LISTEN.
THINK.
SOLVE.™

On-Machine™ Connectivity

- Connection Systems
- PanelConnect™ Systems
- Safety Connection Systems
- Network Media
- On-Machine Distributed I/O
- ArmorStart® Power Media

Allen-Bradley • Rockwell Software • Dodge • Reliance Electric

Rockwell Automation

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*This product is an expansion of existing product line.

Allen-Bradley *connectivity: Ideally suited for* On-Machine™ *applications.*

The connectivity solutions in this catalog are part of a broad range of On-Machine products from Rockwell Automation. For more information, please request the publications indicated below from your Allen-Bradley representative, or visit us at www.ab.com/onmachine and select "Products" in the left navigation bar.

- ***ArmorStart™ On-Machine Motor Controller*** - See publication 280-SG001_-EN-P
- ***Sensors, Limit Switches and Encoders*** - See publication C115-CA001A-EN-P
- ***Push Button Stations for DeviceNet™*** - See publication ICB-SP001_-EN-P
- ***Control Tower™ StackLights, Beacons and Horns*** - See publication ICB-SP001_-EN-P
- ***800Z Touch Buttons*** - See publication S115-CA001_-EN-P
- ***Machine Safety Components*** - See publication S115-CA001A-EN-P
- ***PowerFlex® 70 NEMA 4X AC Drive*** - See 20A-PP001_-EN-P

What Is Preferred Availability?

Products with Preferred Availability are our most commonly ordered items and are typically in factory stock. In this catalog, Preferred Availability products are indicated by blue catalog numbers for your convenience.

General

Application Considerations and General Terms and Conditions of Sale

Application Considerations

Selection of Equipment—Because of the variety of uses for the products described in this catalog, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts and layouts shown in this catalog are intended solely for purposes of example. Because there are many variables and requirements associated with any particular installation, Rockwell Automation/Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Rockwell Automation/Allen-Bradley Publication SGI-1.1, "Safety Guidelines for the Application, Installation and Maintenance of Solid State Control" (available from your local Rockwell Automation/Allen-Bradley office) describes some important differences between solid-state equipment and electromechanical devices which should be taken into consideration when applying products such as those described in this catalog.

Service and Installation Conditions—Unless otherwise noted, the products described in this catalog are designed to meet "usual service and installation conditions" as defined in NEMA (National Electrical Manufacturers Association) Standards Publication—Part ICS 1-108. Open style devices must be provided with environmental protection by proper mounting in enclosures designed for specific application conditions.

See pages 2–20 through 2–21 of this catalog for information on enclosures and an explanation of the degrees of protection provided by the different types, based on NEMA Standards Publication 250 and IEC Publication 529, as applicable.

Performance Data—Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of accelerated testing at elevated stress levels, and the user should correlate it to actual application requirements. Actual performance is subject to Rockwell Automation/Allen-Bradley WARRANTY and LIMIT OF LIABILITY (see Rockwell Automation/ Allen-Bradley Terms and Conditions of Sale).

General Terms and Conditions of Sale

These general terms and conditions of sale only apply to direct sales by the manufacturer or its affiliates. Sales by appointed distributors and other independent authorized resellers will be subject to terms and conditions of sale as may be separately established by each such distributor or reseller. Sales outside of North America, as well as sales of other Rockwell Automation products and services, also may be subject to separate or supplemental terms and conditions of sale. For further information, please consult Rockwell Automation/Allen-Bradley sales office.

General. These general terms and conditions of sale (along with any directly associated written Seller specification or quotation) exclusively will govern the sale or licensing by Seller of all goods and services (including without limitation, hardware, firmware and software products, training, programming, maintenance, engineering, parts and repair services—collectively, the "Products") furnished hereunder. No addition or modification to these terms and conditions will be binding on Seller unless agreed to in writing signed by an authorized representative at Seller's headquarters. Seller objects to other terms and conditions that may be proposed by the customer not otherwise consistent with these or other terms and conditions set forth in Seller's written specification, quotation or order acknowledgment.

Payment Terms. Net thirty (30) days from date of invoice with ongoing approved credit as determined by Seller. Seller reserves the right to suspend any further performance under this agreement or otherwise in the event payment is not made when due. No payment by offset is permitted unless approved by Seller.

Delivery Terms. Delivery terms are Ex Works with respect to shipping costs, risk of loss and title transfer, except that title to all intellectual property rights associated with the Products (e.g., software and firmware) remains with Seller (or its suppliers and licensors), and such Products are made available or licensed only for use by the customer pursuant to this agreement or other Seller license agreement. Acknowledged shipping dates are approximate only and based on prompt receipt of all necessary information from the customer.

Warranty.

A. Hardware: Seller warrants for a period of one (1) year from the date of invoice from Seller or its appointed distributor, as the case may be, that hardware Products furnished hereunder will be of merchantable quality, free from defects in material, workmanship and design. Repaired or replacement Products provided under warranty are similarly warranted for a period of six (6) months from the date of shipment to Customer or the remainder of the original warranty term, whichever is longer.

B. Software and Firmware: Unless otherwise provided in a Seller or third party license agreement, Seller warrants for a period of one (1) year from the date of invoice from Seller or its appointed distributor, as the case may be, that standard software or firmware Products furnished hereunder, when used with Seller-specified hardware, will perform in accordance with published specifications prepared, approved, and issued by Seller's headquarters. Seller makes no representation or warranty, express or implied, that the operation of the software or firmware Products will be uninterrupted or error free, or that the functions contained therein will meet or satisfy the Customer's intended use or requirements. Software and firmware corrections are warranted for a period of three (3) months from the date of shipment to Customer or the remainder of the original warranty term, whichever is longer.

C. Factory Repair and Field Exchange: Seller warrants for a period of six (6) months from the date of invoice from Seller or its appointed distributor, as the case may be, that billable or nonwarranty factory repaired or field exchanged hardware Products furnished hereunder will be free from defects in material and workmanship. Products furnished on an exchange basis may be new or reconditioned.

D. Service: Seller warrants that Products comprised of services, including engineering and custom application programming services, whether provided on a fixed cost or time and material basis, will be performed in accordance with generally accepted industry practices to the extent such services are subject to written acceptance criteria agreed to in advance by Seller. All other warranties relative to provided services are disclaimed.

F. Remedies: Satisfaction of the above warranties will be limited, at Seller's option, to the replacement, repair, reperformance or modification of, or issuance of a credit for the purchase price of the Products involved, and where applicable, only after the return of such Products with Seller's consent. Replacement Products may be new or reconditioned. Any warranty service (consisting of time, travel and expenses related to such services) performed other than at Seller's factory, will be at Customer's expense.

G. General: Warranty satisfaction is available only if (a) Seller is promptly notified in writing and (b) Seller's examination discloses, to its satisfaction, that any alleged defect has not been caused by misuse; neglect; improper installation, operation, maintenance, repair, alteration or modification; accident; or unusual deterioration or degradation of the Products or parts thereof due to physical environment or electrical or electromagnetic noise environment.

H. THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESSED, IMPLIED OR STATUTORY, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, OR PERFORMANCE OR APPLICATION WARRANTIES, AND EXTEND ONLY TO CUSTOMERS PURCHASING FROM SELLER OR ITS APPOINTED DISTRIBUTOR.

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Licensed Software and Firmware—Products comprised of software or firmware may be subject to additional terms and conditions set forth in separate Seller's license agreements that will control to the extent necessary to resolve any conflict with the terms and conditions stated herein. Such Products will not be delivered or made available until the customer also agrees to the terms and conditions of such separate license agreements.

Packing & Marking—Customer- specified packing or marking may be subject to additional charges not otherwise included in the price of the Products.

Weights and Dimensions—Published weights and dimensions are estimates or approximate only and are not warranted.

Quotations—Written quotations are valid for 30 days from issue unless otherwise stated. Verbal quotations expire the same day they are made. All typographical and clerical errors are subject to correction.

Prices—Prices and other information shown in any Seller publication (including product catalogs and brochures) are subject to change without notice and confirmation by specific quotation. Such publications are not offers to sell and are maintained only as a source of general information. The customer will pay or reimburse Seller for all sales, use, excise or similar taxes. Products comprised of time and material services will be provided in accordance with Seller's published service rates (including applicable overtime and travel expenses) in effect as of the date such services are provided, unless otherwise confirmed by Seller's written quotation or order acknowledgment. Billable service time includes travel time to and from the job site and all time Seller's representatives are available for work and waiting (whether on or off the job site) to perform the services.

Changes. Customer-requested order changes, including those affecting the identity, scope and delivery of the Products, must be documented in writing and are subject to Seller's prior approval and adjustments in price, scheduling and other affected terms and conditions. In any event, Seller reserves the right to reject any change that it deems unsafe, technically inadvisable or inconsistent with established engineering or quality guidelines and standards, or incompatible with Seller's design or manufacturing capabilities.

General Terms and Conditions of Sale

Returns. All returns of Products will be subject to prior Seller approval. Nonwarranty returns of unused and salable Products for credit will be subject to Seller's return policies in effect at the time, including applicable restocking charges and other conditions of return. Products returned under warranty must be properly packed and shipped to Seller–specified locations. Shipping containers must be clearly marked per Seller's instruction and shipped freight prepaid by the customer.

Order Cancellation. An order may be canceled by the customer prior to shipment only by written notice and upon payment to Seller of reasonable cancellation and restocking charges, including reimbursement for direct costs, plus allowances for disruption. Cancellation charges associated with orders for custom Products or Products specifically manufactured to the customer's specification may equal the actual selling price of the Products. Seller has the right to cancel an order for cause at any time by written notice, and Seller will be entitled to cancellation and restocking charges as identified above. No termination by the customer for cause will be effective unless and until Seller has failed to correct such alleged cause within forty-five (45) days after receipt of the customer's written notice specifying such cause.

Force Majeure. Seller will not be liable for any loss, damage or delay arising out of its failure to perform hereunder due to causes beyond its reasonable control, including without limitation, acts of God or the customer, acts of civil or military authority, fires, strikes, floods, epidemics, quarantine restrictions, war, riots, delays in transportation, or transportation embargoes. In the event of any such delay, Seller's performance date(s) will be extended for that length of time as may be reasonably necessary to compensate for the delay.

Government Clauses and Contracts. No government contract regulations or clauses will apply to the Products or this agreement or act to bind Seller unless specifically agreed to by Seller in writing at Seller's headquarters. Products sold or licensed hereunder are not intended to be used, nor should they be used, in any nuclear–related application either as a "Basic Component" under 10 CFR 21 (United States NRC) or otherwise under similar nuclear laws and regulations of this or any other country.

Export Control. Products and associated materials supplied or licensed under this agreement may be subject to various export laws and regulations. It is the responsibility of the exporter to comply with all such laws and regulations.

Disputes. The parties will attempt in good faith promptly to resolve any dispute arising out of this agreement by negotiations between representatives who have authority to settle the controversy. If unsuccessful, the parties further will attempt in good faith to settle the dispute by nonbinding third-party mediation, with fees and expenses of such mediation apportioned equally to each side. Any dispute not so resolved by negotiation or mediation may then be submitted to a court of competent jurisdiction in accordance with the terms of this agreement. These procedures are the exclusive procedures for the resolution of all such disputes between the parties.

Governing Law. This agreement and all disputes arising thereunder will be governed by and interpreted in accordance with the internal laws of the state, province or other governmental jurisdiction in which Seller's principal place of business resides, but specifically excluding the provisions of the 1980 UN Convention on Contracts for the International Sales of Goods.

Assignment. This agreement may not be assigned by either party without the written consent of the other, however, consent will not be required for internal transfers and assignments as between Seller and its parent corporations, subsidiaries or affiliates as part of a consolidation, merger or other form of corporate reorganization.

Language. The parties acknowledge that they have required that this agreement be drawn up in English. Les parties reconnaissent avoir exigé la rédaction en anglais du Contrat. In the event of a conflict between the English and other language versions of this agreement, the English version will prevail.

Forever Warranty

Refer to Rockwell Automation/ Allen-Bradley *Proximity Sensors, Forever Warranty* publication number 871–SB001B–EN–P which can be found on *www.theautomationbookstore.com*

ATTENTION: Servicing energized Industrial Control Equipment can be hazardous. Severe injury or death can result from electrical shock, burn, or unintended actuation of controlled equipment. Recommended practice is to disconnect and lockout control equipment from power sources, and release stored energy, if present. Refer to **National Fire Protection Association Standard No. NFPA70E, Part II and (as applicable) OSHA rules for Control of Hazardous Energy Sources (Lockout/Tagout) and OSHA Electrical Safety Related Work Practices** for safety related work practices, including procedural requirements for lockout-tagout, and appropriate work practices, personnel qualifications and training requirements where it is not feasible to de-energize and lockout or tagout electric circuits and equipment before working on or near exposed circuit parts.

Periodic Inspection—Industrial control equipment should be inspected periodically. Inspection intervals should be based on environmental and operating conditions and adjusted as indicated by experience. An initial inspection within 3 to 4 months after installation is suggested. See National Electrical Manufacturers Association (NEMA) Standard No. ICS 1.3, *Preventive Maintenance of Industrial Control and Systems Equipment*, for general guidelines for setting-up a periodic maintenance program. Some specific guidelines for Rockwell Automation/Allen-Bradley products are listed below.

Contamination—If inspection reveals that dust, dirt, moisture or other contamination has reached the control equipment, the **cause must be eliminated**. This could indicate an incorrectly selected or ineffective enclosure, unsealed enclosure openings (conduit or other) or incorrect operating procedures. Replace any improperly selected enclosure with one that is suitable for the environmental conditions—refer to NEMA Standard No. 250, *Enclosures for Electrical Equipment* for enclosure type descriptions and test criteria. Replace any damaged or embrittled elastomer seals and repair or replace any other damaged or malfunctioning parts (e.g., hinges, fasteners, etc.). Dirty, wet or contaminated control devices must be replaced unless they can be cleaned effectively by vacuuming or wiping. Compressed air is **not** recommended for cleaning because it may displace dirt, dust, or debris into other parts or equipment, or damage delicate parts.

Cooling Devices—Inspect blowers and fans used for forced air cooling. Replace any that have bent, chipped, or missing blades, or if the shaft does not turn freely. Apply power momentarily to check operation. If unit does not operate, check and replace wiring, fuse, or blower or fan motor as appropriate. Clean or change air filters as recommended in the product manual. Also, clean fins of heat exchangers so convection cooling is not impaired.

Hazardous Location Enclosures—

ATTENTION: Explosion hazard. Always disconnect power before opening enclosures in hazardous locations. Close and secure such enclosures before reapplying power.

NEMA Types 7 and 9 enclosures require careful handling so machined flanges do not get damaged. For removable covers, remove the cover and set aside with machined surface up. For hinged covers, open the cover fully and restrain in the full open position if necessary. Clean and examine the flanges on both the body and cover before reassembly. If there are scratches, nicks, grooves or rust on the mating surfaces, replace the body or cover as necessary. Examine all bolts and replace any that have damaged threads. Also check mating threads for damage and replace enclosure if necessary. Covers and bodies of some enclosures are manufactured as matched sets (not interchangeable). The manufacturer should be consulted before replacing a cover or body unless it is specified by the manufacturer as interchangeable.

Operating Mechanisms—Check for proper functioning and freedom from sticking or binding. Replace any broken, deformed or badly worn parts or assemblies according to individual product renewal parts lists. Check for and retighten securely any loose fasteners. Lubricate if specified in individual product instructions.

Note: Rockwell Automation/ Allen-Bradley magnetic starters, contactors and relays are designed to operate without lubrication—**do not** lubricate these devices because oil or grease on the pole faces (mating surfaces) of the operating magnet may cause the device to stick in the “ON” mode. Some parts of other devices are factory lubricated—if lubrication during use or maintenance of these devices is needed, it will be specified in their individual instructions. If in doubt, consult your nearest Rockwell Automation Sales Office for information (see page 9-1).

Contacts—Check contacts for excessive wear and dirt accumulations. Vacuum or wipe contacts with a soft cloth if necessary to remove dirt. Contacts are not harmed by discoloration and slight pitting. Contacts should never be filed, as dressing only shortens contact life. Contact spray cleaners should **not be used** as their residues on magnet pole faces or in operating mechanisms may cause sticking, and on contacts can interfere with electrical continuity. Contacts should only be replaced after silver has become badly worn. Always replace contacts in complete sets to avoid misalignment and uneven contact pressure.

Vacuum Contactors—Contacts of vacuum contactors are not visible, so contact wear must be checked indirectly. Vacuum bottles should be replaced when:

1. The estimated number of operations equals one million, or
2. The contact life line indicator shows need for replacement, or
3. The vacuum bottle integrity tests show need for replacement.

Replace all vacuum bottles in the contactor at the same time to avoid misalignment and uneven contact wear. If the vacuum bottles do not require replacement, check and adjust overtravel to the value listed on the maintenance instructions.

Terminals—Loose connections in power circuits can cause overheating that can lead to equipment malfunction or failure. Loose connections in control circuits can cause control malfunctions. Loose bonding or grounding connections can increase hazards of electrical shock and contribute to electromagnetic interference (EMI). Check the tightness of all terminals and bus bar connections and tighten **securely** any loose connections. Replace any parts or wiring damaged by overheating, and any broken wires or bonding straps.

Arc Hoods—Check for cracks, breaks, or deep erosion. Arc hoods and arc chutes should be replaced if damaged or deeply eroded.

Coils—If a coil exhibits evidence of overheating (cracked, melted or burned insulation), it must be replaced. In that event, check for and correct overvoltage or undervoltage conditions, which can cause coil failure. Be sure to clean any residues of melted coil insulation from other parts of the device or replace such parts.

Batteries—Replace batteries periodically as specified in product manual or if a battery shows signs of electrolyte leakage. Use tools to handle batteries that have leaked electrolyte; most electrolytes are corrosive and can cause burns. Dispose of the old battery in accordance with instructions supplied with the new battery or as specified in the manual for the product.

Pilot Lights—Replace any burned out lamps or damaged lenses.

Photoelectric Switches—The lenses of photoelectric switches require periodic cleaning with a soft dry cloth. Reflective devices used in conjunction with photoelectric switches also require periodic cleaning. Do not use solvents or cleaning agents on the lenses or reflectors. Replace any damaged lenses and reflectors.

Solid State Devices—

ATTENTION: Use of other than factory recommended test equipment for solid state controls may result in damage to the control or test equipment or unintended actuation of the controlled equipment. Refer to paragraph titled HIGH VOLTAGE TESTING.

Solid state devices require little more than a periodic visual inspection. Discolored, charred or burned components may indicate the need to replace the component or circuit board. Necessary replacements should be made only at the PC board or plug-in component level. Printed circuit boards should be inspected to determine whether they are properly seated in the edge board connectors. Board locking tabs should also be in place. Solid state devices must also be protected from contamination, and cooling provisions must be maintained — refer to paragraphs titled CONTAMINATION and COOLING DEVICES on previous page. Solvents should not be used on printed circuit boards.

High Voltage Testing—High voltage insulation resistance (IR) and dielectric withstanding voltage (DWV) tests should not be used to check solid state control equipment. When measuring IR or DWV of electrical equipment such as transformers or motors, a solid state device used for control or monitoring must be disconnected before performing the test. Even though no damage is readily apparent after an IR or DWV test, the solid state devices are degraded and repeated application of high voltage can lead to failure.

Locking and Interlocking Devices—Check these devices for proper working condition and capability of performing their intended functions. Make any necessary replacements only with Rockwell Automation/Allen-Bradley renewal parts or kits. Adjust or repair only in accordance with Rockwell Automation/Allen-Bradley instructions.

Maintenance After a Fault Condition—Opening of the short circuit protective device (such as fuses or circuit breakers) in a properly coordinated motor branch circuit is an indication of a fault condition in excess of operating overload. Such conditions can cause damage to control equipment. **Before restoring power,** the fault condition must be corrected and any necessary repairs or replacements must be made to restore the control equipment to good working order. Refer to NEMA Standards Publication No. ICS-2, Part ICS2-302 for procedures.

Replacements—Use only replacement parts and devices recommended by Rockwell Automation/Allen-Bradley to maintain the integrity of the equipment. Make sure the parts are properly matched to the model, series and revision level of the equipment.

Final Check Out—After maintenance or repair of industrial controls, always test the control system for proper functioning under controlled conditions that avoid hazards in the event of a control malfunction.

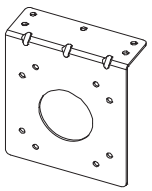
For additional information, refer to NEMA ICS 1.3, PREVENTIVE MAINTENANCE OF INDUSTRIAL CONTROL AND SYSTEMS EQUIPMENT, published by the National Electrical Manufacturers Association, and NFPA70B, ELECTRICAL EQUIPMENT MAINTENANCE, published by the National Fire Protection Association.

	 **889** **Female Cordsets**	 **889** **Male Cordsets**	 **889** **Patchcords**	 **898/1495** **Splitters**	 **879** **V-Cables**
Description	• Cable with integral female connector on one end	• Cable with integral male connector on one end	• Cable with integral connector on each end	• Cable with single male connector attached to two female connectors	• Cable with single male connector attached to two female connectors
Features	• Straight or right angle • Multiple standard lengths • Braided and unbraided • Standard and LED versions • Female connector provides direct interface to sensors and other field devices	• Straight or right angle • Multiple standard lengths • Male connector provides interface to distribution boxes or DC micro ArmorBlock DeviceNet I/O	• Straight or right angle • Multiple standard lengths • Direct connection between field devices and distribution boxes or Allen-Bradley ArmorBlock DeviceNet I/O	• Straight or right angle female connectors • Multiple standard lengths • Direct connection between field devices and distribution boxes or Allen-Bradley ArmorBlock DeviceNet I/O	• Straight or right angle female connectors • Multiple standard lengths • Direct connection between field devices and distribution boxes or Allen-Bradley ArmorBlock DeviceNet I/O
Available Models	• Mini . . . . . 3-10 • Mini Illuminated . . . 3-18 • Mini Coiled . . . . . 3-18 • Mini-Plus . . . . . 3-34 • DC Micro . . . . . 3-46 • DC Micro Illuminated . . . . . 3-54 • DC Micro Coiled . . . . . . • AC Micro . . . . . 3-84 • AC Micro Coiled . . . 3-88 • EAC Micro . . . . . 3-101 • Pico . . . . . 3-106 • Pico Illuminated . . . . . . • M23 3-128	• Mini . . . . . 3-10 • DC Micro . . . . . 3-46 • AC Micro 3-84	• Mini to Mini . . . . . 3-10 • Mini-Plus . . . . . 3-34 • DC Micro . . . . . 3-46 • DC Micro to Pico . . 3-56 • DC Micro to Mini . . . . . . • AC Micro . . . . . 3-84 • Pico . . . . . 3-106 • M23 3-128	• DC Micro Splitter . . 3-58 • AC Micro Splitters . 3-90 • Pico Splitter . . . . . 3-110 • DC Micro to Pico Splitter 3-110	• DC Micro to DC Micro V-Cables . . . . . 3-60 • DC Micro to Conductor V-Cables . . . . . 3-60 • DC Micro to Pico V-Cable 3-60

	 **888** **Receptacles**	 **889/1485** **Bulkhead Pass-Thru**	 **898** **Distribution Boxes**	 **871/889** **Terminal Chambers**	 **889/1485** **Accessories**
Description	• Panel mount connector with flying lead	• Panel mount connector, male to female	• Factory prewired distribution module connecting 4, 6, or 8 devices through a single cable.	• Field installable connectors	• Sealing caps, coupling adaptors, and other connection systems accessories
Features	• Male and female configurations • 1/2in NPT, 1/4in NPT or M14 threads • Threaded metal housing	• 4- and 5-pin configurations • 1/2in NPT, 1/4in NPT or M14 threads • Threaded metal housing	• 4, 6, or 8 port, parallel-wired • Cable or quick-disconnect main connection • Standard and LED versions	• Screw, solder or insulation displacement connector styles • Straight or right angle • Multiple sizes for varying cable jacket diameters	• Rugged durable construction • Versions to interface with male or female connectors • Multiple sizes for various connector types
Available Models	• Mini Receptacle . . . 3-22 • DC Micro . . . . . 3-64 • AC Micro . . . . . 3-92 • EAC Micro . . . . . 3-102 • Pico . . . . . 3-114 • M23 3-130	• Mini Bulkhead Pass-thru . . . . . 3-30 • DC Micro Bulkhead Pass-thru 3-80	• Mini . . . . . 3-24 • Mini Illuminated . . . . . . • DC Micro . . . . . 3-66 • DC Micro Illuminated . . . • AC Micro . . . . . 3-94 • Pico Illuminated	• Mini . . . . . 3-28 • DC Micro . . . . . 3-76 • AC Micro . . . . . 3-96 • Pico . . . . . 3-120 • M23 3-132	• Sealing caps . . . . 3-143 • Coupling adaptors . . . . . 3-144 • Mounting nuts . . . 3-144 • Sealing washers . . 3-144

Quick Selection Guide

PanelConnect™ Systems/Safety Connection Systems

	 **1667** **16-Point PanelConnect**	 **1667** **32-Point PanelConnect**	 **1492** **Digital Prewired Cables**	 **1667** **PanelConnect Fuse Module**	 **1667** **Accessories**
Description	• Factory prewired module connecting field device inputs and outputs from two 8-port distribution boxes directly to I/O cards through prewired cable assemblies	• Factory prewired module connecting field device inputs and outputs from four 8-port distribution boxes directly to I/O cards through prewired cable assemblies	• Factory prewired cable assemblies providing interface between PanelConnect module and I/O	• Optional interface providing overcurrent protection to inputs and outputs wired via PanelConnect	• Line of accessories designed for use with PanelConnect
Features	• Provides prewired connectivity from field device to 16-point I/O • Color-coded ring indication for AC and DC models • LED power indicator • Rugged durable construction • Supports 1746, 1756, 1769, 1771, and 1794 I/O platforms	• Provides prewired connectivity from field device to two 16-point I/O or one 32-point I/O • Combination models provide input and output wiring through each of four passive distribution boxes • LED power indicator • Rugged durable construction	• Prewired factory tested connectivity from PanelConnect module to I/O connections • Ready to wire versions available for custom wiring needs • Option module cables provide connectivity from PanelConnect to option modules such as output fusing	• Predesigned method of adding overcurrent protection • DIN rail mount housing • 16- or 32–point versions	• Rugged durable construction • Factory designed specifically for PanelConnect systems
Available Models	• AC input models . . 4–11 • AC output models . 4–24 • DC input models . . 4–12 • DC output models . 4–25	• DC input models . . 4–12 • DC output models . 4–25 • DC combination models 4–43	• Prewired interface cables . . . . . 4–8 • Ready-to-wire cables . . . . . 4–8 • Option module cables 4–8	• 16-point module . . . 4–48 • 32-point module . . . 4–48	• Mounting bracket . . 4–49 • Sealing Caps 4–48

	 **898** **Safety-Wired T-Port**	 **898** **Safety-Wired Distribution Box**	 **898** **Safety-Wired Distribution Box**	 **898** **Safety-Wired Shorting Plug**	 **888** **Receptacles**
Description	• T-port/splitters designed for use with connectorized safety wiring without enunciation	• Passive distribution box designed for use with connectorized safety wiring	• Passive distribution box designed for use with connectorized safety wiring	• Shorting plugs designed for use with safety-wired distribution boxes	• Male receptacles for use with safety switches
Features	• 4-pin DC micro models for 2 NC or 1 NO/1 NC contacts • Red PUR body indicating safety wiring • Ratcheting coupling nut for vibration resistance • Rugged durable construction	• Models without enunciation • 4-pin DC micro versions • Red PBT body indicating safety wiring • Rugged durable construction	• Models with enunciation • 4-pin DC micro or 6-pin AC micro versions • Red PBT body indicating safety wiring • Rugged durable construction	• 4-pin DC micro or 6-pin AC micro versions • Red PVC body indicating safety wiring • Rugged durable construction	• 4-pin DC micro or 6-pin AC micro versions • M16, M20, and 1/2 NPT mounting threads • 4-, 5-, 6-, and 8-pin styles • Rugged durable construction
Available Models	• DC micro, 2 NC • DC micro 1 NO/1 NC 5–6	• No enunciation, 2 NC 5–7 • No enunciation, 1 NO/ 1 NC 5–8	• Enunciation, 1 NC/ 1 NO . . . . . 5–9 • Enunciation, 2 NC/1 NO 5–10	• 4-pin DC micro, 2 NC • 4-pin DC micro, 1 NO/ 1 NC • 6-pin AC micro, 2 NC/1 NO 5–11	• 4-pin DC micro • 5-pin DC micro • 6-pin AC micro • 8-pin DC micro 5–12

				
1485C **KwikLink ™ Cable**	**1485P** **KwikLink General Purpose Connectors**	**1485P** **KwikLink Connectors**	**1485T & 1485P** **Pigtail KwikLink Connectors**	**1485P** **KwikLink Splice Kits**
• Keyed flat trunk cable for use with Insulation Displacement Connectors (IDCs)	• Vampire connectors for use with KwikLink flat cable in general purpose applications	• Insulation Displacement Connectors (IDCs) for use with KwikLink flat cable	• Insulation Displacement Connector with integral class 1 round cable pigtail for interfacing a device or power supply to flat cable	• A pair of IDCs factory- joined with Class 1 round cable for splicing together two sections of flat cable network
• Keyed to prevent wiring mishaps • TPE or PVC jacket • Class 1 or class 2 rated cable versions • Available in spools up to 420 m (1378 ft)	• Plug and play installation • Two-piece housing • Designed for general purpose applications • IP 67 rated	• Plug and play installation • UL listed and CSA certified • Valox® construction • Sealed: 1200 psi (8270 kPa) washdown	• Plug and play installation • Allows Class 1 drop to KwikLink system • Includes IDC connector and pigtail module	• Plug and play installation • Available in standard splice kit and power isolation splice kit versions • Includes IDC, splice module and flat cable end caps
• TPE CL1 rated . . . . . 6-6, 6-12 • PVC CL2 rated 6-12	• Micro QD 6-7	• Sealed • Unsealed 6-14	• Sealed • Unsealed 6-15	• Sealed • Unsealed • Standard splice kit • Power isolation splice kit . 6-13

				
1485A **Bulkhead Pass-Through Connectors**	**1485T** **PowerTap**	**1485P** **DeviceBox**	**1485P** **DevicePort**	**1485P** **T-Port**
• Mini or micro bulkhead pass-through connectors for convenient routing of DeviceNet wiring through panel walls	• Passive coupling device used to limit trunk current	• Passive sealed junction boxes for up to 8 smart devices	• Passive multi-port tap for up to 8 smart devices	• Connects a single drop line to the trunk
• Nickel-plated brass housing standard • Stainless steel housing versions available	• Allows for multiple power supplies • 7.5 A or 3.0 A fuse protection (2x) • Thick media and thin media versions	• 2, 4, or 8 ports • Cord grip openings • Direct connection to trunk • Thick media and thin media versions	• 4 or 8 ports • Connection to trunk via drop line • Stainless steel option	• Right or left keyway for positioning purposes • Stainless steel option . . . . .
• 4- and 5-pin mini • 5-pin DC micro 6-32, 6-52	• Thick media • Thin media 6-40	• Thick media • Thin media 6-41	• QD drop connector • Pigtail drop connector • Cable drop connector • Thru-Trunk 6-42, 6-44	• Mini drop connector • Micro drop connector 6-34, 6-36

Quick Selection Guide

Network Media

	 **1485K** **KwikLink Drop Cables**	 **1485A** **Accessories**	 **1485C** **Thick Media**	 **1485C** **Thin Media**	 **1485A** **Terminal Chambers**
Description	• Four-wire unshielded drop cables for use exclusively with KwikLink systems	• Accessories to complement KwikLink flat media systems	• 12.2 mm (1/2 in) cable for DeviceNet trunkline offered in cable spools, molded connectors and receptacles	• 6.9 mm (1/4 in) cable for DeviceNet trunkline or droplines offered in cable spools, molded connectors and receptacles	• Mini or micro field attachable connectors with screw terminals for DeviceNet
Features	• For use only with KwikLink Flat Media system • Epoxy-coated zinc coupling nut • PVC jacket	• Durable construction • Simple mounting and installation	• PVC jacket • Standard cordset lengths up to 30 m (98 ft) • Available in raw spools up to 500 m (1640 ft) • Stainless steel option	• Yellow TPE or gray PVC jacket • Standard cordset lengths up to 6 m (19.6 ft) • Available in raw spools up to 600 m (1968 ft) • Stainless steel option	• Straight or right angle • Male and female versions • Screw terminal connection • IP 67 rating
Available Models	• Single ended • Double ended 6–8, 6–17	• KwikLink Dust Cap • Conduit adaptors • KwikLink end caps • Flat cable mounting clamp • Micro sealing cap • Micro terminator 6–10, 6–21	• Cable spools • Premolded segments • Panel mount receptacles • Field attachable conn. • Terminators . . 6–24, 6–28	• Cable spools • Premolded segments • Panel mount receptacles • Field attachable conn. • Terminators . . 6–26, 6–28	• Mini for Thick Media • Mini for Thin Media • Micro for Thin Media 6–18, 6–30

	 **889N** **Auxiliary Power Media**	 **889N** **Auxiliary Power/Single Channel Safety Media**	 **1485** **Accessories**	 **1786** **ControlNet™ Media**	 **1585** **EtherNet™ Media**
Description	• 4-pin patchcords, receptacles, T-ports, terminal chambers, bulkhead pass-through connectors and accessories for auxiliary power for DeviceNet	• 4-pin T-ports and shorting plugs wired to provide both auxiliary power and a single channel safety circuit **Note**: Safety circuit is passive and not part of the DeviceNet communication network.	• Accessories to complement DeviceNet media system installations	• Sealed media utilizing threaded connectors for ControlNet	• Sealed media based on 4-pin D-coded micro (M12) connections
Features	• Yellow PVC jacket • Standard patchcord lengths up to 30 m (98 ft)	• Red PBT housing • Male or female shorting plugs available • For use in conjunction with standard auxiliary power media components	• Durable construction • Broad range of connection types • Simplified installation	• Threaded connectors • IP67 rating • Rugged durable construction	• 4-pin D-coded M12 • Threaded connection • IP 67 rating • Rugged durable construction
Available Models	• Patchcords • T-ports • Receptacles • Bulkhead pass-thru 6–50, 6–53	• T-ports • Shorting Plugs 6–54	• Terminating resistor • Sealing caps • Open-style connectors • Gender changes 6–10, 6–21, 6–48	• Plug Connectors • T-taps • Bulkhead connectors • Terminators 6–58	• IDC field attachable connectors • M12 to RJ45 bulkhead pass-thru 6–59

			
1738 **ArmorPoint**	**1732** **ArmorBlock**	**1792D** **ArmorBlock MaXum**	**1792D** **ArmorBlock High Current**
• Hardened modular IP 69 I/O platform based on IP 20 1734 Point I/O	• Hardened discrete block style I/O for up to 16 device connections	• Hardened I/O package with modular design for up to 16 device connections	• Hardened I/O package with high current (5…10 A) output
• Modular design • 30 I/O types • Integration with ArmorStart • Sealed IP 69 housing • Variety of networks supported • Variety of field connector types	• Discrete design • Compact footprint • Sealed IP 67 housing • Variety of networks supported • Variety of field connector types	• Input or output versions • Selectable filters • Selectable output fault latching • Compatible with sinking/sourcing/ 2-wire devices • Advanced diagnostics • DeviceLogix™	• 5…10 A solid state outputs • Selectable filters • Configured inputs for PNP (sourcing) or NPN (sinking) devices
• Adaptors: DeviceNet, ControlNet, EtherNet, ProfiBus DP • I/O: Digital in/out, Analog in/out, Thermocouple, RTD, SSI (Encoder), RS-232, RS-485 7-5	• 8-input • 8-output • 8-self-configuring • 16-input • 16-output • 16-self-configuring . . . . . NO TAG	• Various from 4 to 16 points 7-23	• 8 in/8 out 7-28

				
280 **Three-Phase Power Trunk Cable**	**280** **Three-Phase Power Drop Cable**	**280** **Three-Phase Power Tees and Reducers**	**280** **Three-Phase Power Receptacles**	**280** **Three-Phase Power Accessories**
• Cordset - Cable with Integral Female or Male connector on one end • Patchcord - Cable with integral female or male connector on each end	• Cordset - Cable with Integral Female or Male connector on one end • Patchcord - Cable with integral female or male connector on each end	• Tee - Connects to a single drop line to trunk w/ Quick Change connectors • Reducing Tee - Connects a single drop line (Mini) to trunk (Quick Change) connector • Reducer - Connects from Quick Change male connector to Mini female connector	• Female receptacles are a panel mount connector with flying leads • Male receptacles are a motor junction box mounted connector with flying leads	• Sealing Caps offered in • versions to interface with female or male connectors • Locking clips clamshell design clips over three power phase connector to limit customer access
• Rated for Motor Branch Circuits • Straight or Right Angle Connectors • 4-pin connector type • Cable Rating: TC-ER/STOOW • Multiple Standard lengths	• Rated for Motor Branch Circuits • Straight or Right Angle Connectors • 4-pin connector type • Cable Rating: TC-ER/STOOW • Multiple Standard lengths	• Rated for Motor Branch Circuits • Trunk Tee, Reducing Tee and Reducer • 4-pin connector type	• Rated for Motor Branch Circuits • Male and female configurations • 4-pin connector type • 1/2 in. NPT • Available in 1 meter lengths	• Sealing Caps - Available in Quick Change and Mini styles • Locking clips are designed for the Quick Change and Mini style connectors
• Straight • Right Angle 8-6	• Straight • Right Angle 8-8	• Trunk Tee • Reducing Tee • Reducer 8-10	• M22 Female • M22 Male • M35 Female • M35 Male 8-12	• Sealing Caps • Locking Clips • Mounting Nuts 8-19

Quick Selection Guide

ArmorStart™ Power Media

	 **889** **Control Power Cordsets & Patchcords**	 **898** **Control Power T-Ports**	 **888** **Control Power Receptacles**	 **889** **Control Power Shorting Plugs**	 **889** **Control Power Accessories**
Description	• Cable with integral connector on either one or both ends	• Cable with single male connector attached to two female connectors	• Panel mount connector with flying leads	• Integral connector with leads shorted for specific application requirements	• Sealing caps, mounting nuts, and sealing washers
Features	• 6-pin/5-used configuration • Male and female • Straight or right angle versions • 16 AWG conductors, cable dual rated UL TC/Open wiring and STOOW • Multiple standard lengths	• 6-pin/5-used configuration • Compact design • Color-coded E-stop in and E-stop out configurations	• 6-pin/5-used configuration • Male and female • 16 AWG conductors • 1/2 NPT mounting threads • Multiple standard lengths	• 6-pin/5-used configuration • Male • Multiple versions color-coded for simple identification	• Rugged durable construction • Designed to mate with Control Power Media
Available Models	• Straight • Right Angle 8–14	• Standard Versions • E-Stop In • E-Stop Out 8–16	• Male • Female 8–17	• Shorting Plugs 8–18	• Sealing Caps • Flat Sealing Washers • Mounting Nuts 8–19

Contents

On-Machine™ Solutions

"On-Machine" is a control design philosophy that moves the industrial controls and hardware closer to the application or on the machine while minimizing the number of components in the cabinet. Although many of these controls have always been on the machine, such as sensors, push buttons, tower lights and connection systems, the complete On-Machine strategy involves taking controls that are traditionally found in an enclosure and moving them out to the application as well.

Although the world outside the enclosure may not seem appropriate for many of today's panel-based industrial controls, the ideal On-Machine component has several key features to enable this migration. Its housing is typically "hardened" to IP67 enclosure standards in order to withstand the harsh environments often found on the factory floor. It tends to be modular and compact in design, with plug-and-play electronic capabilities to ease installation and setup. It can be used as part of a flexible communication network including both standard and intelligent devices. On-Machine solutions are also connectorized for quick system assembly using IP67 connection systems instead of traditional wiring in conduit.

The obvious benefit of moving products out of an enclosure and putting them directly on the machine is the reduced panel space required for an On-Machine system. Secondly, the wiring system is greatly simplified because many connections between components can reside on the machine instead of running back and forth between enclosures. Although the purchase cost of individual components may be slightly higher, the reduction in wiring complexity is so substantial that the decreased wiring time and conduit installation costs make the overall solution more economical.

The end result: the larger and more complex the machine, the greater the potential savings during assembly. A recent study by a consortium of European manufacturers and machine tool technology groups concluded that On-Machine assembly costs are up to 30 percent less than conventional methods.

The features afforded by On-Machine components result in many other benefits, such as decreased systems troubleshooting and repair time as well as enhanced control system reliability—with prewired connection there is less manual wiring, resulting in reduced wiring errors and fewer wiring points to check. Plus, the plug-together connectorized components can often be installed by less technically-trained personnel, providing more flexibility with the workforce. Using plug-and-play components even simplifies design effort and engineering documentation.

On-Machine architectures also reduce the need for maintenance technicians and operators to access a control panel every time they have to check a connection or make an adjustment. Instead, they can efficiently isolate problems and replace a starter or I/O locally, rather than sorting through a complex panel. This gets the machine up and running again both faster and safer.

Startup and commissioning time also are critical, and On-Machine solutions can reduce both considerably. Due to the modularity and simplified connectivity of components, On-Machine designs allow OEMs to more cost efficiently build a machine at their site, pretest it and then disassemble it for transport to an end user's plant.

Equally important for end users is the flexibility of being able to relocate equipment and make additions with relative ease.

The On-Machine approach also allows OEMs to provide standard product offerings once considered to be custom applications. In the material handling industry, for example, conveyors once sold as large customized systems can now be sold in standard ten-foot sections. This allows for reduced OEM engineering, quicker delivery times and increased flexibility for the end user.

The migration to the On-Machine approach, like most industrial innovations, will be driven by economics as companies continue to refine their understanding of true assembly and installation costs. OEMs and end users will see different cost advantages depending on their particular industry and equipment environment.

The ability of these solutions to reduce wiring and system costs, improve Mean Time to Repair (MTTR), enhance control system reliability, increase productivity and promote flexibility will make On-Machine solutions a common strategy for reducing costs and increasing reliability of both OEM and end user control systems.

Choosing the Best Cabling Option for Your Application

With the variety of cabling options available, it is crucial to determine which On-Machine solution best suits the application based on several considerations. Use the process outlined below as a guideline to selecting the best On-Machine solution for your needs.

1. **Number, Location and Concentration of Field Devices**. If there are only a few devices, a simple hard wired solution may be the simplest and most cost-effective solution. However, in the case of machines with relatively high device counts, a connector-based solution could prove to be the easiest to apply and troubleshoot. Those applications with high I/O counts and devices concentrated in key areas may best benefit from the same connectorized solution, but with local hardened I/O blocks. And ultimately, for installations with many devices distributed over distances, a network approach may prove most suitable.
2. **Environment**. What is the environment your field devices—and therefore the cabling system—will be exposed to? Applications where washdowns or corrosive materials are common will require all devices and the associated cabling to be IP67-rated or have stainless steel hardware, respectively. On the other hand, for machines installed in relatively clean, less severe environments, open-style connectors and terminal blocks may be appropriate. If temperature extremes are an issue, the need for high- or low-temperature control components may dictate the selection of a wiring solution.
3. **Machine Sections and Their Locations**. Large machines built in sections and disassembled for shipment only to be reassembled on site generally need modular wiring solutions. Plug-and-play wiring systems allow for the simplest commissioning/recommissioning of the control system on the plant floor, with minimal marshalling and wiring errors.
4. **Standard vs. Networked Solutions**. While standard wiring solutions can just satisfy about every need and address the bulk of industrial control applications, there are instances where system feedback and enhanced diagnostics are a must. In these cases, networks such as ControlNet and DeviceNet, which both have their own topographies and media types, must be considered.
5. **Safety vs. Nonsafety Installations**. When installing a machine safety system, there are special wiring practices and configurations that must be employed. The Allen-Bradley Safety Connection System is a connector-based system designed specifically for safety applications.
6. **Special Considerations**. Upon choosing the best On-Machine wiring scheme, it is important to take other characteristics into account for the cabling components. Component selection and installation may be impacted by the need for hi-flex cable in motion applications, device connection options, routing paths and available space, among other factors.

On-Machine System Layouts

Standard Wiring

Traditional Hardwiring Methods

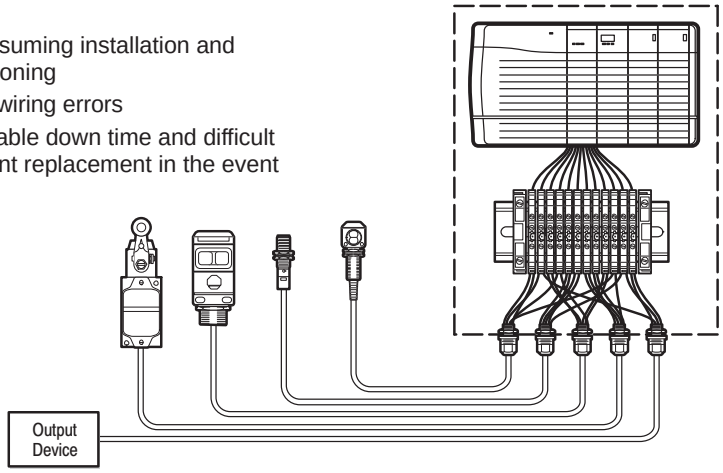
A hardwired system consists of fixed wiring from the devices routed through a cable gland and into terminal connections within the cabinet. At the device, connections may be via terminals as well; in the event of devices with built-in connectors, field attachable connectors may be employed.

Benefits

- A simple solution—requires few parts
- Since no cable lengths are specified, requires little pre-engineering
- A good solution for small machines and/or low device counts

Limitations

- Time-consuming installation and commissioning
- Prone to wiring errors
- Considerable down time and difficult component replacement in the event of failure



Introduction of Quick-Disconnect Cabling at Field Device

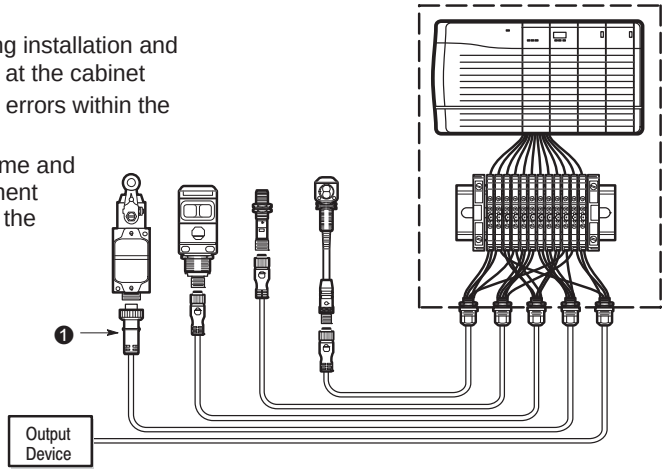
This system is characterized by fixed wiring from terminal blocks through a cable gland at the cabinet, out to connector-based field devices.

Benefits

- A simple solution—requires few parts
- Limited specification of cable lengths, requires some pre-engineering
- Devices can be placed and mounted prior to wiring installation

Limitations

- Time-consuming installation and commissioning at the cabinet
- Prone to wiring errors within the cabinet
- Longer down time and difficult component replacement in the event of cable failure



Introduction of Quick-Disconnect Cabling at Both Ends

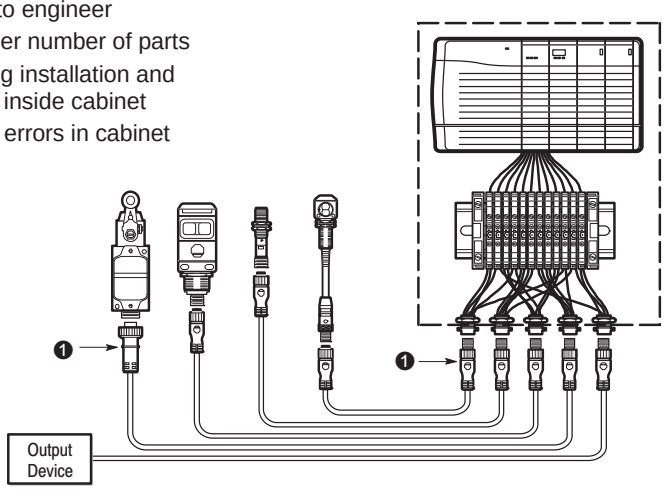
In this case, connector-based devices are interfaced with the panel via a quick-connect receptacle. Inside the panel, however, the receptacle is hardwired to terminal connections.

Benefits

- Easy replacement and reduced down time in event of field device or cable failure
- Highly modular design
- Eliminates wiring errors outside cabinet
- Less time for installation and commissioning outside cabinet

Limitations

- More complex to engineer
- Potentially higher number of parts
- Time consuming installation and commissioning inside cabinet
- Prone to wiring errors in cabinet



❶ Quick-disconnect connector

Wiring Consolidation Using Passive Distribution Boxes

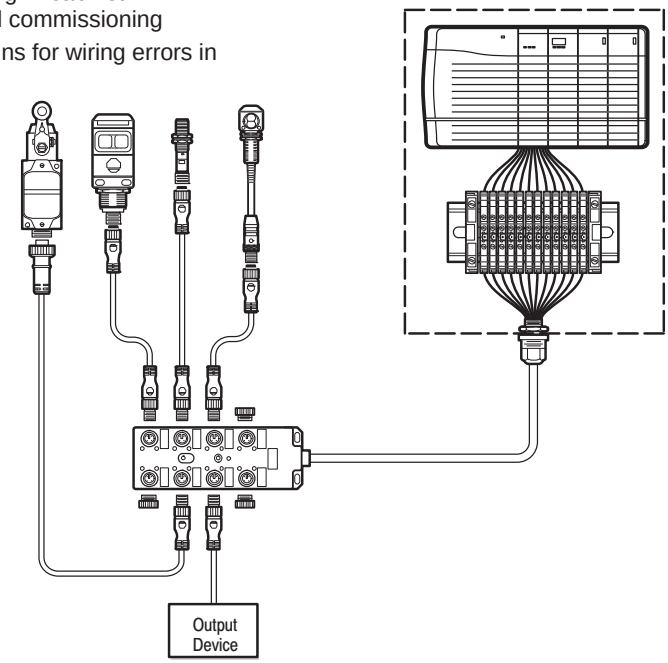
Here, the field devices are interfaced with a distribution box. All connections between the devices and the box are of the quick-connect type. The distribution box is then routed through a cable gland at the cabinet and hard wired into terminals.

Benefits

- Simplifies, neatens and consolidates field device wiring
- Minimal time to repair (MTTR) in event of field device failure
- Eliminates wiring errors outside cabinet
- Reduced installation and commissioning time outside cabinet
- More modular approach, allows replacement of shorter runs upon cable failure

Limitations

- More complex to engineer
- Potentially higher number of parts
- Time consuming in-cabinet installation and commissioning
- Potential remains for wiring errors in cabinet



Wiring Consolidation With Modular Components Outside Panel:

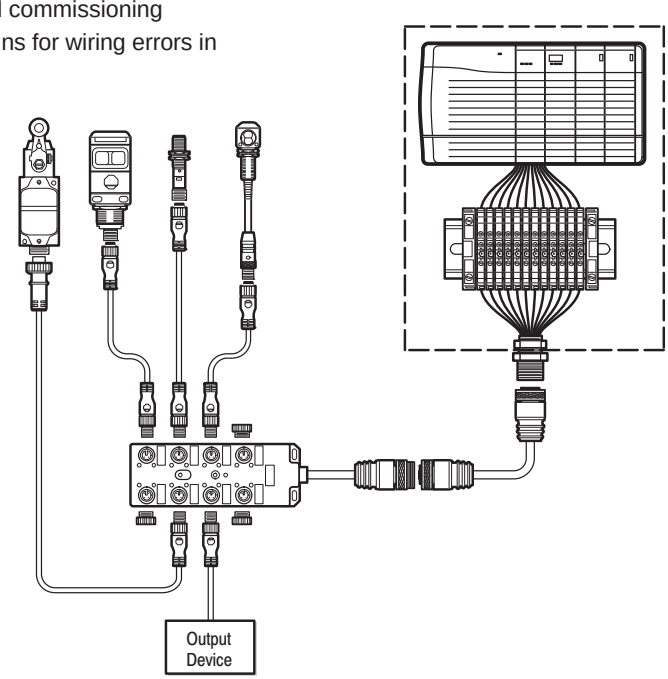
This system is almost identical to the previous example, but with a quick–connect cable between the distribution box and cabinet. The cabinet receptacle is then hard wired to terminals on the panel.

Benefits

- Simplifies, neatens and consolidates field device wiring
- Minimal time to repair (MTTR) in event of field device or cable failure
- Eliminates wiring errors outside cabinet
- Reduced installation and commissioning time outside cabinet
- Even more modular—facilitates replacement of shorter runs upon cable failure, simplifies swap out of failed distribution boxes or main cable

Limitations

- More complex to engineer
- Potentially higher number of parts
- Time consuming in-cabinet installation and commissioning
- Potential remains for wiring errors in cabinet



On-Machine System Layouts

PanelConnect Wiring

Wiring Consolidation Using Modular Components from PLC to Field Device

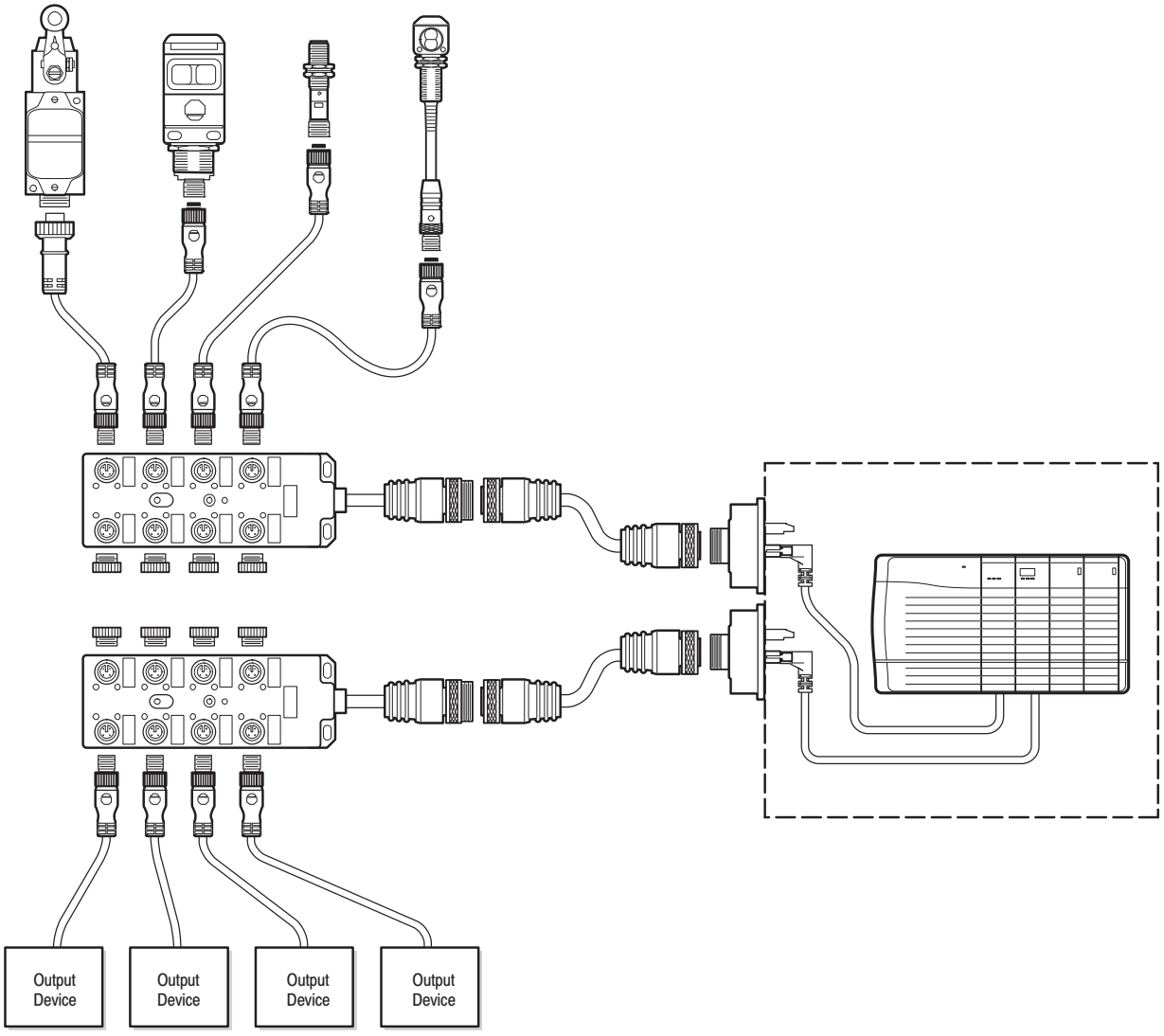
This wiring scheme is essentially the same as the previous two examples involving distribution boxes. But now the cabinet receptacle has been replaced with a PanelConnect module which allows for plug-in connectivity between the module itself and an I/O card on the panel.

Benefits

- Simplifies, neatens and consolidates wiring to field devices and in cabinet
- Minimal time to repair (MTTR) in event of field device or cable failure
- Eliminates wiring errors inside and outside cabinet
- Minimal installation and commissioning time
- Maximum modularity, which allows for quick and easy replacement of components

Limitations

- More complex to engineer
- Potentially higher number of parts
- A single PanelConnect module cannot address a combination of inputs and outputs from a single distribution box—such a case would require multiple PanelConnects (one for inputs, another for outputs)



Wiring Consolidation Using Modular Components from PLC to Field Device

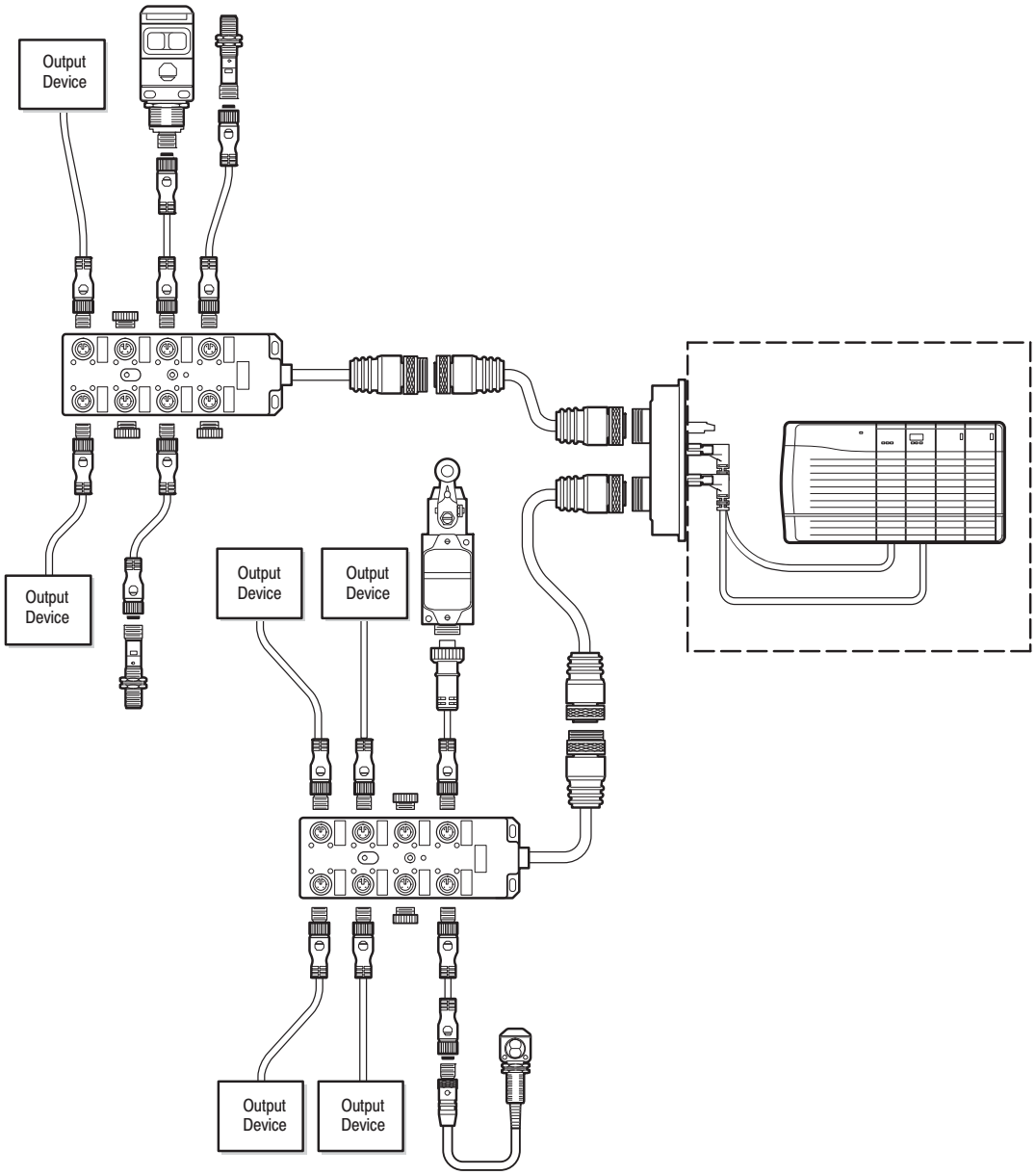
This illustration shows the same application as above, but with a Combination PanelConnect Module which allows for a mixture of inputs and outputs from a distribution box to be interfaced to a single module. Again, the same plug-in connections between the PanelConnect and I/O card apply.

Benefits

- Simplifies, neatens and consolidates wiring to field devices and in cabinet
- Minimal time to repair (MTTR) in event of field device or cable failure
- Eliminates wiring errors inside and outside cabinet
- Minimal installation and commissioning time
- Maximum modularity, which allows for quick and easy replacement of components
- Allows mixed inputs and outputs from a single distribution box to be interfaced through a single combination PanelConnect module.

Limitations

- More complex to engineer
- Potentially higher number of parts



On-Machine System Layouts

Safety Wiring

Safety Connection Systems

Allen-Bradley Guardmaster Safety Connection Systems are complete wiring solutions dedicated to machine safety. These quick-disconnect based systems are specifically intended for use with dry-contact safety switches, and offer flexible and reliable connections between safety interlocks, E-stops, cable pull switches and safety relays.

Safety Connection Systems layouts are available with or without enunciation capabilities, allowing the user the option of direct feedback for the status of individual switches in the system.

Enunciation systems utilize an auxiliary contact as input to tower lights, audible alarms, PLC input cards, etc.

Systems without Enunciation

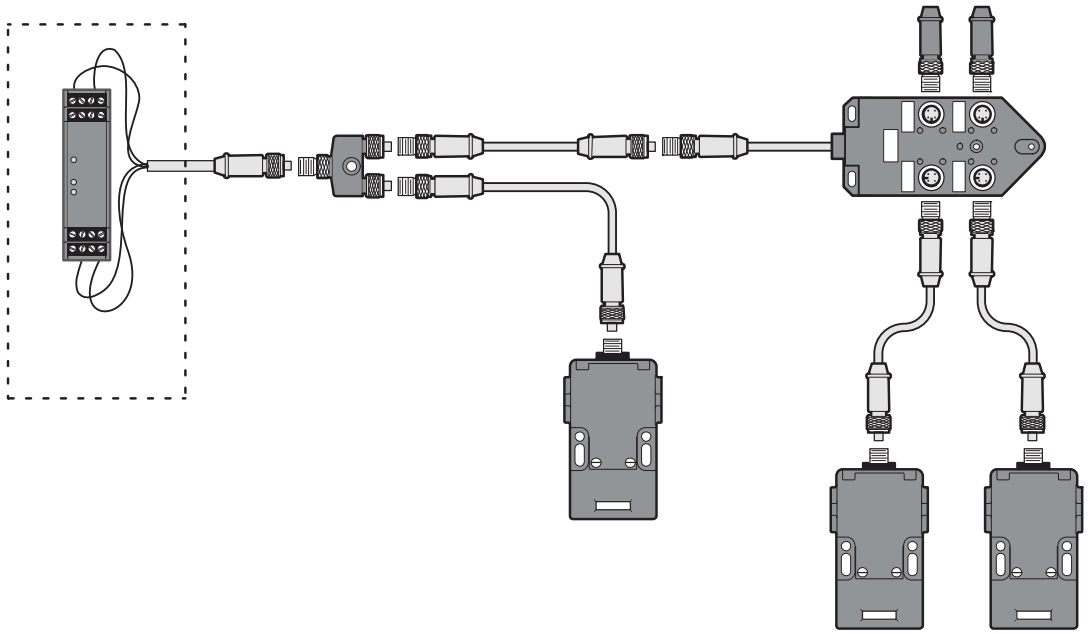
As illustrated below, wiring systems for applications not requiring enunciation use a combination of patchcords, shorting plugs, safety wired distribution boxes and T-ports for series wiring of safety circuits. Distribution boxes for such an application are dual channel models with 2 NC or 1 NC + 1 NO contact configurations. Note that shorting plugs must be used on all unused ports for the system to operate.

Benefits

- Reduced installation cost and easy system expansion
- Simplified troubleshooting
- Modularity
- Provide for Safety PLC input expansion
- Support systems up to Category 3 (per EN954–1)

Limitations

- Suitable for dry-contact switches only—no light curtains, safety mats or pressure sensitive safety edges
- No feedback from individual switches



Systems with Enunciation

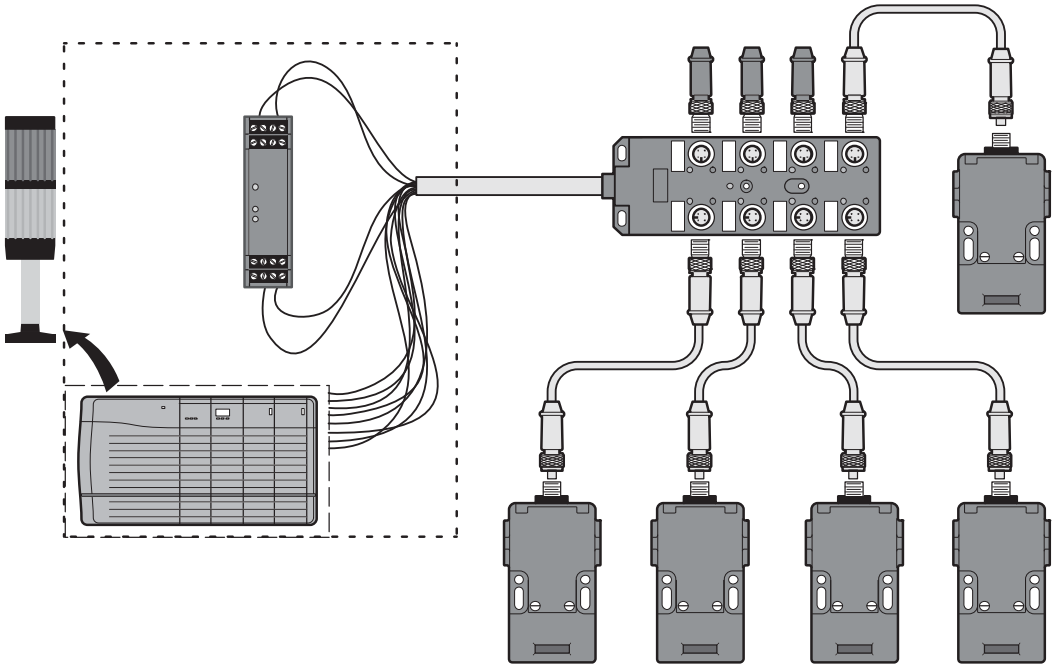
As shown in the illustration below, system layouts with enunciation require patchcords, shorting plugs and distribution boxes, which allow for series wiring of the safety circuits while providing a separate circuit for enunciation. Distribution boxes are offered for these applications in several contact configurations: dual channel with 2 NC, dual channel with 1 NC + 1 NO or single channel with 1 NC. Each type also provides a NO auxiliary contact that is interfaced with the enunciation device to provide visual or audible alarm indication. In addition, LEDs on the distribution boxes assist in the troubleshooting of this system. Again, note that shorting plugs must be used on all unused ports for the system to operate.

Benefits

- Reduced installation cost and easy system expansion
- Simplified troubleshooting and replacement of components
- Modularity
- Feedback from individual switches
- Support systems up to Category 3 (per EN954–1)

Limitations

- Suitable for dry-contact switches only—no light curtains, safety mats or pressure sensitive safety edges



On-Machine System Layouts

Network Wiring for DeviceNet™

Device Networks

DeviceNet™ is an open communication network designed to connect factory floor devices such as photoelectric sensors, inductive proximity sensors, motor starters, drives, valve manifolds, and simple operator interfaces together without interfacing through an I/O system. It increases the amount and rate of information flowing from plant floor devices to control systems, and has the potential to substantially reduce wiring costs.

The DeviceNet network consists of a cabling system that provides both power and communication to nodes. Like the previous examples, the options range from fully hard wired networks to completely connector-based systems. Below are examples designed to showcase the various media types, their features and limitations—each, in reality, is capable of supporting the same types of connections as their non-network counterparts.

DeviceNet™ Flat Media Systems

KwikLink™ General Purpose Media

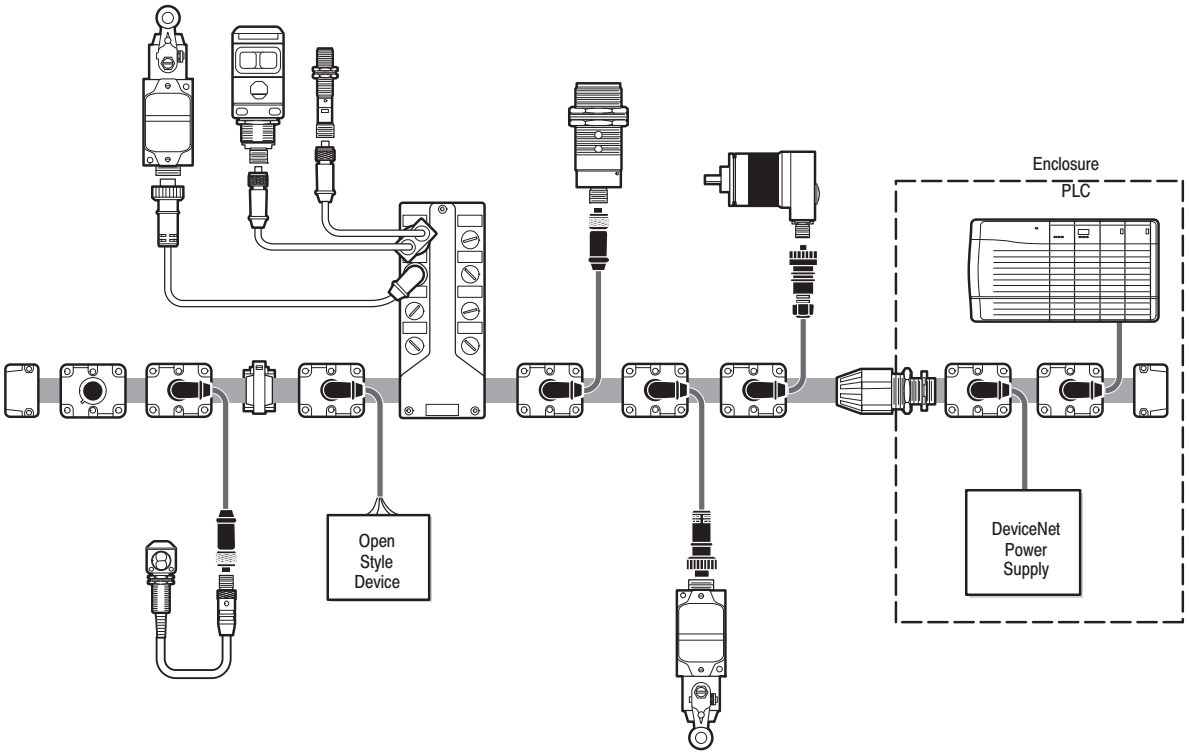
Utilizing the same flat cable design pioneered by Rockwell Automation with the introduction of the original KwikLink system, KwikLink General Purpose connectors combine the flexibility and simplicity of their predecessor in a low profile, OEM-friendly package.

Benefits

- Optimal plug-and-play capability offers drastic reduction in labor, materials and installation costs
- Devices can be added anywhere along the trunk—no need for predetermined cable lengths
- Modular, snap-on connectors eliminate cutting and stripping of cables
- Wide range of components, cable types and accessories provides optimal system flexibility
- Keyed cable and snap-on connectors prevent wiring errors
- Ideal solution for less demanding industrial applications
- Class 2 cable—even more flexible than previous flat cable—makes cable routing even easier

Limitations

- Maximum trunk line distance of 420m (1378ft)
- Single-use connectors cannot be moved or removed once applied



DeviceNet Flat Media Systems

KwikLink™ Heavy Duty Media

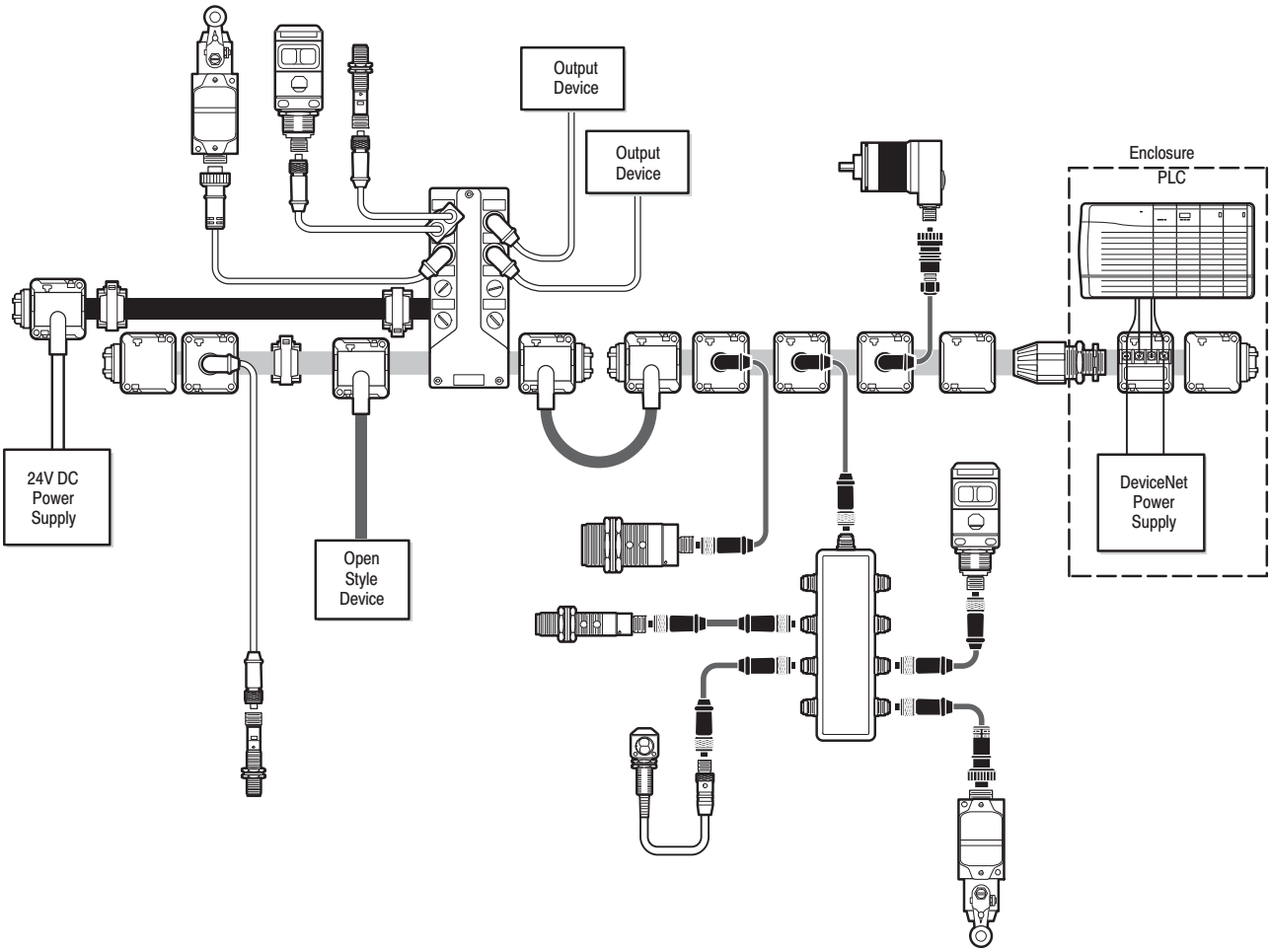
The KwikLink physical media system consists of flat trunk cable and snap-on modular connectors which can be placed anywhere along the trunk. Devices are then interfaced with the trunk via special patchcords, distribution boxes and I/O blocks.

Benefits

- Optimal plug-and-play capability offers drastic reduction in labor, materials and installation costs
- Devices can be added anywhere along the trunk—no need for predetermined cable lengths
- Modular, snap-on connectors eliminate cutting and stripping of cables
- Wide range of components, cable types and accessories provides optimal system flexibility
- Keyed cable and snap-on connectors prevent wiring errors
- Heavy duty connectors and cable allow for use in harsh environments

Limitations

- Maximum trunk line distance of 420m (1378ft)
- Single-use connectors cannot be moved or removed once applied



On-Machine System Layouts

Network Wiring for DeviceNet™

DeviceNet Round Media Solutions

Thick Trunk

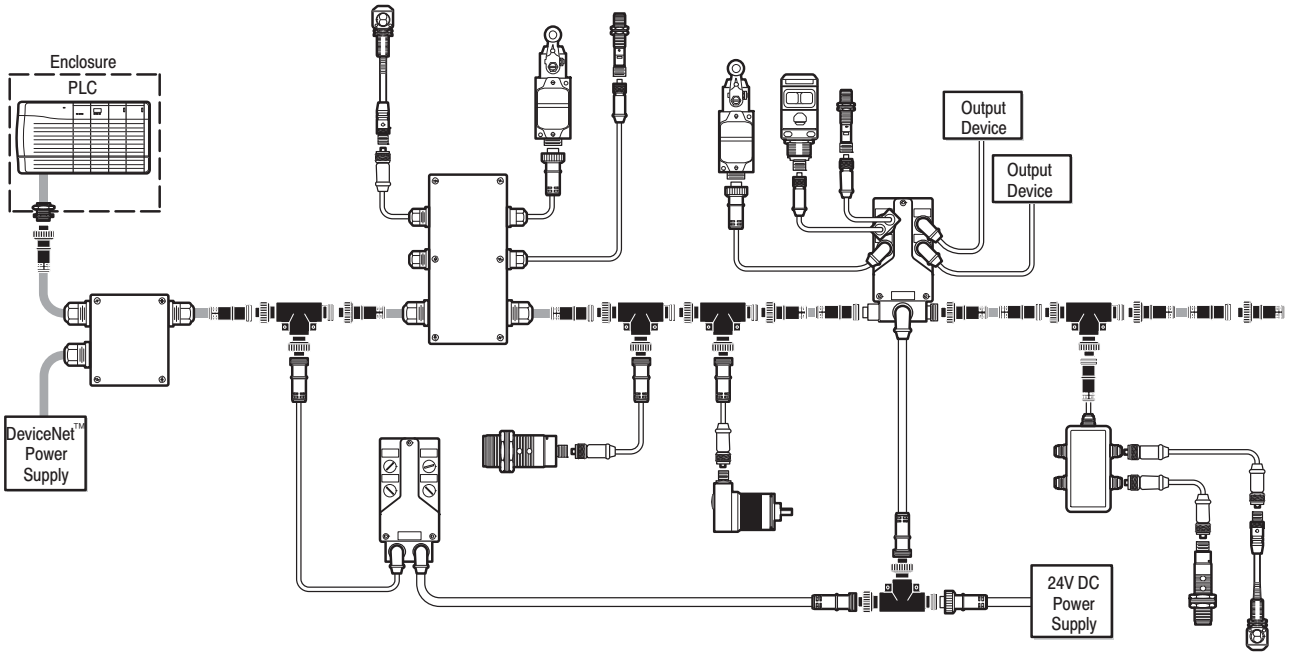
This round media thick trunk system is based on the use of “thick cable” for DeviceNet. Allen-Bradley thick trunk cable allows maximum trunk line distance and is the original DeviceNet system configuration. A full range of rugged, durable Allen-Bradley DeviceNet components are available for use in thick trunk systems. Although typically used as trunkline only, thick cable can also be used for drops to field devices.

Benefits

- Allows for greatest trunkline distance: 500m (1640ft)
- Simplified troubleshooting and replacement of components
- Reduced installation cost and easy system expansion
- PVC cable jacket offers good oil and chemical resistance
- Shielded cable provides optimal resistance to noise

Limitations

- More rigid cable than flat and thin cable counterparts
- Shielded cable makes cutting and stripping of cable time consuming in hardwired networks



DeviceNet Round Media Solutions

Thin Trunk

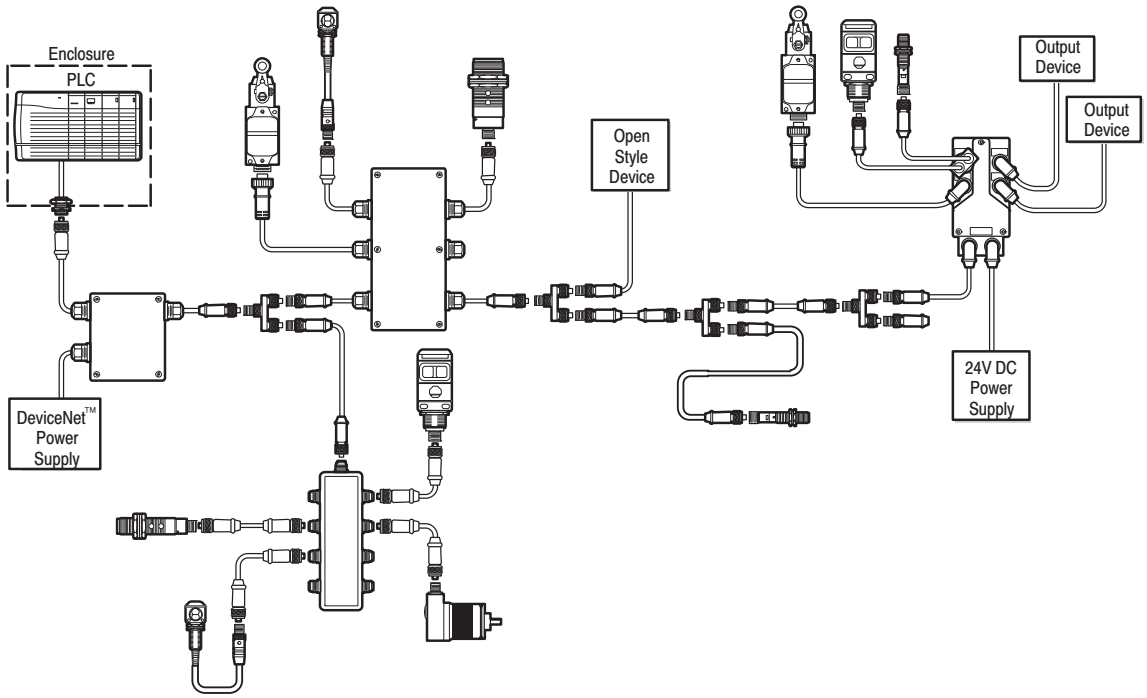
The following round media thin trunk system is based on the use of “thin cable” for DeviceNet. Here, the thin cable typically used for drops to field devices is used as the main trunkline as well. The use of thin cable reduces maximum trunk line distances but allows for a more compact and cost effective installation for some applications. And like the thick trunk system, a wide variety of rugged, durable Allen-Bradley DeviceNet components are also available for use in thin trunk systems.

Benefits

- Simplified troubleshooting and replacement of components
- Reduced installation cost and easy system expansion
- Allows for a more compact DeviceNet installation
- TPE cable jacket offers additional chemical resistance for harsh applications
- Shielded cable provides optimal resistance to noise

Limitations

- At 100m (328ft), offers the shortest maximum trunkline length
- Shielded cable makes cutting and stripping of cable time consuming in hardwired networks



On-Machine System Layouts

Network Wiring for ControlNet™

Control Networks

The ControlNet network is an open, state-of-the-art control network that meets the demands of real-time, high-throughput applications. ControlNet uses the proven Common Industrial Protocol (CIP) to combine the functionality of an I/O network and a peer-to-peer network providing high-speed performance for both functions.

The ControlNet network provides deterministic, repeatable transfers of all mission-critical control data in addition to supporting transfers of non-time-critical data. I/O updates and controller-to-controller interlocking always take precedence over program uploads and downloads and messaging.

ControlNet IP67 Media

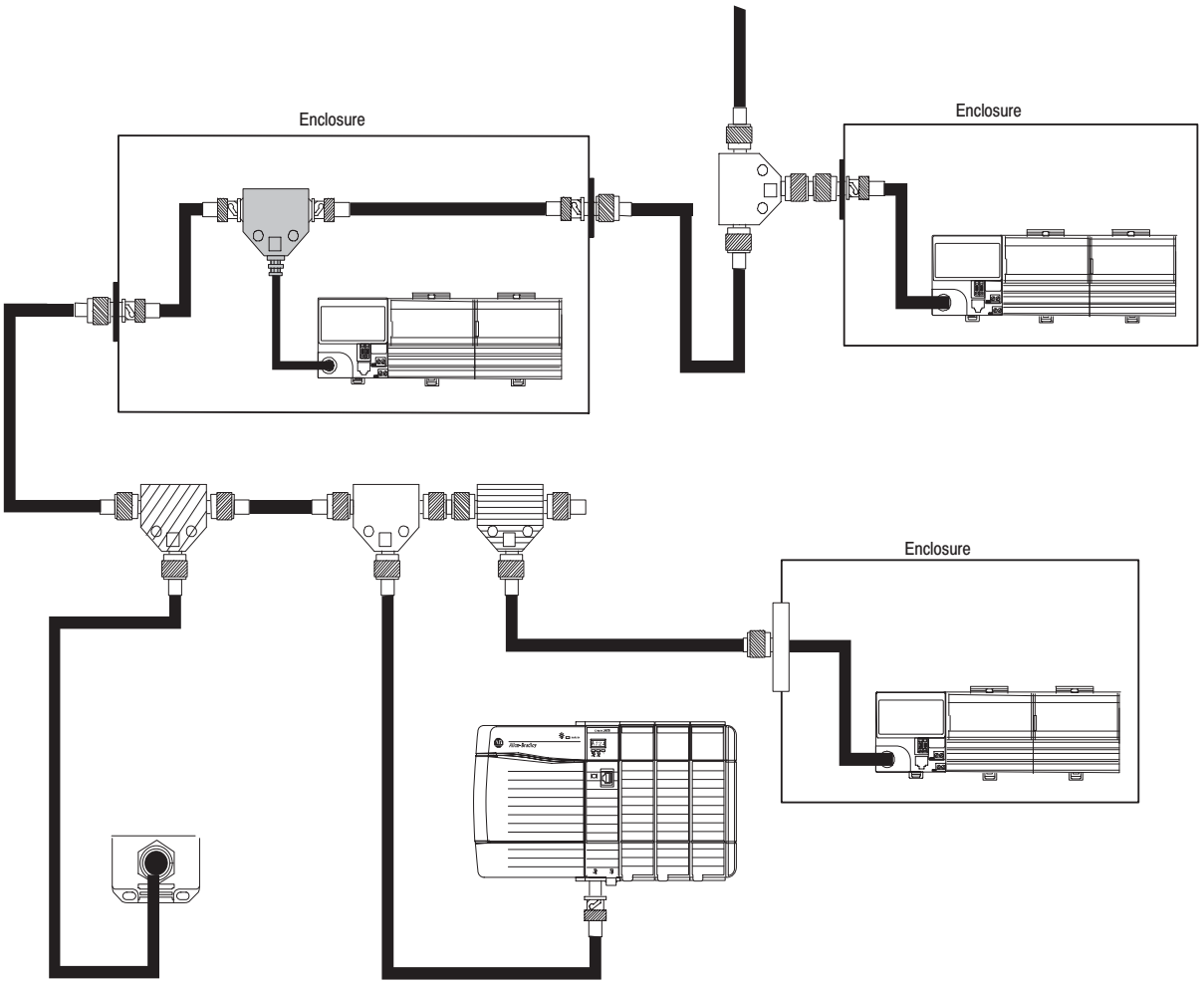
Rockwell Automation offers a variety of ControlNet media options; the decision on which media type to use is based on the environmental factors associated with your application and installation site. A typical ControlNet network consists of one or more of the following: trunk cables, taps, repeaters, terminators, and bridges. The ControlNet IP67 media system offers a modular, rugged version of taps and connectors for high vibration or IP67 type environments.

Benefits

- Variety of media options for a wide range of application needs, including fiber or coaxial media types.
- Threaded connection media type resists vibration and fluid ingress, allowing ControlNet architectures to be implemented in aggressive environments.
- Redundant media option increases network uptime.
- Passive media maximizes reliability and minimizes media failures when compared to active media components.
- High flex cable option is well suited for applications involving constant stress attributed to robotic motion and frequent connection/disconnection.

Limitations

- Field attachable connectors rely on installation technique for both electrical and mechanical integrity.
- Thread-on connectors require additional time to install versus quarter turn bayonet versions.

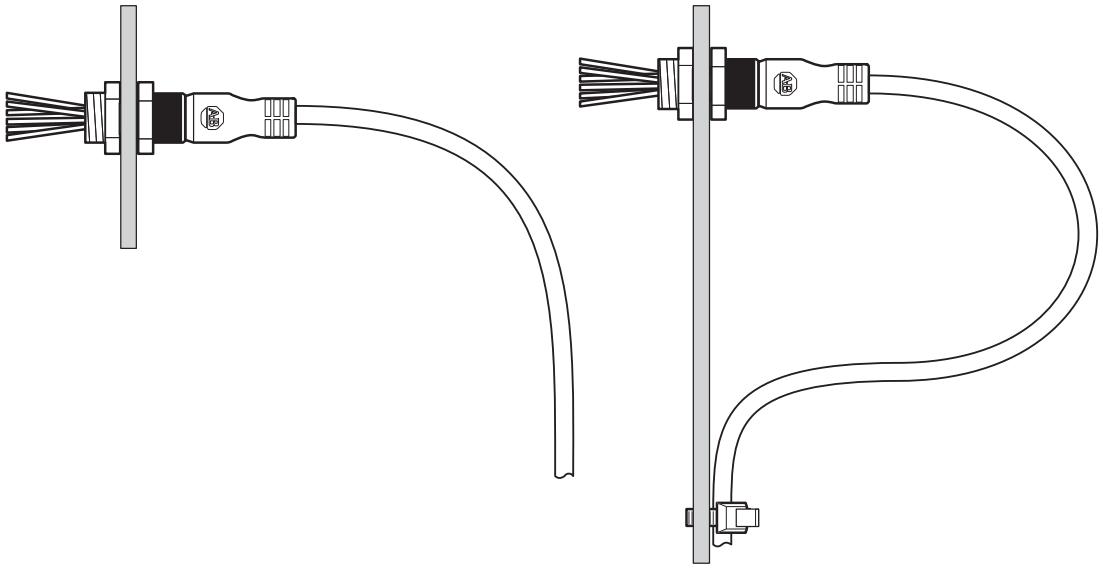


Cable Application—Best Practices

The following are examples of common wiring problems and best practices that will help prevent them. Taking these suggestions into consideration can help ensure reliable operation, extend the system life cycle and ultimately reduce costs attributed to downtime and repeated cable replacement.

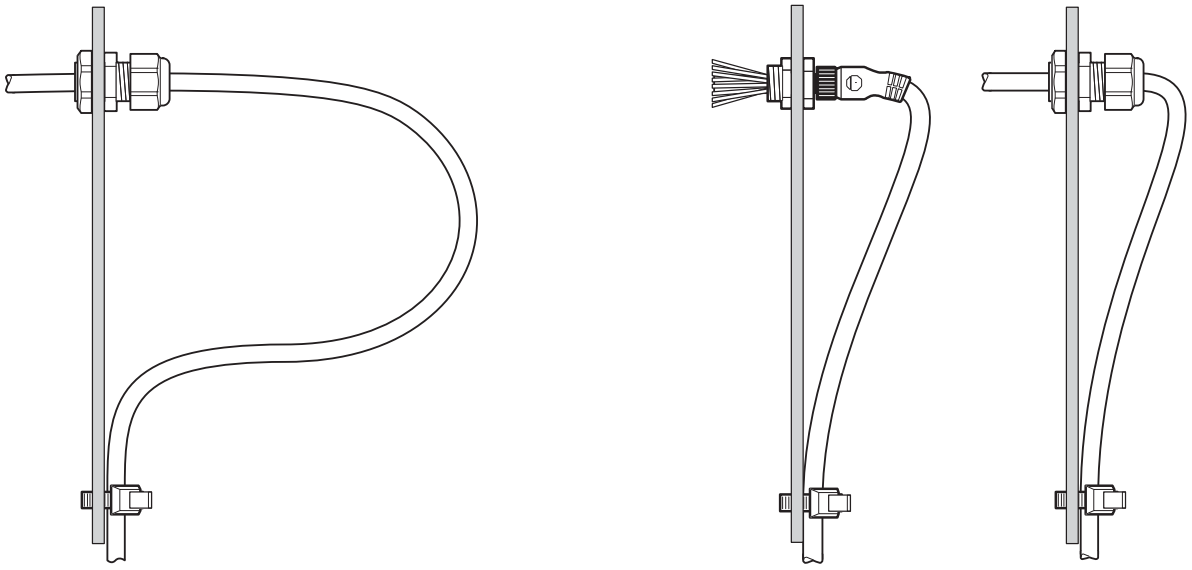
Bend Radius—Fixed and Moving Applications

Allowing for adequate bend radius is pivotal in increasing the life of the cable. When sufficient bend radius is provided, the cable can more effectively absorb the energy of the bend over a greater portion of the overall cable length.



Stress Relief—Cable Gland and Connectors

Ample stress relief at connections is another key to extended cable life. Building a sufficient stress loop into your cable installations can prevent undue stress on the cable at or close to the connector. Built-in overmolded stress relief such as that found on Rockwell Automation patchcords and cordsets offers additional protection from failures at the connector.



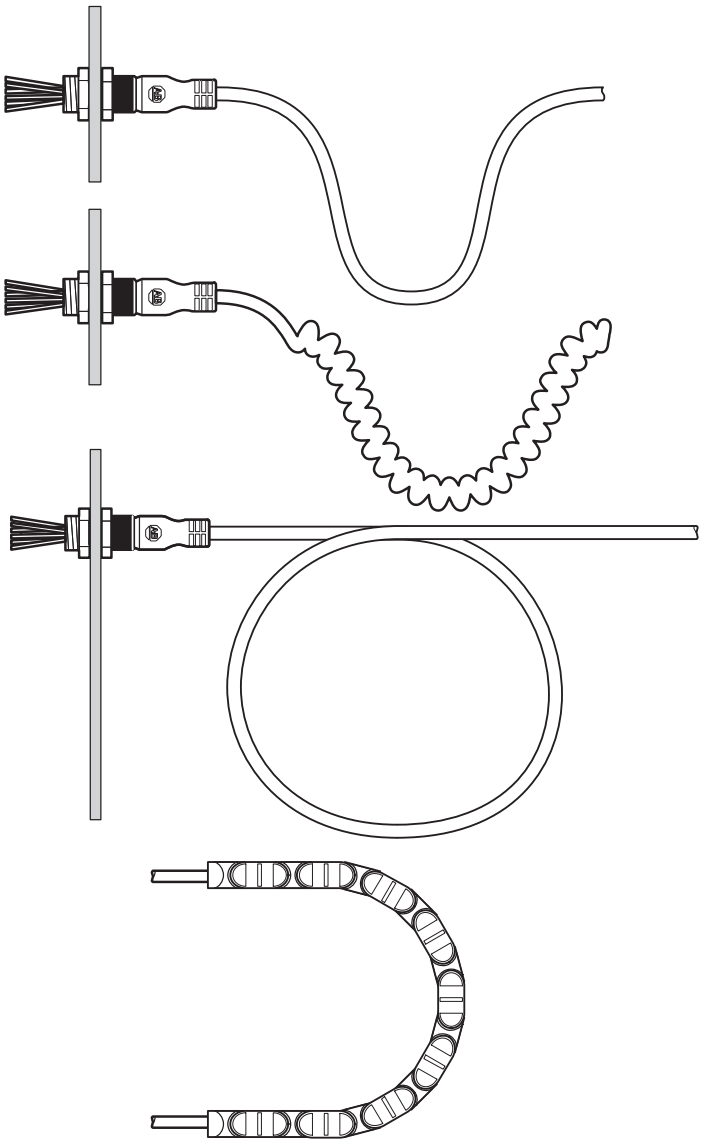
Correct

Incorrect

Application Considerations

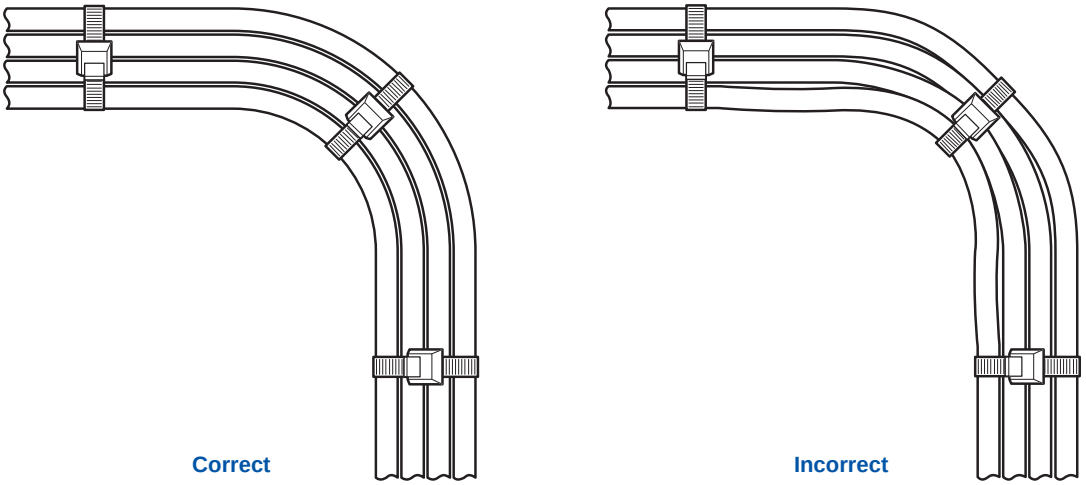
Motion Applications

When one or both of the connections are in motion, extra cable length should be designed into the system to prevent stress on the cable and connectors. In this instance, cable loops (open or closed), coiled cables or C-tracks are the best solution.



Bundling and Cable Ties

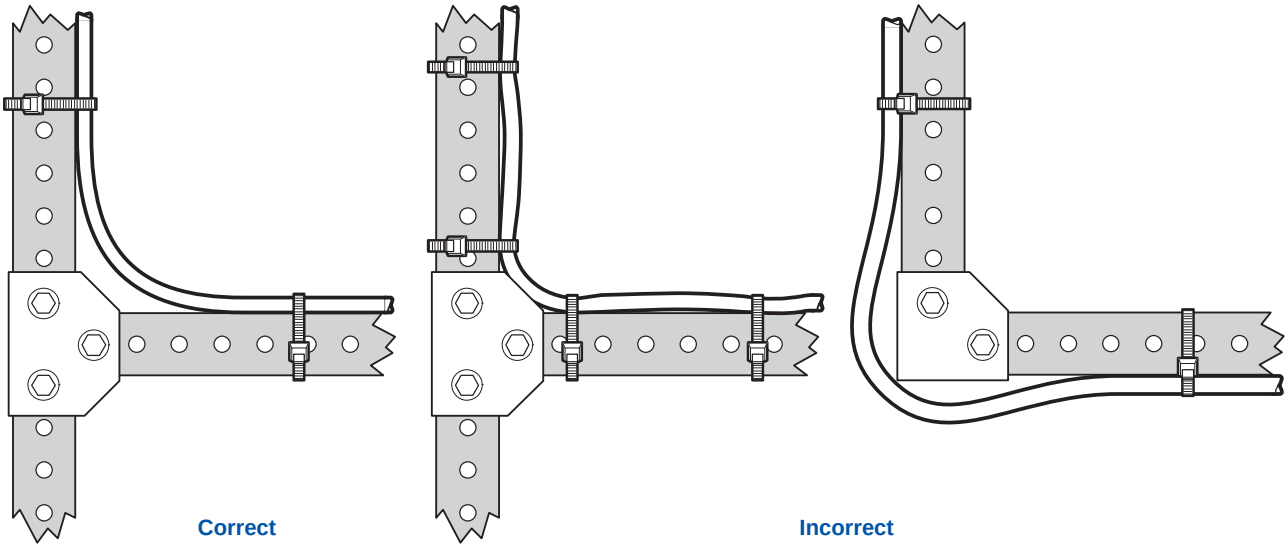
When applying cable ties to any installation, care should be taken so the ties do not pinch or compress the cable(s) in any way. Correct use of cable ties permits movement without placing undue stress on the cable(s); appropriate bundling technique should allow for relatively free movement of the cables within in the bundle.



Correct Incorrect

Cornering

For cables run along corners, tie-downs should be applied in such a way as to prevent extra stress on the cable. Avoid the use of outside cornering as the corner itself is a potential pinch point.



Correct Incorrect

Application Considerations

Cable Jacket Material

Cable Type	General Positioning	Sample Cat. No.
PVC Cable	Cost effective, general purpose cable	**889D–F4AC–2**
PUR Cable	Well suited for oil based solutions and flex applications	**889D–F4UC–2**
TPE Cable	The all around automotive solution (weld, flex, fluids)	**889D–F4HJ–2**
ToughLink Cable	Heavy duty construction for the most rugged environments	**889D–F4HC–2**
ToughWeld Cable	Best suited for weld slag resistance	**889D–F4WE–2**

Positioning Tables

Application	PVC Cable	PUR Cable	TPE Cable	ToughLink™	ToughWeld™
Environment	“A*”	“U*”	“HJ”	“HC”	“WE”
Flex Rated	Not Rated	X ❶	X	Not Rated	Not Rated
Extremely Aggressive Welding Environments (non–flexing)					X
Aggressive Coolants/Fluids, Machining—No Flexing				X	
Machining Robots, Oil based cutting fluid		X			
Welding Robots, Machining, General Use within Automotive Plant			X		
Cold Temperature & Freezer Applications (down to –40°)		X		X	
Relative Cost	Low	Moderate	Moderate	High	Higher

❶ Best flex-rated cable for pico applications. For DC micro flex-rated cable use TPE.

Application Compatibility

General Properties

	PVC	PUR	TPE	ToughLink
Weld slag resistance	F	F	G–E	F
Sub zero temperature flexibility	F	G–E	G	E
Constant bending and flexing	F	E	E	F–G
Abrasion resistance	G	E	G	G
Ozone resistance	E	E	E	E
Sunlight and Weathering	E	G	G	G

General Chemicals

	PVC	PUR	TPE	ToughLink
Alcohols	E	G	E	E
Acids—very mild diluted (less than 3% concentration)	E	G	E	E
Acids—strong up to 50% concentration	E	P–F	E	G
Alkalis—very mild diluted less than 3% concentration	E	G	E	E
Alkalis—strong up to 50% concentration	E	P–F	E	G
Bleach	E	P–F	E	E
Oils, greases	G–E	E	E	G–E
Solvents, volatile (acetone, toluene, MEK)	P–F	P–F	P–F	P–F
Solvent oils (distilled mineral oils C5–C20, citrus oil)	P–F	G	P–F	P–F
Water (submerged)	E	G	E	E

By Industry

	PVC	PUR	TPE	ToughLink
Metalworking Oils/Coolants				
Diluted with water	G	G	E	G
Waterless, oil based	G	E	E	G
Food and Beverage				
Food/beverage industry soils (oils, fats, fruits, juices, vegetables, dairy, tomatoes, wine, vinegar)	G	G	E	G
Food/beverage industry chemicals (chlorinated alkaline cleaners, acidic mineral cleaners, detergents, sanitizers, convey or lubricants)	E	G	E	E
Automotive fluids				
Antifreeze (ethylene glycol)	E	G	E	G
Fuels (gasoline, diesel, kerosene)	G	E	G	G
Motor, transmission (ATF), axle oils, power steering fluid	G	E	E	G
Brake fluids (many different types available)	P–G	P–G	P–G	P–G

P=Poor, F–Fair, G–Good, E=Excellent

Application Considerations

NEMA Enclosures

Enclosure Selection Criteria

Enclosures for Nonhazardous Locations

For a Degree of Protection Against:	Designed to Meet Tests No. ❶	Type							
		For Indoor Use			Outdoor Use		Indoor or Outdoor		
		1	12	13	3R	3	4	4X	6P
Incidental contact with enclosed equipment	6.2	✓	✓	✓	✓	✓	✓	✓	✓
Falling dirt	6.2	✓	✓	✓	✓	✓	✓	✓	✓
Rust	6.8	✓	✓	✓	✓	✓	✓	✓	✓
Circulating dust, lint, fibers and flyings ❷	6.5.1.2 (2)		✓	✓		✓	✓	✓	✓
Windblown dust	6.5.1.1 (2)					✓	✓	✓	✓
Falling liquids and light splashing	6.3.2.2		✓	✓		✓	✓	✓	✓
Rain (Test evaluated per 6.4.2.1)	6.4.2.1				✓	✓	✓	✓	✓
Rain (Test evaluated per 6.4.2.2)	6.4.2.2					✓	✓	✓	✓
Snow and sleet	6.6.2.2				✓	✓	✓	✓	✓
Hosedown and splashing water	6.7						✓	✓	✓
Occasional prolonged submersion	6.11 (2)								✓
Oil and coolant	6.3.2.2		✓	✓					
Oil or coolant spraying and splashing	6.12			✓					
Corrosive agents	6.9				✓	✓		✓	✓

❶ See below for abridged description of NEMA enclosure test requirements. Refer to NEMA Standards Publication No. 250 for complete test specifications.

❷ Nonhazardous materials, not Class III ignitable or combustible.

Selection Criteria

Enclosures for Hazardous Locations (Division 1 or 2) ❸

For A Degree of Protection Against Atmospheres Typically Containing: ❺	Designed to Meet Tests: ❹	Class (National Electrical Code)	Type						
			7, Class I Group:				9, Class II Group:		
			A	B	C	D	E	F	G
Acetylene	Explosion Test	I	✓						
Hydrogen, Manufactured Gas	Hydrostatic Test	I	✓	✓					
Diethyl Ether, Ethylene, Hydrogen Sulfide		I			✓				
Acetone, Butane, Gasoline, Propane, Toluene	Temperature Test	I			✓	✓			
Metal dusts and other combustible dusts with resistivity of less than 10^5 ohm-cm.	Dust Penetration Test	II					✓		
Carbon black, charcoal, coal or coke dusts with resistivity between 10^2 – 10^8 ohm-cm.		II						✓	
Combustible dusts with resistivity of 10^5 ohm-cm or greater.	Temperature Test with Dust Blanket	II							✓
Fibers, flyings	❻	III							✓

❸ For indoor locations only unless cataloged with additional NEMA Type enclosure number(s) suitable for outdoor use as shown in table on page 2–21. Some control devices (if so listed in the catalog) are suitable for **Division 2** hazardous location use in enclosures for non-hazardous locations. For explanation of CLASSES, DIVISIONS and GROUPS, refer to the National Electrical Code.
Note: Classifications of hazardous locations are subject to the approval of the authority having jurisdiction. Refer to the National Electrical Code.

❹ See abridged description of test requirements below. For complete requirements, refer to UL Standard 698, compliance with which is required by NEMA enclosure standards.

❺ For listing of additional materials and information noting the properties of liquids, gases and solids, refer to NFPA 497M-1991, Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations.

❻ UL 698 does not include test requirements for Class III. Products that meet Class II, Group G requirements are acceptable for Class III.

IEC Enclosure Classification

The degree of protection is indicated by two letters (IP) and two numerals. International Standard IEC 529 contains descriptions and associated test requirements that define the degree of protection each numeral specifies. The following table indicates the *general* degree of protection—refer to Abridged Descriptions of IEC Enclosure Test Requirements below. **For complete test requirements refer to IEC 529.**

FIRST NUMERAL ❶	SECOND NUMERAL ❶
Protection of persons against access to hazardous parts and protection against penetration of solid foreign objects.	Protection against ingress of water under test conditions specified in IEC 529.
0 Nonprotected **1** Back of hand; objects greater than 50mm in diameter **3** Finger; objects greater than 12.5mm in diameter **5** Tools or objects greater than 2.5mm in diameter **7** Tools or objects greater than 1.0mm in diameter **9** Dust-protected (dust may enter during specified test but must not interfere with operation of the equipment or impair safety) **11** Dusttight (no dust observable inside enclosure at end of test)	**0** Nonprotected **2** Vertically falling drops of water **4** Vertically falling drops of water with enclosure tilted 15° **6** Spraying water **8** Splashing water **10** Water jets **12** Powerful water jets **13** Temporary submersion **14** Continuous submersion
Example: IP**41** describes an enclosure that is designed to protect against the entry of tools or objects greater than 1mm in diameter and to protect against vertically dripping water under specified test conditions.	
Note: All first numerals and second numerals up to and including characteristic numeral **6**, imply compliance also with the requirements for all lower characteristic numerals in their respective series (first or second). Second numerals **7** and **8** do **not** imply suitability for exposure to water jets (second characteristic numeral **5** or **6**) unless dual coded; e.g., **IP_5/IP_7**.	

❶ The IEC standard permits use of certain supplementary letters with the characteristic numerals. If such letters are used, refer to IEC 529 for the explanation.

Notes

Popular Allen-Bradley Sensors to Most Standard Cordsets & Patchcords

Allen-Bradley Sensor Cat. No.	Connector Style	Standard Cordset Cat. No.	Allen-Bradley Sensor Cat. No.	Connector Style	Standard Cordset Cat. No.
42xx–xxxxx–F4	4-Pin DC Micro (M12)	**889D–F4AC–***	**45xxx–xxxxx–D5**	5-Pin DC Micro (M12)	**889D–F5AC–***
42xx–xxxxx–G3	3-Pin AC Micro (Dual Key)	**889R–F3AEA–***	**45xxx–xxxxx–F4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42xx–xxxxx–G4	4-Pin AC Micro (Dual Key)	**889R–F4AEA–***	**802B–xxxxxxxD4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42xx–xxxxx–P3	3-Pin Pico (M8)	**889P–F3AB–***	**802B–xxxxxxxR4**	4-Pin AC Micro (Dual Key)	**889R–F4AEA–***
42xx–xxxxx–P4	4-Pin Pico (M8)	**889P–F4AB–***	**836E–Dx1xxxD4**	4-Pin DC Micro (M12)	**889D–R4AC–***
42xx–xxxxx–Y4	4-Pin Pico (M8)	**889P–F4AB–***	**837E–Dx1xxxAxD4**	4-Pin DC Micro (M12)	**889D–R4AC–***
42xx–xxxx–D5	5-Pin DC Micro (M12)	**889D–F5AC–***	**871xx–xxxxxxxxx–R5**	5-Pin AC Micro (Dual Key)	**889R–F5AEA–***
42xx–xxxx–N5	5-Pin Mini	**889N–F5AF–‡**	**871xx–xxxxxxxx–N4**	4-Pin Mini	**889N–F4AF–‡**
42Cx–xxxxx–D4	4-Pin DC Micro (M12)	**889D–F4AC–***	**871xx–xxxxxxx–N3**	3-Pin Mini	**889N–F3AFC–‡**
42CRC–xxxx	5-Pin AC Micro (Dual Key)	**889R–F5ECA–***	**871xx–xxxxxxx–R3**	3-Pin AC Micro (Dual Key)	**889R–F3AEA–***
42GDx–9xx0–QD	4-Pin DC Micro (M12)	**889D–F4AC–***	**871xx–xxxxxx–P3**	3-Pin Pico (M8)	**889P–F3AB–***
42GDx–9xx0–QD1	4-Pin Mini	**889N–F4AF–‡**	**871C–DHxxMxx–D4**	4-Pin DC Micro (M12)	**889D–F4LC–***
42GDx–9xx4–QD	5-Pin Mini	**889N–F5AF–‡**	**871C–DTxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GDx–9xx5–QD	5-Pin Mini	**889N–F5AF–‡**	**871D–xxxxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4HJ–***
42GRx–9xx0–QD1	4-Pin Mini	**889N–F4AF–‡**	**871F–Dxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GRx–9xx1–QD	5-Pin Mini	**889N–F5AF–‡**	**871F–Nxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GRx–9xx3–QD	4-Pin Mini	**889N–F4AF–‡**	**871F–NWxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4HJ–***
42GRx–9xx3–QD1	4-Pin AC Micro (Dual Key)	**889R–F4AEA–***	**871F–Pxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GRx–90x0–QD	4-Pin DC Micro (M12)	**889D–F4AC–***	**871F–PWxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4HJ–***
42GRx–92x0–QD	4-Pin DC Micro (M12)	**889D–F4AC–***	**871L–Dxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GRx–95x0–QD	4-Pin DC Micro (M12)	**889D–F4LC–***	**871P–Dxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GRC–9xx2–QD	5-Pin Mini	**889N–F5AF–‡**	**871P–DWxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4HJ–***
42GRF–9xx2–QD	5-Pin Mini	**889N–F5AF–‡**	**871P–MWxxxxxxxD4**	4-Pin DC Micro (M12)	**889D–F4HJ–***
42GRL–9xx2–QD	4-Pin Mini	**889N–F4AF–‡**	**871P–NWxxxxxxxD4**	4-Pin DC Micro (M12)	**889D–F4HJ–***
42GRP–9xx2–QD	5-Pin Mini	**889N–F5AF–‡**	**871R–xxxxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GRR–9xx2–QD	5-Pin Mini	**889N–F5AF–‡**	**871TM–DFxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GRU–9xx2–QD	5-Pin Mini	**889N–F5AF–‡**	**871TM–DHxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GTx–9xx0–QD	4-Pin DC Micro (M12)	**889D–F4AC–***	**871TM–DNxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GTx–9xx0–QD1	4-Pin Mini	**889N–F4AF–‡**	**871TM–DRxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4LC–***
42GTx–9xx1–QD	5-Pin Mini	**889N–F5AF–‡**	**871TM–Mxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GTx–9xx2–QD	5-Pin Mini	**889N–F5AF–‡**	**871TM–Nxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42GTx–9xx3–QD	4-Pin Mini	**889N–F4AF–‡**	**871Z–xxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4HJ–***
42GTx–9xx3–QD1	4-Pin AC Micro (Dual Key)	**889R–F4AEA–***	**872xx–xxxxxxx–N3**	3-Pin Mini	**889N–F3AFC–‡**
42GTGx–10xxx–QD	5-Pin DC Micro (M12)	**889D–F5AC–***	**872xx–xxxxxxx–N4**	4-Pin Mini	**889N–F4AF–‡**
42GTGx–10xxx–QD1	5-Pin Mini	**889N–F5AF–‡**	**872xx–xxxxxxx–P3**	3-Pin Pico (M8)	**889P–F3AB–***
42KB–xxxxxx–Y3	3-Pin Pico (M8)	**889P–F3AB–***	**872xx–xxxxxxx–R3**	3-Pin AC Micro (Dual Key)	**889R–F3AEA–***
42MTB–5000QD5–1	5-Pin Mini	**889N–F5AF–‡**	**872x–xxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42MTB–5004QD4–1	4-Pin Mini	**889N–F4AF–‡**	**873E–xxxxxxxxF4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42SMx–7xxx–QD	4-Pin DC Micro (M12)	**889D–F4AC–***	**873P–Dxxxx1–D5**	4-Pin DC Micro (M12)	**889D–F4AC–***
42SRx–6xx2–QD	4-Pin DC Micro (M12)	**889D–F4AC–***	**873P–Dxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42SRx–6xx3–QD	4-Pin DC Micro (M12)	**889D–F4AC–***	**873P–Dxxxx–F4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42SRx–6xx4–QD	4-Pin AC Micro (Dual Key)	**889R–F4AEA–***	**873P–DxxxxS–D5**	5-Pin DC Micro (M12)	**889D–F5AC–***
42SRx–6xx5–QD	4-Pin AC Micro (Dual Key)	**889R–F4AEA–***	**875xx–xxxxxxx–D4**	4-Pin DC Micro (M12)	**889D–F4AC–***
42SRx–6xx6–QD	4-Pin AC Micro (Dual Key)	**889R–F4AEA–***	**875xx–xxxxxxx–R3**	3-Pin AC Micro (Dual Key)	**889R–F3AEA–***
42SRx–6xx7–QD	4-Pin AC Micro (Dual Key)	**889R–F4AEA–***	**875xx–xxxxxx–P3**	3-Pin Pico (M8)	**889P–F3AB–***
45xxx–xxxx–P4	4-Pin Pico (M8)	**889P–F4AB–***			

* Replace symbol with 1 (1 m), 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
‡ Replace symbol with 1 (1 m), 2 (2 m), 3 (3 m), 4 (4 m), 5 (5 m) or 6 (6 m) for standard lengths.

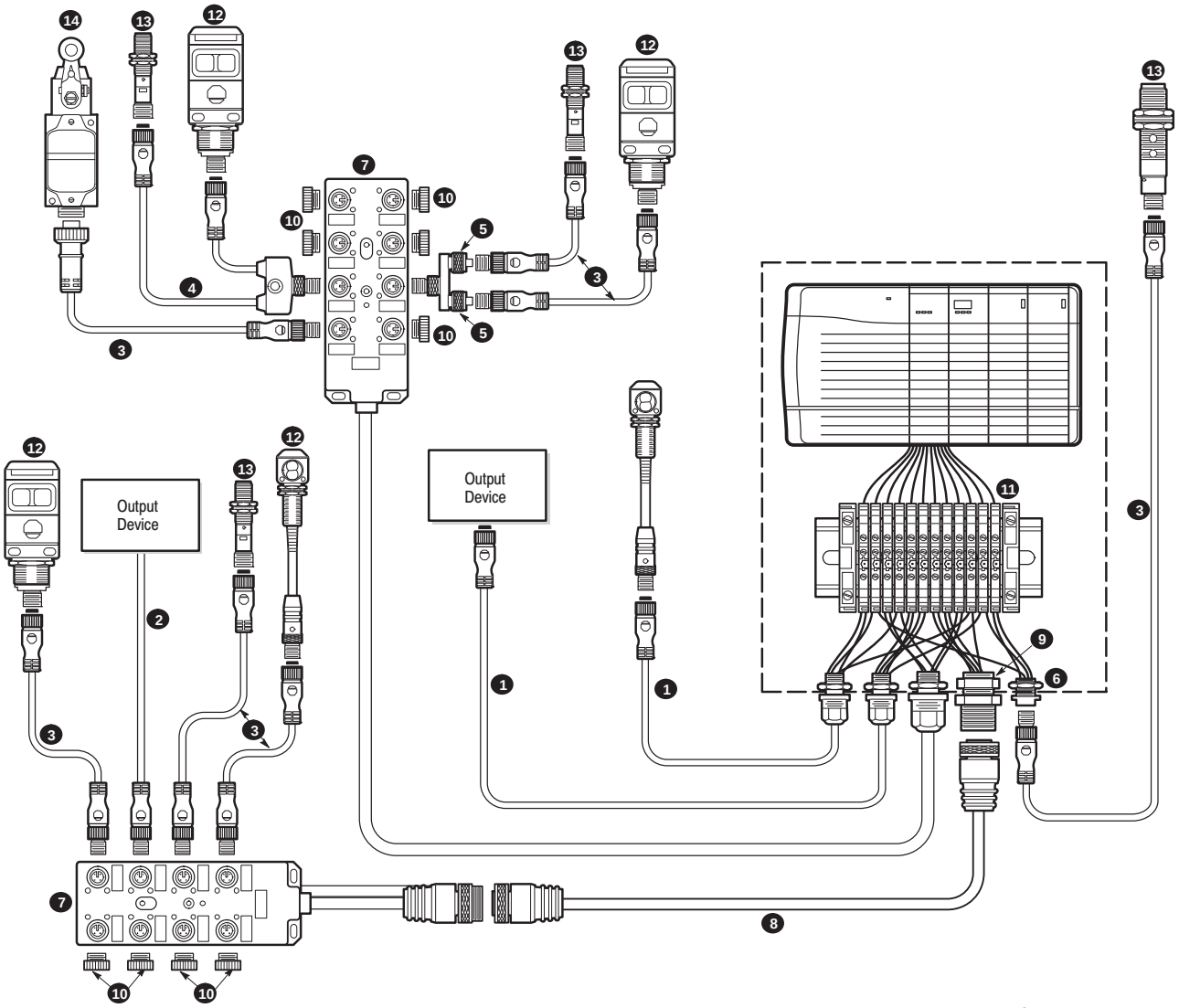
Contents

Quick Selection Guide

Specifications	 Female Cordsets	 Male Cordsets	 Patchcords	 Splitters	 V-Cables
Description	• Cable with integral female connector on one end	• Cable with integral male connector on one end	• Cable with integral connector on each end	• Cable with single male connector attached to two female connectors	• Cable with single male connector attached to two female connectors
Features	• Straight or right angle • Multiple standard lengths • Braided and unbraided • Standard and LED versions • Female connector provides direct interface to sensors and other field devices	• Straight or right angle • Multiple standard lengths • Male connector provides interface to distribution boxes or DC micro ArmorBlock DeviceNet I/O	• Straight or right angle • Multiple standard lengths • Direct connection between field devices and distribution boxes or Allen-Bradley ArmorBlock DeviceNet I/O	• Straight or right angle female connectors • Multiple standard lengths • Direct connection between field devices and distribution boxes or Allen-Bradley ArmorBlock DeviceNet I/O	• Straight or right angle female connectors • Multiple standard lengths • Direct connection between field devices and distribution boxes or Allen-Bradley ArmorBlock DeviceNet I/O
Available Models	• Mini . . . . . 3–10 • Mini Illuminated 3–18 • Mini Coiled . . . . 3–18 • Mini-Plus . . . . . 3–34 • DC Micro . . . . . 3–46 • DC Micro Illuminated . . . 3–54 • DC Micro Coiled . . . . • AC Micro . . . . . 3–84 • AC Micro Coiled 3–88 • EAC Micro . . . . 3–101 • Pico . . . . . 3–106 • Pico Illuminated . . . . . • M23 3–128	• Mini . . . . . 3–10 • DC Micro . . . . . 3–46 • AC Micro 3–84	• Mini to Mini . . . . 3–10 • Mini-Plus . . . . . 3–34 • DC Micro . . . . . 3–46 • DC Micro to Pico 3–56 • DC Micro to Mini . . . . . • AC Micro . . . . . 3–84 • Pico . . . . . 3–106 • M23 3–128	• DC Micro Splitter 3–58 • AC Micro Splitters 3–90 • Pico Splitter . . . 3–110 • DC Micro to Pico Splitter . . . 3–110	• DC Micro to DC Micro V-Cables . . . . . 3–60 • DC Micro to Conductor V-Cables . . . . . 3–60 • DC Micro to Pico V-Cable 3–60

Specifications	 Receptacles	 Bulkhead Pass-Thru	 Distribution Boxes	 Terminal Chambers	 Accessories
Description	• Panel mount connector with flying lead	• Panel mount connector, male to female	• Factory prewired distribution module connecting 4, 6, or 8 devices through a single cable.	• Field installable connectors	• Sealing caps, coupling adaptors, and other connection systems accessories
Features	• Male and female configurations • 1/2in NPT, 1/4in NPT or M14 threads • Threaded metal housing	• 4- and 5-pin configurations • 1/2in NPT, 1/4in NPT or M14 threads • Threaded metal housing	• 4, 6, or 8 port, parallel-wired • Cable or quick-disconnect main connection • Standard and LED versions	• Screw, solder or insulation displacement connector styles • Straight or right angle • Multiple sizes for varying cable jacket diameters	• Rugged durable construction • Versions to interface with male or female connectors • Multiple sizes for various connector types
Available Models	• Mini Receptacle 3–22 • DC Micro . . . . . 3–64 • AC Micro . . . . . 3–92 • EAC Micro . . . . 3–102 • Pico . . . . . 3–114 • M23 3–130	• Mini Bulkhead Pass-thru . . . . . 3–30 • DC Micro Bulkhead Pass-thru 3–80	• Mini . . . . . 3–24 • Mini Illuminated . . . . . • DC Micro . . . . . 3–66 • DC Micro Illuminated . • AC Micro . . . . . 3–94 • Pico Illuminated	• Mini . . . . . 3–28 • DC Micro . . . . . 3–76 • AC Micro . . . . . 3–96 • Pico . . . . . 3–120 • M23 3–132	• Sealing caps . . 3–143 • Coupling adaptors . . . . 3–144 • Mounting nuts . 3–144 • Sealing washers 3–144

Typical Configuration (DC Micro Connectors Based System)



1. DC Micro Cordset . . page 3–46
2. DC Micro Male Cordset . . . . . page 3–46
3. DC Micro Patchcord page 3–46
4. DC Micro V-Cable . . page 3–60
5. DC Micro Splitter . . . page 3–58
6. DC Micro Receptacle page 3–64
7. DC Micro Distribution Box . . . . . page 3–66
8. Mini-Plus Patchcord page 3–34
9. Mini-Plus Receptacle page 3–38
10. DC Micro Sealing Caps . . . . . page 3–143
11. Terminal Blocks — See the *Industrial Control* Catalog.
12. Photoelectric Sensor
13. Inductive Sensor
14. Limit Switch

— See the *Sensors* Catalog.

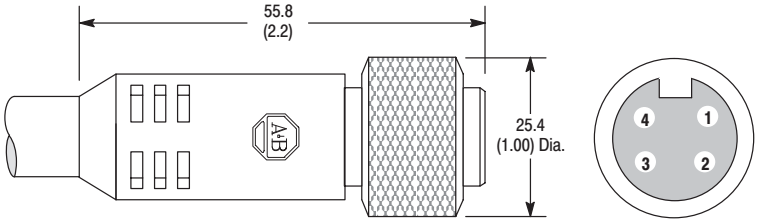
Connection Systems

Selection Criteria

Which Connector to Use?

Mini QD (page 3–7)

- 3-pin, 4-pin, 5-pin and 6-pin
- Straight and right angle
- Illuminated and non-illuminated
- 6ft, 12ft, and 20ft lengths (standard)
- Alternate wire color codes available
- Heavy duty STOOW–A or general purpose cable

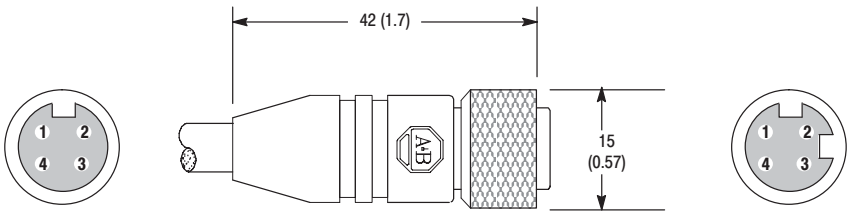


DC Micro QD (page 3–43)

- 4-pin or 5-pin
- Straight and right angle
- Illuminated and non-illuminated
- 2m, 5m, and 10m lengths (standard)
- Stranded aluminum shield
- M12 x 1 thread (IEC standard)
- Single keyway

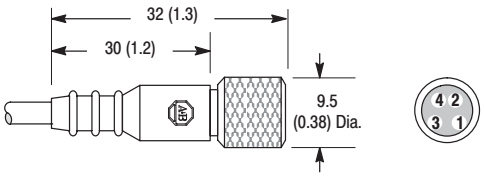
AC Micro QD (page 3–81)

- 3-pin, 4-pin, 5-pin or 6-pin
- Straight and right angle
- Illuminated and non-illuminated
- 2m, 5m, and 10m lengths (standard)
- 1/2in–20 thread (English)
- Dual Keyway



Pico QD (page 3–103)

- 3-pin or 4-pin
- Straight and right angle
- Illuminated and non-illuminated
- Snap-on or Thread-on
- 2m, 5m, and 10m lengths (standard)



Company Name	Naming Convention						
Rockwell Automation	Pico	DC Micro	AC Micro	EAC Micro	Mini	Mini-Plus	M23
Woodhead/ Brad Harrison®	Nano-Change®	Micro-Change® Single Keyway	Micro-Change® Dual Keyway	Micro-Change® Reverse Keyway	Mini-Change® A-Size	Mini-Change® B-Size & C-Size	M23
Turck	Picofast™	Eurofast™	Microfast™	Eurofast™ Reverse Key	Minifast™	—	Multifast™
Crouse-Hinds	NanoLine™	Micro-Mini™ DC DIN	Micro-Mini™ Dual Key	Micro-Mini™ AC DIN	MiniLine™ Style I	MiniLine™ Style II & Style III	—
Lumberg	Pico Style	Micro DC Style	Micro AC Style	Micro Style Reverse Key	Mini Style	Mini Style	M23
Other Names	M8	M12					
Standard Connector Threads	M8 x 1	M12 x 1	1/2in–20UN	M12 x 1	7/8in–16UN	1in–16UN 1 1/8in–16UN	M23

Cable Naming Conventions

Sensor End

Input/Output

Cordsets

= = Female (standards)
Female connector with cut cable at other end

= = Male
Male connector with cut cable at other end

Patchcords

= = Patchcord
Female connector for sensor end, Male connector for input/output end

Y Cables

= = Y Cable
2 female connectors or flying (wire) leads for separate sensors connected to male connector for input/output

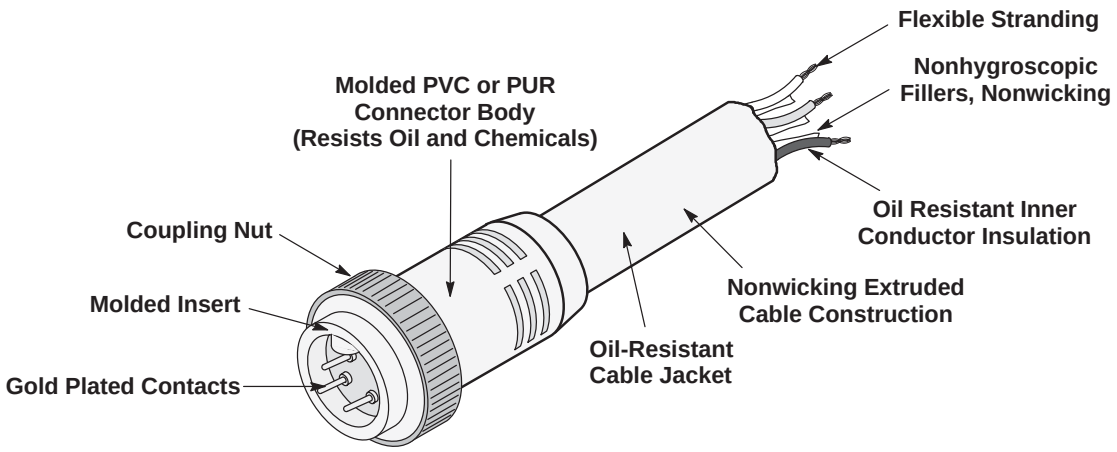
=

Receptacles

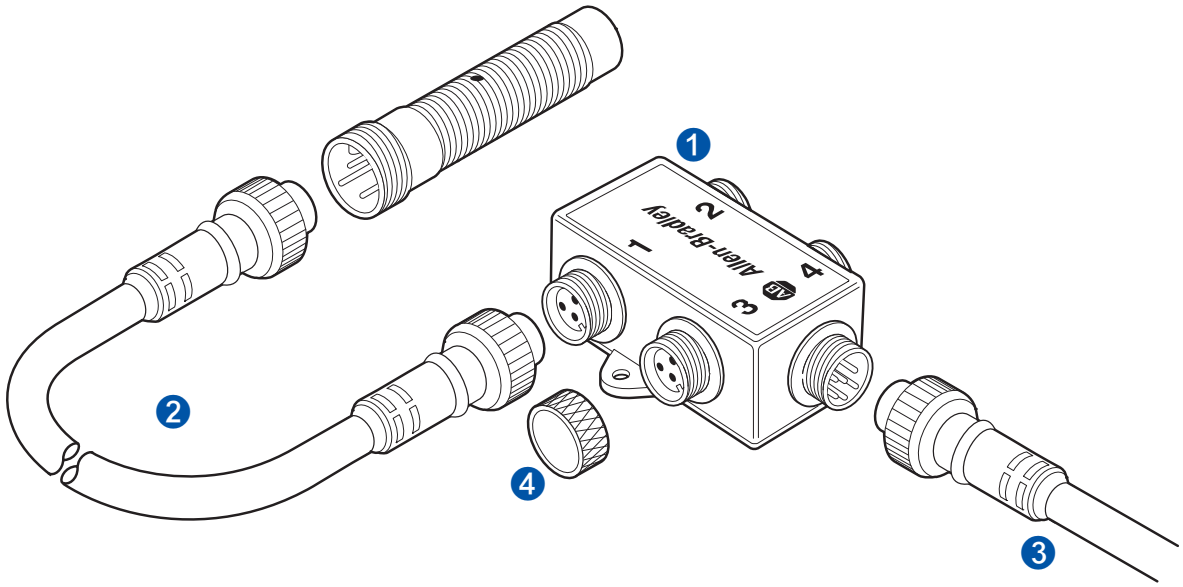
= = Female
Panel mount female connector with wire leads at other end

= = Male
Panel mount male connector with wire leads at other end

Anatomy of a Cordset



Selecting a Distribution Box



❶ Distribution Box

- A passive connection block used to consolidate wiring, simplify installation and reduce troubleshooting

❷ Patchcord or Cordset

- A cable that interfaces field devices to a distribution box or control system
- Patchcords have quick-disconnects at both ends
- Cordsets have a quick-disconnect at one end and conductors (flying leads) at the other

❸ Main Cable/Cordset

- The cordset or integral cable that interfaces a distribution box to a control system

❹ Sealing Cap

- An accessory that protects unused distribution box ports from moisture and other contaminants

Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments.

Featuring industry standard 3-, 4-, 5- or 6-pin overmolded connectors, Allen-Bradley mini quick-disconnect cables provide secure connection for proximity sensors, limit switches and photoelectric sensors. Connectors can be straight or right–angled and are physically keyed to prevent wiring mishaps. Allen-Bradley mini style cabling options include:

- Cordsets: Cable with integral male or female connector at one end and flying leads at the other
- Patchcords: Cable with integral connector at each end (one male, one female)

Available in 6, 12 and 20 ft lengths (standard), Allen-Bradley mini quick-disconnect cordsets and patchcords can also be ordered with alternate wire color coding or in a heavy-duty STOOW–A cable jacket.

Mini connector receptacles are also offered for bulkhead/panel installation. These 3-, 4- or 5-pin die-cast connectors come in male or female versions and are UL recognized, CSA certified and ideal for use in enclosures. They also allow for custom wiring configurations.

Allen-Bradley passive distribution boxes allow multiple devices to be connected to a control system through a single pigtail. Each distribution box features internal-thread female receptacles (4, 6 or 8, depending on model) for quick and easy connection with quick-disconnect mating plugs.

Terminal chambers are passive field-installable connectors for use with raw cable. Allen-Bradley 3-, 4- and 5-pin mini style terminal chambers contain screw terminals for quick and easy assembly of custom QD cables on the plant floor.

Rockwell Automation is continually expanding its connection system offerings. If our standard catalog does not contain the item that you need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Mini Style

Configurator

Cordset

889N S — F 3 A F C — 12F
a b c d e f g

a

Code	Coupling Nut Material
Blank	Standard Coupling Nuts (Nickel Plated Brass)
S	Stainless Steel Coupling Nuts

b

Code	Connector Type
F	Striaght Female (Internal Threads)
L	Neon, Right Angle Female (Internal Threads)
R	Right Angle Female (Internal Threads)
U	Straight Male (Internal Threads)
V	Right Angle Male (Internal Threads)

c

Code	Number of Pins
2–6	Number of Pins

d

Code	Jacket Material
A	PVC Cable
H	ToughLink™ Cable
W	ToughWeld™ Cable

e

Code	Wire Gauge
C	22 AWG (9) 22 AWG/(3) 18 AWG
E	18 AWG
F	16 AWG
G	5/18 & 2/20 AWG twisted/shielded

f

Code	Color Code
Blank	IEC Color Code
A	Automotive Color Code
C	U.S. Industry Standard Color Code

g

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)
F	Feet (1F5 = 1.5 ft)

Patchcord

889N S – F 4 A F N U – 12F
a b c d e f g h

a

Code	Coupling Nut Material
Blank	Standard Coupling Nuts (Nickel Plated Brass)
S	Stainless Steel Coupling Nuts

b

Code	Connector type
F	Striaght Female (Internal Threads)
R	Right Angle Female (Internal Threads)

c

Code	Number of pins
2–6	Number of Pins

d

Code	Jacket Material
A	PVC Cable
H	ToughLink™ Cable
W	ToughWeld™ Cable

e

Code	Wire Gauge
C	22 AWG (9) 22 AWG/(3)18 AWG
E	18 AWG
F	16 AWG
G	5/18 & 2/20 AWG Twisted/Shielded

f

Code	Male End Connector Style
N	Mini QD

g

Code	Male End Connector Type
E	Right Angle Male (External Threads)
M	Straight Male (External Threads)
U	Straight Male (Internal Threads)
V	Right Angle Male (Internal Threads)

h

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)
F	Feet (1F5 = 1.5 ft)

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Receptacles

888N — F 4 A F I — 1F
a b c d e f

a

Code	Connector Type
F	Striaght Female (External Threads)
R	Right Angle Female (External Threads)
M	Striaght Male (External Threads)
E	Right Angle Male (External Threads)

b

Code	Number of Pins
2–6	Number of Pins

c

Code	Wire Type
A	PVC

d

Code	Wire Gauge
E	18 AWG
F	16 AWG

e

Code	Mounting Threads
1	1/2 in 14 NPT

f

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)
F	Feet (1F5 = 1.5 ft)

Distribution Box

889N — L 3 4 P S — N6
a b c d e f

a

Code	Illuminated
Blank	No LEDs
L	LED/Lamp (AC)

b

Code	Number of Pins on Connectors
3–4	Number of Pins

c

Code	Ports
4,6,8	Number of Ports

d

Code	Wiring Configuration
P	Parallel—1 Input/Port

e

Code	Port Orientation
S	Ports on Side of Box

f

Code	Main Connector Style
N6	6-Pin Mini Connector
N7	7-Pin Mini Plus Connector
N8	8-Pin Mini Plus Connector
N9	9-Pin Mini Plus Connector
N10	10-Pin Mini Plus Connector
N12	12-Pin Mini Plus Connector

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Cordsets and Patchcords, Mini Style

16 AWG, STOOW PVC

Mini Style

4-Pin Straight Mini Cordset

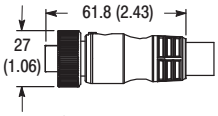
Features

- Heavy duty STOOW–A 16 AWG cable
- PVC jacket offers good oil and chemical resistance
- 2-, 3-, 4-, 5- and 6-pin configurations
- Ratcheting coupling nut for vibration resistance

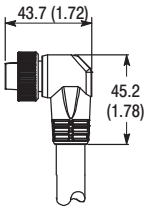
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Housing	Molded oil-resistant PVC
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant yellow PVC jacket, 16 AWG stranded copper, 600V; UL recognized and CSA certified, STOOW–A
Bend Radius	10x diameter
Cable Diameter	2/c = 10 mm (0.40 in) 3/c = 10 mm (0.40 in) 4/c = 11 mm (0.43 in) 5/c = 13 mm (0.51 in) 6/c = 14 mm (0.55 in)
Electrical	
Cable Rating	UL STOOW VW–1 105C 600V, CSA ST 105C 600V FT2, UV oil and water resistant
Assembly Rating	2-pin = 600V, 13 A 3-pin = 600V, 13 A 4-pin = 600V, 10 A 5-pin = 600V, 8 A 6-pin = 600V, 8 A
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

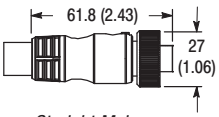
Dimensions—mm (in)



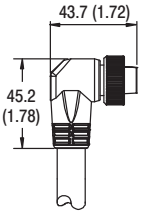
Straight Female



Right Angle Female

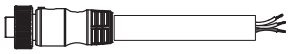


Straight Male



Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.



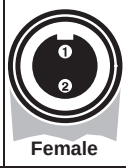
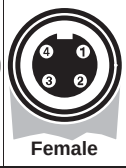
Example of Cordset

Example of Patchcord

Mating Components & Accessories

Description	Cat. No.	Page
Coupling Adaptors	**889A–NADPT**	3–144

Pinout and Color Code

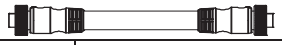
Color Code	Face View Pinout									
	2-Pin		3-Pin		4-Pin		5-Pin		6-Pin	
	 Female	 Male	 Female	 Male	 Female	 Male	 Female	 Male	 Female	 Male
A (US)	1 White 2 Black		1 Green 2 Black 3 White		1 Black 2 White	3 Red 4 Green	1 White 2 Red 3 Green	4 Orange 5 Black	1 White 2 Red 3 Green	4 Orange 5 Black 6 Blue
B (Auto)	—		1 Green 2 Red/Black Tr 3 Red/White Tr		1 Red/Black Tr 2 Red/White Tr	3 Red 4 Green	1 Red/White Tr 2 Red 3 Green 4 Red/Yellow Tr 5 Red/Black Tr		—	
C (IEC)	—		—		1 Black 2 Blue	3 Brown 4 White	1 Black 2 Blue 3 Orange	4 Brown 5 White	1 Blue 2 Orange 3 Red	4 White 5 Brown 6 Black

Product Selection

Cordsets

Pin Count	Assembly Rating	Color Code	Cat. No.			
			Straight Female	Right Angle Female	Straight Male	Right Angle Male
2-Pin	600V 13A	A	889N–F2AFC–*F	889N–R2AFC–*F	889N–U2AFC–*F	889N–V2AFC–*F
3-Pin		A	889N–F3AFC–*F	889N–R3AFC–*F	889N–U3AFC–*F	889N–V3AFC–*F
		B	889N–F3AFA–*F	889N–R3AFA–*F	889N–U3AFA–*F	889N–V3AFA–*F
4-Pin	600V 10A	A	889N–F4AFC–*F	889N–R4AFC–*F	889N–U4AFC–*F	889N–V4AFC–*F
		B	889N–F4AFA–*F	889N–R4AFA–*F	889N–U4AFA–*F	889N–V4AFA–*F
		C	889N–F4AF–*F	889N–R4AF–*F	889N–U4AF–*F	889N–V4AF–*F
5-Pin	600V 8A	A	889N–F5AFC–*F	889N–R5AFC–*F	889N–U5AFC–*F	889N–V5AFC–*F
		B	889N–F5AFA–*F	889N–R5AFA–*F	889N–U5AFA–*F	889N–V5AFA–*F
		C	889N–F5AF–*F	889N–R5AF–*F	889N–U5AF–*F	889N–V5AF–*F
6-Pin		C	889N–F6AFC–*F	889N–R6AFC–*F	889N–U6AFC–*F	889N–V6AFC–*F
		A	889N–F6AF–*F	889N–R6AF–*F	889N–U6AF–*F	889N–V6AF–*F

Patchcords



Pin Count	Assembly Rating	Cat. No.			
		Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
2-Pin	16 AWG 600V 13 A	889N–F2AFNU–‡F	889N–F2AFNV–‡F	889N–R2AFNU–‡F	889N–R2AFNV–‡F
3-Pin		889N–F3AFNU–‡F	889N–F3AFNV–‡F	889N–R3AFNU–‡F	889N–R3AFNV–‡F
4-Pin	16 AWG 600V 10 A	889N–F4AFNU–‡F	889N–F4AFNV–‡F	889N–R4AFNU–‡F	889N–R4AFNV–‡F
5-Pin	16 AWG 600V 8 A	889N–F5AFNU–‡F	889N–F5AFNV–‡F	889N–R5AFNU–‡F	889N–R5AFNV–‡F
6-Pin		889N–F6AFNU–‡F	889N–F6AFNV–‡F	889N–R6AFNU–‡F	889N–R6AFNV–‡F

* Replace symbol with 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.
‡ Replace symbol with 3 (3 ft), 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.

Note: Stainless steel connector versions may be ordered by adding an “S” to the bulletin number, e.g., **889NS–F3AFC–*F**.

Cordsets and Patchcords, Mini Style

18 AWG, PVC

Mini Style

4-Pin Straight Mini Cordset

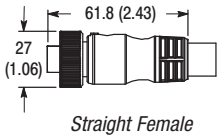
Features

- General purpose 18 AWG cable
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- 2-, 3-, 4-, 5- and 6-pin configurations
- Ratcheting coupling nut for vibration resistance

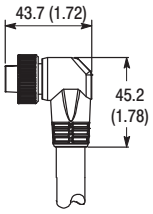
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Housing	Molded oil-resistant PVC
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant yellow PVC jacket, 18 AWG stranded copper, 300V; UL recognized and CSA certified, STOOW–A
Bend Radius	10x diameter
Cable Diameter	2/c = 6 mm (0.24 in) 3/c = 6 mm (0.25 in); 4/c = 7 mm (0.27 in); 5/c = 8 mm (0.31 in); 6/c = 8 mm (0.32 in)
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	2-pin = 300V, 10 A 3-pin = 300V, 10 A 4-pin = 300V, 7 A 5-pin = 300V, 5.6 A 6-pin = 300V, 5.6 A
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

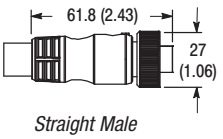
Dimensions—mm (in)



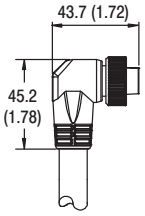
Straight Female



Right Angle Female



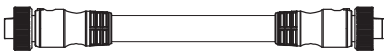
Straight Male



Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.

Example of Cordset



Example of Patchcord

Mating Components & Accessories

Description	Cat. No.	Page
Coupling Adaptor	**889A–NADPT**	3–144

Pinout and Color Code

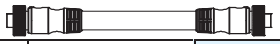
Color Code	Face View Pinout									
	2-Pin		3-Pin		4-Pin		5-Pin		6-Pin	
	 Female	 Male	 Female	 Male	 Female	 Male	 Female	 Male	 Female	 Male
A (US)	1 White 2 Black		1 Green 2 Black 3 White		1 Black 2 White	3 Red 4 Green	1 White 2 Red 3 Green	4 Orange 5 Black	1 White 2 Red 3 Green	4 Orange 5 Black 6 Blue
B (Auto)	—		1 Green 2 Red/Black Tr 3 Red/White Tr		1 Red/Black Tr 2 Red/White Tr	3 Red 4 Green	1 Red/White Tr 2 Red 3 Green 4 Red/Yellow Tr 5 Red/Black Tr		—	
C (IEC)	—		—		1 Black 2 Blue	3 Brown 4 White	1 Black 2 Blue 3 Grey	4 Brown 5 White	—	

Product Selection

Cordsets

Pin Count	Assembly Rating	Color Code	Cat. No.			
			Straight Female	Right Angle Female	Straight Male	Right Angle Male
2-Pin	300V, 10 A	A	889N–F2AEC–*F	889N–R2AEC–*F	889N–U2AEC–*F	889N–V2AEC–*F
3-Pin		A	889N–F3AEC–*F	889N–R3AEC–*F	889N–U3AEC–*F	889N–V3AEC–*F
		B	889N–F3AEA–*F	889N–R3AEA–*F	889N–U3AEA–*F	889N–V3AEA–*F
4-Pin	300V, 7 A	A	889N–F4AEC–*F	889N–R4AEC–*F	889N–U4AEC–*F	889N–V4AEC–*F
		B	889N–F4AEA–*F	889N–R4AEA–*F	889N–U4AEA–*F	889N–V4AEA–*F
		C	889N–F4AE–*F	889N–R4AE–*F	889N–U4AE–*F	889N–V4AE–*F
5-Pin	300V, 5.6 A	A	889N–F5AEC–*F	889N–R5AEC–*F	889N–U5AEC–*F	889N–V5AEC–*F
		B	889N–F5AEA–*F	889N–R5AEA–*F	889N–U5AEA–*F	889N–V5AEA–*F
		C	889N–F5AE–*F	889N–R5AE–*F	889N–U5AE–*F	889N–V5AE–*F
6-Pin		A	889N–F6AE–*F	889N–R6AE–*F	889N–U6AE–*F	889N–V6AE–*F

Patchcords



Pin Count	Assembly Rating	Cat. No.			
		Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
2-Pin	300V, 10 A	889N–F2AENU–‡F	889N–F2AENV–‡F	889N–R2AENU–‡F	889N–R2AENV–‡F
3-Pin		889N–F3AENU–‡F	889N–F3AENV–‡F	889N–R3AENU–‡F	889N–R3AENV–‡F
4-Pin	300V, 7 A	889N–F4AENU–‡F	889N–F4AENV–‡F	889N–R4AENU–‡F	889N–R4AENV–‡F
5-Pin	300V, 5.6 A	889N–F5AENU–‡F	889N–F5AENV–‡F	889N–R5AENU–‡F	889N–R5AENV–‡F
6-Pin		889N–F6AENU–‡F	889N–F6AENV–‡F	889N–R6AENU–‡F	889N–R6AENV–‡F

* Replace symbol with 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.
‡ Replace symbol with 3 (3 ft), 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.

Note: Stainless steel connector versions may be ordered by adding an “S” to the bulletin number, e.g., **889NS–F3AEC–*F**.

Cordsets and Patchcords, Mini Style

16 AWG, ToughLink™ and ToughWeld™

Mini Style

4-Pin Straight Mini Cordset

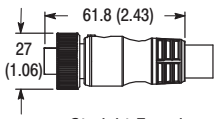
Features

- Heavy duty 16 AWG cable
- Highly visible yellow ToughLink jacket offers excellent oil and chemical resistance
- ToughWeld jacket offers good oil and chemical resistance and excellent resistance to weld slag
- 3-, 4-, and 5-pin configurations
- Ratcheting coupling nut for vibration resistance

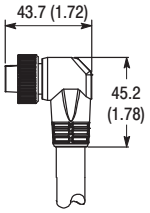
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Housing	Molded oil-resistant PVC
Contacts	Gold-plated palladium/nickel
Cable	ToughLink: Oil-resistant yellow TPE jacket, 16 AWG stranded copper, 600V; UL recognized and CSA certified, SEOOW ToughWeld: Oil-resistant yellow CPE thermoset jacket, 16 AWG stranded copper, 600V; UL recognized and CSA certified, SOOW
Bend Radius	10x diameter
Cable Diameter	3/c = 10 mm (0.41 in); 4/c = 11 mm (0.44 in); 5/c = 13 mm (0.52 in)
Electrical	
Cable Rating	ToughLink: UL SEOOW VW–1 105C –50C 600V water resistant, CSA STOO FT–1 600V; ToughWeld: UL SOOW 105C 600V water resistant, CSA –50C FT–1 600V
Assembly Rating	3-pin = 600V, 13A; 4-pin = 600V, 10 A; 5-pin = 600V, 8 A
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	ToughLink: –20…+105° (–4…+221°); ToughWeld: –20…+90° (–4…+194°)

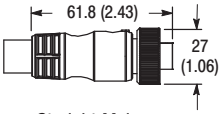
Dimensions—mm (in)



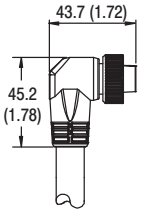
Straight Female



Right Angle Female



Straight Male



Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.

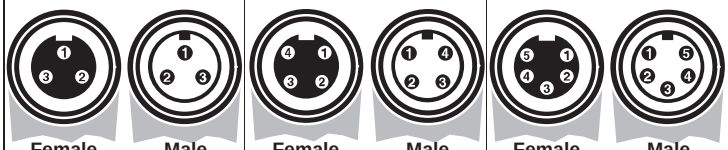
Example of Cordset

Example of Patchcord

Mating Components & Accessories

Description	Cat. No.	Page
Coupling Adaptor	**889A–NADPT**	3–144

Pinout and Color Code

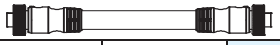
Color Code	Face View Pinout					
	3-Pin		4-Pin		5-Pin	
						
	Female	Male	Female	Male	Female	Male
A (US)	1 Green 2 Black 3 White		1 Black 2 White	3 Red 4 Green	1 White 2 Red 3 Green	4 Orange 5 Black

Product Selection

Cordsets

Pin Count	Material	Assembly Rating	Color Code	Cat. No.			
				Straight Female	Right Angle Female	Straight Male	Right Angle Male
3-Pin	ToughLink (TPE)	600V 13A	A	889N–F3HFC–*F	889N–R3HFC–*F	889N–U3HFC–*F	889N–V3HFC–*F
4-Pin		600V 10A		889N–F4HFC–*F	889N–R4HFC–*F	889N–U4HFC–*F	889N–V4HFC–*F
5-Pin		600V 8A		889N–F5HFC–*F	889N–R5HFC–*F	889N–U5HFC–*F	889N–V5HFC–*F
3-Pin	Tough-Weld (CPE)	600V 13A		889N–F3WFC–*F	889N–R3WFC–*F	889N–U3WFC–*F	889N–V3WFC–*F
4-Pin		600V 10A		889N–F4WFC–*F	889N–R4WFC–*F	889N–U4WFC–*F	889N–V4WFC–*F
5-Pin		600V 8A		889N–F5WFC–*F	889N–R5WFC–*F	889N–U5WFC–*F	889N–V5WFC–*F

Patchcords



Pin Count	Material	Assembly Rating	Cat. No.			
			Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
3-Pin	ToughLink (TPE)	600V 13A	889N–F3HFNU–*F	889N–F3HFNV–*F	889N–R3HFNU–*F	889N–R3HFNV–*F
4-Pin		600V 10A	889N–F4HFNU–*F	889N–F4HFNV–*F	889N–R4HFNU–*F	889N–R4HFNV–*F
5-Pin		600V 8A	889N–F5HFNU–*F	889N–F5HFNV–*F	889N–R5HFNU–*F	889N–R5HFNV–*F
3-Pin	ToughWeld (CPE)	600V 13A	889N–F3WFNU–*F	889N–F3WFNV–*F	889N–R3WFNU–*F	889N–R3WFNV–*F
4-Pin		600V 10A	889N–F4WFNU–*F	889N–F4WFNV–*F	889N–R4WFNU–*F	889N–R4WFNV–*F
5-Pin		600V 8A	889N–F5WFNU–*F	889N–F5WFNV–*F	889N–R5WFNU–*F	889N–R5WFNV–*F

* Replace symbol with 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.
‡ Replace symbol with 3 (3 ft), 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.

Note: Stainless steel connector versions may be ordered by adding an “S” to the bulletin number, e.g., **889NS–F3HFC–*F**.

Cordsets and Patchcords, Mini Style

18 AWG, TPE and ToughWeld™

Mini Style

4-Pin Straight Mini Cordset

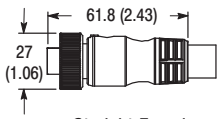
Features

- General purpose 18 AWG cable
- Highly visible yellow ToughLink jacket offers excellent oil and chemical resistance
- ToughWeld jacket offers good oil and chemical resistance and excellent resistance to weld slag
- 3-, 4-, and 5-pin configurations
- Ratcheting coupling nut for vibration resistance

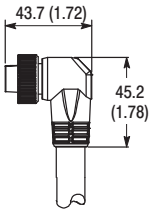
Specifications

Certifications	UL recognized and CSA certified	
Mechanical		
Coupling Nut	Epoxy-Coated Zinc	
Housing	Molded oil-resistant PVC	
Contacts	Gold-plated palladium/nickel	
Cable	Oil-resistant yellow TPE or CPE jacket, 18 AWG stranded copper, 300V; UL recognized and CSA certified, STOOW–A	
Bend Radius	10x diameter	
Cable Diameter	TPE 3/c = 6 mm (0.25 in); 4/c = 7 mm (0.27 in); 5/c = 8 mm (0.32 in);	ToughWeld 3/c = 8 mm (0.32 in) 4/c = 9 mm (0.36 in) 5/c = 10 mm (0.38 in)
Electrical		
Cable Rating	TPE: UL AWM style 20327 VW–1 105C 300V, CSA AWM A/B I/II 105C 300V FT1, UV oil and water resistant ToughWeld: UL SJOOW 105C 300V water resistant, CSA –50C FT–1 300V	
Assembly Rating	3-pin = 300V, 10 A 4-pin = 300V, 7 A 5-pin = 300V, 5.6 A	
Environmental		
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown	
Operating Temperature—C (F)	–20…+105° (–4…+221°)	

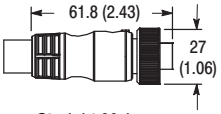
Dimensions—mm (in)



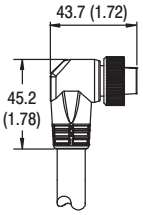
Straight Female



Right Angle Female

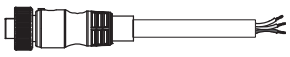


Straight Male

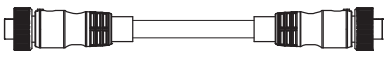


Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset

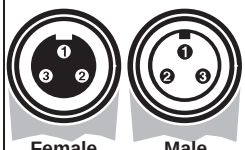
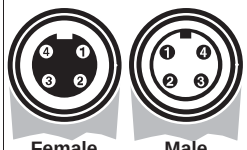
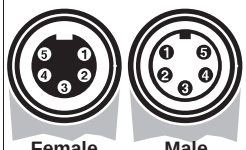


Example of Patchcord

Mating Components & Accessories

Description	Cat. No.	Page
Coupling Adaptor	**889A–NADPT**	3–144

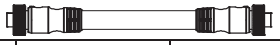
Pinout and Color Code

Color Code	Face View Pinout					
	3-Pin		4-Pin		5-Pin	
	 Female	Male	 Female	Male	 Female	Male
A (US)	1 Green 2 Black 3 White		1 Black 2 White	3 Red 4 Green	1 White 2 Red 3 Green	4 Orange 5 Black
B (Auto)	1 Green 2 Red/Black Tr 3 Red/White Tr		1 Red/Black Tr 2 Red/White Tr	3 Red 4 Green	1 Red/White Tr 2 Red 3 Green	4 Red/Yellow Tr 5 Red/Black Tr

Product Selection

Cordsets 

Pin Count	Material	Assembly Rating	Color Code	Cat. No.			
				Straight Female	Right Angle Female	Straight Male	Right Angle Male
3-Pin	TPE	300V, 10 A	B	889N–F3HJA–*F	889N–R3HJA–*F	889N–U3HJA–*F	889N–V3HJA–*F
4-Pin		300V, 7 A		889N–F4HJA–*F	889N–R4HJA–*F	889N–U4HJA–*F	889N–V4HJA–*F
5-Pin		300V, 5.6 A		889N–F5HJA–*F	889N–R5HJA–*F	889N–U5HJA–*F	889N–V5HJA–*F
3-Pin	Tough-Weld (CPE)	300V, 10 A	A	889N–F3WEC–*F	889N–R3WEC–*F	889N–U3WEC–*F	889N–V3WEC–*F
4-Pin		300V, 7 A		889N–F4WEC–*F	889N–R4WEC–*F	889N–U4WEC–*F	889N–V4WEC–*F
5-Pin		300V, 5.6 A		889N–F5WEC–*F	889N–R5WEC–*F	889N–U5WEC–*F	889N–V5WEC–*F

Patchcords 

Pin Count	Material	Assembly Rating	Cat. No.			
			Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
3-Pin	TPE	300V, 10 A	889N–F3HJNU–*F	889N–F3HJNV–*F	889N–R3HJNU–*F	889N–R3HJNV–*F
4-Pin		300V, 7 A	889N–F4HJNU–*F	889N–F4HJNV–*F	889N–R4HJNU–*F	889N–R4HJNV–*F
5-Pin		300V, 5.6 A	889N–F5HJNU–*F	889N–F5HJNV–*F	889N–R5HJNU–*F	889N–R5HJNV–*F
3-Pin	ToughWeld (CPE)	300V, 10 A	889N–F3WENU–*F	889N–F3WENV–*F	889N–R3WENU–*F	889N–R3WENV–*F
4-Pin		300V, 7 A	889N–F4WENU–*F	889N–F4WENV–*F	889N–R4WENU–*F	889N–R4WENV–*F
5-Pin		300V, 5.6 A	889N–F5WENU–*F	889N–F5WENV–*F	889N–R5WENU–*F	889N–R5WENV–*F

* Replace symbol with 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.
‡ Replace symbol with 3 (3 ft), 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.

Note: Stainless steel connector versions may be ordered by adding an “S” to the bulletin number, e.g., **889NS–F3HJA–*F**.

Cordsets and Patchcords, Mini Style

LED or Coil Cables, PVC

Mini Style

3-Pin Illuminated Mini Cordset

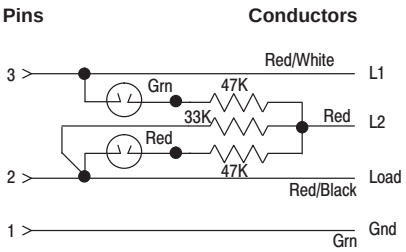
Features

- Illuminated cordset: long-life neon lamp indicates power and output
- Coiled cordset: retractable cable for moving applications
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- One-piece molded body design

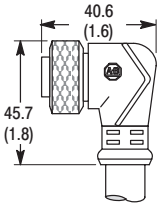
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Housing	Molded oil-resistant PVC
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant yellow PVC jacket, 18 AWG stranded copper (illuminated), 300V; UL recognized and CSA certified
Bend Radius	10x diameter
Cable Diameter	3/c = 7.4 mm (0.29 in); 4/c = 7.1 mm (0.28 in)
Electrical	
Cable Rating	LED models: UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant Coiled Cable: 300V, UL style 20197, CSA AWM 1/11 A/B
Assembly Rating	3-pin = 300V, 6 A 4-pin = 300V, 5 A
Environmental	
Enclosure Type Rating	IP 67; 1200 psi washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

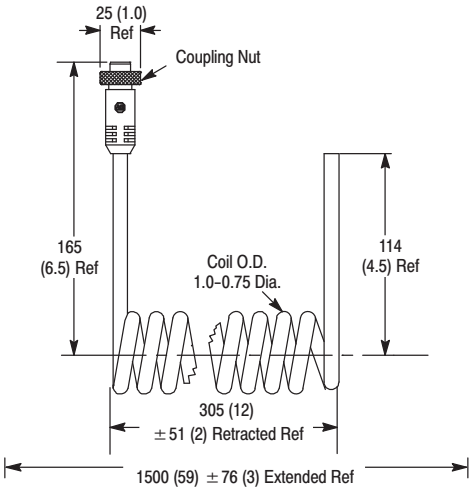
Wiring Diagrams



Dimensions—mm (in)

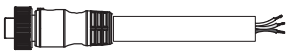


Right Angle Female
Red/White



Straight Female

Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset

Pinout and Color Code

Color Code	Face View Pinout	
	3-Pin	4-Pin
	 Female	 Female
A	1 Green 2 Red/Black Tr 3 Red/White Tr Red	1 Black 3 Brown 2 Blue 4 White

Product Selection

LED Cordsets

Cable			Cat. No.
Pin Count	Wire Rating	Color Code	Right Angle Female
3-Pin	18 AWG 300V 6 A	A	889N–L3AFA–*F

Coiled Cordsets

Cable			Cat. No.
Pin Count	Wire Rating	Color Code	Straight Female
4-Pin	18 AWG 300V 5 A	A	889N–F4AD–C5F

* Replace symbol with 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.

Mini Style

Tap-Style Wiring

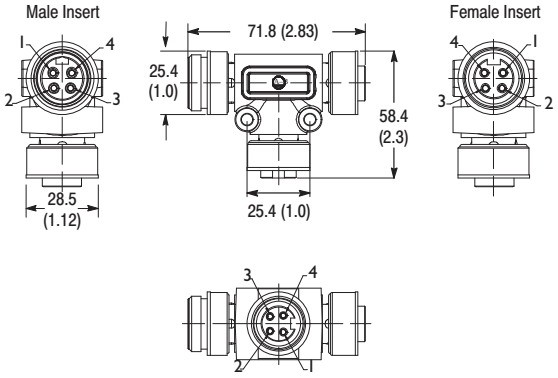
Features

- Tap-style wiring
- TPE body offers good oil and chemical resistance
- Ratcheting coupling nuts for vibration resistance

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Black epoxy coated zinc
Material	TPE
Contacts	Gold-plated palladium nickel
Electrical	
Assembly Rating	300V, 8 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–25…+70° (–13…+158°)

Dimensions—mm (in)



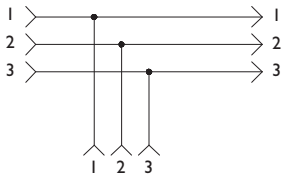
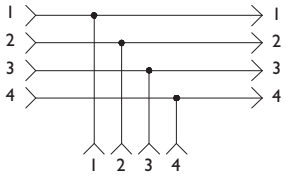
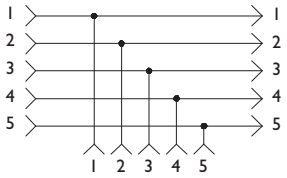
Note: 4-pin version shown
Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

	Face View Pinout					
	3-Pin		4-Pin		5-Pin	
	 Female	 Male	 Female	 Male	 Female	 Male

Product Selection

T-Ports

Connector	Wiring Diagram	Assembly Rating	Cat. No.
3-Pin		300V 8 A	**898N–33PB–N4KF**
4-Pin			**898N–43PB–N4KF**
5-Pin			**1485P–P1N5–MN5KF**

Note: Stainless steel connectors may be ordered by adding an “S” to the bulletin number (e.g. **898NS–43PB–N4KF**).

Receptacles, Mini Style

16 & 18 AWG, 1/2 in NPT Mount

Mini Style

4-Pin Mini Female Receptacle

2-Pin Mini Male Receptacle

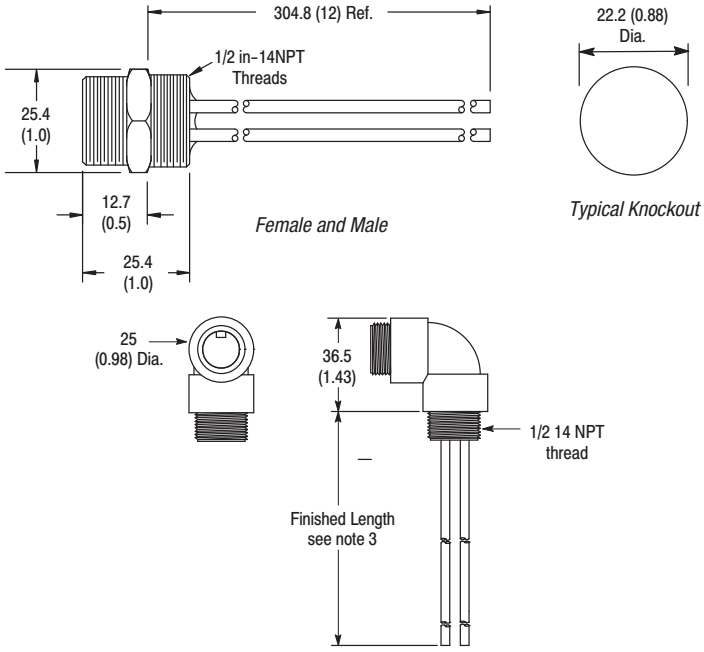
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Black Epoxy-Coated Zinc
Contacts	Gold-plated palladium/nickel
Receptacle Insert Material	PVC
Conductors	16 & 18 AWG, PVC insulation
Electrical	
Assembly Rating	2-pin = 16 AWG: 600V, 13 A,; 18 AWG: 300V, 8 A 3-pin = 16 AWG: 600V, 13 A; 18 AWG: 300V, 8 A 4-pin = 16 AWG: 600V, 10 A; 18 AWG: 300V, 8 A 5-pin = 16 AWG: 600V, 8 A; 18 AWG: 300V, 8 A 6-pin = 16 AWG: 600V, 8 A; 18 AWG: 300V, 8 A
Environmental	
Enclosure Type Rating	NEMA 6P; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Features

- 16 & 18 AWG conductors
- Female bulkhead receptacles
- 2-, 3-, 4-, 5- or 6-pin configuration
- 1/2 in–14NPT threads

Dimensions—mm (in)



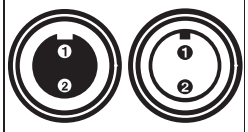
Dimensions are approximate. Illustrations are not drawn to scale.

Mating Components & Accessories

Description	Cat. No.
1/2 in–14 NPT Mounting Nut★	**889A–U1NUT–10**
1/2 in–14 NPT Flat Sealing Washer★	**889A–U1FSL–10**

★ Sold in bags of 10.

Pinout and Color Code

Color Code	Face View Pinout									
	2-Pin		3-Pin		4-Pin		5-Pin		6-Pin	
	 Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
A (US)	1 White 2 Black		1 Green 2 Black 3 White		1 Black 2 White	3 Red 4 Green	1 White 2 Red 3 Green	4 Orange 5 Black	1 White 2 Red 3 Green	4 Orange 5 Black 6 Blue
B (Auto)	—		1 Green 2 Red/Black Tr 3 Red/White Tr		1 Red/Black Tr 2 Red/White Tr	3 Red 4 Green	1 Red/White Tr 2 Red 3 Green 4 Red/Yellow Tr 5 Red/Black Tr		—	
C (IEC)	—		—		1 Black 2 Blue	3 Brown 4 White	1 Black 2 Blue 3 Grey	4 Brown 5 White		

Product Selection

16 AWG Receptacles

Pin Count	Assembly Rating	Color Code	Thread Size	Cat. No.			
				Straight Female External Threads	Right Angle Female External Threads	Straight Male External Threads	Right Angle Male External Threads
2–Pin	600V AC/DC, 13 A	A	1/2 in 14 NPT	888N–F2AF1–*F	888N–R2AF1–*F	888N–M2AF1–*F	888N–E2AF1–*F
3–Pin		A		888N–F3AF1–*F	888N–R3AF1–*F	888N–M3AF1–*F	888N–E3AF1–*F
		B		888N–F3AFA1–*F	888N–R3AFA1–*F	888N–M3AFA1–*F	888N–E3AFA1–*F
4–Pin	600V AC/DC, 10 A	A		888N–F4AF1–*F	888N–R4AF1–*F	888N–M4AF1–*F	888N–E4AF1–*F
		B		888N–F4AFA1–*F	888N–R4AFA1–*F	888N–M4AFA1–*F	888N–E4AFA1–*F
	600V AC/DC, 8 A	C		888N–F4AFE1–*F	888N–R4AFE1–*F	888N–M4AFE1–*F	888N–E4AFE1–*F
5–Pin		A		888N–F5AF1–*F	888N–R5AF1–*F	888N–M5AF1–*F	888N–E5AF1–*F
		B		888N–F5AFA1–*F	888N–R5AFA1–*F	888N–M5AFA1–*F	888N–E5AFA1–*F
		C		888N–F5AFE1–*F	888N–R5AFE1–*F	888N–M5AFE1–*F	888N–E5AFE1–*F
6–Pin		A		888N–F6AF1–*F	888N–R6AF1–*F	888N–M6AF1–*F	888N–E6AF1–*F

18 AWG Receptacles

Pin Count	Assembly Rating	Color Code	Thread Size	Cat. No.			
				Straight Female External Threads	Right Angle Female External Threads	Straight Male External Threads	Right Angle Male External Threads
2–Pin	300V, 10 A	A	1/2 in 14 NPT	888N–F2AE1–*F	888N–R2AE1–*F	888N–M2AE1–*F	888N–E2AE1–*F
3–Pin		A		888N–F3AE1–*F	888N–R3AE1–*F	888N–M3AE1–*F	888N–E3AE1–*F
		B		888N–F3AEA1–*F	888N–R3AEA1–*F	888N–M3AEA1–*F	888N–E3AEA1–*F
4–Pin	300V, 7 A	A		888N–F4AE1–*F	888N–R4AE1–*F	888N–M4AE1–*F	888N–E4AE1–*F
		B		888N–F4AEA1–*F	888N–R4AEA1–*F	888N–M4AEA1–*F	888N–E4AEA1–*F
	300V, 5.6 A	C		888N–F4AEE1–*F	888N–R4AEE1–*F	888N–M4AEE1–*F	888N–E4AEE1–*F
5–Pin		A		888N–F5AE1–*F	888N–R5AE1–*F	888N–M5AE1–*F	888N–E5AE1–*F
		B		888N–F5AEA1–*F	888N–R5AEA1–*F	888N–M5AEA1–*F	888N–E5AEA1–*F
		C		888N–F5AEE1–*F	888N–R5AEE1–*F	888N–M5AEE1–*F	888N–E5AEE1–*F
6–Pin		A		888N–F6AE1–*F	888N–R6AE1–*F	888N–M6AE1–*F	888N–E6AE1–*F

* Replace symbol with 1 (0.3 m (1 ft)) or 3 (0.9 m (3 ft)) for standard cable lengths.

Distribution Boxes, Mini Style

3-Pin, Parallel Wired, Mini Connector

Mini Style

4-Port Mini Distribution Box

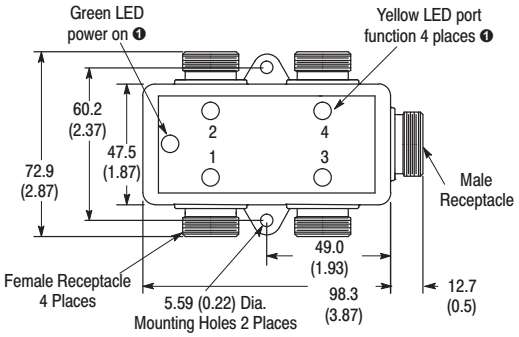
Specifications

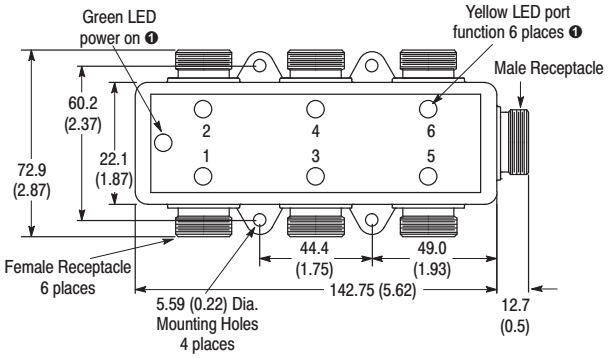
Certifications	UL recognized and CSA certified
Mechanical	
Connector Shell Material	Anodized aluminum with clear sealant
Housing	Yellow PET
Contacts	Gold-plated palladium/nickel
Connector Insert Material	PVC
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–30…+105° (–22…+221°)

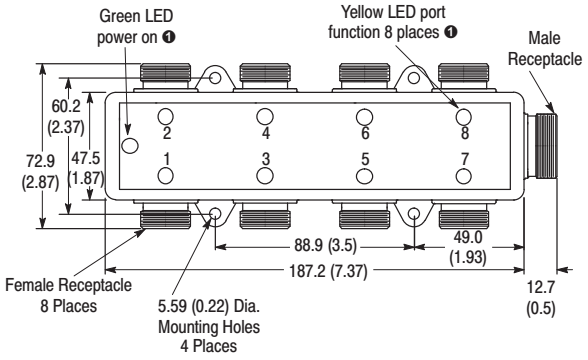
Features

- Highly visible yellow PET body offers good oil and chemical resistance
- 4, 6, or 8 parallel wired 3-pin mini connectors
- LED and nonLED models

Dimensions—mm (in)

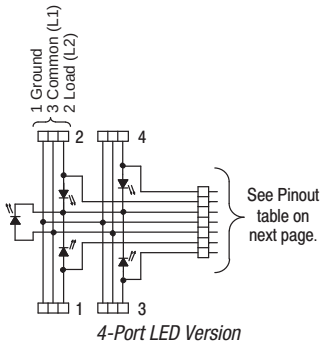




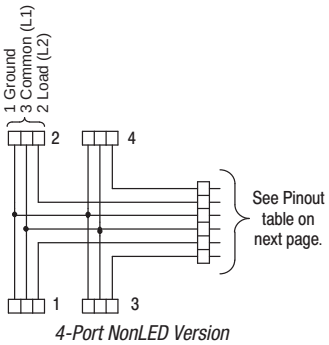


❶ LED models only.
Dimensions are approximate. Illustrations are not drawn to scale.

Wiring Diagrams



4-Port LED Version

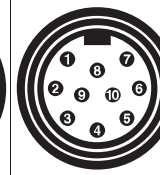


4-Port NonLED Version

Mating Components & Accessories

Description	Cat. No.	Page
Device Patchcords	**889N–F3AFNU–*F**	3–11
Main Cordset	**889N–F§AF–‡**	3–35, 3–37
Terminal Chambers	**871A–TS3–NU2**	3–29
Sealing Caps	**889A–NCAP**	3–143

Pinout

Ports	Main Connection					
	4 Port		6 Port		8 Port	
Wiring Arrangement	A	B	C	D	E	F
						
Ports (Female 3-Pin)	**6-Pin Male**	**7-Pin Male**	**8-Pin Male**	**9-Pin Male**	**10-Pin Male**	**12-Pin Male**
LED Ground	—	Pin 1	—	Pin 4	—	Pin 7
(+) All Ports Pin 3	Pin 1	Pin 3	Pin 5	Pin 5	Pin 10	Pin 11
(–) All Ports Pin 1	Pin 3	Pin 7	Pin 7	Pin 7	Pin 8	Pin 9
Port 1 Pin 2	Pin 2	Pin 4	Pin 6	Pin 6	Pin 7	Pin 10
Port 2 Pin 2	Pin 4	Pin 5	Pin 1	Pin 1	Pin 1	Pin 1
Port 3 Pin 2	Pin 5	Pin 2	Pin 4	Pin 9	Pin 9	Pin 12
Port 4 Pin 2	Pin 6	Pin 6	Pin 2	Pin 2	Pin 2	Pin 2
Port 5 Pin 2	—	—	Pin 3	Pin 8	Pin 3	Pin 3
Port 6 Pin 2	—	—	Pin 8	Pin 3	Pin 4	Pin 4
Port 7 Pin 2	—	—	—	—	Pin 5	Pin 5
Port 8 Pin 2	—	—	—	—	Pin 6	Pin 6
No Connection	—	—	—	—	—	Pin 8

Product Selection

3-Pin Distribution Boxes

Ports	Illuminated	Assembly Rating	Wiring Arrangement	Cat. No.
4 Port	No LED	600V, 7 A	A	**898N–34PS–N6**
	LED	120V, 7 A	B	**898N–L34PS–N7**
6 Port	No LED	600V, 7 A	C	**898N–36PS–N8**
	LED	120V, 7 A	D	**898N–L36PS–N9**
8 Port	No LED	600V, 7 A	E	**898N–38PS–N10**
	LED	120V, 7 A	F	**898N–L38PS–N12**
Device Patchcords (Straight to Straight)				**889N–F3AFNU–*F**
Main Cordset (Straight to Conductor)				**889N–F§AF–‡**

* Replace symbol with 3 (3 ft), 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.
‡ Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
§ Replace symbol with the number of pins in the main connection

Distribution Boxes, Mini Style

4-Pin, Parallel Wired, Mini Connector

Mini Style

4-Port Mini Distribution Box

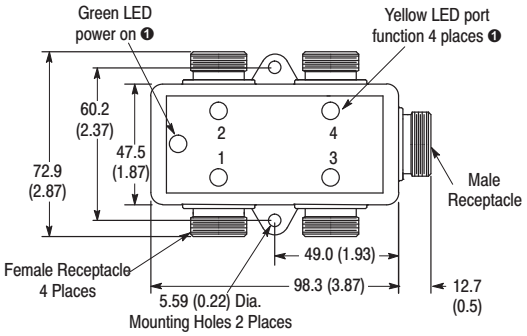
Specifications

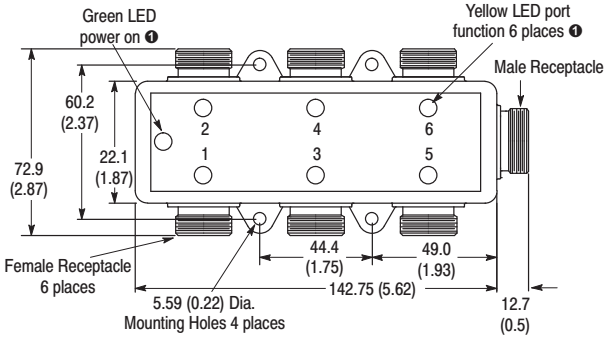
Certifications	UL recognized and CSA certified
Mechanical	
Connector Shell Material	Anodized aluminum with clear sealant
Housing	Yellow PET
Contacts	Gold-plated palladium/nickel
Connector Insert Material	PVC
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–30…+105° (–22…+221°)

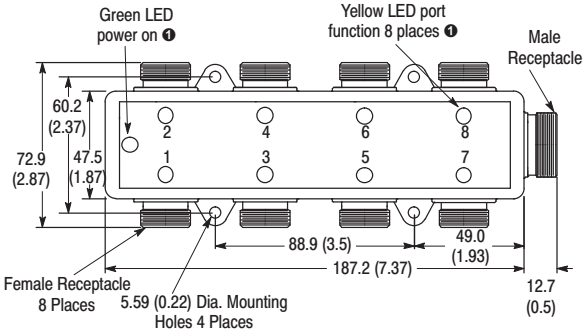
Features

- Highly visible yellow PET body offers good oil and chemical resistance
- 4 parallel wired 4-pin mini connectors

Dimensions—mm (in)

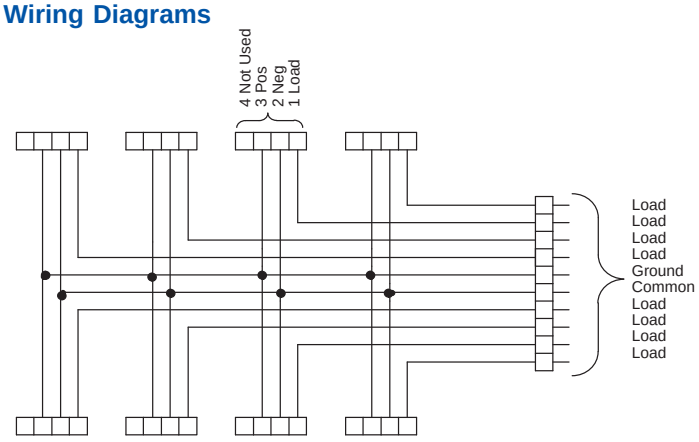






❶ LED models only.
Dimensions are approximate. Illustrations are not drawn to scale.

Wiring Diagrams



Mating Components & Accessories

Description	Cat. No.	Page
Device Patchcords	**889N–F3AFNU–*F**	3–11
Main Cordset	**889N–F§AF–‡**	3–35, 3–37
Terminal Chambers	**871A–TS3–NU2**	3–29
Sealing Caps	**889A–NCAP**	3–143

Pinout

Ports	Main Connection		
	4 Port	6 Port	8 Port
Wiring Arrangement	A	B	C
				
Ports (Female 4-Pin)	**6-Pin Male**	**8-Pin Male**	**10-Pin Male**
(+) All Ports Pin 3	Pin 1	Pin 5	Pin 10
(–) All Ports Pin 2	Pin 3	Pin 7	Pin 8
All Ports Pin 4	Not Used	Not Used	Not Used
Port 1 Pin 1	Pin 2	Pin 6	Pin 7
Port 2 Pin 1	Pin 4	Pin 1	Pin 1
Port 3 Pin 1	Pin 5	Pin 4	Pin 9
Port 4 Pin 1	Pin 6	Pin 2	Pin 2
Port 5 Pin 1	—	Pin 3	Pin 3
Port 6 Pin 1	—	Pin 8	Pin 4
Port 7 Pin 1	—	—	Pin 5
Port 8 Pin 1	—	—	Pin 6

Product Selection

4-Pin Distribution Boxes

Ports	Illuminated	Assembly Rating	Wiring Arrangement	Cat. No.
4 Port	No LED	120V, 7 A	A	**898N–44PS–N6**
6 Port			B	**898N–46PS–N8**
8 Port			C	**898N–48PS–N10**
Device Patchcords (Straight to Straight)				**889N–F4AFNU–*F**
Main Cordset (Straight to Conductor)				**889N–F§AF–‡**

* Replace symbol with 3 (3 ft), 6 (6 ft), 12 (12 ft), or 20 (20 ft) for standard cable lengths.
‡ Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
§ Replace symbol with the number of pins in the main connection.

Terminal Chambers, Mini Style

Screw Type, Field Attachable Connector

Mini Style

3-Pin Mini Female Terminal Chamber

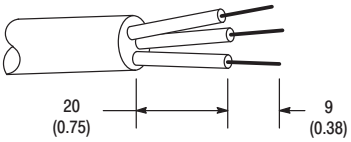
Specifications

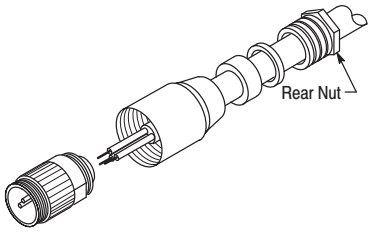
Mechanical	
Coupling Nut	Black anodized aluminum
Connector Shell Material	PBT
Contacts	Gold-plated brass
Wire Size, Max.	16 AWG (1.5 mm^2)
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–40…+85° (–40…+185°)

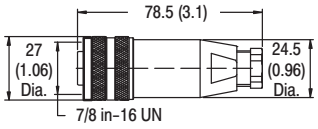
Features

- Field installable
- Screw terminals provide simple and secure installation
- Allows easy modification of existing cable installations

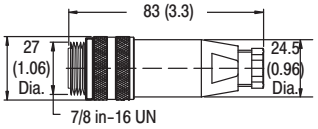
Dimensions—mm (in)



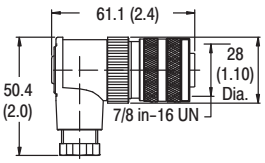




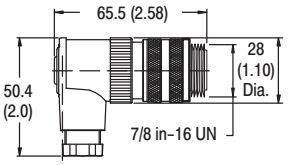
Straight
Internal Thread



Straight
External Thread



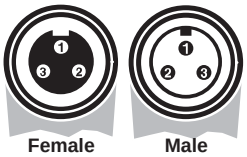
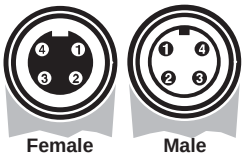
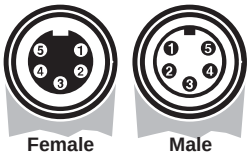
Right Angle
Internal Thread



Right Angle
External Thread

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

Face View Pinout		
3-Pin	4-Pin	5-Pin
 Female Male	 Female Male	 Female Male

Product Selection

Terminal Chambers

Pin Count	Cable Jacket Diameter—mm (in)	Assembly Raiting	Rear Nut Thread Size	Cat. No.		
				Straight Female Internal Threads	Straight Male Internal Threads	Straight Male External Threads
3-Pin	6.0…8.0 (0.24…0.32)	250V, 12 A	PG9	871A–TS3–N2 ➢	871A–TS3–NU2 ➢	871A–TS3–NM2 ➢
	10.0…12.0 (0.39…0.47)		PG13.5	871A–TS3–N1	871A–TS3–NU1	871A–TS3–NM1
4-Pin	6.0…8.0 (0.24…0.32)	250V, 9 A	PG9	871A–TS4–N1 ➢	871A–TS4–NU1 ➢	871A–TS4–NM1 ➢
	10.0…12.0 (0.39…0.47)		PG13.5	871A–TS4–N2	871A–TS4–NU2	871A–TS4–NM2
	12.0…14.0 (0.47…0.55)		PG16	871A–TS4–N3	871A–TS4–NU3	871A–TS4–NM3
5-Pin	6.0…8.0 (0.24…0.32)		PG9	871A–TS5–N1 ➢	871A–TS5–NU1 ➢	871A–TS5–NM1 ➢
	10.0…12.0 (0.39…0.47)		PG13.5	871A–TS5–N2	871A–TS5–NU2	871A–TS5–NM2
	12.0…14.0 (0.47…0.55)		PG16	871A–TS5–N3	871A–TS5–NU3	871A–TS5–NM3

➢ Available in Right Angle. Replace ”S” with ”R” (i.e. **871A–TR3–N2**)

Note: Stainless steel coupling nuts available. Add ”S” to Cat. No. (i.e. **871AS–TS3–N2**)

Bulkhead Pass-thru, Mini Style

Mini Style

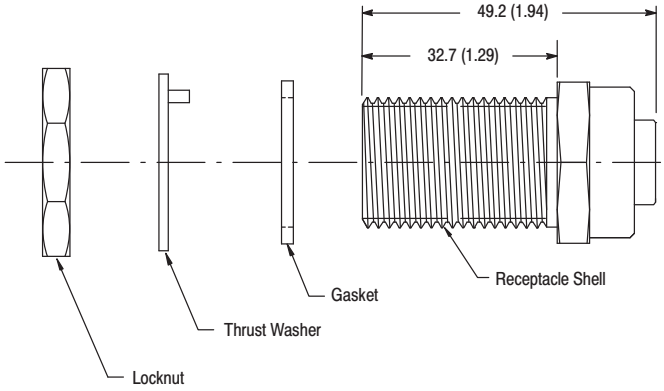
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Nickel-plated brass
Lock Nut	Nickel-plated brass
Contacts	Gold-plated palladium/nickel
Gasket	Neoprene
Thrust Washer	Nylon
Connector Insert Material	PVC
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Features

- Male to female bulkhead passthru provides flexibility in thru-panel installations
- 3- through 6-pin mini versions for use in multiple applications with standard wiring or DeviceNet implementations

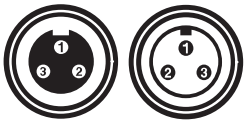
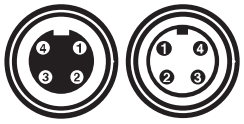
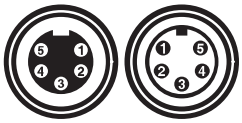
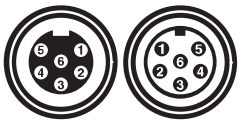
Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

Face View Pinout

3-Pin	4-Pin	5-Pin	6-Pin
 Female Male	 Female Male	 Female Male	 Female Male

Product Selection

Bulkhead Pass-thru

Pin Count	Assembly Rating	Cat. No.
3-Pin	600V 13 A	**889A–CXN3–M3**
4-Pin	600V 10 A	**889A–CXN4–M4**
5-Pin	600V 8 A	**1485A–CXN5–M5**
6-Pin	600V 8 A	**889A–CXN6–M6**

Note: Stainless steel versions may be ordered by adding an “S” to the Cat. No. (i.e. **889AS–CXN4–M4**).

Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments.

Featuring PVC overmolded connectors and heavy duty STOOW–A cable, Allen-Bradley mini-plus cordsets and patchcords provide secure connection for devices using up to 12 pins. Connectors can be straight or right-angled and are physically keyed to prevent wiring mishaps. For bulkhead or panel installation, Rockwell Automation/Allen-Bradley also offers mini-plus receptacles. All mini-plus connection options are UL recognized and CSA certified.

Rockwell Automation is continually expanding its connection system offerings. If our standard catalog does not contain the item that you need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Cordset

889N — F 9 A F — 5
a b c d e

a

Code	Connector Type
F	Striaght Female (Internal Threads)
R	Right Angle Female (Internal Threads)
U	Straight Male (Internal Threads)
V	Right Angle Male (Internal Threads)

b

Code	Number of Pins
7, 8, 9, 10, 12	Number of Pins

c

Code	Jacket Material
A	PVC Cable

d

Code	Wire Gauge
C	22 AWG (9) 22 AWG/(3)18 AWG
E	18 AWG
F	16 AWG
G	5/18 & 2/20 AWG Twisted/Shielded

e

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Patchcord

889N – F 7 A F N U – 2
a b c d e f g

a

Code	Connector Type
F	Striaght Female (Internal Threads)
R	Right Angle Female (Internal Threads)

b

Code	Number of Pins
7, 8, 9, 10, 12	Number of Pins

c

Code	Jacket Material
A	PVC Cable

d

Code	Wire Gauge
C	22 AWG (9)22 AWG/(3)18 AWG
E	18 AWG
F	16 AWG
G	5/18 & 2/20 AWG Twisted/Shielded

e

Code	Male End Connectror Style
N	Mini QD

f

Code	Male End Connector Type
U	Straight Male (Internal Threads)
V	Right–Angle Male (Internal Threads)

g

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Receptacles

888N — F 7 A F I — 1F
a b c d e f

a

Code	Connector Type
F	Striaght Female (External Threads)
M	Striaght Male (External Threads)

b

Code	Number of Pins
7, 8, 9, 10, 12	Number of Pins

c

Code	Wire Type
A	PVC

d

Code	Wire Gauge
E	18 AWG
F	16 AWG

e

Code	Mounting Threads
1	1/2 in 14 NPT

f

Code	Cable Length
F	Feet (1F5 = 1.5 ft)

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Cordsets & Patchcords, Mini-Plus Style

16 AWG or 18 AWG

Mini-Plus Style

8-Pin Mini-Plus Cordset

8-Pin Mini-Plus Straight to Straight Patchcord

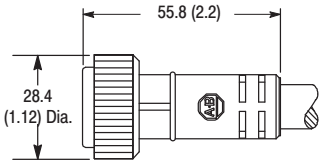
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Anodized Aluminum with clear sealant, 16 AWG Epoxy-coated zinc, 18 AWG
Material	Molded oil-resistant PVC
Contacts	Gold-plated machined brass
Cable	Oil-resistant yellow PVC jacket, 16AWG stranded copper, 600V; UL recognized and CSA certified, STOOW
Bend Radius	10x diameter
Cable Diameter	7/c = 14mm (0.55in) 8/c = 15mm (0.59in)
Electrical	
Cable Rating	16 AWG: UL STOOW 105C 600V, CSA ST 105C FT2 18 AWG: UL AWM style 2517 or 2661 105C 300V, CSA AWM A/B I/II 105C 300V FT1
Assembly Rating	16 AWG: 600V, 7 A; 18 AWG: 300V, 3 A
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–40…+105° (–40…+221°)

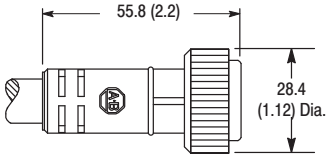
Features

- Heavy duty STOOW 16 AWG cable
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- One-piece molded body design

Dimensions—mm (in)

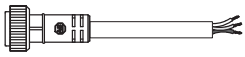


Straight Female

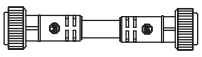


Straight Male

Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset



Example of Patchcord

Mating Components & Accessories

Description	Cat. No.	Page
Coupling Adaptor	**889A–N2ADPT**	3–144

Pinout and Color Code

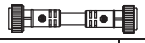
Color Code	Face View Pinout			
	7-Pin		8-Pin	
	 Female	 Male	 Female	 Male
A	1 White/Black Tr 2 Black 3 White 4 Red	5 Orange 6 Blue 7 Green	1 Orange 2 Blue 3 White/Black Tr 4 Black	5 White 6 Red 7 Green 8 Red/Black Tr
B	1 Black 2 White 3 Blue 4 Brown	5 Grey ❶ 6 Yellow ❶ 7 Green	1 Red 2 Whtie 3 Blue 4 Brown	5 Grey 6 Yellow 7 Green 8 Pink

❶ 20 AWG conductors

Product Selection

Cordsets 

Pin Count	Assembly Rating	Color Code	Cat. No.	
			Straight Female	Straight Male
7-Pin	16 AWG 600V 7 A	A	889N–F7AF–*	889N–U7AF–*
	(5) 18 AWG/(2) 20 AWG 300V 3 A	B	889N–F7AG–*	—
8-Pin	16 AWG 600V 7 A	A	889N–F8AF–*	889N–U8AF–*
	18 AWG 300V 3 A	B	889N–F8AE–*	—

Patchcords 

Pin Count	Assembly Rating	Color Code	Cat. No.
			Straight Female Straight Male
7-Pin	16 AWG, 600V 7 A	A	889N–F7AFNU–§
8-Pin			889N–F8AFNU–§

* Replace symbol with 2 (2 m (6.5 ft)), 5 (5 m (16.4 ft)), or 10 (10 m (32.8 ft)) for standard cable lengths.
§ Replace symbol with 1 (1m (3.3ft), 2 (2 m (6.5 ft)), 3 (3m (9.8ft)), 5 (5 m (16.4 ft)) or 10 (10 m (32.8 ft)) for standard cable lengths.

Mini-Plus Style

10-Pin Mini-Plus Cordset

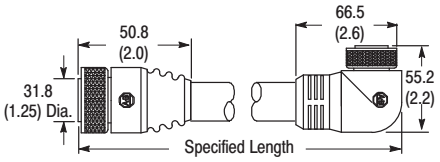
Features

- Heavy duty STOOW 16 AWG cable
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- One-piece molded body design

Specifications

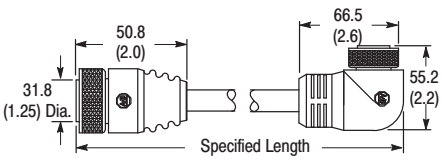
Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Anodized Aluminum with clear sealant
Material	Molded oil-resistant PVC
Contacts	Gold-plated machined brass
Cable	Oil-resistant yellow PVC jacket, 16 AWG stranded copper, 600V; UL recognized and CSA certified, STOOW
Bend Radius	10x diameter
Cable Diameter	16 AWG 9/c = 17 mm (0.67 in) 16 AWG 10/c = 17 mm (0.67 in) 16 AWG 12/c = 18 mm (0.71 in) 18/22 AWG 12/c = 9 mm (0.36 in)
Electrical	
Cable Rating	16 AWG: UL STOOW 105C 600V, CSA ST 105C FT2 18/22 AWG: UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 105C 300V FT4
Assembly Rating	16 AWG: 600V, 7 A; 18/22 AWG: 300V, 3 A
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–40…+105° (–40…+221°)

Dimensions—mm (in)



16 AWG Straight Internal Thread

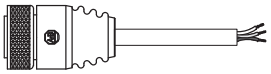
16 AWG Right Angle Internal Thread



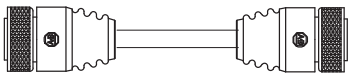
18 AWG Straight Internal Thread

18 AWG Right Angle Internal Thread

Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset

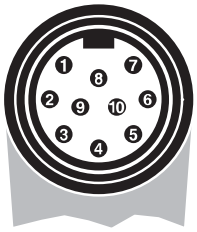


Example of Patchcord

Mating Components & Accessories

Description	Cat. No.	Page
Coupling Adaptor	**889A–N3ADPT**	3–144

Pinout and Color Code

Color Code	Face View Pinout					
	9-Pin		10-Pin		12-Pin	
	 Female	 Male	 Female	 Male	 Female	 Male
A	1 Orange 2 Blue 3 Red/Black Tr 4 Green/Black Tr 5 White	6 Red 7 Green 8 White/Black Tr 9 Black	1 Orange 2 Blue 3 White/Black Tr 4 Red/Black Tr 5 Green/Black Tr	6 Orange/Black Tr 7 Red 8 Green 9 Black 10 White	1 Orange 2 Blue 3 WhiteBlack Tr 4 Red/Black Tr 5 Green/Black Tr 6 Orange/Black Tr	7 Blue/Black Tr 8 Black/White Tr 9 Green 10 Red 11 White 12 Black
B	—		—		1 White 2 Green 3 Yellow 4 Grey 5 Rose 6 Red	7 Black 8 Violet 9 Green/Yellow ❶ 10 Orange 11 Blue ❶ 12 Brown ❶

❶ 18 AWG conductors

Product Selection

Cordsets

Pin Count	Assembly Rating	Color Code	Cat. No.	
			Straight Female	Straight Male
9-Pin	16 AWG, 600V, 7 A	A	889N–F9AF–*	889N–U9AF–*
10-Pin	16 AWG, 600V, 7 A		889N–F10AF–*	889N–U10AF–*
12-Pin	16 AWG, 600V, 7 A		889N–F12AF–*	889N–U12AF–*
	(3) 18 AWG/(9) 22 AWG, 300V, 3 A	B	889N–F12AC–*	—

Patchcords

Pin Count	Assembly Rating	Cat. No.	
		Straight Female Straight Male	Straight Female Right Angle Male
9-Pin	16 AWG, 600V, 7 A	889N–F9AFNU–‡	—
10-Pin	16 AWG, 600V, 7 A	889N–F10AFNU–‡	889N–F10AFNV–‡
10-Pin	(3) 18 AWG/(9) 22 AWG, 300V, 3 A	889N–F10ACNU–‡	889N–F10ACNV–‡
12-Pin	16 AWG, 600V, 7 A	889N–F12AFNU–‡	889N–F12AFNV–‡
12-Pin	(3) 18 AWG/(9) 22 AWG, 300V, 3 A	889N–F12ACNU–‡	889N–F12ACNV–‡
Thread adaptor to couple standard internally threaded ends.		889A–N3ADPT	889A–N3ADPT

* Replace symbol with 2 (2 m (6.5 ft)), 5 (5 m (16.4 ft)), or 10 (10 m (32.8 ft)) for standard cable lengths.
‡ Replace symbol with 1 (1 m), 2 (2 m), 3 (3 m), 5 (5 m), or 10 (10 m) for standard cable lengths.

Receptacles, Mini-Plus Style

16 AWG, PVC, 7- & 8-Pin

Mini-Plus Style

7-Pin Mini-Plus Female Receptacle

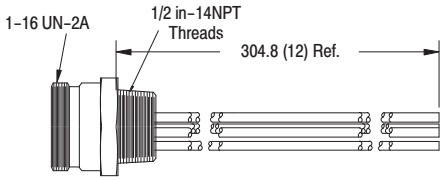
Features

- 16 AWG conductors
- Female bulkhead receptacles
- 3-, 4-, 5- or 6-pin configuration
- 1/2 in 14 NPT threads

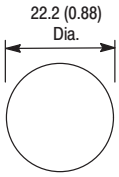
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Receptacle Shell Material	Machined anodized aluminum with clear sealant
Connector Insert	PVC
Contacts	Gold-plated machined brass
Insulation	Oil-resistant PVC, 16 AWG stranded copper, 600V; UL recognized and CSA certified
Electrical	
Assembly Rating	16 AWG: 600V AC/DC, 7 A; 18 AWG: 300V AC/DC, 4.9 A
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–30…+105° (–22…+221°)

Dimensions—mm (in)



Straight Female



Typical Knockout

Dimensions are approximate. Illustrations are not drawn to scale.

Mating Components & Accessories

Description	Cat. No.
1/2 in–14 NPT Mounting Nut★	**889A–U1NUT–10**
1/2 in–14 NPT Flat Sealing Washer★	**889A–U1FSL–10**

★ Sold in bags of 10.

Pinout and Color Code

Color Code	Face View Pinout			
	7-Pin		8-Pin	
				
	Female	Male	Female	Male
A	1 White/Black Tr 2 Black 3 White 4 Red	5 Orange 6 Blue 7 Green	1 Orange 2 Blue 3 White/Black Tr 4 Black	5 White 6 Red 7 Green 8 Red/Black Tr

Product Selection

16 AWG Receptacles

Pin Count	Assembly Rating	Color Code	Thread Size	Cat. No.	
				Straight Female External Threads	Straight Male External Threads
7–Pin	600V AC/DC, 7 A	A	1/2 in 14 NPT	888N–F7AF1–*F	888N–M7AF1–*F
8–Pin				888N–F8AF1–*F	888N–M8AF1–*F

18 AWG Receptacles

Pin Count	Assembly Rating	Color Code	Thread Size	Cat. No.	
				Straight Female External Threads	Straight Male External Threads
7–Pin	300V AC/DC, 4.9 A	A	1/2 in 14 NPT	888N–F7AE1–*F	888N–M7AE1–*F
8–Pin				888N–F8AE1–*F	888N–M8AE1–*F

* Replace symbol with 1 (1 ft) or 3 (3 ft) for standard cable lengths.

Receptacles, Mini-Plus Style

16 AWG, PVC, 9-, 10- & 12-Pin

Mini-Plus Style

12-Pin Mini-Plus Male Receptacle

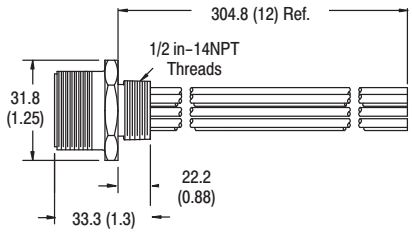
Features

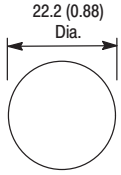
- 16 AWG conductors
- Female bulkhead receptacles
- 3-, 4-, 5- or 6-pin configuration
- 1/2 in–14NPT threads

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Receptacle Shell Material	Machined anodized aluminum with clear sealant
Connector Insert	PVC
Contacts	Gold-plated machined brass
Insulation	Oil-resistant PVC, 16 AWG stranded copper, 600V; UL recognized and CSA certified
Electrical	
Assembly Rating	9-pin: 16 AWG, 600V, 7 A; 18 AWG, 300V, 4.9 A 10-pin: 16 AWG, 600V, 7 A; 18 AWG, 300V, 4.9 A 12-pin: 16 AWG, 600V, 5 A; 18 AWG, 300V, 3.5 A
Environmental	
Enclosure Type Rating	NEMA 4, 6P, 12, 13; IP 67; 1200 psi washdown
Operating Temperature—C (F)	–30…+105° (–22…+221°)

Dimensions—mm (in)





Typical Knockout

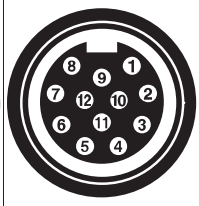
Dimensions are approximate. Illustrations are not drawn to scale.

Mating Components & Accessories

Description	Cat. No.
1/2 in–14 NPT Mounting Nut★	**889A–U1NUT–10**
1/2 in–14 NPT Flat Sealing Washer★	**889A–U1FSL–10**

★ Sold in bags of 10.

Pinout and Color Code

Color Code	Face View Pinout					
	9-Pin		10-Pin		12-Pin	
	 Female	 Male	 Female	 Male	 Female	 Male
A	1 Orange 2 Blue 3 Red/Black Tr 4 Green/Black Tr 5 White	6 Red 7 Green 8 White/Black Tr 9 Black	1 Orange 2 Blue 3 White/Black Tr 4 Red/Black Tr 5 Green/Black Tr	6 Orange/Black Tr 7 Red 8 Green 9 Black 10 White	1 Orange 2 Blue 3 White/Black Tr 4 Red/Black Tr 5 Green/Black Tr 6 Orange/Black Tr	7 Blue/Black Tr 8 Black/White Tr 9 Green 10 Red 11 White 12 Black

Product Selection

16 AWG Receptacles

Pin Count	Assembly Rating	Color Code	Thread Size	Cat. No.	
				Straight Female External Threads	Straight Male External Threads
9–Pin	600V, 7 A	A	1/2 in 14 NPT	888N–F9AF1–*F	888N–M9AF1–*F
10–Pin				888N–F10AF1–*F	888N–M10AF1–*F
12–Pin	600V, 5 A			888N–F12AF1–*F	888N–M12AF1–*F

18 AWG Receptacles

Pin Count	Assembly Rating	Color Code	Thread Size	Cat. No.	
				Straight Female External Threads	Straight Male External Threads
9–Pin	300V, 4.9 A	A	1/2 in 14 NPT	888N–F9AE1–*F	888N–M9AE1–*F
10–Pin				888N–F10AE1–*F	888N–M10AE1–*F
12–Pin	300V, 3.5 A			888N–F12AE1–*F	888N–M12AE1–*F

* Replace symbol with 1 (1 ft) or 3 (3 ft) for standard cable lengths.

Notes

Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments.

Featuring industry standard 4- or 5-pin overmolded connectors, Allen-Bradley DC micro quick-disconnect cables provide secure connection for proximity sensors, limit switches, photoelectric sensors and other field devices. Connectors can be straight or right–angled and are physically keyed to prevent wiring mishaps. Allen-Bradley DC micro style cabling options include:

- Cordsets: Cable with integral male or female connector at one end and flying leads at the other
- Patchcords: Cable with integral connector at each end (one male, one female)
- Y-cables: A single cable with male connector that splits into two female connectors, allowing connection of two devices to a single I/O port

Available with straight or right angle connectors, Allen-Bradley micro quick-disconnect cordsets, patchcords and V-cables feature a choice of jacket colors and materials for a variety of applications and environments. Some models include braided shielding for noise reduction and LEDs for power and output status indication.

For bulkhead or panel installation, Allen-Bradley DC micro receptacles are also offered. These 3- or 4-wire die-cast connectors, available in male or female versions, are UL recognized and CSA certified. Ideal for use in enclosures, DC micro receptacles also allow for custom wiring configurations.

Allen-Bradley passive distribution boxes interface multiple devices to a control system through a single cable or quick-disconnect pigtail. Each distribution box features internal-thread female receptacles (4, 6 or 8, depending on model) for quick and easy connection with quick-disconnect mating plugs. LED versions are available for use with PNP (sourcing) inputs.

Available in male and female versions, terminal chambers or field attachable connectors are passive field-installable connectors for use with raw cable. Allen-Bradley 4- and 5-pin DC micro style terminal chambers contain screw terminals or insulation displacement connectors for quick and easy assembly of custom QD cables on the plant floor. Terminal chambers can be straight or right-angled and are available for various cable diameters.

Rockwell Automation is continually expanding its connection system offerings. If our standard catalog does not contain the item that you need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Cordset

889D S — F 4 A C — _ 10
a b c d e f g

b

Code	Connector Type
A	Straight Female, LED—NPN
B	Straight Female, LED—PNP
E	Right Angle Male (External Threads)
F	Straight Female (Internal Threads)
M	Straight Male (External Threads)
N	Right Angle Female, LED—NPN
P	Right Angle Female, LED—PNP
R	Right Angle Female (Internal Threads)

c

Code	Number of Pins
3–5, 8	Number of Pins

d

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded
B	PVC Cable, Black, Unshielded
E	PVC Cable, Yellow, Braided Shield
F	PVC Cable, Yellow, Foil Shield
H	TPE or Toughlink Cable, Unshielded
L	PVC Cable, Blue, Unshielded
U	PUR Cable, Yellow, Unshielded
W	ToughWeld Cable, Unshielded

e

Code	Wire Gauge
C	22 AWG
D	20 AWG
E	18 AWG
J	18 AWG, Flex

f

Code	Special Characteristics
Blank	Standard Wiring
Q	Quadroplex Wiring
K	KwikLink Aux. Power Wiring
C	Coiled Cable

g

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

a

Code	Coupling Nut Material
Blank	Standard Coupling Nut (Epoxy-Coated Zinc)
N	Nickel-Plated Brass
S	Stainless Steel

Patchcord

889D S – F 4 A C D M — _ 2
a b c d e f g h i

b

Code	Connector Type
F	Straight Female (Internal Threads)
R	Right Angle Female (Internal Threads)

c

Code	Number of Pins
3–5,8	Number of Pins

d

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded
B	PVC Cable, Black, Unshielded
E	PVC Cable, Yellow, Braided Shield
F	PVC Cable, Yellow, Foil Shield
H	TPE or Toughlink Cable, Unshielded
L	PVC Cable, Blue, Unshielded
U	PUR Cable, Yellow, Unshielded
W	ToughWeld Cable, Unshielded

e

Code	Wire Gauge
C	22 AWG
D	20 AWG
E	18 AWG
J	18 AWG, Flex

f

Code	Male End Connector Style
D	DC Micro QD

g

Code	Male End Connector Type
E	Right Angle Male (External Threads)
M	Straight Male (External Threads)

h

Code	Special Characteristics
Blank	Standard Wiring
K	KwikLink Aux. Power Wiring
J	Drain Connected to Pin 5
Q	Quadroplex Wiring
V	Pin 2 to Pin 4 Wiring

i

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Receptacles

888D — F 4 A C 1 — 0M3
b c d e f h

a

Code	Connector Type
F	Female (Internal Threads)
M	Male (External Threads)

b

Code	Number of Pins
3–5, 8	Number of Pins

c

Code	Wire Type
A	PVC

d

Code	Wire Gauge
C	22 AWG
E	18 AWG

e

Code	Mounting Threads
1	1/2 in 14 NPT
2	1/4 in 18 NPT
3	PG9
5	Rear Mount
6	M14 x 1

f

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Distribution Box

898D — P 5 4 P T — B5
b c d e f g

a

Code	Illuminated
Blank	No LEDs
N	NPN LEDs
P	PNP LEDs

b

Code	Number of Pins on Connectors
5	Number of Pins

c

Code	Ports
4,6,8	Number of ports

d

Code	Wiring Configuration
D	Parallel—2 Inputs/Port
P	Parallel—1 Input/Port

e

Code	Port Orientation
T	Ports on Top of Box

f

Code	Main Connector Style
B5	5 m Black PUR/PVC Cable
B10	10 m Black PUR/PVC Cable
N7	8-pin Mini-Plus Connector
N9	9-pin Mini-Plus Connector
N12	12-pin Mini Plus Connector
T	Terminal Block Connector
M12	12-pin M23 Connector
M19	19-pin M23 Connector

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Cordsets & Patchcords, DC Micro Style

18 and 22 AWG, Yellow, Black, or Blue PVC

DC Micro Style

4-Pin DC Micro Cordset

Features

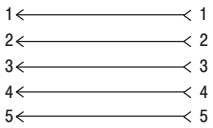
- Ratcheting coupling nut
- Subtle black or highly visible yellow PVC jacket offers good oil and chemical resistance
- Blue jacket models for intrinsically safe applications
- "–Q" models specifically wired for Quadroplex applications.
- "–V" models allow wiring of devices using pin 2 for output into standard single-point distribution boxes and IP 67 I/O

Specifications

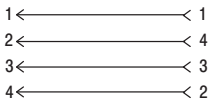
Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Material	Molded oil-resistant PUR
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant PVC jacket, 18AWG or 22AWG conductors, 300V, UL recognized and CSA certified
Bend Radius	10x diameter
Cable Diameter	2/c = 5 mm (0.21 in) 3/c = 5 mm (0.21 in) 4/c = 5 mm (0.21 in) 5/c = 6.5 mm (0.25 in) 4/c (18AWG) = 6.5 mm (0.25 in)
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Wiring Diagrams

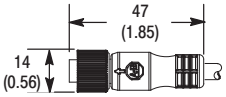
Standard Models



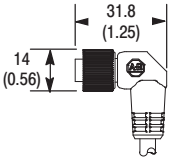
889D–*4ACD*–V* Models



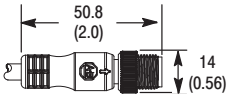
Dimensions—mm (in)



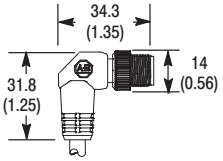
Straight Female



Right Angle Female

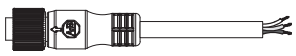


Straight Male



Right Angle Male

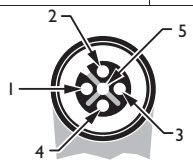
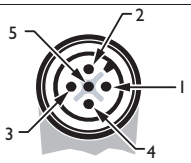
Dimensions are approximate. Illustrations are not drawn to scale.



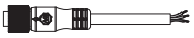
Example of Cordset

Example of Patchcord

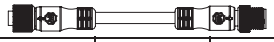
Pinout and Color Code

Color Code	Face View Pinout							
	2–Pin		3–Pin		4–Pin		5–Pin	
			 Female		 Male			
A	1 NA 2 NA 3 Brown	4 Blue 5 NA	1 Brown 2 NA 3 Blue	4 Black 5 NA	1 Brown 2 White 3 Blue	4 Black 5 NA	1 Brown 2 White 3 Blue	4 Black 5 Grey
B	1 Brown 2 NA 3 NA	4 Blue 5 NA	—		—		—	

Product Selection

Cordsets 

Pin Count	Color Code	Jacket Color	Wire Gauge	Cat. No.			
				Straight Female	Right Angle Female	Straight Male	Right Angle Male
2-Pin	A	Yellow	22 AWG	889D–F2AC–*	889D–R2AC–*	889D–M2AC–*	889D–E2AC–*
	B	Black		889D–F2BC–Q*	889D–R2BC–Q*	—	—
3-Pin	A	Yellow		889D–F3AC–*	889D–R3AC–*	889D–M3AC–*	889D–E3AC–*
4-Pin	A	Yellow		889D–F4AC–*	889D–R4AC–*	889D–M4AC–*	889D–E4AC–*
	A	Yellow	18 AWG	889D–F4AE–*	889D–R4AE–*	889D–M4AE–*	889D–E4AE–*
	A	Black	22 AWG	889D–F4BC–*	889D–R4BC–*	889D–M4BC–*	889D–E4BC–*
	A	Blue		889D–F4LC–*	889D–R4LC–*	889D–M4LC–*	889D–E4LC–*
5-Pin	A	Yellow	22 AWG	889D–F5AC–*	889D–R5AC–*	889D–M5AC–*	889D–E5AC–*
	A	Black		889D–F5BC–*	889D–R5BC–*	889D–M5BC–*	889D–E5BC–*

Patchcords 

Pin Count	Color Code	Jacket Color	Wire Gauge	Cat. No.			
				Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
2-Pin	A	Yellow	22 AWG	889D–F2ACDM–‡	889D–F2ACDE–‡	889D–R2ACDM–‡	889D–R2ACDE–‡
	B	Black	22 AWG	889D–F2BCDM–Q‡	889D–F2BCDE–Q‡	889D–R2BCDM–Q‡	889D–R2BCDE–Q‡
3-Pin	A	Yellow	22 AWG	889D–F3ACDM–‡	889D–F3ACDE–‡	889D–R3ACDM–‡	889D–R3ACDE–‡
4-Pin	A	Yellow	22 AWG	889D–F4ACDM–‡	889D–F4ACDE–‡	889D–R4ACDM–‡	889D–R4ACDE–‡
	A★	Yellow	22 AWG	889D–F4ACDM–V‡	889D–F4ACDE–V‡	889D–R4ACDM–V‡	889D–R4ACDE–V‡
	A	Yellow	18 AWG	889D–F4AEDM–‡	889D–F4AEDE–‡	889D–R4AEDM–‡	889D–R4AEDE–‡
	A	Black	22 AWG	889D–F4BCDM–‡	889D–F4BCDE–‡	889D–R4BCDM–‡	889D–R4BCDE–‡
	A	Blue	22 AWG	889D–F4LCDM–‡	889D–F4LCDE–‡	889D–R4LCDM–‡	889D–R4LCDE–‡
5-Pin	A	Yellow	22 AWG	889D–F5ACDM–‡	889D–F5ACDE–‡	889D–R5ACDM–‡	889D–R5ACDE–‡
	A	Yellow	22 AWG	889D–F5BCDM–‡	889D–F5BCDE–‡	889D–R5BCDM–‡	889D–R5BCDE–‡

* Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.
‡ Replace symbol with 0M3 (1 ft), 1 (1 m), 2 (2 m), 5 (5 m) or 10 (10 m) for standard lengths.
★ See Wiring Diagrams.

Note: Stainless steel connectors may be ordered by adding an “S” to the bulletin number (e.g. **889DS–F4AC–***).

Cordsets & Patchcords, DC Micro Style

22 AWG, Yellow PVC Shielded

DC Micro Style

4-Pin DC Micro Cordset

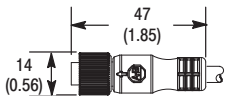
Features

- Ratcheting coupling nut
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Shielding reduces noise in signal transmitted through cable
- Braided models exhibit improved durability and abrasion resistance
- "–J" models provide shield grounding through pin 5 for ease of grounding

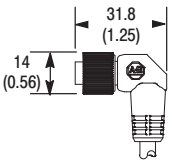
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Material	Molded oil-resistant PUR
Contacts	Gold over nickel-plated brass
Cable	Yellow oil-resistant PVC jacket, 22AWG conductors, 300V, UL recognized and CSA certified
Bend Radius	10x diameter
Cable Diameter	4/c = 5 mm (0.21 in) 5/c = 6.5 mm (0.25 in)
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

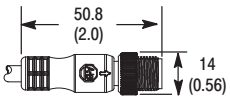
Dimensions—mm (in)



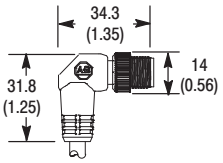
Straight Female



Right Angle Female

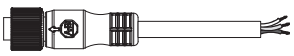


Straight Male

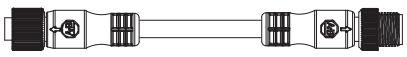


Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.

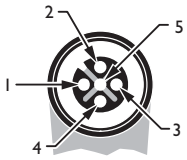
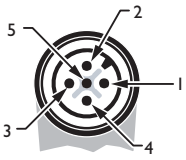


Example of Cordset



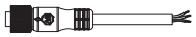
Example of Patchcord

Pinout and Color Code

Color Code	Face View Pinout	
	4-Pin	5-Pin
	 Female	 Male
A	1 Brown 2 White 3 Blue 4 Black 5 NA	1 Brown 2 White 3 Blue 4 Black 5 Grey
B	1 Brown 2 White 3 Blue 4 Black 5 Drain Wire	—

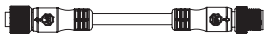
Product Selection

Cordsets



Pin Count	Color Code	Shield	Wire Gauge	Cat. No.			
				Straight Female	Right Angle Female	Straight Male	Right Angle Male
4-Pin	A	Braided Shield	22 AWG	889D–F4EC–*	889D–R4EC–*	889D–M4EC–*	889D–E4EC–*
	A	Foil Shield		889D–F4FC–*	889D–R4FC–*	889D–M4FC–*	889D–E4FC–*
	B			889D–F5FC–J*	889D–R5FC–J*	889D–M5FC–J*	889D–E5FC–J*
5-Pin	A	Braided Shield		889D–F5EC–*	889D–R5EC–*	889D–M5EC–*	889D–E5EC–*

Patchcords



Pin Count	Color Code	Shield	Wire Gauge	Cat. No.			
				Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
4-Pin	A	Braided Shield	22 AWG	889D–F4ECDM–‡	889D–F4ECDE–‡	889D–R4ECDM–‡	889D–R4ECDE–‡
	A	Foil Shield		889D–F4FCDM–‡	889D–F4FCDE–‡	889D–R4FCDM–‡	889D–R4FCDE–‡
	B			889D–F5FCDM–J‡	889D–F5FCDE–J‡	889D–R5FCDM–J‡	889D–R5FCDE–J‡
5-Pin	A	Braided Shield		889D–F5ECDM–‡	889D–F5ECDE–‡	889D–R5ECDM–‡	889D–R5ECDE–‡

* Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.
‡ Replace symbol with 0M3 (1 ft), 1 (1 m), 2 (2 m), 5 (5 m) or 10 (10 m) for standard lengths.

Note: Stainless steel connectors may be ordered by adding an “S” to the bulletin number (e.g. **889DS–F4EC–***).

Cordsets and Patchcords, DC Micro Style

18 AWG & 22 AWG, PUR, TPE, or TPR

DC Micro Style

4-Pin DC Micro Cordset

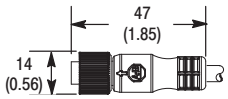
Features

- PUR jacket provides good oil and chemical resistance
- TPE jacket material for good oil, chemical, and weld slag resistance
- 8-pin/7-wire configuration for Sipha safety switches and other applications
- Ratcheting coupling nuts for vibration resistance

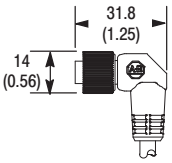
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Material	Molded oil-resistant PUR
Contacts	Gold over nickel-plated brass
Cable	PUR or TPE jacket, 18 & 22 AWG or 24 AWG conductors, 300V; UL recognized and CSA certified
Bend Radius	10x diameter
Cable Diameter	4/c (PUR): 5 mm (0.21 in) 4/c (18 AWG TPE): 7 mm (0.28 in) 4/c (22 AWG TPE): 4.9 mm (0.19 in) 5/c: 6.5 mm (0.25 in) 7/c: 7.4 mm (0.29 in) 8/c: 7.4 mm (0.29 in)
Electrical	
Cable Rating	4 & 5/c (PUR): UL AWM style 20866 VW–1 80C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant 8/c (PUR): UL AWM style 20866 90C 300V, CSA II A 90C 300V TPE: UL AWM style 20327 VW–1 105C 300V, CSA AWM A/B I/II 105C 300V FT1, UV oil and water resistant
Assembly Rating	4- or 5-pin: 250V, 4 A; 8-pin: 300V AC/36V DC, 1.5 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	PUR models: –20…+80° (–4…+176°) TPE models: –20…+105° (–4…+221°) TPR models: –25…+125° (–13…+256°)

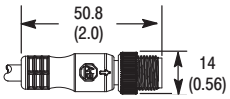
Dimensions—mm (in)



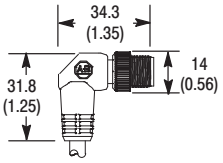
Straight Female



Right Angle Female

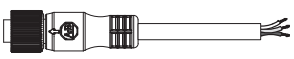


Straight Male

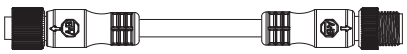


Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.

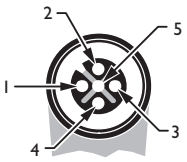
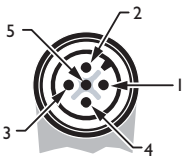
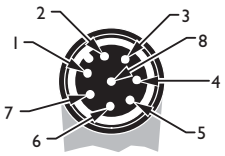
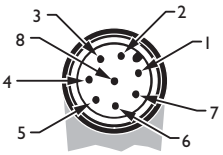


Example of Cordset



Example of Patchcord

Pinout and Color Code

Color Code	Face View Pinout					
	4-Pin		5-Pin		8-Pin	
	 Female		 Male		 Female	 Male
A	1 Brown 2 White 3 Blue	4 Black 5 NA	1 Brown 2 White 3 Blue	4 Black 5 Grey	1 Red 2 Blue 3 Green 4 Yellow	5 Black 6 White 7 N.C. 8 Grey
B	—		—		1 White 2 Brown 3 Green 4 Yellow	5 Grey 6 Pink 7 Blue 8 Red

Product Selection

Cordsets

Pin Count	Cable Type	Assembly Rating	Color Code	Cat. No.			
				Straight Female	Right Angle Female	Straight Male	Right Angle Male
4-Pin	TPE	18 AWG, 250V, 4 A	A	889D–F4HJ–*	889D–R4HJ–*	889D–M4HJ–*	889D–E4HJ–*
	PUR	22 AWG, 250V, 4 A	A	889D–F4HL–*	889D–R4HL–*	889D–M4HL–*	889D–E4HL–*
			A	889D–F4UC–*	889D–R4UC–*	889D–M4UC–*	889D–E4UC–*
5-Pin			A	889D–F5UC–*	889D–R5UC–*	889D–M5UC–*	889D–E5UC–*
8-Pin	TPR	24 AWG 300V AC/ 36V DC 1.5 A	A	889D–F8AC–*	—	—	—
	PUR		B	889D–F8AB–*	889D–R8AB–*	889D–M8AB–*	—

Patchcords

Pin Count	Cable Type	Assembly Rating	Cat. No.			
			Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right–Angle Male
4-Pin	TPE	18 AWG, 250V, 4 A	889D–F4HJDM–‡	889D–F4HJDE–‡	889D–R4HJDM–‡	889D–R4HJDE–‡
	PUR	22 AWG, 250V, 4 A	889D–F4HLDM–‡	889D–F4HLDE–‡	889D–R4HLDM–‡	889D–R4HLDE–‡
			889D–F4UCDM–‡	889D–F4UCDE–‡	889D–R4UCDM–‡	889D–R4UCDE–‡
5-Pin			889D–F5UCDM–‡	889D–F5UCDE–‡	889D–R5UCDM–‡	889D–R5UCDE–‡
8-Pin		24 AWG 300V AC/ 36V DC 1.5 A	889D–F8ABDM–‡	—	—	—

* Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
‡ Replace symbol with 0M3 (1 ft), 1 (1 m), 2 (2 m), 5 (5 m) or 10 (10 m) for standard lengths.

Note: Stainless steel connectors may be ordered by adding an “S” to the bulletin number (e.g. **889DS–F4HJ–***)

Cordsets and Patchcords, DC Micro Style

18 and 22 AWG, ToughLink™ or ToughWeld™

DC Micro Style

4-Pin DC Micro Cordset

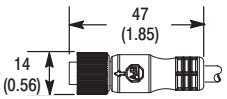
Features

- Ratcheting coupling nut for vibrating resistance
- ToughLink TPE yellow jacket offers excellent oil and chemical resistance
- ToughWeld CPE yellow jacket provides excellent resistance to weld slag
- Heavy duty construction for rugged environments

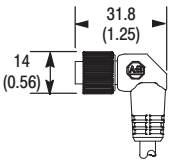
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-coated zinc
Material	Molded oil-resistant santoprene body
Contacts	Gold over nickel-plated brass
Cable	Allen-Bradley ToughLink TPE or ToughWeld CPE yellow jacket, 18 AWG or 22 AWG conductors, 300V; UL recognized and CSA certified
Bend Radius	10x diameter
Cable Diameter	ToughLink: 8 mm (0.32 in); ToughWeld: 9 mm (0.35 in)
Electrical	
Cable Rating	ToughLink: UL AWM style 20328 600V VW–1 105C to –50C water resistant, CSA AWM I/II A/B 105C 600V FT2 ToughWeld: UL –50C SJOOW 90C dry and 60C water resistant, CSA –50C SJOOW 90C FT1
Assembly Rating	250V, 3 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	ToughLink: –40…+105° (–40…+221°) ToughWeld: –20…90° (–4…+194°)

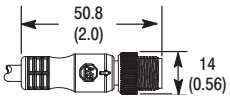
Dimensions—mm (in)



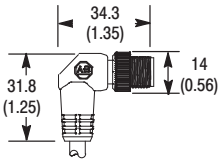
Straight Female



Right Angle Female

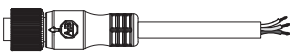


Straight Male

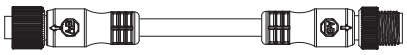


Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.



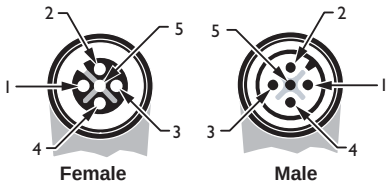
Example of Cordset



Example of Patchcord

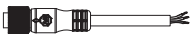
Pinout and Color Code

Color Code	Face View Pinout 4-Pin Female	Male
A	1 Brown 2 White	3 Blue 4 Black



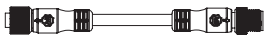
Product Selection

Cordsets



Pin Count	Material	Assembly Rating	Color Code	Cat. No.			
				Straight Female	Right Angle Female	Straight Male	Right Angle Male
4-Pin	ToughLink (TPE)	22 AWG 250V 3 A	A	889D–F4HC–*	889D–R4HC–*	889D–M4HC–*	889D–E4HC–*
	ToughWeld (CPE)	18 AWG 250V 3 A	A	889D–F4WE–*	889D–R4WE–*	—	—

Patchcords



Pin Count	Material	Assembly Rating	Cat. No.			
			Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
4-Pin	ToughLink (TPE)	22 AWG 250V 3 A	889D–F4HCDM–‡	889D–F4HCDE–‡	889D–R4HCDM–‡	889D–R4HCDE–‡
	ToughWeld (CPE)	18 AWG 250V 3 A	889D–F4WEDM–‡	889D–F4WEDE–‡	889D–R4WEDM–‡	—

* Replace symbol with 1 (1 m), 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
‡ Replace symbol with 1 (1 m), 2 (2 m), 3 (3 m), 4 (4 m), 5 (5 m) or 6 (6 m) for standard lengths.

Cordsets and Patchcords, DC Micro Style

20 and 22 AWG, LED or Coiled

DC Micro Style

4-Pin DC Micro Cordset

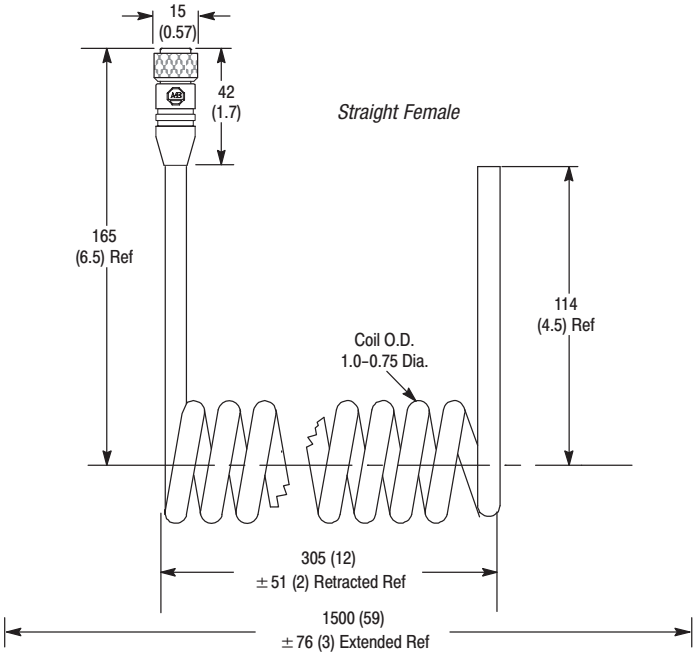
Features

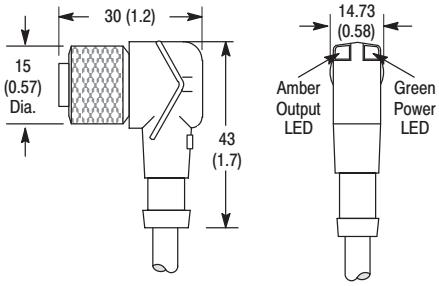
- Coil provides retractable cable for moving applications
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- One-piece molded body design

Specifications

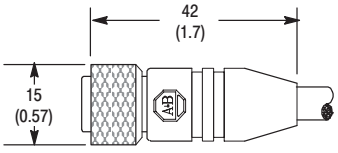
Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-coated zinc
Material	Molded oil-resistant PVC
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant yellow PVC jacket, 20AWG or 22 AWG stranded copper, 300V, UL recognized and CSA certified
Bend Radius	10x diameter
Cable Diameter	LED: 5 mm (0.2 in); Coiled: 7.1 mm (0.28 in)
Electrical	
Cable Rating	LED models: UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Dimensions—mm (in)





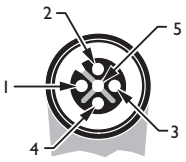
Right Angle Female



Straight Female

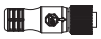
Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

Color Code	Face View Pinout 4-Pin  Female
A	1 Brown 3 Blue 2 Not Used 4 Black
B	1 Brown 3 Blue 2 White 4 Black

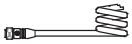
Product Selection

LED Cordsets



Cable				Cat. No.	
Pin Count	Assembly Rating	Color Code	Output Style	Straight Female	Right Angle Female
4-Pin	22 AWG 250V 4 A	A	PNP	889D–B4AC–*	889D–P4AC–*
			NPN	889D–A4AC–*	889D–N4AC–*

Coiled Cordsets



Cable			Cat. No.
Pin Count	Assembly Rating	Color Code	Straight Female
4-Pin	20 AWG 250V 4 A	B	889D–F4AD–C5F

* Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard lengths.

Note: PNP cable used with PNP sensor output.
NPN cable used with NPN sensor output.

Patchcords, DC Micro Style

24 AWG, Pico to Micro, PVC

DC Micro Style

DC Micro to Pico Patchcord

Features

- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Convenient connection from pico to DC micro
- Ratcheting coupling nut for vibration resistance

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	DC Micro: Black Epoxy-Coated Zinc; Pico: Nickel-plated brass
Connector Material	DC Micro: Molded oil-resistant PUR; Pico: Molded oil resistant TPE
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant yellow PVC jacket, 24 AWG conductors, 300V, UL recognized and CSA certified
Cable Diameter	4.3 mm (0.17 in)
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 105C 300V FT1
Assembly Rating	60V AC/75V DC, 3 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Wiring Diagrams

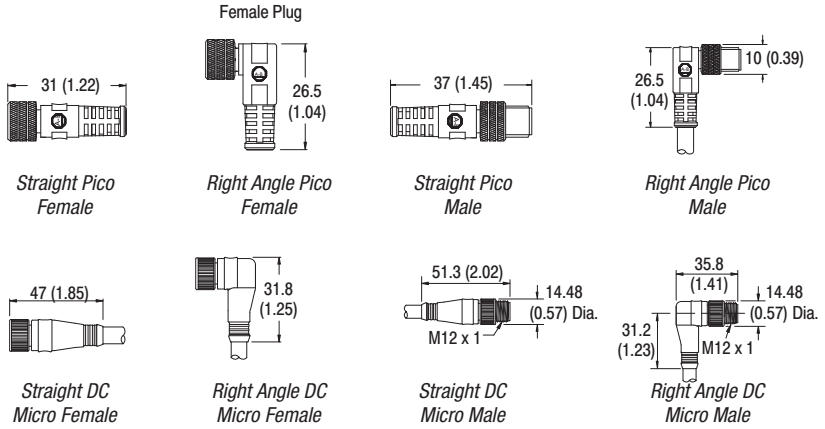
3-Pin Pico — 4-Pin DC Micro

Pin 1> ——— >Pin 1
>Pin 2
Pin 3> ——— >Pin 3
Pin 4> ——— >Pin 4

4-Pin Pico Female — 4-Pin DC Micro Male

Pin 1> ——— >Pin 1
Pin 2> ——— >Pin 2
Pin 3> ——— >Pin 3
Pin 4> ——— >Pin 4

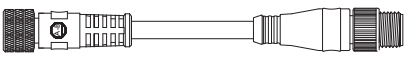
Dimensions—mm (in)



Straight Pico Female | *Right Angle Pico Female* | *Straight Pico Male* | *Right Angle Pico Male*

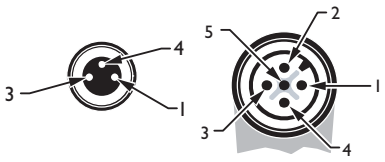
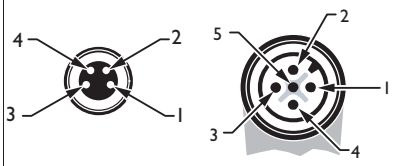
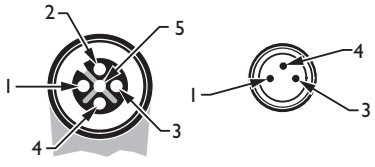
Straight DC Micro Female | *Right Angle DC Micro Female* | *Straight DC Micro Male* | *Right Angle DC Micro Male*

Dimensions are approximate. Illustrations are not drawn to scale.

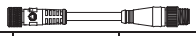


Example of Patchcord

Pinout

Pinout	Face View Pinout		
	A	B	C
			
	Female Male	Female Male	Female Male
	3-Pin Pico Female to 4-Pin DC Micro Male	4-Pin Pico Female to 4-Pin DC Micro Male	4-Pin DC Micro Female to 3-Pin Pico Male

Product Selection

Patchcords 

Style: Female to Male	Pinout	Assembly Rating	Cat. No.			
			Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
3-Pin Pico to 4-Pin Micro	A	24 AWG 60V AC/75V DC 3 A	889P–F3ABDM4–*	889P–F3ABDE4–*	889P–R3ABDM4–*	889P–R3ABDE4–*
4-Pin Pico to 4-Pin Micro	B		889P–F4ABDM–*	889P–F4ABDE–*	—	—
4-Pin Micro to 3-Pin Pico	C		889D–F4ABP3M–*	889D–F4ABP3E–*	889D–R4ABP3M–*	889D–R4ABP3E–*

* Replace symbol with 1 (1m), 2 (2m), 5 (5m) or 10 (10m) for standard cable lengths.

DC Micro Style

Splitter, DC Micro

Features

- Standard wiring models with or without pin 5 designed for use with dual input distribution boxes and IP 67 distributed I/O
- Standard wiring with pin 5 version specifically keyed for MDSA applications
- Individual power wiring version for use with dual input distributed I/O with point-level diagnostics
- Tap-style wiring version used for DeviceNet and micro auxiliary power applications
- PUR body offers good oil and chemical resistance
- Ratcheting coupling nuts for vibration resistance

Specifications

Mechanical	
Coupling Nut Material	Black Epoxy-Coated Zinc
Material	Black PUR
Connector Insert	PUR
Contacts	Gold over nickel-plated brass
O-Ring	Viton®
Electrical	
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Dimensions—mm (in)

Figure A

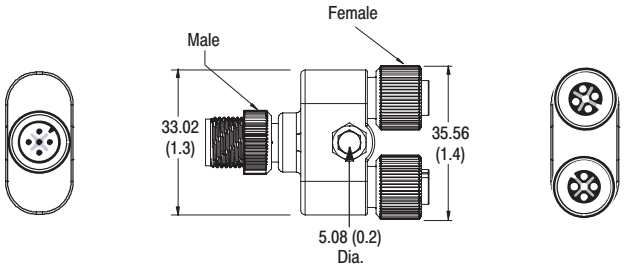


Figure B

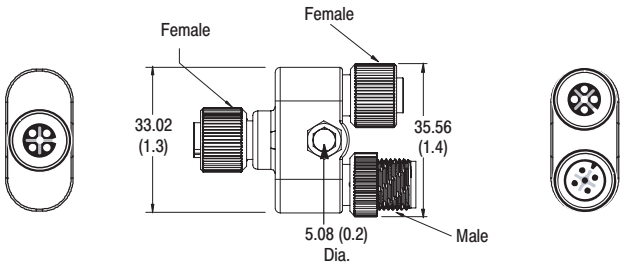
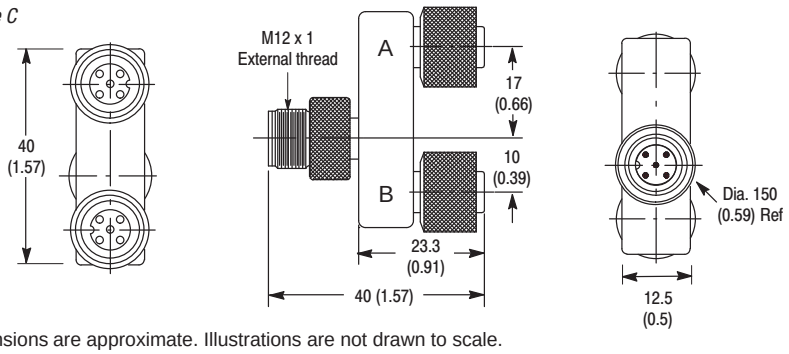


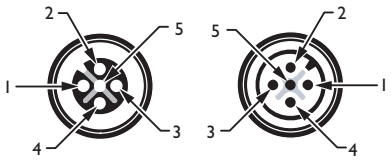
Figure C



Dimensions are approximate. Illustrations are not drawn to scale.

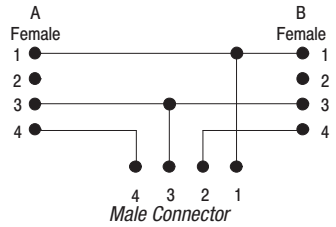
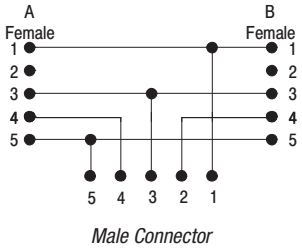
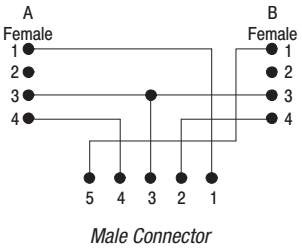
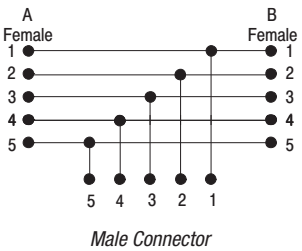
Pinout and Color Code

Color Code	Face View Pinout 4-Pin Female	Male
A	1 Brown 2 White	3 Blue 4 Black



Product Selection

Splitters

Connector	Wiring Diagram	Assembly Rating	Dimensions	Cat. No.
Standard Wiring (without pin 5)		250V 4 A	A	879D–F4DM
Standard Wiring (with pin 5)				879D–F5DM
Standard Wiring (with pin 5) for MDSA		250V 4 A	C	898D–53PY–D5★
Individual Power Wiring		250V 4 A	A	879D–F4D5M
Tap-Style Wiring			A	1485P–RDR5
			B	1485P–DRR5

★ This model comes with nickel-plated brass coupling nuts as standard and is not available in stainless steel version.

Note: Stainless steel connectors may be ordered by adding an "S" to the bulletin number (e.g. **879DS–F4DM–***).

V-Cables, DC Micro Style

22 AWG, Yellow or Black PVC

DC Micro Style

DC Micro V-Cable

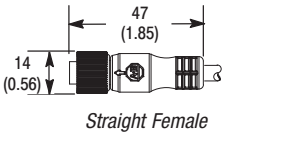
Features

- Space-saving slim design
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Convenient connection of two sensors to one I/O port
- Standard wiring models with or without pin 5 designed for use with dual input distribution boxes and IP 67 distributed I/O
- Individual power wiring version for use with dual input distributed I/O with point-level diagnostics
- Ratcheting coupling nut for vibration resistance

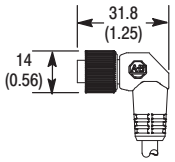
Specifications

Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Connector Insert	Molded oil-resistant PUR
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant PVC jacket, 22 AWG conductors, 300V, UL recognized and CSA certified
Cable Diameter	5 mm (0.21 in)
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

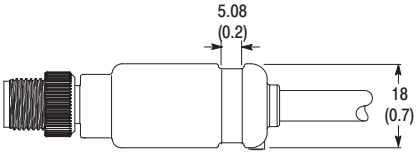
Dimensions—mm (in)

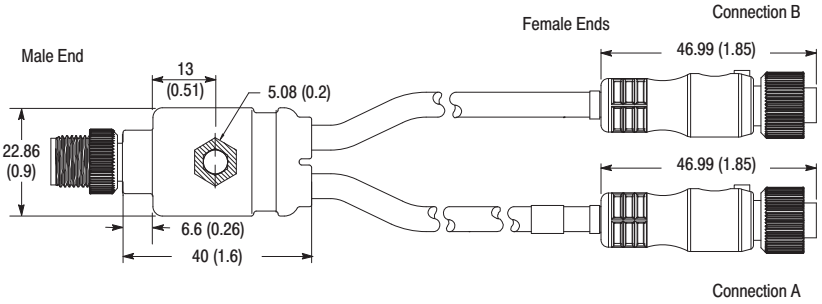


Straight Female



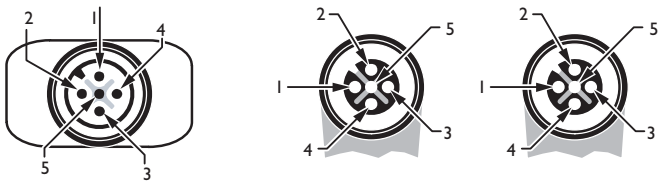
Right Angle Female





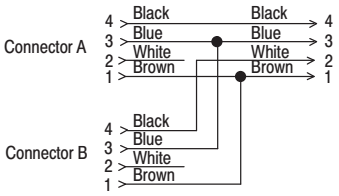
Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

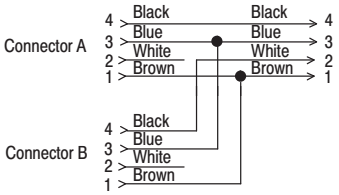
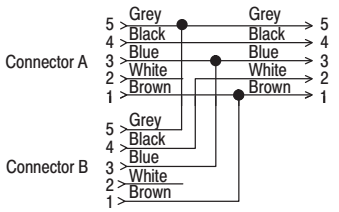
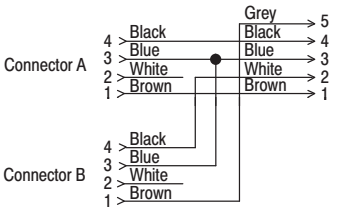
	Face View Pinout
	

Product Selection

V-Cable Cordsets

Type	Wiring Diagram	Jacket Material	Assembly Rating	Cat. No.
3-Pin to 4-Pin				
Standard Wiring		Yellow PVC	250V 4 A	879D–C3ACD4M–*

V-Cables

Type	Wiring Diagram	Jacket Material	Assembly Rating	Cat. No.	
				Straight Female	Right Angle Female
Standard Wiring		Yellow PVC	250V 4 A	879D–F4ACDM–*	879D–R4ACDM–*
		Black PVC		879D–F4BCDM–*	879D–R4BCDM–*
Standard Wiring with Pin 5		Yellow PVC	250V 4 A	879D–F5ACDM–*	879D–R5ACDM–*
		Black PVC		879D–F5BCDM–*	879D–R5BCDM–*
Individual Power Wiring		Yellow PVC	250V 4 A	879D–F4ACD5M–*	879D–R4ACD5M–*
		Black PVC		879D–F4BCD5M–*	879D–R4BCD5M–*

* Replace symbol with 0M3 (0.3 m), 1 (1 m), 2 (2 m) or 5 (5 m) for standard cable lengths.

DC Micro Style

DC Micro V-Cable

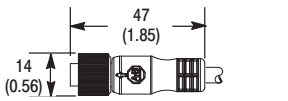
Features

- PUR jacket provides good oil and chemical resistance
- TPE jacket material for good oil, chemical, and weld slag resistance
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Convenient connection of two sensors to 1 I/O port
- Standard wiring models without pin 5 designed for use with dual input distribution boxes and IP 67 distributed I/O
- Individual power wiring version for use with dual input distributed I/O with point-level diagnostics
- Ratcheting coupling nut for vibration resistance

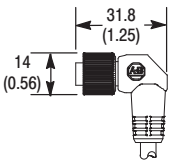
Specifications

Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Connector Insert	Molded oil-resistant PVC
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant yellow PVC or TPE jacket, 18 AWG conductors, 300V, UL recognized and CSA certified
Cable Diameter	PVC: 6.5 mm (0.25 in); TPE: 7 mm (0.28 in)
Electrical	
Cable Rating	PVC: UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant TPE: UL AWM style 20327 VW–1 105C 300V, CSA AWM A/B I/II 105C 300V FT1, UV oil and water resistant
Assembly Rating	250V, 4A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

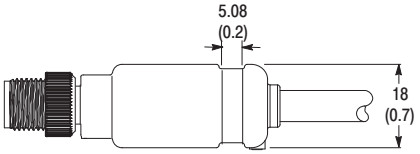
Dimensions—mm (in)

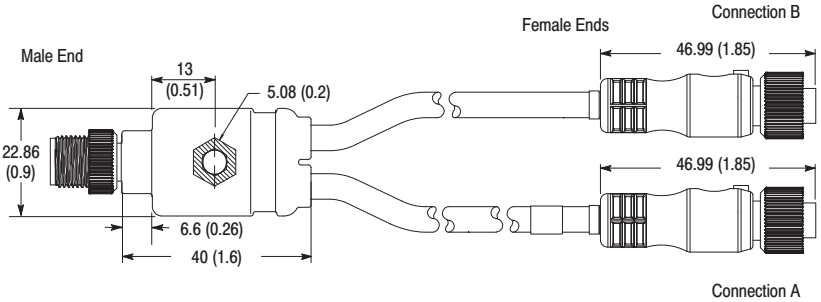


Straight Female



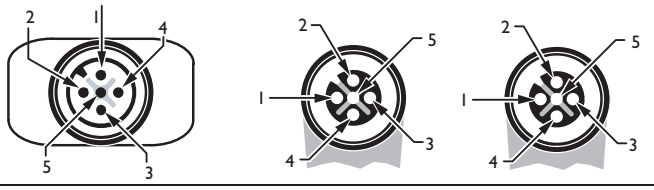
Right Angle Female





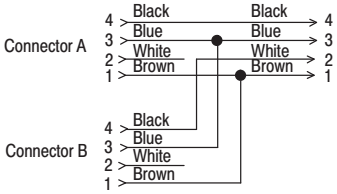
Dimensions are approximate. Illustrations are not drawn to scale.

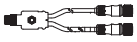
Pinout

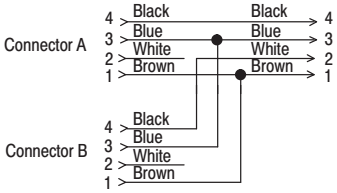
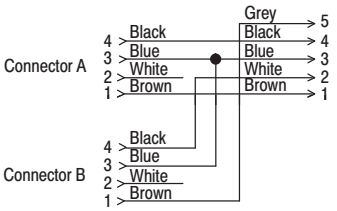
	Face View Pinout
	

Product Selection

V-Cable Cordsets 

Type	Wiring Diagram	Jacket Material	Assembly Rating	Cat. No.
3-Pin to 4-Pin				
Standard Wiring		Yellow PVC	250V, 4 A	879D–C3AED4M–*

V-Cable 

Type	Wiring Diagram	Jacket Material	Assembly Rating	Cat. No.	
				Straight Female	Right Angle Female
Standard Wiring		Yellow PVC	250V, 4 A	879D–F4AEDM–*	879D–R4AEDM–*
		Yellow TPE		879D–F4HJDM–*	879D–R4HJDM–*
Individual Power Wiring		Yellow PVC	250V, 4 A	879D–F4AED5M–*	879D–R4AED5M–*
		Yellow TPE		879D–F4HJD5M–*	879D–R4HJD5M–*

* Replace symbol with 0M3 (0.3 m), 1 (1 m), 2 (2 m) or 5 (5 m) for standard cable lengths.

Receptacles, DC Micro Style

18 & 22 AWG, 1/2 NPT, 1/4 NPT, M14, Rear-Mount, or PG9 Mounting Threads

DC Micro Style

DC Micro Female Receptacle

Features

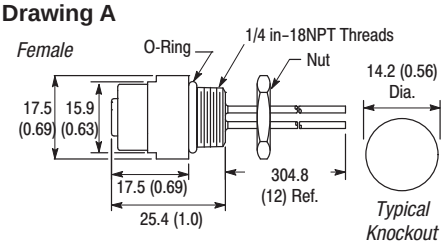
- 22 AWG conductors
- Female and male bulkhead receptacles
- 3-, 4-, 5-, or 8-pin configuration
- 1/4 in, 1/2 in, M14, or PG 9 mounting threads
- Rear mount receptacles available in 3-, 4-, and 5-pin configuration

Specifications

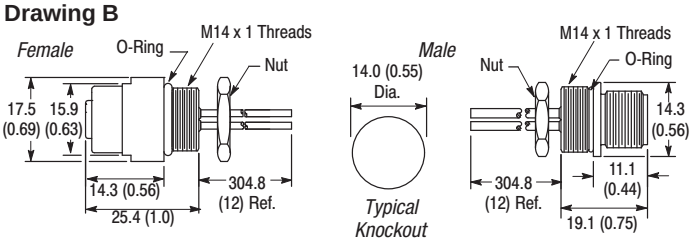
Certifications	UL recognized and CSA certified
Mechanical	
Receptacle Shell Material	Black anodized machined aluminum
Connector Insert	Nylon
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant PVC, 18 AWG or 22AWG stranded copper, 300V, UL recognized and CSA certified
Electrical	
Assembly Rating	250V, 4 A; 8-pin: 300V, 1.5 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Dimensions—mm (in)

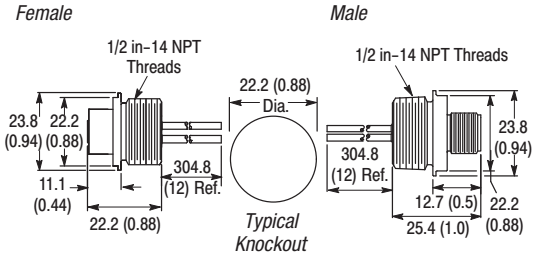
Drawing A



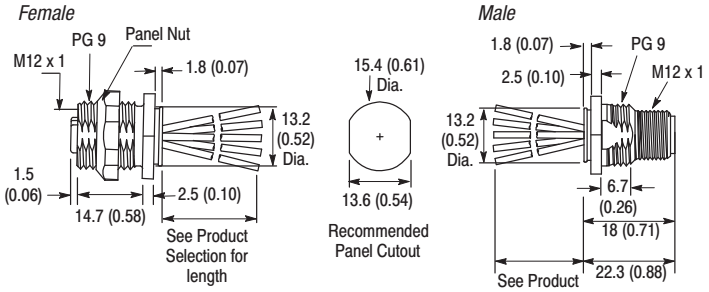
Drawing B



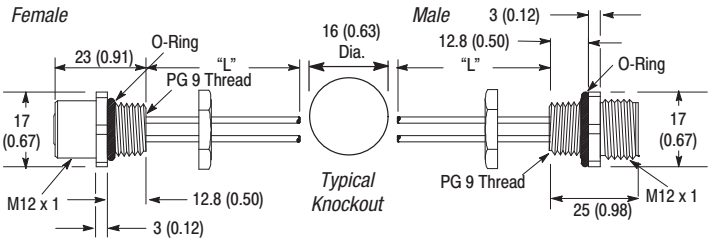
Drawing C



Drawing D



Drawing E



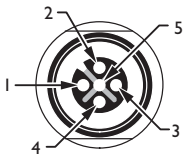
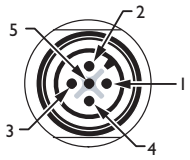
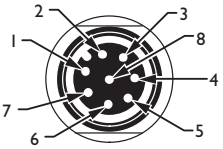
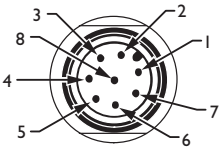
Dimensions are approximate. Illustrations are not drawn to scale.

Mating Components & Accessories

Description	Cat. No.
1/2 in–14 NPT Mounting Nut★	889A–U1NUT–10
1/2 in–14 NPT Flat Sealing Washer★	889A–U1FSL–10

★ Sold in bags of 10.

Pinout and Color Code

Color Code	Face View Pinout															
	3–Pin			4–Pin			5–Pin			8-Pin						
	 Female			 Male						 Female			 Male			
A	1 Brown 2 N/C	3 Blue 4 Black		1 Brown 2 White	3 Blue 4 Black		1 Brown 2 White 3 Blue	4 Black 5 Grey		1 White 2 Brown 3 Green 4 Yellow	5 Grey 6 Pink 7 Blue 8 Red					

Product Selection

22 AWG Receptacles

Pin Count	Assembly Rating	Drawing	Panel Mount Threads	Cat. No.	
				Female	Male
3-Pin	250V 4 A	A	1/4 in–18 NPT	888D–F3AC2–*	888D–M3AC2–*
		C	1/2 in–14 NPT	888D–F3AC1–*	888D–M3AC1–*
		B	M14 x 1	888D–F3AC6–*	888D–M3AC6–*
		D	Rear Mount PG 9	888D–F3AC5–‡	888D–M3AC5–‡
4-Pin		A	1/4 in–18 NPT	888D–F4AC2–*	888D–M4AC2–*
		C	1/2 in–14 NPT	888D–F4AC1–*	888D–M4AC1–*
		B	M14 x 1	888D–F4AC6–*	888D–M4AC6–*
		D	Rear Mount PG 9	888D–F4AC5–‡	888D–M4AC5–‡
5-Pin		A	1/4 in–18 NPT	888D–F5AC2–*	888D–M5AC2–*
		C	1/2 in–14 NPT	888D–F5AC1–*	888D–M5AC1–*
		B	M14 x 1	888D–F5AC6–*	888D–M5AC6–*
		D	Rear Mount PG 9	888D–F5AC5–‡	888D–M5AC5–‡
8-Pin	24 AWG 300V, 1.5 A	E	PG 9	888D–F8AB3–*	888D–M8AB3–*

18 AWG Receptacles

Pin Count	Assembly Rating	Drawing	Panel Mount Threads	Cat. No.	
				Female	Male
4-Pin	250V 4 A	C	1/2 in–14 NPT	888D–F4AE1–*	888D–M4AE1–*
		D	Rear Mount PG9	888D–F4AE5–‡	888D–M4AE5–‡
5-Pin		C	1/2 in–14 NPT	888D–F5AE1–*	888D–M5AE1–*
		D	Rear Mount PG9	888D–F5AE5–‡	888D–M5AE5–‡

* Replace symbol with 0M3 (0.3 m) or 1 (1 m) for standard cable lengths.
‡ Replace symbol with 0M5 (0.5 m) or 1 (1 m) for standard cable lengths.

Note: 1/2 NPT mounting theads model mounting nuts and flat sealing washers sold separately.

Distribution Boxes, DC Micro Style

4-Pin, One Signal per Port, Cable Connector

DC Micro Style

DC Micro 8-Port Distribution Box

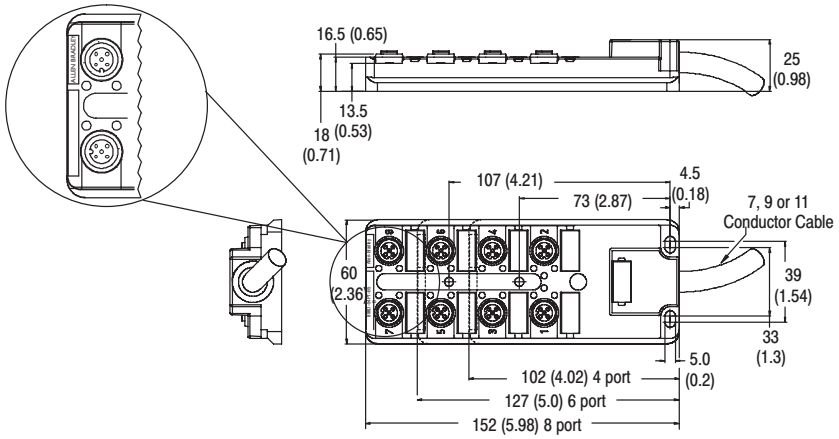
Features

- Grey Pocan body offers good oil and chemical resistance
- 4 or 8 DC micro connectors
- PUR/PVC cable rated to flex to 1 million cycles
- LED versions for use with PNP (sourcing) or NPN (sinking) field devices
- Snap-in markers for box and port identification can be used with 1492 Fast Track™ marker printer system

Specifications

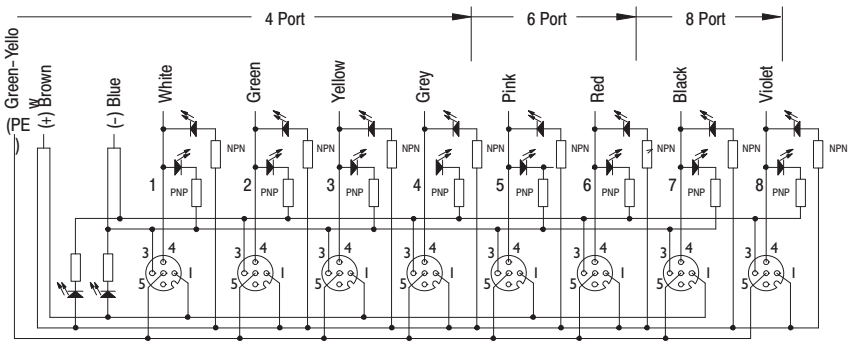
Certifications	UL recognized and CSA certified
Mechanical	
Material	Grey Pocan
Connector Insert	PBT
Receptacle Shell Material	Zinc diecast with nickel plating
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant black PUR/PVC jacket, (3) 18 AWG stranded copper, (4, 6, or 8) 22 AWG flex rated for 1 million cycles
Cable Diameter	4 port = 7.5 mm (0.30 in) 6 port = 7.8 mm (0.31 in) 8 port = 8.2 mm (0.32 in)
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+90° (–4…+194°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Wiring Diagrams



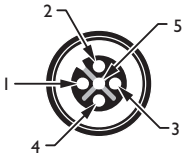
Note: Wiring diagram shows both PNP and NPN wiring. Actual units use PNP LED, NPN LED or neither.

Mating Components & Accessories

Description	Cat. No.	Page
Device patchcord	**889D–F4ACDM–‡**	3–47
Field Attacable Connectors	**871A–TS4–DM**	3–77
IDC Field Attachable Connectors	**889D–M4DC–H**	3–79
Sealing Caps§	**1485A–M12**	3–143
Labels⁂	**1492–MS9X20**	—

‡ Replace symbol with the length of the cable in meters (1, 2, 3, 5 or 10 m standard)
§ 2 provided with box
⁂ 1 set provided with box (see *Industrial Controls* catalog)

Pinout

Device Connection			Main Connection
			
Ports (Female 4-pin)			**Cable Connector**
4 Port	**6 Port**	**8 Port**	
Ground	Ground	Ground	Green/Yellow
(+) All Ports Pin 1	(+) All Ports Pin 1	(+) All Ports Pin 1	Brown
(–) All Ports Pin 3	(–) All Ports Pin 3	(–) All Ports Pin 3	Blue
Port 1 Pin 4	Port 1 Pin 4	Port 1 Pin 4	White
Port 2 Pin 4	Port 2 Pin 4	Port 2 Pin 4	Green
Port 3 Pin 4	Port 3 Pin 4	Port 3 Pin 4	Yellow
Port 4 Pin 4	Port 4 Pin 4	Port 4 Pin 4	Grey
—	Port 5 Pin 4	Port 5 Pin 4	Rose
—	Port 6 Pin 4	Port 6 Pin 4	Red
—	—	Port 7 Pin 4	Black
—	—	Port 8 Pin 4	Violet

Product Selection

Distribution Boxes

Ports	Illuminated	Assembly Rating	Cat. No.
4 Port	No LED	10…30V DC, 2 A per channel/ 10 A total	898D–54PT–B*
	PNP LED		898D–P54PT–B*
	NPN LED		898D–N54PT–B*
6 Port	No LED		898D–56PT–B*
	PNP LED		898D–P56PT–B*
	NPN LED		898D–N56PT–B*
8 Port	No LED		898D–58PT–B*
	PNP LED		898D–P58PT–B*
	NPN LED		898D–N58PT–B*
Device Patchcords (Straight to Straight)			889D–F4ACDM–‡

* Replace symbol with 5 (5 m) or 10 (10 m) for standard cable lengths.
‡ Replace symbol with the length of cable in meters (1, 2, 3, 5 or 10 m standard).

Distribution Boxes, DC Micro Style

4-Pin, One Signal per Port, Cable with Mini QD Connector

DC Micro Style

DC Micro 8-Port Distribution Box

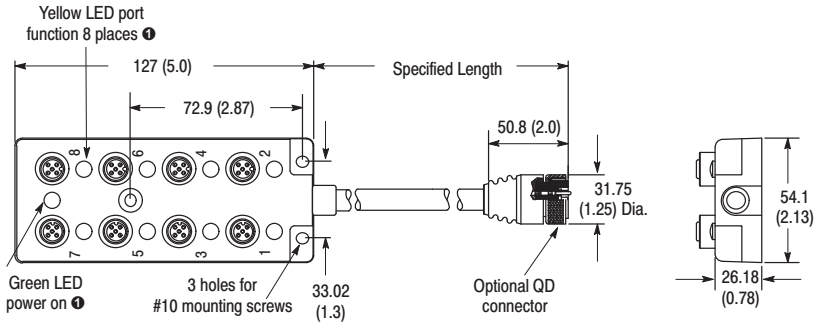
Features

- Highly visible yellow PET body offers good oil and chemical resistance
- 4, 6, or 8 DC micro connectors
- LED versions for use with PNP (sourcing) field devices
- 12-pin mini connector on 8-port box for use with PanelConnect

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Yellow PET
Connector Insert	PUR
Receptacle Shell Material	Anodized aluminum with clear sealant
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant yellow PVC jacket, 18 AWG stranded copper conductors 300V
Cable Diameter	9 mm (0.36 in)
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+90° (–4…+194°)

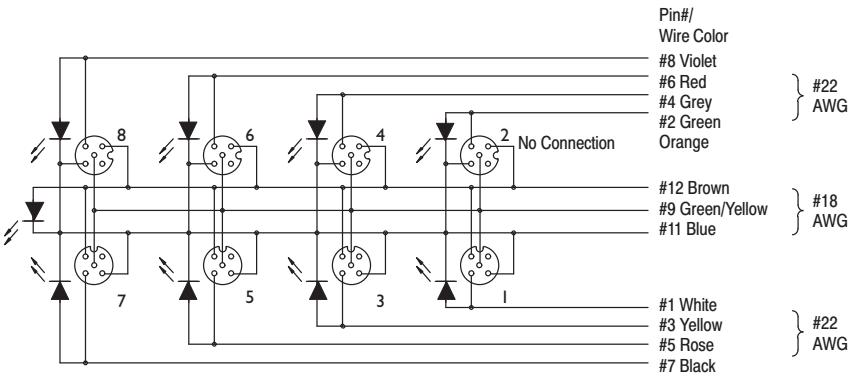
Dimensions—mm (in)



❶ LED models only.

Dimensions are approximate. Illustrations are not drawn to scale.

Wiring Diagrams



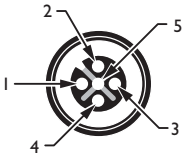
Note: Wiring diagram shows both PNP wiring. Actual units use PNP LED or neither.

Mating Components & Accessories

Description	Cat. No.	Page
Device patchcord	**889D–F4ACDM–‡**	3–47
Field Attacable Connectors	**871A–TS4–DM**	3–77
IDC Field Attachable Connectors	**889D–M4DC–H**	3–79
Sealing Caps	**1485A–M12**	3–143
Main Cordset	**889N–F§AF–‡**	3–35, 3–37

‡ Replace symbol with the length of the cable in meters (1, 2, 3, 5 or 10 m standard)
§ Replace symbol with the number of pins in the main connection

Pinout

	Main Connection		
	4 Port	6 Port	8 Port
			
Ports (Female 4-Pin)	**7-Pin Male**	**9-Pin Male**	**12-Pin Male**
Ground	Pin 7	Pin 7	Pin 9
(+) All Ports Pin 1	Pin 6	Pin 9	Pin 12
(–) All Ports Pin 3	Pin 5	Pin 8	Pin 11
Port 1 Pin 4	Pin 1	Pin 1	Pin 1
Port 2 Pin 4	Pin 2	Pin 2	Pin 2
Port 3 Pin 4	Pin 3	Pin 3	Pin 3
Port 4 Pin 4	Pin 4	Pin 4	Pin 4
Port 5 Pin 4	—	Pin 5	Pin 5
Port 6 Pin 4	—	Pin 6	Pin 6
Port 7 Pin 4	—	—	Pin 7
Port 8 Pin 4	—	—	Pin 8
No Connection	—	—	Pin 10

Product Selection

Distribution Boxes

Ports	Illuminated	Assembly Rating	Cat. No.
4 Port	No LED	10…30V DC, 3	**898D–54PT–N7**
	LED		**898D–P54PT–N7**
6 Port	No LED		**898D–56PT–N9**
	LED		**898D–P56PT–N9**
8 Port	No LED		**898D–58PT–N12**
	LED		**898D–P58PT–N12**
Device Patchcords (Straight to Straight)			**889D–F4ACDM–***
Main Cordset (Straight to Conductor)			**889N–F‡AF–§**

* Replace symbol with the length of cable in meters.
‡ Replace symbol with the number of pin in the main conductor.
§ Replace symbol with the length of cable in meters.

Distribution Boxes, DC Micro Style

4-Pin, Two Signals per Port, Cable Connector

DC Micro Style

DC Micro 8-Port Distribution Box

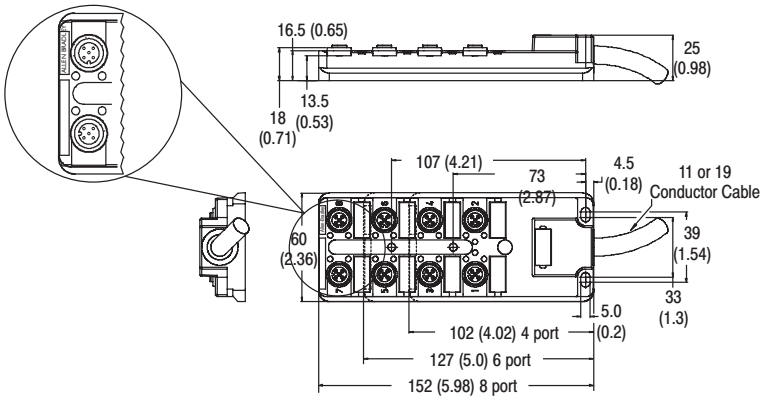
Features

- Grey Pocan body offers good oil and chemical resistance
- 4 or 8 DC micro connectors
- PUR/PVC cable rated to flex to 1 million cycles
- LED version for use with PNP (sourcing)
- Snap-in markers for box and port identification can be used with 1492 Fast Track™ marker printer system

Specifications

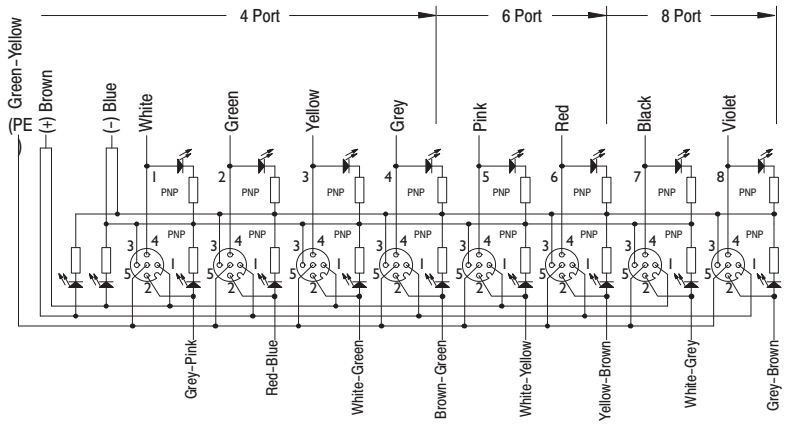
Certifications	UL recognized and CSA certified
Mechanical	
Material	Grey Pocan
Connector Insert	PBT
Receptacle Shell Material	Zinc diecast with nickel plating
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant black PUR/PVC jacket, (3) 18 AWG stranded copper, (8 or 16) 22 AWG flex rated for 1 million cycles
Cable Diameter	4 port = 8.2 mm (0.32 in) 8 port = 9.7 mm (0.38 in)
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+90° (–4…+194°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Wiring Diagrams



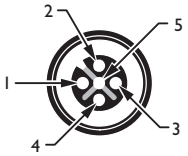
Note: Wiring diagram shows PNP wiring. Actual units use PNP LED or no LED.

Mating Components & Accessories

Description	Cat. No.	Page
Device patchcord	**889D–F5ACDM–‡**	3–47
Field Attacable Connectors	**871A–TS4–DM**	3–77
IDC Field Attachable Connectors	**889D–M4DC–H**	3–79
V-Cable	**879D–F4ACDM–‡**	3–61
Splitter	**879D–F4DM**	3–59
Sealing Caps§	**1485A–M12**	3–143
Labels⁂	**1492–MS9X20**	—

‡ Replace symbol with the length of the cable in meters (1, 2, 3, 5 or 10 m standard)
§ 2 provided with box
⁂ 1 set provided with box (see *Industrial Controls* catalog)

Pinout

Device Connection		Main Connection
		
Ports (Female 4-Pin)		**Cable Connector**
4 Port	**8 Port**	
Ground	Ground	Green/Yellow
(+) All Ports Pin 1	(+) All Ports Pin 1	Brown
(–) All Ports Pin 3	(–) All Ports Pin 3	Blue
Port 1 Pin 4	Port 1 Pin 4	White
Port 2 Pin 4	Port 2 Pin 4	Green
Port 3 Pin 4	Port 3 Pin 4	Yellow
Port 4 Pin 4	Port 4 Pin 4	Grey
—	Port 5 Pin 4	Rose
—	Port 6 Pin 4	Red
—	Port 7 Pin 4	Black
—	Port 8 Pin 4	Violet
Port 1 Pin 2	Port 1 Pin 2	Grey–Pink
Port 2 Pin 2	Port 2 Pin 2	Red–Blue
Port 3 Pin 2	Port 3 Pin 2	White–Green
Port 4 Pin 2	Port 4 Pin 2	Brown–Green
—	Port 5 Pin 2	White–Yellow
—	Port 6 Pin 2	Yellow–Brown
—	Port 7 Pin 2	White–Grey
—	Port 8 Pin 2	Grey–Brown

Product Selection

Distribution Boxes

Ports	Illuminated	Assembly Rating	Cat. No.
4 Port	No LED	10…30V DC, 2 A per channel/ 10 A total	**898D–54DT–B***
	PNP LED		**898D–P54DT–B***
8 Port	No LED		**898D–58DT–B***
	PNP LED		**898D–P58DT–B***
Device Patchcords (Straight to Straight)			**889D–F4ACDM–‡**
Device V-Cables (Straight)			**879D–F4ACDM–‡**

* Replace symbol with 5 (5 m) or 10 (10 m) for standard cable lengths.
‡ Replace symbol with the length of cable in meters (1, 2, 3, 5 or 10 m standard).

Distribution Boxes, DC Micro Style

4-Pin, One Signal per Port, Terminal Block Connector

DC Micro Style

DC Micro 8-Port Distribution Box

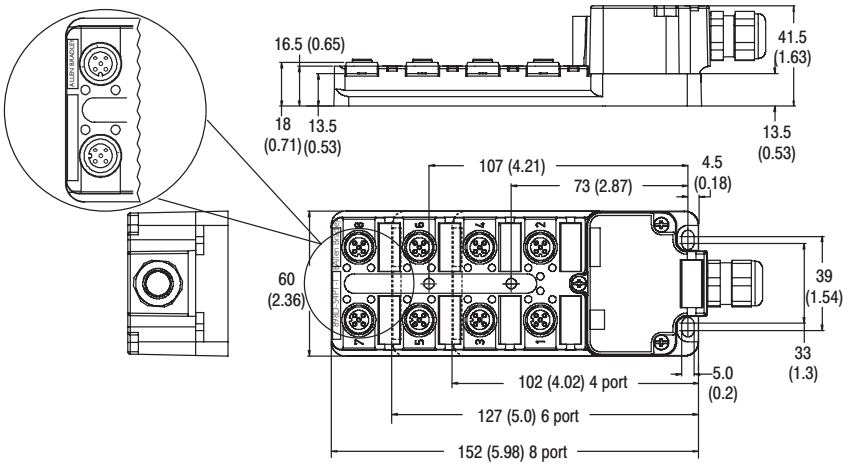
Features

- Grey Pocan body offers good oil and chemical resistance
- 4, 6, or 8 DC micro connectors
- Screw terminal connection allows for customized home-run wiring
- Moveable jumpers allow for box to have 1 common or 2 separate power sources
- LED version for use with PNP (sourcing) or NPN (sinking) field devices
- Snap-in markers for box and port identification can be used with 1492 Fast Track™ marker printer system

Specifications

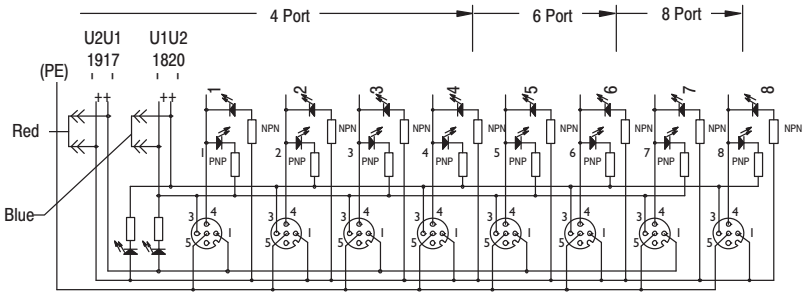
Certifications	UL recognized and CSA certified
Mechanical	
Material	Grey Pocan
Connector Insert	PBT
Receptacle Shell Material	Zinc diecast with nickel plating
Contacts	Gold-plated palladium/nickel
Cable Gland	M20 mounting thread
Cable Diameter	6…10 mm (0.24…0.39 in)
Environmental	
Enclosure Type Rating	IP 67; 1200 psi washdown
Operating Temperature—C (F)	–20…+90° (–4…+194°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Wiring Diagrams



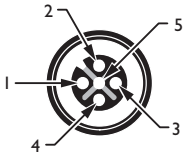
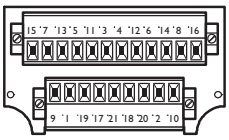
Note: Wiring diagram shows both PNP and NPN wiring. Actual units use PNP LED, NPN LED or neither.

Mating Components & Accessories

Description	Cat. No.	Page
Device patchcord	**889D–F4ACDM–‡**	3–47
Field Attacable Connectors	**871A–TS4–DM**	3–77
IDC Field Attachable Connectors	**889D–M4DC–H**	3–79
Sealing Caps§	**1485A–M12**	3–143
Labels⁂	**1492–MS9X20**	—

‡ Replace symbol with the length of the cable in meters (1, 2, 3, 5 or 10 m standard)
§ 2 provided with box
⁂ 1 set provided with box (see *Industrial Control* catalog)

Pinout

Device Connection		Main Connection
		
Ports (Female 4-Pin)		**Terminal Block Connector**
4 Port	**8 Port**	
Ground	Ground	PE
(+) Odd Ports Pin 1	(+) Odd Ports Pin 1	17
(+) Even Ports Pin 1	(+) Even Ports Pin 1	19
(–) Odd Ports Pin 3	(–) Odd Ports Pin 3	18
(–) Even Ports Pin 3	(–) Even Ports Pin 3	20
Port 1 Pin 4	Port 1 Pin 4	1
Port 2 Pin 4	Port 2 Pin 4	2
Port 3 Pin 4	Port 3 Pin 4	3
Port 4 Pin 4	Port 4 Pin 4	4
—	Port 5 Pin 4	5
—	Port 6 Pin 4	6
—	Port 7 Pin 4	7
—	Port 8 Pin 4	8

Product Selection

Distribution Boxes

Ports	Illuminated	Assembly Rating	Cat. No.
4 Port	No LED	10…30V DC, 2 A per channel/10 A total or 8 A per input when 2 inputs are used	**898D–54PT–T**
	PNP LED		**898D–P54PT–T**
	NPN LED		**898D–N54PT–T**
8 Port	No LED		**898D–58PT–T**
	PNP LED		**898D–P58PT–T**
	NPN LED		**898D–N58PT–T**
Device Patchcords (Straight to Straight)			**889D–F4ACDM–‡**

‡ Replace symbol with the length of cable in meters (1, 2, 3, 5 or 10 m standard).

Distribution Boxes, DC Micro Style

4-Pin, One or Two Signals per Port, M23 Main Connector

DC Micro Style

DC Micro 8-Port Distribution Box

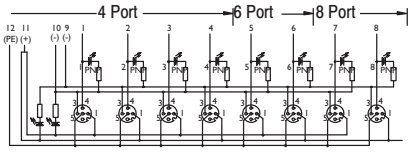
Features

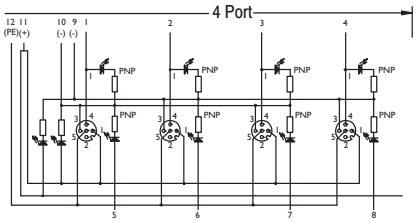
- Pocan body offers good oil and chemical resistance
- Four and eight DC micro connectors
- 12- or 19-pin M23 quick disconnect
- LED version for use with PNP (sourcing) field devices
- Snap-in markers for box and port identification can be used with 1492 Fast Track™ marker printer system

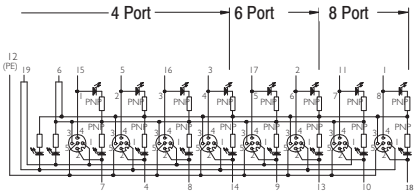
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Grey Pocan
Connector Insert	PBT
Receptacle Shell Material	Zinc diecast with nickel plating
Contacts	Gold-plated palladium/nickel
Main Connector	12- and 19-Pin M23
Environmental	
Enclosure Type Rating	IP 67; 1200 psi washdown
Operating Temperature—C (F)	–20…+90° (–4…+194°)

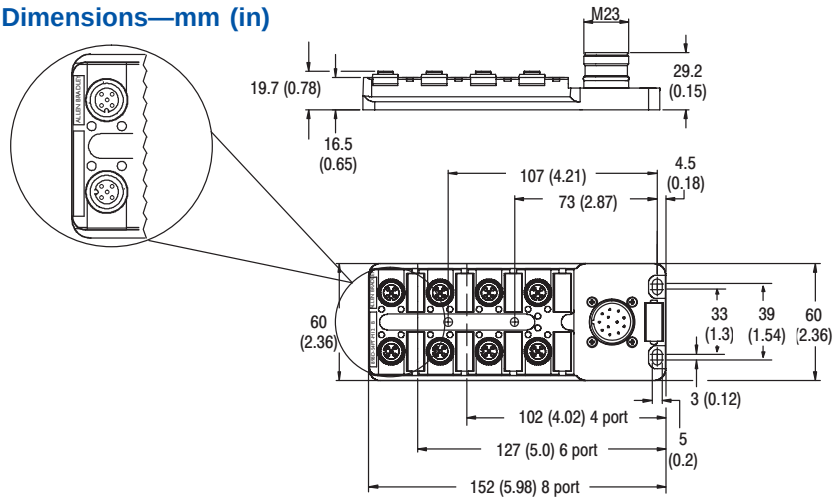
Wiring Diagrams







Dimensions—mm (in)



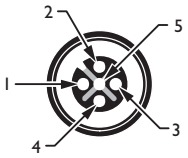
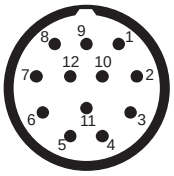
Dimensions are approximate. Illustrations are not drawn to scale.

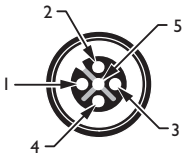
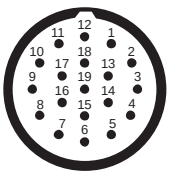
Mating Components & Accessories

Description	Cat. No.	Pg
Device patchcord	**889D–F4ACDM–‡**	3–47
Main Patchcord (12-pin)	**889M–R11RMMU–‡**	3–129
Main Patchcord (19-pin)	**889M–R19RMMU–‡**	3–129
V-Cable (Dual)	**879D–F4ADM–‡**	3–61
Sealing Caps§	**1485A–M12**	3–143
Labels⁂	**1492–MS9X20**	—

‡ Replace symbol with the length of cable in meters (1, 2, 3, 5 or 10 m standard).
§ 2 provided with box
⁂ 1 set provided with box (see *Industrial Control* catalog)

Pinout

Device Connection			Main Connection
			
Ports (Female 4 pin)			M23 Connector (Male 12-Pin)
4 Port (Single Channel)	4 Port (Dual Channel)	8 Port (Single Channel)	
Ground	Ground	Ground	12
(+) All Ports Pin 1	(+) All Ports Pin 2	(+) All Ports Pin 1	11
(–) All Ports Pin 3	(–) All Ports Pin 4	(–) All Ports Pin 3	10 & 9
Port 1 Pin 4	Port 1 Pin 4	Port 1 Pin 4	1
Port 2 Pin 4	Port 2 Pin 4	Port 2 Pin 4	2
Port 3 Pin 4	Port 3 Pin 4	Port 3 Pin 4	3
Port 4 Pin 4	Port 4 Pin 4	Port 4 Pin 4	4
—	Port 1 Pin 2	Port 5 Pin 4	5
—	Port 2 Pin 2	Port 6 Pin 4	6
—	Port 3 Pin 2	Port 7 Pin 4	7
—	Port 4 Pin 2	Port 8 Pin 4	8

Device Connections	Main Connection
	
	M23 Connector (Male 19-Pin)
8 Port (Dual Channel)	
Ground	12
(+) All Ports Pin 1	19
(–) All Ports Pin 3	6
Port 1 Pin 4	15
Port 2 Pin 4	5
Port 3 Pin 4	16
Port 4 Pin 4	3
Port 5 Pin 4	17
Port 6 Pin 4	2
Port 7 Pin 4	11
Port 8 Pin 4	1
Port 1 Pin 2	7
Port 2 Pin 2	4
Port 3 Pin 2	8
Port 4 Pin 2	14
Port 5 Pin 2	9
Port 6 Pin 2	13
Port 7 Pin 2	10
Port 8 Pin 2	18

Product Selection

Distribution Boxes

Ports	No. of Signals per Port	Illuminated	Assembly Rating	Cat. No.
4 Port	Single (1)	No LED	10…30V DC, 2 A per channel/ 10 A total	898D–54PT–M12
		PNP LED		898D–P54PT–M12
8 Port		No LED		898D–58PT–M12
		PNP LED		898D–P58PT–M12
4 Port	Dual (2)	No LED		898D–54DT–M12
		PNP LED		898D–P54DT–M12
8 Port		No LED		898D–58DT–M19
		PNP LED		898D–P58DT–M19
Device Patchcords (Straight to Straight)				889D–F4ACDM–‡
Homerun Patchcord for 4 Port (Right Angle to Straight)				889M–R11RMMU–‡
Homerun Patchcord for 8 Port (Right Angle to Straight)				889M–R19RMMU–‡

‡ Replace symbol with the length of cable in meters (1, 2, 3, 5 or 10 m standard).

DC Micro Style

DC Micro Female

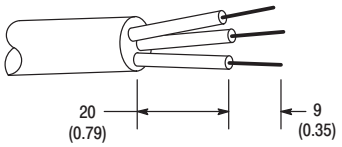
Specifications

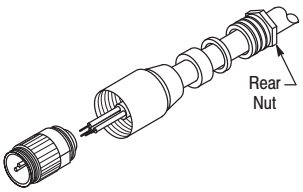
Mechanical	
Coupling Nut	Nickel-plated brass
Connector Shell Material	PBT, except embedded thermistor models: Nylon
Contacts	Gold-plated palladium nickel
Cable	18 AWG (0.75 mm^2) max.
Electrical	
Assembly Rating	4- or 5-pin: 250V, 4 A; 8-pin: 60V, 2 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–40…+88° (–40…+185°)

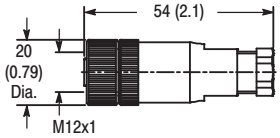
Features

- Field installable
- 4- or 5-pin DC micro style
- Straight or right angle
- Single cable or dual cable models
- Screw terminals provide simple and secure installation
- Allows easy modification of existing cable installations
- Embedded thermistor models designed for use with ArmorPoint thermocoupling input modules provide cold junction compensation capability

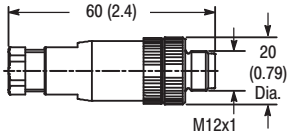
Dimensions—mm (in)



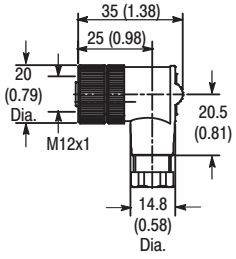




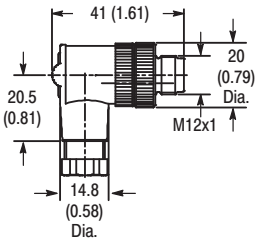
Straight Female



Straight Male



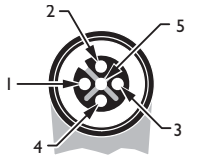
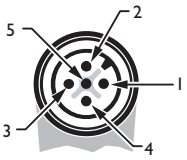
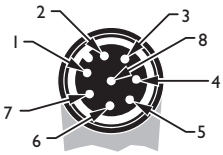
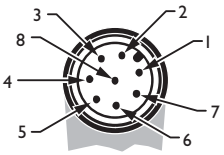
Right Angle Female



Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

	Face View Pinout		
	4–Pin	5–Pin	8-Pin
	 Female	 Male	 Female  Male

Product Selection

Single-Cable Model Terminal Chambers

Pin Count	Cable Jacket Diameter—mm (in)	Assembly Rating	Rear Nut Thread Size	Cat. No.			
				Straight Female	Right Angle Female	Straight Male	Right Angle Male
4-Pin	4.0…6.0 (0.16…0.24)	250V, 4 A	PG 7	871A–TS4–D	871A–TR4–D	871A–TS4–DM	871A–TR4–DM
	6.0…8.0 (0.24…0.32)		PG 9	871A–TS4–D1	871A–TR4–D1	871A–TS4–DM1	871A–TR4–DM1
5-Pin	4.0…6.0 (0.16…0.24)		PG 7	871A–TS5–D	871A–TR5–D	871A–TS5–DM	871A–TR5–DM
	6.0…8.0 (0.24…0.32)		PG 9	871A–TS5–D1	871A–TR5–D1	871A–TS5–DM1	871A–TR5–DM1
8-Pin	6.0…8.0 (0.24…0.32)	60V, 2 A	PG 9	871A–TS8–D1	—	871A–TS8–DM1	—

Dual-Cable Model Terminal Chambers

Pin Count	Cable Jacket Diameter—mm (in)	Assembly Rating	Rear Nut Thread Size	Cat. No.	
				Straight Male	Right Angle Male
4-Pin	Two cables 2.1…3.0 (0.08…0.12) or 3.5…5.2 (0.14…0.21)	250V, 4 A	PG 9	871A–VS4–DM	871A–VR4–DM
5-Pin				871A–VS5–DM	871A–VR5–DM

Embedded Thermistor Terminal Chambers

Pin Count	Cable Jacket Diameter—mm (in)	Assembly Rating	Wiring Diagram	Cat. No.	
				Straight Male	Right Angle Male
4-Pin	3.0…6.5 (0.12…0.26)	250V, 4 A	1 2 – TC+ 3 4 – TC–	871A–TS4CJC–DM★	871A–TR4CJC–DM★

★ This model comes with nickel-plated brass coupling nuts as standard and is not available in stainless steel version.

Note: Stainless steel coupling nuts available, add an “S” to the bulletin number (e.g. **871AS–TS4–DM**).

DC Micro Style

DC Micro Male

Features

- Field installable with no hand tools needed
- 4-pin DC micro style
- Straight or right angle, male or female
- Allows easy modification of existing cable installations
- Insulation displacement technology for secure and reliable installation
- Metal body unit excellent in shielding applications

Specifications

Mechanical	
Coupling Nut	Zinc die-cast
Connector Shell Material	Zinc die-cast or polyamide
Contacts	Gold-plated palladium nickel
Maximum IDC Installations	10
Conductor Outside Diameter	26–22 AWG–20 AWG: 1.0…1.6 mm (0.039…0.063 in) 24–22 AWG, 22–18 AWG: 1.6…2.0 mm (0.063…0.079 in)
Electrical	
Assembly Rating	32V, 4 A; 50V, 6 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–25…85° (–13…185°)
Installation Temp.—C (F)	–5…50° (23…185°)

Dimensions—mm (in)

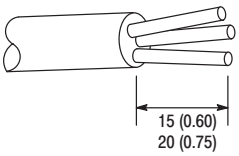


Figure A

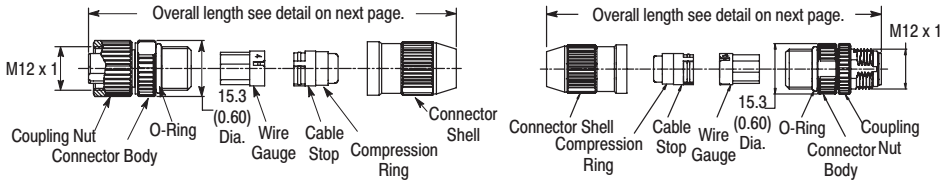


Figure B

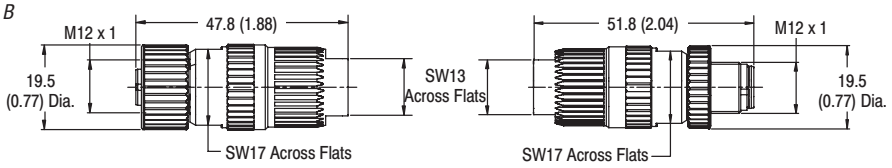


Figure C

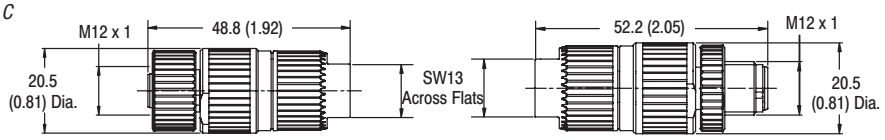
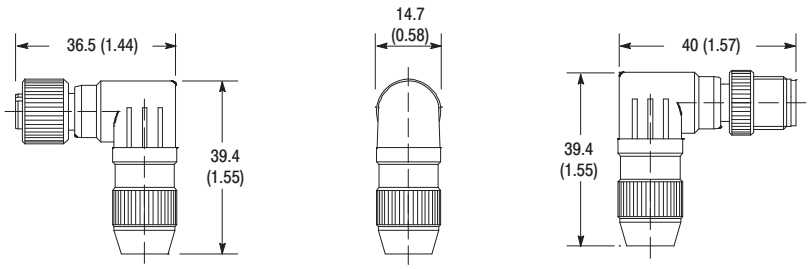


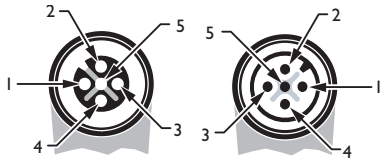
Figure D



Right Angle Female *Right Angle Male*

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

	Face View Pinout
	4–Pin
	

Product Selection

IDC Field Attachables

Pin Count	Connector Body	Dimen - sions	Cable Jacket Diameter— mm (in)	Wire Size	Assembl y Rating	Cat. No.			
						Straight Female	Straight Male	Right Angle Female	Right Angle Male
4-Pin	Polyamide Small body unshielded	Figure A & D	4.0…5.1 (0.16…0.20)	26…22 AWG	32V 4 A	889D–F4DC–H	889D–M4DC–H	889D–R4DC–H	889D–E4DC–H
	Zinc die-cast Large body shielded	Figure B	7.0…8.8 (0.28…0.35)	24…22 AWG	32V 4 A	889D–F4DC–SH	889D–M4DC–SH	—	—
	Polyamide Large body unshielded	Figure C	5.5…8.0 (0.22…0.31)	22…18 AWG	50V 6 A	889D–F4CE–H	889D–M4CE–H	—	—

Bulkhead Pass-Thru, DC Micro Style

DC Micro Style

DC Micro Blulkhead Pass-Through

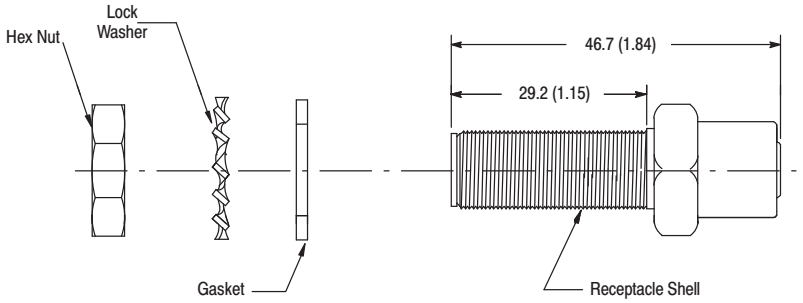
Features

- Male to female bulkhead pass-thru provides flexibility in thru-panel installations
- Standard 5-pin DC micro version allows use for a variety of pin-count configurations

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Shell & Locknut	Nickel-plated brass
Connector Insert Material	Nylon
Gasket	Neoprene
Thrust Washer	Steel Alloy
Contacts	Gold-plated palladium/nickel
Environmental	
Enclosure Type Rating	IP67
Operating Temperature—C (F)	–20…+80° (–4…+176°)

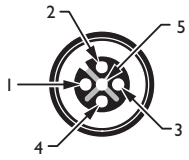
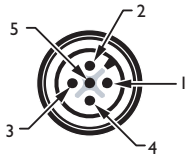
Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

IDC Field Attachables

Face View of Female	Assembly Rating	Face View of Male	Cat. No.
	250V 4 A		**1485A–CXR5–D5**

Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments. All Allen-Bradley AC micro cabling products are UL recognized and CSA certified.

Featuring industry standard 3-, 4-, 5- or 6-pin, dual key overmolded connectors, Allen-Bradley AC micro cordsets provide secure connection for proximity sensors, limit switches, photoelectric sensors and other field devices. Cables can be 22 AWG or 18 AWG, shielded or unshielded with straight or right-angled connectors. Special coiled cables are also available for applications involving moving equipment. For bulkhead or panel installation, Rockwell Automation offers die-cast, dual keyway 3-, 4-, 5- or 6-pin AC micro male or female receptacles.

Allen-Bradley passive distribution boxes allow multiple devices to be connected to a control system through a single pigtail. Each distribution box features internal-thread female receptacles (4, 6 or 8, depending on model) for quick and easy connection with quick-disconnect mating plugs.

Available in male and female versions, terminal chambers are passive field-installable connectors for use with raw cable. Allen-Bradley 3-pin AC micro style terminal chambers contain screw terminals for quick and easy assembly of custom QD cables on the plant floor. Terminal chambers can be straight or right-angled and are also available for various cable diameters.

Rockwell Automation is continually expanding its connection system offerings. If our standard catalog does not contain the item that you need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Cordset

889R S — F 3 E C A — 5
a b c d e f g

a

Code	Coupling Nut Material
Blank	Standard Coupling nuts (Epoxy–coated zinc)
N	Nickel Plated Brass
S	Stainless Steel

b

Code	Connector Type
E	Right Angle Male (External Threads)
F	Striaght Female (Internal Threads)
M	Striaght Male (External Threads)
R	Right Angle Female (Internal Threads)

c

Code	Number of Pins
3–6	Number of Pins

d

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded
E	PVC Cable, Yellow, Braided Shielded
W	ToughWeld™

e

Code	Wire Gauge
C	22 AWG
D	20 AWG
E	18 AWG

f

Code	Wire Color Code
A	Automotive Color Code

g

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Patchcord

889R S — F 3 A E D M — 10
a b c d e f g h

a

Code	Coupling Nut Material
Blank	Standard Coupling Nuts (Epoxy–Coated Zinc)
N	Nickel Plated Brass
S	Stainless Steel

b

Code	Connector Type
F	Striaght Female (Internal Threads)
R	Right Angle Female (Internal Threads)

c

Code	Number of Pins
3–6	Number of Pins

d

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded
E	PVC Cable, Yellow, Braided Shielded
W	ToughWeld™

e

Code	Wire Gauge
C	22 AWG
D	20 AWG
E	18 AWG

f

Code	Male End Connector Style
R	AC Micro QD

g

Code	Male End Connector Type
E	Right Angle Male (External Threads)
M	Striaght Male (External Threads)

h

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Receptacles

888R — F 4 A C I — 1F
a b c d e f

a

Code	Connector Type
F	Female (External Threads)
M	Male (External Threads)

b

Code	Number of Pins
3–6	Number of Pins

c

Code	Wire Type
A	PVC

d

Code	Wire Gauge
C	22 AWG

e

Code	Mounting Threads
1	1/2 in 14 NPT
2	1/4 in 18 NPT

f

Code	Cable Length
F	Feet (1F5 = 1.5 ft)

Distribution Boxes

898R — L 3 4 P S — N6
a b c d e f

a

Code	Illuminated
Blank	No LEDs
L	LED/Lamp AC

b

Code	Number of Pins on Connectors
3	Number of Pins

c

Code	Ports
4,6,8	Number of Ports

d

Code	Wiring Configuration
P	Parallel – 1 Input/Port

e

Code	Port Orientation
S	Ports on Side of Box

f

Code	Main Connector Style
N6	6-Pin Mini Connector
N7	7-Pin Mini Plus Connector
N8	8-Pin Mini Plus Connector
N9	9-Pin Mini Plus Connector
N10	10-Pin Mini Plus Connector
N12	12-Pin Mini Plus Connector

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Cordsets and Patchcords, AC Micro Style

18 or 22 AWG, PVC

AC Micro Style

3-Pin AC Micro Cordset

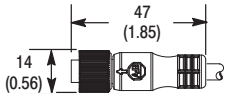
Features

- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Heavy-duty re-inforcing braiding can be used as a grounded shield to reduce noise
- Ratcheting coupling nut for vibration resistance

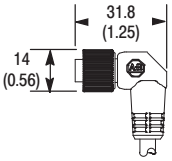
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Connector	Molded oil-resistant polyurethane
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant yellow PVC jacket, 18 or 22 AWG conductors, 300V; UL recognized and CSA certified
Bend Radius	10 x diameter
Cable Diameter	3/c (22 AWG) = 6.7 mm (0.26 in) 3/c (18 AWG) = 6.7 mm (0.26 in) 4/c (18 AWG) = 6.7 mm (0.26 in) 5/c (18 AWG) = 6.7 mm (0.26 in) 6/c (22 AWG) = 6.7 mm (0.26 in)
Braiding	Shield aluminum mylar stranding 26 x #36 (AWG) (Braided cable models only)
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+105° (–4…+221°)

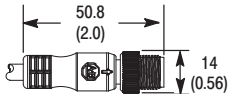
Dimensions—mm (in)



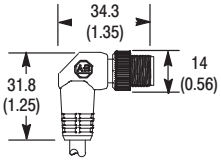
Straight Female



Right Angle Female

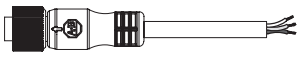


Straight Male



Right Angle Male

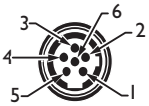
Dimensions are approximate. Illustrations are not drawn to scale.



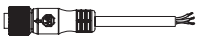
Example of Cordset

Example of Patchcord

Pinout and Color Code

Color Code	Face View Pinout							
	3-Pin		4-Pin		5-Pin		6-Pin	
	 Female	 Male	 Female	 Male	 Female	 Male	 Female	 Male
A	1 Green (GND) 2 Red/Black Tr. 3 Red/White Tr.		1 Red/Black Tr. 3 Red 2 Red/White Tr. 4 Green (GND)		1 Red/White Tr. 4 Red/Yellow Tr. 2 Red 5 Red/Black Tr. 3 Green		1 Red/White Tr. 4 Red/Yellow Tr. 2 Red 5 Red/Black Tr. 3 Green 6 Red/Blue Tr.	

Product Selection

Cordsets 

Pin Count	Assembly Rating	Color Code	Cat. No.			
			Straight Female	Right Angle Female	Straight Male	Right Angle Male
3-Pin	Braided 22 AWG, 250V, 4 A	A	889R–F3ECA–*	889R–R3ECA–*	889R–M3ECA–*	889R–E3ECA–*
	18 AWG, 250V, 4 A		889R–F3AEA–*	889R–R3AEA–*	889R–M3AEA–*	889R–E3AEA–*
4-Pin	Braided 22 AWG, 250V, 4 A		889R–F4ECA–*	889R–R4ECA–*	889R–M4ECA–*	889R–E4ECA–*
	18 AWG, 250V, 4 A		889R–F4AEA–*	889R–R4AEA–*	889R–M4AEA–*	889R–E4AEA–*
5-Pin	Braided 22 AWG, 250V, 4 A		889R–F5ECA–*	889R–R5ECA–*	889R–M5ECA–*	889R–E5ECA–*
	18 AWG, 250V, 4 A		889R–F5AEA–*	889R–R5AEA–*	889R–M5AEA–*	889R–E5AEA–*
6-Pin	Braided 22 AWG, 250V, 4 A		889R–F6ECA–*	889R–R6ECA–*	889R–M6ECA–*	889R–E6ECA–*

Patchcords 

Pin Count	Assembly Rating	Color Code	Cat. No.			
			Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
3-Pin	Braided 22 AWG, 250V, 4 A	A	889R–F3ECRM–‡	889R–F3ECRE–‡	889R–R3ECRM–‡	889R–R3ECRE–‡
	18 AWG, 250V, 4 A		889R–F3AERM–‡	889R–F3AERE–‡	889R–R3AERM–‡	889R–R3AERE–‡
4-Pin	Braided 22 AWG, 250V, 4 A		889R–F4ECRM–‡	889R–F4ECRE–‡	889R–R4ECRM–‡	889R–R4ECRE–‡
	18 AWG, 250V, 4 A		889R–F4AERM–‡	889R–F4AERE–‡	889R–R4AERM–‡	889R–R4AERE–‡
5-Pin	Braided 22 AWG, 250V, 4 A		889R–F5ECRM–‡	889R–F5ECRE–‡	889R–R5ECRM–‡	889R–R5ECRE–‡
	18 AWG, 300V, 4 A		889R–F5AERM–‡	889R–F5AERE–‡	889R–R5AERM–‡	889R–R5AERE–‡
6-Pin	Braided 22 AWG, 250V, 4 A		889R–F6ECRM–‡	889R–F6ECRE–‡	889R–R6ECRM–‡	889R–R6ECRE–‡

* Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

‡ Replace symbol with 0M3 (0.3 m), 1 (1 m), 2 (2 m), 3 (3 m), 5 (5 m) or 10 (10 m) for standard lengths.

Cordsets and Patchcords, AC Micro Style

18 AWG, ToughWeld™

AC Micro Style

3-Pin AC Micro Cordset

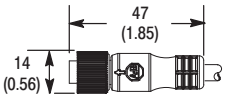
Features

- Durable SJOOW 18 AWG cable
- Highly visible yellow ToughWeld neoprene rubber jacket offers excellent weld slag resistance
- Ratcheting coupling nuts for vibration resistance

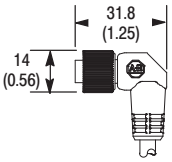
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Connector	Molded oil-resistant polyurethane
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant yellow TPE jacket, 18 AWG stranded copper, 300V
Bend Radius	10 x diameter
Cable Diameter	9 mm (0.35 in)
Electrical	
Cable Rating	UL –50C SJOOW 90C dry and 60C water resistant, CSA –50C SJOOW 90C FT1
Assembly Rating	300V, 3 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+90° (–4…+194°)

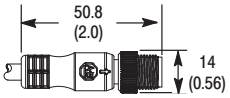
Dimensions—mm (in)



Straight Female

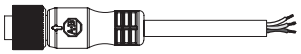


Right Angle Female

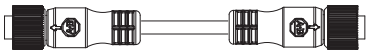


Straight Male

Dimensions are approximate. Illustrations are not drawn to scale.

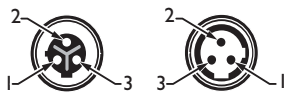


Example of Cordset



Example of Patchcord

Pinout and Color Code

Color Code	Face View Pinout
	3-Pin
Color Code	 Female Male
A	1 Green 2 Red/Black Tr 3 Red/White Tr

Product Selection

Cordsets 

Pin Count	Assembly Rating	Material	Color Code	Cat. No.	
				Straight Female	Right Angle Female
3–Pin	18 AWG, 300V, 3 A	ToughWeld	A	889R–F3WEA–*	889R–R3WEA–*

Patchcords 

Pin Count	Assembly Rating	Material	Color Code	Cat. No.
				Straight Female Straight Male
3–Pin	18 AWG, 300V, 3A	ToughWeld	A	889R–F3WERM–‡F

* Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

‡ Replace symbol with 3 (3 ft), 6 (6 ft). 12 (12 ft), or 20 (20 ft) for standard lengths.

Cordsets and Patchcords, AC Micro Style

20 AWG, Coil Cables, PVC

AC Micro Style

3-Pin AC Micro Cordset

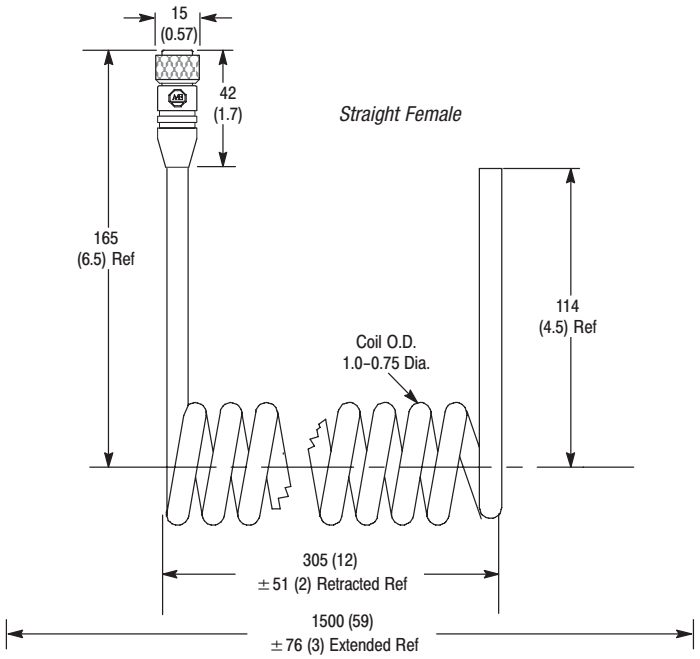
Features

- Coil provides retractable cable for moving applications
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- One-piece molded body design

Specifications

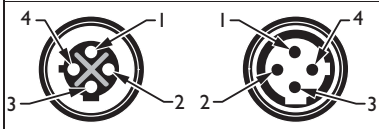
Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Epoxy-Coated Zinc
Connector	Molded oil-resistant PVC
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant yellow PVC jacket, 20 AWG stranded copper, 300V, UL recognized and CSA certified
Bend Radius	No rating
Cable Diameter	7.1 mm (0.28 in)
Electrical	
Cable Rating	300V, UL style 20197, CSA AWM 1/11 A/B
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

Color Code	Face View Pinout 4-Pin  Female	Male
A	1 Black 2 Blue	3 Brown 4 White
B	1 Red/Black Tr. 2 Red/White Tr.	3 Red 4 Green (GND)

Product Selection

Cordsets

Pin Count	Assembly Rating	Color Code	Length—m (ft)	Cat. No. Straight Female
4-Pin	20 AWG 250V 4 A	A	1.5 (5)	889R–F4AD–C5F
		B		889R–F4ADA–C5F

Splitter, AC Micro Style

AC Micro Style

Splitter, AC Micro

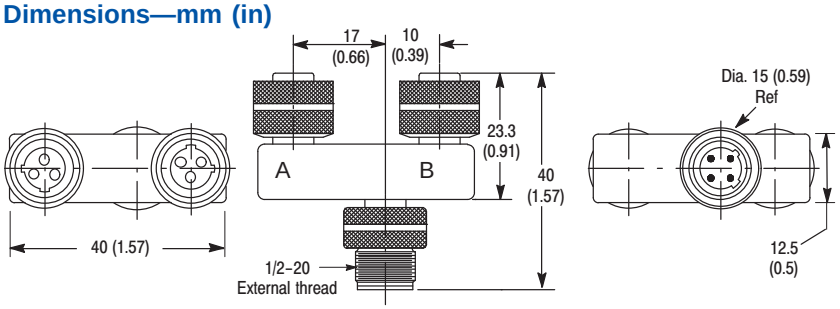
Features

- Splitter designed for use with Bulletin 198 MDSA AC modules
- PUR body offers good oil and chemical resistance
- Ratcheting coupling nut for vibration resistance

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Black PUR
Connector Insert	PUR
Receptacle Shell Material	Nickel-plated brass
Contacts	Brass, gold over nickel plating
O-Ring	Viton®
Electrical	
Assembly Rating	300V, 3 A
Environmental	
Enclosure Type Rating	IP 67; NEMA 6P
Operating Temperature—C (F)	–30…+105° (–22…+221°)

Dimensions—mm (in)



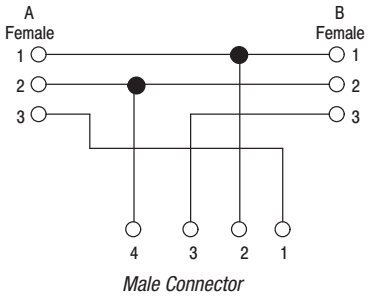
Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

	Face View Pinout	
	3-Pin	4-Pin
		

Product Selection

Splitters

Type	Wiring Diagram	Assembly Rating	Cat. No.
Standard Wiring		300V 3 A	**898R–33PYX–R3**

Male Connector

Receptacles, AC Micro Style

18 AWG & 22 AWG, 1/2 NPT & 1/4 NPT Mounting Threads

AC Micro Style

AC Micro Male Receptacle

Specifications

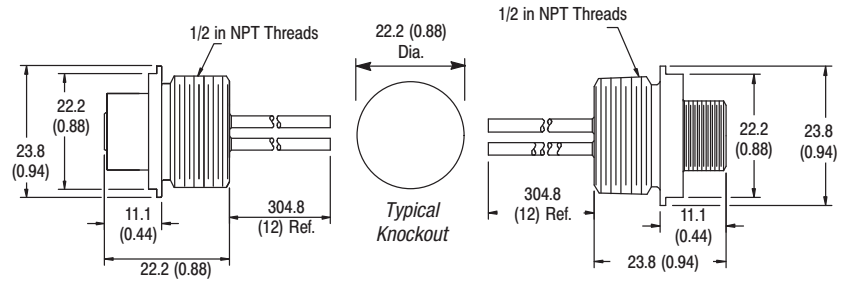
Certifications	UL recognized and CSA certified
Mechanical	
Receptacles Shell Material	Machined anodized aluminum with clear sealant
Connector Insert Material	Nylon
Contacts	Machined brass
Wire Insulation	Oil-resistant PVC, 22 AWG stranded copper, 300V UL recognized and CSA certified
Electrical	
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Features

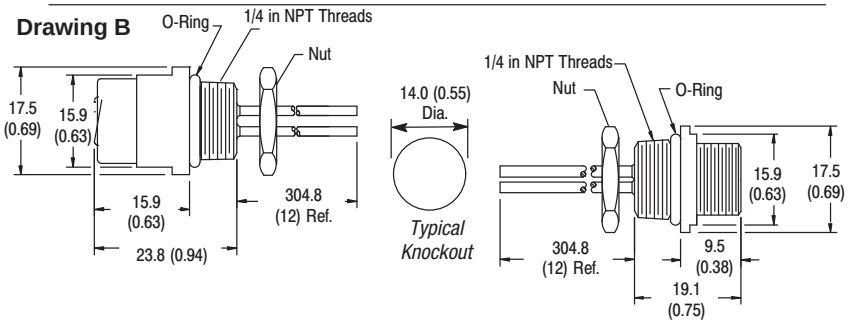
- 22 AWG conductors
- Male bulkhead receptacles
- 3-, 4-, 5- or 6-pin configuration
- 1/2 in–14 NPT or 1/4 in–18 NPT threads

Dimensions—mm (in)

Drawing A



Drawing B



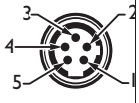
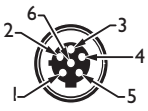
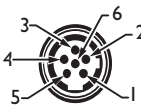
Dimensions are approximate. Illustrations are not drawn to scale.

Mating Components & Accessories

Description	Cat. No.
1/2 in–14 NPT Mounting Nut★	**889A–U1NUT–10**
1/2 in–14 NPT Flat Sealing Washer★	**889A–U1FSL–10**

★ Sold in bags of 10.

Pinout and Color Code

Color Code	Face View Pinout							
	3-Pin		4-Pin		5-Pin		6-Pin	
Color Code	 Female	 Male	 Female	 Male	 Female	 Male	 Female	 Male
A	1 Green 2 Red/Black Tr 3 Red/White Tr		1 Red/Black Tr 2 Red/White Tr	3 Red 4 Green (GND)	1 Red/White Tr 2 Red 3 Green (GND)	4 Red/Yellow Tr 5 Red/Black Tr	1 Red/White Tr 2 Red 3 Green	4 Red/Yellow Tr 5 Red/Black Tr 6 Red/Blue Tr

Product Selection

22 AWG Receptacle

Pin Count	Assembly Rating	Color Code	Panel Mount Threads	Dim. Drawing	Cat. No.	
					Female	Male
3-Pin	22 AWG 250V 4 A	A	1/2 in x 14NPT	A	888R–F3AC1–*	888R–M3AC1–*
			1/4 in x 18NPT	B	888R–F3AC2–*	888R–M3AC2–*
4-Pin			1/2 in x 14NPT	A	888R–F4AC1–*	888R–M4AC1–*
			1/4 in x 18NPT	B	888R–F4AC2–*	888R–M4AC2–*
5-Pin			1/2 in x 14NPT	A	888R–F5AC1–*	888R–M5AC1–*
			1/4 in x 18NPT	B	888R–F5AC2–*	888R–M5AC2–*
6-Pin			1/2 in x 14NPT	A	888R–F6AC1–*	888R–M6AC1–*
Mounting nuts for 1/2 in 14 NPT threaded receptacles are available in bags of 10 pieces						889A–U1NUT–10
Flat, sealing washers for 1/2 in 14 NPT threaded receptacles are available in bags of 10 pieces						889A–U1FSL–10

18 AWG Receptacle

Pin Count	Assembly Rating	Color Code	Panel Mount Threads	Dim. Drawing	Cat. No.	
					Female	Male
3-Pin	18 AWG 250V 4 A	A	1/2 in x 14NPT	A	888R–F3AE1–*	888R–M3AE1–*
			1/4 in x 18NPT	B	888R–F3AE2–*	888R–M3AE2–*
4-Pin			1/2 in x 14NPT	A	888R–F4AE1–*	888R–M4AE1–*
			1/4 in x 18NPT	B	888R–F4AE2–*	888R–M4AE2–*
5-Pin			1/2 in x 14NPT	A	888R–F5AE1–*	888R–M5AE1–*
			1/4 in x 18NPT	B	888R–F5AE2–*	888R–M5AE2–*
Mounting nuts for 1/2 in 14 NPT threaded receptacles are available in bags of 10 pieces						889A–U1NUT–10
Flat, sealing washers for 1/2 in 14 NPT threaded receptacles are available in bags of 10 pieces						889A–U1FSL–10

* Replace symbol with 1 (1 ft) and 3 (3 ft) for standard cable lengths.

Distribution Boxes, AC Micro Style

4-, 6-, and 8-Port, Parallel Wired

AC Micro Style

4-Port AC Micro

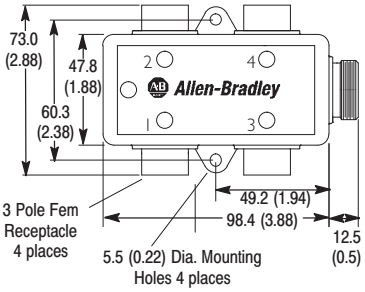
Specifications

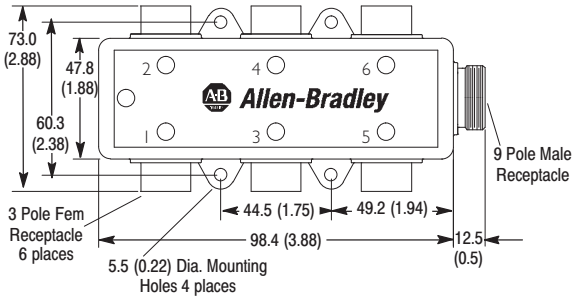
Certifications	UL recognized and CSA certified
Mechanical	
Material	Yellow PET
Connector Insert	PVC
Receptacle Shell Material	Anodized aluminum with clear sealant
Contacts	Gold-plated palladium/nickel
Environmental	
Enclosure Type Rating	IP 67; NEMA 6P
Operating Temperature—C (F)	–30…+105° (–22…+221°)

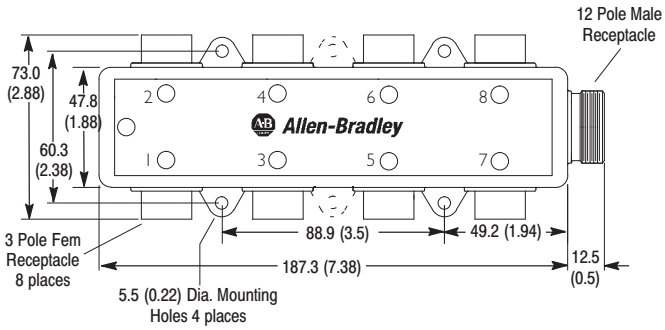
Features

- 4 parallel wired 3-pin AC micro connectors
- Highly visible yellow PET body offers good chemical and oil resistance

Dimensions—mm (in)

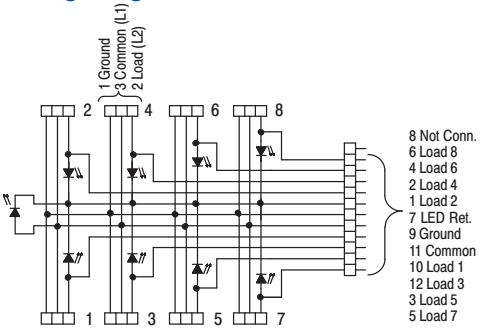






Dimensions are approximate. Illustrations are not drawn to scale.

Wiring Diagrams



Note: 8-port LED version.

Mating Components & Accessories

Description	Cat. No.	Page
Device patchcord	**889R–F3AERM–***	3–85
Main Cordset	**889N–F‡AF–***	3–35, 3–37
Field attachable connectors	**871A–TS3–RM**	3–97
Sealing caps	**889A–RMCAP**	3–143

Pinout and Wiring Arrangement

	Main Connection					
	4 Port		6 Port		8 Port	
Wiring Arrangement	A	B	C	D	E	F
Ports (3-pin AC Micro Female)	6-Pin Mini Male	7-Pin Mini Male	8-Pin Mini Male	9-Pin Mini Male	10-Pin Mini Male	12-Pin Mini Male
LED Return		Pin 1		Pin 4		Pin 7
All Ports Pin 3 (L1)	Pin 1	Pin 3	Pin 5	Pin 5	Pin 10	Pin 11
All Ports Pin 1 (GND)	Pin 3	Pin 7	Pin 7	Pin 7	Pin 8	Pin 9
Port 1 Pin 2 (L2)	Pin 2	Pin 4	Pin 6	Pin 6	Pin 7	Pin 10
Port 2 Pin 2 (L2)	Pin 4	Pin 5	Pin 1	Pin 1	Pin 1	Pin 1
Port 3 Pin 2 (L2)	Pin 5	Pin 2	Pin 4	Pin 9	Pin 9	Pin 12
Port 4 Pin 2 (L2)	Pin 6	Pin 6	Pin 2	Pin 2	Pin 2	Pin 2
Port 5 Pin 2 (L2)	—	—	Pin 3	Pin 8	Pin 3	Pin 3
Port 6 Pin 2 (L2)	—	—	Pin 8	Pin 3	Pin 4	Pin 4
Port 7 Pin 2 (L2)	—	—	—	—	Pin 5	Pin 5
Port 8 Pin 2 (L2)	—	—	—	—	Pin 6	Pin 6
No Connection	—	—	—	—	—	Pin 8

Product Selection

3-Pin Distribution Boxes

Ports	Illuminated	Assembly Rating	Wiring Arrangement	Cat. No.
4 Port	No LED	300V, 3 A	A	898R–34PS–N6
	LED	120V, 3 A	B	898R–L34PS–N7
6 Port	No LED	300V, 3 A	C	898R–36PS–N8
	LED	120V, 3 A	D	898R–L36PS–N9
8 Port	No LED	300V, 3 A	E	898R–38PS–N10
	LED	120V, 3 A	F	898R–L38PS–N12
Device Patchcords (Straight to Straight)				889R–F3EARM–*
Main Cordset (Straight to Conductor)				889N–F‡AF–*

* Replace symbol with 2 (2 m (6.5 ft)), 5 (5 m (16.4 ft)), or 10 (10 m (32.8 ft) for standard cable lengths.

‡ Replace symbol with the number of pins in the main connection.

Terminal Chambers, AC Micro Style

Screw-Type Field Attachable Connectors

AC Micro Style

AC Micro Male Receptacle

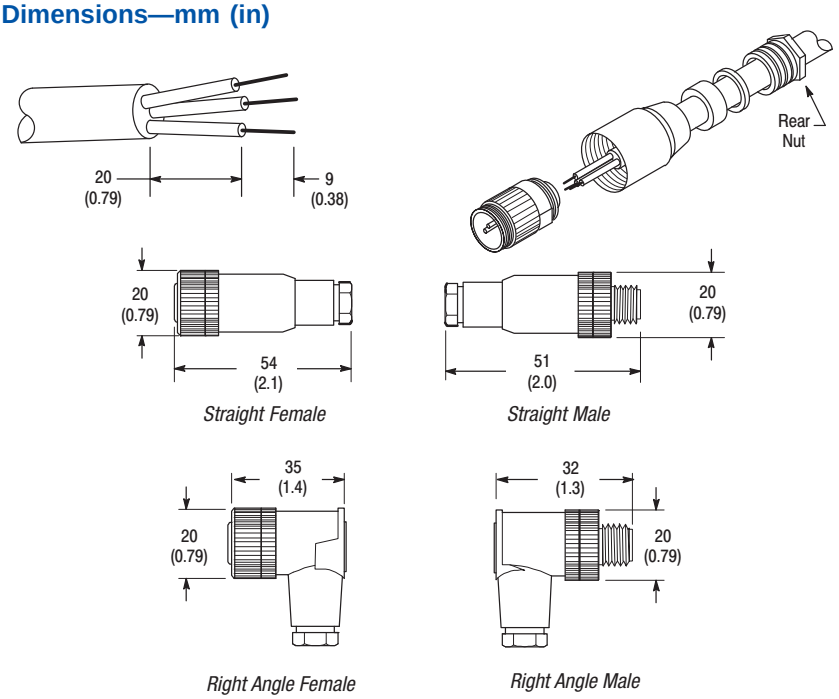
Features

- Field installable
- 3-pin AC micro style
- Straight or right angle
- Screw terminals provide simple and secure installation
- Allows easy modification of existing cable installations

Specifications

Mechanical	
Coupling Nut	Nickel-plated brass
Connector Insert Material	Nylon
Contacts	Gold-plated palladium/nickel
Wire Size, Max.	18 AWG (0.75 mm^2)
Environmental	
Enclosure Type Rating	IP 67 (IEC 529); NEMA 6P
Operating Temperature—C (F)	–40…+90° (–40…+194°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

Color Code	Face View Pinout 3-Pin Female	Male
A	1 Green 2 Red/Black Tr 3 Red/White Tr	

Product Selection

Terminal Chambers

Style	Cable Jacket Diameter—mm (in)	Wire Size, Max.	Cat. No.	
			Female	Male
Straight	4.0…6.0 (0.16…0.24)	18 AWG (0.75 mm^2)	871A–TS3–R	871A–TS3–RM
Right Angle			871A–TR3–R	871A–TR3–RM
Straight	6.0…8.0 (0.24…0.32)	18 AWG (0.75 mm^2)	871A–TS3–R1	871A–TS3–RM1
Right Angle			871A–TR3–R1	871A–TR3–RM1

Note: Stainless steel coupling nuts available, add “S” to cat. no. (e.g., **871AS–TS3–R**).

Notes

EAC Micro Style

Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments.

Featuring industry standard 4-pin overmolded connectors, Allen-Bradley EAC micro quick-disconnect cables provide secure connection for proximity sensors, photoelectric sensors and other field devices. Connectors can be straight or right-angled and are physically keyed to prevent wiring mishaps. Allen-Bradley EAC micro style cordsets are UL recognized and CSA certified and feature a yellow PVC jacket for high visibility and increased oil/chemical resistance.

Rockwell Automation is continually expanding its connection system offerings. If our standard catalog does not contain the item that you need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Cordset

889B — F 4 A C — 10
a b c d e

a

Code	Connector Type
F	Striaght Female (Internal Threads)
R	Right Angle Female (Internal Threads)

b

Code	Number of Pins
3–4	Number of Pins

c

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded

d

Code	Wire Gauge
C	22 AWG

e

Code	Cable Length
Blank	Meters

Receptacles

888B — M 4 A C 6 — 0M3
a b c d e f

a

Code	Connector Type
M	Male (External Threads)

b

Code	Number of Pins
4	Number of Pins

c

Code	Wire Type
A	PVC

d

Code	Wire Gauge
C	22 AWG

e

Code	Mounting Threads
6	M14 x 1

f

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

EAC Micro Style

4-Pin EAC Micro Cordset

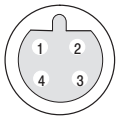
Features

- Ratcheting coupling nut
- Highly visible yellow PVC jacket offers good oil and chemical resistance

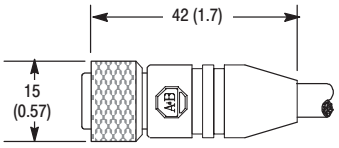
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	Epoxy coated zinc
Connector Material	Molded oil-resistant polyurethane body
Contacts	Gold over nickel-plated brass
Cable	Yellow oil-resistant PVC jacket, 22AWG conductors, 300V, UL recognized and CSA certified
Cable Diameter	5 mm (0.21 in)
Electrical	
Cable Rating	300V
Assembly Rating	300V, 3 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–40…+90° (–40…+194°)

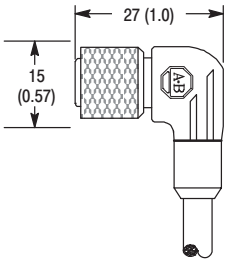
Pinout and Color Code

Color Code	Face View Pinout 4-Pin  Female	
A	1 Brown 2 Blue	3 Not Used 4 Green/Yellow
B	1 Brown 2 Blue	3 Black 4 Green/Yellow

Dimensions—mm (in)



Straight Female



Right Angle Female

Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Pin Count	Assembly Rating	Color Code	Cat. No.	
			Straight Female	Right Angle Female
3-Pin	22 AWG 300V 3 A	A	**889B–F3AC–***	**889B–R3AC–***
4-Pin		B	**889B–F4AC–***	**889B–R4AC–***

* Replace symbol with 2 (2m), 5 (5m) or 10 (10m) for standard cable lengths.

Receptacles, EAC Micro Style

22 AWG, M14 Mounting Threads

EAC Micro Style

EAC Micro Male Receptacle

Features

- 22 AWG conductors
- Male bulkhead receptacles
- 3- or 4-wire configuration
- M14 x 1 threads

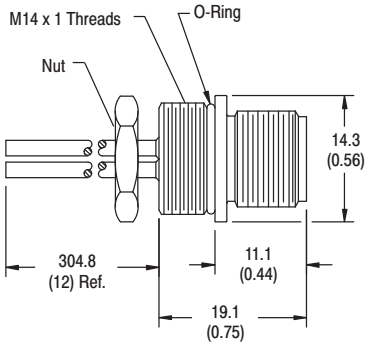
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Receptacles Shell Material	Black anodized machined aluminum
Connector Insert Material	Nylon
Contacts	Machined brass with gold over nickel plating
Wire Insulation	Oil-resistant PVC, 22 AWG stranded copper, 300V, UL recognized and CSA certified
Electrical	
Assembly Rating	300V, 3 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Pinout and Color Code

Color Code	Face View Pinout 4-Pin Male	
A	1 Brown 2 Blue	3 Not Used 4 Green/Yellow
B	1 Brown 2 Blue	3 Black 4 Green/Yellow

Dimensions—mm (in)



Dimensions are approximate. Illustrations are

Product Selection

Pin Count	Assembly Rating	Color Code	Panel Mount Threads	Length—m (ft)	Cat. No.
4-Pin	22 AWG 300V 3 A	A	M14 x 1	0.3 (1)	888B–M3AC6–0M3
		B			888B–M4AC6–0M3

Pico Style

Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments.

Featuring industry standard 3- or 4-pin overmolded connectors, Allen-Bradley pico quick-disconnect cables provide secure connection for proximity sensors, photoelectric sensors and other field devices. Connectors come in either thread-on or snap-on styles and can be straight or right-angled. They are also physically keyed to prevent wiring mishaps.

Allen-Bradley pico style cabling options include:

- Cordsets: Cable with integral male or female connector at one end and flying leads at the other
- Patchcords: Cable with integral connector at each end (one male, one female)
- Splitters/Y-cables: A single cable with male connector that splits into two female connectors, allowing connection of two devices to a single I/O port

Available with straight or right angle connectors, Allen-Bradley pico quick-disconnect cordsets, patchcords and Y-cables feature a yellow PVC jacket for increased visibility and oil/chemical resistance. PUR cables, cables with snap-on connectors as well as LED versions with power and output status indication are also available.

For bulkhead or panel installation, Allen-Bradley pico receptacles are also offered. These 3- or 4-wire connectors, available in male or female versions, are ideal for use in enclosures. Pico receptacles also allow for custom wiring configurations.

Allen-Bradley passive distribution boxes interface multiple devices to a control system through a single cable. Each pico distribution box features internal-thread female receptacles (4, 6, 8, or 10 depending on model) for quick and easy connection with quick-disconnect mating plugs. All products are LED versions for use with PNP (sourcing) inputs.

Available in male and female versions, terminal chambers, or field attachable connectors are passive field installable connectors for use with raw cable. Allen-Bradley 3- and 4-pin pico style IDC field installable connectors contain insulation displacement connectors for quick and easy assembly of custom QD cables on the plant floor with minimal tools required.

Rockwell Automation is continually expanding its connection system offerings. If our standard catalog does not contain the item that you need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Cordset

889P — F (a) 4 (b) A (c) B (d) — 10 (e)

a

Code	Connector Type
E	Right Angle Male (External Threads)
F	Straight Female (Internal Threads)
M	Straight Male (External Threads)
N	Right Angle Female, LED—NPN
P	Right Angle Female, LED—PNP
R	Right Angle Female (Internal Threads)
S	Straight Female, Snap-On
W	Right Angle Female, PNP, Snap-On
Y	Right Angle Female, NPN, Snap-On
Z	Right Angle Female, Snap-On

b

Code	Number of Pins
3–4	Number of Pins

c

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded
U	PUR Cable, Yellow, Unshielded

d

Code	Wire Gauge
B	24 AWG

e

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Patchcord

889P — F (a) 4 (b) A (c) B (d) P (e) M (f) — 10 (g)

a

Code	Connector Type
F	Straight Female (Internal Threads)
R	Right Angle Female (Internal Threads)

b

Code	Number of Pins
3–4	Number of Pins

c

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded
U	PVC Cable, Yellow, Unshielded

d

Code	Wire Gauge
B	24 AWG

e

Code	Male End Connector Style
P	Pico Quick-Disconnect

f

Code	Male End Connector Type
E	Right Angle Male (External Threads)
M	Straight Male (External Threads)

g

h	Cable Length
Blank	Meters (0M3 = 0.3 m)

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Receptacles

888P — F 4 A C 1 — 0M3
a b c d e f

a

Code	Connector Type
F	Female (External Threads)
M	Male (External Threads)

b

Code	Number of Pins
3–4	Number of Pins

c

Code	Wire Type
A	PVC

d

Code	Wire Gauge
B	24 AWG

e

f	Mounting Threads
4	M8 x 0.5

f

g	Cable Length
Blank	Meters (0M3 = 0.3 m)

Distribution Boxes

898P — P 3 4 P T — B5
a b c d e f

a

b	Illuminated
P	PNP LEDs

b

c	Number of Pins on Connectors
3	Number of Pins

c

d	Ports
4, 6, 8, 10, 12	Number of Ports

d

e	Wiring Configuration
P	Parallel—1 Input/Port

e

f	Port Orientation
T	Ports on Top of Box

f

g	Main Connector Style
B5	5 meter Black PUR/PVC Cable
B10	10 meter Black PUR/PVC Cable
D8	8-Pin DC Micro Connector

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Cordsets & Patchcords, Pico Style

24 AWG, Yellow PVC or PUR, Screw-On or Snap-On, LED and NonLED

Pico Style

Pico Screw-On Style

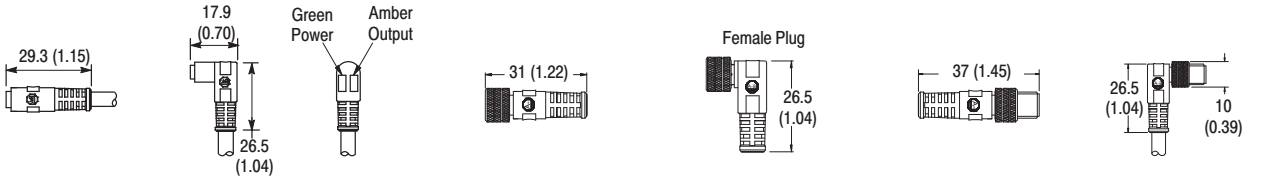
Features

- Highly visible yellow PVC jacket offers good oil and chemical resistance
- LED versions provide power and output indication for either PNP or NPN devices
- Snap-on coupling style for quick and simple connection

Specifications

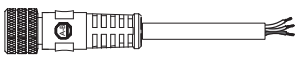
Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	Nickel-plated brass
Connector Material	Molded TPE
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant yellow PVC or PUR jacket, 24 AWG conductors, 300V, UL recognized, CSA certified
Cable Diameter	3/c = 4.3 mm (0.17 in) 4/c = 4.6 mm (0.18 in)
Electrical	
Cable Rating	PVC: UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 105C 300V FT1 PUR: UL AWM style 20233 or 20549 80C 300V
Assembly Rating	NonLED: 60V AC/75V DC, 4 A; LED: 10…30V DC, 4 A
Environmental	
Enclosure Type Rating	Screw-type: IP 67 Snap-on type: IP 65
Operating Temperature—C (F)	PVC models: –20…+105° (–4…+221°) PUR models: –20…+80° (–4…+176°)

Dimensions—mm (in)

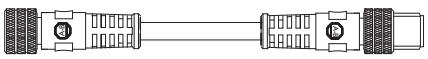


Straight Snap-On Female | *Right Angle Snap-On Female* | *Straight Screw-On Female* | *Right Angle Screw-On Female* | *Straight Screw-On Male* | *Right Angle Screw-On Male*

Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset

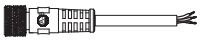


Example of Patchcord

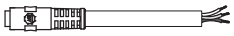
Pinout and Color Code

Color Code	Face View Pinout			
	3-Pin		4-Pin	
	 Female	 Male	 Female	 Male
A	1 Brown 3 Blue	4 Black	1 Brown 2 White	3 Blue 4 Black

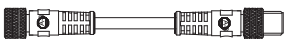
Product Selection

Snap-On Cordsets 

Pin Count	Jacket Material	Assembly Rating	Color Code	LED Type	Cat. No.	
					Straight Female	Right Angle Female
3-Pin	Yellow PVC	24 AWG 60V AC/75V DC 4 A	A	—	889P–S3AB–*	889P–Z3AB–*
	Yellow PUR				889P–S3UB–*	889P–Z3UB–*
3-Pin LED	Yellow PVC	24 AWG 10…30V DC 4 A		PNP	—	889P–W3AB–*
	Yellow PUR				—	889P–W3UB–*
	Yellow PVC			NPN	—	889P–Y3AB–*
	Yellow PUR				—	889P–Y3UB–*
4-Pin	Yellow PVC	24 AWG 60V AC/75V DC 4 A		—	889P–S4AB–*	889P–Z4AB–*
	Yellow PUR				889P–S4UB–*	889P–Z4UB–*

Screw-On Cordsets 

Pin Count	Jacket Material	Assembly Rating	Color Code	LED Type	Cat. No.			
					Straight Female	Right Angle Female	Straight Male	Right Angle Male
3-Pin	Yellow PVC	24 AWG 60V AC/75V DC 4 A	A	—	889P–F3AB–*	889P–R3AB–*	889P–M3AB–*	889P–E3AB–*
	Yellow PUR				889P–F3UB–*	889P–R3UB–*	—	—
3-Pin LED	Yellow PVC	24 AWG 10…30V DC/ 4 A		PNP	—	889P–P3AB–*	—	—
	Yellow PUR				—	889P–P3UB–*	—	—
	Yellow PVC			NPN	—	889P–N3AB–*	—	—
	Yellow PUR				—	889P–N3UB–*	—	—
4-Pin	Yellow PVC	24 AWG 60V AC/75V DC 4 A		—	889P–F4AB–*	889P–R4AB–*	889P–M4AB–*	889P–E4AB–*
	Yellow PUR				889P–F4UB–*	889P–R4UB–*	889P–M4UB–*	889P–E4UB–*

Screw-On Patchcords 

Pin Count	Jacket Color	Assembly Rating	Color Code	Cat. No.			
				Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
3-Pin	Yellow PVC	24 AWG 60V AC/75V DC 3 A	A	889P–F3ABPM–‡	889P–F3ABPE–‡	889P–R3ABPM–‡	889P–R3ABPE–‡
	Yellow PUR			889P–F3UBPM–‡	—	889P–R3UBPM–‡	—
4-Pin Female to 3-Pin Male	Yellow PVC			889P–F4ABPM3–‡	889P–F4ABP3E–‡	889P–R4ABPM3–‡	889P–R4ABP3E–‡
	Yellow PUR			889P–F4UBPM3–‡	—	—	—
4-Pin	Yellow PVC			889P–F4ABPM–‡	—	—	—
	Yellow PUR			889P–F4UBPM–‡	—	889P–R4UBPM–‡	—

* Replace symbol with 2 (2 m), (5 m) or 10 (10 m) for standard cable lengths.
‡ Replace symbol with 1 (1 m), 2 (2 m), 3 (3 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

Patchcords, Pico Style

24 AWG, Pico to DC Micro, PVC

Pico Style

DC Micro to Pico Patchcord

Features

- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Convenient connection from pico to DC micro
- Ratcheting coupling nut for vibration resistance

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	DC micro: Black epoxy-coated zinc Pico: Nickel-plated brass
Connector Material	DC micro: Molded oil-resistant PUR Pico: Molded oil resistant TPE
Contacts	Gold over nickel-plated brass
Cable	Oil-resistant yellow PVC jacket, 24 AWG conductors, 300V, UL recognized and CSA certified
Cable Diameter	4.3 mm (0.17 in)
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 105C 300V FT1
Assembly Rating	60V AC/75V DC, 3 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Wiring Diagrams

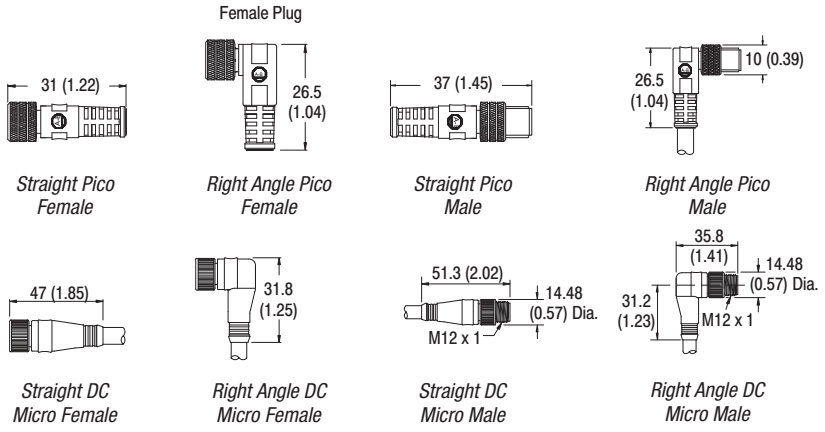
3-Pin Pico — 4-Pin DC Micro

Pin 1>	>Pin 1
	>Pin 2
Pin 3>	>Pin 3
Pin 4>	>Pin 4

4-Pin Pico Female — 4-Pin DC Micro Male

Pin 1>	>Pin 1
Pin 2>	>Pin 2
Pin 3>	>Pin 3
Pin 4>	>Pin 4

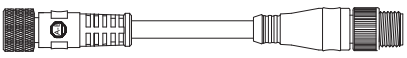
Dimensions—mm (in)



Straight Pico Female | *Right Angle Pico Female* | *Straight Pico Male* | *Right Angle Pico Male*

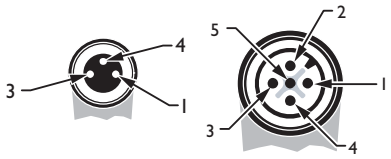
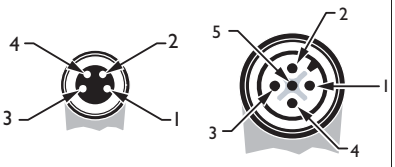
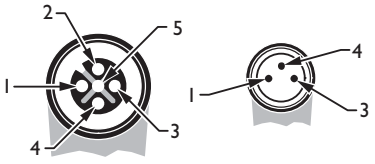
Straight DC Micro Female | *Right Angle DC Micro Female* | *Straight DC Micro Male* | *Right Angle DC Micro Male*

Dimensions are approximate. Illustrations are not drawn to scale.

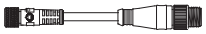


Example of Patchcord

Pinout

Pinout	Face View Pinout		
	A	B	C
			
	Female Male	Female Male	Female Male
	3-Pin Pico Female to 4-Pin DC Micro Male	4-Pin Pico Female to 4-Pin DC Micro Male	4-Pin DC Micro Female to 3-Pin Pico Male

Product Selection

Patchcords 

Style: Female to Male	Pinout	Assembly Rating	Cat. No.			
			Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
3-Pin Pico to 4-Pin DC Micro	A	24 AWG 60V AC/75V DC 3 A	889P–F3ABDM4–*	889P–F3ABDE4–*	889P–R3ABDM4–*	889P–R3ABDE4–*
4-Pin Pico to 4-Pin DC Micro	B		889P–F4ABDM–*	889P–F4ABDE–*	—	—
4-Pin DC Micro to 3-Pin Pico	C		889D–F4ABP3M–*	889D–F4ABP3E–*	889D–R4ABP3M–*	889D–R4ABP3E–*

* Replace symbol with 1 (1 m), 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

Splitter, Pico Style

Pico to Pico, DC Micro to Pico

Pico Style

Splitter

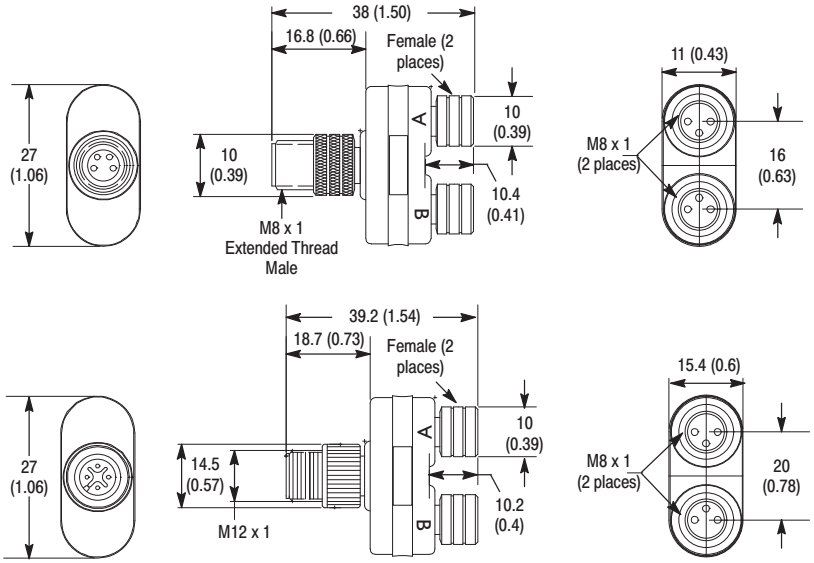
Features

- Two 3-pin female pico to one 4-pin DC micro connector allows simplification of wiring
- PUR body offers good oil and chemical resistance
- Racheting coupling nuts for vibration resistance

Specifications

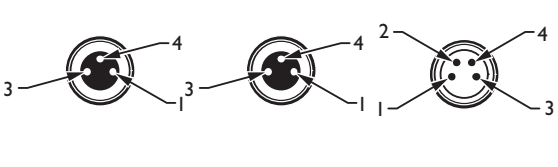
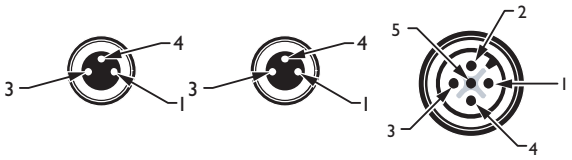
Certifications	UL recognized and CSA certified
Mechanical	
Material	Black PUR
Connector Insert	PUR
Receptacle Shell Material	Nickel-plated brass
Contacts	Gold-plated palladium/nickel
O-Ring	Viton®
Electrical	
Assembly Rating	60V AC/75V DC, 4 A
Environmental	
Enclosure Type Rating	IP 67; NEMA 6P
Operating Temperature—C (F)	–0…+85° (–32…+185°)

Dimensions—mm (in)



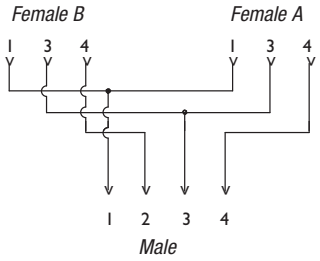
Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

Pinout	Face View Pinout	Face View Pinout
	A	B
		
	Female Female Male	Female Female Male
	3-Pin Pico Female to 4-Pin Pico Male	3-Pin Pico Female to 4-Pin DC Micro Male

Product Selection

Splitters

Connector	Wiring Diagram	Assembly Rating	Pinout	Cat. No.
Standard Wiring Pico to Pico		60V AC/75V DC 4 A	A	898P–32YY–PM4
Standard Wiring Pico to DC Micro			B	898P–32YY–DM4

V-Cables, Pico Style

24 AWG, Pico to DC Micro, PVC or PUR, LED and NonLED

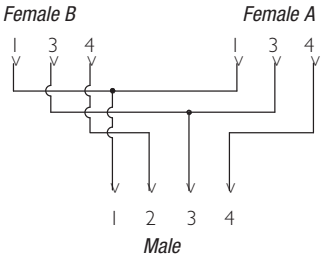
Pico Style

Pico Y-Cables

Features

- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Convenient connection of 2 sensors to 1 I/O port
- Screw-on coupling nuts for rugged reliable connection
- Racheting coupling nuts for vibration resistance

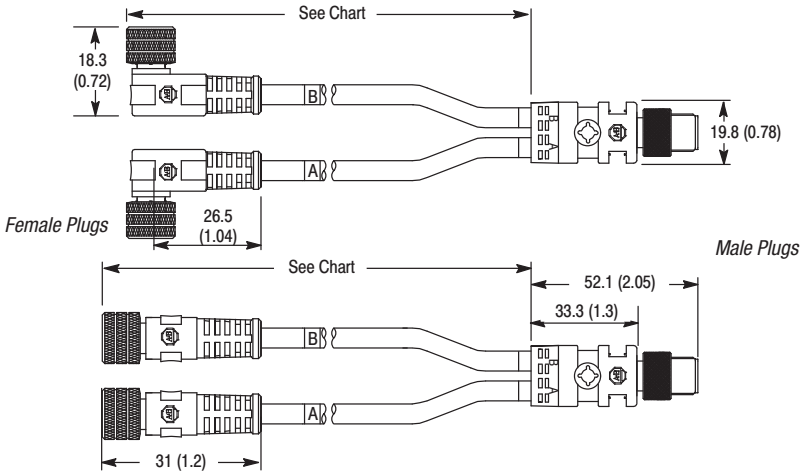
Wiring Diagrams



Specifications

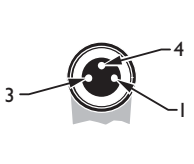
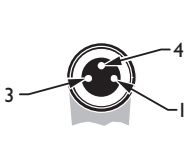
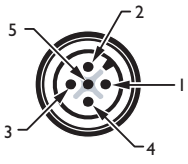
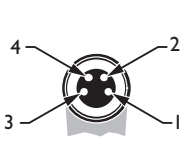
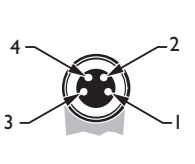
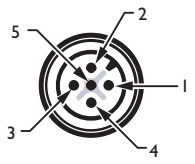
Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Nickel-plated brass (Pico) Epoxy-coated zinc (DC Micro)
Connector Material	Molded TPE
Contacts	Gold over nickel-plated brass
Cable	Oil resistant yellow PVC jacket, 24 AWG conductors, 300V, UL recognized, CSA certified
Bend Radius	10 x diameter
Cable Diameter	3/c = 4.3 mm (0.17 in) 4/c = 4.6 mm (0.18 in)
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 105C 300V FT1
Assembly Rating	NonLED: 60V AC/75V DC, 4 A; LED: 10…30V DC, 4 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	PVC models: –20…+105° (–4…+221°) PUR models: –20…+80° (–4…+176°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

Pinout	Face View Pinout					
	A			B		
						
	Female	Female	Male	Female	Female	Male
	3-Pin Pico Female to 4-Pin DC Micro Male			4-Pin Pico Female to 4-Pin DC Micro Male		

Product Selection

V-Cables 

Female Connector Pinout	Jacket Material	Male Connector Pinout	LED Type	Pinout	Assembly Rating	Cat. No.	
						Straight Female Connector	Right Angle Female Connector
3-Pin Pico	PVC	4-Pin DC Micro	—	A	24 AWG 60V AC/75V DC 4 A	879PZ–F3ABDM4–*	879PZ–R3ABDM4–*
	PUR		—	A		879PZ–F3UBDM4–*	879PZ–R3UBDM4–*
4-Pin Pico	PVC		—	B		879PZ–F4ABDM4–*	—
3-Pin Pico LED	PVC		PNP	A	24 AWG 10…30V DC 4 A	—	879PZ–P3ABDM4–*
	PVC		NPN			—	879PZ–N3ABDM4–*
	PUR		PNP	A		—	879PZ–P3UBDM4–*
	PUR		NPN	A		—	879PZ–N3UBDM4–*

* Replace symbol with 0M3 (0.3 m (1 ft)), 1 (1 m (3.3 ft)), 2 (2 m (6.5 ft)), 5 (5 m (16.4 ft)), or 10 (10 m (32.8 ft)) for standard cable lengths.

Receptacles, Pico Style

24 AWG, M8 Mounting Threads

Pico Style

Pico Receptacles

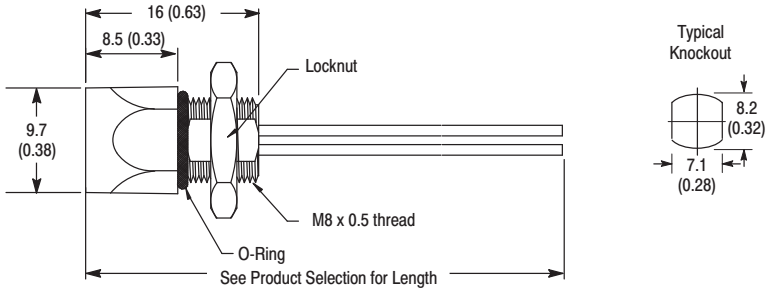
Features

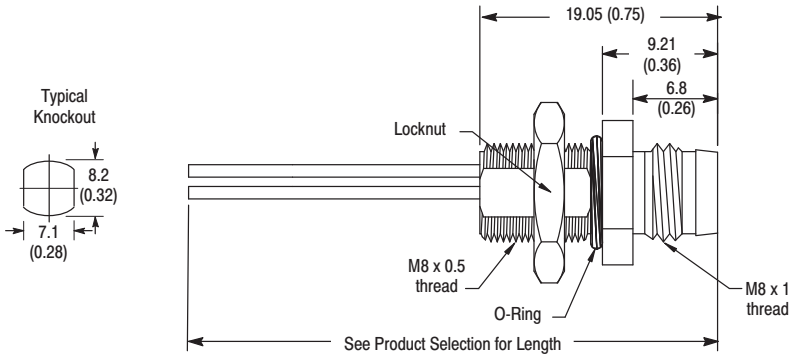
- Connector shell design accommodates threaded male connector types only
- 3-pin and 4-pin configurations provide standard connectivity
- M8 x 0.5 mounting threads for convenient installation

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Receptacle Shell Material	Nickel-plated brass
Connector Insert Material	PBT
Contacts	Gold over nickel-plated brass
Electrical	
Assembly Rating	60V AC/75V DC, 7 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Dimensions—mm (in)



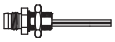


Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

Color Code	Face View Pinout			
	3-Pin		4-Pin	
	 Female	 Male	 Female	 Male
A	1 Brown 3 Blue	4 Black	1 Brown 2 White	3 Blue 4 Black

Product Selection

Receptacles 

Pin Count	Assembly Rating	Color Code	Panel Mount Threads	Cat. No.	
				Female	Male
3-Pin	24 AWG 60V AC/75V DC 4 A	A	M8 x 0.5	888P–F3AB4–*	888P–M3AB4–*
4-Pin				888P–F4AB4–*	888P–M4AB4–*

* Replace symbol with 0M3 (0.3 m (1 ft)) or 1 (1 m (3.3 ft)) for standard cable lengths.

Distribution Boxes, Pico Style

3-Pin, Cable Connector

Pico Style

Pico 8-Port Distribution Box

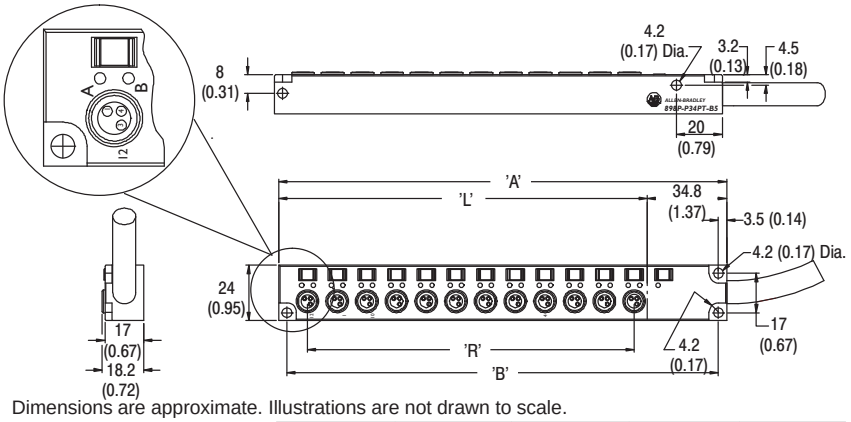
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Grey Pocan
Connector Insert	PBT
Receptacle Shell Material	Nickel-plated brass
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant black PUR/PVC jacket, (3) 18 AWG stranded copper, (4, 6, 8, 10 or 12) 22 AWG flex rated for 1 million cycles
Cable Diameter	4 port = 6.4 mm (0.25 in) 10 port = 7.6 mm (0.30 in) 6 port = 7.2 mm (0.28 in) 12 port = 9.8 mm (0.39 in) 8 port = 7.4 mm (0.29 in)
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+80° (–4…+176°)

Features

- Grey Pocan body offers good oil and chemical resistance
- Side and top mounting holes for ease of installation
- PUR/PVC cable rated to flex to 1 million cycles
- LED version for use with PNP (sourcing) field devices
- Snap-in markers for box and port identification can be used with 1492 Fast Track™ marker printer system

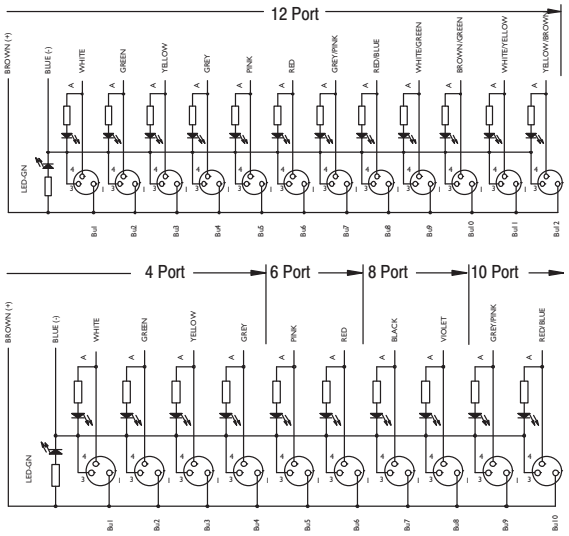
Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

# of Ports	L	R	B	A
4	57 (2.2)	39 (1.5)	85 (3.3)	92 (3.6)
6	83 (3.3)	65 (2.6)	111 (4.4)	118 (4.6)
8	109 (4.3)	91 (3.6)	137 (5.4)	144 (5.7)
10	135 (5.3	117 (4.6)	163 (6.4)	170 (6.7)
12	161 (6.3)	143 (5.6)	189 (7.4)	196 (7.7)

Wiring Diagrams



Mating Components & Accessories

Description	Cat. No.	Page
Device patchcord (3-pin)	**889P–F3ABPM–‡**	3–107
Field Attachable Connectors	**871A–TS3–PM**	3–121
IDC Field Attachable Connectors	**889P–M3DC–H**	3–123
Sealing Caps§	**889A–PMCAP**	3–143
Labels⁂	**1492–M5X10**	—

‡ Replace symbol with the length of the cable in meters (1, 2, 3, 5 or 10 m standard)
§ 2 provided with box
⁂ 1 set provided with box (see *Industrial Control* catalog)

Pinout

Device Connection					Main Connection
					
Ports (Female 3-pin)					Cable
4 Port	**6 Port**	**8 Port**	**10 Port**	**12 Port**	
Ground	Ground	Ground	Ground	Ground	Green/Yellow
(+) All Ports Pin 1	(+) All Ports Pin 1	(+) All Ports Pin 1	(+) All Ports Pin 1	(+) All Ports Pin 1	Brown
(–) All Ports Pin 3	(–) All Ports Pin 3	(–) All Ports Pin 3	(–) All Ports Pin 3	(–) All Ports Pin 3	Blue
Port 1 Pin 4	Port 1 Pin 4	Port 1 Pin 4	Port 1 Pin 4	Port 1 Pin 4	White
Port 2 Pin 4	Port 2 Pin 4	Port 2 Pin 4	Port 2 Pin 4	Port 2 Pin 4	Green
Port 3 Pin 4	Port 3 Pin 4	Port 3 Pin 4	Port 3 Pin 4	Port 3 Pin 4	Yellow
Port 4 Pin 4	Port 4 Pin 4	Port 4 Pin 4	Port 4 Pin 4	Port 4 Pin 4	Grey
—	Port 5 Pin 4	Port 5 Pin 4	Port 5 Pin 4	Port 5 Pin 4	Rose
—	Port 6 Pin 4	Port 6 Pin 4	Port 6 Pin 4	Port 6 Pin 4	Red
—	—	Port 7 Pin 4	Port 7 Pin 4	—	Black
—	—	Port 8 Pin 4	Port 8 Pin 4	—	Violet
—	—	—	Port 9 Pin 4	Port 7 Pin 4	Grey/Pink
—	—	—	Port 10 Pin 4	Port 8 Pin 4	Red/Blue
—	—	—	—	Port 9 Pin 4	White/Green
—	—	—	—	Port 10 Pin 4	Brown/Green
—	—	—	—	Port 11 Pin 4	White/Yellow
—	—	—	—	Port 12 Pin 4	Yellow/Brown

Product Selection

3-Pin Single Output, Distribution Boxes

Ports	Illuminated	Assembly Rating	Cat. No.
4 Port	PNP LED	10…30V DC, 2 A per channel/ 6 A total	**898P–P34PT–B***
6 Port			**898P–P36PT–B***
8 Port			**898P–P38PT–B***
10 Port			**898P–P310PT–B***
12 Port			**898P–P312PT–B***
Device Patchcord (3-pin straight to straight)			**889P–F3ABPM–‡**

* Replace symbol with 5 (5 m) or 10 (10 m) for standard cable lengths.
‡ Replace symbol with the length of cable in meters (1, 2, 3, 5 or 10 m standard).

Distribution Boxes, Pico Style

3-Pin, DC Micro Main Connector

Pico Style

Pico 6-Port Distribution Box

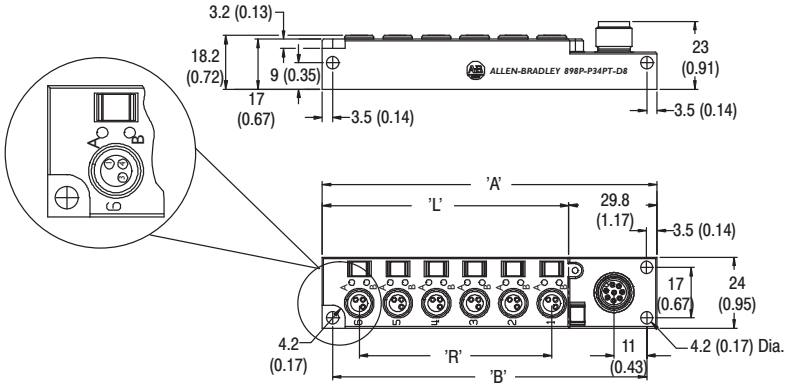
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Grey Pocan
Connector Insert	PBT
Receptacle Shell Material	Nickel-plated brass
Contacts	Gold-plated palladium/nickel
Main Connector	8-Pin DC Micro
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–20…+80° (–4…+176°)

Features

- Grey Pocan body offers good oil and chemical resistance
- 8-pin DC micro main connector
- Side and top mounting holes for ease of installation
- LED version for use with PNP (sourcing) field devices
- Snap-in markers for box and port identification can be used with IEC marker printer system

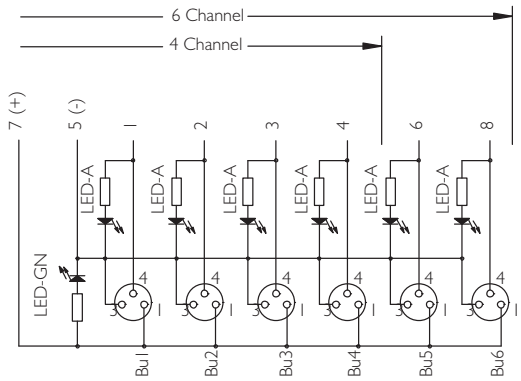
Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

# of Ports	L	R	B	A
4	57 (2.2)	39 (1.5)	80 (3.1)	87 (3.4)
6	83 (3.3)	65 (2.6)	106 (4.2)	113 (4.4)

Wiring Diagrams

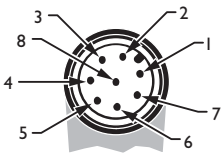


Mating Components & Accessories

Description	Cat. No.	Page
Device patchcord (3-pin)	**889P–F3ABPM–‡**	3–107
DC Micro Homerun patchcord	**889D–R8ABDM–‡**	3–51
Field Attachable Connectors	**871A–TS3–PM**	3–121
IDC Field Attachable Connectors	**889P–M3DC–H**	3–123
Sealing Caps§	**889A–PMCAP**	3–143
Labels⁂	**1492–M5X10**	—

‡ Replace symbol with the length of the cable in meters (1, 2, 3, 5 or 10 m standard)
§ 2 provided with box
⁂ 1 set provided with box (see *Industrial Control* catalog)

Pinout

Device Connection		Main Connection
		
Ports (Female 3-Pin)		**8 Pin DC Micro**
4 Port	**6 Port**	
(+) All Ports Pin 1	(+) All Ports Pin 1	7
(–) All Ports Pin 3	(–) All Ports Pin 3	5
Port 1 Pin 4	Port 1 Pin 4	1
Port 2 Pin 4	Port 2 Pin 4	2
Port 3 Pin 4	Port 3 Pin 4	3
Port 4 Pin 4	Port 4 Pin 4	4
—	Port 5 Pin 4	6
—	Port 6 Pin 4	8

Product Selection

3-Pin Single Output, Distribution Boxes

Ports	Illuminated	Assembly Rating	Cable Length—m (ft)	Cat. No.
4 Port	PNP LED	10…30V DC, 2 A per channel/6 A total	8-pin M12 QD	898P–P34PT–D8
6 Port				898P–P36PT–D8
Device Patchcord (3-pin straight to straight)				889P–F3ABPM–‡
Homerun Patchcord for D8 models (Right Angle to Straight)				889D–R8ABDM–‡

‡ Replace symbol with the length of cable in meters (1, 2, 3, 5 or 10 m standard).

Pico Style

3-Pin Pico Female

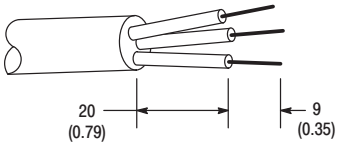
Features

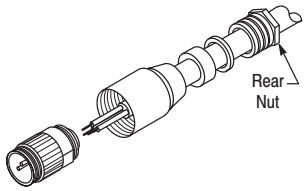
- Field installable
- 3- or 4-pin DC micro style
- Straight connectors
- Screw terminals provide simple and secure installation
- Allows easy modification of existing cable installations

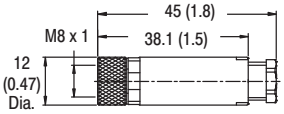
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut	Nickel-plated brass
Connector Shell Material	PBT
Contacts	Gold-plated palladium nickel
Cable	20 AWG (0.5 mm^2) max.
Electrical	
Assembly Rating	3- or 4-pin: 60V, 4 A
Environmental	
Enclosure Type Rating	IP 67
Operating Temperature—C (F)	–40…+88° (–40…+185°)

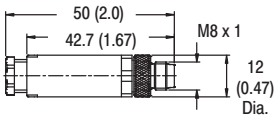
Dimensions—mm (in)







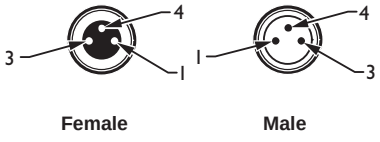
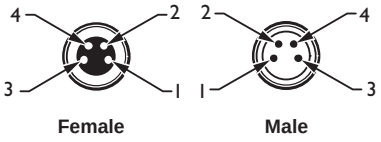
Right Angle Female



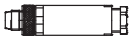
Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

Color Code	Face View Pinout	
	4–Pin	5–Pin
		
	Female Male	Female Male
A	1 Brown 3 Blue 4 Black	1 Brown 2 White 3 Blue 4 Black

Product Selection

Terminal Chambers 

Pin Count	Cable Jacket Diameter—mm (in)	Assembly Rating	Rear Nut Thread Size	Cat. No.	
				Straight Female	Straight Male
3-Pin	3.5…5.0 (0.14…0.20)	60V, 4 A	PG 7	871A–TS3–P	871A–TS3–PM
4-Pin				871A–TS4–P	871A–TS4–PM

Field Attachable, Pico Style

Insulation Displacement Connection

Pico Style

Pico Style Male

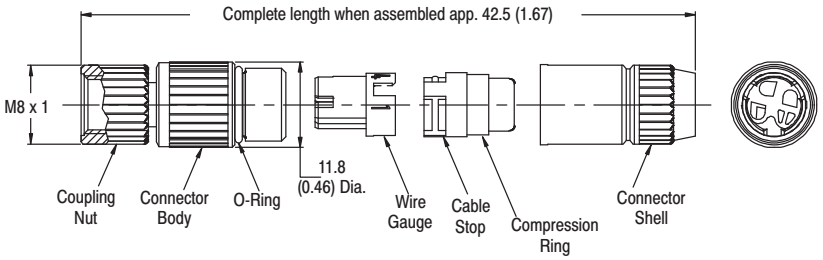
Features

- Field installable with no hand tools needed
- 3- or 4-pin pico style
- Straight, male or female
- Allows easy modification of existing cable installations
- Insulation displacement technology for secure and reliable installation

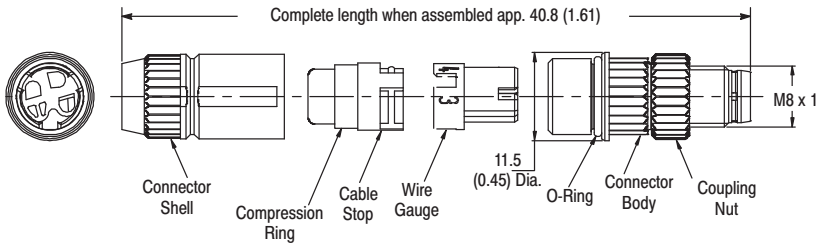
Specifications

Mechanical	
Coupling Nut	Nickel-plated brass
Connector Shell Material	Nickel-plated brass
Connector Body Material	Hytrel Htr 8068
Field Contacts	Gold-plated palladium nickel
IDC Installations, Max.	10
Outside Diameter Conductor	1.0 mm…1.6 mm (0.04 in…0.063 in)
Wire Size	22 AWG…26 AWG (min. individual strand size = 38 AWG)
Environmental	
Enclosure Type Rating	IP 67; NEMA 6P
Operating Temperature—C (F)	–25…+85° (–13…+185°)
Installation Temp.—C (F)	–5…+50° (23…+122°)

Dimensions—mm (in)



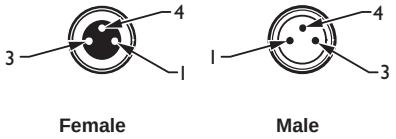
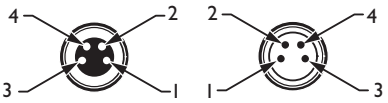
Straight Female



Straight Male

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

Color Code	Face View Pinout			
	3-Pin		4-Pin	
				
	Female	Male	Female	Male
A	1 Brown 3 Blue	4 Black	1 Brown 2 White	3 Blue 4 Black

Product Selection

Terminal Chambers 

Style	Cable Jacket Diameter—mm (in)	Rating	Cat. No.	
			Female	Male
Straight	4.0…5.1 (0.16…0.20)	32V 3 A	889P–F3DC–H	889P–M3DC–H
			889P–F4DC–H	889P–M4DC–H

Notes

M23 Style




Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments.

Featuring industry standard 12-pin connectors, the Allen-Bradley M23 cables provide secure connection for high pin count field devices utilizing M23 style connectors. Connectors can be straight or right angled and are physically keyed to prevent wiring mishaps. Allen-Bradley M23 style cabling options include:

- Cordsets: Cable with integral female connector at one end and flying leads at the other
- Patchcords: Cable with integral connector at each end (one male, one female)

M23 connector receptacles are also offered for bulkhead/panel installation. These 12-pin male connectors are ideal for use in enclosures and on field devices with M20 conduit openings, and allow for custom wiring configurations.

Terminal chambers, or field attachable connectors, are passive field-installable connectors for use with raw cable. Allen-Bradley 12-pin M23 style terminal chambers contain solder-cups and machined housing components for reliable installation and assembly.

Rockwell Automation is continually expanding its connection systems offerings. If our standard catalog does not contain the item that you need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Cordset

889M — F (a) 12X9 (b) A (c) E (d) — 10 (e)

a

Code	Connector Type
F	Straight Female (Internal Threads)
R	Right Angle Female (Internal Threads)
U	Straight Male (Internal Threads)
V	Right Angle Male (Internal Threads)

b

Code	Number of Pins
12X9	12 Pins 9 Conductors
11	12 Pins 11 Conductors
12	12 Pins 12 Conductors
19	19 Pins 19 Conductors

c

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded
R	PUR Cable, Black, Unshielded

d

Code	Wire Gauge
E	18 AWG
H	18 AWG with One Twisted Pair
M	3/18 AWG and Rest 22 AWG

e

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Patchcord

889M — F (a) 12 (b) A (c) H (d) M (e) U (f) — 1 (g)

a

Code	Connector Type
F	Straight Female (Internal Threads)
R	Right Angle Female (Internal Threads)

b

Code	Number of Pins
12X9	12 Pins 9 Conductors
11	12 Pins 11 Conductors
12	12 Pins 12 Conductors
19	19 Pins 19 Conductors

c

Code	Jacket Material
A	PVC Cable, Yellow, Unshielded
R	PUR Cable, Black, Unshielded

d

Code	Wire Gauge
H	18 AWG with One Twisted Pair
M	3/18 AWG and Rest 22 AWG

e

Code	Male End Connector Style
M	M23

f

Code	Male End Connector Type
U	Straight Male (Internal Threads)
V	Right Angle Male (Internal Threads)

g

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Receptacles

888M —	F	12	A	E		—	0M3
	a	*b*	*c*	*d*	*e*		*f*

a

Code	Connector Type
F	Female (External Threads)
M	Male (External Threads)

b

Code	Number of Pins
12X9	12 Pins 9 Conductors
11	12 Pins 11 Conductors
12	12 Pins 12 Conductors
19	19 Pins 19 Conductors

c

Code	Wire Type
A	PVC

d

Code	Wire Gauge
E	18 AWG

e

Code	Mounting Threads
Blank	M20 x 1.5

f

Code	Cable Length
Blank	Meters (0M3 = 0.3 m)

Note: **The Configurators are for reference only.** Please do not use these to create a catalog number as the result may be unavailable.

Cordsets and Patchcords, M23 Style

18 or 18/22 AWG, Black or Yellow PVC

M23 Style

12-Pin M23 Cordset

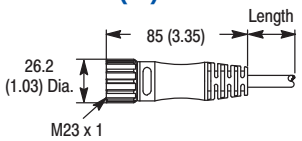
Features

- 12-pin configuration for SafeShield light curtains and other applications
- 12-pin/11-conductor on 19-pin for passive distribution and other box applications
- Subtle black or highly visible yellow PVC jacket offers good oil and chemical resistance

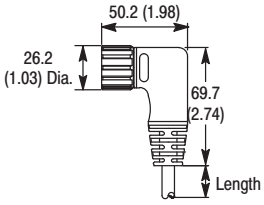
Specifications

Mechanical	
Coupling Nut	Nickel-plated brass
Connector	Molded oil-resistant PUR
Contacts	Gold over nickel-plated brass
Cable	Oil resistant yellow PVC jacket, 18AWG conductors, 60V UL recognized and CSA certified
Bend Radius	10 x diameter
Cable Diameter	10 mm (0.41 in)
Electrical	
Cable Rating	300V
Assembly Rating	9-, 11-, 12-pin: 63V, 6A; 19-pin: 63V, 12 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+80° (–4…+176°)

Dimensions—mm (in)

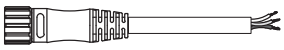


Straight Internal Threads

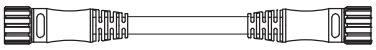


Right Angle Internal Threads

Dimensions are approximate. Illustrations are not drawn to scale.

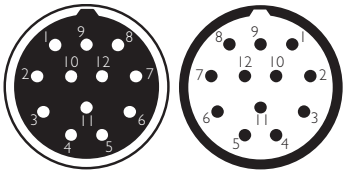
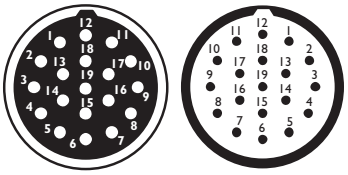


Example of Cordset



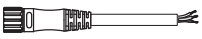
Example of Patchcord

Pinout and Color Code

Color Code	Face View Pinout	
	9-, 11-, or 12-Pin	19-Pin
	 Female Male	 Female Male
A	**9-Pin** 1 Brown 2 NA 3 Blue 4 White 5 NA 6 Green 7 Yellow 8 Grey 9 Pink 10 Red 11 NA 12 Green/Yellow	1 Violet 2 Red 3 Grey 4 Red/Blue 5 Green 6 Blue 7 Grey/Pink 8 White/Green 9 White/Yellow 10 White/Grey 11 Black 12 Green/Yellow 13 Yellow/Brown 14 Brown/Green 15 White 16 Yellow 17 Pink 18 Grey/Brown 19 Brown
B	**11-Pin** 1 White 2 Green 3 Yellow 4 Grey 5 Pink 6 Red 7 Black 8 Violet 9 Blue 10 Blue 11 Brown 12 Green/Yellow	—
C	**12-Pin** 1 Brown 2 Blue 3 Grey 4 Pink 5 Red 6 Yellow 7 White 8 Red/Blue 9 Black 10 Violet 11 Grey/Pink 12 Green	—

Product Selection

Cordsets



Pin Count	Color Code	Jacket Color	Assembly Rating	Cat. No.			
				Straight Female	Right Angle Female	Straight Male	Right Angle Male
9-Pin	A	Yellow	18 AWG	889M–F12X9AE–*	889M–R12X9AE–*	—	—
11-Pin	B	Black	3/18 & 8/22 AWG	889M–F11RM–*	889M–R11RM–*	889M–U11RM–*	889M–V11RM–*
12-Pin	C	Yellow	18 AWG	889M–F12AH–*	889M–R12AH–*	—	—
19-Pin	A	Black	3/18 & 16/22 AWG	889M–F19RM–*	889M–R19RM–*	889M–U19RM–*	889M–V19RM–*

Patchcords

Pin Count	Jacket Color	Assembly Rating	Cat. No.			
			Straight Female Straight Male	Straight Female Right Angle Male	Right Angle Female Straight Male	Right Angle Female Right Angle Male
11-Pin	Black	3/18 & 8/22 AWG	889M–F11RMMU–‡	889M–F11RMMV–‡	889M–R11RMMU–‡	889M–R11RMMV–‡
12-Pin	Yellow	18 AWG	889M–F12AHMU–§	—	—	—
19-Pin	Black	3/18 & 16/22 AWG	889M–F19RMMU–‡	889M–F19RMMV–‡	889M–R19RMMU–‡	889M–R19RMMV–‡

* Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.
‡ Replace symbol with 0M3 (0.3 m), 1 (1 m), 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
§ Replace symbol with 0M3 (0.3 m), 0M6 (0.6 m), 1 (1 m), 2 (2 m) or 3 (3 m) for standard cable lengths.

Receptacles, M23 Style

18 or 18/22 AWG, M20 Mounting Threads

M23 Style

12-Pin Male M23 Receptacle

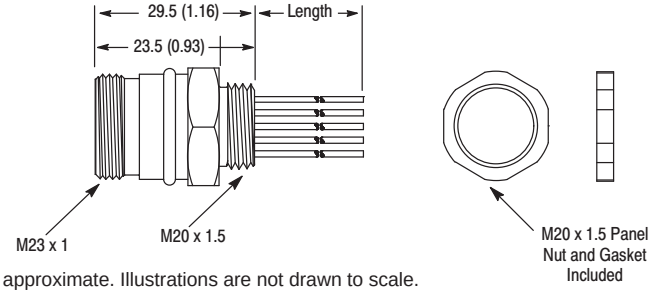
Features

- 18 AWG conductors for ease of wiring
- 12-pin configuration provides standard connectivity
- M20 x 1.5 threads for convenient mounting to safety switches
- Mounting nut and rubber sealing washer included

Specifications

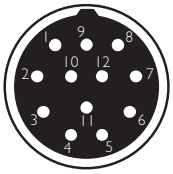
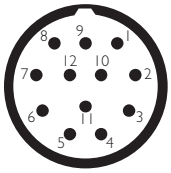
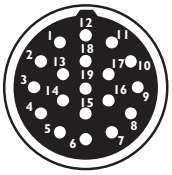
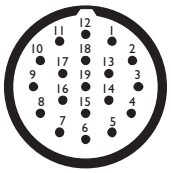
Mechanical	
Receptacle Shell Material	Nickel-plated brass
Connector Insert Material	Nylon
Contacts	Gold over nickel-plated brass
Cable	Oil resistant PVC, 18AWG stranded copper, 300V UL recognized and CSA certified
Electrical	
Assembly Rating	9-, 11-, 12-pin: 63V, 6A; 19-pin: 63V, 12 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

Color Code	Face View Pinout		
	9-, 11-, or 12-Pin		19-Pin
	 Female	 Male	 Female
			 Male
A	**9-Pin** 1 Brown 2 NA 3 Blue 4 White 5 NA 6 Green 7 Yellow 8 Grey 9 Pink 10 Red 11 NA 12 Green/Yellow		1 Violet 2 Red 3 Grey 4 Red/Blue 5 Green 6 Blue 7 Grey/Pink 8 White/Green 9 White/Yellow 10 White/Grey 11 Black 12 Green/Yellow 13 Yellow/Brown 14 Brown/Green 15 White 16 Yellow 17 Pink 18 Grey/Brown 19 Brown
B	**11-Pin** 1 White 2 Green 3 Yellow 4 Grey 5 Pink 6 Red 7 Black 8 Violet 9 Blue 10 Blue 11 Brown 12 Green/Yellow		—
C	**12-Pin** 1 Brown 2 Blue 3 Grey 4 Pink 5 Red 6 Yellow 7 White 8 Red/Blue 9 Black 10 Violet 11 Grey/Pink 12 Green		—

Product Selection

Receptacles

Pin Count	Color Code	Assembly Rating	Cat. No.	
			Female	Male
9-Pin	A	18 AWG	**888M–F12X9AE–***	**888M–M12X9AE–***
11-Pin	B	3/18 & 8/22 AWG	**888M–F11AE–***	**888M–M11AE–***
12-Pin	C	18 AWG	**888M–F12AE–***	**888M–M12AE–***
19-Pin	A	3/18 & 16/22 AWG	**888M–F19AE–***	**888M–M19AE–***

* Replace symbol with 0F5 (0.5 ft) or 1F (1 ft) for standard cable lengths.

Field Attachable, M23 Style

Solder Type

M23 Style

Field Attachable M23

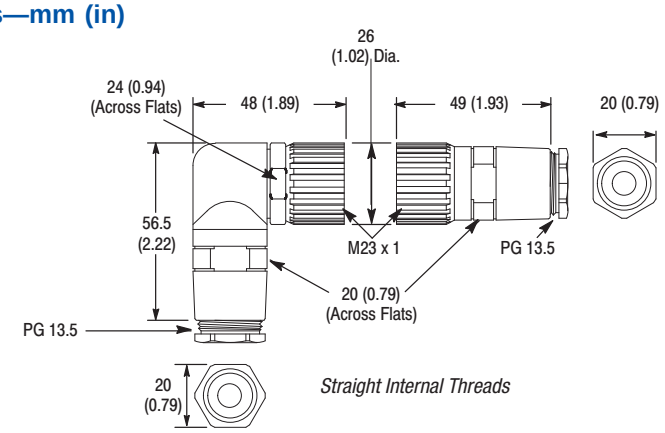
Features

- Straight or right angle, male or female
- 12- or 19-pin M23 style for standard connectivity
- Allows modification of existing cable installations and field creation of special cable lengths
- Solder connector for secure and reliable installation
- Spanner wrench for assembly of connector available

Specifications

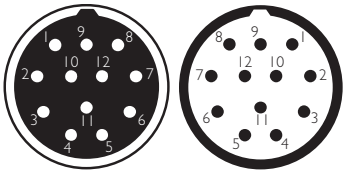
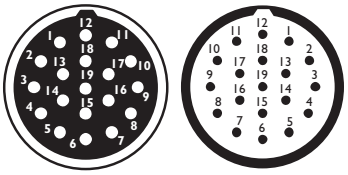
Mechanical	
Coupling Nut Material	Nickel-plated brass
Connector Shell Material	Nickel-plated brass
Contacts	Gold over nickel-plated brass
Cable	18 AWG (1.0 mm^2) max.
Cable Diameter	10…14 mm (0.39…0.55 in)
Electrical	
Assembly Rating	63V, 12 A power, 3 A all others
Environmental	
Enclosure Type Rating	IP 65
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

	Face View Pinout	
	9–, 11–, or 12–Pin	19–Pin
	 Female Male	 Female Male

Product Selection

Field Attachables

Pin Count	Cable Jacket Diameter—mm (in)	Assembly Rating	Cat. No.			
			Straight Female	Right Angle Female	Straight Male	Right Angle Male
12-Pin	10…14 (0.39…0.55)	63V, 12 A power, 3 A all others	889M–F12AH–T	889M–R12AH–T	889M–M12AH–T	889M–E12AH–T
19-Pin			889M–F19AH–T	889M–R19AH–T	889M–M19AH–T	889M–E19AH–T
Spanner Wrench (sold separately)						889A–M23SW

Notes

Insulation Displacement Connectors (IDC)

Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments.

Using field attachable connectors on preleaded sensors, cable spools, or single ended cordsets provides instant custom length cables that maintain the advantages of a fully connector-based system. Insulation Displacement Connectors (IDC) terminate cables without stripping and connecting individual leads to screw terminals.

Field Attachable Insulation Displacement connectors are available in DC Micro and Pico connectors. These parts are located in the DC Micro and Pico sections of the catalog.

Rockwell Automation offers the convenience of IDC connections in receptacle form for bulkhead or panel installation. This 4-wire zinc die-cast connector is ideal for terminating wires to enclosures with the flexibility of field customization.

Multiple cables can be terminated with the Allen-Bradley passive IDC distribution box. The ports each have a 3-wire termination and are available on an 8-port box. The 3-pole IDC insert (sold separately) which is needed to make the connection has a much lower profile than a connector on a standard distribution box. LED versions are available for use with PNP (sourcing) inputs.

Rockwell Automation is continually expanding its connection system offerings. If our standard catalog does not contain the item that you need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Distribution Boxes, IDC Style

One Signal per Port, Cable Connector

IDC Style

IDC Style 8-Port Distribution Box

IDC Insert

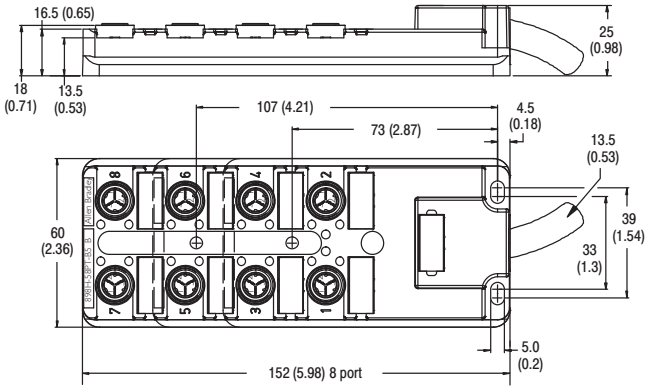
Features

- Highly visible yellow PET body offers good oil and chemical resistance
- Insulation displacement connection (IDC) allows cut-to-length cables to quickly attach to distribution box
- PUR/PVC cable rated to flex to 1 million cycles
- LED version for use with PNP (sourcing) field devices
- Snap-in markers for box and port identification can be used with 1492 Fast Track™ marker printer system

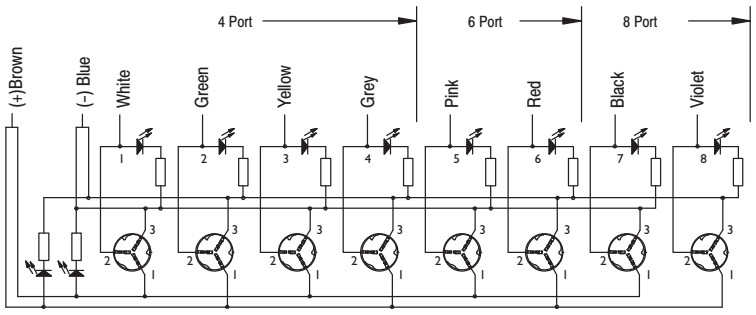
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Grey Pocan
Connector Insert	PBT
Receptacle Shell Material	Nickel-plated brass
Contacts	Gold-plated palladium/nickel
Max. IDC Installations	10
Cable	Oil-resistant black PUR/PVC jacket, (3) 18 AWG stranded copper, (8 or 16) 22 AWG flex rated for 1 million cycles
Cable Diameter	7.4 mm (0.29 in)
Conductor Outside Diameter	24–22 AWG, 1.6…2.0 mm (0.063…0.079 in)
Environmental	
Enclosure Type Rating	IP 67; 1200 psi washdown
Operating Temperature—C (F)	–20…+90° (–4…+194°)

Dimensions—mm (in)



Wiring Diagrams



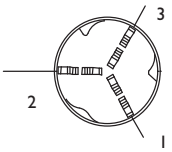
Note: Wiring diagram shows PNP wiring. Actual units use PNP LED or no LED.

Mating Components & Accessories

Description	Cat. No.	Page
Device cordset	**889D–F4AC–‡**	
3–pole IDC Insert (Required for Connection with IDC box)	**889A–HCC3**	
Sealing Caps§	**1485A–M12**	
Labels⁂	**1492–MS9X20**	

‡ Replace symbol with the length of the cable in meters (2, 5 or 10 m standard)
§ 2 provided with box
⁂ 1 set provided with box

Pinout

Device Connection	Main Connection
	
Ports (IDC)	**Cable Connector**
8 Port	
(+) All ports Ports Pin 1	Brown
(–) All Ports Pin 3	Blue
Port 1 Pin 2	White
Port 2 Pin 2	Green
Port 3 Pin 2	Yellow
Port 4 Pin 2	Grey
Port 5 Pin 2	Rose
Port 6 Pin 2	Red
Port 7 Pin 2	Black
Port 8 Pin 2	Violet

Product Selection

3-Pin Single Output, Distribution Boxes

Ports	Illuminated	Assembly Rating	Cat. No.
8 Port	No LED	10…30V DC, 2 A per channel/10 A total	898H–58PT–B*
	PNP LED		898H–P58PT–B*
3-pole IDC insert (must be ordered separately)			889A–HCC3
DC Micro Device Cordset (Straight)			889D–F4AC–‡

* Replace symbol with 5 (5 m) or 10 (10 m) for standard cable lengths.
‡ Replace symbol with the length of cable in meters (2, 5 or 10 m standard).

Receptacles, IDC Style

4-Pin

IDC Style

4-Pin IDC Receptacle

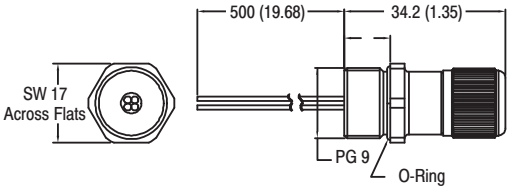
Specifications

Mechanical	
Receptacle Shell	Nickel-plated brass
Coupling Nut	Nickel-plated brass
Connector Shell	Nickel-plated brass
Insert	Black PUR
Contacts	Gold over nickel-plated brass
Max. IDC Installations	10
Conductor Outside Diameter	24–22 AWG, 1.6…2.0 mm (0.063…0.079 in)
Conductor OD	1.2…1.6 mm (0.047…0.063 in)
Wire Insulation	Oil-resistant PVC, 22 AWG stranded copper, 300V, UL recognized
Environmental	
Enclosure Type Rating	IP 67, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+85° (–4…+185°)

Features

- Field installable with no hand tools needed
- 24–22 AWG conductors
- 4-pin configuration
- PG 9
- Viton® o-ring
- Allows easy modification of existing cable installations
- Insulation displacement technology for secure and reliable installation

Dimensions—mm (in)



Product Selection

Receptacles

Description	Connector Body	Cable Jacket Diameter—mm (in)	Panel Mount Threads	Wire Color	Assembly Rating	Cat. No.
4-Pin Straight Receptacle	Brass with Nickel-Plating	4.0…5.1 (0.16…0.20)	PG 9	1 Brown 2 White 3 Blue 4 Black	24–22 AWG 32V 4 A	**888H–T4DC3–0M3**

Cable Spools

Description

Rockwell Automation offers a wide variety of connection products for interfacing field devices to I/O, junction boxes, PLCs, etc. Connection systems products are made of durable materials and are designed to handle rough industrial environments.

Many cables which can be ordered in cordset and patchcord form can also be ordered in cable spool form. When combined with field attachable connectors, spools of raw cable provide enhanced flexibility while allowing for the quick and simple installation characteristic of a fully connector–based system while staying consistent with existing patchcords and cordsets already being used.

Rockwell Automation offers spools in a variety of PVC, PUR, and TPE cable types, including the following:

- Yellow, black, or blue PVC cable,
- 22 AWG yellow PVC cable,
- 22 AWG with braided shield
- Yellow PVC cable, 18 AWG
- Yellow PUR cable, 22 AWG
- Yellow TPE cable, 18 AWG

Available in 2– to 6– wire configurations in IEC or automotive color code, these cables can be used in a variety of applications.

Rockwell Automation is continually expanding its connection system offerings. If our standard catalog does not contain the item that your need, or you have a special application, please contact your distributor or the factory for assistance.

Styles

Cable Spools

22 AWG & 18 AWG PVC

Cable Spools

Specifications

Cable	Oil-resistant PVC jacket, PVC insulated conductors, 300V
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Features

- 3-, 4-, 5- and 6-conductor AWM styles
- Braided shielded or unshielded versions
- Yellow, blue, or black PVC cable jacket
- 22 AWG or 18 AWG conductors
- IEC or Automotive color-coded conductors

Product Selection

Jacket Material	Number of Conductors	Color Code	Jacket Color	Wire Gauge	Nominal O.D.—mm (in)	Shielding	Cat. No.
PVC	2	Brown, Blue	Yellow	22 AWG	5.3 (0.21)	None	889–C2AC–S**
	3	Brown, Blue, Black	Yellow	22 AWG	5.3 (0.21)	None	889–C3AC–S**
		Green, Red w/Black stripe, Red w/White stripe	Yellow	22 AWG	6.7 (0.26)	Braided	889–C3ECA–S**
			Yellow	18 AWG	6.7 (0.26)	None	889–C3AEA–S**
	4	Brown, White, Blue, Black	Yellow	22 AWG	5.3 (0.21)	None	889–C4AC–S**
			Black	22 AWG	5.3 (0.21)	None	889–C4BC–S**
			Blue	22 AWG	5.3 (0.21)	None	889–C4LC–S**
			Yellow	22 AWG	6.7 (0.26)	Braided	889–C4EC–S**
			Yellow	18 AWG	6.7 (0.26)	None	889–C4AE–S**
			Yellow	22 AWG	5.5 (0.22)	Foil	889–C4FC–S**
		Green, Red w/Black stripe, Red w/White stripe, Red	Yellow	22 AWG	6.7 (0.26)	Braided	889–C4ECA–S**
			Yellow	18 AWG	6.7 (0.26)	None	889–C4AEA–S**
	5	Brown, White, Blue, Black, Grey	Yellow	22 AWG	6.0 (0.24)	None	889–C5AC–S**
			Black	22 AWG	6.0 (0.24)	None	889–C5BC–S**
			Yellow	22 AWG	6.7 (0.26)	Braided	889–C5EC–S**
		Green, Red w/Black stripe, Red w/White stripe, Red, Red w/Yellow stripe	Yellow	22 AWG	6.7 (0.26)	None	889–C5ECA–S**
			Yellow	18 AWG	6.7 (0.26)	None	889–C5AEA–S**
	6	Green, Red w/Black, Red w/White, Red, Red w/Yellow, Red w/Blue stripe	Yellow	22 AWG	6.7 (0.26)	Braided	889–C6ECA–S**

* Replace symbol with 50 (50 m), 100 (100 m) or 200 (200 m) for standard cable lengths.

Cable Spools

Specifications

Cable	Oil-resistant jacket, PVC insulated conductors, 300V
Cable Rating	PUR: UL AWM style 20866 VW–1 80C 300V, CSA AWM A/B 80C 300V FT1, UV oil and water resistant TPE: UL AWM style 20327 VW–1 105C 300V, CSA AWM A/B 105C 300V FT1, UV oil and water resistant
Operating Temperature—C (F)	PUR: –20…+80° (–4…+176°); TPE: –20…+105° (–4…+221°

Features

- 4- or 5-conductor AWM styles
- 22 AWG or 18 AWG conductors
- IEC color-coded conductors
- Flex-rated cable design tested to 8 million cycles
- Yellow cable jackets provide high degrees of oil and chemical resistance
- TPE jacket provides weld-slag resistance

Product Selection

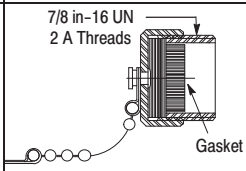
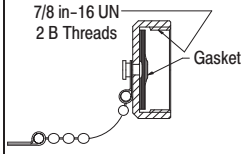
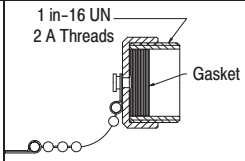
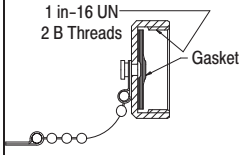
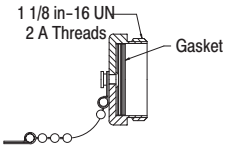
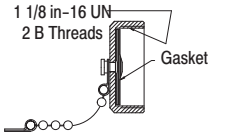
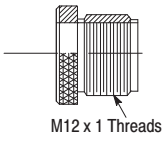
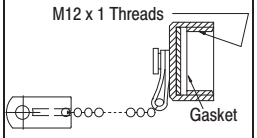
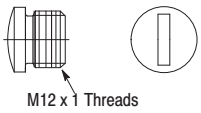
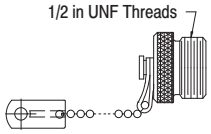
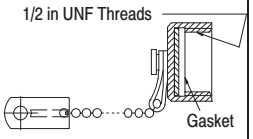
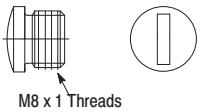
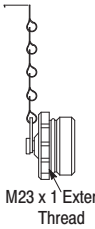
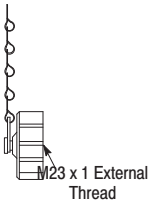
Jacket Material	Number of Conductors	Color Code	Jacket Color	Wire Gauge	Nominal O.D.—mm (in)	Shielding	Cat. No.
PUR	4	Brown, White, Blue, Black	Yellow	22 AWG	5.2 (0.21)	None	889–C4UC–S**
	5	Brown, White, Blue, Black, Grey			5.2 (0.21)		889–C5UC–S**
TPE	4	Brown, White, Blue, Black		18 AWG	7.0 (0.28)		889–C4HJ–S**

* Replace symbol with 50 (50 m), 100 (100 m) or 200 (200 m) for standard cable lengths.

Notes

Sealing Caps

Mini and MIcro Cap

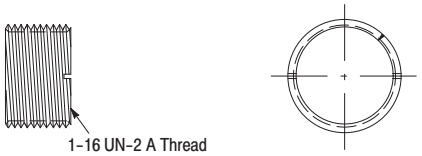
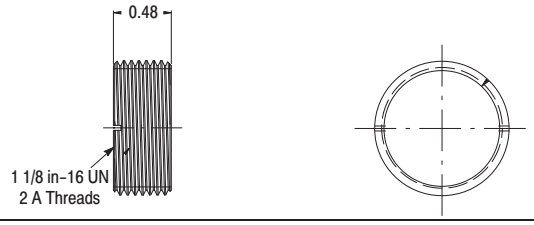
Connector Style	Material	Thread Config.	Dimensions—mm (in)	Cat. No.	Thread Config.	Dimensions—mm (in)	Cat. No.
Mini	Aluminum	External		**1485A–C1**	Internal		**889A–NCAP**
Mini-Plus (7 and 8 pin)	Aluminum	External		**889A–NM2CAP**	Internal		**889A–N2CAP**
Mini-Plus (9, 10, and 12 pin)	Aluminum	External		**889A–NM3CAP**	Internal		**889A–N3CAP**
DC Micro	Aluminum	External		**1485A–C3**	Internal		**889A–DCAP**
	Plastic	External		**1485A–M12**	—	—	—
AC Micro	Aluminum	External		**889A–RMCAP**	Internal		**889A–RCAP**
Pico	Plastic	External		**889A–PMCAP**	—	—	—
M23	Nickel-plated Brass	External		**889A–MMCAP**	Internal		**889A–MCAP**

Accessories

Coupling Adaptor/Mounting Accessories

Coupling Adaptors

Coupling Adaptor

Connector Style	Material	Dimensions—mm (in)	Cat. No.
Mini	Aluminum		**889A–NADPT**
Mini-Plus (7 and 8 pin)			**889A–N2ADPT**
Mini-Plus (9, 10, and 12 pin)			**889A–N3ADPT**

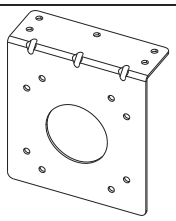
Mounting Accessories

Description	Cat. No.
Mounting nuts for 1/2 in–14NPT threaded receptacles are available in bags of 10 pieces	**889A–U1NUT–10**
Flat, sealing washers for 1/2 in–14NPT threaded receptacles are available in bags of 10 pieces	**889A–U1FSL–10**

Contents

PanelConnect™ Modules for Input/Output Connections

Quick Slection Guide

	 1667 16-Point PanelConnect	 1667 32-Point PanelConnect	 1492 Digital Pre-Wired Cables	 1667 PanelConnect Fuse Module	 1667 Accessories
Description	• Factory pre wired module connecting field device inputs and outputs from two 8-port distribution boxes directly to I/O cards through pre wired cable assemblies	• Factory pre wired module connecting field device inputs and outputs from your 8-port distribution boxes directly to I/O cards through pre wired cable assemblies	• Factory pre wired cable assemblies providing interface between PanelConnect module and PLC I/O	• Optional interface proving overcurrent protection to inputs and ouputs wired via PanelConnect	• Line of accessories designed for use with PanelConnect
Features	• Provides pre wired connectivity from field device to 16-point I/O • Color-coded ring indication for AC and DC models • LED power indicator • Rugged durable construction • Supports 1746, 1756, 1769, 1771, and 1794 I/O platforms	• Provides pre wired connectivity from field device to two 16-point I/O or one 32-point I/O • Combination models provides input and output wiring throughout each of four passive distribution boxes • LED power indicator • Rugged durable construction	• Pre-wired factory tested connectivity from PanelConnect module to PLC I/O connections • Ready to wire versions available for custom wiring needs • Option module cables provide connectivity from PanelConnect to option modules such as output fusing	• Predesigned method of adding overcurrent protection • DIN rail mount housing • 16- or 32-point versions	• Rugged durable construction • Factory designed specifically for PanelConnect systems
Available Models	• AC input models.....4-11 • AC output models....4-24 • DC input models.....4-12 • DC output models...4-25	• DC input models.....4-12 • DC output models....4-25 • DC combination models.....4-43	• Pre-wired interface cables.....4-8 • Ready-to-wire cables.4-8 • Option module cables.....4-8	• 16-point module.....4-48 • 32-point module.....4-48	• Mounting bracket.....4-49 • Sealing Caps.....4-48

PanelConnect™ Modules for Input/Output Connections

Description

Connecting inputs and outputs to an Allen-Bradley PLC is very convenient with Allen-Bradley PanelConnect™ Modules and cables. Unlike conventional methods of:

- wiring a number of inputs or outputs on machine devices (sensors and pneumatic valves) through a panel and maintaining the integrity of the enclosure then
- wiring the connector to a terminal block then
- wiring to the PLC I/O Module or
- facing the task of providing a seal on a number of cables entering an enclosure

Using a PanelConnect Module with associated Connection systems, allows connection of up to 32 inputs or outputs directly to a 32 point PLC Input or Output module with convenient pre-built cables and connectors.

Benefits

Simplifies Machine and System Commissioning

Often a machine or system is set up at the manufacturer and then disassembled for shipping to the job site. Many of the input and output connections need to be initially connected, then disconnected for shipment, and then reconnected for final assembly. When connecting through the enclosure, the time needed for the reconnection as well as making correct enclosure seals, and making the correct connection for final assembly can be greatly simplified and costs reduced using the PanelConnect module and Connection systems. Commissioning can be done in hours instead of taking weeks and months.

Enclosure Integrity

The PanelConnect module is a simple system that mounts on the enclosure and creates the correct seal for the entry of the input and output connections. There is no longer a need to spend the additional time to seal the opening where the sensor or output cables enter the enclosure or use custom connectors. This reduces the associated time and wiring errors as well.

Environmental Rating

PanelConnect Modules are rated for the harsh environments of IP65/NEMA Type 1, 4, 4X, and 12. These products bridge the IP20, In Panel environment to the IP65, On Machine environment.

Reduced Wiring Time and Cost

Wiring is completed in a fraction of the time when connecting the **“Plug and Play”** easy assembly system of PanelConnect modules, Pre-Wired I/O Cables, Distribution Box and Distribution Box Patch Cords when compared to traditional methods. Both standard and specific build-to-order length cables are available, providing the correct length for any panel in a neat, space-efficient wiring solution. Lower wiring costs are possible for OEMs and users because less skilled labor is needed to connect the **“Plug and Play”** system.

Minimal Repair and Replacement Time

“Plug and Play” PanelConnect and Connection systems are easily field replaceable using threaded secured connectors. These systems support the control system requirement for Minimal Time To Repair.

Simplified Design

Design engineers can simplify their panel drawings by calling out a PanelConnect Module and pre-wired cable instead of having to detail every individual wire and terminal block on their drawings. Simplified panel drawings aid not only the installer but also the end customer who receives the panel.

Fewer Parts, Less Inventory, and Lower Carrying Cost

A wiring system involves the PanelConnect module and the cable, versus a terminal block, barrier, a jumper, markers, wires, and swing arms with traditional hardwired systems. Therefore, it requires fewer components and, in turn, less inventory and lower carrying costs.

Reduced Wiring Errors

Wiring system cables are pre-tested to ensure 100% accurate connections and eliminate the need for point-to-point checking of wiring. This reduces the possibility of crossed wires and loose connections between the I/O module and the PanelConnect Module. Even one error in wiring 128 I/O points in a point-to-point system may require a complete check of the wiring. Wiring errors can take several minutes to track down and correct before the panel is ready for startup. When PanelConnect Modules and cables are snapped in place, they fit every time — no need to find the wrong or loose connection, resulting in a much higher rate of success at system startup.

Increased Volume and Productivity

PanelConnect systems can help OEMs and panel builders produce a higher volume of machines. Inter-connected wiring for a wiring system is 60 times faster to install than traditional point-to-point wiring, enabling OEMs and panel builders using PanelConnect System components to build panels faster and produce more machines. Machine segments also can be outsourced as machine segments can be connected via the **“Plug and Play”** products. Wiring is completed in a fraction of the time when connecting inputs and outputs with the Connection system and the PanelConnect Module as compared to the time required for traditional methods.

Design Flexibility

To develop a cost-effective system, the hardware components must meet the needs of the design engineer. Allen-Bradley products provide the broadest range of PanelConnect modules and cables, as well as flexibility with modularity and system expansion capabilities. Allen-Bradley Wiring Systems deliver a lower life-cycle cost.

Quality-Looking Panels

The pre-wired cables and PanelConnect modules organize the wiring in your panel providing a consistent look. Markers and pre-printed adhesive labels for the terminal wiring neatly identify field-wiring-side connections, which correspond to the I/O module. A large marking area is also available for identifying I/O information on the PanelConnect modules.

Smaller Panel Space

By mounting the PanelConnect modules on the side wall of the enclosure, DIN Rail space is eliminated in the panel when compared to traditional terminal blocks.

Reduced Wire Preparation and Routing

PanelConnect systems eliminate the time and costs associated with stripping and cutting wires. Pre-wired cables eliminate this step altogether. Routing wires is much easier with wiring systems since engineers only have to worry about routing one pre-wired cable versus 20 wires used in the traditional wiring method.

Easier Marking and Labeling

Three markers on the front of the PanelConnect are provided to mark both I/O module and input/output points and Patch Cord cables. Pre-printed, I/O-specific adhesive label strips for quick marking of power supply terminals save labor compared to point-to-point wiring that requires labor-intensive wire markers. No wire labels are required on a pre-wired cable. Voltage Marking rings are provided to note AC and DC PanelConnect modules.

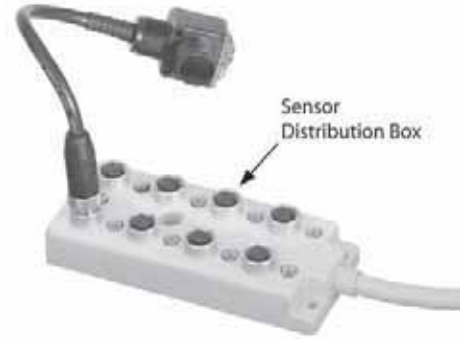
Compatibility

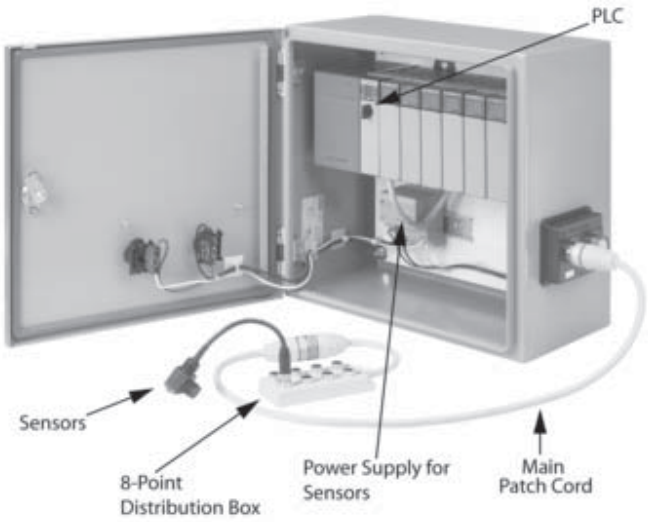
PanelConnect systems works with other digital and analog Allen-Bradley 1492 Programmable Controller Wiring Systems. PanelConnect systems work with the Allen-Bradley Sensor Connection Systems as well as other leading connection systems manufacturers: Brad Harrison™ - Daniel Woodhead, Crouse Hinds, Lumberg and Turck. PanelConnect supports connector cables for both Mini-Plus and M23 style for Mini and Micro Sensor connectors.

PanelConnect™ Modules for Input Connections

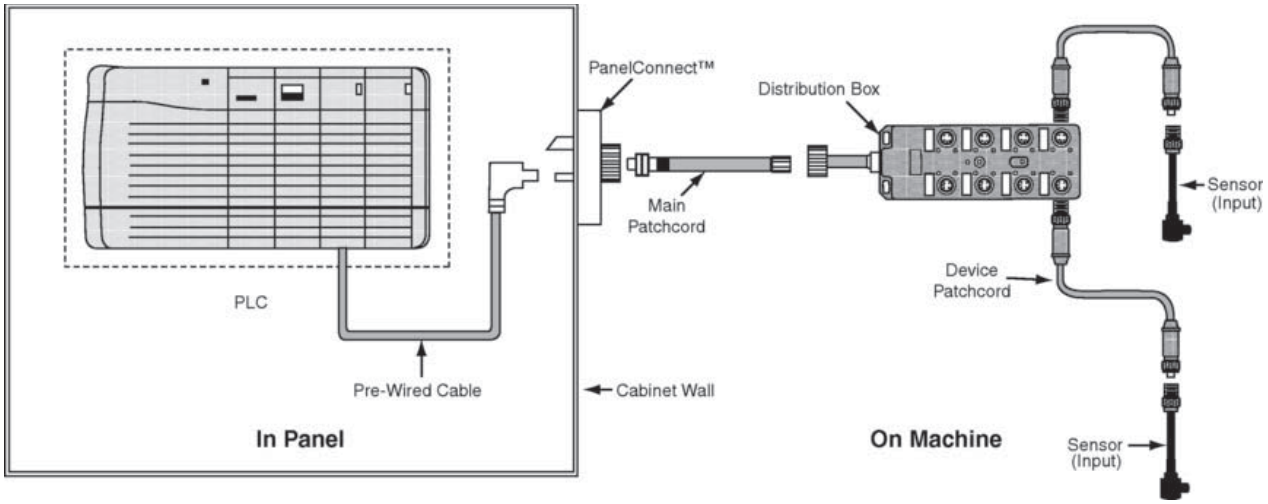
Overview, Continued

PanelConnect System View





Typical Configuration



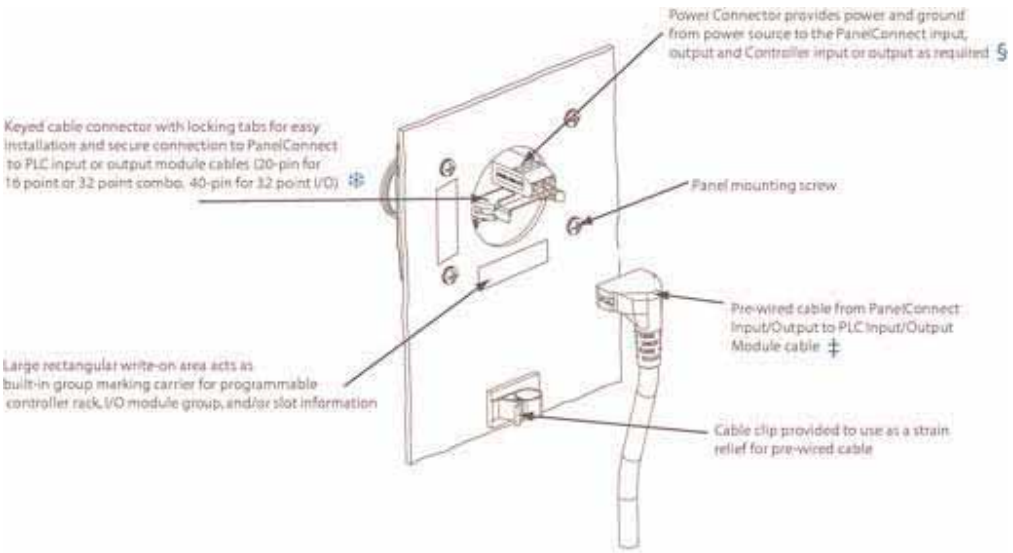
Allen-Bradley

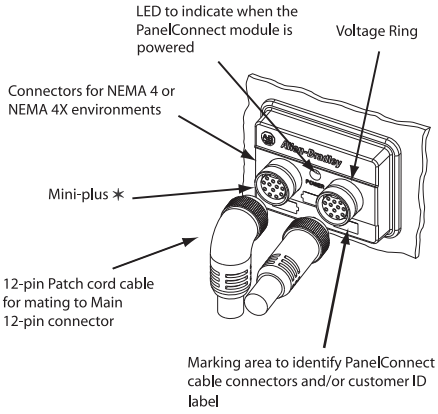
PanelConnect™ Modules for Input/Output Connections

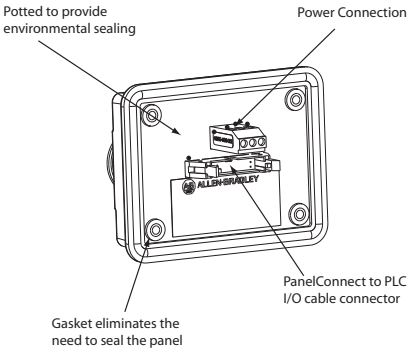
PanelConnect Input and Output Module Overview

✶ Field side connectors for two keyed (4 on 32 point) 10-pin or 12-pin Mini-Plus style connectors or M23 12-pin (not on 32 point) which mate to patchcords of the appropriate style.
❄ PanelConnect input/output module connector for 16-point input/output module cable.
‡ Pre-wired or I/O ready PanelConnect Module cable.
§ Power supply Connector for Power source input.

Note: All of the digital PanelConnect for input and output products have the following features:







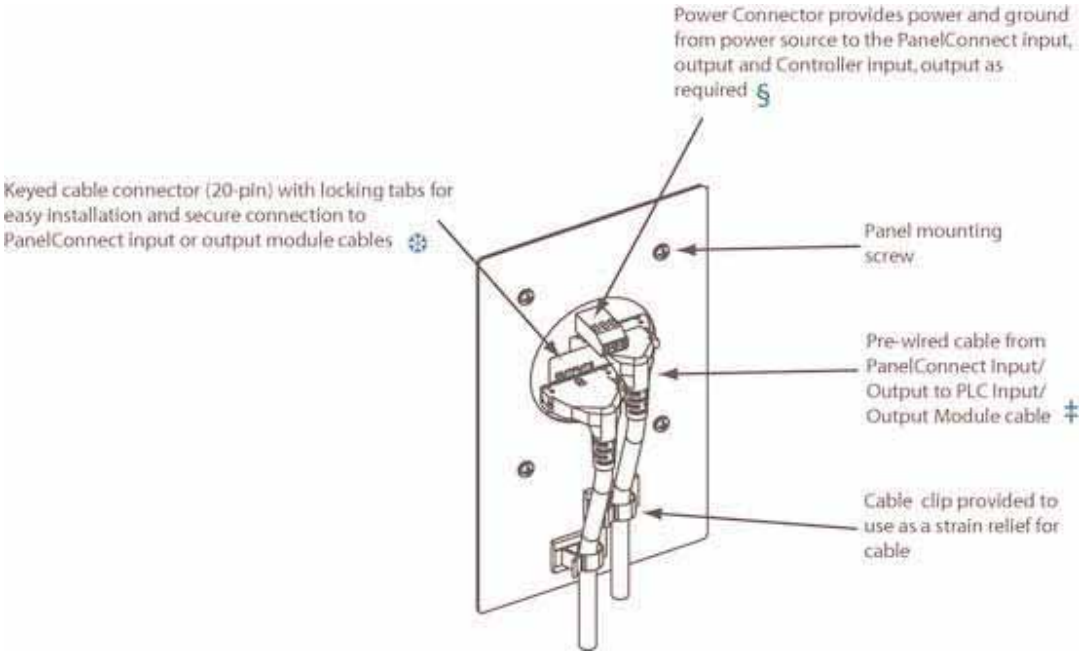
cULus Listed and CE Approved

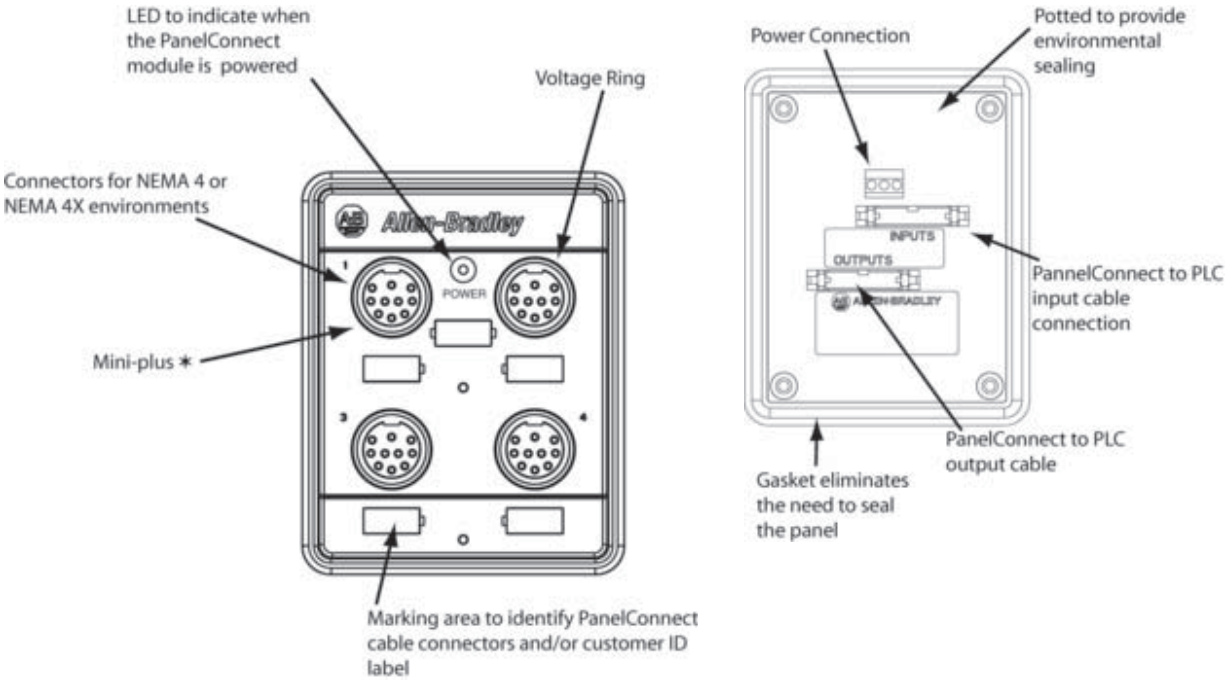
PanelConnect™ Modules for Input/Output Connections

PanelConnect 32-Point Combination (16 Input, 16 Output) Module Overview

∗ Field side connectors for four keyed 12-pin Mini-Plus style connectors which mate to 12-pin Mini-Plus style patchcords.
❄ PanelConnect input/output module connector for 16-point input/output module cables.
‡ Pre-wired or I/O ready PanelConnect Module cable.
§ Power supply Connector for Power source input.

Note: All of the digital PanelConnect combination input and output products have the following features:





cULus Listed and CE Approved

PanelConnect Input Features

16-Point Input PanelConnect Module with two 10-pin Mini-Plus Connectors

These modules are used with sensor (input) distribution boxes with no LEDs. Each 10-pin Mini-Plus connector mates with a 10-conductor main patch cord that connects to the distribution box. On the field connector, various sensors (including photoelectric sensors and proximity sensors) connect with a variety of connector styles. AC and DC versions of the PanelConnect module are available to meet the input (sensor) voltage requirements. Up to 16 inputs (sensors) can be connected to each PanelConnect module. Each PanelConnect Module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with a cable that connects to a PLC-input module. Cables are available to connect to the most popular Allen-Bradley PLC input modules. Modules are available in NEMA Type 4 or 4X versions.

16-Point Input PanelConnect Module with two 12-pin Mini-Plus Connectors

These modules are normally used with sensor (input) distribution boxes with LEDs. Each 12-pin Mini-Plus connector mates with a 12-conductor main patch cord that connects to the distribution box. On the field connector, various sensors (including photoelectric sensors and proximity sensors or other inputs) connect with a variety of connector styles. AC and DC versions of the PanelConnect module are available to meet the input (sensor) voltage requirements. Up to 16 inputs (sensors) can be connected to each PanelConnect module. Each PanelConnect Module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with cables that connect to a PLC-input module. Cables are available to connect to the most popular Allen-Bradley PLC input modules. Modules are available in NEMA Type 4 or 4X versions.

16-Point Input PanelConnect Module with two 12-pin M23 Connectors

These modules are used with sensor (input) distribution boxes with or without LEDs. Each 12-pin M23 connector mates with a ten-, eleven-, or twelve-conductor main patch cord that connects to the distribution box. On the field connector side, various sensors (including photoelectric sensors and proximity sensors or other inputs) connect with a variety of connector styles. AC and DC versions of the PanelConnect module are available to meet the sensor voltage requirements. Up to 16 inputs (sensors) can be connected to each PanelConnect module. Each PanelConnect Module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with a cable to connect to a PLC-input module. Cables are available to connect to the most popular Allen-Bradley PLC input modules. Modules are available in NEMA Type 4 or 4X versions.

32-Point Input PanelConnect Module with four 10-pin Mini-Plus Connectors

These modules are used with Connection systems without LEDs on the distribution box. Each 10-pin Mini-Plus connector mates with a ten-conductor main patch cord that connects to the distribution box. Additionally on the field connection side, various inputs (sensors) connect with a variety of connector styles. Up to 32 inputs can be connected to each PanelConnect module. Each PanelConnect Module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with a cable to connect to a PLC-input module. Cables are available to connect to the most popular Allen-Bradley PLC input modules. Modules are available in NEMA Type 4 or 4X versions.

32-Point Input PanelConnect Module with four 12-pin Mini-Plus Connectors

These modules are used with Connection systems with LEDs on the distribution box. Each 12-pin Mini-Plus connector mates with a 12-conductor main patch cord that connects to the distribution box. Additionally on the field connection side, various inputs (sensors) connect with a variety of connector styles. Up to 32 inputs can be connected to each PanelConnect module. Each PanelConnect Module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with a cable to connect to a PLC-input module. Cables are available to connect to the most popular Allen-Bradley PLC input modules. Modules are available in NEMA Type 4 or 4X versions.

PanelConnect™ Modules for InputConnections

Features

Digital Pre-Wired Cables

Bulletin 1492 pre-wired cables are designed to minimize control wiring in a panel. Pre-wired cables, when used with a PanelConnect Module replace the point-to-point wiring between Allen-Bradley programmable controller I/O modules and individual terminal blocks. The pre-wired cables have a removable terminal block or wiring arm at the I/O end of the cable and a cable connector on the other end to connect to the PanelConnect Module. All of the pre-wired cables use #22 AWG wire and are 100% tested for continuity to make a perfect connection every time. The digital pre-wired cables are offered in four standard lengths of 0.5, 1.0, 2.5, and 5.0 m to fit a variety of applications. Other cable lengths are also available as build-to-order products. Pre-wired cables are available for many of the 1746 SLC I/O, 1756 ControlLogix, 1769 Compact for CompactLogix and MicroLogix 1500, and 1771 (PLC-5) Output Modules.

Ready-to-Wire Digital Cables

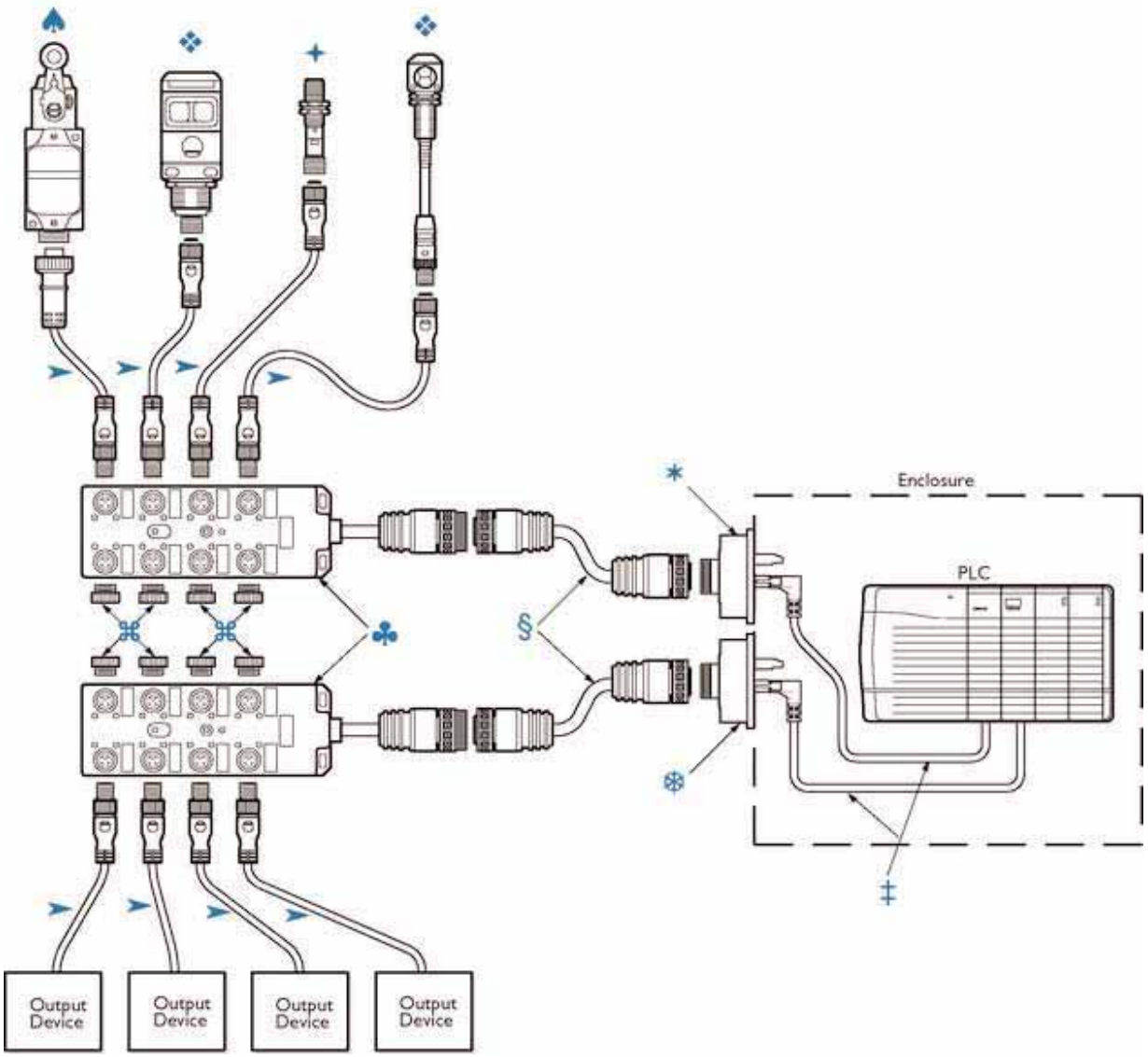
PanelConnect-ready cables have a cable connector that attaches to the PanelConnect Module, pre-wired to one end, and have free connectors ready to wire to other suppliers' I/O modules or other components on the other end. PanelConnect ready cables use #22 AWG wire and have individual color-coded conductors for quick wire-to-terminal coordination. The digital PanelConnect-ready cables are offered in standard lengths of 1.0, 2.5, and 5.0 m to fit a variety of applications. Other cable lengths are also available as build-to-order products.

PanelConnect Fuse Module (optional)

The PanelConnect fuse module provides a convenient method of adding overcurrent protection to your PanelConnect inputs and outputs. This module has sixteen or thirty-two (16 or 32) 5x20 fuse holders to protect each individual input or output. The module has two 20-pin or 40-pin connectors with locking tabs. The right connector is used to connect to the back of the PanelConnect (in-panel connector). The left connector is used to connect to the Input or Output PLC module. The connection between the PanelConnect Module and the Fuse Module is done via the PanelConnect Option Module cable while connection to the PLC is done via PanelConnect pre-wired cables. This module is optional so OEM's can add fusing based on the needs of their customers.

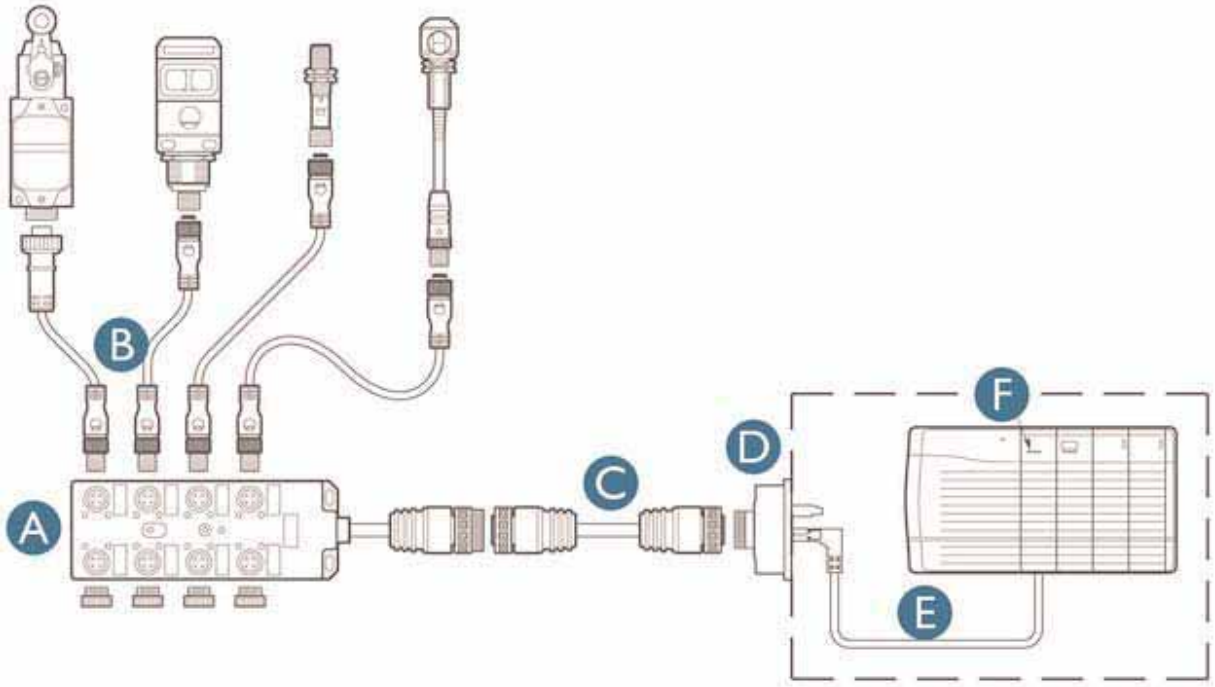
Digital Option Module Cables

PanelConnect Option Module cable has two over molded cable connectors. The cables use #22 AWG wire and are 100% tested for continuity to make a perfect connection between the fuse module and PanelConnect module every time. These cables are offered in five standard lengths of 0.5, 1.0, 1.5, 2.5, and 5.5 meters to fit a variety of applications.



✶PanelConnect 16- and 32-point Input...page 4-11
❄PanelConnect 16- and 32-point Output…page 4-23
‡Wiring Systems Cable…page 4-19 and 4-39
§Main Patchcord (Mini-Plus)
♣Distribution Box
➢Device Patchcords
⌘Sealing Caps…4-48
✦Inductive Proximity...See the Sensors Catalog
❖Photoelectric Sensor…See the Sensors Catalog
♠Limit Switch…See the Sensors Catalog

Using the Selection Tables
Typical Configuration Example



PanelConnect™ Systems

Modules for Input Connections

Product Selection

AC Input Systems NEMA 4

			Catalog Number			
A Distribution Box		3-pin mini no LED	898N-38PS-N10	—	—	—
		3-pin mini LEDs	—	898N-L38PS-N12	—	—
		3-pin AC micro, no LED	—	—	898R-38PS-N10	—
		3-pin AC micro LED	—	—	—	898R-L38PS-N12
B Device Patchcords			889N-F3AFNU-⊖F		889R-F3AERM-⊖	
C Main Patchcords (Mini-Plus)			889N-F10ACNU-⊖		889N-F12ACNU-⊖	
D PanelConnect (16 Input)			1667-16IA1008	1567-16IA1207	1667-16IA1008	1667-16IA1207
System			F	E		
I/O System	Nominal System	I/O Range	Frequency Module	I/O Module				
1746	100/120V AC	85–132V AC	47–63 Hz	1746-IA16	1492-CABLE⊖A	1492-CABLE⊖A	1492-CABLE⊖A	1492-CABLE⊖A
	24V AC	10–30V AC	47–63 Hz	1746-IN16	1492-CABLE⊖B	1492-CABLE⊖B	1492-CABLE⊖B	1492-CABLE⊖B
1756	120V AC	74–132V AC	47–63 Hz	1756-IA16	1492-CABLE⊖X	1492-CABLE⊖X	1492-CABLE⊖X	1492-CABLE⊖X
	24V AC	10–30V AC	47–63 Hz	1756-IN16	1492-CABLE⊖X	—	1492-CABLE⊖X	—
1769	100/120V AC	79–132V AC	47–63 Hz	1769-IA16	1492-CAB⊖A69	1492-CAB⊖A69	1492-CAB⊖A69	1492-CAB⊖A69

Product Selection — Input Modules

Using Selection Tables to Make Valid Catalog Numbers

Configure the cable catalog number using 1492-CABLE∗ (for digital cables). See footnote ∗ on pages this page and 4-12.

Table 1. AC Input Systems NEMA Type 4

					Catalog Number			
	Allen-Bradley Distribution Box		3-pin mini, no LED		898N-38PS-N10	—	—	—
			3-pin mini, LEDs		—	898N-L38PS-N12	—	—
			3-pin AC micro, no LED		—	—	898R-38PS-N10	—
			3-pin AC micro, LED		—	—	—	898R-L38PS-N12
	Allen-Bradley Device Patchcords				889N-F3AFNU-‡F		889R-F3AERM-§	
	Allen-Bradley Main Patchcords				10-pin Mini Plus	12-pin Mini Plus	10-pin Mini Plus	12-pin Mini Plus
					889N-F10ACNU-♣	889N-F12ACNU-♣	889N-F10ACNU-♣	889N-F12ACNU-♣
	Allen-Bradley PanelConnect (16-input)				1667-16IA1008	1667-16IA1207	1667-16IA1008	1667-16IA1207
	System							
I/O System	Nominal System	I/O Range	Frequency Module	I/O Module	Cat. No.	Cat. No.	Cat. No.	Cat. No.
1746	100/120V AC	85…132V AC	47…63 Hz	1746-IA16	1492-CABLE∗A	1492-CABLE∗A	1492-CABLE∗A	1492-CABLE∗A
	24V AC	10…30V AC	47…63 Hz	1746-IN16	1492-CABLE∗B	1492-CABLE∗B	1492-CABLE∗B	1492-CABLE∗B
1756	120V AC	74…132V AC	47…63 Hz	1756-IA16	1492-CABLE∗X	1492-CABLE∗X	1492-CABLE∗X	1492-CABLE∗X
	24V AC	10…30V AC	47…63 Hz	1756-IN16	1492-CABLE∗X	—	1492-CABLE∗X	—
1769	100/120V AC	79…132V AC	47…63 Hz	1769-IA16	1492-CAB∗A69	1492-CAB∗A69	1492-CAB∗A69	1492-CAB∗A69
1771	120V AC	70…138V AC	50/60 Hz	1771-IAD	1492-CABLE∗F	1492-CABLE∗F	1492-CABLE∗F	1492-CABLE∗F
	24V AC	16…30V AC	50/60 Hz	1771-IND	1492-CABLE∗F	1492-CABLE∗F	1492-CABLE∗F	1492-CABLE∗F
1764	100/120V AC	79…132V AC	47…63 Hz	1764-24AWA	1492-CAB∗A64	1492-CAB∗A64	1492-CAB∗A64	1492-CAB∗A64
1794	100/120V AC	85…132V AC	47…63 Hz	1794-IA16	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P
Other AC PLC Input Modules					1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P

∗ PanelConnect to PLC I/O module cables are available in standard lengths of 0.5 m, 1.0 m, and 5.0 m. To order, insert the desired length code in the catalog number (“005” = 0.5 m, “010” = 1.0 m, “0.25” = 2.5 m, and “050” = 5 m). Example: 1492-CABLE005B is for a 0.5 m cable for the 1746-IB16 I/O module. 1492-CABLE∗ P has minimum length of 1.0 m.

‡ Mini patchcords are available in standard lengths of 0.9 m, 1.8 m, 3.6 m, and 6 m (3 ft, 6 ft, 12 ft, and 20 ft). To order, insert the desired length in the catalog number. Example: 889N–F3AFNU–3F represents a mini 0.9 m (3 ft) patchcord. Note catalog number reflects straight male to straight female version with 16 AWG conductors, additional models are also available.

§ AC micro patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889R–F3AERM–3 represents an AC micro 3 m (9.8 ft) patchcord. Note catalog number reflects straight male to straight female version with 18 AWG conductors, additional models are also available.

♣ Mini-Plus patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889N–F12ACNU–2 represents a 2 m (6.5 ft) patchcord. Note catalog number reflects straight male to straight female version with 18/22 AWG conductors, additional models are also available.

PanelConnect™ Modules for Input Connections

Selection Tables, Continued

Table 2. DC Input Systems NEMA Type 4

					Catalog Number					
	Allen-Bradley Distribution Box	5-pin DC micro, no LED			898D-58PT-N12					
		5-pin DC micro, PNP LED			—	—	898D-P58PT-N12	—	898D-P58PT-N12	—
		5-pin DC micro, NPN LED			—	—	—	898D-N58PT-N12	—	—
		4-pin mini, no LED			898N-48PS-N10		—	—	—	898N-48PS-N10
	Allen-Bradley Device Patchcords				889B-F4AFNU-‡F		889D-F4ACDM-§			889D-F4AFNU-‡F
	Allen-Bradley Main Patchcords				10-pin Mini Plus		12-pin Mini Plus			10-pin Mini Plus
					889N-F10ACNU-♣		889N-F12ACNU-♣			889N-F10ACNU-♣
	PanelConnect (16-input)				1667-16ID1004	1667-16ID1001	1667-16ID1201	1667-16ID1212	—	—
	PanelConnect (32-input)				—	—	—	—	1667-32ID1201	1667-32ID1001
	System									
I/O System	Nominal System (DC)	I/O Range (DC)‡	Type Module	I/O Module						
1746	24V DC	10…30V DC	Sink	1746-IB16	1492-CABLE∗B	—	1492-CABLE∗B	—	—	—
	48V DC	30…60V DC	Sink	1746-IC16	1492-CABLE∗B	—	—	—	—	—
	120V DC	90…146V DC	Sink	1746-IH16	1492-CABLE∗B	—	—	—	—	—
	24V DC	10…30V DC	Sink	1746-IN16	1492-CABLE∗B	—	1492-CABLE∗B	—	—	—
	24V DC	10…30V DC	Sink	1746-ITB16	1492-CABLE∗B	—	1492-CABLE∗B	—	—	—
	24V DC	10…30V DC	Source	1746-ITV16	—	1492-CABLE∗B	—	1492-CABLE∗B❄	—	—
	24V DC	10…30V DC	Source	1746-IV16	—	1492-CABLE∗B	—	1492-CABLE∗B❄	—	—
	24V DC	30…60V DC	Sink	1746-IB32	—	—	—	—	1492-CABLE∗H	1492-CABLE∗H
1756	12/24V DC	10…30V DC	Sink	1756-IB16	1492-CABLE∗X	—	1492-CABLE∗X	—	—	—
	48V DC	30…60V DC	Sink	1756-IC16	1492-CABLE∗X	—	—	—	—	—
	24V DC	10…30V DC	Sink	1756-IB32	—	—	—	—	1492-CABLE∗Z	1492-CABLE∗Z
	24V DC	10…30V DC	Source	1756-IV32	—	—	—	—	—	—
1762	24V DC	14…30V DC	Sink	1762-L40BWA	—	—	—	—	1492-CAB∗A62	1492-CAB∗A62
				1762-L40BXB	—	—	—	—		
1764	24V DC	14…30V DC	Sink	1764-24BWA	1492-CAB∗A64	1492-CAB∗A64	1492-CAB∗A64	—	—	—
				1764-28BXB	1492-CAB∗B64	1492-CAB∗B64	1492-CAB∗B64	—	—	—
1769	24V DC	10…30V DC	Sink	1769-IQ16	1492-CAB∗B69	—	1492-CAB∗B69	—	—	—
				1769-IQ16F		—		—	—	—
	24V DC	10…30V DC	Source	1769-IQ16	—	1492-CAB∗B69	—	1492-CAB∗B69	—	—
				1769-IQ16F	—		—		—	—
	24V DC	10…30V DC	Sink	1769-IQ32	—	—	—	—	1492-CAB∗J69	1492-CAB∗J69
1771	125V DC	70…138V DC	Sink	1771-IAD	1492-CABLE∗F	—	—	—	—	—
	24V DC	10…30V DC	Sink	1771-IBD	1492-CABLE∗F	—	1492-CABLE∗F	—	—	—
	48V DC	20…60V DC	Sink	1771-ICD	1492-CABLE∗F	—	1492-CABLE∗F	—	—	—
	24V DC	9…30V DC	Sink	1771-IND	1492-CABLE∗F	—	1492-CABLE∗F	—	—	—
	24V DC	10…30V DC	Sink	1771-IBN	—	—	—	—	1492-CABLE∗J	1492-CABLE∗J
1794	24V DC	10…30V DC	Sink	1794-IB16	—	—	1492-CABLE∗Q	—	—	—
	48V DC	20…60V DC	Sink	1794-IC16	—	—	1492-CABLE∗Q	—	—	—
	24V DC	10…30V AC	Sink	1794-IB32	—	—	—	—	1492-CABLE∗Q	1492-CABLE∗Q
	24V DC	10...30V DC	Source	1794-IV32	—	—	—	—	—	1492-CABLE∗Q
Other DC PLC Input Modules					1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗Q	1492-CABLE∗Q

∗ Cables are available in standard lengths of 0.5 m, 1.0 m, and 5.0 m (1.6 ft, 3.2 ft, 16.4 ft). To order, insert the desired length code in the catalog number (“005” = 0.5 m, “010” = 1 m, “0.25” = 2.5 m “050” = 5 m). Example: 1492–CABLE005B is a 0.5m cable. Note 1492–CABLE∗ P has minimum length of 1 m.

‡ Mini patchcords are available in standard lengths of 0.9 m, 1.8 m, 3.6 m, and 6 m (3 ft, 6 ft, 12 ft, and 20 ft). To order, insert the desired length in the catalog number. Example: 889N–F4AFNU–6F represents a mini 1.8 m (6 ft) patchcord. Note catalog number reflects straight male to straight female version with 16 AWG conductors, additional models are also available.

§ DC micro patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889D–F4ACDM–3 represents an DC micro 3 m (9.8 ft) patchcord. Note catalog number reflects straight male to straight female version with 22 AWG conductors, additional models are also available.For use with outputs, 5-pin versions may be required for earth grounding on pin 5 depending on output field device.

♣ Mini-Plus patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889N–F12ACNU–2 represents a 2 m (6.5 ft) patchcord. Note catalog number reflects straight male to straight female version with 18/22 AWG conductors, additional models are also available.

Note: PNP type distribution boxes require sink type PLC inputs. NPN type require source inputs.

Table 2. DC Input Systems NEMA Type 4, Continued

			Allen-Bradley Distribution Box LEDs	5-pin DC micro, no LEDs	889D-58PT-M12	
				5-pin DC micro PNP, LEDs	898D-P58PT-M12	—
			Allen-Bradley Device Patchcord		889D-F4ACDM-➢	889D-F4ACDM-➢
			Allen-Bradley Main Patchcord		Metric 23 (12-pin)	
					889M-R11RMMU-➢	
			PanelConnect (16-input)		1667-16ID2206	1667-16ID2211
	System					
Input System	Nominal	Input Range‡	Type Module	Input Module		
1746	24V DC	10…30V DC	Sink	1746-IB16	1492-CABLE∗B	—
	48V DC	30…60V DC	Sink	1746-IC16	1492-CABLE∗B	—
	120V DC	90…146V DC	Sink	1746-IH16	—	—
	24V DC	10…30V DC	Sink	1746-IN16	1492-CABLE∗B	—
	24V DC	10…30V DC	Sink	1746-ITB16	1492-CABLE∗B	—
	24V DC	10…30V DC	Source	1746-ITV16	—	1492-CABLE∗B
	24V DC	10…30V DC	Source	1746-IV16	—	1492-CABLE∗B
	24V DC	10…30V DC	Source	1746-IB32	—	—
	24V DC	10…30V DC	Source	1746-IBN	—	—
1756	12/24V DC	10…30V DC	Sink	1756-IB16	1492-CABLE∗X	—
	48V DC	30…60V DC	Sink	1756-IC16	1492-CABLE∗X	—
	24V DC	10…30V DC	Source	1756-IB32	—	—
1764	24V DC	14…30V DC	Sink	1764-24BWA	1492-CAB∗A64	1492-CAB∗A64
				1764-28BXB	1492-CAB∗B64	1492-CAB∗B64
1769	24V DC	10…30V DC	Sink	1769-IQ16	1492-CAB∗B69	—
	24V DC	10…30V DC	Source	1769-IQ16	—	1492-CAB∗B69
1771	125V DC	70…138V DC	Sink	1771-IAD	—	—
	24V DC	10…30V DC	Sink	1771-IBD	1492-CABLE∗F	—
	48V DC	20…60V DC	Sink	1771-ICD	1492-CABLE∗F	—
	24V DC	9…30V DC	Sink	1771-IND	1492-CABLE∗F	—
Other DC PLC Intput Modules					1492-CABLE∗P	1492-CABLE∗P

∗ Panel Connect to PLC I/O module cables are available in standard lengths of 0.5 m, 1.0 m, and 5.0 m. To order, insert the desired length code in the catalog number (“005” = 0.5 m, “010” = 1.0 m, “0.25” = 2.5 m, and “050” = 5 m). Example: 1492-CABLE005B is for a 0.5 m cable for the 1746-IB16 I/O module. 1492-CABLE∗ P has minimum length of 1.0 m.

‡ Refer to the PLC module installation manual for details.

§ DC micro patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889D–F4ACDM–3 represents an DC micro 3 m (9.8 ft) patchcord. Note catalog number reflects straight male to straight female version with 22 AWG conductors, additional models are also available.For use with outputs, 5-pin versions may be required for earth grounding on pin 5 depending on output field device.

➢ Replace with length of cable in meters (1 m, 2 m, 3 m, 5 m, or 10 m standard).

Note: PNP type distribution boxes require sink type PLC inputs. NPN type require source inputs.

The same information for NEMA Type 4 applies to NEMA Type 4X products as shown in Tables 1 and 2 for Cables and Distribution Boxes.

Table 3. NEMA Type 4 and 4X Input Systems

NEMA 4X Module	NEMA 4 Module
1667-16IA1008X	1667-16IA1008
1667-16IA1207X	1667-16IA1207
—	—
∗	1667-16ID1001
1667-16ID1004X	1667-16ID1004
1667-16ID1201X	1667-16ID1201
∗	1667-16ID1212
—	—
∗	1667-16ID2206
∗	1667-16ID2211
—	—
∗	1667-32ID1201
∗	1667-32ID1001

∗ Contact factory for availability

PanelConnect™ Modules for Input Connections

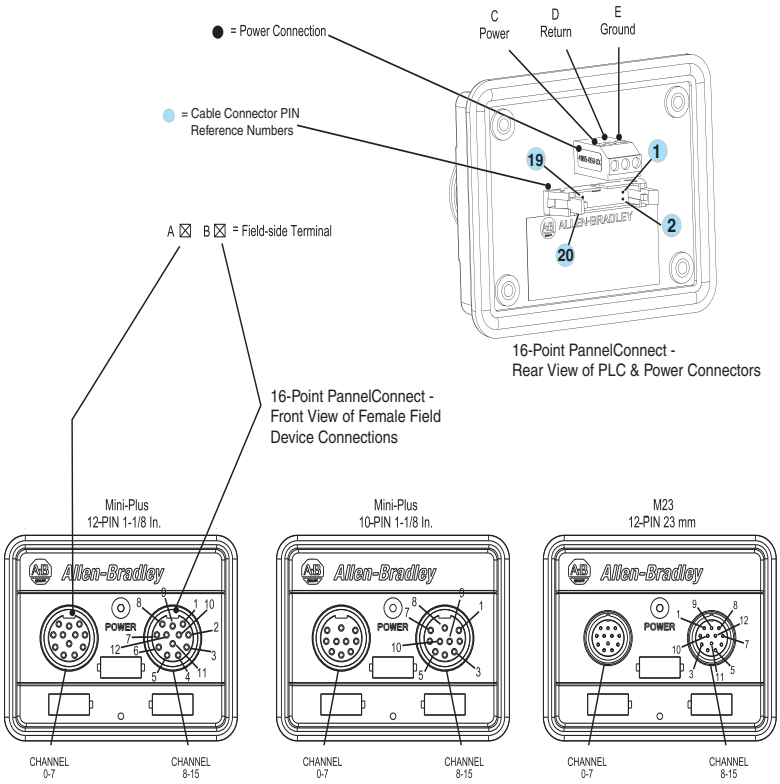
PanelConnect™ Specifications

For all PanelConnect dimensions, refer to page 4-55 and 4-56.

For general marker card information, refer to page 4-49.

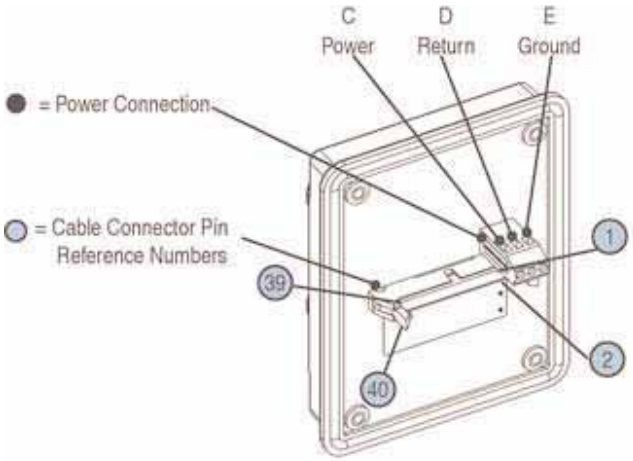
For general adhesive label card information, refer to page 4-50 — 4-52.

Refer to page 4-60 for specific platform web site information. Refer to the online documentation for new product information.



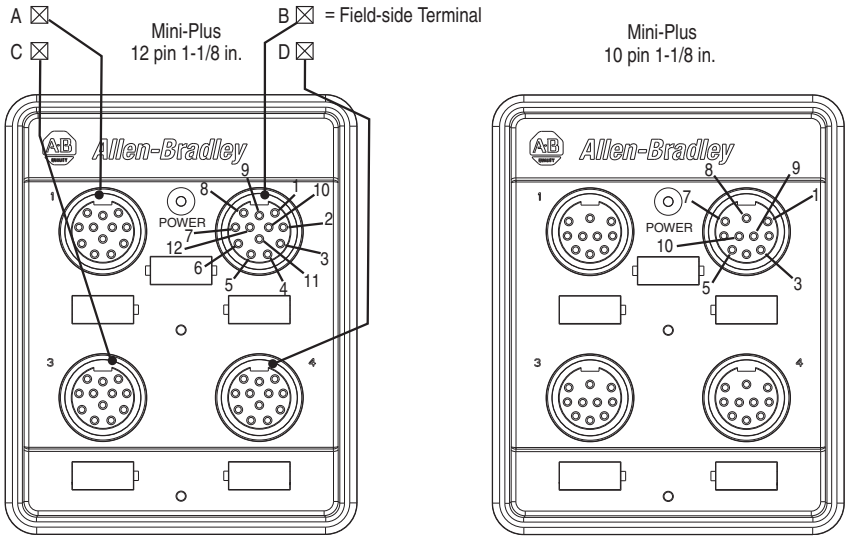
16-Point Input PanelConnect Module with two 10- or 12-pin Mini-Plus Connectors or two 12-pin M23 Connectors

Mini-Plus 12-pin, 1-1/8 in.	Mini-Plus 10-pin, 1-1/8 in.	M23 12-pin, 23 mm
Cat. Nos.	Cat. Nos.	Cat. Nos.
1667-16IA1207	1667-16IA1008	1667-16ID2206
1667-16ID1201	1667-16ID1001	1667-16ID2211
1667-16ID1212	1667-16ID1004	



32 Point Input PanelConnect - Rear View of
PLC Cable Connection (Pinout) and Power Connectors

32 Point PanelConnect-Front View of Female Connections



32-Point Input PanelConnect Module with four 10- or 12-pin Mini-Plus Connectors

Mini-Plus 12-pin, 1-1/8 in.	Mini-Plus 10-pin, 1-1/8 in.
Cat. Nos.	Cat. Nos.
1667-32ID1201	1667-32ID1001

PanelConnect™ Modules for Input Connections

Module Specifications, Pinouts and Application Notes

Modules for 16-Point Inputs

Features:

- Direct connection to common 16-point PLC input modules.
- AC and DC versions with color coded ring for voltage indication.
- LED power indicator.
- Rugged durable construction.
- Provides prewired connectivity from on-machine sensor field device to PLC input modules.

Specifications

Cat. No.	1667-161A1008	1667-16ID1001	1667-16ID1004	1667-16IA1207	1667-16ID1201	1667-16ID1212	1667-16ID2206	1667-16ID2211
Field Connector: Number of Pins and Style	10-Pin Mini Plus (1-1/8 in.)			12-Pin Mini Plus (1-1/8 in.)			12-Pin M23 Metric 23 mm	
Voltage Rating	10-265V AC	10-265V DC	10-265V DC	10-265V AC	10-265V DC	10-265V DC	10-265V DC	10-265V DC
Module Type	16 Input							
Degree of Protection	IP65; Type 1, 4, 4X, 12							
Maximum Peak Voltage*	600V_p							
Maximum Current (per Circuit)	2 A							
Maximum Current (per Module)	12 A							
Indicator Circuit Current (Nominal)	2 mA							
No. of Terminals per Device Common	2							
Operating Temperate Range	0°C…+60°C (32°F…+140°F) Noncondensing							
Certifications	cULus Listed (File E113724 Guide NRAQ) CE							
Power Supply Connector Specification								
Wire Range (Rated Cross Section)	#22…#12 AWG (0.2…4 mm²)							
Wire Strip Length	8 mm (0.32 in.)							
Recommended Tightening Torque	0.50…0.60 N•m (4.5…5.5 lb-in.)							

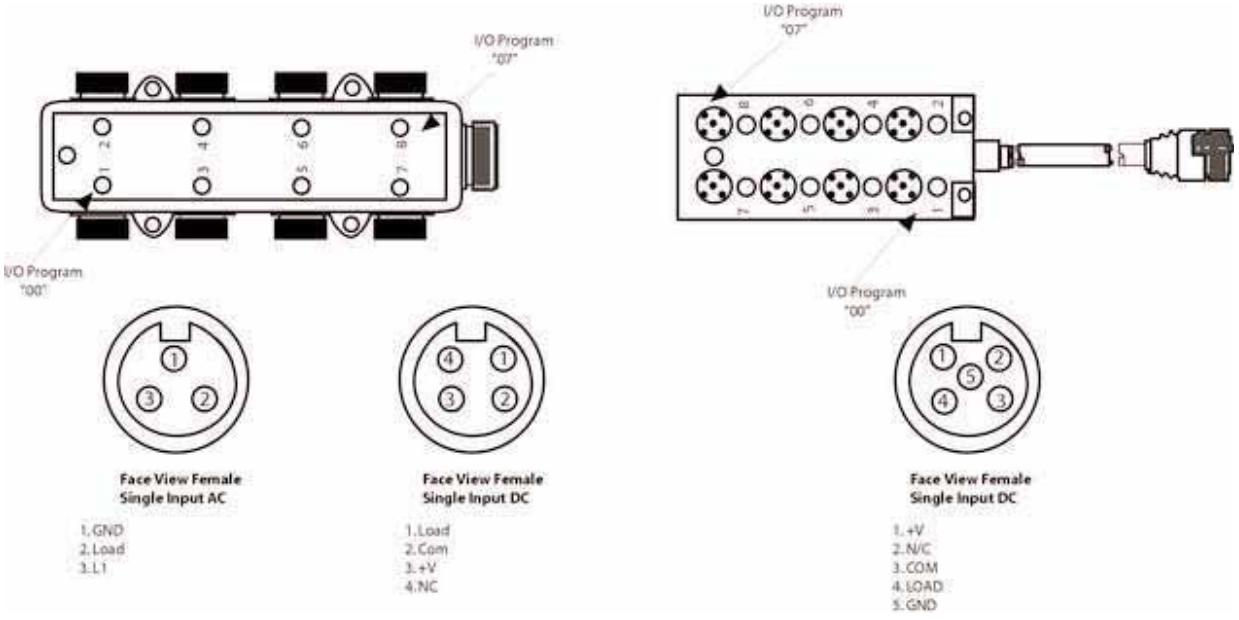
* Transient voltage greater than 600Vp use a UL Recognized suprpression device rated at 2.5kV withstand.

Application Notes

1. Compatiblity- To ensure proper operation with the I/O module, do not exceed the voltage and current ratings of the PanelConnect Module.
2. Wiring- Refer to the label section page 4-50 — 4-52.
3. Dimensions- Refer to page 4-55 and 4-56.

Distribution Block Connection

Match I/O Program to Distribution Block Outputs in the sequence shown below:



Allen-Bradley

PanelConnect Pin to Field-Side Connections

Input Connector Pin Reference	Field-Side Connector—10-Pin Mini			Field-Side Connector—12-Pin Mini			Field-Side Connector—M23 12-Pin	
	AC	DC	DC	AC	DC	DC	DC	DC
	1667-16IA1008	1667-16ID1001	1667-16ID1004	1667-16IA1207	1667-16ID1201	1667-16ID1212	1667-16ID2206	1667-16ID2211
1	—	A10,B10	A8,B8	A7,B7	A11,B11	A12,B12	A9,A10, B9. B10	A11, B11
2								
3	A7	A7	A7	A10	A1	A1	A1	A1
4	A1	A1	A1	A1	A2	A2	A2	A2
5	A9	A9	A9	A12	A3	A3	A3	A3
6	A2	A2	A2	A2	A4	A4	A4	A4
7	A3	A3	A3	A3	A5	A5	A5	A5
8	A4	A4	A4	A4	A6	A6	A6	A6
9	A5	A5	A5	A5	A7	A7	A7	A7
10	A6	A6	A6	A6	A8	A8	A8	A8
11	B7	B7	B7	B10	B1	B1	B1	B1
12	B1	B1	B1	B1	B2	B2	B2	B2
13	B9	B9	B9	B12	B3	B3	B3	B3
14	B2	B2	B2	B2	B4	B4	B4	B4
15	B3	B3	B3	B3	B5	B5	B5	B5
16	B4	B4	B4	B4	B6	B6	B6	B6
17	B5	B5	B5	B5	B7	B7	B7	B7
18	B6	B6	B6	B6	B8	B8	B8	B8
19	A10, B10	A10,B10	A8,B8	A7,B7	A11,B11	A12,B12	A9, A10, B9, B10	A11, B11
20								
Power Pin Reference								
C	A10, B10	A10, B10	A10, B10	A11, B11	A12, B12	A12, B12	A11, B11	A11, B11
D	—	A8, B8	A8, B8	A7, B7	A11, B11	A11, B11	A9, A10, B9, B10	A9, A10, B9, B10
E	A8, B8	—	—	A9, B9	A9, B9	A9, B9	A12, B12	A12, B12

Modules for 32-Point Inputs


Features:
- Direct connection to common 32-point PLC Input Modules.
- LED power indicator.
- Rugged durable construction.
- Provides prewired connectivity from On-Machine Sensor field device to PLC Input Module.

Specifications

Catalog Number	1667-32ID1001	1667-32ID1201
Field Connector: No. pins Style	10-Pin Mini Plus (1-1/8 in.)	12-Pin Mini Plus (1-1/8 in.)
Voltage Rating	10-30V DC	
Module Type	32 Input	
Degree of Protection	IP65; Type 1, 4, 4X, 12	
Maximum Peak Voltage*	600V_p	
Maximum Current (per Circuit)	2 A	
Maximum Current (per Module)	12 A	
Indicator Circuit Current (Nominal)	2 mA	
No. of Terminals per Device Common	2	
Operating Temperature Range	0°C…+60°C (32°F…140°F) Noncondensing	
Certifications	• cULus Listed (File E113724 Guide NRAQ) • CE	
Power Supply Conector Specification		
Wire Range (Rated Cross Section)	#22...#12 AWG (0.2...4 mm²)	
Wire Strip Length	0.32 in. (8 mm)	
Recommended Tightening Torque	4.5...5.5lb.-in. (0.50...0.60 N•m)	

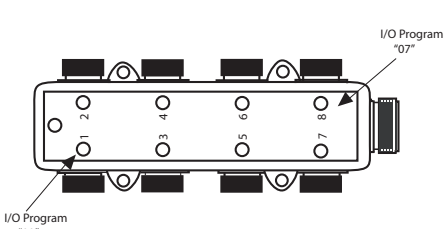
* Transient voltage greater than 600V_p use a UL Recognized suppression device rated at 2.5kV withstand.

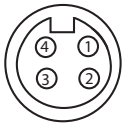
Application Notes

1. Compatiblity- To ensure proper operation with the I/O module, do not exceed the voltage and current ratings of the PanelConnect Module.
2. Wiring- Refer to the label section page 4-50 — 4-52.
3. Dimensions- Refer to page 4-55 and 4-56.

Distribution Block Connection

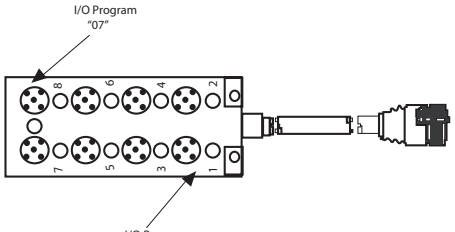
Match I/O Program to Distribution Block Outputs in the sequence shown below:





Face View Female
Single Input DC

1. Load
2. Com
3. +V
4. NC



Face View Female
Single Input DC

1. +V
2. N/C
3. COM
4. LOAD
5. GND

Panel Connections					
Input Connector ●	Field-Side Connector—10-Pin ⊠ DC 1667-32ID1001	Field-Side Connector—12-Pin ⊠ DC 1667-32ID1201	Input Connector ●	Field-Side Connector—10-Pin ⊠ DC 1667-32ID1001	Field-Side Connector—12-Pin ⊠ DC 1667-32ID1201
1	A8, B8, C8, D8	A11, B11, C11, D11	23	B1	B2
2			24	D1	D2
3			25	B9	B3
4			26	D9	D3
5	A7	A1	27	B2	B4
6	C7	C1	28	D2	D4
7	A1	A2	29	B3	B5
8	C1	C2	30	D3	D5
9	A9	A3	31	B4	B6
10	C9	C3	32	D4	D6
11	A2	A4	33	B5	B7
12	C2	C4	34	D5	D7
13	A3	A5	35	B6	B8
14	C3	C5	36	D6	D8
15	A4	A6	37	A8, B8, C8, D8	A11, B11, C11, D11
16	C4	C6	38		
17	A5	A7	39		
18	C5	C7	40		
19	A6	A8	**Power Pin Reference**		
20	C6	C8	C	A10, B10, C10, D10	A12, B12, C12, D12
21	B7	B1	D	A8, B8, C8, D8	A11, B11, C11, D11
22	D7	D1	E	—	A9, B9, C9, D9

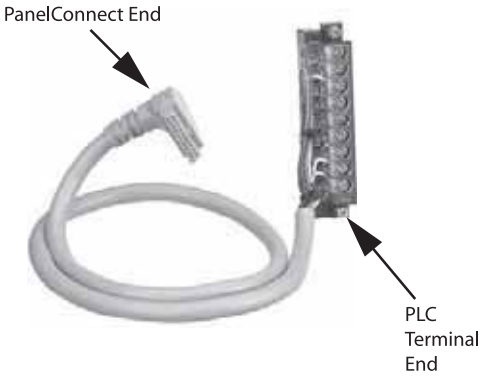
PanelConnect™ Modules for Input Connections

Module Specifications, Pinouts and Application Notes, Continued

Pre-Wired Cables for Input PanelConnect

Bulletin 1492 pre-wired cables are designed to minimize control wiring in a panel. These pre-wired cables replace the point-to-point wiring between Allen-Bradley programmable controller I/O modules and the PanelConnect module.

Specifications



The pre-wired cables have a Bulletin 1746, 1756, 1762 (MicroLogix 1200, 40 I/O Base), 1764 (MicroLogix), 1769, or 1771 PLC input module on one end and a molded cable connector on the other to connect to the PanelConnect Module. The broad offering of digital pre-wired cables supports 16-point and 32-point Bulletin 1746, 1756, 1762, 1764, 1769, and 1771 digital input modules.

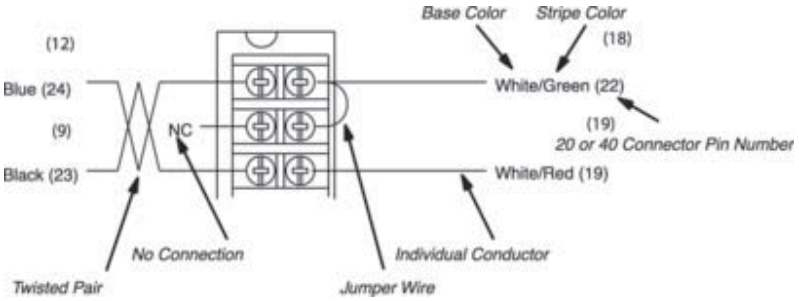
Pre-Wired Cable Cat. No.	Standard Cable Lengths	Insulation Rating	No. of Conductors	Conductor Size	Nominal Outer Diameter	I/O Module Connector Cat. No.
1492-CABLE∗A	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1746-RT25R Red Removable Terminal Block
1492-CABLE∗B	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1746-RT25B Blue Removable Terminal Block
1492-CABLE∗F	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1771-WH (16-Point/21 Terminal) Wiring Arm
1492-CABLE∗X	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1756-TBNH Removable Terminal Block
1492-CAB∗A69	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1769-RTBN18 Removable Terminal Block
1492-CAB∗B69	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1769-RTBN18 Removable Terminal Block
1492-CAB∗J69	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.1 mm (0.46 in.)	(2) 1769-RTBN18 Removable Terminal Blocks
1492-CABLE∗H	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1746-N3 40-Pin Cable Connector
1492-CABLE∗J	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1746-WN (32-point/40 Terminal) Wiring Arm
1492-CABLE∗Z	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1746-TBCH Removable Terminal Block
1492-CABLE∗X	0.5, 1.0, 2.5, 5.0 m	300V 80°C		#20 AWG	9.0 mm (0.36 in.)	1756-TBNH Removable Terminal Block
1492-CAB∗A62	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1762-L40xxx Input Terminal
1492-CAB∗A64	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	9.0 mm (0.36 in.)	1764-24AWA, -24BWA Input Terminal
1492-CAB∗B64	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	9.0 mm (0.36 in.)	1764-28BXB Input Terminal

∗ Cables are available in standard lengths of 0.5 m, 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (005 = 0.5 m, 010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: Cat. No. 1492-CABLE005A is for a 0.5 m cable for the 1746-IA16 I/O Module. Also refer to Build-to-Order Length Cables, on [BAD REF 203006].

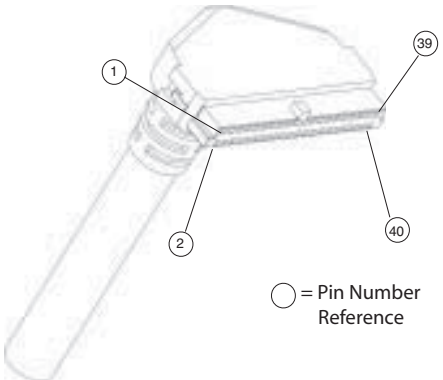
Pinouts

Digital Pre-Wired Cables

The following diagrams illustrate how the individual conductors in the digital pre-wired cables are terminated at both ends. The description listed first is the wire color of the conductor connected to the removable terminal block (Bulletin 1746, 1756, and 1769 I/O) or wiring arm (1771 I/O). The number that follows in parentheses is the corresponding -pin number of the PanelConnect™ mating connect



I/O pin Connector Definition



PanelConnect Mating Connector

Allen-Bradley

PanelConnect Digital, Module-Ready Cable Specifications

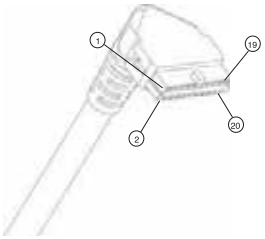
PanelConnect Module-Ready Cable Specifications

PanelConnect ready cables have a cable connector on one end to attach to the PanelConnect Module plus 20 and 40 individually colored conductors on the other end (Cat. Nos. CABLE∗P and CABLE∗Q respectively). These cables allow the PanelConnect Module to be used in specialty applications that require a custom connection, such as connection to other than Allen-Bradley PLCs.

Module-Ready Cable Cat. No.	Cable Lengths	Insulation Rating	Number of Conductors	Conductor Size	Nominal Outer Diameter	Current/ Conductor
1492-CABLE∗P	1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36")	2 A

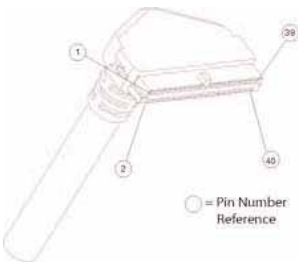
Each colored conductor is connected to one pin of the molded cable connector as listed in the tables below.

Connector -pin Number	Wire Color Base/Stripe	Connector pin Number	Wire Color Base/Stripe
1	Black	11	Blue/Black
2	White	12	Black/White
3	Red	13	Red/White
4	Green	14	Green/White
5	Orange	15	Blue/White
6	Blue	16	Black/Red
7	White/Black	17	White/Red
8	Red/Black	18	Orange/Red
9	Green/Black	19	Blue/Red
10	Orange/Black	20	Red/Green



Cat. No.	Cable Lengths	Insulation Rating	Number of Conductors	Conductor Size	Nominal Outer Diameter	Current/ Conductor
1492-CABLE∗Q	1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46")	2 A

Connector -pin Number	Wire Color Base/Stripe	Connector pin Number	Wire Color Base/Stripe
1	Black	21	Orange/Green
2	White	22	Black/White/Red
3	Red	23	White/Black/Red
4	Green	24	Red/Black/White
5	Orange	25	Green/Black/White
6	Blue	26	Orange/Black/White
7	White/Black	27	Blue/Black/White
8	Red/Black	28	Black/Red/Green
9	Green/Black	29	White/Red/Green
10	Orange/Black	30	Red/Black/Green
11	Blue/Black	31	Green/Black/Orange
12	Black/White	32	Orange/Black/Green
13	Red/White	33	Blue/White/Orange
14	Green/White	34	Black/White/Orange
15	Blue/White	35	White/Red/Orange
16	Black/Red	36	Orange/White/Blue
17	White/Red	37	White/Red/Blue
18	Orange/Red	38	Black/White/Green
19	Blue/Red	39	White/Black/Green
20	Red/Green	40	Red/White/Green



∗ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CABLE025P** is for a 2.5 m, 20 conductor PanelConnect ready cable.

PanelConnect™ Modules for Input/Output Connections

Features

PanelConnect Output Features

16-Point Output PanelConnect Module with two 12-pin Mini-Plus Connectors

These modules are normally used with Connection systems with LEDs on the distribution box or directly to some pneumatic valve manifolds. Each 12-pin Mini-Plus connector mates with a 12-conductor main patch cord that connects to the distribution box or pneumatic valve manifold. Additionally on the field connection side, various outputs (including pneumatic valves) connect with a variety of connector styles. AC and DC versions of the PanelConnect module are available to meet the output voltage requirements. Up to 16 outputs can be connected to each PanelConnect module. Each PanelConnect Module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with a cable to connect to a PLC-output module. Cables are available to connect to the most popular Allen-Bradley PLC output modules. Modules are available in NEMA Type 4 or 4X versions.

16-Point Output PanelConnect Module with two 12-pin M23 Connectors

These modules are used with Connection systems with or without LEDs on the distribution box or directly to some pneumatic valve manifolds. Each 12-pin M23 connector mates with a ten, eleven, or twelve conductor main patch cord that connects to the distribution box or pneumatic valve manifold. Additionally on the field connection side, various outputs (including pneumatic valves) connect with a variety of connector styles. AC and DC versions of the PanelConnect module are available to meet the output voltage requirements. Up to 16 outputs can be connected to each PanelConnect module. Each PanelConnect Module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with a cable to connect to a PLC-output module. Cables are available to connect to the most popular Allen-Bradley PLC output modules. Modules are available in NEMA Type 4 or 4X versions.

32-Point Output PanelConnect Module with four 12-pin Mini-Plus Connectors

These modules are used with Connection systems with LEDs on the distribution box or directly to some pneumatic valve manifolds. Each 12-pin Mini-Plus connector mates with a twelve conductor main patch cord that connects to the distribution box. Additionally on the field connection side, various outputs (including pneumatic valves) connect with a variety of connector styles. 24V DC versions of the PanelConnect module are available to meet the output voltage requirements. Up to 32 outputs can be connected to each PanelConnect module. Each PanelConnect Module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with a cable to connect to a PLC-output module. Cables are available to connect to the most popular Allen-Bradley PLC output modules. Modules are available in NEMA Type 4 or 4X versions.

Digital Pre-Wired Cables

Bulletin 1492 pre-wired cables are designed to minimize control wiring in a panel. Pre-wired cables, when used with a PanelConnect Module replaces the point-to-point wiring between Allen-Bradley programmable controller I/O modules and individual terminal blocks. The pre-wired cables have a removable terminal block or wiring arm at the I/O end of the cable and a cable connector on the other end to connect to the PanelConnect Module. All of the pre-wired cables use #22 AWG wire and are 100% tested for continuity to make a perfect connection every time. The digital pre-wired cables are offered in four standard lengths of 0.5, 1.0, 2.5, and 5.0 m to fit a variety of applications. Other cable lengths are also available as build-to-order products. Pre-wired cables are available for many of the 1746 SLC I/O, 1756 ControlLogix, 1769 Compact for CompactLogix and MicroLogix 1500, and 1771 (PLC-5) Output Modules.

Ready-to-Wire Digital Cables

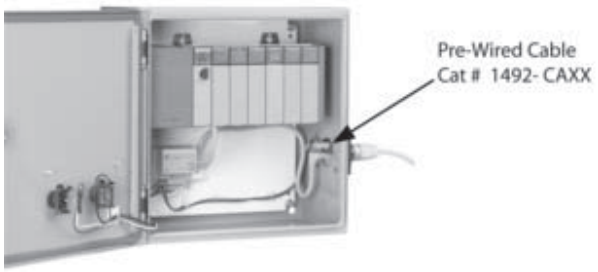
PanelConnect-ready cables have a cable connector that attaches to the PanelConnect Module, pre-wired to one end, and have free connectors ready to wire to other suppliers' I/O modules or other components on the other end. PanelConnect ready cables use #22 AWG wire and have individual color-coded conductors for quick wire-to-terminal coordination. The digital PanelConnect-ready cables are offered in standard lengths of 1.0, 2.5, and 5.0 m to fit a variety of applications. Other cable lengths are also available as build-to-order products.

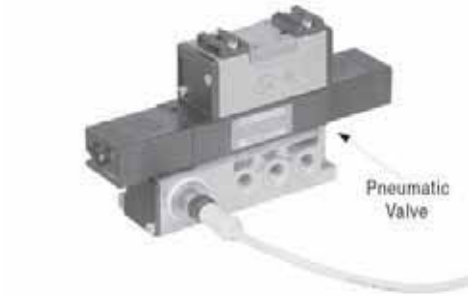
PanelConnect Fuse Module (optional)

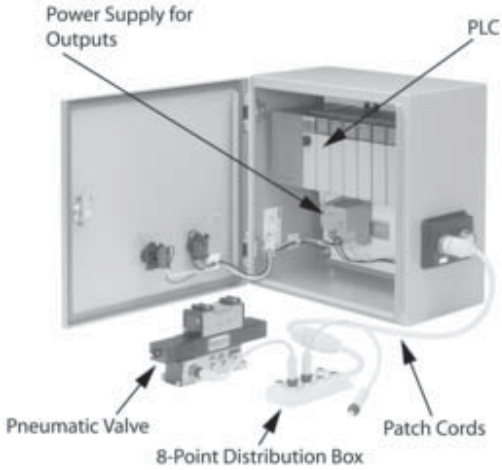
The PanelConnect fuse module provides a convenient method of adding overcurrent protection to your PanelConnect inputs and outputs. This module has sixteen or thirty-two (16 or 32) 5x20 fuse holders to protect each individual input or output. The module has two 20-pin or 40-pin connectors with locking tabs. The right connector is used to connect to the back of the PanelConnect (in-panel connector). The left connector is used to connect to the Input or Output PLC module. The connection between the PanelConnect Module and the Fuse Module is done via the PanelConnect Option Module cable while connection to the PLC is done via PanelConnect pre-wired cables. This module is optional so OEM's can add fusing based on the needs of their customers.

Digital Option Module Cables

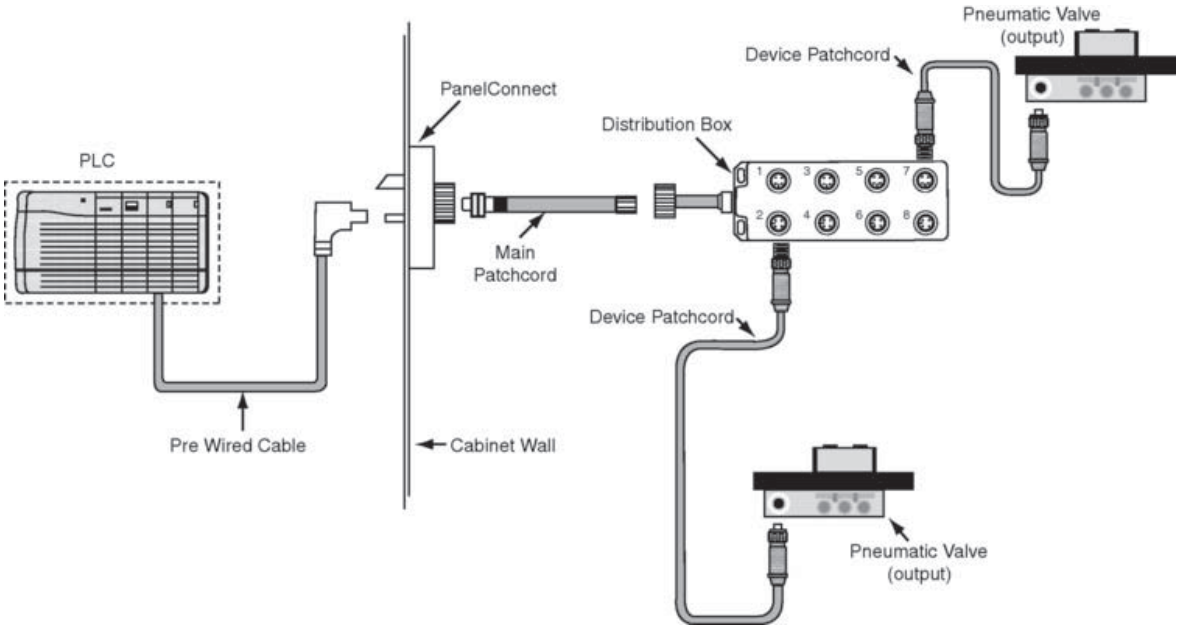
PanelConnect Option Module cable has two over molded cable connectors. The cables use #22 AWG wire and are 100% tested for continuity to make a perfect connection betwen the fuse module and PanelConnect module every time. These cables are offered in five standard lengths of 0.5, 1.0, 1.5, 2.5, and 5.5 meters to fit a variety of applications.







Typical Configuration



PanelConnect™ Modules for Output Connections

Selection Tables

Product Selection — Output Modules

Using Selection Tables to Make Valid Catalog Numbers

Configure the cable catalog number using 1492-CABLE∗ (for digital cables). See footnote ∗ on pages this page and 4-37.

Table 1. AC Output Systems NEMA Type 4

					Catalog Number					
	Distribution Box	3-pin mini, LED			898N-L38PS-N12			—	—	—
		3-pin AC micro, LED			—	—	—	898R-L38PS-N12		
	Device Patchcords				889N-F3AFNU-‡F			889R-F3AERM-§		
	Main Patchcords				12-pin Mini Plus 889N-F12ACNU-♣					
	PanelConnect (16-output)				1667-16OA1201	1667-16OA1202	1667-16OA1203	1667-16OA1201	1667-16OA1202	1667-16OA1203
					System					
I/O System	Nominal (AC)	I/O Range (AC)❄	Type Module	I/O Module						
1746	120/240V AC	85…265V AC	Source	1746-OA16	1492-CABLE∗C	—	—	1492-CABLE∗C	—	—
	120/240V AC	85…265V AC	Source	1746-OW16	1492-CABLE∗D	—	—	1492-CABLE∗D	—	—
1762§➢	120/240V AC	5…264V AC	Source	1762-L40AWA	1492-CAB∗C62	1492-CAB∗C62	—	1492-CAB∗C62	1492-CAB∗C62	—
	120/240V AC	5…264V AC	Source	1762-L40BWA	1492-CAB∗C62	1492-CAB∗C62	—	1492-CAB∗C62	1492-CAB∗C62	—
1764‡➢	120/240V AC	5…264V AC	Source	1764-24AWA	1492-CAB∗D64	1492-CAB∗D64	—	1492-CAB∗D64	1492-CAB∗D64	—
	120/240V AC	5…264V AC	Source	1764-24BWA	1492-CAB∗D64	1492-CAB∗D64	—	1492-CAB∗D64	1492-CAB∗D64	—
1769	120/240V AC	85…265V AC	Source	1769-OW16	1492-CAB∗H69	—	—	1492-CAB∗H69	—	—
	120/240V AC	85…265V AC	Source	1769-OA16	1492-CAB∗H69	—	—	1492-CAB∗H69	—	—
1756	120/240V AC	74…265V AC	Source	1756-OA16	—	1492-CABLE∗X	—	—	1492-CABLE∗X	—
1771	120V AC	12…138V AC	Source	1771-OAD	—	—	1492-CABLE∗F	—	—	1492-CABLE∗F
	48V AC	10…60V AC	Source	1771-OND	—	—	1492-CABLE∗F	—	—	1492-CABLE∗F
1794	100/120V AC	85…132V AC	Source	1794-OA16	1492-CABLE∗P	1492-CABLE∗P	—	1492-CABLE∗P	1492-CABLE∗P	—
Other AC PLC Output Modules					1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P

∗ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CABLE005B** is for a 0.5 m cable. Note 1492-CABLE∗P has a minimum length of 1 m.

❄ Refer to the PLC Installation Manual for details.

‡ Mini patchcords are available in standard lengths of 0.9 m, 1.8 m, 3.6 m, and 6 m (3 ft, 6 ft, 12 ft, and 20 ft). To order, insert the desired length in the catalog number. Example: 889N–F3AFNU–3F represents a mini 0.9 m (3 ft) patchcord. Note catalog number reflects straight male to straight female version with 16 AWG conductors, additional models are also available.

§ AC micro patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889R–F3AERM–3 represents an AC micro 3 m (9.8 ft) patchcord. Note catalog number reflects straight male to straight female version with 18 AWG conductors, additional models are also available.

♣ Mini-Plus patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889N–F12ACNU–2 represents a 2 m (6.5 ft) patchcord. Note catalog number reflects straight male to straight female version with 18/22 AWG conductors, additional models are also available.

➢ Refer to Bulletin 1762 and Bulletin 1764 Output Ratings, Table X on page 4-38.

Table 2. DC Output Systems NEMA Type 4

					Catalog Number					
	Distribution Box		5-pin DC micro, no LEDs (2 output per connector)		898D-54DT-N12					
			5-pin DC micro, no LEDs		898D-58PT-N12					
			5-pin DC micro, PNP LEDs		898D-P58PT-N12	—	898D-P58PT-N12			—
			5-pin DC micro, NPN LEDs		—	898D-N58PT-N12	—	—	—	898D-N58PT-N12
	Device Patchcords				889D-F4ACDM-‡					
	Main Patchcords				12-pin MIni Plus					
					889N-F12ACNU-§					
	PanelConnect (16-outputs)				1667-16OD1201		1667-16OD1202	1667-16OD1203	—	—
	PanelConnect (32-outputs)				—	—	—	—	1667-32OD1201	
	System									
I/O Systems	Nominal (DC)	I/O Range (DC)❄	Type Module	I/O Module						
1746	24V DC	10…50V DC	Sourcing	1746-OB16	1492-CABLE∗E	—	—	—	—	—
	24V DC	10…50V DC	Sourcing	1746-OB16E	1492-CABLE∗E	—	—	—	—	—
	24V DC	20.4…26.4V DC	Sourcing	1746-OB16P	1492-CABLE∗E	—	—	—	—	—
	24V DC	10…50V DC	Sinking	1746-OV16	—	1492-CABLE∗E	—	—	—	—
	24V DC	20.4…26.4V DC	Sinking	1746-OV16P	—	1492-CABLE∗E	—	—	—	—
	24V DC	5-125V DC	Sourcing	1746-OW16	—	—	—	—	—	—
	24V DC	10…50V DC	Sourcing	1746-OB32	—	—	—	—	1492-CABLE∗H	—
	24V DC	10…30V DC	Sourcing	1746-OB32E	—	—	—	—	1492-CABLE∗H	—
	24V DC	10…50V DC	Sinking	1746-OV32	—	—	—	—	—	1492-CABLE∗H
1756	24V DC	10…31.2V DC	Sourcing	1756-OB16E	—	—	1492-CABLE∗X	—	—	—
	24V DC	10…31.2V DC	Sourcing	1756-OB32	—	—	—	—	1492-CABLE∗Z	—
	24V DC	10…31.2V DC	Sinking	1756-OV32E	—	—	—	—	—	1492-CABLE∗Z
1762§♣	24V DC	5…125V DC	Sourcing	1762-L40AWA	1492-CAB∗C62	—	—	—	—	—
	24V DC	21.6…27.6V DC	Sourcing	1762-L40BWA	1492-CAB∗C62	—	—	—	—	—
	24V DC	5…125V DC	Sourcing	1762-L40BXB	1492-CAB∗D62	—	—	—	—	—
1764‡♣	24V DC	5…125V DC	Sourcing	1764-24AWA	1492-CAB∗D64	—	—	—	—	—
	24V DC	20.4…26.4V DC	Sourcing	1764-24BWA	1492-CAB∗D64	—	—	—	—	—
	24V DC	5…125V DC	Sourcing	1764-28BXB	1492-CAB∗E64	—	—	—	—	—
1769	24V DC	20.4…26.4V DC	Sourcing	1769-OB16	1492-CAB∗E69	—	—	—	—	—
	24V DC	20.4…26.4V DC	Sinking	1769-OV16	—	1492-CAB∗E69	—	—	—	—
	24V DC	5-125V DC	Sourcing	1769-OW16	1492-CAB∗H69	—	—	—	—	—
	24V DC	20.4…26.4V DC	Sourcing	1769-OB32	—	—	—	—	1492-CAB∗K69	—
1771	24V DC	10…50V DC	Sourcing	1771-OBD	—	—	—	1492-CABLE∗F	—	—
	24V DC	10…50V DC	Sourcing	1771-OND	—	—	—	—	—	—
	24V DC	10…50V DC	Sourcing	1771-OBN	—	—	—	—	1492-CABLE∗L	—
	24V DC	10…50V DC	Sinking	1771-OVN	—	—	—	—	—	1492-CABLE∗L
1794	24V DC	10…50V DC	Sourcing	1794-OB16	1492-CABLE∗P	—	—	—	—	—
	24V DC	10…50V DC	Sourcing	1794-OB32	—	—	—	—	1492-CABLE∗Q	—
Other 16 Point DC PLC Output Modules					1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P	—	—
Other 32 Point DC PLC Output Modules					—	—	—	—	1492-CABLE∗Q	—

∗ Cables are available in standard lengths of 0.5 m, 1.0 m, and 5.0 m (1.6 ft, 3.2 ft, 16.4 ft). To order, insert the desired length code in the catalog number ("005" = 0.5 m, "010" = 1 m, "0.25" = 2.5 m "050" = 5 m). Example: 1492–CABLE005B is for a 0.5 m cable. Note 1492–CABLE∗P as minimum length of 1 m.

❄ Refer to the PLC Installation Manual for details.

‡ DC micro patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889D–F4ACDM–3 represents an DC micro 3 m (9.8 ft) patchcord. Note catalog number reflects straight male to straight female version with 22 AWG conductors, additional models are also available.For use with outputs, 5-pin versions may be required for earth grounding on pin 5 depending on output field device.

§ Mini-Plus patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. Example: 889N–F12ACNU–2 represents a 2 m (6.5 ft) patchcord. Note catalog number reflects straight male to straight female version with 18/22 AWG conductors, additional models are also available.

§ Refer to Bulletin 1762 and Bulletin 1764 Output ratings, Table X on page 4-38.

Note: PNP type distribution boxes require source type PLC outputs, NPN require sink outputs.

PanelConnect™ Modules for Output Connections

Selection Tables, Continued

Table 2. DC Output Systems NEMA Type 4, Continued

					Either with or without LEDs		
	Allen-Bradley Distribution Box		5-pin DC micro, no LEDs		898D-58PT-M12		
			5-pin DC micro, PNP LEDs		898D-P58PT-M12	—	898D-P58PT-M12
	Allen-Bradley Device Patchcord				889D-F4ACDM-♣	—	889D-F4ACDM-♣
	Allen-Bradley Main Patchcord 12-pin Metric 23				889M-R11RMMU-♣		
	PanelConnect (16 output)				1667-16OD2201		1667-16OD2202
System							
Output Systems	**Nominal**	**Output Range❄**	**@ Module**	**Output Module**	—	—	—
1746	24V DC	10…50V DC	Sourcing	1746-OB16	1492-CABLE∗E	—	—
	24V DC	10…30V DC	Sourcing	1746-OB16E	1492-CABLE∗E	—	—
	24V DC	20.4…26.4V DC	Sourcing	1746-OB16P	1492-CABLE∗E	—	—
	24V DC	10…50V DC	Sinking	1746-OV16	—	1492-CABLE∗E	—
	24V DC	20.4…26.4V DC	Sinking	1746-OV16P	—	1492-CABLE∗E	—
	24V DC	5-125V DC	Sourcing	1746-OW16	1492-CABLE∗D	—	—
	24V DC	10…50V DC	Sourcing	1746-OB32	—	—	—
	24V DC	10…30V DC	Sourcing	1746-OB32E	—	—	—
	24V DC	10…50V DC	Sinking	1746-OV32	—	—	—
1756	24V DC	10…31.2V DC	Sourcing	1756-OB16E	—	—	1492-CABLE∗X
	24V DC	10…31.2V DC	Sourcing	1756-OB32	—	—	—
1762§	24V DC	5…125V DC	Sourcing	1762-L40AWA	1492-CAB∗C62	—	—
	24V DC	21.6…27.6V DC	Sourcing	1762-L40BWA	1492-CAB∗C62	—	—
	24V DC	5…125V DC	Sourcing	1762-L40BXB	1492-CAB∗D62	—	—
1764‡	24V DC	5…125V DC	Sourcing	1764-24AWA	1492-CAB∗D64	—	—
	24V DC	20.4…26.4V DC	Sourcing	1764-24BWA	1492-CAB∗D64	—	—
	24V DC	5…125V DC	Sourcing	1764-28BXB	1492-CAB∗E64	—	—
1769	24V DC	20.4…26.4V DC	Sourcing	1769-OB16	1492-CAB∗E69	—	—
	24V DC	20.4…26.4V DC	Sinking	1769-OV16	—	1492-CAB∗E69	—
	24V DC	5…125V DC	Sourcing	1769-OW16	1492-CAB∗H69	—	—
1771	24V DC	10…50V DC	Sourcing	1771-OBD	—	—	—
	24V DC	10…50V DC	Sourcing	1771-OND	—	—	—
	24V DC	10…50V DC	Sourcing	1771-OBN	—	—	—
	24V DC	10…50V DC	Sinking	1771-OVN	—	—	—
1794	24V DC	10…50V DC	Sourcing	1794-OB16	—	—	—
	24V DC	10…50V DC	Sourcing	1794-OB32	—	—	—
Other 16-Point DC PLC Output Modules					1492-CABLE∗P	1492-CABLE∗P	1492-CABLE∗P
Other 32-Point DC PLC Output Modules					—	—	—

∗ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CABLE025WH** is for a 2.5 m cable with a pre-wired 1771-WH Wiring Arm on one end.

❄ Refer to PLC installation manual for details.

‡ Refer to Bulletin 1764 output ratings, when using PanelConnect, Table X on page 4-38.

§ Refer to Bulletin 1762 output ratings, when using PanelConnect, Table X on page 4-38.

♣ Replace with length of cable in meters (1 m, 2 m, 3 m, 5 m, or 10 m standard).

Note: PNP type distribution boxes require source type PLC outputs, NPN require sink outputs.

Table 2. DC Output Systems NEMA Type 4, Continued

					Either with or without LEDs	
	Allen-Bradley Distribution Box		5-pin DC micro, no LEDs		898D-58PT-M12	
			5-pin DC micro, PNP LEDs		898D-P58PT-M12	
	Allen-Bradley Device Patchcord				889M-F4ACDM-♣	
	Allen-Bradley Main Patchcord 12-pin Metric 23				889M-R11RMMU-♣	
	PanelConnect (16 output)				1667-16OD2205	1667-16OD2203
System						
Output Systems	**Nominal**	**Output Range❄**	**@ Module**	**Output Module**		
1746	24V DC	10…50V DC	Sourcing	1746-OB16	—	—
	24V DC	10…30V DC	Sourcing	1746-OB16E	—	—
	24V DC	20.4…26.4V DC	Sourcing	1746-OB16P	—	—
	24V DC	10…50V DC	Sinking	1746-OV16	—	—
	24V DC	20.4…26.4V DC	Sinking	1746-OV16P	—	—
	24V DC	5-125V DC	Sourcing	1746-OW16	—	—
	24V DC	10…50V DC	Sourcing	1746-OB32	—	—
	24V DC	10…30V DC	Sourcing	1746-OB32E	—	—
	24V DC	10…50V DC	Sinking	1746-OV32	—	—
1756	24V DC	10…31.2V DC	Sourcing	1756-OB16E	1492-CABLE✶X	—
	24V DC	10…31.2V DC	Sourcing	1756-OB32	—	—
1769	24V DC	20.4…26.4V DC	Sourcing	1769-OB16	—	—
	24V DC	20.4…26.4V DC	Sinking	1769-OV16	—	—
	24V DC	5-125V DC	Sourcing	1769-OW16	—	—
1771	24V DC	10…50V DC	Sourcing	1771-OBD	—	1492-CABLE✶F
	24V DC	10…50V DC	Sourcing	1771-OND	—	1492-CABLE✶F
	24V DC	10…50V DC	Sourcing	1771-OBN	—	—
	24V DC	10…50V DC	Sinking	1771-OVN	—	—
1794	24V DC	10…50V DC	Sourcing	1794-OB16	—	—
	24V DC	10…50V DC	Sourcing	1794-OB32	—	—
Other 16-Point DC PLC Output Modules					1492-CABLE✶P	1492-CABLE✶P
Other 32-Point DC PLC Output Modules					—	—

✶ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CABLE025WH** is for a 2.5 m cable with a pre-wired 1771-WH Wiring Arm on one end. Also refer to Build-to-Order Length Cables on [BAD REF 203002].

❄ Refer to PLC installation manual for details.

♣ Replace with length of cable in meteres (1 m, 2 m, 3 m, 5 m, or 10 m standard).

Note: PNP type distribution boxes require source type PLC outputs, NPN require sink outputs.

PanelConnect™ Modules for Output Connections

Selection Tables, Continued

Table 3. AC Output with Direct Connect to Pneumatic Valves

					AC Output					
				Main Connector Style	Mini-plus (1-1/8 in.)					
				Connectors	12-pin					
				Valve Interface	Valve Series	Valve Interface	Valve Interface Cable			
				Output points				16	16	16
					Cat. No.	**Cat. No.**	**Cat. No.**	**Cat. No.**	**Cat. No.**	**Cat. No.**
				Parker Hannifin	"F" Series Air Control Valve❄	SCC122NB	—	1667-16OA1201	1667-16OA1202	1667-16OA1203
				Festo	Midi/Maxi Pneumatic Valve Manifold‡	IMP2-03-1§	Build to order from Mfg.	1667-16OA1201	1667-16OA1202	1667-16OA1203
				Festo	Midi/Maxi Pneumatic Valve Manifold‡	IMP2-03-4§	Build to order from Mfg.	1667-16OA1201	1667-16OA1202	1667-16OA1203
	System									
I/O System	**Nominal**	**Output Range♣**	**Type Module**	**I/O Module**						
1746	120V AC	120…240 V AC	Source	1746-OA16	—	—	—	1492-CABLE∗C	—	—
1756	120V AC	85…265V AC	Source	1756-OA16	—	—	—	—	1492-CABLE∗X	—
1769	120V AC	74…265V AC	Source	1769-OA16	—	—	—	1492-CAB∗H69	—	—
1771	120V AC	10…138V AC	Source	1771-OAD	—	—	—	—	—	1492-CABLE∗F
1794	100/120V AC	85…132V AC	Source	1794-OA16	—	—	—	1492-CABLE∗P	—	—

∗ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CABLE025WH** is for a 2.5 m cable with a pre-wired 1771-WH Wiring Arm on one end.

❄ Voltage Code 23 and 83 valve (120V AC)

‡ 120V AC Solenoid Valves only

§ Maximum 8 outputs

♣ Refer to PLC installation manual for details.

Table 4. DC Output with Direct Connect to Pneumatic Valves

Connectors				12-pin						
Main Connector Style				Mini-plus (1 1/8in)				Metric 23		
Main Patchcord				889N-F12ACNU-♣				889M-F11RMMU-♣		
Output points				16	16	16	32	16	16	16
Valve Interface	Valve Series	Valve Interface Cat. No.	Valve Interface Cable Cat. No.	PanelConnect Catalog Number				PanelConnect Catalog Number		
Parker Hanifin	"F" Series Air Control Valve❄	SCC122 MB	See page 41	1667-16OD1201	1667-16OD1202	1667-16OD1203	1667-32OD1201	—	—	—
Festo	Midi/Maxi Pneumatic Valve Manifold‡	IMP2-03-1§	Build to order from manufacturer	1667-16OD1201	1667-16OD1202	1667-16OD1203	1667-32OD1201	—	—	—
Festo	Midi/Maxi Pneumatic Valve Manifold‡	IMP2-03-4§	Build to order from manufacturer	1667-16OD1201	1667-16OD1202	1667-16OD1203	1667-32OD1201	—	—	—
Festo	"Compact Performance" Valve Manifold	CPV-…VI-MP§	Build to order from manufacturer	1667-16OD1201	1667-16OD1202	1667-16OD1203	1667-32OD1201	—	—	—
Festo	"Compact Performance" Valve Manifol	CPA-…-MP§	Build to order from manufacturer	1667-16OD1201	1667-16OD1202	1667-16OD1203	1667-32OD1201	—	—	—
Numatics	2005 Valve	AKP…§	Dist.	—	—	—	—	1667-16OD2204	1667-16OD2205	—
Numatics	2012 Valve	AKP…§	Dist.	—	—	—	—	1667-16OD2204	1667-16OD2205	—
Numatics	ISO5599/2 Valve	AKP…§	Dist.	—	—	—	—	1667-16OD2204	1667-16OD2205	—
System										
I/O System	Nominal	I/O Range	@ Module	I/O Module	PanelConnect Cable Catalog Number					
1746	24V DC	10…50V DC	Source	1746-OB16	1492-CABLE∗E	—	—	—	1492-CABLE∗E	—	—
	24V DC	10…30V DC	Source	1746-OB16E	1492-CABLE∗E	—	—	—	1492-CABLE∗E	—	—
	24V DC	20.4…26.4V DC	Source	1746-OBP16	1492-CABLE∗E	—	—	—	1492-CABLE∗E	—	—
	24V DC	10…50V DC	Source	1746-OB32	—	—	—	1492-CABLE∗H	—	—	—
	24V DC	10…30V DC	Source	1746-OB32E	—	—	—	1492-CABLE∗H	—	—	—
1756	24V DC	10…31.2V DC	Source	1756-OB16E	—	1492-CABLE∗X	—	—	—	1492-CABLE∗X	—
	24V DC	10…31.2V DC	Source	1756-OB32	—	—	—	1492-CABLE∗Z	—	—	—
1769	24V DC	20.4…26.4V DC	Source	1769-OB16	1492-CAB∗E69	—	—	—	1492-CAB∗E69	—	—
				1769-OB32	—	—	—	1492-CAB∗K69	—	—	—
1771	24V DC	10…50V DC	Source	1771-OBD	—	—	1492-CABLE∗F	—	—	—	1492-CABLE∗F
	24V DC	10…50V DC	Source	1771-OBN	—	—	—	1492-CABLE∗L	—	—	—
1794	24V DC	10…50V DC	Source	1794-OB16	1492-CABLE∗P	—	—	—	1492-CABLE∗P	—	—

∗ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CABLE025WH** is for a 2.5 m cable with a pre-wired 1771-WH Wiring Arm on one end. .

❄ Voltage Code 19 Valve

‡ 24V DC Solenoid Valves Only

§ Maximum of 8 Outputs

♣ Mini-Plus patchcords are available in standard legnths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. **Example: 889N-F12ACNU-2** represents a 2 m (6.5 ft) patchcord. Note catalog number reflects straight male to straight female version with 18/22 AWG conductors, addtional models are also available.

PanelConnect™ Modules for Input/Output Connections

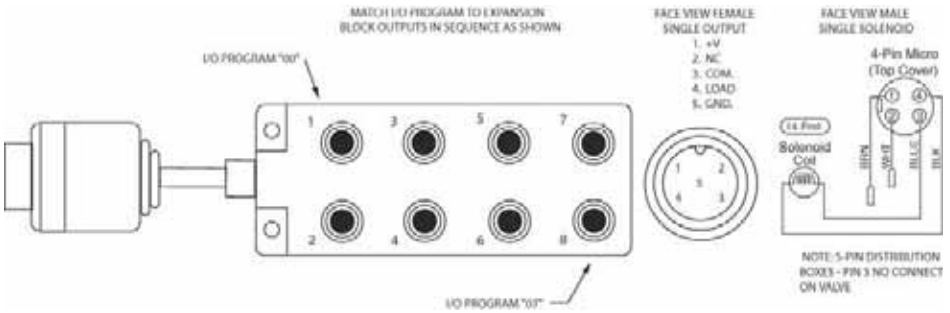
Table 5. Type 4X Input and Output Systems

NEMA 4X Module	NEMA 4 Module
1667-16OA1201X	1667-16OA1201
1667-16OA1202X	1667-16OA1202
*	1667-16OA1203
*	1667-16OD1201
*	1667-16OD1202
*	1667-16OD1203
*	1667-16OD1204
*	1667-16OD1205
*	1667-16OD1206
*	1667-16OD1207
1667-16OD2201X	1667-16OD2201
1667-16OD2202X	1667-16OD2202
*	1667-16OD2203
*	1667-16OD2204
*	1667-16OD2205
*	1667-32OD1201

* Contact factory for availability. Note: to maintain Type 4X compatibility, refer to page 4-48

Table 6. Distribution Boxes

Allen-Bradley Distribution Boxes for Outputs									
Typical PanelConnect Modules for PLC Output Platform			Connection Systems - 8 output connections						
1746, 1769 and 1794 Catalog Number	1756 Catalog Number	1771 Catalog Number	Distribution Box Catalog Number	Voltage Type	Voltage Range System	LED on Connection Box	Main Connector Type	Output Connection Type	Individual Valve Supported
1667-16OD1201	1667-16OD1202	1667-16OD1203	898D-58PT-N12	DC	10-30V DC	No	12 pin Mini-Plus (1-1/8 in.)	5-pin Micro	Single
			898D-P58PT-N12_	DC	10-30V DC	Yes PNP	12 pin Mini-Plus (1-1/8 in.)	5-pin Micro	Single
1667-16OD1201	—	—	898D-N58PT-N12_	DC	10-30V DC	Yes NPN	12 pin Mini-Plus (1-1/8 in.)	5-pin Micro	Single
1667-16OA1201	1667-16OA1202	1667-16OA1203	898N-L38PS-N12	AC	85-132V AC	YES	12 pin Mini-Plus (1-1/8 in.)	3-pin Mini	Single
1667-16OA1201	1667-16OA1202	1667-16OA1203	898R-L38PS-N12	AC	85-132V AC	YES	12 pin Mini-Plus (1-1/8 in.)	3-pin Micro	Single
1667-16OD1201	1667-16OD1202	1667-16OD1203	898D-54DT-N12	DC	10-30V DC	NO	12 pin Mini-Plus (1-1/8 in.)	5-pin Micro	Double
1667-32OD1201	1667-32OD1201	1667-32OD1201	898D-58PT-N12	DC	10-30V DC	No	12 pin Mini-Plus (1-1/8 in.)	5-pin Micro	Single
1667-32OD1201	1667-32OD1201	1667-32OD1201	898D-P58PT-N12_	DC	10-30V DC	Yes PNP	12 pin Mini-Plus (1-1/8 in.)	5-pin Micro	Single
1667-32OD1201	—	1667-32OD1201	898D-N58PT-N12_	DC	10-30V DC	Yes NPN	12 pin Mini-Plus (1-1/8 in.)	5-pin Micro	Single
1667-32OD1201	1667-32OD1201	1667-32OD1201	898D-54DT-N12	DC	10-30V DC	NO	12 pin Mini-Plus (1-1/8 in.)	5-pin Micro	Double



Note: PNP type distribution boxes require source type PLC outputs, NPN require sink outputs.

Table 7. Pneumatic Valve Direct Interfaces

Festo Interface to Panel Connect

PanelConnect Module for Pneumatic Valves	Valve Connection						
Catalog Number PanelConnect	Valve Series	Catalog Number To Valve Interface	Catalog Number for Cable from Valve to PanelConnect	Voltage Type & Output Points	Voltage Range	Main Connector Type PanelConnect	Main Connector Type Valve Interface
1667-16OD1201	Midi / Maxi Pneumatic Valve Manifold*	03E-x-MP4	Build to order by Festo	DC & 16	24V DC	24V DC12-pin Mini-Plus (1-1/8 in.)	25-Pin D-Shell
	"Compact Performance" Valve Manifold	12P-x-MP-xx-x-x					
1667-32OD1201	Midi / Maxi Pneumatic Valve Manifold*	03E-x-MP4	Build to order by Festo	DC & 32			
	"Compact Performance" Valve Manifold	12P-x-MP-xx-x-x					
1667-16OD1202	Midi / Maxi Pneumatic Valve Manifold*	03E-x-MP4	Build to order by Festo	DC & 16			
	"Compact Performance" Valve Manifold	12P-x-MP-xx-x-x					
1667-16OA1203	Midi / Maxi Pneumatic Valve Manifold*	03E-x-MP4					
	"Compact Performance" Valve Manifold	12P-x-MP-xx-x-x					
1667-16OA1201	Midi / Maxi Pneumatic Valve Manifold❄	03E-x-MP4	Build to order by Festo	AC & 16	120V AC		
1667-16OA1202							
1667-16OA1203							

PanelConnect™ Modules for Input/Output Connections

Parker Hannifin Interface to Panel Connect

PanelConnect Module for Pneumatic Valves	Valve Connection						
Catalog Number PanelConnect	Valve Series	Catalog Number To Valve Interface	Catalog Number for Cable from Valve to PanelConnect	Voltage Type & Output Points	Voltage Range	Main Connector Type PanelConnect	Main Connector Type Valve Interface
1667-16OD1201	"F" Series Air Control Valve‡	SCxxx1MB	889N-F12ACU➢	DC & 16	24V DC	12-pin Mini-Plus (1-1/8 in.)	
1667-32OD1201							
1667-16OD1202							
1667-16OD1203							
1667-16OA1201	"F" Series Air Control Valve§	SCxxx1MB		AC & 16	120V AC	12-pin Mini-Plus (1-1/8 in.)	
1667-16OA1202							
1667-16OA1203							

Numatics Interface to Panel Connect

PanelConnect Module for Pneumatic Valves	Valve Connection						
Catalog Number PanelConnect	Valve Series	Catalog Number To Valve Interface	Catalog Number for Cable from Valve to PanelConnect♣	Voltage Type & Output Points	Voltage Range	Main Connector Type PanelConnect	Main Connector Type Valve Interface
1667-16OD2204	2005 Valve	AKP…	Available from Distributor	DC & 16	24V DC	Metric M23	
1667-16OD2204	2012 Valve						
1667-16OD2204	ISO 5999/2						

Note: Maximum of 8 Outputs per PanelConnect Connector

✶ DC 24V DC Solenoid Valves Only

❄ AC 120V DC Solenoid Valves Only

‡ Voltage Code 19 Valve

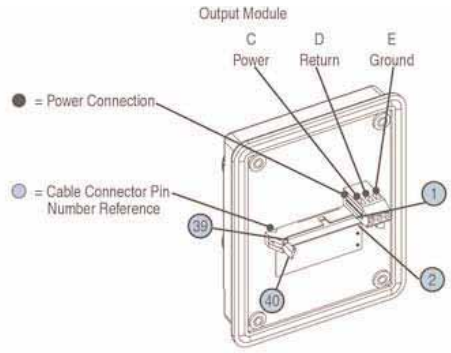
§ Voltage Code 23 and 83 Valve (120V AC)

♣ A-B or Numatics distributor that carries on M23 cable.

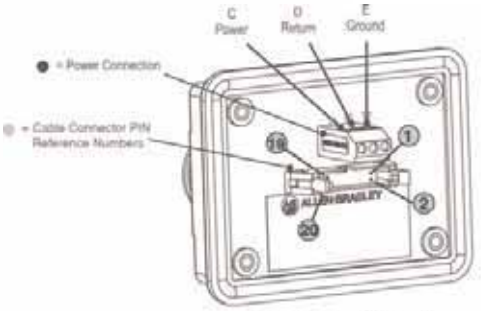
➢ Mini-Plus patchcords are available in standard legnths of 1 m, 2 m, 3 m, 5 m, and 10 m (0.3 ft, 0.6 ft, 0.9 ft, 1.5 ft and 3 ft). To order, insert the desired length in the catalog number. **Example: 889N-F12ACNU-2** represents a 2 m (0.6 ft) patchcord. Note catalog number reflects straight male to straight female version with 18/22 AWG conductors, addtional models are also available.

Digital PanelConnect™ Output Specifications

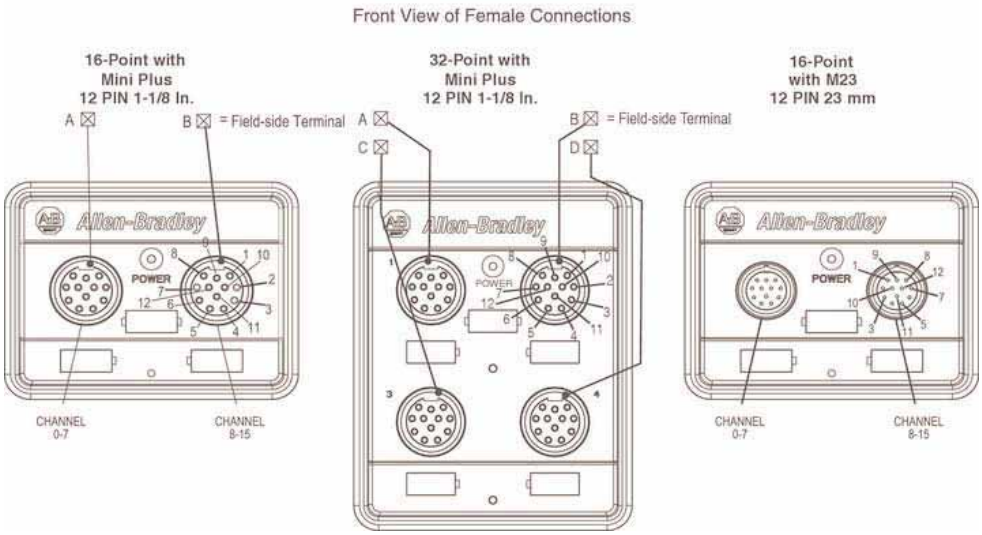
For all PanelConnect dimensions, refer to page 4-55 and 4-56.
For general marker card information, refer to page 4-49.
For general adhesive label card information, refer to page 4-50 — 4-52.



Rear View (32 Point)



16-Point PannelConnect -
Rear View of PLC Cable Connection
(Pinout) & Power Connectors



Output PanelConnect Module with two or four 12-pin Mini-Plus connectors or two 12-pin M23 connectors

16-Point with Mini-Plus 12-pin, 1-1/8 in.	32-Point with Mini-Plus 12-pin, 1-1/8 in.	16-Point with M23 12-pin, 23 mm
Cat. No.	Cat. No.	Cat. No.
1667-16OA1201	1667-32OD1201	1667-16OD2201
1667-16OA1202		1667-16OD2202
1667-16OA1203		1667-16OD2203
1667-16OD1201		1667-16OD2204
1667-16OD1202		1667-16OD2205
1667-16OD1203		
1667-16OD1204		
1667-16OD1205		
1667-16OD1206		
1667-16OD1207		

Digital PanelConnect™ Modules for Outputs

Features:

- Direct connection to common 16- and 32-point PLC output cards.
- AC and DC versions with color-coded ring for voltage indication.
- LED power indicator.
- Rugged durable construction.
- Provides pre-wired connectivity from field device to PLC output module.

Cat. No.	1667-16OA1201 ❄	1667-16OA1202 ❄	1667-16OA1203	1667-16OD1201 ❄	1667-16OD1202	1667-16OD1203	1667-16OD1204 ❄	1667-16OD1205	1667-16OD1206	1667-16OD1207
Field Connector Style	12-Pin Mini Plus (1-1/8 in.)									
Voltage Rating	10-265V AC			10-265V DC						
Module Type	16 Output									
Degree of Protection	IP65; Type 1, 4, 4X, 12									
Maximum Peak Voltage✶	600V_p									
Maximum Current (per Circuit)	2 A									
Maximum Current (per Module)	12 A									
Indicator Circuit Current (Nominal)	2 mA									
No. of Terminals per Device Common	2									
Operating Temperature Range	0°C…+60°C (32°F…+140°F); Noncondensing									
Certifications	• cULus Listed (File E113724 Guide NRAQ) • CE									
Power Supply Connector Specification										
Wire Range (Rated Cross Section)	#22…#12 AWG (0.2…4 mm²)									
Wire Strip Length	8 mm (0.32 in.)									
Recommended Tightening Torque	0.50…0.60 N•m (4.5…5.5 lb-in.)									

✶ Transient voltage greater than 600V_p use a UL Recognized suppression device rated at 2.5kV withstand.

❄ When using 1667-Oxx PanelConnect modules with bulletin 1762 MicroLogix 1200 embedded or Bulletin 1764 MicroLogix 1500 base I/O, the Bulletin 1667 module current ratings are lower. Refer to Table X, page 4-38 .

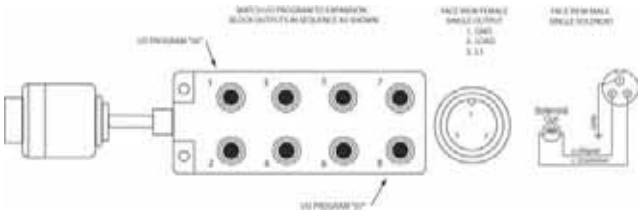
Application Notes

1. Compatiblity- To ensure proper operation with the I/O module, do not exceed the voltage and current ratings of the PanelConnect Module.
2. Wiring- Refer to the label section page 4-49 — 4-52.
3. Dimensions- Refer to page 4-55 and 4-56.

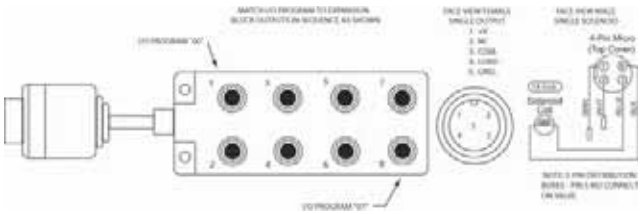
Distribution Block Connection

Match I/O Program to Distribution Block outputs in the sequence shown below

1667-160Axxxx



1667-160Dxxxx



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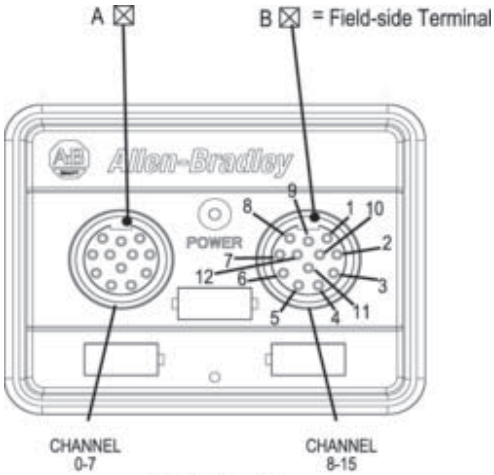
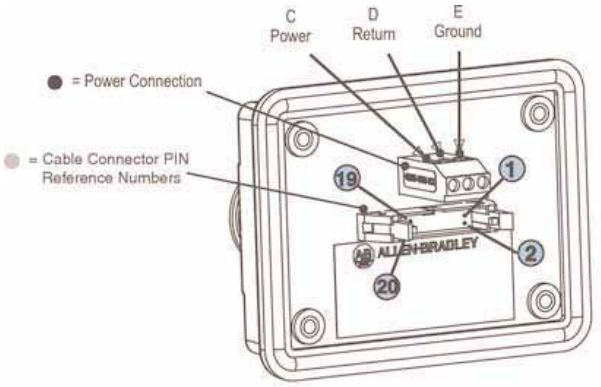
Panel Connections										
Field Side Connector—12-Pin Mini-Plus										
Output Connector Pin Reference	AC	AC	AC	DC	DC	DC	DC	DC	DC	DC
	1667-16OA1201	1667-16OA1202	1667-16OA1203	1667-16OD1201	1667-16OD1202	1667-16OD1203	1667-16OD1204	1667-16OD1205	1667-16OD1206	1667-16OD1207
1	A11, B11	A11	A11, B11	A12, B12	A12	A12, B12	A12, B12	A12	A10,B10	A10
2		A7			A11			A10		B11
3	A10	A10	A10	A1	A1	A1	A7	A7	A1	A1
4	A1	A1	A1	A2	A2	A2	A6	A6	A2	A2
5	A12	A12	A12	A3	A3	A3	A5	A5	A3	A3
6	A2	A2	A2	A4	A4	A4	A4	A4	A4	A4
7	A3	A3	A3	A5	A5	A5	A3	A3	A5	A5
8	A4	A4	A4	A6	A6	A6	A2	A2	A6	A6
9	A5	A5	A5	A7	A7	A7	A1	A1	A7	A7
10	A6	A6	A6	A8	A8	A8	A8	A8	A8	A8
11	B10	B10	B10	B1	B1	B1	B7	B7	B1	B1
12	B1	B1	B1	B2	B2	B2	B6	B6	B2	B2
13	B12	B12	B12	B3	B3	B3	B5	B5	B3	B3
14	B2	B2	B2	B4	B4	B4	B4	B4	B4	B4
15	B3	B3	B3	B5	B5	B5	B3	B3	B5	B5
16	B4	B4	B4	B6	B6	B6	B2	B2	B6	B6
17	B5	B5	B5	B7	B7	B7	B1	B1	B7	B7
18	B6	B6	B6	B8	B8	B8	B8	B8	B8	B8
19	A11, B11	B11	A11, B11	A11, B11	B12	A12, B12	A10, B10	B12	A11, B11	A10
20		B7	A7, B7		B11	A11, B11		B10		B11
Power Pin Reference										
C				A12, B12	A12, B12	A12, B12	A12, B12	A12, B12	A10, B10	A10, B10
D	A7, A11, B7, B11	A7, A11, B7, B11	A7, A11, B7, B11	A11, B11	A11, B11	A11, B11	A10, B10	A10, B10	A11, B11	A11, B11
E	A9, B9	A9, B9	A9, B9	A9, B9	A9, B9	A9, B9	A9, B9	A9, B9	A9, B9	A9, B9



16-Point with Mini Plus 12 PIN 1-1/8 In.



16-Point PannelConnect - Rear View of PLC Cable Connection (Pinout) & Power Connectors

Modules for 16 Outputs (M23)

Features:

- Direct connection to common 16 point output cards.
- AC and DC versions with color coded ring for voltage indication.
- LED power indicator.
- Rugged durable construction.
- Provides pre-wired connectivity from field device to PLC output module.

Specifications

Cat. No.	1667-16OD2201❄	1667-16OD2202	1667-16OD2203	1667-16OD2204	1667-16OD2205
Number of Pins	12				
Field Connector Style	M23 Metric 23mm				
Voltage Rating	10...265V DC				
Number of Points	16				
Degree of Protection	IP65 Type 1, 4, 4X, 12				
Maximum Peak Voltage✶	600V_p				
Maximum Current (per Circuit)	2 A				
Maximum Current (per Module)	12 A				
Indicator Circuit Current (Nominal)	2 mA				
No. of Terminals per Device Column	2				
Operating Temperature Range	0°...+60°C (32°…140°F) Non-Condensing				
Certifications	• cULus Listed (File E113724 Guide NRAQ) • CE				
Power Supply Connector Specifications					
Wire Range (Rated Cross Section)	#22...#12 AWG (0.2...4 mm^2)				
Wire Strip Length	0.32 in. (8 mm)				
Recommended Tightening Torque	4.5...5.5 lb.-in. (0.50...0.60 N•m)				

✶ Transient voltage greater than 600V_p use a UL Recognized suppression device rated at 2.5kV withstand.

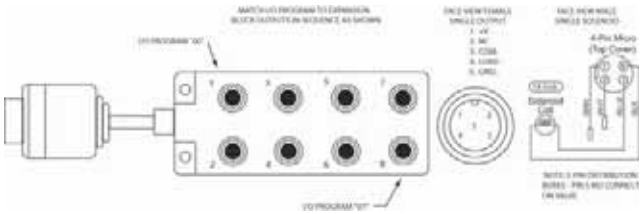
❄ When using 1667-Oxx PanelConnect modules with bulletin 1762 MicroLogix 1200 embedded or Bulletin 1764 MicroLogix 1500 base I/O, the Bulletin 1667 module current ratings are lower. Refer toTable X, page 4-38 .

Application Notes

1. Compatiblity- To ensure proper operation with the I/O module, do not exceed the voltage and current ratings of the PanelConnect Module.
2. Wiring- Refer to the label section page 4-49 — 4-52.
3. Dimensions- Refer to page 4-55 and 4-56.

Distribution Block Connection

Match I/O Program to Distribution Block outputs in the sequence shown below:



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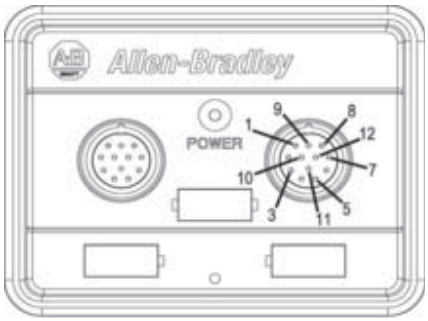
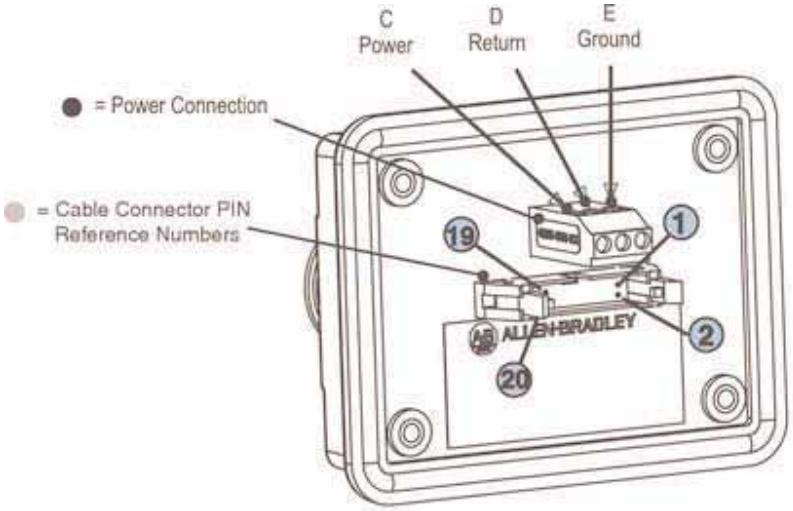
Panel Connections					
Field Side Connector—12-Pin M23					
Output Connector Pin Reference ●	DC 1667-16OD2201	DC 1667-16OD2202	DC 1667-16OD2203	DC 1667-16OD2204	DC 1667-16OD2205
1	A11, B11	A11	A11, B11	A1, B1	A1, B1
2		A9, A10			A3, B3
3	A1	A1	A1	A4	A4
4	A2	A2	A2	A5	A5
5	A3	A3	A3	A6	A6
6	A4	A4	A4	A7	A7
7	A5	A5	A5	A8	A8
8	A6	A6	A6	A9	A9
9	A7	A7	A7	A10	A10
10	A8	A8	A8	A11	A11
11	B1	B1	B1	B4	B4
12	B2	B2	B2	B5	B5
13	B3	B3	B3	B6	B6
14	B4	B4	B4	B7	B7
15	B5	B5	B5	B8	B8
16	B6	B6	B6	B9	B9
17	B7	B7	B7	B10	B10
18	B8	B8	B8	B11	B11
19	A9, A10	B11	A11, B11	A3, B3	A1, B1
20	B9, B10	B9, B10	A9,A10, B9, B10		A3, B3
Power Pin Reference					
C	A11, B11	A11, B11	A11, B11	A1, B1	A1, B1
D	A9, A10, B9, B10	A9, A10, B9, B10	A9, A10, B9, B10	A3, B3	A3, B3
E	A12, B12	A12, B12	A12, B12	A12, B12	A12, B12



16-Point with M23 12 PIN 23 mm



16-Point PannelConnect - Rear View of PLC Cable Connection (Pinout) & Power Connectors

PanelConnect™ Modules for Output Connections

1667-32OD1201 (32-Point Output)

1667-32OD1201 Specifications

Main PanelConnect Connector	**Number of pins**	12
	Style	Mini-Plus 1-1/8 in.
	Number of points	32

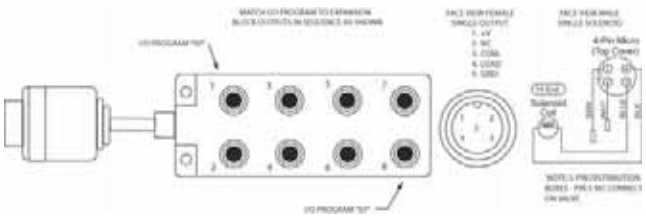
Degree of Protection	IP65 Type 1, 4, 4X, 12
Voltage Rating	10…30V DC
Maximum Peak Voltage*	600V_p
Maximum Current (per Circuit)	2 A
Maximum Current (per Module)	12 A
Indicator Circuit Current (Nominal)	2 mA
No. of Terminals per Device Common	2
Operating Temperature Range	0…+60×C Non-Condensing
Certifications	• cULus Listed (File E113724 Guide NRAQ) • CE

* Transient voltage greater than 600V_p use a UL Recognized suppression device rated at 2.5 kV withstand.

● Power Supply Connector Specification	
Wire Range (Rated Cross Section)	#22…#12 AWG (0.2…4 mm²)
Wire Strip Length	0.32 in. (8 mm)
Recommended Tightening Torque	4.5…5.5 lb.-in. (0.50…0.60 Nm)

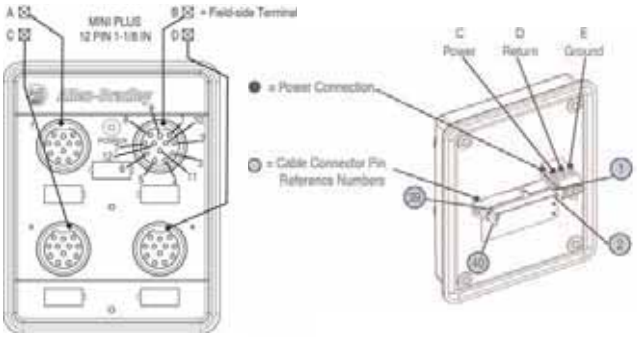
Distribution Block Connection

Match I/O Program to Distribution Block outputs in the sequence shown below:



Note: For configuring to double solenoid valves, refer to page 4-31 for Distribution Box connections.

Pinout



Panel Connections			
Connector Pin Reference ☒	Field Side Connector ●	Connector Pin Reference ☒	Field Side Connector ●
1	A12, B12, C12, D12	21	B1
2		22	D1
3		23	B2
4		24	D2
5	A1	25	B3
6	C1	26	D3
7	A2	27	B4
8	C2	28	D4
9	A3	29	B5
10	C3	30	D5
11	A4	31	B6
12	C4	32	D6
13	A5	33	B7
14	C5	34	D7
15	A6	35	B8
16	C6	36	D8
17	A7	37	A11, B11, C11, D11
18	C7	38	
19	A8	39	
20	C8	40	
Power Pin Reference ●			
		C	A12, B12
		D	A11, B11, C11, D11
		E	A9, B9, C9, D9

Application Notes

1. **Compatibility** — To ensure proper operation with the I/O module, do **not** exceed the voltage and current ratings of the PanelConnect Module.
2. **Wiring** — Refer to the label section on 4-49 — 4-52.
3. **Dimensions** — Refer to page 4-55 and 4-56.

Table X. PLC-Specific Current Ratings

Cat. No.	Current/Circuit	Current/Module	Indicator Circuit Current	Operating Temperature Range
1762-40AWA (Outputs) *	0.25 A	4.0 A	2 mA	0°…60°C
1762-40BWA (Outputs) *				
1762-40BXB (Outputs) *				
1764-24AWA (Outputs) *	0.5 A (Outputs 0…4) 0.25 A (Outputs 4…11)			
1764-24BWA (Outputs) *				
1764-28BXB (Outputs) *	2.0 A (Outputs 0…1) 0.6 A (Outputs 2…7) 1.0 A (Outputs 8…11)			

* Refer to Bulletin 1762 and 1764 literature for output voltage ratings.

Allen-Bradley

PanelConnect™ Cables for Output Connections

Pre-Wired Cables for Output PanelConnect™

Bulletin 1492 pre-wired cables are designed to minimize control wiring in a panel. Digital pre-wired cables, when used with a PanelConnect™ Module, replace the point-to-point wiring between Allen-Bradley programmable controller I/O modules and individual terminal blocks. The digital ready-to-wire cables provide one end of the cable pre-terminated, for the PanelConnect Module.

Specifications

The pre-wired cables have a Bulletin 1746 Removable Terminal Block, 1756 Removable Terminal Block, 1769 Removable Terminal Block, or 1771 Wiring Arm on one end and a cable connector on the other to connect to the PanelConnect Module. The broad offering of digital pre-wired cables supports Bulletin 1746, 1756, 1769, and 1771 digital modules.

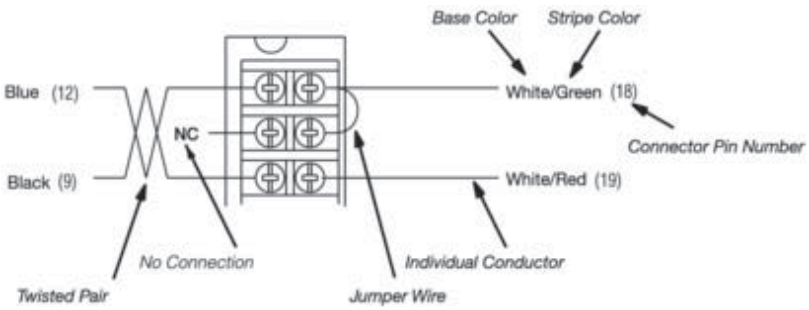
Cat. No.	Standard Cable Lengths	Insulation Rating	No. of Conductors	Conductor Size	Nominal Outer Diameter	I/O Module Connector Cat. No.
1492-CABLE∗C	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1746-RT25R Red Removable Terminal Block
1492-CABLE∗D	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1746-RT25C Orange Removable Terminal Block
1492-CABLE∗E	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1746-RT25B Blue Removable Terminal Block
1492-CABLE∗F	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1771-WH (16-Point/21 Terminal) Wiring Arm
1492-CABLE∗H	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1746-N3 40-pin cable connector
1492-CABLE∗L	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1771-WN (32-point/40 Terminal) Wiring Arm
1492-CABLE∗X	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1756-TBNH Removable Terminal Block
1492-CABLE∗Z	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1756-TBCH Removable Terminal Block
1492-CAB∗B62	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1762-L40xxx Output Terminal
1492-CAB∗C64	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1764-24AWA, -24BWA Output Terminal
1492-CAB∗F64	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1764-28BXB Output Terminal
1492-CAB∗E69	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1769-RTBN18 Removable Terminal Block
1492-CAB∗H69	0.5, 1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.0 mm (0.46 in.)	1769-RTBN18 Removable Terminal Block
1492-CAB∗K69	0.5, 1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	(2) 1769-RTBN18 Removable Terminal Block

∗ Cables are available in standard lengths of 0.5 m, 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (005 = 0.5 m, 010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CABLE005A** is for a 0.5 m cable for the 1746-IA16 I/O Module.

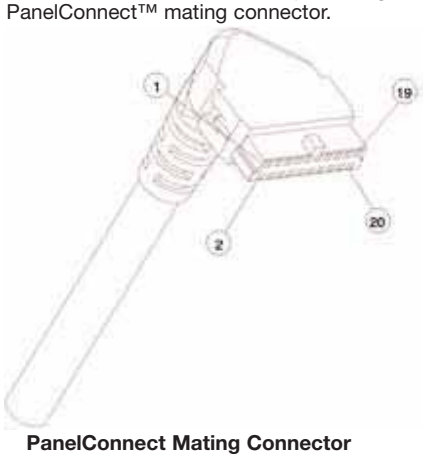
Pinouts

Digital Pre-Wired Cables

The following diagrams illustrate how the individual conductors in the digital pre-wired cables are terminated at both ends. The description listed first is the wire color of the conductor connected to the removable terminal block (Bulletin 1746, 1756, and 1769 I/O) or wiring arm (1771 I/O). The number that follows in parentheses is the corresponding pin number of the PanelConnect™ mating connector.



I/O pin Connector Definition



PanelConnect Mating Connector

PanelConnect™ Input and Output Combination Modules

Combination PanelConnect Features

32-Point Combination Input/Output PanelConnect Module with four 12-pin Mini-Plus Connectors

These modules are used when input and output devices are in the vicinity of each other (i.e., conveyor systems).

Each 12-pin Mini-Plus connector connects to four (4) input and four (4) output devices. The distribution box used in this application is split between four (4) inputs and four (4) outputs. Each 12-pin Mini-Plus connector mates with a twelve-conductor patchcord that connects to the distribution box.

These modules are normally used with Connection systems with LEDs on the distribution box, for easier identification on the machine. The 32-Point combination modules are available only for DC inputs and outputs.

Each PanelConnect module has an LED to indicate when the module is powered. On the internal panel side, the PanelConnect mates with two 20-pin cables, one for PLC input modules and one for PLC output modules. These cables are available for the most popular Allen-Bradley Input and Output I/O modules. Modules are available in Type 4 and 4X versions.

Digital Pre-Wired Cables

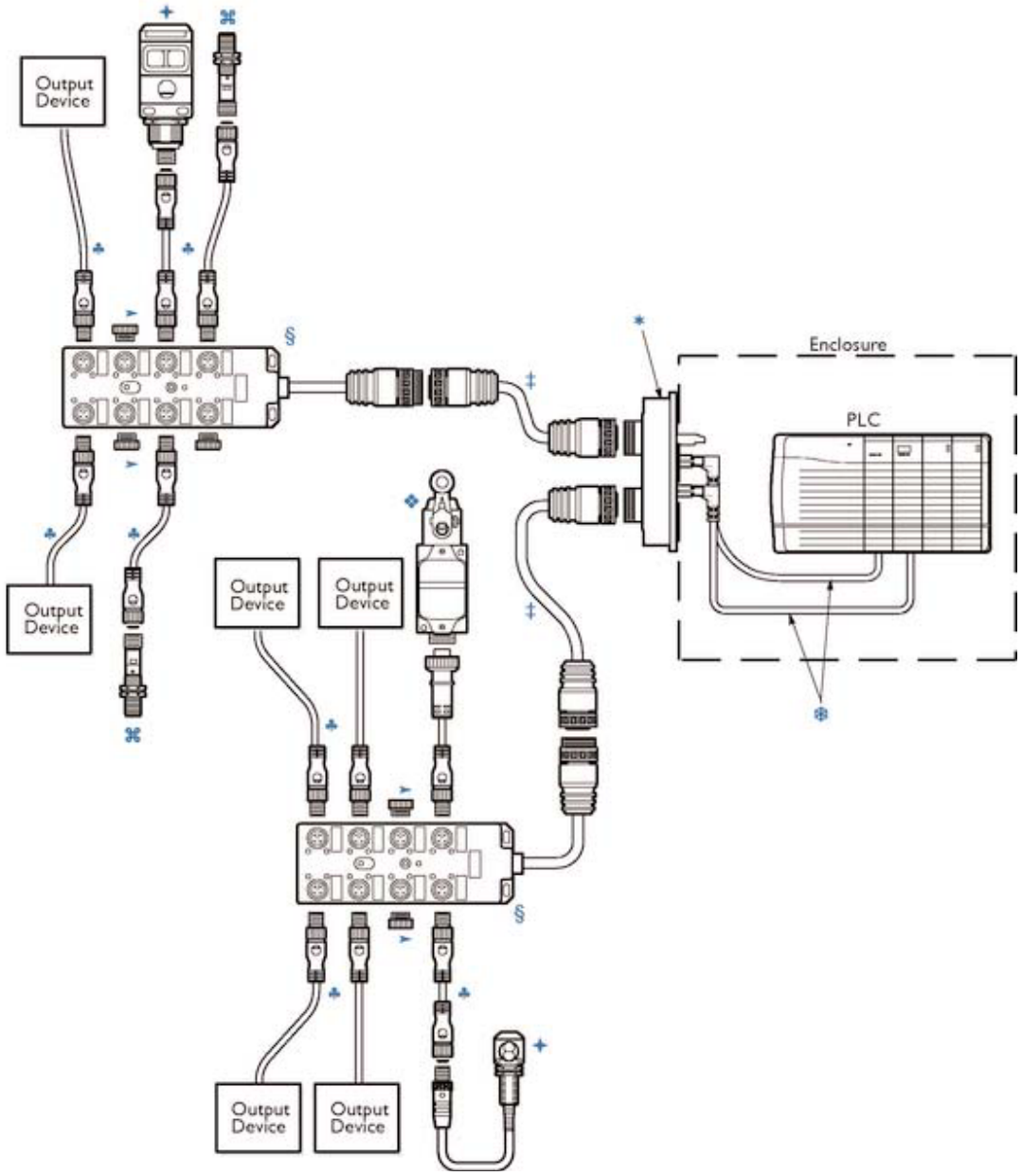
Bulletin 1492 pre-wired cables are designed to minimize control wiring in a panel. Pre-wired cables, when used with a PanelConnect Module replaces the point-to-point wiring between Allen-Bradley programmable controller I/O modules and individual terminal blocks. The pre-wired cables have a removable terminal block or wiring arm at the I/O end of the cable and a cable connector on the other end to connect to the PanelConnect Module. All of the pre-wired cables use #22 AWG wire and are 100% tested for continuity to make a perfect connection every time. The digital pre-wired cables are offered in four standard lengths of 0.5, 1.0, 2.5, and 5.0 m to fit a variety of applications. Other cable lengths are also available as build-to-order products. Pre-wired cables are available for many of the 1746 SLC I/O, 1756 ControlLogix, 1769 Compact for CompactLogix and MicroLogix 1500, and 1771 (PLC-5) Output Modules.

Ready-to-Wire Digital Cables

PanelConnect-ready cables have a cable connector that attaches to the PanelConnect Module, pre-wired to one end, and have free connectors ready to wire to other suppliers' I/O modules or other components on the other end. PanelConnect ready cables use #22 AWG wire and have individual color-coded conductors for quick wire-to-terminal coordination. The digital PanelConnect-ready cables are offered in standard lengths of 1.0, 2.5, and 5.0 m to fit a variety of applications. Other cable lengths are also available as build-to-order products.

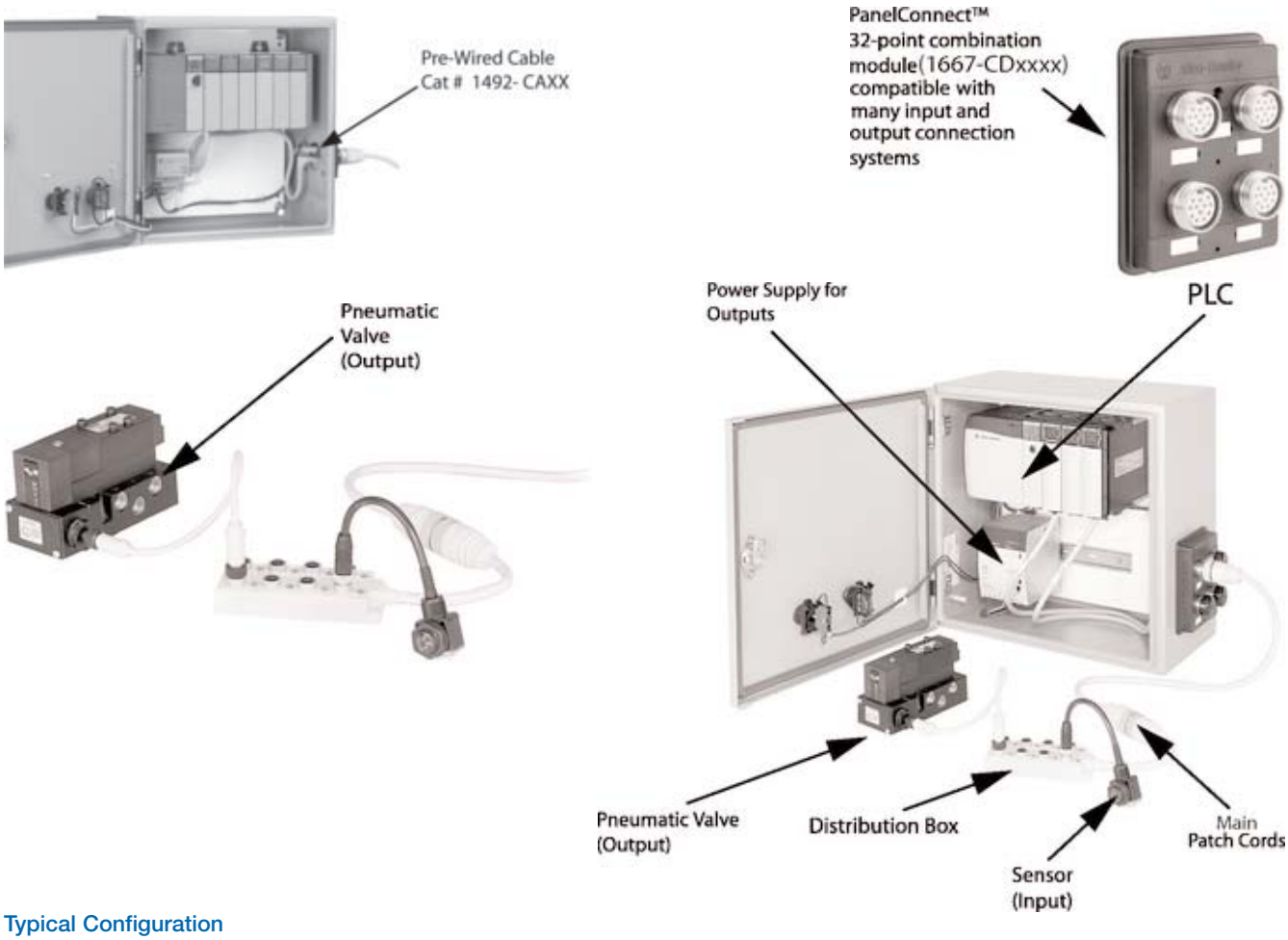
Combination Input/Output System

Typical Configuration

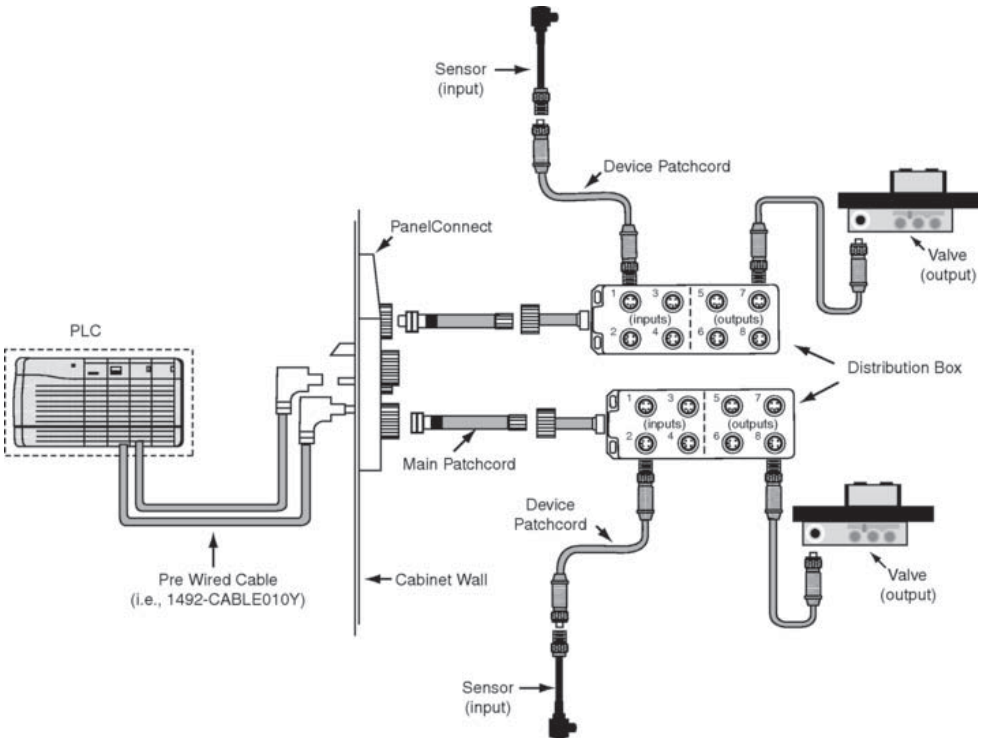


✳PanelConnect Combination 32-point Input/Output...page 4-43
❄Wiring Systems Cable…page 4-20 and 4-39
‡Main Patchcord (Mini-Plus)
§Distribution Box
♣Device Patchcords
➢Sealing Caps…page 4-48
⌘Inductive Proximity...See the Sensors Catalog
✦Photoelectric Sensor…See the Sensors Catalog
❖Limit Switch…See the Sensors Catalog

PanelConnect™ Modules for Input/Output Combination Connections



Typical Configuration



Allen-Bradley

Table 1. 32-Point Combination Modules

			DC Combination Input and Output			
	Distribution Box	5-pin DC micro, no LEDs, dual input/output per port	898D-54DT-N12	—	—	898D-54DT-N12
		5-pin DC micro, no LEDs	898D-58PT-N12	—	—	898D-58PT-N12
		5-pin DC micro, PNP LEDs	898D-P58PT-N12			—
		5-pin DC micro, NPN LEDs	—	—	—	898D-N58PT-N12
	Device Patchcords		889D-F4ACDM-♣	889D-F4ACDM-♣	889D-F4ACDM-♣	889D-F4ACDM-♣
	Main Patchcord Mini-plus (1-1/8 in.) 12-pin		889N-F12ACNU-§	889N-F12ACNU-§	889N-F12ACNU-§	889N-F12ACNU-§
	PanelConnect		1667-32CD1201	1667-32CD1202	1667-32CD1203	1667-32CD1204

Allen-Bradley Input Systems													Allen-Bradley Output Systems			
I/O System	Nominal	Input Range	Type Module	Input Module	Input Cable❄	Output Cable‡	Input Cable❄	Output Cable‡	Input Cable❄	Output Cable‡	Input Cable❄	Output Cable‡	Nominal	Input Range	Type Module	Output Module
1746	24V DC	10…30V	Sink	1746-IB16	1492-CABLE∗B	1492-CABLE∗E	—	—	—	—	—	—	24V DC	10…30V	Source	1746-OB16E
	24V DC	10…30V AC/DC	Sink	1746-IN16	1492-CABLE∗B	1492-CABLE∗E	—	—	—	—	—	—	24V DC	10…30V	Source	1746-OB16E
	24V DC	10…30V DC	Sink	1746-ITB16	1492-CABLE∗B	1492-CABLE∗E	—	—	—	—	—	—	24V DC	10…30V	Source	1746-OB16E
	24V DC	10…30V DC	Source	1746-ITV16	—	—	—	—	—	—	1492-CABLE∗E	1492-CABLE∗E	24V DC	10…50V DC	Sink	1746-OV16
	24V DC	10…30V DC	Source	1746-IV16	—	—	—	—	—	—	1492-CABLE∗B	1492-CABLE∗E	24V DC	20…26V DC	Sink	1746-OVP16
1756	24V DC	10…30V DC	Sink	1756-IB16	—	—	1492-CABLE∗X	1492-CABLE∗X	—	—	—	—	24V DC	10…30V DC	Source	1756-OB16E
1769	24V DC	10…30V DC	Sink Only	1769-IQ16 (Sink Mode)	1492-CAB∗B69	1492-CAB∗E69	—	—	—	—	—	—	24V DC	20…26V DC	Source	1769-OB16
	24V DC	10…30V DC	Source	1769-IQ16 (Source Mode)	—	—	—	—	—	—	1492-CAB∗B69	1492-CAB∗E69	24V DC	20…26V DC	Sink	1769-OV16
1771	24V DC	10…30V DC	Sink Only	1771-IBD	—	—	—	—	1492-CABLE∗F	1492-CABLE∗F	—	—	24V DC	10…50V DC	Source	1771-OBD
	24V DC	20…60V DC	Sink	1771-ICD	—	—	—	—	1492-CABLE∗F	1492-CABLE∗F	—	—	24V DC	10…50V DC	Source	1771-OBD
	24V DC	9…30V DC	Sink	1771-IND	—	—	—	—	1492-CABLE∗F	1492-CABLE∗F	—	—	24V DC	10…50V DC	Source	1771-OBD
1794	24V DC	10…30V DC	Sink	1794-IB16	1492-CABLE∗P	1492-CABLE∗P	—	—	—	—	1492-CABLE∗P	1492-CABLE∗P	24V DC	10…30V DC	Source	1794-OB16

∗ Cables are available in standard lengths of 0.5 m, 1.0 m, and 5.0 m. To order, insert the desired length code in the catalog number ("005" = 0.5 m, "010" = 1.0 m, "0.25" = 2.5 m, and "050" = 5 m). Example: 1492-CABLE005B is for a 0.5 m cable for the 1746-IB16 I/O module. 1492-CABLE∗P has minimum length of 1.0 m.

❄ The input cable mates to the Allen-Bradley input system input module.

‡ The output cable mates to the Allen-Bradley input system output module.

§ Mini patchcords are available in standard lengths of 0.9 m, 1.8 m, 3.6 m, and 6 m (3 ft., 6 ft., 12 ft., and 20 ft.). To order, insert the desired length in the catalog number. **Example: 889N-F12ACNU-2** represents a 2 m (6.5 ft.) patchcord. Note catalog number reflects straigh male to straight female version with 18/22 AWG conductors, additional models are also available.

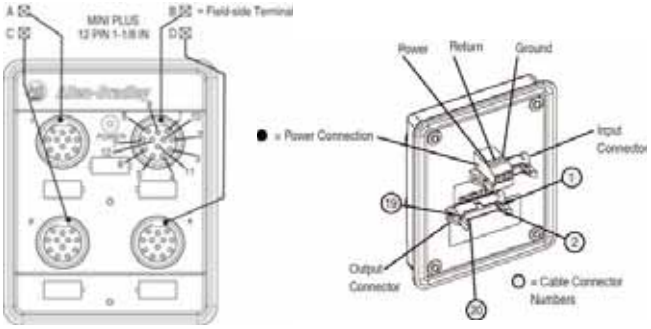
♣ DC micro patchcords are available in standard lengths of 1 m, 2 m, 3 m, 5 m, and 10 m (3.3 ft, 6.5 ft, 9.8 ft, 16.4 ft and 32.8 ft). To order, insert the desired length in the catalog number. **Example: 889D-F4ACDM-2** represents a 2 m (6.5 ft.) patchcord. Note catalog number reflects straight male to straight female version with 18/22 AWG conductors, additional models are also available.

Note: PNP type disitrubtion boxes require sink type PLC inputs and source type PLC outputs. NPN type distribution boxes require source type PLC inputs and sink type PLC outputs.

PanelConnect™ Modules for Input/Output Connections

1667-32CD1201

Pinout



1667-32CD1201 Specifications

Main PanelConnect Connector	**No. pins**	12
	Style	Mini-Plus 1-1/8 in.
	Type	16 Input / 16 Output
	No Points	32-Point Combination

Degree of Protection	IP65 Type 1, 4, 4X, 12
Voltage Rating	10…30V DC
Maximum Peak Voltage*	600V_p
Maximum Current (per Circuit)	2 A
Maximum Current (per Module)	12 A
Indicator Circuit Current (Nominal)	2 mA
No. of Terminals per Device Common	2
Operating Temperature Range	0°…+60°C (32°…140°F) Non Condensing
Certifications	• cULus Listed (File E113724 Guide NRAQ) • CE

* Transient voltage greater than 600V_p use a UL Recognized suppression device rated at 2.5 kV withstand.

Power Supply Connector Specification	
Wire Range (Rated Cross Section)	#22…#12 AWG (0.2…4 mm²)
Wire Strip Length	0.32 in. (8 mm)
Recommended Tightening Torque	4.5…5.5 lb.-in. (0.50…0.60 N•m)

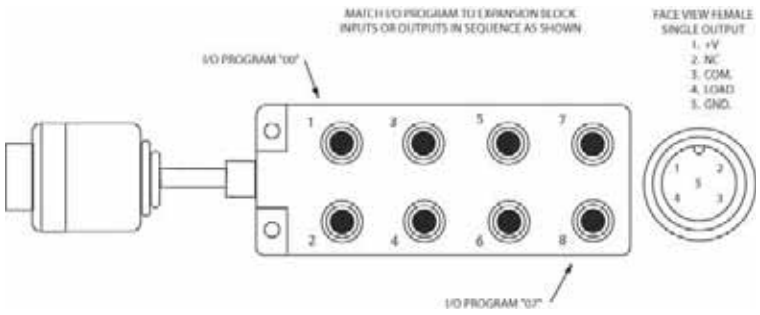
Connector Pin Reference Input	Field Side Connector	Connector Pin Reference Output	Field Side Connector
1	—	1	C12, D12
2	—	2	
3	A1	3	A5
4	A2	4	A6
5	A3	5	A7
6	A4	6	A8
7	B1	7	B5
8	B2	8	B6
9	B3	9	B7
10	B4	10	B8
11	C1	11	C5
12	C2	12	C6
13	C3	13	C7
14	C4	14	C8
15	D1	15	D5
16	D2	16	D6
17	D3	17	D7
18	D4	18	D8
19	A11, B11	19	C11, D11
20		20	
		Power Pin Ref.	
		C	A12, B12, C12, D12
		D	A11, B11, C11, D11
		E	A9, B9, C9, D9

Application Notes

1. **Compatibility** — To ensure proper operation with the I/O module, do **not** exceed the voltage and current ratings of the PanelConnect Module.
2. **Wiring** — Refer to the label section on 4-49 — 4-52.
3. **Dimensions** — Refer to page 4-55 and 4-56.

Distribution Block Connection

Match I/O Program to Distribution Block outputs in the sequence shown below:



Allen-Bradley

1667-32CD1202

1667-32CD1202 Specifications

Main PanelConnect Connector	**No. pins**	12
	Style	Mini-Plus 1-1/8 in.
	Type	16 Input / 16 Output
	No Points	32-Point Combination

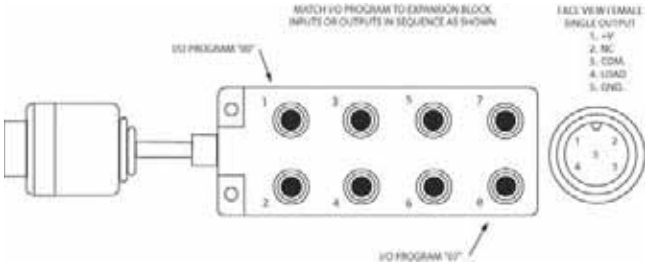
Degree of Protection	IP65 Type 1, 4, 4X, 12
Voltage Rating	10…30V DC
Maximum Peak Voltage*	$600V_p$
Maximum Current (per Circuit)	2 A
Maximum Current (per Module)	12 A
Indicator Circuit Current (Nominal)	2 mA
No. of Terminals per Device Common	2
Operating Temperature Range	0°…+60°C (32°…140°F) Non Condensing
Certifications	• cULus Listed (File E113724 Guide NRAQ) • CE

* Transient voltage greater than $600V_p$ use a UL Recognized suppression device rated at 2.5 kV withstand.

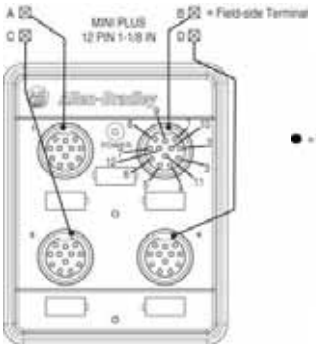
● Power Supply Connector Specification	
Wire Range (Rated Cross Section)	#22…#12 AWG (0.2…4 mm^2)
Wire Strip Length	0.32 in. (8 mm)
Recommended Tightening Torque	4.5…5.5 lb.-in. (0.50…0.60 N•m)

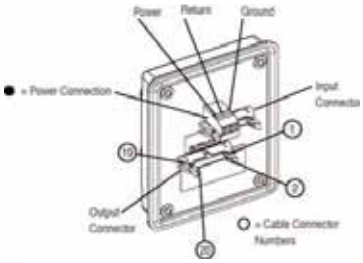
Distribution Block Connection

Match I/O Program to Distribution Block outputs in the sequence shown below:



Pinout





Connector Pin Reference Input ●	Field Side Connector ☒	Connector Pin Reference Output ●	Field Side Connector ☒
1	A11, B11	1	C12, D12
2		2	C11, D11
3	A1	3	A5
4	A2	4	A6
5	A3	5	A7
6	A4	6	A8
7	B1	7	B5
8	B2	8	B6
9	B3	9	B7
10	B4	10	B8
11	C1	11	C5
12	C2	12	C6
13	C3	13	C7
14	C4	14	C8
15	D1	15	D5
16	D2	16	D6
17	D3	17	D7
18	D4	18	D8
19	A11, B11	19	C12, D12
20		20	C11, D11
		Power Pin Ref.	
		C	A12, B12, C12, D12
		D	A11, B11, C11, D11
		E	A9, B9, C9, D9

Application Notes

1. **Compatibility** — To ensure proper operation with the I/O module, do **not** exceed the voltage and current ratings of the PanelConnect Module.
2. **Wiring** — Refer to the label section on 4-49 — 4-52.
3. **Dimensions** — Refer to page 4-55 and 4-56.

PanelConnect™ Modules for Input/Output Connections

1667-32CD1203

1667-32CD1203 Specifications

Main PanelConnect Connector	**No. pins**	12
	Style	Mini-Plus 1-1/8 in.
	Type	16 Input / 16 Output
	No Points	32-Point Combination

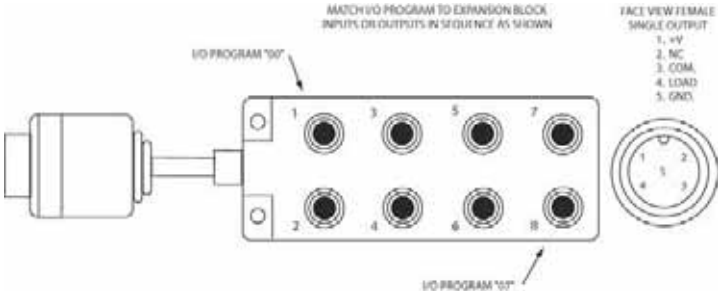
Degree of Protection	IP65 Type 1, 4, 4X, 12
Voltage Rating	10…30V DC
Maximum Peak Voltage*	$600V_p$
Maximum Current (per Circuit)	2 A
Maximum Current (per Module)	12 A
Indicator Circuit Current (Nominal)	2 mA
No. of Terminals per Device Common	2
Operating Temperature Range	0°…+60°C (32°…140°F) Non Condensing
Certifications	• cULus Listed (File E113724 Guide NRAQ) • CE

* Transient voltage greater than $600V_p$ use a UL Recognized suppression device rated at 2.5 kV withstand.

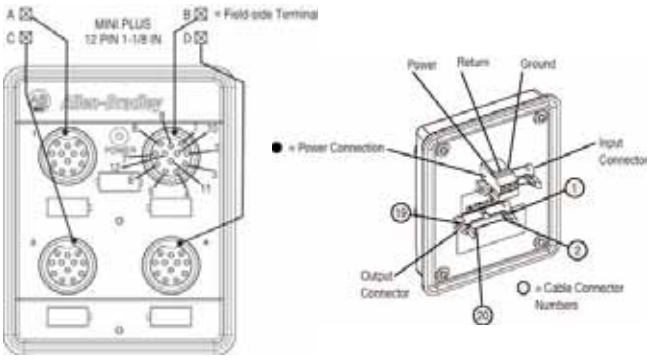
● Power Supply Connector Specification	
Wire Range (Rated Cross Section)	#22…#12 AWG (0.2…4 mm²)
Wire Strip Length	0.32 in. (8 mm)
Recommended Tightening Torque	4.5…5.5 lb.-in. (0.50…0.60 N•m)

Distribution Block Connection

Match I/O Program to Distribution Block outputs in the sequence shown below:



Pinout



Connector Pin Reference Input ●	Field Side Connector ⊠	Connector Pin Reference Output ●	Field Side Connector ⊠
1	—	1	C12, D12
2	—	2	
3	A1	3	A5
4	A2	4	A6
5	A3	5	A7
6	A4	6	A8
7	B1	7	B5
8	B2	8	B6
9	B3	9	B7
10	B4	10	B8
11	C1	11	C5
12	C2	12	C6
13	C3	13	C7
14	C4	14	C8
15	D1	15	D5
16	D2	16	D6
17	D3	17	D7
18	D4	18	D8
19	—	19	C12, D12
20	A11, B11	20	C11, D11
		Power Pin Ref.	
		C	A12, B12, C12, D12
		D	A11, B11, C11, D11
		E	A9, B9, C9, D9

Application Notes

1. **Compatibility** — To ensure proper operation with the I/O module, do **not** exceed the voltage and current ratings of the PanelConnect Module.
2. **Wiring** — Refer to the label section on 4-49 — 4-52.
3. **Dimensions** — Refer to page 4-55 and 4-56.

1667-32CD1204

Main PanelConnect Connector	**No. pins**	12
	Style	Mini-Plus 1-1/8 in.
	Type	16 Input / 16 Output
	No Points	32-Point Combination

1667-32CD1204 Specifications

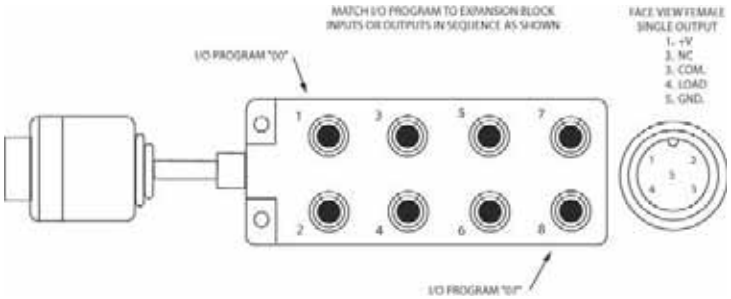
Degree of Protection	IP65 Type 1, 4, 4X, 12
Voltage Rating	10…30V DC
Maximum Peak Voltage*	$600V_p$
Maximum Current (per Circuit)	2 A
Maximum Current (per Module)	12 A
Indicator Circuit Current (Nominal)	2 mA
No. of Terminals per Device Common	2
Operating Temperature Range	0°…+60°C (32°…140°F) Non Condensing
Certifications	• cULus Listed (File E113724 Guide NRAQ) • CE

* Transient voltage greater than $600V_p$ use a UL Recognized suppression device rated at 2.5 kV withstand.

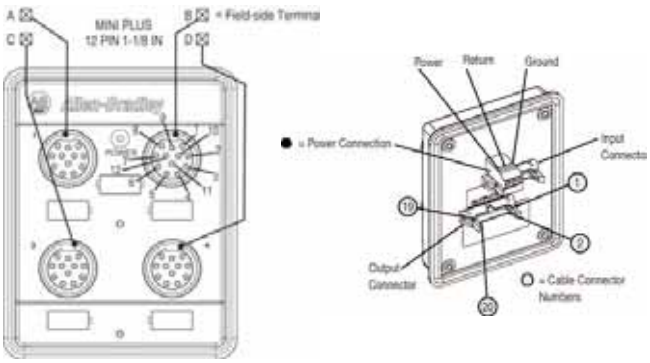
Power Supply Connector Specification	
Wire Range (Rated Cross Section)	#22…#12 AWG (0.2…4 mm²)
Wire Strip Length	0.32 in. (8 mm)
Recommended Tightening Torque	4.5…5.5 lb.-in. (0.50…0.60 N•m)

Distribution Block Connection

Match I/O Program to Distribution Block outputs in the sequence shown below:



Pinout



Connector Pin Reference Input	Field Side Connector	Connector Pin Reference Output	Field Side Connector
1	A12, B12	1	C12, D12
2		2	
3	A1	3	A5
4	A2	4	A6
5	A3	5	A7
6	A4	6	A8
7	B1	7	B5
8	B2	8	B6
9	B3	9	B7
10	B4	10	B8
11	C1	11	C5
12	C2	12	C6
13	C3	13	C7
14	C4	14	C8
15	D1	15	D5
16	D2	16	D6
17	D3	17	D7
18	D4	18	D8
19	A12, B12	19	C11, D11
20		20	
		Power Pin Ref.	
		C	A12, B12, C12, D12
		D	A11, B11, C11, D11
		E	A9, B9, C9, D9

Application Notes

1. **Compatibility** — To ensure proper operation with the I/O module, do **not** exceed the voltage and current ratings of the PanelConnect Module.
2. **Wiring** — Refer to the label section on 4-49 — 4-52.
3. **Dimensions** — Refer to page 4-55 and 4-56.

PanelConnect™ Options and Accessories

PanelConnect Fuse Module

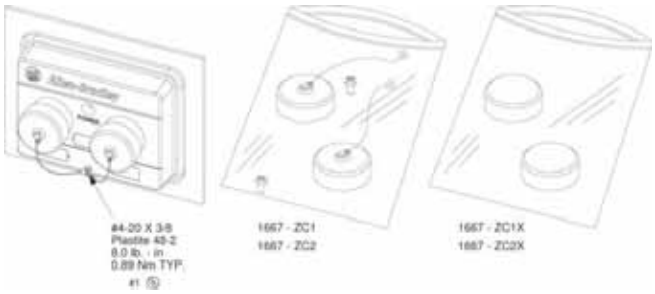
The PanelConnect fuse module provides a convenient method of adding overcurrent protection to your PanelConnect inputs and outputs. This module has sixteen or thirty-two (16 or 32) 5x20 fuse holders to protect each individual input or output. The module has two 20-pin or 40-pin connectors with locking tabs. The right connector is used to connect to the back of the PanelConnect (in-panel connector). The left connector is used to connect to the Input or Output PLC module. The connection between the PanelConnect Module and the Fuse Module is done via the PanelConnect Option Module cable while connection to the PLC is done via PanelConnect pre-wired cables. This module is optional so OEM's can add fusing based on the needs of their customers.

Digital Option Module Cables

PanelConnect Option Module cable has two over molded cable connectors. The cables use #22 AWG wire and are 100% tested for continuity to make a perfect connection between the fuse module and PanelConnect Module every time. These cables are offered in five standard lengths of 0.5, 1.0, 1.5, 2.5, and 5.5 meters to fit a variety of applications.

Sealing Caps

To maintain the Type 4, 4X, and 12 enclosure rating, these accessory caps must be used if both field side connectors are not permanently terminated. Hand tighten plus one quarter turn.



PanelConnect Catalog Number	1667-ZC1∗ Mini-Plus 1-1/8 in.	1667-ZC2∗ M23	PanelConnect Catalog Number	1667-ZC1∗ Mini-Plus 1-1/8 in.	1667-ZC2∗ M23
1667-16IA1008	X		1667-16OD1202	X	
1667-16IA1207	X		1667-16OD1203	X	
1667-16IA2209		X	1667-16OD1204	X	
1667-16ID1001	X		1667-16OD1205	X	
1667-16ID1004	X		1667-16OD1206	X	
1667-16ID1201	X		1667-16OD1207	X	
1667-16ID1202	X		1667-16OD2201		X
1667-16ID1203	X		1667-16OD2202		X
1667-16ID1210	X		1667-16OD2203		X
1667-16ID1212	X		1667-16OD2204		X
1667-16ID2205		X	1667-16OD2205		X
1667-16ID2206		X	1667-32CO1201	X	
1667-16ID2211		X	1667-32CO1202	X	
1667-16ID2213		X	1667-32CO1203	X	
1667-16OA1201	X		1667-32CO1204	X	
1667-16OA1202	X		1667-32ID1201	X	
1667-16OA1203	X		1667-32ID1202	X	
1667-16OD1201	X		1667-32OA1201	X	

∗ Add X to Cat. No. for NEMA 4X sealing cap

Mounting Bracket

Use the above bracket (1667-ZB) when mounting the PanelConnect module within an enclosure.

Marker Cards

Each PanelConnect is provided with markers ⁎, ❄ installed in the front of the module. The center marker ❄ indicates whether the module is an input or output combined device. The blank markers ⁎ are for customer use to mark I/O address or cable reference. In addition, each PanelConnect is provided with a tree of five markers for machine marking. Replacement and spare markers are available as accessories, 1492-M9X20.

Voltage Marking Ring

Each PanelConnect™ module is provided with two voltage marking rings (‡). AC modules use the red rings provided and DC modules use the blue rings.

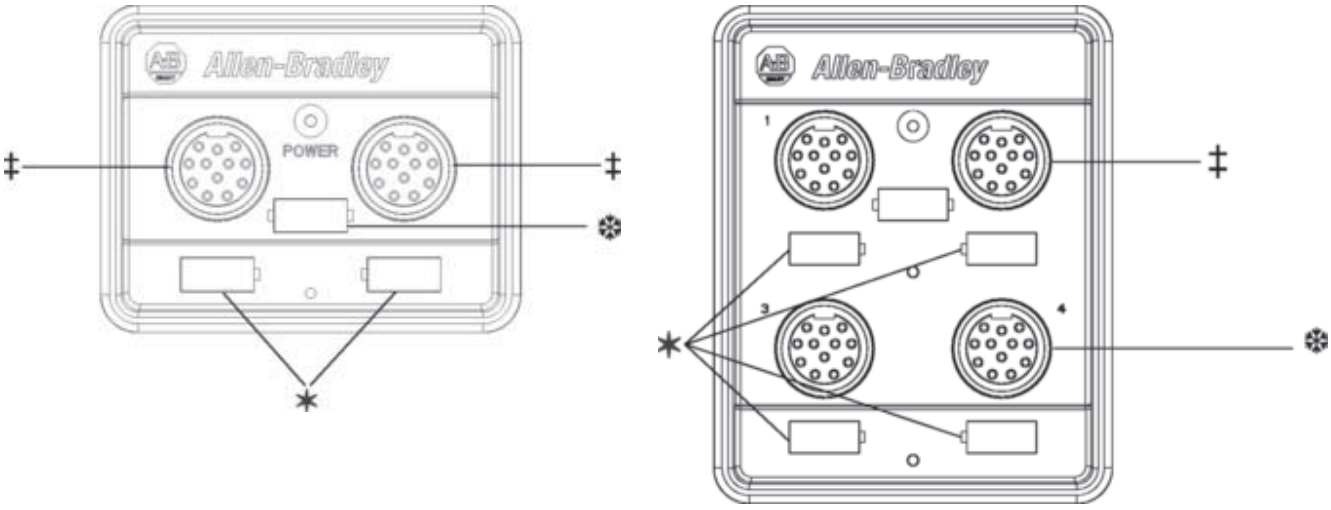


Table 2. Type 4X Input Systems

Type 4X Module	Type 4 Module
⁎	1667-32CD1201
⁎	1667-32CD1202
⁎	1667-32CD1203
⁎	1667-32CD1204

⁎ Contact factory for availability

The same information for Type 4 applies to Type 4X products as shown in Tables 1 and 2 for Cables and Distribution Boxes.

Adhesive Label Cards for 16-Point Input PanelConnect Modules

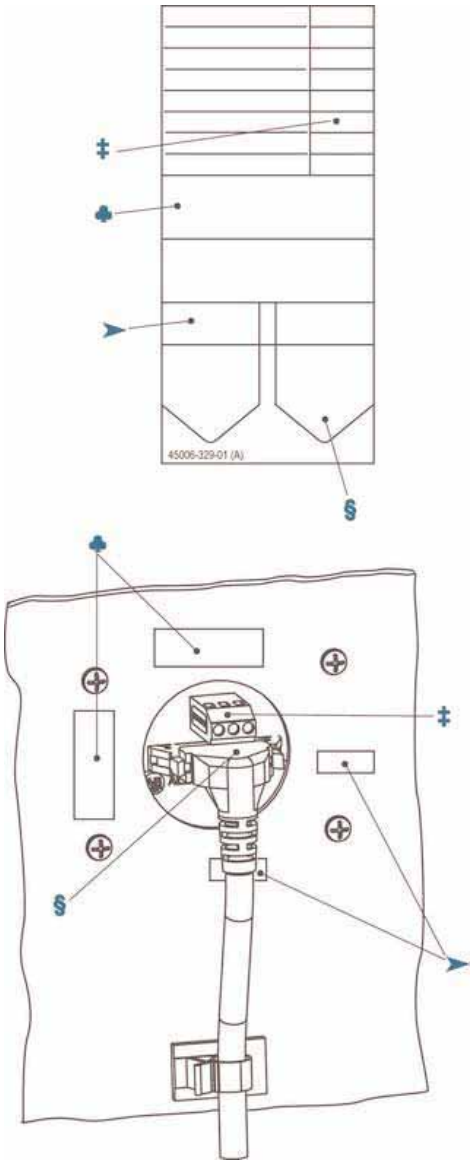
Each PanelConnect™ module is provided with an adhesive label card. The label card is made available for the back of the PanelConnect Module and provides the power supply connector descriptions. The label strips provides the wiring description from the input module power connections.

The label lists (‡) all of the compatible input modules and their respective power wiring descriptions. Depending on the input module that is used, the label strip is simply peeled from the label card and applied to the back side power supply connector (‡).

In addition, blank labels are provided for:

- marking the pre-wired cable with identification label (§)
- marking the PanelConnect Module identification the inside of the panel label(♣ ➢)

1667-16IA1008	1667-16ID1001	1667-16ID2205
1667-16IA1207	1667-16ID1004	1667-16ID2206
1667-16IA2209	1667-16ID1201	1667-16ID2211
	1667-16ID1202	1667-16ID2213
	1667-16ID1203	
	1667-16ID1212	



16-Point Input Label Card with Labels

Adhesive Label Cards for 16-Point Output PanelConnect Modules

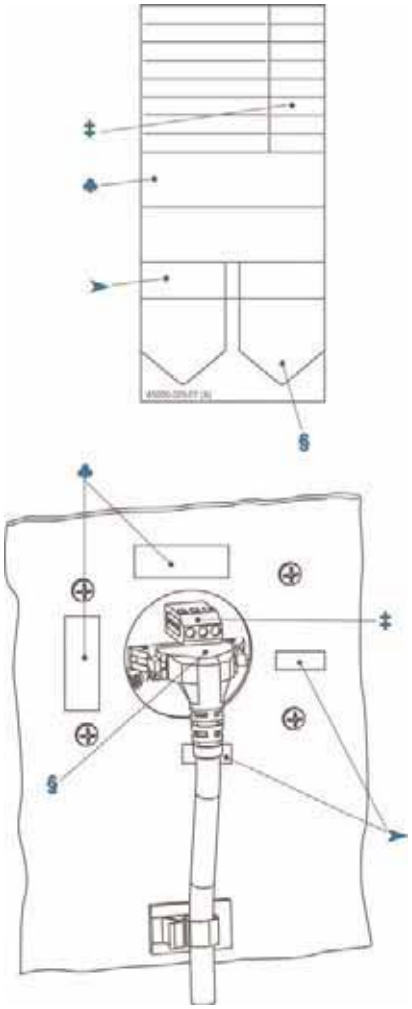
Each PanelConnect™ module is provided with an adhesive label card. The label card is made available for the back of the PanelConnect Module and provides the power supply connector descriptions. The label strips provides the wiring description from the input module power connections.

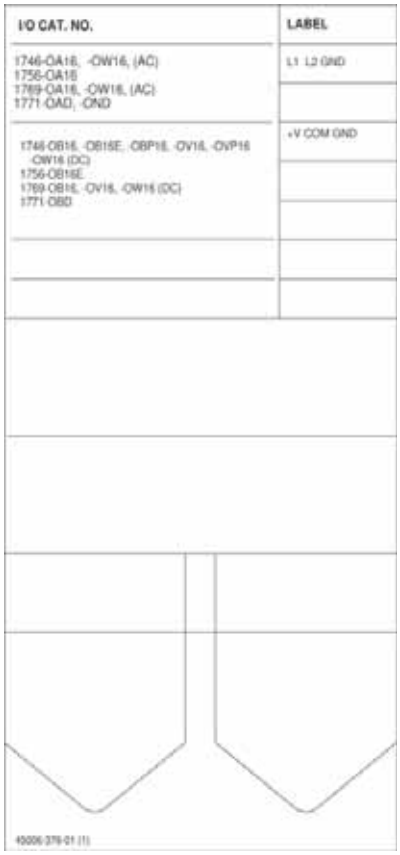
The label lists (‡)all of the compatible input modules and their respective power wiring descriptions. Depending on the input module that is used, the label strip is simply peeled from the label card and applied to the back side power supply connector (‡).

In addition, blank labels are provided for:

- marking the pre-wired cable with identification label (§)
- marking the PanelConnect Module identification the inside of the panel label (♣➢)

1667-16OA1201	1667-16OD1201	1667-16OD2201	1667-16OD2204
1667-16OA1202	1667-16OD1202	1667-16OD2202	1667-16OD2205
1667-16OA1203	1667-16OD1203	1667-16OD2203	
	1667-16OD1204		
	1667-16OD1205		
	1667-16OD1206		
	1667-16OD1207		





16-Point Output Label Card with Labels

PanelConnect™ Options and Accessories

Adhesive Label Cards for 32-Point Input, Output and Combination Input/Output PanelConnect Modules

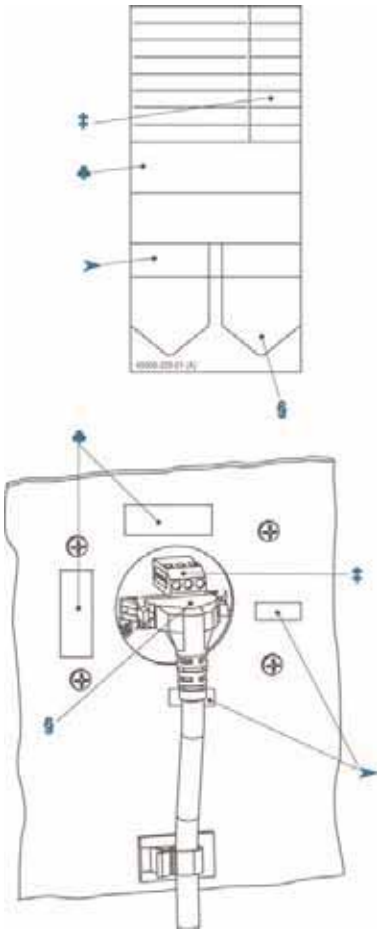
Each PanelConnect™ module is provided with an adhesive label card. The label card is made available for the back of the PanelConnect Module and provides the power supply connector descriptions. The label strips provides the wiring description from the input module power connections.

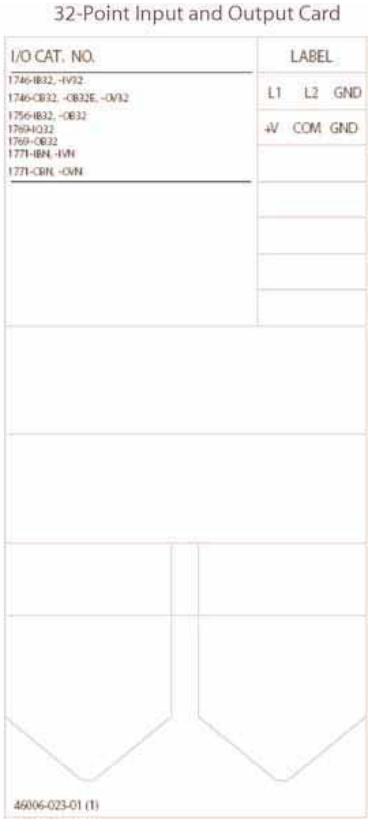
The label lists (‡) all of the compatible input modules and their respective power wiring descriptions. Depending on the input module that is used, the label strip is simply peeled from the label card and applied to the back side power supply connector (‡).

In addition, blank labels are provided for:

- marking the pre-wired cable with identification label
- marking the PanelConnect Module identification the inside of the panel label (♣➢)

Combination	Input	Output
1667-32CD1201	1667-32ID1001 1667-32ID12001	1667-32OD1201
1667-32CD1202		
1667-32CD1203		
1667-32CD1204		





Fuse Modules

1667-Z16F

1667-Z16F Specifications

Option Module Connector	**No. pins**	20
	Style	Male

Degree of Protection	IP20
Voltage Rating	10…265V AC/DC
Maximum Peak Voltage*	$600V_p$
Maximum Current (per Circuit)	2 A
Maximum Current (per Module)	12 A
Operating Temperature Range	0°…+60°C (32°…140°F) Non-Condensing
Certifications	• cURus Recognized (File E113724 Guide NRAQ2) • CSA Certified (File LR1234) • CE

* Transient voltage greater than $600V_p$ use a UL Recognized suppression device rated at 2.5 kV withstand.

Pinout

Fuse Module Connections			
Connector Pin Reference from I/O ●	PLC Connector ⊠	Connector Pin Reference from I/O ●	PLC Connector ⊠
1	1	11	11
2	2	12	12
3	3	13	13
4	4	14	14
5	5	15	15
6	6	16	16
7	7	17	17
8	8	18	18
9	9	19	19
10	10	20	20

Application Notes

1. **Compatibility** — To ensure proper operation with the I/O module, do **not** exceed the voltage and current ratings of the fuse and PanelConnect Module.
2. **Dimensions** — Refer to 4-55 and 4-56.

1667-Z32F

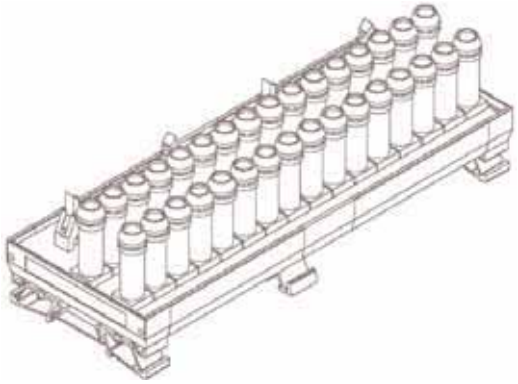
1667-Z32F Specifications

Option Module Connector	**No. pins**	40
	Style	Male

Degree of Protection	IP20
Voltage Rating	10…265V AC/DC
Maximum Peak Voltage*	$600V_p$
Maximum Current (per Circuit)	2 A
Maximum Current (per Module)	12 A
Operating Temperature Range	0°…+60°C (32°…140°F) Non-Condensing
Certifications	• cURus Recognized (File E113724 Guide NRAQ2) • CSA Certified (File LR1234) • CE

* Transient voltage greater than $600V_p$ use a UL Recognized suppression device rated at 2.5 kV withstand.

Pinout



Fuse Module Connections			
Connector Pin Reference from I/O ●	PanelConnect Connector Pin Reference ☒	Connector Pin Reference from I/O ●	PanelConnect Connector pin Reference from I/O ☒
1	1	21	21
2	2	22	22
3	3	23	23
4	4	24	24
5	5	25	25
6	6	26	26
7	7	27	27
8	8	28	28
9	9	29	29
10	10	30	30
11	11	31	31
12	12	32	32
13	13	33	33
14	14	34	34
15	15	35	35
16	16	36	36
17	17	37	37
18	18	38	38
19	19	39	39
20	20	40	40

Application Notes

1. **Compatibility** — To ensure proper operation with the I/O module, do **not** exceed the voltage and current ratings of the fuse and PanelConnect Module.
2. **Dimensions** — Refer to 4-55 and 4-56.

PanelConnect Digital, Option Module Cable Specifications

PanelConnect Option Module cable has an over molded cable connectors at each end. This cable is to connect PanelConnect option modules to PanelConnect.

Cat. No. 1667-CAB∗A

Cat. No. 1667-CAB∗B

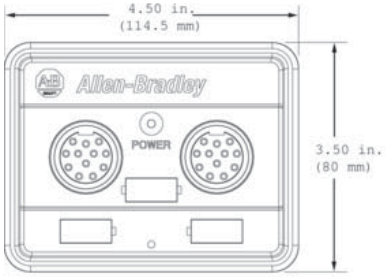
Cat. No.	Cable Lengths	Insulation Rating	Number of Conductors	Conductor Size	Nominal Outer Diameter	Option Module
1667-CAB∗A	0.5, 1.0, 1.5, 2.5, 5.5 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	16 Point
1667-CAB∗B	0.5, 1.0, 1.5, 2.5, 5.5 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	32 Point

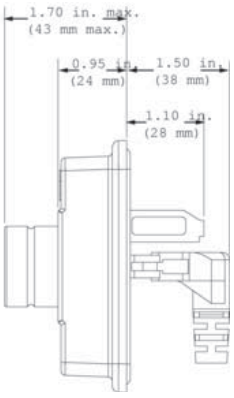
∗ Cables are available in lengths of 0.5 m, 1.0 m, 2.5 m, 5.0 m, and 5.5 m. To order, insert the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1667-CAB005A** is for a 0.5 m, 20-conductor PanelConnect cable.

16-Point PanelConnect Input or Output Module Dimensions

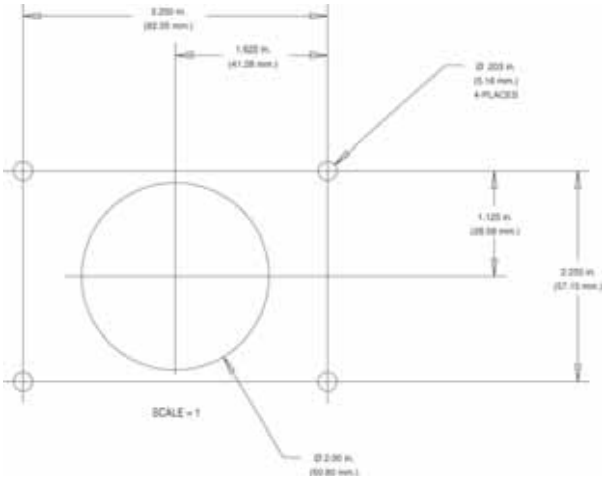
Applicable Input Modules		
1667-16IA1008	1667-16ID1001	1667-16ID1212
1667-16IA1207	1667-16ID1004	1667-16ID2205
1667-16IA2209	1667-16ID1201	1667-16ID2206
	1667-16ID1202	1667-16ID2211
	1667-16ID1203	1667-16ID2213

Applicable Output Modules		
1667-16OD2201	1667-16OD1201	1667-16OA1201
1667-16OD2202	1667-16OD1202	1667-16OA1202
1667-16OD2203	1667-16OD1203	1667-16OA1203
1667-16OD2204	1667-16OD1204	1667-16OD1206
1667-16OD2205	1667-16OD1205	1667-16OD1207





16-Point PanelConnect Input or Output Module hole cutting template (for reference only)



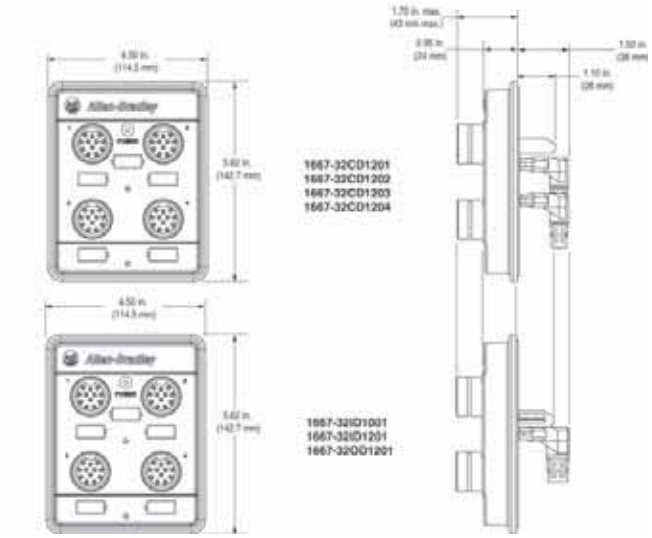
PanelConnect™ Options and Accessories

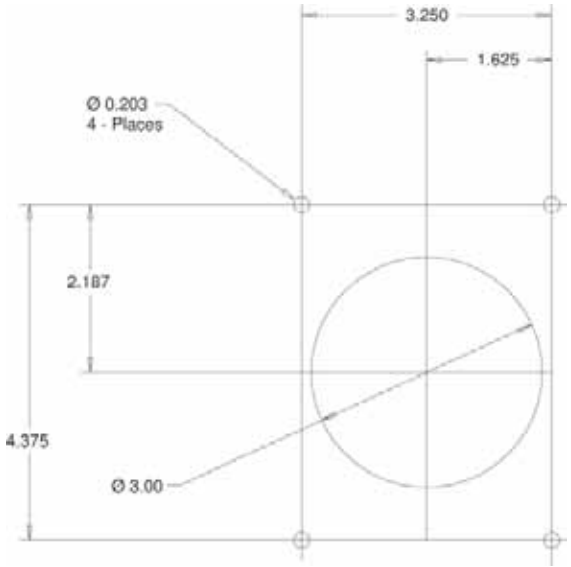
32-Point PanelConnect Input or Output Module Dimensions

Applicable Input Module	Applicable Output Module	Applicable Combination Input/Output Modules
1667-32ID1201	1667-32OD1201	1667-32CD1201 1667-32CD1202
1667-32ID1001		1667-32CD1203 1667-32CD1204

Note: All References to Crouse Hinds, Daniel Woodhead, Lumberg and Turck were obtained from manufacturers' commercial literature. Refer to manufacturers' literature for specific information.

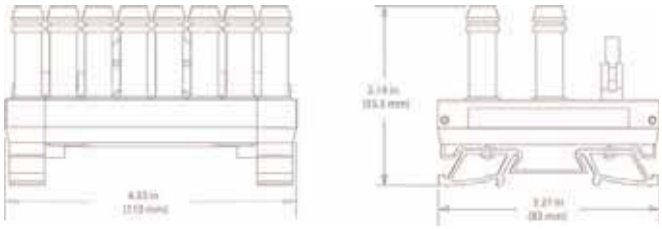
32-Point PanelConnect Input, Output, or Combination Module hole cutting template (for reference only)



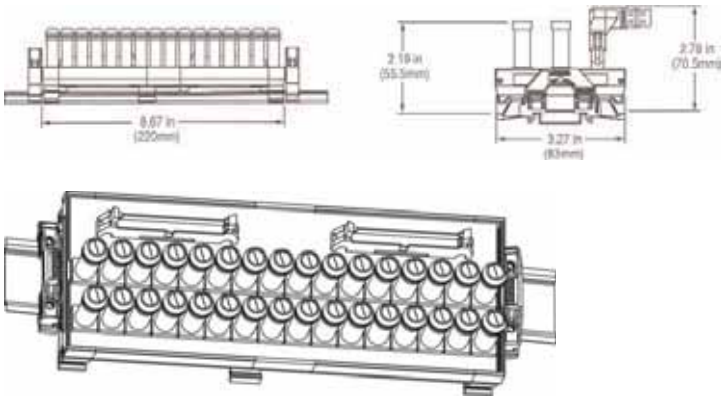


NOT TO SCALE

16-Point PanelConnect Fuse Module Dimensions



32-Point PanelConnect Fuse Module Dimensions



Allen-Bradley

Pneumatic Valve Wiring Reference Guide

Quick Connect Wiring Options for Pneumatic Valves

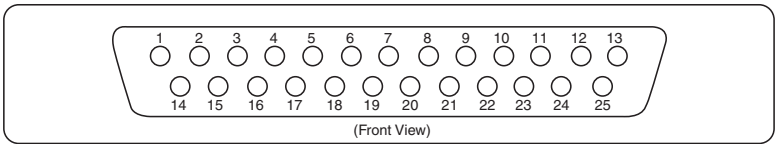
Pneumatic Valve Wiring Interface	Cabling to Pneumatic Valve	Supported by PanelConnect and Distribution Boxes
Manifold with direct connect interface with Mini-Plus connector (shown on page 4)	Double end 12-pin Mini-Plus Patch Cord	Yes – Parker Hannifin Manifold (see page 40)
Manifold with direct connect interface with M23 connector	Double end 12-pin M23 Patch Cord	Yes – Numatics Manifold (see page 40)
Manifold with direct connect interface with 25-pin D-Shell connector	Special Patch Cord Mini-Plus one end and 25-pin D-Shell	Yes– Festo Manifold (see page 40) Configuration on other valve manufactures 25-pin D-Shell must be verified (see wiring ∗ below).
Single solenoid pneumatic valve with M12 connector (4 or 5-Pin)	4- or 5-Pin M12 Micro Patch Cord	Yes – But wiring configuration must be verified (see wiring ❄ in the pages which follow).
Double solenoid pneumatic valve with M12 connector (4 or 5-pin)	4- or 5-pin M12 Micro Patch Cord	Yes – But wiring configuration must be verified (see wiring ‡ in the pages which follow).
Single solenoid pneumatic valve with Mini connector (3-pin)	3-pin Mini Patch Cord	Yes – But wiring configuration must be verified (see wiring § in the pages which follow).
Single solenoid pneumatic valve with Mini connector (5-pin)	5-pin Mini Patch Cord	No
Double solenoid pneumatic valve with Mini connector (5-pin)	5-pin Mini patch cord	No
Single solenoid pneumatic valve with DIN 43650 connector	DIN 43650 DIN Connector with M12 micro connector (see DIN43650 configurations which follow)	Yes – See wiring ♣ in the pages which follow.
Double solenoid pneumatic valve with DIN 43650 connector	Two DIN 43650 DIN Connector with splitter to M12 micro connector (see DIN43650 configurations which follow)	Yes –See wiring ➢ in the pages which follow.

∗PNP ⌘ Typical 25-Pin D-Shell Wiring

25-pin Pin Numbers	Manifold Wiring	PanelConnect	
		Pin Number	Output Address
1	Coil No. 1	Connector A Pin 1	00
2	Coil No. 2	Connector A Pin 2	01
3	Coil No. 3	Connector A Pin 3	02
4	Coil No. 4	Connector A Pin 4	03
5	Coil No. 5	Connector A Pin 5	04
6	Coil No. 6	Connector A Pin 6	05
7	Coil No. 7	Connector A Pin 7	06
8	Coil No. 8	Connector A Pin 8	07
9	No Connect	No Connect	-
10	No Connect	No Connect	-
11	No Connect	No Connect	-
12	No Connect	No Connect	-
13	No Connect	No Connect	-
14	No Connect	No Connect	-
15	No Connect	No Connect	-
16	No Connect	No Connect	-
17	No Connect	No Connect	-
18	No Connect	No Connect	-
19	No Connect	No Connect	-
20	No Connect	No Connect	-
21	No Connect	No Connect	-
22	No Connect	No Connect	-
23	No Connect	No Connect	-
24	Common	Connector A Pin 11	Common
25	Common	Connector A Pin 11	Common

⌘NPN (differences from adjacent chart)

25-pin Pin Numbers	Manifold Wiring	PanelConnect	
		Pin Number	Output Address
24	V+	Connector A Pin 12	V+
25	V+	Connector A Pin 12	V+



Typical Valve Individual DIN 43650 Connector with M12 Wiring Schematics, Continued

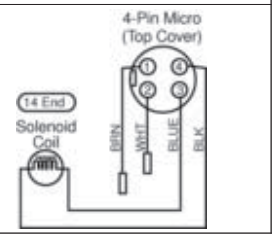
Examples of Manufactures Manifolds and Individual Valves

Valve Manufacturer	Valve Series	Wiring Interface Option	Wiring Schematic required
Festo	Midi / Maxi	Manifold 25-pin D-Shell	✶
Festo	Compact Performance	Manifold 25-pin D-Shell	✶
Festo	ISO 599/2 Single Solenoid	Individual Valve 4-pin Micro (M12)	❄
Festo	ISO 599/2 Double Solenoid	Individual Valve 4-pin Micro (M12)	‡
MAC	Series 42, 45, 46, 48, 82 MacConnect	Manifold 25-pin D-Shell	✶Cable not developed
Parker Hannifin	F Series	Manifold Mini-Plus	12-Pin Mini-Plus Straight Wiring
Parker Hannifin	B Series Single Solenoid	Individual Valve DIN 43650	♣
Parker Hannifin	B Series Single Solenoid	Individual Valve DIN 43650	➢
Numatics	2005 Manifold	Manifold M23	12-Pin M23 Straight Wiring
Numatics	2012 Manifold	Manifold M23	12-Pin M23 Straight Wiring
Numatics	ISO 599/2 Manifold	Manifold M23	12-Pin M23 Straight Wiring
Numatics	2012, Mark 8, Mark 15, Mark 55	Individual Valve 4-pin Micro (M12)	❄
Numatics	Individual Valves (56Y option)	Individual Valve 4-pin Micro (M12)	❄
SMC	ISO 599/2 Size 1, 2, and 3 Single Valve (61E Option)	Individual Valve 4-pin Micro (M12)	❄
SMC	Series SV Single Solenoid	Individual Valve 4-pin Micro (M12)	‡

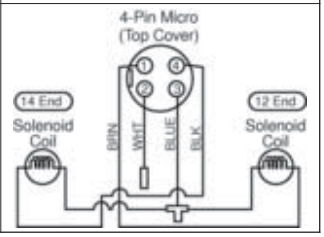
Note: These are just some of the valves provide my the manufactures listed above. All references to Festo, MAC Valves, Parker Hannifin, Numatics and SMC were obtained from manufactures commercial literature. Refer to manufactures literature for specific information.

Typical Individual Valve Wiring Schematics for M12 Micro and Mini Connectors

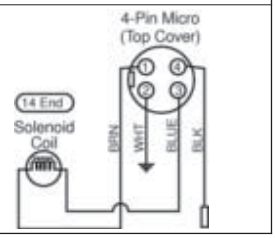
❄Single Solenoid SAE / Ford / GM Wiring 4-Pin Male Micro (M12)

	❄
Schematic	

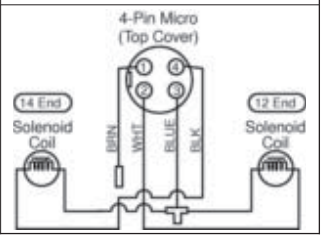
Double Solenoid GM Wiring 4-Pin Male Micro (M12)

Schematic	

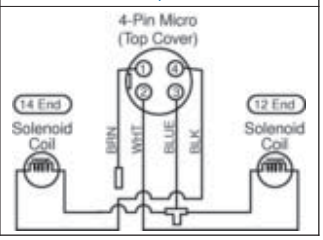
Single Solenoid Chrysler Wiring 4-Pin Male Micro (M12)

Schematic	

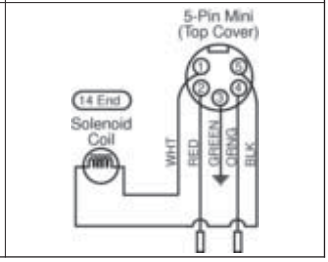
Double Solenoid Chrysler Wiring 4-Pin Male Micro (M12)

Schematic	

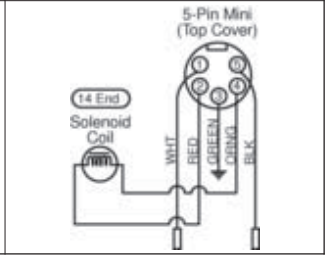
‡Double Solenoid SAE / Ford Wiring 4-Pin Male Micro (M12)

	‡
Schematic	

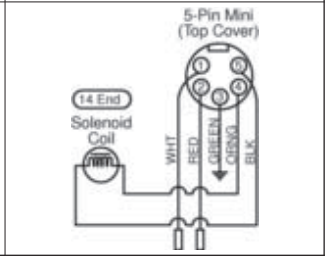
Single Solenoid SAE / Ford Wiring 5-Pin Male Micro (M12)

Schematic	

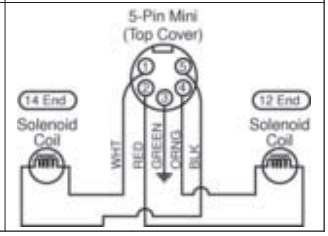
Single Solenoid GM Wiring 5-Pin Male Micro (M12)

Schematic	

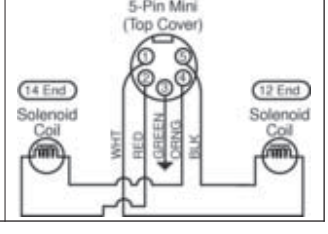
Single Solenoid Chrysler Wiring 5-Pin Male Micro (M12)

Schematic	

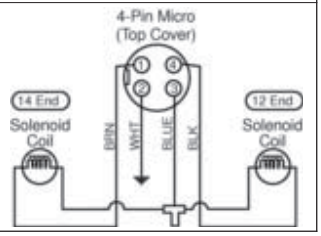
Double Solenoid SAE / Ford Wiring 5-Pin Male Micro (M12)

Schematic	

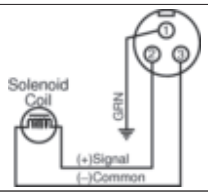
Double Solenoid GM Wiring 5-Pin Male Micro (M12)

Schematic	

Double Solenoid Chrysler Wiring 4-Pin Male Micro (M12)

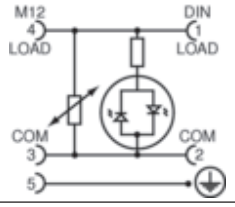
Schematic	

§Single Solenoid Wiring 3-Pin Male Mini

	§
Schematic	

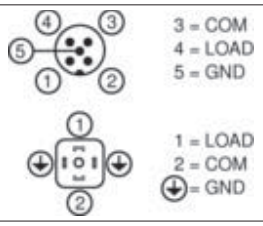
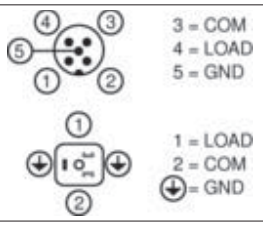
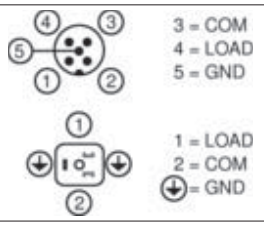
Typical Valve Individual DIN 43650 Connector with M12 Wiring Schematics

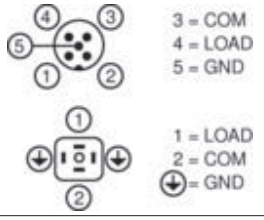
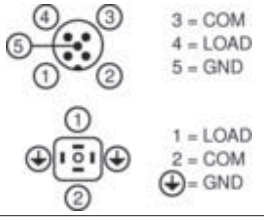
♣Wiring Schematic (Internal)

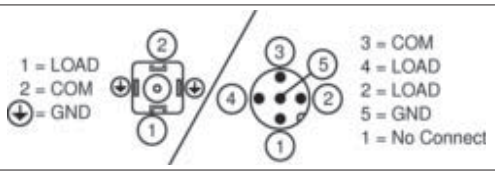
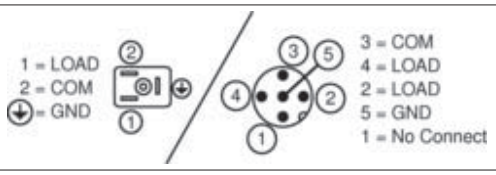
	♣
Internal View	

Typical Valve Individual DIN 43650 Connector with M12 Wiring Schematics, Continued

♣Wiring Schematics (External)

	♣	♣	♣
Face View			
Connector Style	DIN 43650 **FORM A**	DIN 43650 **FORM B**	Industry Standard **FORM B**

	♣	♣
Face View		
Connector Style	DIN 43650 **FORM C**	Industry Standard **FORM C**

	➢	➢
Face View		
Connector Style	Splitter with two **FORM A** DIN Plugs	Splitter with two **FORM B** DIN Plugs

Web Site Information

Visit the Industrial Control section of the http://www.ab.com/catalogs/ http://www.ab.com/catalogs/ web site for I/O wiring diagrams of the PanelConnect™ Modules and cables for:

- **Bulletin 1746,**
- **Bulletin 1756,**
- **Bulletin 1771, and**
- **Bulletin 1769**

Note: To locate the wiring diagram, navigate to one of the above platform sections on the web site and locate the desired product selection table. Select the desired I/O module, PanelConnect Module and pre-wired cable combination. A letter will appear in the box for all valid combinations. Wiring diagrams can be located by clicking on the underlined letter in the box.

Catalog Number Cross Reference

This chart cross references old 1492 PanelConnect products to the new 1667 PanelConnect products.

Old Catalog Number	New Catalog Number
1492-TPMA1008	1667-16IA1008
1492-TPMA1207	1667-16IA1207
1492-TPMA2209	1667-16IA2209
1492-TPMD1004	1667-16ID1004
1492-TPMD1201	1667-16ID1201
1492-TPMD1202	1667-16ID1202
1492-TPMD1203	1667-16ID1203
1492-TPMD2205	1667-16ID2205
1492-TPMD2206	1667-16ID2206
1492-TPMB	1667-ZB
1492-TPMC1	1667-ZC1
1492-TPMC2	1667-ZC2

Contents

Quick Selection Guide

Product Overview

	 **898 Safety-Wired T-Port**	 **898 Safety-Wired Distribution Box**	 **898 Safety-Wired Distribution Box**	 **898 Safety-Wired Shorting Plug**	 **888 Receptacles**
Description	• T-Port/splitters designed for use with connectorized safety wiring without enunciation	• Passive distribution box designed for use with connectorized safety wiring	• Passive distribution box designed for use with connectorized safety wiring	• Shorting plugs designed for use with safety-wired distribution boxes	• Male receptacles for use with safety switches
Features	• 4-pin DC micro models for 2 N.C. or 1 N.O./1 N.C. contacts • Red PUR body indicating safety wiring • Ratcheting coupling nut • Rugged durable construction	• Models without enunciation • 4-pin DC Micro versions • Red PBT body indicating safety wiring • Rugged durable construction	• Models with enunciation • 4-pin DC Micro or 6-pin AC Micro versions • Red PBT body indicating safety wiring • Rugged durable construction	• 4-pin DC Micro or 6-pin AC Micro versions • Red PVC body indicating safety wiring • Rugged durable construction	• 4-pin DC Micro or 6-pin AC Micro versions • M16, M20, and 1/2 NPT mounting threads • 4-, 5-, 6-, and 8-pin styles • Rugged durable construction
Available Models	• DC Micro, 2 N.C. • DC Micro, 1 N.O./1 N.C.	• No enunciation, 2 N.C. • No enunciation, 1 N.O./1 N.C.	• Enunciation, 1 N.O./1 N.C. • Enunciation, 1 N.O./2 N.C.	• 4-pin DC Micro, 2 N.C. • 4-pin DC Micro, 1 N.O./1 N.C. • 6-pin AC Micro, 1 N.O./2 N.C.	• 4-pin DC Micro • 5-pin DC Micro • 6-pin AC Micro • 8-pin DC Micro

The Allen-Bradley Guardmaster Safety Connection Systems are complete wiring solutions dedicated to machine safety. These quick disconnect-based systems consist of safety wired T-Ports and distribution boxes as well as patchcords and shorting plugs. Specifically intended for use with dry-contact safety switches, Safety Connection Systems provide flexible and reliable connections between safety interlock switches, E-stops, cable pull switches and safety relays. And while this system is ideal for use with these components, it is not suitable for use with light curtains, safety mats or pressure sensitive safety edges.

Allen-Bradley Guardmaster Safety Connection Systems are designed to:

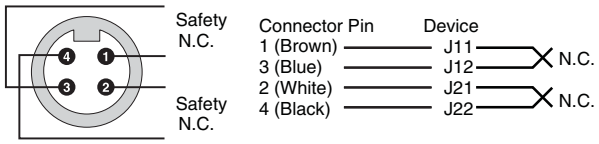
- Reduce installation cost
- Ease system expansion
- Simplify troubleshooting
- Promote system modularity
- Provide for Safety PLC input expansion
- Support systems up to Category 3 (per EN954-1)

Safety Connection Systems layouts are available with or without enunciation capabilities, allowing the user the option of direct feedback for the status of individual switches in the system. Enunciation systems utilize an auxiliary contact as input to tower lights, audible alarms, PLC input cards, etc.

Systems without Enunciation

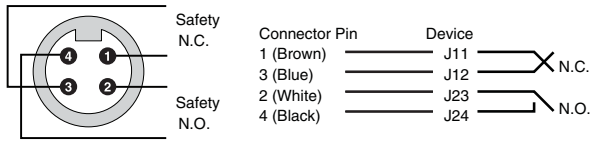
As illustrated in the example layout on page 5-4, wiring systems for applications not requiring enunciation use a combination of patchcords, shorting plugs, safety wired distribution boxes and T-ports for series wiring of safety circuits. Distribution boxes for such an application are dual channel models with 2 N.C. or 1 N.C. + 1 N.O. contact configurations. See the wiring diagrams below for connector pin assignments.

Dual Channel 2 N.C.



Male Connector (On Switch)

Dual Channel 1 N.C./1 N.O.



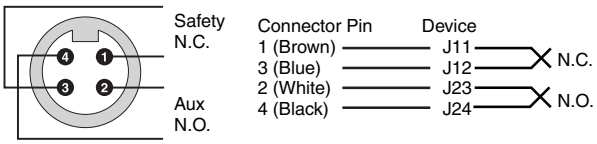
Male Connector (On Switch)

Note: Shorting plugs must be used on all unused ports for the system to operate.

Systems with Enunciation

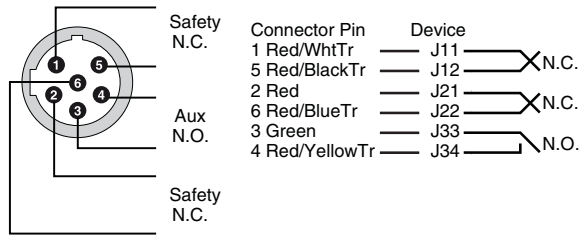
As shown at the bottom of page 5-5, system layouts with enunciation require patchcords, shorting plugs and distribution boxes, which allow for series wiring of the safety circuits while providing a separate circuit for enunciation. Distribution boxes are offered for these applications in two contact configurations: dual channel with 2 N.C. or single channel with 1 N.C. Each type also provides a N.O. auxiliary contact that is interfaced with the enunciation device to provide visual or audible alarm indication. In addition, LEDs on the distribution boxes assist in the troubleshooting of this system. See the wiring diagrams below for the associated connector pin configurations.

Single Channel 1 N.C./1 N.O.



Male Connector (On Switch)

Dual Channel 2 N.C./1 N.O.



Male Connector (On Switch)

Note: Shorting plugs must be used on all unused ports for the system to operate.

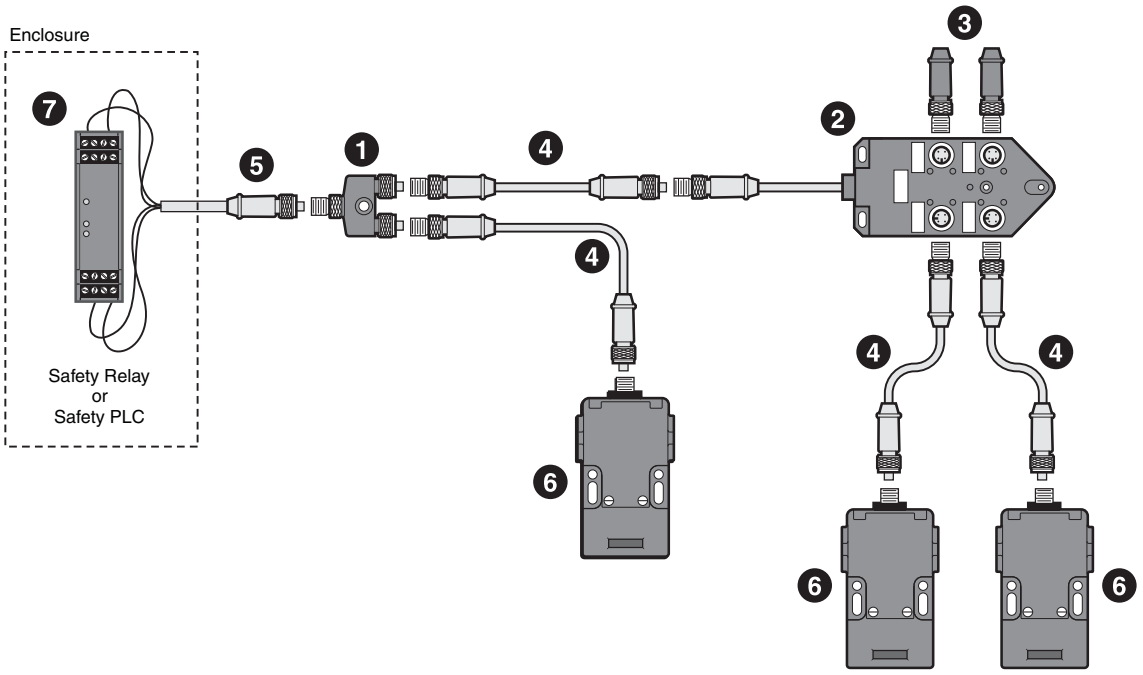
Installation Considerations

Some important notes regarding Safety Connection Systems:

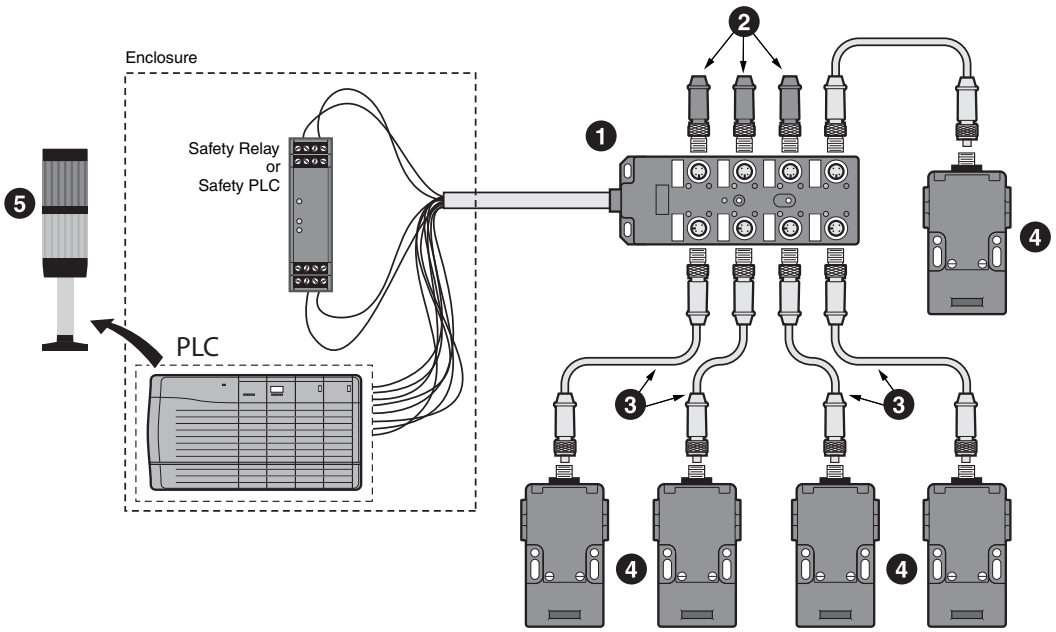
- To help ensure that only authorized personnel can access the connections, safety distribution boxes should be mounted in the 'guarded' area as defined in the risk assessment for the application.
- The safety connection system is designed to simplify the installation of safety devices—it does ***not*** control the safety circuit.
- Since the safety circuits are wired in series, shorting plugs must be installed in all unused distribution box ports in order for the system to operate.

Overview

Example Layout without Enunciation



1. Safety-Wired Distribution Box 5-7
2. Safety-Wired Splitter/T-Port 5-6
3. Shorting Plug 5-11
4. Device Patchcord 3-47
5. Device Cordset 3-47
6. Safety Switch with QD ..... See *Safety Products* catalog
7. Safety Relay .....



1. Safety-Wired Distribution Box 5-7
2. Shorting Plug 5-11
3. Device Patchcord 3-85
4. Safety Switch with QD . See *Safety Products* catalog
5. Safety Relay ..... See *Safety Products* catalog
6. Tower Light ..... See *Industrial Controls* catalog

Safety Wired T-Port

Dual-Channel, No Enunciation

T-Port

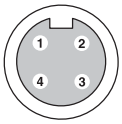
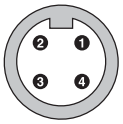
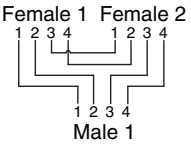
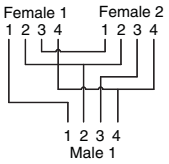
Features

- T-Port/Splitter designed for use with dual-channel safety devices with 4-pin DC micro connector
- PUR body offers good oil and chemical resistance
- Ratcheting coupling nut for vibration resistance
- For use in category 2 or 3 systems per EN 954-1

Specifications

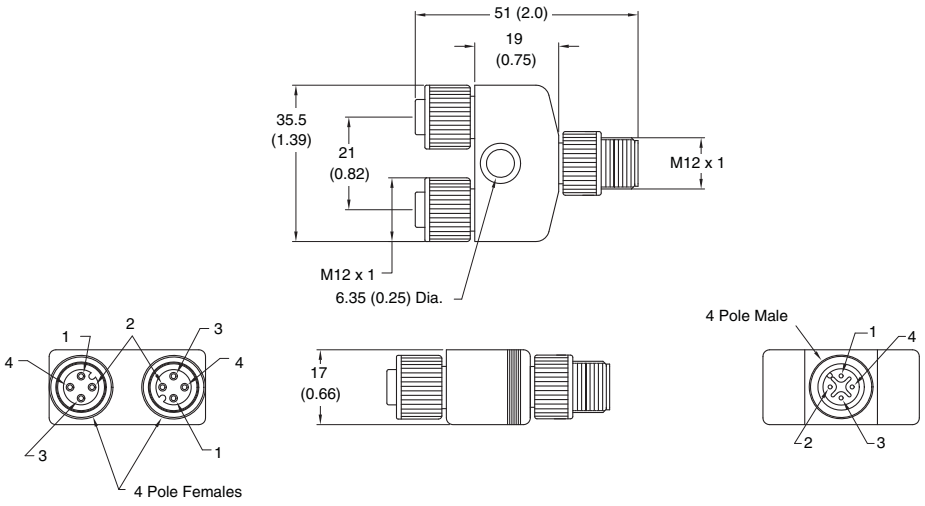
Housing Material	Red PUR
Connector Insert Material	PUR
Connector Shell Material	Epoxy coated zinc
Contact Material	Brass, gold over nickel plating
O-Ring Material	Viton®
Enclosure Type Rating	IP 67, NEMA 6P
Operating Temperature — C (F)	-20…105° (-13…221°)

Product Selection

Face View of Female (2)	Rating	Face View of Male (1)	Configuration	Wiring	Cat. No.
	10…30V DC 3 A		2 N.C.		898D-43LY-D4
			1 N.O. & 1 N.C.		898D-43KY-D4

Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.



Allen-Bradley

Distribution Box

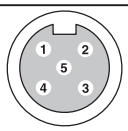
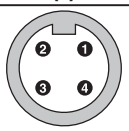
Features

- Prewired for dual-channel N.C. safety
- 4 or 8 safety wired 4-pin DC micro connectors
- 4-pin male DC micro pigtail main connection
- For use in category 2 or 3 systems per EN 954-1

Specifications

Housing Material	Red PBT
Connector Insert Material	PBT
Connector Shell Material	Nickel-plated brass
Contact Material	Gold-plated palladium/nickel
Cable O.D.	9.8 mm (0.39 in) OD
Cable Type	—
Enclosure Type Rating	IP 67, NEMA 6P
Operating Temperature— C (F)	-20…105° (-13…221°)

Product Selection

Face View of Female	No. of Ports	Illuminated	Rating	Face View of Male (1)	Cable Length	Cat. No.
	4	No LED	10…30V DC		0.2 m (8 in)	898D-44LT-DM4
	8					898D-48LT-DM4
Shorting plug for unused ports						898D-41LU-DM
Patchcord, straight to straight DC Micro						889D-F4ACDM-∗

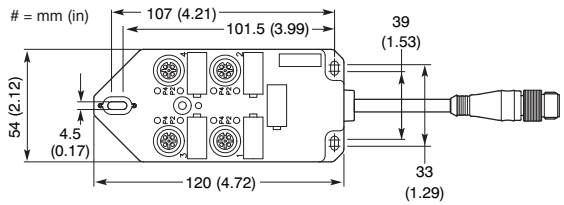
∗ Length in meters (1, 2, 3, 5, 10 standard).

Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.

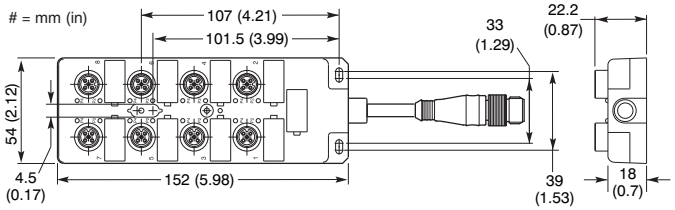
4-Port

4-Port



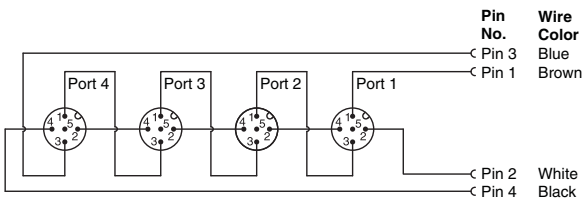
8-Port

8-Port

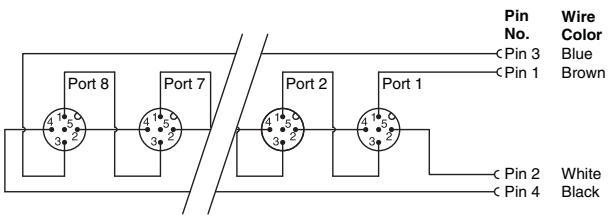


Wiring Diagrams

4-Port



8-Port



Safety Wired Distribution Box

Dual-Channel N.C./N.O, No Enunciation

Distribution Box

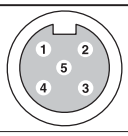
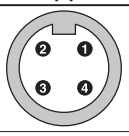
Features

- Prewired for dual-channel (one N.O./one N.C.) safety
- 4 or 8 safety wired 4-pin DC micro connectors
- 4-pin male DC micro pigtail main connection
- For use in category 2 or 3 systems per EN 954-1

Specifications

Housing Material	Red PBT
Connector Insert Material	PBT
Connector Shell Material	Nickel-plated brass
Contact Material	Gold-plated palladium/nickel
Cable O.D.	9.8 mm (0.39 in) OD
Cable Type	Oil-resistant yellow PVC jacket, (3) 18AWG, (16) 22AWG conductors
Enclosure Protection	IP 67, NEMA 6P
Operating Temperature— C (F)	-20…105° (-13…221°)

Product Selection

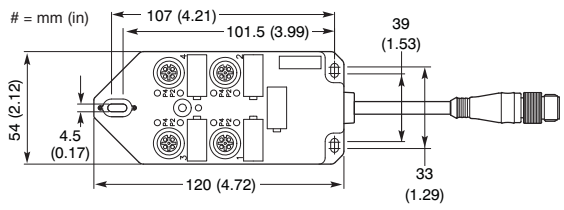
Face View of Female	No. of Ports	Illuminated	Rating	Face View of Male (1)	Cable Length	Cat. No.
	4	No LED	10…30V DC		0.2 m (8 in)	898D-44KT-DM4
	8					898D-48KT-DM4
Shorting plug for unused ports						898D-41KU-DM
Patchcord, straight to straight DC Micro						889D-F4ACDM-∗

∗ Length in meters (1, 2, 3, 5, 10 standard).

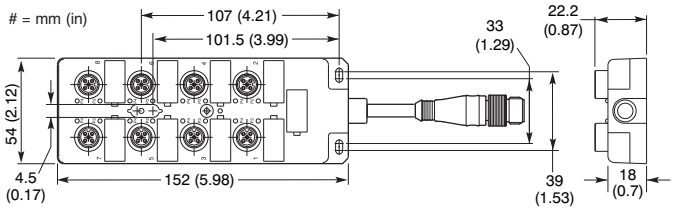
Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.

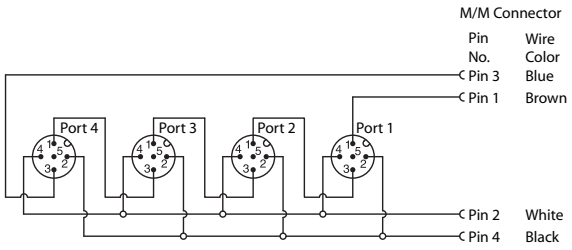
4-Port

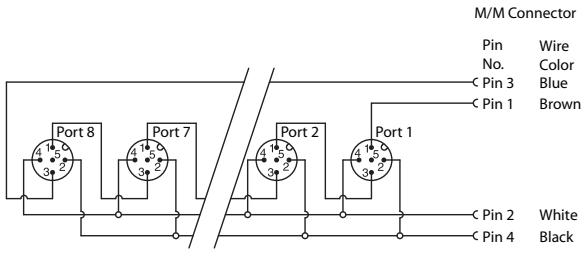


8-Port



Wiring Diagrams





Allen-Bradley

Distribution Box

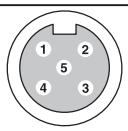
Features

- Prewired for single-channel (N.C.) safety with enunciation
- 8 safety wired 4-pin DC micro connectors
- Individual enunciation output for each port
- For use in category 2 or 3 systems per EN 954-1

Specifications

Housing Material	Red PBT
Connector Insert Material	PBT
Connector Shell Material	Nickel-plated brass
Contact Material	Gold-plated palladium/nickel
Cable O.D.	9.8 mm (0.39 in) OD
Cable Type	Oil-resistant yellow PVC jacket, (12) 18AWG conductors
Enclosure Protection	IP 67, NEMA 6P
Operating Temperature— C (F)	-20…105° (-13…221°)

Product Selection

Face View of Female	No. of Ports	Illuminated	Rating	Face View of Male (1)	Cable Length	Cat. No.
	4	LEDs	10…30V DC	Cable	5 m (16.4 ft)	898D-P44JT-A5
	8				10 m (32.8 ft)	898D-P44JT-A10
	4				5 m (16.4 ft)	898D-P48JT-A5
	8				10 m (32.8 ft)	898D-P48JT-A10
Shorting plug for unused ports						898D-41KU-DM
Patchcord, straight to straight DC Micro						889D-F4ACDM-∗

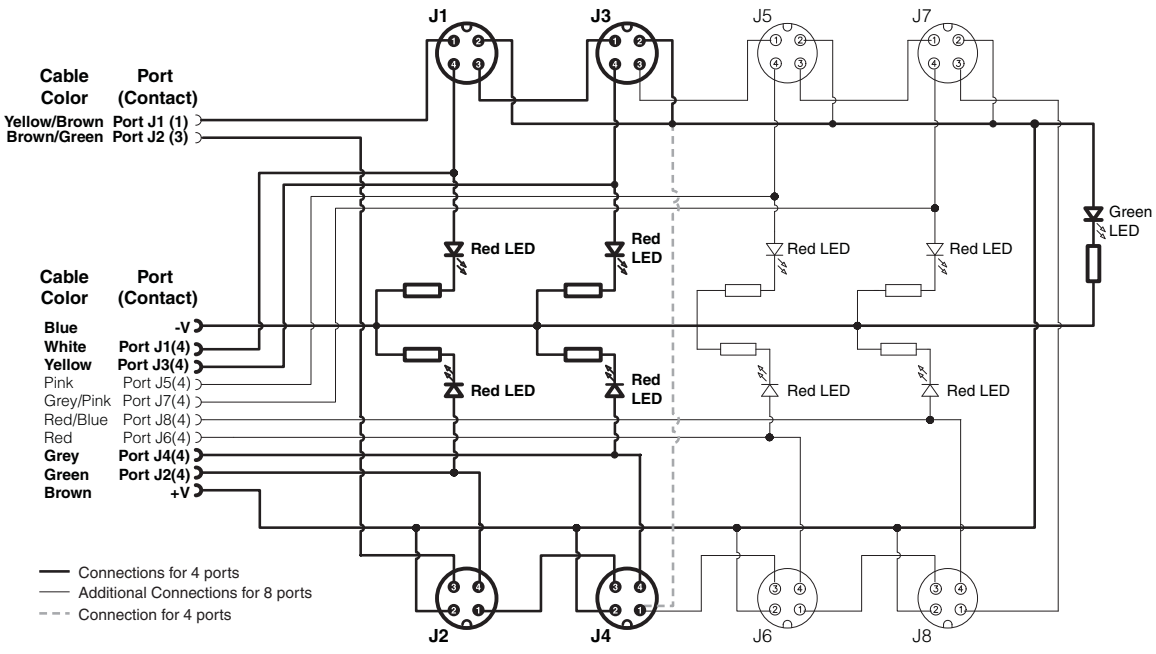
∗ Length in meters (1, 2, 3, 5, 10 standard).

Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.

See 8-port dimensions page 5-7.

Wiring Diagrams



Safety Wired Distribution Box

8-Port, Dual-Channel (2 N.C.) plus Individual N.O. Enunciation

Distribution Box

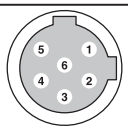
Features

- Prewired for dual-channel N.C. safety plus individual N.O. enunciation
- Eight 6-pin AC micro connectors
- 14-conductor main cable
- Individual enunciation output for each port
- For use in category 2 or 3 systems per EN 954-1

Specifications

Housing Material	Red PBT
Connector Insert Material	PBT
Connector Shell Material	Nickle-plated brass
Contact Material	Gold-plated palladium/nickel
Cable O.D.	9.8 mm (0.39 in) OD
Cable Type	Oil-resistant yellow PVC jacket, (14) 18AWG conductors
Enclosure Protection	IP 67, NEMA 6P
Operating Temperature— C (F)	-20…105° (-13…221°)

Product Selection

Face View of Female	No. of Ports	Illuminated	Rating	Face View of Male (1)	Cable Length	Cat. No.
	8	LEDs	10…30V DC	Cable	5 m (16.4 ft)	898R-P68MT-A5
					10 m (32.8 ft)	898R-P68MT-A10
Shorting plug for unused ports						898R-61MU-RM
Patchcord, straight to straight DC Micro						889R-F6ECRM-∗

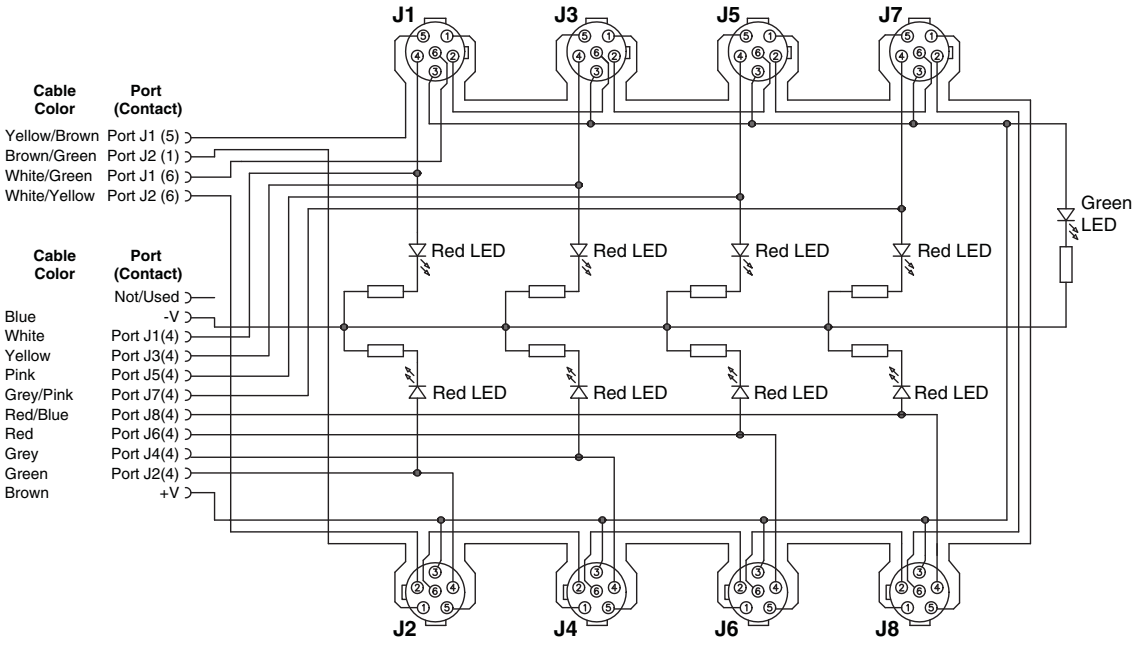
∗ Length in meters (1, 2, 3, 5, 10 standard).

Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.

See 8-port dimensions on page 5-7.

Wiring Diagrams



Allen-Bradley

Shorting Plug

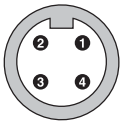
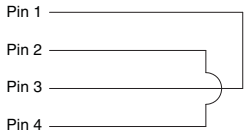
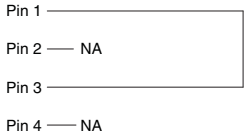
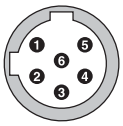
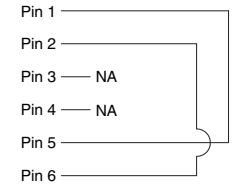
Specifications

Coupling Nut Material	4-pin: Epoxy-coated zinc 6-pin: Nickel-plated brass
Connector Insert Material	PUR
Connector Shell Material	RED PVC
Contact Material	Brass, gold over nickel plating
O-Ring Material	Viton®
Enclosure Protection	IP 67, NEMA 6P
Operating Temperature— C (F)	-20…105° (-13…221°)

Features

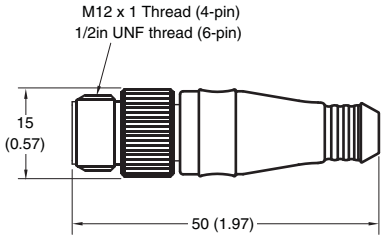
- Shorting plug designed for use with safety-wired distribution boxes
- PVC body offers good oil and chemical resistance
- Ratcheting coupling nut on 4-pin models for vibration resistance

Product Selection

Face View of Female	Rating	Configuration	Wiring	Cat. No.
	10…30V DC 4A	2 N.C.		898D-41LU-DM
		1 N.O. & 1 N.C.		898D-41KU-DM
		2 N.C. & 1 N.O.		898R-61MU-RM

Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.



Receptacles

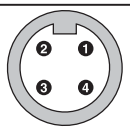
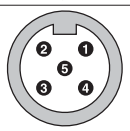
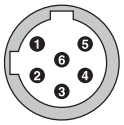
Specifications

Connector Shell Material	Nickel-plated brass
Connector Insert Material	Nylon
Contact Type	Machined brass with gold over nickel plating
Wire Insulation	Oil resistant PVC, 22AWG stranded copper, 300V
Operating Temperature— C (F)	-20…+105° (-4…+221°)

Features

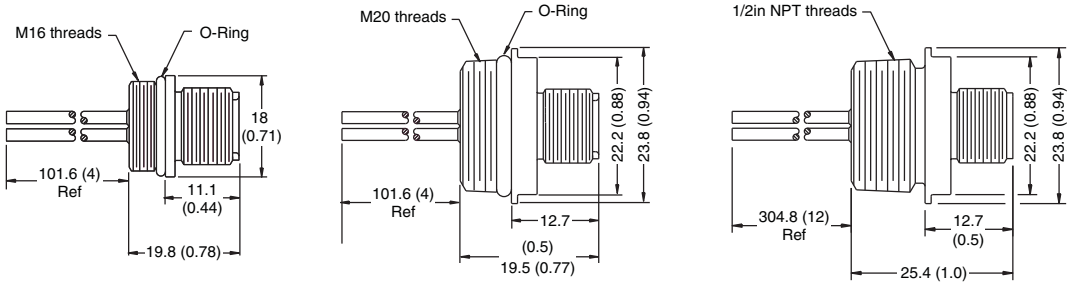
- Male bulkhead receptacles
- 4-, 5- or 8-pin DC micro configuration
- 6-pin AC micro configuration
- M16, M20 or 1/2in -14NPT mounting threads

Product Selection

Face View of Male	Wire Color	Wire Rating	Length—m (ft)	Panel Mount Thread Size	Drawing	Cat. No.
	1 Brown 2 White 3 Blue 4 Black	22AWG 300V 3A	0.1 (0.3)	M16 x 1	A	888D-M4AC9-4N
				M20 x 1.5	B	888D-M4AC8-4N
			1 (3.3)	1/2in-14NPT	—	888D-M4AC1-0M3
	1 Brown 2 White 3 Blue 4 Black 5 Grey		0.1 (0.3)	M16 x 1	A	888D-M5AC9-4N
				M20 x 1.5	B	888D-M5AC8-4N
			1 (3.3)	1/2in-14NPT	—	888D-M5AC1-0M3
	1 Red/White Tr 2 Red 3 Green 4 Red/Yellow Tr 5 Red/Black Tr 6 Red/Blue Tr	22AWG 300V 3A	0.1 (0.3)	M16 x 1	A	888R-M6AC9-4N
				M20 x 1.5	B	888R-M6AC8-4N
			0.3 (1)	1/2in-14NPT	C	888R-M6AC1-0M3
	1 White 2 Brown 3 Green 4 Yellow 5 Grey 6 Pink 7 Blue 8 Red	24AWG 36V DC/30V AC 1.5A	0.1 (0.3)	M16 x 1	A	888D-M8AC9-4N
				M20 x 1.5	B	888D-M8AC8-4N

Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.



Allen-Bradley

Contents

A wide variety of field devices are available specifically for use on DeviceNet networks. They include:

RightSight™ Photoelectric Sensor	*www.ab.com/catalogs/sensors*
Series 9000 Photoelectric Sensor	*www.ab.com/catalogs/sensors*
871TM Inductive Proximity Sensor	*www.ab.com/catalogs/sensors*
802DN Limit Switch	*www.ab.com/catalogs/sensors*
842D Encoder	*www.ab.com/catalogs/sensors*
DeviceLink™	*www.ab.com/catalogs/sensors*
SafeShield™ Safety Light Curtain Interface Module	*www.ab.com/catalogs/safety*
Bulletin 284 Distributed Starter	*www.ab.com/en/epub/catalogs*
Bulletin 280/281 ArmorStart™ Distributed Motor Controller	*www.ab.com/en/epub/catalogs*
Bulletin 855T—70mm Control Tower™ Stack Lights	*www.ab.com/en/epub/catalogs*

Quick Selection Guide

Specifications	 **1485C** **KwikLink ™ Cable**	 **1485P** **KwikLink General Purpose Connectors**	 **1485P** **KwikLink Connectors**	 **1485T & 1485P** **Pigtail KwikLink Connectors**	 **1485P** **KwikLink Splice Kits**
Description	• Keyed flat trunk cable for use with Insulation Displacement Connectors (IDCs)	• Vampire connectors for use with KwikLink flat cable in general purpose applications	• Insulation Displacement Connectors (IDCs) for use with KwikLink flat cable	• Insulation Displacement Connector with integral class 1 round cable pigtail for interfacing a device or power supply to flat cable	• A pair of IDCs factory-joined with Class 1 round cable for splicing together two sections of flat cable network
Features	• Keyed to prevent wiring mishaps • TPE or PVC jacket • Class 1 or class 2 rated cable versions • Available in spools up to 420 m (1378 ft)	• Plug and play installation • Two-piece housing • Designed for general purpose applications • IP 67 rated	• Plug and play installation • UL listed and CSA certified • Valox® construction • Sealed: 1200 psi (8270 kPa) washdown	• Plug and play installation • Allows Class 1 drop to KwikLink system • Includes IDC connector and pigtail module	• Plug and play installation • Available in standard splice kit and power isolation splice kit versions • Includes IDC, splice module and flat cable end caps
Connections	• NA	• Micro QD	• Micro QD • Open-style • Terminator	• Mini QD • Conductor	• KwikLink module to KwikLink module
Available Models	• TPE CL1 rated • PVC CL2 rated	• Micro QD	• Sealed • Unsealed	• Sealed • Unsealed	• Sealed • Unsealed • Standard splice kit • Power isolation splice kit
Additional Info	• See page 6–6, 6–12	• See page 6–7	• See page 6–14	• See page 6–15	• See page 6–13

Specifications	 **1485A** **Bulkhead Pass-Through Connectors**	 **1485T** **PowerTap ™**	 **1485P** **DeviceBox**	 **1485P** **DevicePort ™**	 **1485P** **T-Port**
Description	• Mini or micro bulkhead pass-through connectors for convenient routing of DeviceNet wiring through panel walls	• Passive coupling device used to limit trunk current	• Passive sealed junction boxes for up to 8 smart devices	• Passive multi-port tap for up to 8 smart devices	• Connects a single drop line to the trunk
Features	• Nickel-plated brass housing standard • Stainless steel housing versions available	• Allows for multiple power supplies • 7.5 A or 3.0 A fuse protection (2x) • Thick media and thin media versions	• 2, 4, or 8 ports • Cord grip openings • Direct connection to trunk • Thick media and thin media versions	• 4 or 8 ports • Connection to trunk via drop line • Stainless steel option	• Right or left keyway for positioning purposes • Stainless steel option
Connections	• Mini QD • Micro QD	• Cage-clamp terminal strips	• Cage-clamp terminal strips	• Mini QD • Micro QD	• Mini QD • Micro QD
Enclosure	• 4- and 5-pin mini • 5-pin DC micro	• Thick media • Thin media	• Thick media • Thin media	• QD drop connector • Pigtail drop connector • Cable drop connector • Thru-Trunk	• Mini drop connector • Micro drop connector
Additional Info	• See page 6–32, 6–52	• See page 6–40	• See page 6–41	• See page 6–42, 6–44	• See page 6–34, 6–36

Quick Selection Guide

 **1485K** **KwikLink Drop Cables**	 **1485A** **Accessories**	 **1485C** **Thick Media**	 **1485C** **Thin Media**	 **1485A** **Terminal Chambers**
• Four-wire unshielded drop cables for use exclusively with KwikLink systems	• Accessories to complement KwikLink flat media systems	• 12.2 mm (1/2 in) cable for DeviceNet trunkline offered in cable spools, molded connectors and receptacles	• 6.9 mm (1/4 in) cable for DeviceNet trunkline or droplines offered in cable spools, molded connectors and receptacles	• Mini or micro field attachable connectors with screw terminals for DeviceNet
• For use only with KwikLink Flat Media system • Epoxy-coated zinc coupling nut • PVC jacket	• Durable construction • Simple mounting and installation	• PVC jacket • Standard cordset lengths up to 30 m (98 ft) • Available in raw spools up to 500 m (1640 ft) • Stainless steel option	• Yellow TPE or gray PVC jacket • Standard cordset lengths up to 6 m (19.6 ft) • Available in raw spools up to 600 m (1968 ft) • Stainless steel option	• Straight or right angle • Male and female versions • Screw terminal connection • IP 67 rating
• Mini QD • Micro QD • Conductor	• Micro QD	• Mini QD • Conductor	• Mini QD • Micro QD • Conductor	• Mini QD • Micro QD
• Single ended • Double ended	• KwikLink Dust Cap • Conduit adaptors • KwikLink end caps • Flat cable mounting clamp • Micro sealing cap • Micro terminator	• Cable spools • Premolded segments • Panel mount receptacles • Field attachable conn. • Terminators	• Cable spools • Premolded segments • Panel mount receptacles • Field attachable conn. • Terminators	• Mini for Thick Media • Mini for Thin Media • Micro for Thin Media
• See page 6–8, 6–17	• See page 6–10, 6–21	• See page 6–24, 6–28	• See page 6–26, 6–28	• See page 6–18, 6–30

 **889N** **Auxiliary Power Media**	 **889N** **Auxiliary Power/Single Channel Safety Media**	 **1485** **Accessories**	 **1786** **ControlNet™ Media**	 **1585** **EtherNet™ Media**
• 4-pin patchcords, receptacles, T-ports, terminal chambers, bulkhead pass-through connectors and accessories for auxiliary power for DeviceNet	• 4-pin T-ports and shorting plugs wired to provide both auxiliary power and a single channel safety circuit **Note**: safety circuit is passive and not part of the DeviceNet communication network.	• Accessories to complement DeviceNet media system installations	• Sealed media utilizing threaded connectors for ControlNet	• Sealed media based on 4-pin D-coded micro (M12) connections
• Yellow PVC jacket • Standard patchcord lengths up to 30 m (98 ft)	• Red PBT housing • Male or female shorting plugs available • For use in conjunction with standard auxiliary power media components	• Durable construction • Broad range of connection types • Simplified installation	• Threaded connectors • IP67 rating • Rugged durable construction	• 4-pin D-coded M12 • Threaded connection • IP 67 rating • Rugged durable construction
• Mini QD	• Mini QD	• Mini QD • Micro QD • Open-style	• TNC	• D-coded micro (M12)
• Patchcords • T-ports • Receptacles • Bulkhead pass-thru	• T-ports • Shorting Plugs	• Terminating resistor • Sealing caps • Open-style connectors • Gender changes	• Plug Connectors • T-taps • Bulkhead connectors • Terminators	• IDC field attachable connectors • M12 to RJ45 bulkhead pass-thru
• See page 6–50, 6–53	• See page 6–54	• See page 6–10, 6–21, 6–48	• See page 6–58	• See page 6–59

Introduction

DeviceNet™

General Description

DeviceNet™ is an open communication network designed to connect factory floor devices such as photoelectric sensors, inductive proximity sensors, motorstarters, drives, valve manifolds, and simple operator interfaces together without interfacing through an I/O system. It increases the amount and rate of information flowing from plant floor devices to control systems, and has the potential to substantially reduce wiring costs. Up to 64 intelligent nodes can be connected to one DeviceNet network. The ability to remove and replace devices from the network while under power without a programming tool is a distinct advantage of the DeviceNet network.

The DeviceNet network consists of a cabling system that provides both power and communication to nodes. Rockwell Automation offers a number of media products for device connection and communication needs.

KwikLink™ Flat Media System

The KwikLink flat media system provides a simple, modular cabling method with its flat 4-wire cable and Insulation Displacement Connectors (IDCs). Designed to promote up to 50% savings in installation costs by offering a drastic reduction in labor and materials, the KwikLink system allows nodes to be added to the network quickly and easily—without severing the trunkline. Cutting or stripping of the trunkline is eliminated, as is the need for predetermined cable lengths. KwikLink offers maximum simplicity while still supporting 64 nodes.

KwikLink Heavy Duty Connectors are the original connector style for flat media. This rugged industrial connector design incorporates a removable field interface cap in a multitude of connection types including micro, mini pigtail, cable pigtail, open style, and terminator styles, in addition to splice kits for joining two separate flat media trunk sections.

KwikLink General Purpose connectors provide a simple low profile two-piece connector design for less demanding industrial applications. These micro style connectors are offered with an extremely pliable flat cable for maximum ease of installation and cable routing and are rated for use in IP67 environments.

ArmorBlock MaXum I/O is also specifically designed to provide a direct interface to the KwikLink flat media system. A full complement of accessories is also available. For complete information on system installation and associated details, see Rockwell Automation publication DN–6.7.2 and 1485–IN001A–EN–P.

Round Media— Thick Trunk System

Rockwell Automation round media thick trunk systems are based on the use of “thick cable” for DeviceNet. Rockwell Automation thick trunk cable allows maximum trunk line distance and is the original DeviceNet system configuration. Thick trunk cable is available in bulk spools or as mini male to mini female cordsets or patchcords in varying lengths. A wide variety of rugged, durable Allen-Bradley DeviceNet components are available for use in thick trunk systems. These components include drop cables, T-Ports, DeviceBox, DevicePort, PowerTap and a multitude of other components and accessories. Stainless steel versions of thick cable system components are also available. For complete information on system installation and associated details, see Rockwell Automation publication DN–6.7.2.

Round Media— Thin Trunk System

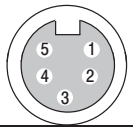
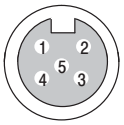
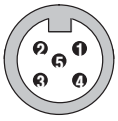
Rockwell Automation round media thin trunk systems are based on the use of “thin cable” for DeviceNet. The use of thin cable reduces maximum trunk line distances but allows for a more compact and cost effective installation for some applications. Rockwell Automation thin cable outer jacket material is either grey PVC for standard environments or yellow CPE for additional chemical resistance. Thin trunk cable is available in a wide variety of configurations including raw spools and both micro and mini cordsets and patchcords. Similar to Rockwell Automation thick trunk systems, compatible components include T-Ports, DeviceBox, DevicePort, PowerTap, and a multitude of other components and accessories. Stainless steel versions of thin cable system components are also available. For complete information on system installation and associated details, see Rockwell Automation publication DN–6.7.2.

General Characteristics

Data Rates	125 k baud	250 k baud	500 k baud
Flat Trunk Distance	420 m (1378 ft)	200 m (656 ft)	75 m (246 ft)
Thick Trunk Distance	500 m (1640 ft)	250 m (820 ft)	100 m (328 ft)
Thin Trunk Distance	100 m (328 ft)		
Max. Drop Length	6.1 m (20 ft)		
Cumulative Drop	156 m (512 ft)	78 m (256 ft)	39 m (128 ft)
Number of Nodes	64		

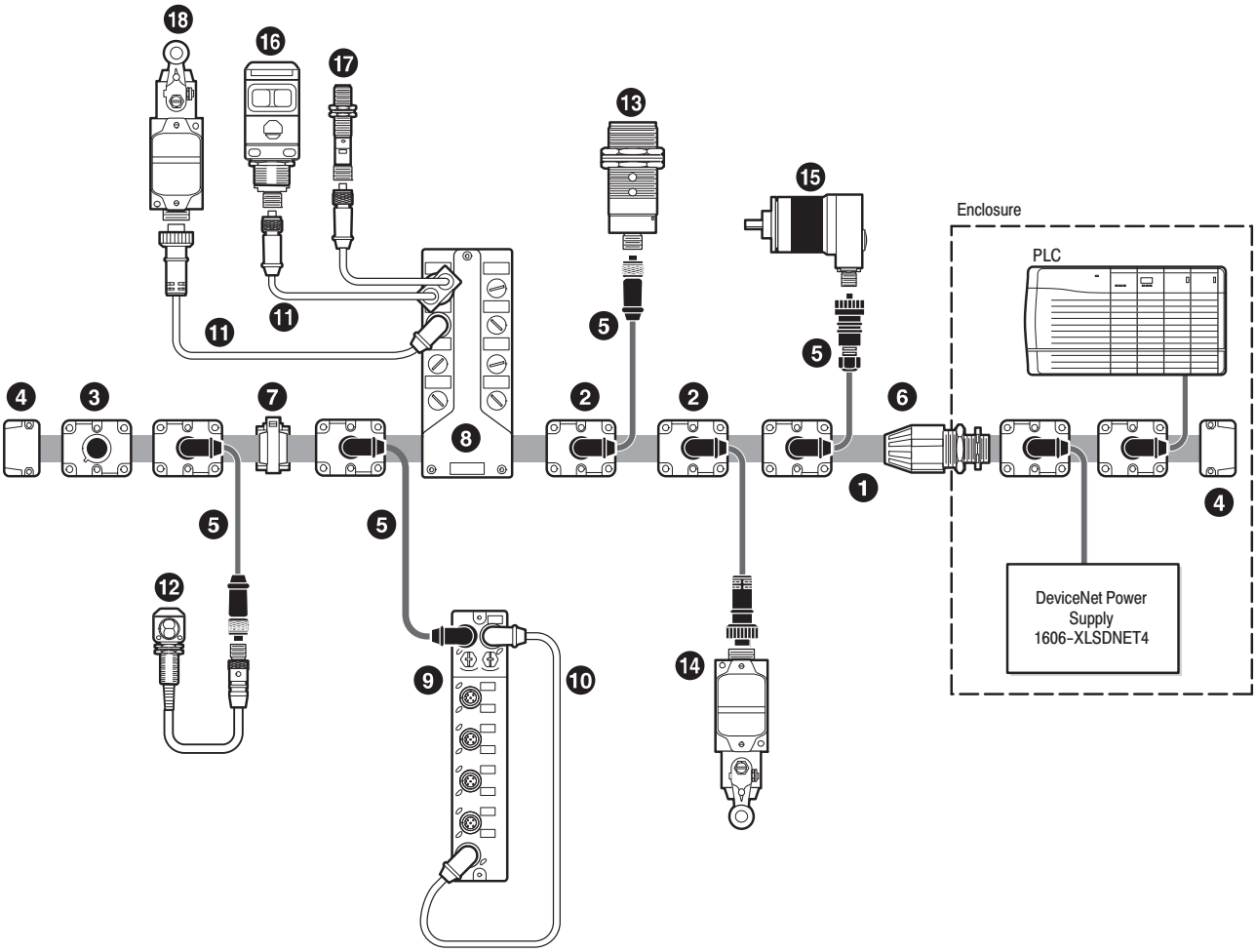
For detailed information on these characteristics, see Rockwell Automation publication DN 6.7.2.

Round Media DeviceNet Connection Wiring

Mini Connector		Micro Connector		
Face View of Female	Face View of Male	Face View of Female	Face View of Male	Color Code
				1. Drain 2. Red (V+) 3. Black (V–) 4. White (CAN_H) 5. Blue (CAN_L)

DeviceNet™ KwikLink™ General Purpose Flat Media System

Typical Configuration



1. KwikLink General Purpose Flat Trunk Cable . . . . . page 6–6
2. KwikLink General Purpose Connector . . . . . page 6–7
3. Micro Terminator . . . . . page 6–10
4. Flat Cable End Cap . . . . . page 6–10
5. KwikLink Drop Cable . . . . page 6–8
6. Conduit Adaptor . . . . . page 6–10
7. Mounting Clamp . . . . . page 6–10
8. ArmorBlock MaXum . . . . page 7–23
9. ArmorBlock . . . . . page NO TAG
10. Auxiliary Power Cordsets page 6–19
11. Standard Cordsets . . . . . page 3–43
12. DeviceNet Photoelectric
13. DeviceNet Inductive
14. DeviceNet Limit Switch
15. DeviceNet Encoder
16. Standard Photoelectric
17. Standard Proximity
18. Standard Limit Switch

See the *Sensors* Catalog.

DeviceNet™ Flat Media System—KwikLink™ General Purpose

Flat Cable Trunk

Flat Media

Class 2 General Purpose Flat Cable

Features

- Physical key to ensure proper connection alignment
- Sized to fit inside 1 inch conduit
- Highly pliable PVC jacket material
- UL recognized and CSA certified

Specifications

Cable	4-conductor unshielded
Cable Rating	KwikLink DeviceNet trunk cable 4C16, UL CMG or CL2 75C or PLTC, cUL CMG 75C FT4
Agency Approvals	UL listed and CSA certified
Operating Temperature—C (F)	–25…+75° (–13…+167°)

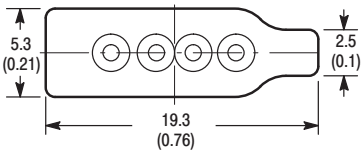
Description

KwikLink General Purpose Class 2 (CL2) flat cable is specifically designed for use with the new KwikLink General Purpose connectors. This PVC jacketed cable conforms to the same physical profile as original KwikLink flat cables, but is highly flexible for ease of installation and routing.

Note: KwikLink General Purpose Flat Cable is not recommended for use with original heavy duty KwikLink connectors.

The cable adheres to NEC Article 725, which states that for a Class 2 circuit, the power source must have a rated output of less than 30V and 100V A. In the case of DeviceNet, running at 24V, the maximum allowable current is then 100V A/24V or 4 A. Therefore, KwikLink General Purpose Class 2 cable is rated to 4 A at 24V DC.

Product Selection

Dimensions—mm (inches)	Rating	Use	Jacket Material	Color	Cat. No.		
					75m Spool	200m Spool	420m Spool
	24V DC 4 A (Class 2)	Device-Net Trunk	PVC	Grey	1485C–P1K75	1485C–P1K200	1485C–P1K420

Note: The KwikLink General Purpose flat cable is only for use with the KwikLink General Purpose connectors and ArmorBlock MaXum flat cable base. It is not suitable for use with original KwikLink Heavy Duty connectors.

Flat Media

KwikLink General Purpose

Features

- Quick, simple installation
- Simple 2-piece, low profile housing
- Rugged, durable construction
- IP 67 rated
- Designed for single use
- Integral micro connector

Specifications

Storage Temperature—C (F)	–40…+85° (–40…+185°)
Installation Temperature—C (F)	0…50° (32°…122°)
Operating Temperature—C (F)	–25…+75° (–13…+167°)
Enclosure Rating	IP 67
Vibration	0.35 mm (0.014 in) displacement @ 10…150Hz, 3 planes
Connector Body	Cover: Glass-filled polyester, type PBT Base: Glass-filled nylon, type PA66
Installation Torque	10…12 in lbs (1.1…1.3 Nm)
Dimensions	45 mm x 40 mm x 32 mm (1.8 in x 1.6 in x 1.3 in)

Description

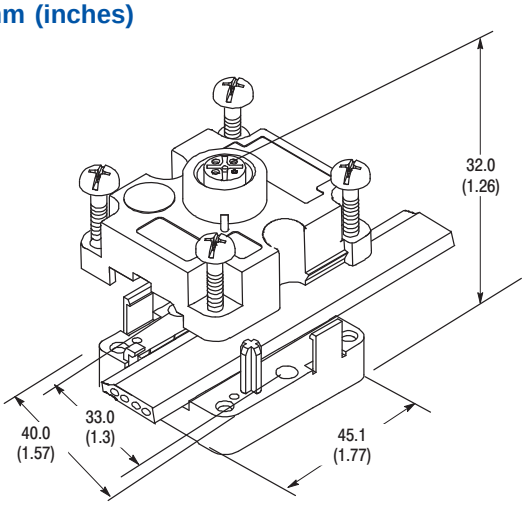
Allen-Bradley KwikLink General Purpose connectors are the next generation of the original KwikLink. Designed to interface drop cables to the flat cable trunkline with optimal plug-and-play capability at minimal cost, the KwikLink General Purpose connector's simple 2-piece design results in a low profile housing and decreases installation time.

The connector snaps onto the flat cable at any point along the trunk. Contact is made with the cable's 4 conductors by tightening 4 screws that drive the contacts through the cable jacket into the conductors.

These connectors are sealed to IP 67 requirements and provide a wide working temperature range for application flexibility.

KwikLink General Purpose connectors, similar to original KwikLink, are designed for single use only and, once installed, should not be removed from the trunkline.

Dimensions—mm (inches)



Product Selection

Connector Style	Rating	Color	Cat. No.
Micro Style	24V DC 3 A	Black	1485P–K1E4–R5

DeviceNet™ Flat Media System—KwikLink™ General Purpose

KwikLink™ Drop Cordsets

Flat Media

KwikLInk Drop Cordset

Features

- Drop cables designed exclusively for use with KwikLink systems
- Micro, mini and cable connection
- Ratcheting coupling nut for vibration resistance

Specifications

Coupling Nut	Epoxy coated zinc
Connector	Molded oil resistant PVC
Contacts	Gold-plated palladium nickel
Cable	Oil resistant grey PVC jacket, unshielded, 22 AWG power conductors, 24 AWG signal conductors
Cable O.D.	6 mm (0.24 in)
Operating Temperature—C (F)	–20…+105° (–4…+221°)
Maximum Current	3 Amps

Drop Cables

Designed specifically for use with KwikLink, these drop cables come in the most common connection configurations. All trunkline connections are 90° micro male with 4-wire unshielded cable. Device connection options include 5-pin mini and micro as well as flying leads.

Dimensions—mm (in)

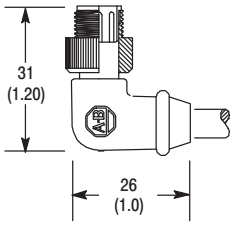


Diagram A
Right Angle Micro Male

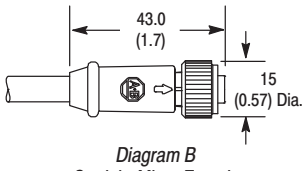


Diagram B
Straight Micro Female

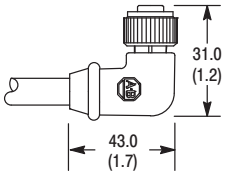


Diagram C
Right Angle Micro Female

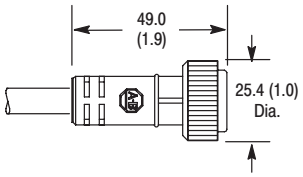


Diagram D
Straight Mini Female

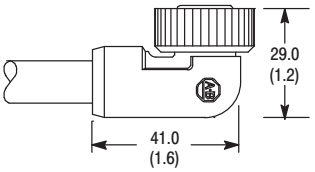


Diagram E
Right Angle Mini Female

Product Selection

KwikLink Drop Cable Cordsets and Patchcords

Connector Style	Dimensions (Diagram No.)	Cat. No. and Length—m (ft)					
		1 (3.3)	2 (6.5)	3 (9.8)	4 (13.1)	5 (16.4)	6 (19.7)
Right Angle Micro to Conductor	A	1485K–P1F5–C	1485K–P2F5–C	—	1485K–P4F5–C	—	1485K–P6F5–C
Right Angle Micro to Str Micro	A, B	1485K–P1F5–R5	1485K–P2F5–R5	1485K–P3F5–R5	1485K–P4F5–R5	1485K–P5F5–R5	1485K–P6F5–R5
Right Angle Micro to Right Angle Micro	A, C	1485K–P1F5–V5	1485K–P2F5–V5	1485K–P3F5–V5	1485K–P4F5–V5	1485K–P5F5–V5	1485K–P6F5–V5
Right Angle Micro to Str Mini	A, D	1485K–P1F5–N5	1485K–P2F5–N5	1485K–P3F5–N5	1485K–P4F5–N5	1485K–P5F5–N5	1485K–P6F5–N5
Right Angle Micro to Right Angle Mini	A, E	1485K–P1F5–Z5	1485K–P2F5–Z5	1485K–P3F5–Z5	1485K–P4F5–Z5	1485K–P5F5–Z5	1485K–P6F5–Z5

Additional drop cable configurations are available, contact your local Rockwell Automation/Allen-Bradley distributor.

Note: These drop cables are only for use with the KwikLink flat cable system. They are not suitable for use with standard DeviceNet round cable systems.

Flat Media

4-Pin DC Micro Patchcord

Features

- 22 AWG conductors
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Ratcheting coupling nuts for vibration resistance

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	Epoxy coated zinc
Connector Material	Molded PUR
Contacts	Gold over nickel-plated brass
Cable	Oil resistant yellow PVC jacket, 22 AWG conductors, 300V, UL recognized and CSA certified
Cable Diameter	5 mm (0.21 in)
Bend Radius	10x diameter
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105 (–4…+221)

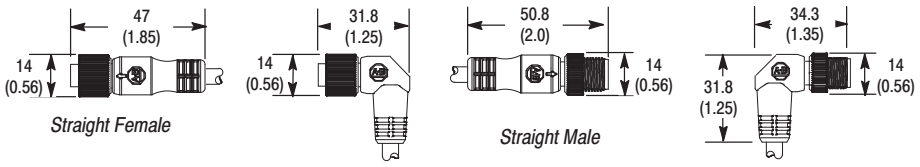
Description

KwikLink Auxiliary Power Micro drops are standard DC Micro cordsets and patchcords designed to interface between KwikLink Micro style connectors and Allen-Bradley distributed I/O products with micro power connection. The application–specific wiring allows for quick and simple connection of auxiliary power to such devices as ArmorBlock™ 8-point products and ArmorBlock MaXum™ with micro base. These products may also be connected directly to DeviceNet micro drops to provide power without disrupting network communications.

Wiring Diagrams

Male	Female
1 < --No connection--	< 1
2 < -----Brown-----	< 2
3 < ------Blue------	< 3
4 < --No connection--	< 4
5 < --No connection--	< 5

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Female Connector \ Male Connector	Cat. No.		
	Cable	Straight Micro (Figure C)	Right Angle Micro (Figure D)
Cable	**889–C2AC–S§**	**889D–M2AC–K***	**889D–E2AC–K***
Straight Micro (Figure A)	**889D–F2AC–K***	**889D–F2ACDM–K‡**	**889D–F2ACDE–K‡**
Right Angle Micro (Figure B)	**889D–R2AC–K***	**889D–R2ACDM–K‡**	**889D–R2ACDE–K‡**

* Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths (i.e., **889D–F2AC–K2**).
‡ Replace symbol with 0M3 (1 ft), 1 (1 m), 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths (i.e. **889D–R2ACDE–K0M3**).
§ Replace symbol with length in meters 50, 100, or 200 (i.e., **889–C2AC–S50**).

DeviceNet™ Flat Media System—KwikLink™ General Purpose

KwikLink™ Accessories

Accessories

In order to support all of the options associated with the flexibility of KwikLink, Allen-Bradley offers an array of accessories including cable mounts, conduit adaptors, flat cable end caps, and threaded plugs for sealing unused micro connectors.

Cat. No.	Description
1485A–KCAP	Flat Cable End Cap
1485A–T1D5	Micro Terminator, Male
1485A–CAD	Conduit Adaptor (PG21)
1485A–FCM	Flat Cable Mounting Clamp
1485A–M12	Plastic Threaded Plug (M12)

Flat Cable End Cap

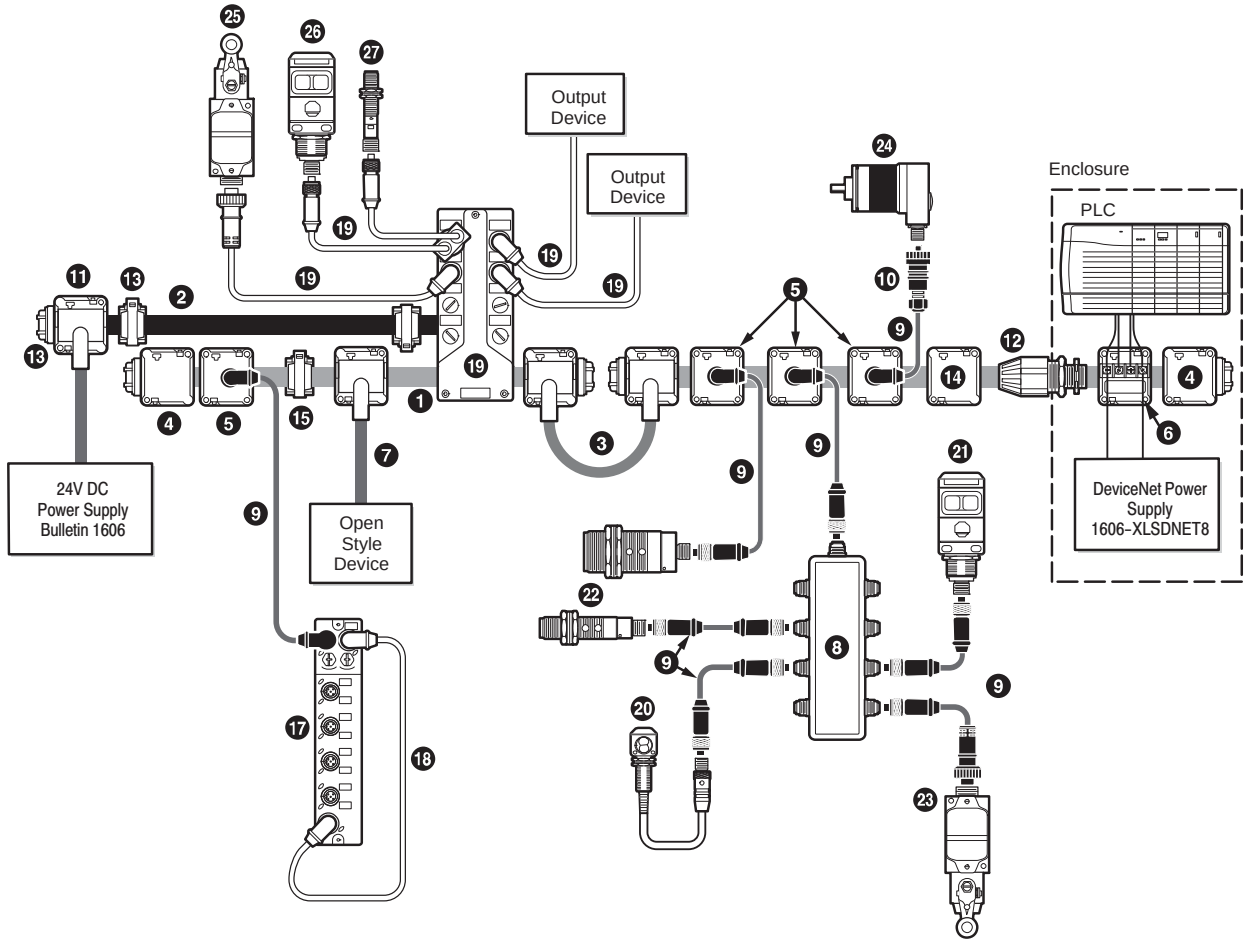
Conduit Adaptor

Micro Terminator

Mounting Clamp

M12 Threaded Plug (Plastic)

Typical Configuration



See the *Sensors* Catalog.

DeviceNet™ Flat Media System—KwikLink™ Heavy Duty

Flat Cable Trunk

Flat Media

Class 1 Flat Cable

Class 2 Flat Cable

Auxiliary Power Flat Cable

Features

- Physical key to ensure proper connection alignment
- Sized to fit inside 1in conduit
- TPE or PVC jacket material
- UL recognized and CSA certified

Specifications

Cable	4-conductor unshielded
Cable Rating	CL1: KwikLink DeviceNet trunk cable 4C16, UL TC 600V 75C west sunlight resistant, cUL FT4 CL2: KwikLink DeviceNet trunk cable 4C16, UL CL2 75C, CSA AWM I/II A/B 80C 300V FT4 Auxiliary Power: 4C16, UL TC 600V 75C wet sunlight resistant, cUL Type CIC TPE FT4
Agency Approvals	UL listed and CSA certified
Operating Temperature—C (F)	–25…+75° (–13…+167°)

Description

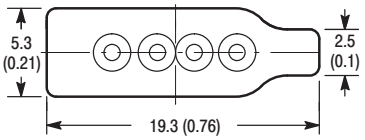
Class 1 (CL1) Cable: Per NEC specifications for a Class 1 circuit (see NEC Article 725), the power source must have a rated output of less than 30V and 1000V A. So, based on the size of the flat cable conductors, the maximum current through the network must be no more than 8 A. For applications requiring 8A in the field, a Class 1 rated flat cable is available.

Allen-Bradley Class 1 KwikLink cable is UL listed for 600V and 8 A at 24V DC. For optimal chemical resilience and superior protection in harsh environments, KwikLink Class 1 cable also features a TPE jacket. Maximum toughness with excellent flexibility.

Class 2 (CL2) Cable: For less demanding applications at lower currents, Allen-Bradley offers a PVC-jacketed Class 2 cable. More flexible than the CL 1 cable, this design adheres to NEC Article 725, which states that for a Class 2 circuit, the power source must have a rated output of less than 30V and 100V A. In the case of DeviceNet, running at 24V, the maximum allowable current is then 100V A/24V or 4 A. Therefore, KwikLink CL 2 cable is rated to 4 A at 24V DC. This cable can be used with all flat cable connectors.

Auxiliary Power Cable (CL1): In some cases, it may be desirable to run an auxiliary bus to power outputs, i.e. valves, actuators, indicators. To support such an application, Allen-Bradley provides a black PVC power cable for use with KwikLink connectors. KwikLink power cable is a Class 1 cable capable of supplying 24V of output power with currents up to 8 A. This cable can be used with all flat cable connectors.

Product Selection

Dimensions—mm (in)	Rating	Use	Jacket Material	Color	Cat. No. 75 m Spool	Cat. No. 200 m Spool	Cat. No. 420 m Spool
	24V DC 8 A (Class 1)	DeviceNet Trunk	TPE	Grey	1485C–P1E75	1485C–P1E200	1485C–P1E420
	24V DC 4 A (Class 2)		PVC	Light Grey	1485C–P1G75	1485C–P1G200	1485C–P1G420
	24V DC 8 A (Class 1)	Aux Power Trunk		Black	1485C–P1L75	1485C–P1L200	1485C–P1L420

Flat Media

Splice Kit

Specifications

Storage Temperature—C (F)	–40…+85° (–40…+185°)
Operating Temperature—C (F)	–25…+75° (–13…+167°)
Enclosure Rating	Unsealed: NEMA 1; IP 60 (IEC 529) Sealed: NEMA 4, 6P, 13; IP 67 (IEC 529) & 1200 psi (8270 kPa) washdown
Vibration	1.5 mm displacement @ 10…500 Hz, 10 G peak, 3 planes
Housing Material	Valox®
Cable Jacket Material	Grey PVC
Dimensions	45 mm x 49 mm x 59 mm (1.8 in x 1.8 in x 2.3 in)

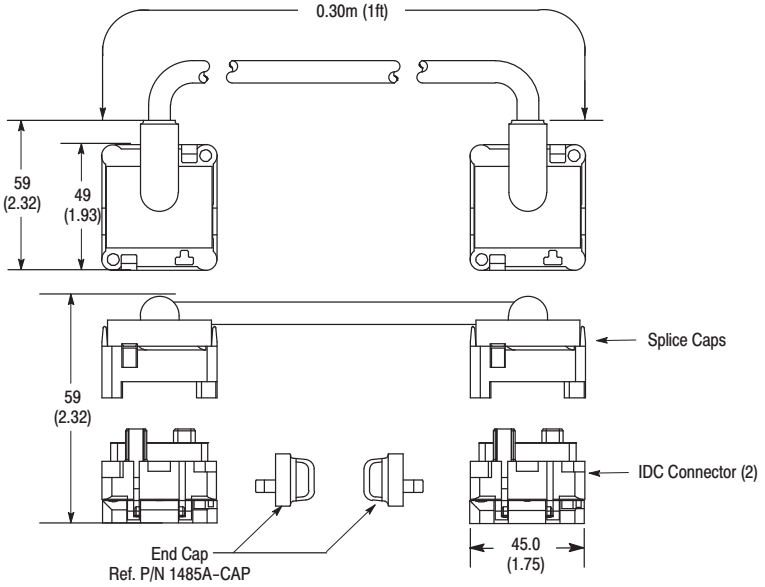
Features

- Sealed and unsealed versions
- Connects trunk segments with 8 A current capacity
- Standard and power isolation versions
- Quick, simple installation
- Includes IDC connectors, splice caps, and flat cable end caps

Description

KwikLink splice kits are used for splicing together two sections of a flat cable network. Splice kits are rated for 8 A at 24V DC (Class 1) and come with all the parts necessary to join sections of flat media. Kits include a pair of snap-on KwikLink modules factory-joined with Class 1 round cable, two IDC connector bases, and two flat cable end caps. Power Isolation versions are available to allow separation of power supplies along the network trunkline. This permits the connection of multiple power supplies to the trunk without mutual interference. Additional information on the IDC connector is found on page 6–14.

Dimensions—mm (in)



Product Selection

Connector Style	Rating	Wiring Diagram	Cable Length—m (ft)	Cat. No. Unsealed	Cat. No. Sealed
Splice Kit	24V DC 8 A	V+ (Red) V+ Can–H (White) Can–H Can–L (Blue) Can–L V– (Black) V–	0.3 (1.0)	1485P–P1H4–S	1485P–P1E4–S
Power Isolation Splice Kit		V+ (No Connection) V+ Can–H (White) Can–H Can–L (Blue) Can–L V– (Black) V–		1485P–P1H4–SX	1485P–P1E4–SX

DeviceNet™ Flat Media System—KwikLink™ Heavy Duty

Insulation Displacement Connectors

Flat Media

Micro Style IDC

Open Style IDC

Terminator

Features

- Sealed and unsealed versions
- Quick simple installation
- Rugged Valox housing
- Includes interface and IDC module
- Terminator includes interface, IDC module, and flat cable end cap

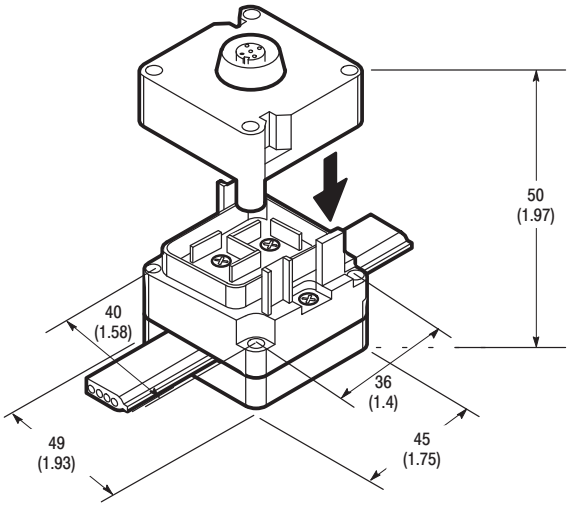
Specifications

Storage Temperature—C (F)	–40…+85° (–40…+185°)
Operating Temperature—C (F)	–25…+75° (–13…+167°)
Enclosure Rating	Unsealed: NEMA 1; IP 60 (IEC 529) Sealed: NEMA 4, 6P, 13; IP 67 (IEC 529) & 1200 psi (8270 kPa) washdown
Vibration	1.5 mm displacement @ 10…500 Hz, 10 G peak, 3 planes
Housing Material	Valox®
Dimensions	45 mm x 49 mm x 50 mm (1.8 in x 1.8 in x 2 in)

Description

Allen-Bradley KwikLink Insulation Displacement Connectors (IDCs) interface drop cables to the flat cable trunkline with optimal plug-and-play capability at minimal cost. The hinged, two-piece base snaps snugly around the flat cable at any point along the trunk. Contact is made with the cable's four conductors by tightening two screws that drive the contacts through the cable jacket and into the conductors. The upper portion of the IDC provides the connection to the drop cable and is available in several versions including micro- and open-style connectors. Sealed versions offer NEMA 6P and 13, IP 67 and 1200 psi washdown protection and feature a wide working temperature range (–25...75°C (–13...167°F)) for outdoor use. The compact Valox® construction (roughly 2 inch square) makes KwikLink IDCs chemically resistant for use in harsh industrial environments.

Dimensions—mm (in)



Product Selection

Connector Style	Rating	Connector Material	Color	Cat. No.	
				Unsealed	Sealed
Terminator	24V DC 8 A	Valox®	Black	1485A–T1H4	1485A–T1E4
Micro Style	24V DC 3 A			1485P–P1H4–R5	1485P–P1E4–R5
Open Style	24V DC 8 A			1485P–P1H4–T4	—

Flat Media

Mini Style Pigtail Drop IDC

Cable Drop IDC

Features

- Sealed and unsealed versions
- Quick simple installation
- Rugged Valox housing and PVC cable
- Includes tap/drop and IDC connection
- Flying leads or female mini style connector

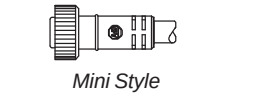
Specifications

Storage Temperature—C (F)	–40…+85° (–40…+185°)
Operating Temperature—C (F)	–25…+75° (–13…+167°)
Enclosure Rating	Unsealed: NEMA 1; IP 60 (IEC 529) Sealed: NEMA 6P, 13; IP 67 (IEC 529) and 1200 psi (8270 kPa) washdown
Vibration	1.5 mm displacement @ 10…500 Hz, 10 G peak, 3 planes
Housing Material	Valox®
Dimensions	45 mm x 49 mm x 59 mm (1.8 in x 1.8 in x 2.3 in)

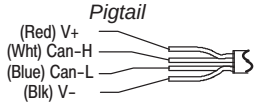
Description

KwikLink pigtail drops are Insulation Displacement Connectors (IDC) with integral Class 1 round cables for interfacing devices or power supplies to flat cable. These components are Class 1 rated (8 A at 24V DC) and are available in multiple lengths for application flexibility. Each model includes both the pigtail drop module and the insulation displacement connector. For additional information on the IDC connector, see page 6–15.

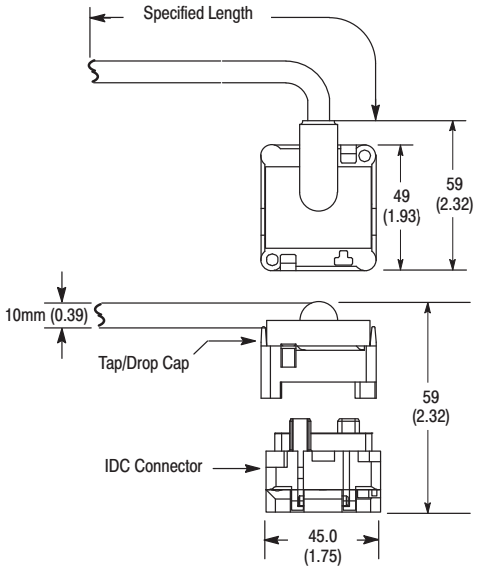
Dimensions—mm (in)



Mini Style Pigtail



Cable Drop



Product Selection

Connector Style	Rating	Cable Jacket Material	Cable Length—m (ft)	Cat. No.	
				Unsealed	Sealed
Cable Drop	24V DC 8 A	Grey PVC	1 (3.2)	1485T–P1H4–B1	1485T–P1E4–B1
			2 (6.5)	1485T–P1H4–B2	1485T–P1E4–B2
			3 (9.8)	1485T–P1H4–B3	1485T–P1E4–B3
			6 (19.6)	1485T–P1H4–B6	1485T–P1E4–B6
Mini-Style Pigtail Drop			1 (3.2)	1485P–P1H4–B1–N5	1485P–P1E4–B1–N5
			2 (6.5)	1485P–P1H4–B2–N5	1485P–P1E4–B2–N5
			3 (9.8)	1485P–P1H4–B3–N5	1485P–P1E4–B3–N5
			6 (19.6)	1485P–P1H4–B6–N5	1485P–P1E4–B6–N5

DeviceNet™ Flat Media System—KwikLink™ Heavy Duty

DevicePort™

Flat Media

4- and 8-Port DevicePorts with Cable Drop

Features

- Passive
- Sealed (NEMA 6P)
- 4-Port or 8-Port
- Drop cable
- Micro quick-disconnect

Specifications

Storage Temperature—C (F)	–40…+85° (–40…185°)
Operating Temperature—C (F)	–25…+70° (–13…158°)
Enclosure Rating	NEMA 4, 6P and 1200 psi, 3.5 GPM, (60°C) 140°F temperature ;Washdown; IP 67 (IEC 529)
Shock and Vibration	5 G, 30…120 Hz
Housing Material	Chemical resistant black polymer

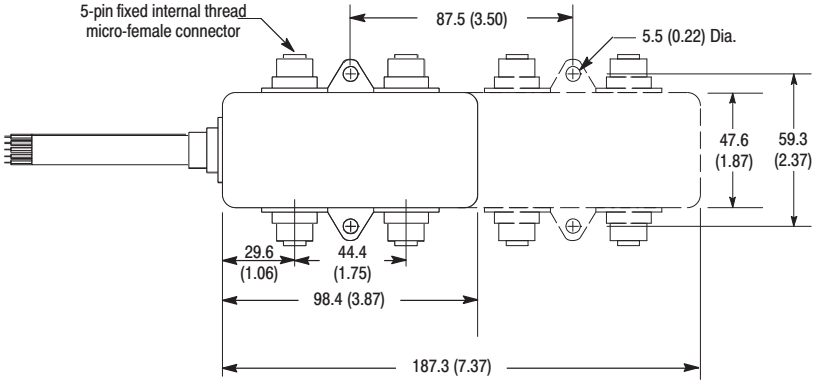
Description

DevicePort™ taps are passive multiport taps which connect via a drop cable. DevicePort™ taps are offered with 4 or 8 quick-disconnect ports in sealed versions to connect up to 8 physical nodes.

Using DevicePort reduces the number of physical taps on the trunk line from as many as eight taps to one. All device connections are micro female receptacles. Only micro male connectors with rotating coupling nuts can interface with each port. Allen-Bradley micro style DeviceNet drop cables are recommended.

Micro DevicePort Taps come standard with sealing caps for all ports. If replacement sealing caps are required, order catalog number **1485A–C3**.

Dimensions—mm (in)



Product Selection

Male Connector Style	Female Connector Style	Number of Ports	Cat. No.
2 m Cable	Micro	4	**1485P–P4R5–C2**
		8	**1485P–P8R5–C2**
Micro		4	**1485P–P4R5–D5**
		8	**1485P–P8R5–D5**
Right Angle Micro (2 m pigtail)		4	**1485P–P4R5–C2–F5**
		8	**1485P–P8R5–C2–F5**

Other DevicePort configurations are also available (page 6–44).

Flat Media

KwikLInk Drop Cordset

Features

- Drop cables designed exclusively for use with KwikLink systems
- Micro, mini and cable connection
- Ratcheting coupling nut for vibration resistance

Specifications

Coupling Nut	Epoxy coated zinc
Connector	Molded oil resistant PVC
Contacts	Gold over nickel-plated brass
Cable	Oil resistant grey PVC jacket, unshielded, 22 AWG power conductors, 24 AWG signal conductors
Cable O.D.	6 mm (0.24 in)
Operating Temperature—C (F)	–20…+105° (–4…+221°)
Maximum Current	3 Amps

Drop Cables

Designed specifically for use with KwikLink, these drop cables come in the most common connection configurations. All trunkline connections are 90° micro male with 4-wire unshielded cable. Device connection options include 5-pin straight mini and micro as well as flying leads.

Dimensions—mm (in)

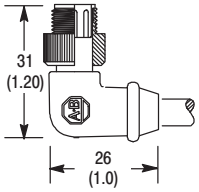


Diagram A
Right Angle Micro Male

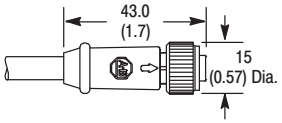


Diagram B
Straight Micro Female

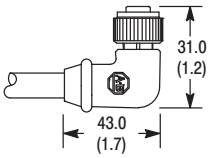


Diagram C
Right Angle Micro Female

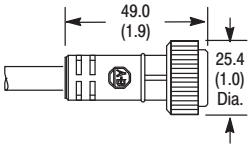


Diagram D
Straight Mini Female

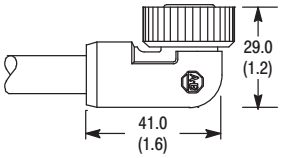


Diagram E
Right Angle Mini Female

Product Selection

KwikLink Drop Cable Cordsets and Patchcords

Connector Style	Dimensions (Diagram No.)	Cat. No. and Length—m (ft)					
		1 (3.3)	2 (6.5)	3 (9.8)	4 (13.1)	5 (16.4)	6 (19.7)
Right Angle Micro to Conductor	A	1485K–P1F5–C	1485K–P2F5–C	—	1485K–P4F5–C	—	1485K–P6F5–C
Right Angle Micro to Str Micro	A, B	1485K–P1F5–R5	1485K–P2F5–R5	1485K–P3F5–R5	1485K–P4F5–R5	1485K–P5F5–R5	1485K–P6F5–R5
Right Angle Micro to Right Angle Micro	A, C	1485K–P1F5–V5	1485K–P2F5–V5	1485K–P3F5–V5	1485K–P4F5–V5	1485K–P5F5–V5	1485K–P6F5–V5
Right Angle Micro to Str Mini	A, D	1485K–P1F5–N5	1485K–P2F5–N5	1485K–P3F5–N5	1485K–P4F5–N5	1485K–P5F5–N5	1485K–P6F5–N5
Right Angle Micro to Right Angle Mini	A, E	1485K–P1F5–Z5	1485K–P2F5–Z5	1485K–P3F5–Z5	1485K–P4F5–Z5	1485K–P5F5–Z5	1485K–P6F5–Z5

Additional drop cable configurations are available, contact your local Allen-Bradley distributor.

Note: These drop cables are only for use with the KwikLink flat cable system. They are not suitable for use with standard DeviceNet round cable systems.

DeviceNet™ Flat Media System—KwikLink™ Heavy Duty

Terminal Chambers

Flat Media

Straight Female Micro Style Terminal Chamber

Features

- Field installable
- Straight and right angle 5-pin terminal chambers
- Mini and micro versions
- Screw terminal installation

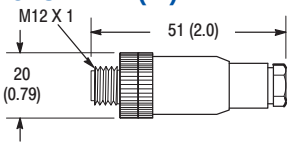
Specifications

Coupling Nut	Micro: nickel-plated brass; Mini: anodized aluminum
Connector Shell	Nylon
Contacts	Gold-plated palladium nickel
Enclosure	NEMA 6; IP 67 (IEC 529)
Operating Temperature—C (F)	–40…90° (–40…194°)

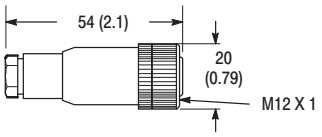
Description

Terminal chambers are passive field-installable connectors. Allen-Bradley 5-pin micro style and 5-pin mini style terminal chambers are designed for use with DeviceNet systems. These connectors contain screw terminals for quick and easy installation and are sized for use with DeviceNet thin cables. Other versions are also available for use with thick cable, see pages 6–30 and 6–31.

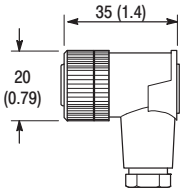
Dimensions—mm (in)



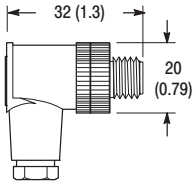
Micro Style Male



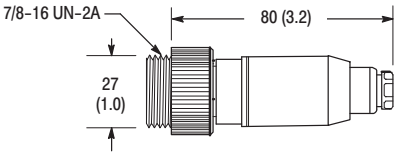
Micro Style Female



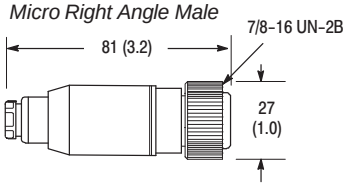
Micro Right Angle Female



Micro Right Angle Male



Mini Style Male



Mini Style Female

Product Selection

Thin Trunk or Drop Cable Terminal Chambers

Connector Style	Type	Cat. No.
Straight Micro	Male	871A–TS5–DM1
	Female	871A–TS5–D1
Right Angle Micro	Male	871A–TR5–DM1
	Female	871A–TR5–D1
Straight Mini	Male	871A–TS5–NM1
	Female	871A–TS5–N1

Flat Media

4-Pin DC Micro Patchcord

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	Epoxy coated zinc
Connector Material	Molded PUR
Contacts	Gold over nickel-plated brass
Cable	Oil resistant yellow PVC jacket, 22 AWG conductors, 300V, UL recognized and CSA certified
Cable Diameter	5 mm (0.21 in)
Bend Radius	10x diameter
Electrical	
Cable Rating	UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+105 (–4…+221)

Features

- 22 AWG conductors
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Ratcheting coupling nuts for vibration resistance

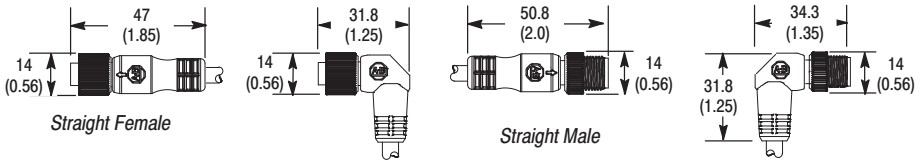
Description

KwikLink Auxiliary Power Micro drops are standard DC Micro cordsets and patchcords designed to interface between KwikLink Micro style connectors and Allen-Bradley distributed I/O products with micro power connection. The application–specific wiring allows for quick and simple connection of auxiliary power to such devices as ArmorBlock™ 8-point products and ArmorBlock MaXum™ with micro base. These products may also be connected directly to DeviceNet micro drops to provide power without disrupting network communications.

Wiring Diagrams

Male	Female
1 < --No connection--	< 1
2 < -----Brown-----	< 2
3 < ------Blue------	< 3
4 < --No connection--	< 4
5 < --No connection--	< 5

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Female Connector \ Male Connector	Cat. No.		
	Cable	**Straight Micro (Figure C)**	**Right Angle Micro (Figure D)**
Cable	**889–C2AC–S§**	**889D–M2AC–K***	**889D–E2AC–K***
Straight Micro (Figure A)	**889D–F2AC–K***	**889D–F2ACDM–K‡**	**889D–F2ACDE–K‡**
Right Angle Micro (Figure B)	**889D–R2AC–K***	**889D–R2ACDM–K‡**	**889D–R2ACDE–K‡**

* Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths (i.e., **889D–F2AC–K2**).
‡ Replace symbol with 0M3 (1 ft), 1 (1 m), 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths (i.e. **889D–R2ACDE–K0M3**).
§ Replace symbol with length in meters 50. 100, or 200m (i.e., **889–C2AC–S50**).

DeviceNet™ Flat Media System—KwikLink™ Heavy Duty

Auxiliary Power Insulation Displacement Connectors

Flat Media

Mini Style Pigtail Drop IDC

Features

- Designed for interfacing auxiliary power connections
- Quick simple installation
- Rugged Valox housing and PVC cable
- Includes tap/drop and insulation displacement connection
- Flying leads or female mini style connector

Wiring

Device End	Flat Cable
Black (pin 1)	Black
White (pin 2)	Blue
Red (pin 3)	Red
Green (pin 4)	White

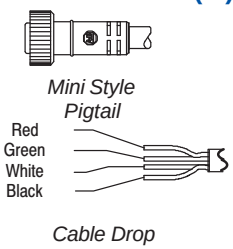
Specifications

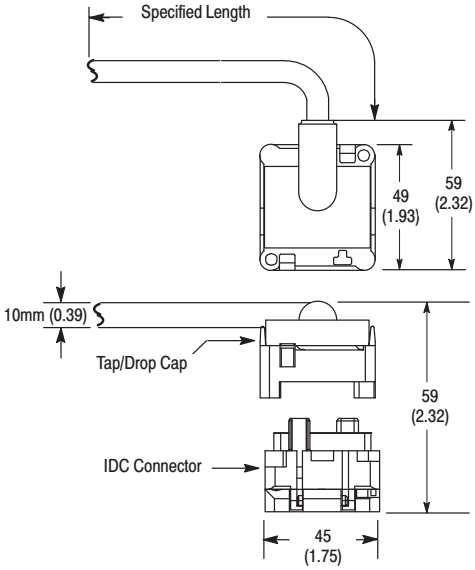
Operating Temperature—C (F)	–25…+75° (–13…+167°)
Enclosure Rating	NEMA 6P, 13; IP 67 (IEC 529) and 1200 psi (8270 kPa) washdown
Vibration	1.5 mm displacement @ 10…500 Hz, 10 G peak, 3 planes
Housing Material	Valox®
Cable	Oil resistant yellow PVC jacket, 16 AWG stranded copper, 600V, UL recognized and CSA certified, STOOW–A
Dimensions	45 mm x 49 mm x 59 mm (1.8 in x 1.8 in x 2.3 in)

Description

KwikLink Auxiliary Power pigtail drops are Insulation Displacement Connectors (IDC) with integral yellow STOOW round cables for connecting auxiliary power to output devices or hardened I/O platforms such as ArmorBlock MaXum or FlexArmor. These components are Class 1 rated (8 A at 24V DC) and are available in multiple lengths for application flexibility. Each model includes both the pigtail drop module and the IDC. Additional information on the IDC can be found on page 6–15.

Dimensions—mm (in)





Product Selection

Connector Style	Rating	Device End Connection	Cable Length—m (ft)	Cat. No.
Cable Drop	24V DC 8 A	Yellow STOOW PVC Cable	1 (3.28)	**1485T–P1E4–C1**
			2 (6.5)	**1485T–P1E4–C2**
			3 (9.8)	**1485T–P1E4–C3**
			6 (19.7)	**1485T–P1E4–C6**
Mini-Style Pigtail Drop		 4-Pin Mini Female	1 (3.28)	**1485T–P1E4–C1–N4**
			2 (6.5)	**1485T–P1E4–C2–N4**
			3 (9.8)	**1485T–P1E4–C3–N4**
			6 (19.7)	**1485T–P1E4–C6–N4**

Accessories

In order to support all of the options associated with the flexibility of KwikLink, Rockwell Automation offers an array of accessories including cable mounts, conduit adaptors, covers for unused nodes, and threaded plugs for sealing unused micro connectors.

Cat. No.	Description
1485A–C5E4	KwikLink module dust cap
1485A–CAD	Conduit adaptor (PG21)
1485A–FCM	Flat cable mounting clamp
1485A–M12	Plastic Threaded plug (M12)
1485A–C3	Aluminum Threaded Plug (M12)
1485A–CAP	Flat Cable End Cap

Dust Cap

Conduit Adaptor

Flat Cable End Cap

Mounting Clamp

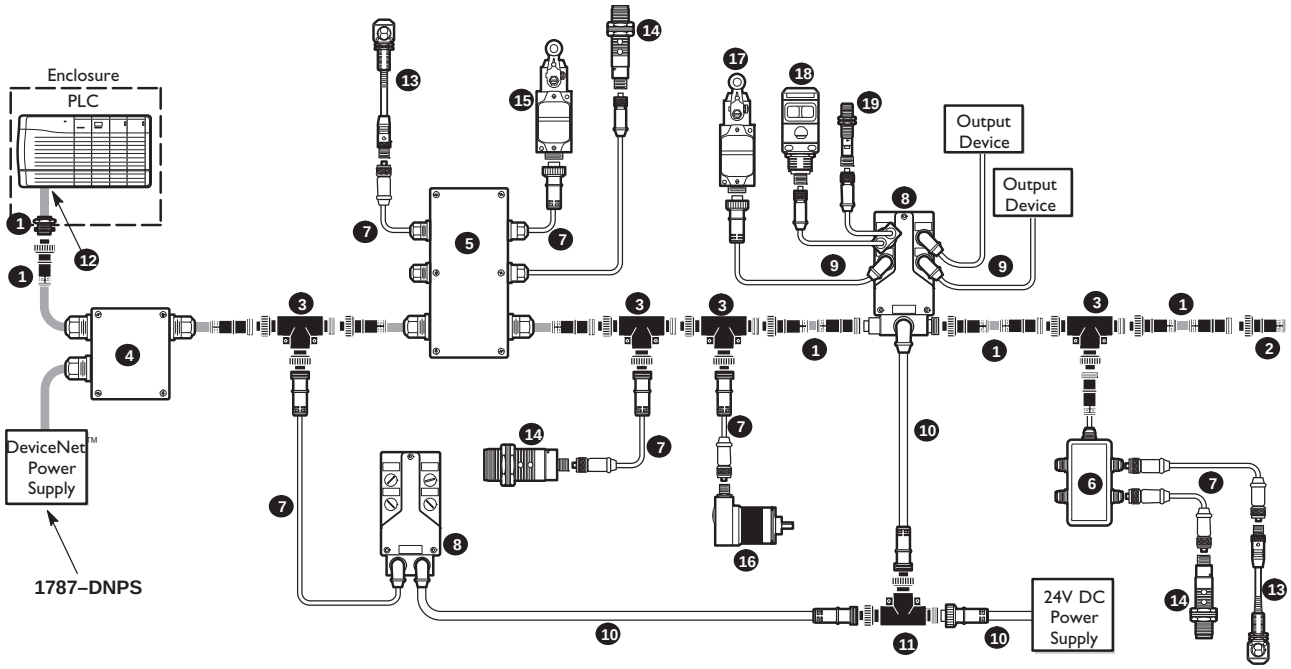
M12 Threaded Plug (Plastic)

M12 Threaded Plug (Aluminum)

DeviceNet™ Round Media

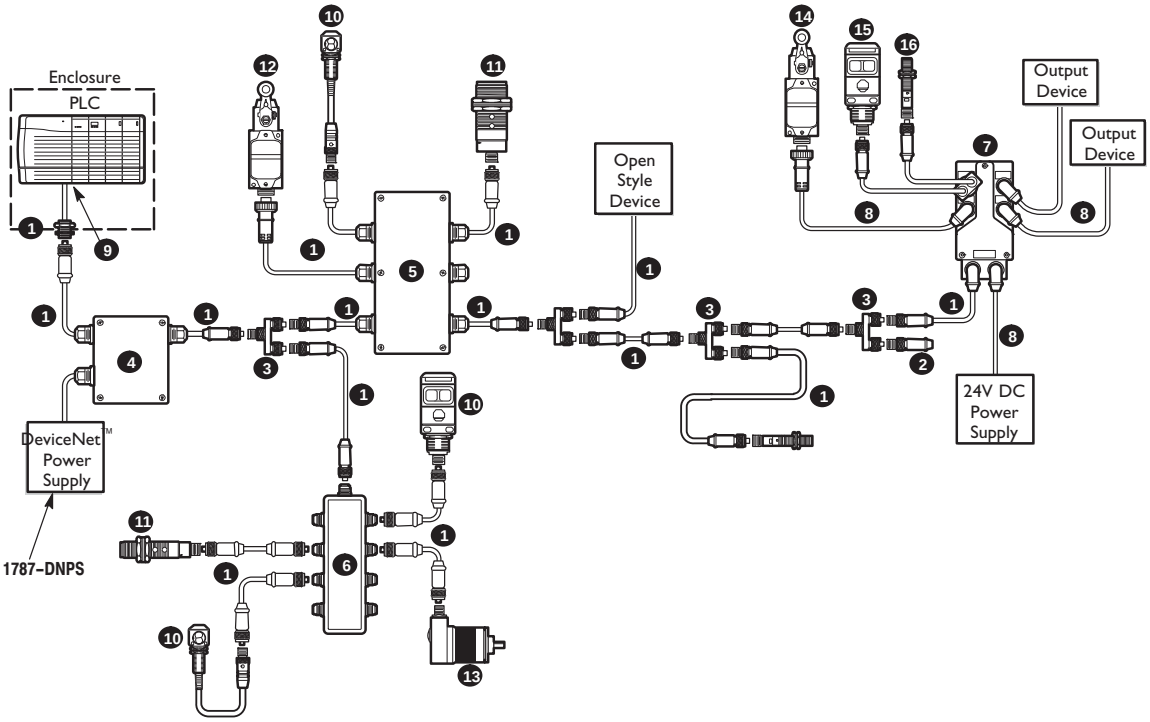
Thick Trunk

Typical Configuration



See the *Sensors* Catalog.

Typical Configuration



1 Thin Trunk/Drop Cable . . page 6–26
2 Terminator . . . . . page 6–33
3 T-Port . . . . . page 6–36
4 Power Tap . . . . . page 6–40
5 DeviceBox . . . . . page 6–41
6 DevicePort . . . . . page 6–42, 6–44
7 ArmorBlock MaXum . . . . page 7–23
8 Standard Cordsets . . . . . page 3–43
9 Open Terminator . . . . . page 6–48
10 DeviceNet Photoelectric
11 DeviceNet Inductive
12 DeviceNet Limit Switch
13 DeviceNet Encoder
14 Standard Limit Switch
15 Standard Photoelectric
16 Standard Proximity

See the *Sensors* Catalog.

Round Media

Thick Trunk Cable

Mini to Mini Thick Patchcord

Description

Allen-Bradley thick trunk cable is available in raw spools as well as specified lengths with any of several connectors preattached. Cordsets and patchcords are prewired and factory-molded to assure reliable connection. Allen-Bradley thick trunk cables provide a rugged and durable foundation for DeviceNet systems. Although typically used in thick trunk systems as trunkline only, Allen-Bradley thick cable can also be used for DeviceNet drops. CL1 600V-rated ODVA Type V cable is also available in spools only. ODVA Type V cable provides greater flexibility in applications requiring higher voltage jacket ratings.

Features

- PVC jacket offers good oil and chemical resistance
- Watertight connections (NEMA 4, 6P; IP 67)
- Gold plated contacts
- Ratcheting coupling nut for vibration resistance

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	Epoxy Coated Zinc
Cable Jacket Material	Grey PVC
Conductors	1 pair 15 AWG, 1 pair 18 AWG, and drain
Contacts	Gold-plated machined brass
Cable Diameter	Thick: 12.2 mm (0.48 in); ODVA Type V: 12.8 mm (0.50 in)
Bend Radius	10x diameter
Electrical	
Cable Rating	Thick: UL–Type PLTC 300V or CM 75C (167F) or AWM style 2464, CSA– AWM I/II A/B 80C (176F) 300V FT1 ODVA Type V Cable: Type V Trunk Cable, UL 600V Type TC–ER Sunlight Resistant 75C Dry Open Wiring, CSA AWM I/II A/B 75C 600V FT1, Oil Resistant
Assembly Rating	Thick: 300V, 8 A (4A NEC)
Environmental	
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13; IP 67; 1200 psi (8720 kPa) washdown
Operating Temperature—C (F)	–20…+70° (–15…+158°)

Dimensions—mm (in)

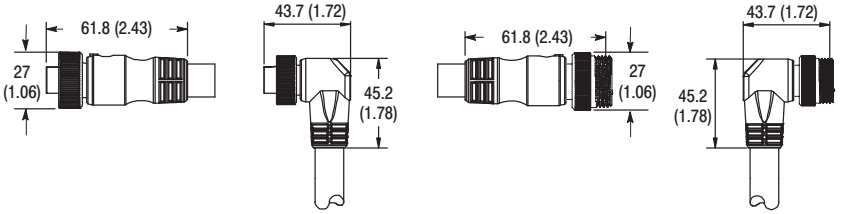
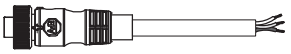
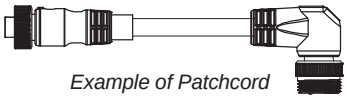


Figure A Straight Female | *Figure B Right Angle Female* | *Figure C Straight Male* | *Figure D Right Angle Male*

Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset



Example of Patchcord

Pinout and Color Code

	Face View Pinout	
		
	Mini Connector	
	Female	Male
Color Code	1 Drain 2 Red (V+) 3 Black (V–)	4 White (CAN_H) 5 Blue (CAN_L)

Product Selection

Thick Cable

Male Connector / Female Connector	Cat. No.		
	Cable	Mini Straight (Figure C)	Mini Right Angle (Figure D)
Cable	1485C–P1A‡	1485C–P*M5–C	1485C–P*W5–C
Mini Straight (Figure A)	1485C–P*N5–C	1485C–P*N5–M5	1485C–P*W5–N5
Mini Right Angle (Figure B)	1485C–P*Z5–C	1485C–P*M5–Z5	1485C–P*W5–Z5

* Replace symbol with desired length in meters (i.e. **1485C–P1N5–M5** for a 1 meter cable). Standard cable lengths: 1m, 2m, 3m, 4m, 5m, 6m, 8m, 10m, 12m, 18m, 24m, 30m.
‡ Replace symbol with 50 (50 m (164 ft)), 150 (150 m (492 ft)), 300 (300 m (984 ft)), or 500 (500 m (1640 ft)).

Note: Stainless steel versions may be ordered by adding “S” to the cat. no. (e.g., **1485CS–P1N5–M5**).

ODVA Type V Cable

Description	Cat. No.
Cable Spool	1485C–P1BS§

§ Replace symbol with length in meters (i.e., **1485C–P1BS75** for 75 meter spool). Available lengths are 75 m (246 ft), 200 m (656 ft), and 420 m (1378 ft).

Note: Distance performance of this cable type is limited to that of flat cable (see page 6–4).

Round Media

Thin Cable

Mini to Micro Thin Cordset

Description

Rockwell Automation/Allen-Bradley offers thin cable in spools and pre-molded DeviceNet cables in various lengths for use as trunk or drops. Designed in a heavy-duty, chemical-resistant yellow CPE jacket, or standard grey PVC jacket, these cables have been designed specifically for harsh industrial environments including those applications involving dirt, oil and fluids. The molded construction and gold plated connector pins make for reliable connections that are impervious to most external contaminants.

Features

- Grey PVC jacket for standard applications and yellow CPE jacket for more demanding environments
- Water tight performance to a rating of IP 67
- Inserts are securely bonded to the connector body for superior side load and pull-out resistance
- Gold plated contacts for corrosion resistance
- Ratcheting coupling nut for vibration resistance

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	Epoxy Coated Zinc
Cable Jacket Material	Yellow CPE (Chemical Resistant) or Grey PVC
Conductors	1 pair 22 AWG, 1 pair 24 AWG and drain
Contacts	Mini: Gold-plated machined brass; Micro: Gold over nickel-plated brass
Cable Diameter	6.9 mm (0.27 in)
Bend Radius	10x diameter
Current, Max.	3 Amps
Electrical	
Cable Rating	Grey PVC: UL– CM 75°C (167°F) or AWM 2464, CSA– AWM II A/B 80°C (176°F) 300V FT4; Yellow CPE: UL– CL2 or CM 75°C (167°F) or AWM 20869 80°C (176°F), CSA– AWM I/II A/B 80°C (176°F) 30
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13; IP 67; 1200 psi (8720 kPa) washdown
Operating Temperature—C (F)	–20…+70° (–15…+158°)

Dimensions—mm (in)

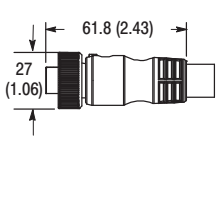


Figure A
Straight Female

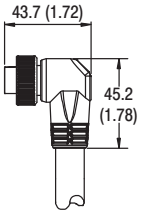


Figure B
Right Angle Female

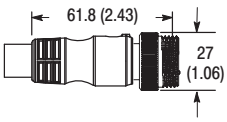


Figure C
Straight Male

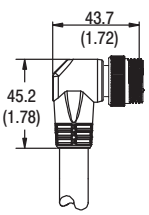


Figure D
Right Angle Male

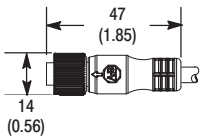


Figure E
Straight Female

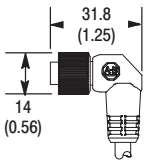


Figure F
Right Angle Female

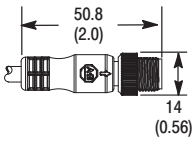


Figure G
Straight Male

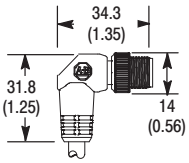
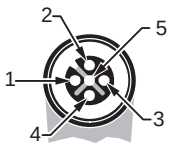
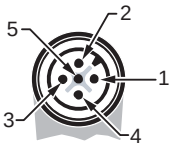


Figure H
Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

	Face View Pinout			
				
	Mini Connector		Micro Connector	
	Female	Male	Female	Male
Color Code	1 Drain 2 Red (V+) 3 Black (V–)	4 White (CAN_H) 5 Blue (CAN_L)		

Product Selection

Grey PVC Thin Cable

Female Connector \ Male Connector	Cat. No.				
	Cable	Mini Straight (Figure C)	Mini Right Angle (Figure D)	Micro Straight (Figure G)	Micro Right Angle (Figure H)
Cable	1485C–P1CG‡	1485G–P*M5–C	1485G–P*W5–C	1485G–P*D5–C	1485G–P*F5–C
Mini Straight (Figure A)	1485G–P*N5–C	1485G–P*N5–M5	1485G–P*W5–N5	1485G–P*D5–N5	1485G–P*N5–F5
Mini Right Angle (Figure B)	1485G–P*Z5–C	1485G–P*M5–Z5	1485G–P*W5–Z5	1485G–P*D5–Z5	1485G–P*F5–Z5
Micro Straight (Figure E)	1485G–P*R5–C	1485G–P*M5–R5	1485G–P*W5–R5	1485G–P*R5–D5	1485G–P*R5–F5
Micro Right Angle (Figure F)	1485G–P*V5–C	1485G–P*M5–V5	1485G–P*W5–V5	1485G–P*D5–V5	1485G–P*F5–V5

Yellow CPE Thin Cable

Female Connector \ Male Connector	Cat. No.				
	Cable	Mini Straight (Figure C)	Mini Right Angle (Figure D)	Micro Straight (Figure G)	Micro Right Angle (Figure H)
Cable	1485C–P1C‡	1485R–P*M5–C	1485R–P*W5–C	1485R–P*D5–C	1485R–P*F5–C
Mini Straight (Figure A)	1485R–P*N5–C	1485R–P*N5–M5	1485R–P*W5–N5	1485R–P*D5–N5	1485R–P*N5–F5
Mini Right Angle (Figure B)	1485R–P*Z5–C	1485R–P*M5–Z5	1485R–P*W5–Z5	1485R–P*D5–Z5	1485R–P*F5–Z5
Micro Straight (Figure E)	1485R–P*R5–C	1485R–P*M5–R5	1485R–P*W5–R5	1485R–P*R5–D5	1485R–P*R5–F5
Micro Right Angle (Figure F)	1485R–P*V5–C	1485R–P*M5–V5	1485R–P*W5–V5	1485R–P*D5–V5	1485R–P*F5–V5

* Replace symbol with 1 (1 m), 2 (2 m), 3 (3 m), 4 (4 m), 5 (5 m) or 6 (6 m) for standard cable lengths.
‡ Replace symbol with 50 (50 m (164 ft)), 150 (150 m (492 ft)), 300 (300 m (984 ft)), or 600 (600 m (1968 ft)).

Note: Stainless steel versions may be ordered by adding "S" to the catalog number (e.g. **1485RS–P1M5–C**).

Round Media

Mini Female Thin Receptacle

Description

Allen–Bradley receptacles are available with either thick or thin cable styles in specified lengths. Receptacles provide a simple rugged means of thru–panel wiring.

Features

- Thick or thin cable types
- 1/2 in–14 NPT mounting threads
- Rugged single piece construction

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Housing Material	Anodized Aluminum with Clear Sealant
Cable Jacket Material	Thick: Grey PVC; Thin: Grey PVC or Yellow CPE
Conductors	Thick: 1 pair 15 AWG, 1 pair 18 AWG, and drain; Thin: 1 pair 22 AWG, 1 pair 24 AWG, and drain
Contacts	Mini: Gold plated machined brass; Micro: Gold over nickel-plated brass
Cable Diameter	Thick: 12.2 mm (0.48 in); Thin: 6.9 mm (0.27 in)
Bend Radius	10x diameter
Current, Max.	Thick: 8 A (4A NEC); Thin: 3 A
Electrical	
Cable Rating	Thick: UL–Type PLTC 300V or CM 75°C (167°F) or AWM style 2464, CSA– AWM I/II A/B 80°C (176°F) 300V FT1; Thin, Grey PVC: UL– CM 75°C (167°F) or AWM 2464, CSA– SWM II A/B 80°C (176°F) 300V FT4; Thin, Yellow CPE: UL– CL2 or CM 75°C (167°F) or AWM 20869 80°C (176°F), CSA– AWM I/II A/B 80°C (176°F) 30
Assembly Rating	Thick: 300V, 8 A (4A NEC); Thin: 250V, 4 A
Environmental	
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13; IP67, 1200 psi (8720 kPa) washdown
Operating Temperature—C (F)	–20…+70° (–15…+158°)

Dimensions—mm (in)

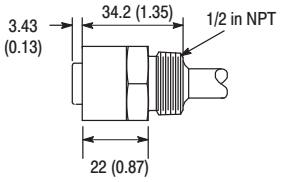
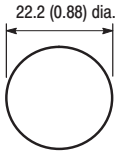


Figure A
Mini Female Receptacle



Typical Knockout

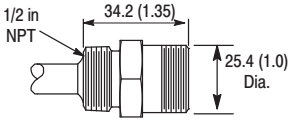


Figure B
Mini Male Receptacle

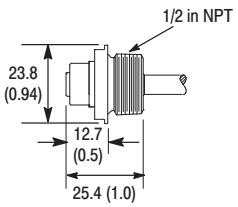


Figure C

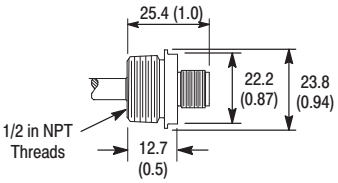


Figure D

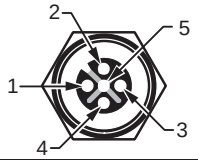
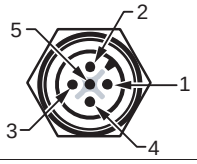
Dimensions are approximate. Illustrations are not drawn to scale.

Accessories

Description	Cat. No.
1/2 in 14-NPT Mounting Nuts	**889A–U1NUT–10★**
Flat Sealing Washers	**889A–U1FSL–10★**

★ Sold in bags of 10.

Pinout and Color Code

	Face View Pinout			
				
	Mini Connector		**Micro Connector**	
	Female	**Male**	**Female**	**Male**
Color Code	1 Drain 2 Red (V+) 3 Black (V–)		4 White (CAN_H) 5 Blue (CAN_L)	

Product Selection

Cable Type	Connector Type	End Style	Dimensions	Mounting Threads	Cat. No.
Thick Grey PVC	Mini	Female	Figure A	1/2 in–14 NPT	1485F–P*N5–A
		Male	Figure B		1485F–P*M5–A
Thin Grey PVC		Female	Figure A		1485F–P*N5–CG
		Male	Figure B		1485F–P*M5–CG
	Micro	Female	Figure C		1485F–P*R5–CG
		Male	Figure D		1485F–P*D5–CG
Thin Yellow CPE	Mini	Female	Figure A		1485F–P*N5–C
		Male	Figure B		1485F–P*M5–C
	Micro	Female	Figure C		1485F–P*R5–C
		Male	Figure D		1485F–P*D5–C

* Replace symbol with desired length in meters (i.e. **1485F–P1N5–A** for a 1 meter cable). Standard cable lengths: 1 m…6m.

Note: Stainless steel versions may be ordered by adding "S" to the catalog number (e.g. **1485FS–P1N5–A**).

Round Media

Straight Female Micro Style

Female Mini Style

Description

Terminal chambers are passive field-installable connectors. Allen-Bradley 5-pin micro style and 5-pin mini style terminal chambers are designed for use with DeviceNet systems. These connectors contain screw terminals for quick and easy installation and are sized for use with either DeviceNet thick or thin cables.

Features

- Field installable
- Straight and right angle 5-pin terminal chambers
- Mini and micro versions
- Screw terminal installation
- Thick and thin cable versions

Specifications

Mechanical	
Coupling Nut Material	Micro: nickel-plated brass; Mini: anodized aluminum
Connector Shell Material	Nylon
Contacts	Mini: Gold-plated brass; Micro: Gold over nickel-plated brass
Shock/Vibration	5 G, 30…120 Hz
Electrical	
Assembly Rating	Mini: 250V, 9 A; Micro: 125V, 4 A
Environmental	
Enclosure Type Rating	NEMA 6; IP 67 (IEC 529)
Operating Temperature—C (F)	–25…+70° (–13…+158°)

Dimensions—mm (in)

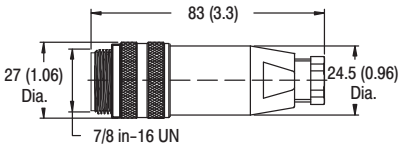


Figure A
Mini Style Female

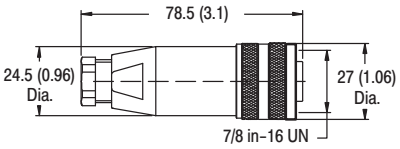


Figure B
Mini Style Male

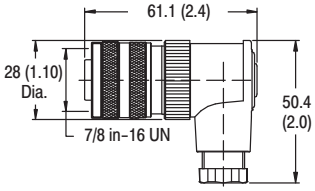


Figure C
Micro Style Female

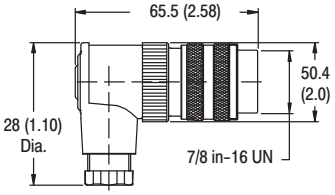


Figure D
Micro Style Male

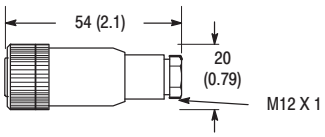


Figure E
Micro Style Female

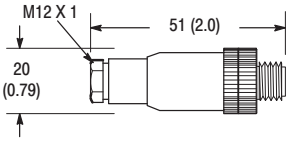


Figure F
Micro Style Male

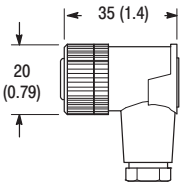


Figure G
Micro Right Angle Female

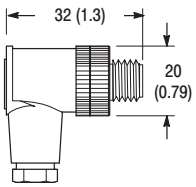
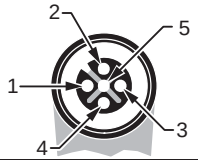
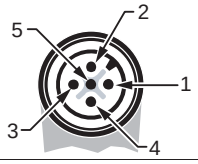


Figure H
Micro Right Angle Male

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

	Face View Pinout			
				
	Mini Connector		Micro Connector	
	Female	Male	Female	Male
Color Code	1 Drain 2 Red (V+) 3 Black (V–) 4 White (CAN_H) 5 Blue (CAN_L)			

Product Selection

Media Use	Connector Type	Connector Style	Type	Dimensions	Cat. No.
Thick	Mini	Straight	Female	A	871A–TS5–N3
			Male	B	871A–TS5–NM3
Thin			Female	A	871A–TS5–N1
			Male	B	871A–TS5–NM1
		Right Angle	Female	C	871A–TR5–N1
			Male	D	871A–TR5–NM1
	Micro	Straight	Female	E	871A–TS5–D1
			Male	F	871A–TS5–DM1
		Right Angle	Female	G	871A–TR5–D1
			Male	H	871A–TR5–DM1

Round Media

Mini Bulkhead Pass-thru

Micro Bulkhead Pass-thru

Description

Bulkhead pass-through connectors are passive male to female connectors within a threaded metal housing. These connectors increase system modularity and ease installation in through-panel applications.

Features

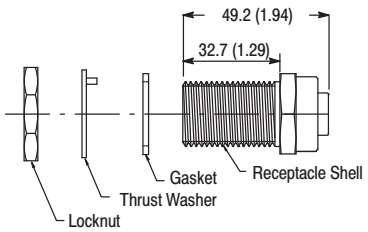
- Male to female bulkhead passthru provides flexibility in thru-panel installations
- Thick cable provides 5-pin mini version for use with DeviceNet wiring
- Thin cable provides standard 5-pin DC micro version allows use for a variety of pin-count configurations

Specifications

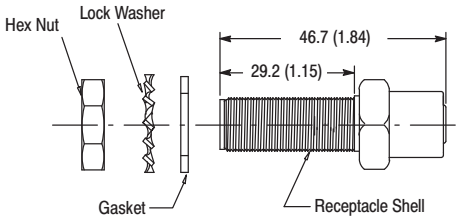
	Mini	Micro
Mechanical		
Shell and Lockout Material	Nickel-plated brass	
Connector Insert Material	PVC	Nylon
Gasket	Neoprene	
Thrust Washer	Nylon	Steel Aloy
Contact Material	Gold-plated palladium nickel	
Electrical		
Assembly Rating	600V, 8 A	250V, 4 A
Environmental		
Enclosure Type Rating	IP 67	
Operating Temperature—C (F)	–20…+105° (–4…+221°)	–20…+80° (–4…+176°)

Dimensions—mm (in)

Mini



Micro



Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Connection Type	Media Use	Cat. No.
Mini 5-pin	Thick or Thin	1485A–CXN5–M5
Micro 5-pin	Thin	1485A–CXR5–D5

Note: Stainless steel mini version may be ordered by adding “S” to the catalog number (e.g., **1485AS–CXN5–M5**).

Round Media

Mini Style Terminator

Micro Style Terminator

Description

Terminators are installed at both ends of the network to stabilize the DeviceNet system electrically. Offered in both male and female versions, each terminator contains a 121 ohm load resistor to ensure network functionality.

Features

- Male and female connector terminators
- Electrically stabilize network
- NEMA 1, 2, 4, 6P, 12, 13; IP 67 rating

Specifications

Mechanical	
Coupling Nut Material	Epoxy Coated Zinc
Contacts	Mini: Gold-plated brass; Micro: Gold over nickel-plated brass
Electrical	
Assembly Rating	Mini: 250V, 8 A; Micro: 250V, 4 A
Environmental	
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P; 12, 13, IP 67, 1200 psi (8720 kPa) washdown
Operating Temperature—C (F)	–25…+70° (–13…+158°)

Dimensions—mm (in)

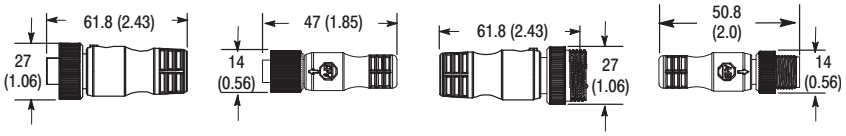


Figure A *Mini Straight Female*
Figure B *Micro Straight Female*
Figure C *Mini Straight Male*
Figure D *Micro Straight Male*

Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Connector Type	Wiring Diagram	Gender	Media Use	Cat. No.
Mini	1 — NC 2 — NC 3 — NC 4 — 121 Ω 5	Male	Thick or Thin	1485A–T1M5
		Female		1485A–T1N5
Micro		Male	Thin	1485A–T1D5
		Female		1485A–T1R5

Note: Stainless steel versions may be ordered by adding “S” to the catalog number (e.g., **1485AS–T1M5**).

Round Media

Mini Style T-Port

Description

T-ports are another alternative for connecting to the trunk line. The T-port is sealed to NEMA 6P and has a right or left keyway for positioning purposes. An example of this would be if the customer connects a Photoelectric directly off the T-port. Depending on which direction the Photoelectric was positioned would dictate a right or left keyway. DeviceNet nodes can connect directly into the T-port or by using a drop cable or DevicePort™.

For power input requirements on your DeviceNet network, Rockwell Automation/Allen-Bradley offers a T-port configuration specifically designed for power input. These NEMA 6P rated passive coupling devices allow power to be applied to the trunkline through the use of quick-disconnect cables.

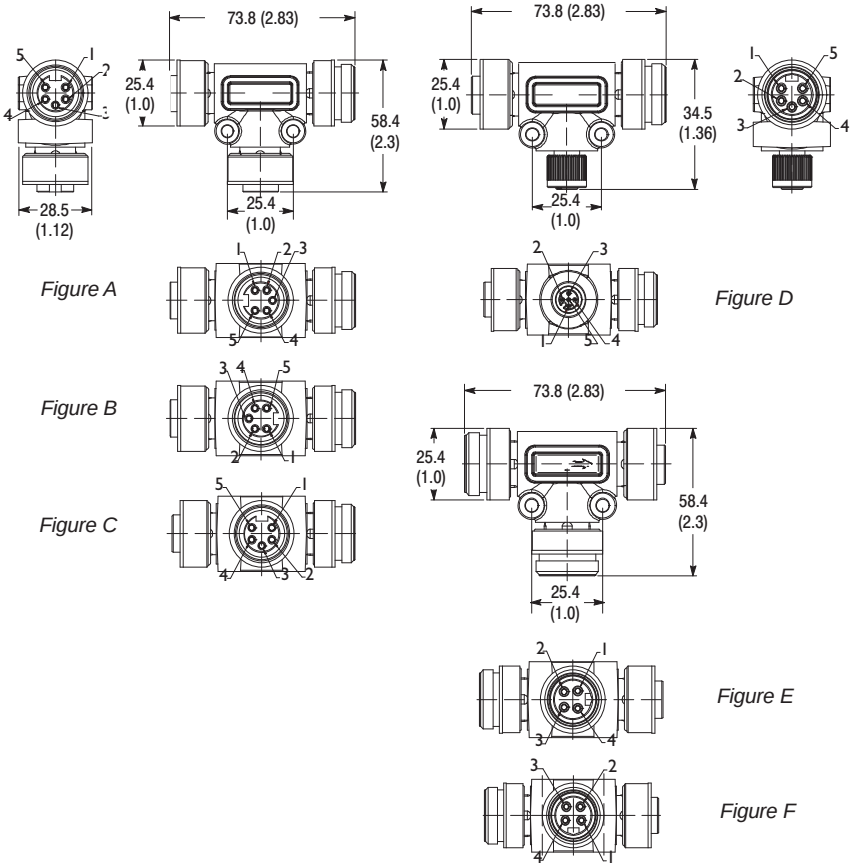
Features

- Passive
- Sealed (NEMA 6P, IP 67)
- Mini quick-disconnect trunk connections
- Mini or micro quick-disconnect drop connections
- Variety of keying for positioning

Specifications

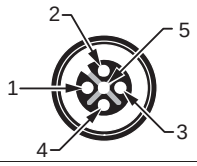
Mechanical	
Coupling Nut Material	Epoxy Coated Zinc
Material	TPE
Contacts	Mini: Gold-plated brass; Micro: Gold-plated palladium nickel
Electrical	
Assembly Rating	Mini to Mini: 50V, 8 A; Mini to Micro: 50V, 4 A
Environmental	
Enclosure Type Rating	NEMA 6P, 12 and 13; IP 67, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–25…+70° (–13…+158°)

Dimensions—mm (in)

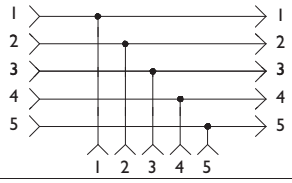
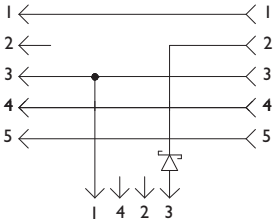


Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

	Face View Pinout			
				
	Mini Connector		**Micro**	**Mini**
	Female	**Male**	**Female**	**Male**
Color Code		1 Drain 2 Red (V+) 3 Black (V–)	4 White (CAN_H) 5 Blue (CAN_L)	

Product Selection

T-Port Use	Wiring Diagram	Trunk Connectors	Drop Connector	Drop Orientation	Cat. No.
Device Drop		Mini	Mini Female 5-Pin	Figure A	1485P–P1N5–MN5KF
				Figure B	1485P–P1N5–MN5KM
				Figure C	1485P–P1N5–MN5KT
			Micro Female 5-Pin	Figure D	1485P–P1R5–MN5
Power Input			Mini Male 4-Pin	Figure E	1485T–P1M4–MN5KF
				Figure F	1485T–P1M4–MN5KT

Note: Stainless steel versions may be ordered by adding “S” to the catalog number (e.g., **1485PS–P1N5–MN5KF**).

Round Media

Micro Style T-Port

Description

T-ports are another alternative for connecting to the trunk line. The T-port is sealed to NEMA 6P with micro quick-disconnect. DeviceNet nodes can connect directly into the T-port or by using a drop cable or DevicePort™.

Features

- Passive
- Sealed (NEMA 6P, IP 67)
- Micro quick-disconnect trunk and drop connections
- In-line connectors for narrow trunk and drop runs

Specifications

Mechanical	
Coupling Nut Material	Epoxy-coated zinc
Material	PUR
Contacts	Gold over nickel-plated brass
Electrical	
Assembly Rating	250V, 4 A
Environmental	
Enclosure Type Rating	NEMA 6P, 12 and 13, IP 67 (IEC 529), 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+70° (–4…+158°)

Dimensions—mm (in)

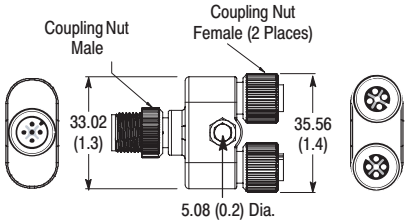


Figure A

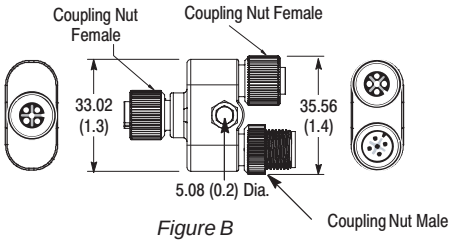
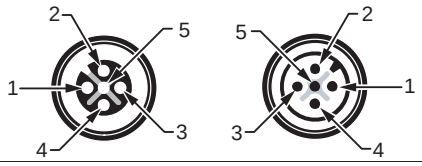


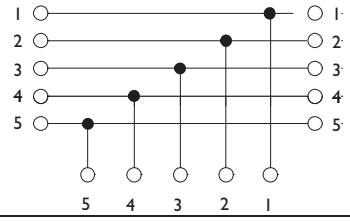
Figure B

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

	Face View Pinout	
		
	Micro Connector	
	Female	Male
Color Code	1 Drain 2 Red (V+) 3 Black (V–)	4 White (CAN_H) 5 Blue (CAN_L)

Product Selection

T-Port Use	Wiring Diagram	Trunk Connectors	Drop Connector	Figure	Cat. No.
Device Drop		Micro	Micro	A	1485P–RDR5
				B	1485P–DRR5

Round Media

Male to Male Gender Changer

Right Angle Adaptor

Description

Gender and configuration changers provide flexibility in managing complex network layouts. Gender changer models allow existing female connectors to become male, and vice–versa. The configuration changer model provides the ability to change an existing straight connector to a right angle, or create a tight bend in space conscious applications.

Features

- Mini connectors
- Male to male or female to female versions
- Same physical mounting as T-ports

Specifications

Mechanical	
Coupling Nut Material	Epoxy Coated Zinc
Material	TPE
Contacts	Gold-plated palladium nickel
Electrical	
Assembly Rating	50V, 8 A
Environmental	
Enclosure Type Rating	NEMA 6P, 12 and 13, IP 67, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+70° (–4…+158°)

Dimensions—mm (in)

Figure A

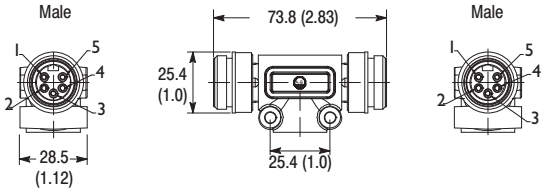


Figure B

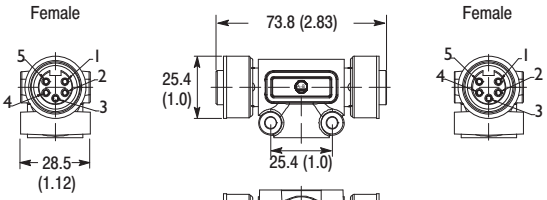
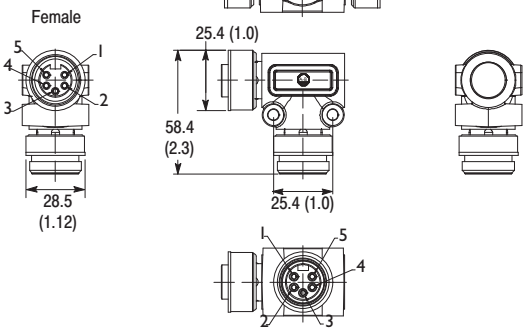


Figure C

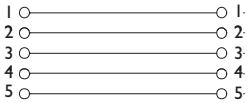


Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

	Face View Pinout	
		
	Mini Connector	
	Female	Male
Color Code	1 Drain 2 Red (V+) 3 Black (V–)	4 White (CAN_H) 5 Blue (CAN_L)

Product Selection

Product Type	Configuration	Wiring Diagram	Dimensions	Cat. No.
Gender Changer	Mini Male to Mini Male		Figure A	1485A–GCM5M5
	Mini Female to Mini Female		Figure B	1485A–GCN5N5
Configuration Changer	Mini Male to Mini Female		Figure C	1485A–RAN5–M5

Note: Stainless steel versions may be ordered by adding “S” to the catalog number (e.g., **1485AS–RAN5–M5**).

Round Media

PowerTap, Thick Cable

Description

For power requirements on your DeviceNet™ network, Rockwell Automation offers its PowerTap™. The PowerTap is a passive coupling device used to limit trunk current to agency specified values. This current limitation is provided by two standard mini blade-style fast blow type 7.5A or 3A fuses. The Allen-Bradley PowerTap™ is also used to permit the connection of multiple power supplies to the trunk without mutual interference. This is achieved through selective use or removal of appropriate fuses.

For complete information on connecting power to DeviceNet, see Rockwell Automation publication DN 6.7.2.

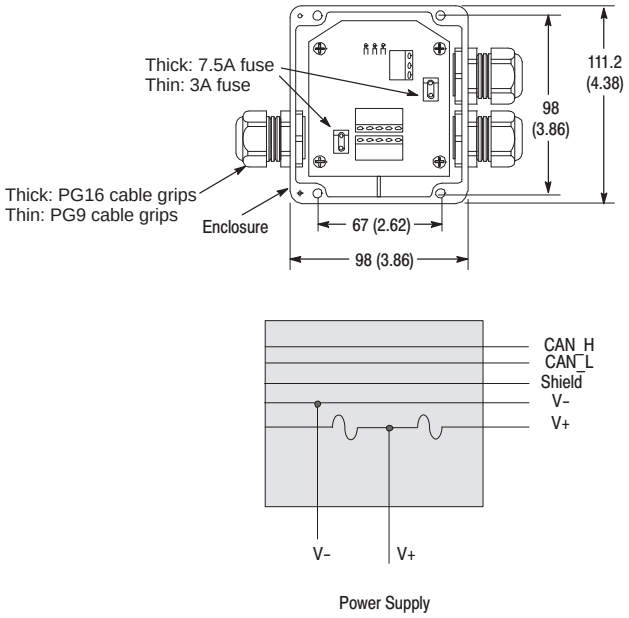
Features

- Passive
- Cage clamp terminal strip connections
- Cord grip openings

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Black polymer
Humidity	5…95% relative (noncondensing)
Washdown Rating	1200 psi (8270 kPa) at 60°C (140°F); temperature washdown;
Current	Thick: 15.0 A max. total current; (7.5 A max. per trunk) Thin: 6 A max. total current; (3 A max. per trunk)
Electrical	
Assembly Rating	Thick: 24V, 8 A; Thin: 25V, 3 A
Environmental	
Enclosure Type Rating	NEMA 3, 4X, 12 and 13
Storage Temperature—C (F)	–40…+85° (–40…+185°)
Operating Temperature—C (F)	–25…+70° (–13…+158°)

Dimensions—mm (in)



Fuse Placement Schematic

Product Selection

Media Use	Trunk Connection	Power Supply Connection	Fuse (2 included)	Cat. No.
Thick	Cable Gland/Terminal Strip	Cable Gland/Terminal Strip	7.5 A	1485T–P2T5–T5
Thin			3 A	1485T–P2T5–T5C
Installation accessory kit (see page 6–48)				1485A–ACCKIT

Round Media

4-port DeviceBox, Thick Cable

Description

DeviceBox™ taps are passive sealed junction boxes offered in a 2-, 4-, or 8-port configuration. This is a direct connection onto the trunk line, providing terminal strip connections for up to 8 intelligent nodes.

An accessories kit is available for DeviceBox™ which includes a wrench for tightening down cable grips as well as mounting hardware such as combi-head sheet metal screws and machine mounting screws. The accessories kit includes spare plugs and a cable gland which provides a protective seal as well as various other spare components (see page 6–48).

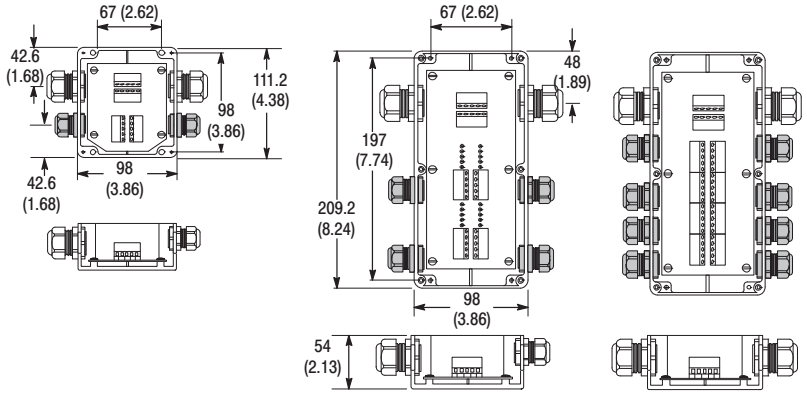
Features

- Passive
- 2-, 4- or 8-Port
- Cage clamp terminal strip connections
- Cord grip openings

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Black polymer
Humidity	5…95% relative (noncondensing)
Washdown Rating	1200 psi (8270 kPa)
Electrical	
Current	Thick: 8 A max. total current; (7.5 A max. per trunk)
Assembly Rating	24V, 8 A
Environmental	
Enclosure Type Rating	NEMA 3, 4X, 12 and 13
Storage Temperature—C (F)	–40…+85° (–40…+185°)
Operating Temperature—C (F)	–25…+70° (–13…+158°)

Dimensions—mm (in)



Note: Trunk connection in diagrams above show thick cable gland.

Product Selection

Media Use	Trunk Connection	Drop Connection	Number of Ports	Cat. No.
Thick	Thick Cable Gland/ Terminal Strip	Thin Cable Gland/ Terminal Strip	2	1485P–P2T5–T5
			4	1485P–P4T5–T5
			8	1485P–P8T5–T5
Thin	Thin Cable Gland/ Terminal Strip	Thin Cable Gland/ Terminal Strip	2	1485P–P2T5–T5C
			4	1485P–P4T5–T5C
			8	1485P–P8T5–T5C
Installation accessory kit (see page 6–48)				1485A–ACCKIT

Round Media

6-Port Thru-Trunk DevicePort with Micro Connectors

Description

Thru-trunk DevicePort™ taps are passive multiport taps which connect directly to the trunk. These DevicePort taps are offered with 4 or 6 quick-disconnect ports in sealed versions to connect up to 6 physical nodes.

Using the thru-trunk DevicePort tap reduces the number of physical taps on the trunk line from as many as six taps to one. Allen-Bradley micro DevicePorts come standard with sealing caps for all ports and replacement caps are available using catalog number **1485A–C3**. Sealing caps are not provided with mini DevicePorts. If mini sealing caps are required, order catalog number **1485A–C1**.

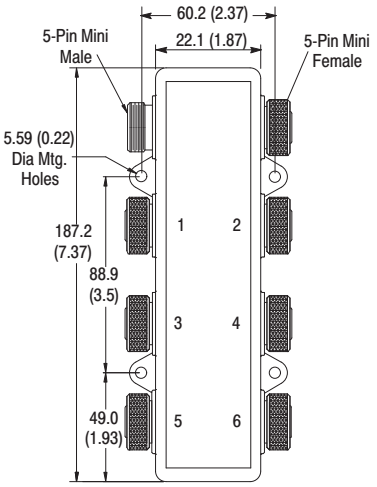
Features

- Direct trunk connection simplifies installation
- Passive
- Sealed (NEMA 6P)
- 4-Port or 6-Port
- Mini or micro quick-disconnect device connections

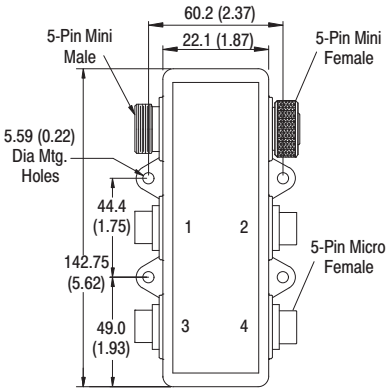
Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Chemical resistant black polymer
Connector Shell	Anodized aluminum with clear sealant
Contacts	Mini: Gold-plated brass; Micro: Gold over nickel-plated brass
Shock/Vibration	5 G, 30…120 Hz
Electrical	
Assembly Rating	24V, 3 A
Environmental	
Enclosure Type Rating	IP–67, NEMA 4, 6P; 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–13…+158° (–25…+70°)

Dimensions—mm (in)



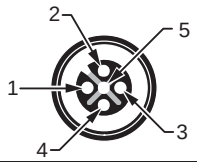
6-port mini thru-trunk DevicePort



4-port micro thru-trunk DevicePort

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

	Face View Pinout		
			
	Mini Connector		Micro Connector
	Female	Male	Female
Color Code	1 Drain 2 Red (V+) 3 Black (V–)	4 White (CAN_H) 5 Blue (CAN_L)	

Product Selection

Trunk Connection Type	Drop Connection Type	Number of Drop Ports	Cat. No.
Mini Male/Mini Female	Mini Female	4	1485P–P4N5–MN5
		6	1485P–P6N5–MN5
	Micro Female	4	1485P–P4R5–MN5
		6	1485P–P6R5–MN5

Round Media

8-Port DevicePort with Cable Drop and Micro Connectors

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Material	Chemical resistant black polymer
Connector Shell	Anodized aluminum with clear sealant
Contacts	Mini: Gold-plated brass; Micro: Gold over nickel-plated brass
Shock/Vibration	5 G, 30…120 Hz
Electrical	
Assembly Rating	24V, 3 A
Environmental	
Enclosure Type Rating	IP–67, NEMA 4, 6P; 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–13…+158° (–25…+70°)

Description

DevicePort™ taps are passive multiport taps which connect to the trunk via a drop cable. DevicePort taps are offered with 4 or 8 quick-disconnect ports in sealed versions to connect up to 8 physical nodes.

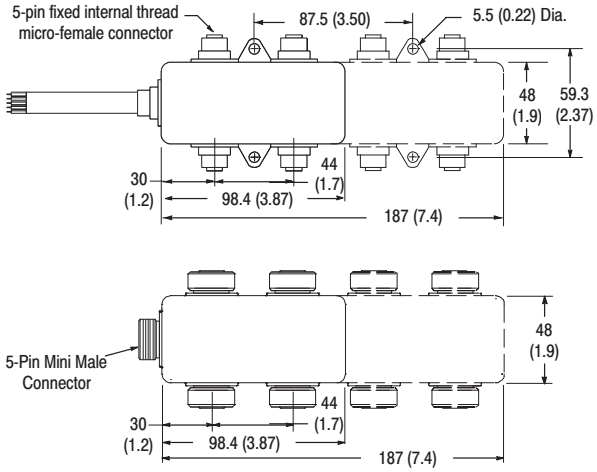
Using the DevicePort tap reduces the number of physical taps on the trunk line from as many as eight taps to one.

Allen-Bradley micro DevicePorts come standard with sealing caps for all ports and replacement caps are available using catalog number **1485A–C3**. Sealing caps are not provided with mini DevicePorts. If mini sealing caps are required, order catalog number **1485A–C1**.

Features

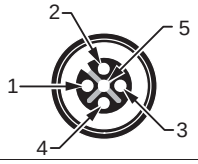
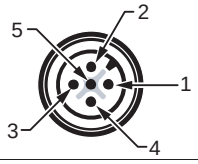
- Passive
- Sealed (NEMA 6P)
- 4-Port or 8-Port
- Drop cable, mini quick-disconnect, or mini quick-disconnect pigtail drop connection
- Mini or micro quick-disconnect device connections

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

	Face View Pinout			
				
	Mini Connector		Micro Connector	
	Female	Male	Female	Male
Color Code	1 Drain 2 Red (V+) 3 Black (V–)		4 White (CAN_H) 5 Blue (CAN_L)	

Product Selection

Male Connector Style	Female Connector Style	Number of Ports	Cat. No.
Mini	Mini	4	1485P–P4N5–M5
		8	1485P–P8N5–M5
Mini (2m pigtail)	Micro	4	1485P–P4R5–C2–M5
		8	1485P–P8R5–C2–M5
2m Cable		4	1485P–P4R5–C2
		8	1485P–P8R5–C2
Micro		4	1485P–P4R5–D5
		8	1485P–P8R5–D5
Right Angle Micro (2m pigtail)		4	1485P–P4R5–C2–F5
		8	1485P–P8R5–C2–F5

Note: Stainless steel versions may be ordered by adding “S” to the catalog number (e.g., **1485PS–P4N5–M5**).

Round Media

Open-Style Y-Adaptor

Description

The DeviceNet open-style Y-adaptor provides a unique connectivity capability, which simplifies installations requiring daisy-chaining of open-style devices. This compact connector is offered with retaining screws to help ensure reliable connection, and is rated up to 8A at 24V for the most demanding DeviceNet applications.

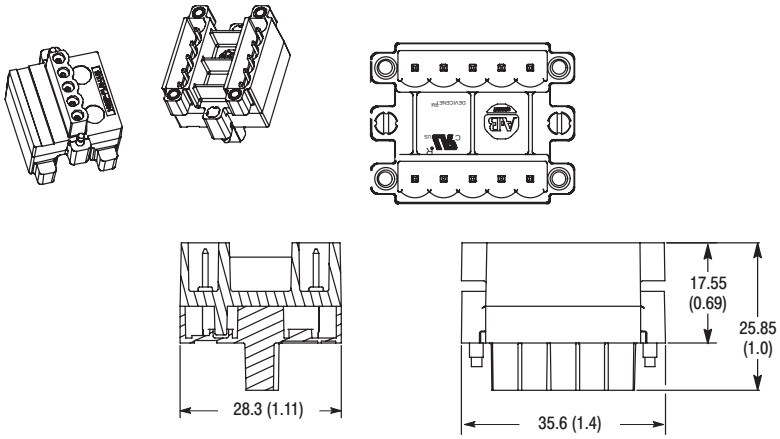
Features

- Female open style to two open style y-adaptors for DeviceNet
- Provides convenient daisy chaining of open-style DeviceNet connections
- Retaining screws for rugged reliable connection

Specifications

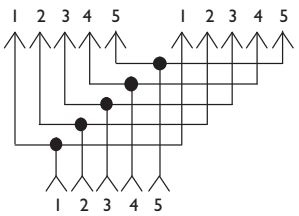
Certifications	UL recognized for US and Canada
Mechanical	
Material	Nylon
Retaining Screws Material	Nickel-plated brass
Contact Material	Phosphor-bronze
Electrical	
Cable Rating	
Assembly Rating	24V, 8 A
Environmental	
Enclosure Type Rating	IP 20
Operating Temperature—C (F)	–25…+75° (–13…+167°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Female Connector (x1)	Male Connector (x2)	Electrical Rating	Wiring Diagram	Cat. No.
Open-Style DeviceNet	Open-Style DeviceNet	24V, 8 A		1485P–P1J5–UU5

Round Media

Open-Style to Micro

Specifications

Mechanical	
Material	Nylon 66
Coupling Nut Material	Nickel-plated brass
Retaining Screw Material	Zinc-plated steel
Contacts	Gold-plated copper
Electrical	
Assembly Rating	24V DC, 4 A
Environmental	
Enclosure Type Rating	IP 20
Operating Temperature—C (F)	–25…+75° (–13…+167°)

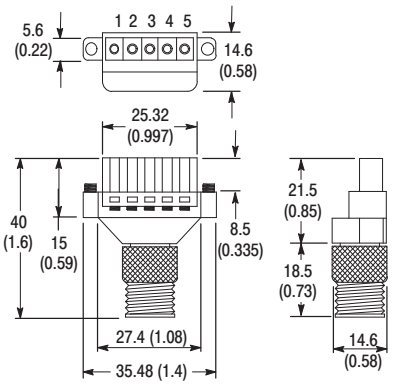
Description

The DeviceNet open-style to micro-style adaptor provides simplified connectivity of open-style devices to round and flat media systems. This adaptor eliminates the need for screw-terminal connections when attaching to open style field devices. It also allows the use of standard factory molded micro drop connections throughout an installation thus reducing the total number of parts needed in typical systems. The resulting micro connection point also simplifies troubleshooting of open-style field devices by allowing toolless connection and disconnection. This compact connector is offered with retaining screws to help ensure reliable and consistent connection.

Features

- Female open style to male micro style for DeviceNet
- Provides convenient transition from open-style DeviceNet
- Retaining screws for rugged reliable connection

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Female Connector	Male Connector (x2)	Electrical Rating	Cat. No.
Open-Style DeviceNet	Micro-Style	24V DC, 4A	1799–DNC5MMS

Round Media

Open Style Tap

Description

Open-style taps provide a way for drop cables to be connected to the trunk line using open-style wiring connections. Three sets of 5-position color coded wiring chambers accomodate all wires (for entering trunk cable, exiting trunk cable, and drop cable). The open-style top can be mounted on a DIN rail. Jack screws on open-style taps and connectors provide additional physical support.

Product Selection

Cat. No.
1492–DN3TW

5-Pin Linear Plug

10-Pin Linear Plug

5-Pin Linear Plug

Description

Open-style connectors come in two primary varieties—5 position (5-pin linear plug) and 10 position (10-pin linear plug). Ten position connectors provide easier daisy-chaining because there is an independent wire chamber for each wire (entering and exiting cable).

Product Selection

No. of Pins	Jack Screws	Cat. No.
5	No	1799–DNETCON
5	Yes	1799–DNETSCON
10	Yes	1787–PLUG10R

Mini and MIcro Cap

Terminating Resistor

DeviceBox Accessory Kit

Description

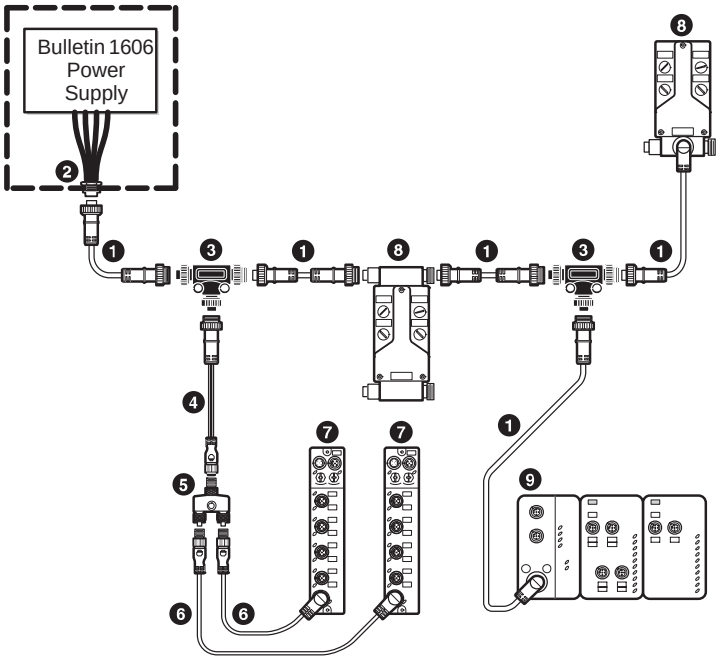
A variety of accessories are available to complement the DeviceNet Media systems. Accessories include both mini and micro style caps for sealing unused connectors, standalone terminating resistors, and an installation accessory kit for DeviceBox.

Product Selection

Description	Cat. No.
Mini Cap	1485A–C1
Resistor	1485A–C2
Micro Cap	1485A–C3
Kit for DeviceBox	1485A–ACCKIT

Note: Stainless steel versions of sealing caps may be ordered by adding "S" to the catalog number (e.g., **1485AS–C1**).

Typical Configuration



Note: Only Auxiliary Power wiring shown.

1 Mini Patchcord . . . . . page 6–50
2 Mini Receptacle . . . . . page 6–53
3 Mini T-Port . . . . . page 6–54
4 Mini to Micro Patchcord . page 6–50
5 Micro T-Port . . . . . page 6–54
6 Micro Patchcord . . . . . page 6–50
7 ArmorBlock . . . . . page NO TAG
8 ArmorBlock MaXum . . . . page 7–23
9 ArmorPoint . . . . . page 7–5

Auxiliary Power is based on a 4–pin connector system and is used to provide 24V DC power to I/O modules and other devices separately from network power. Running separate power to these devices is most typically used for I/O devices with output connections to prevent power supply interruption due to switching of outputs. However, some devices require separate auxiliary power to power them regardless of the presence of outputs.

Depending on the devices used, it may be possible to provide power through only one pair of the four available contacts, and in this case the other available pair may be used for single channel E-stop through the use of special E-stop drop or power T-ports and shorting plugs. Allen-Bradley E-stop T-ports and shorting plugs are red in color for easy identification.

Many end devices, including Rockwell Automation hardened I/O products, utilize a different pin numbering convention for 4-pin mini connections than that used on physical media products. Both numbering conventions are shown below.

Physical Media (per SAE–J–1738A)

Female	*Male*
1 Black (V–)	3 Red (V+)
2 White (E–)	4 Green (E+)

End Device Pinout (per EN 50 044)

Female	*Male*
1 Red (V+)	3 White (E–)
2 Green (E+)	4 Black (V–)

Auxiliary Power

Mini to Mini Auxiliary Power Patchcord

Description

Auxiliary power cables are used to provide power to output devices requiring separate power and assure proper DeviceNet operation by avoiding spikes, dropouts, or other noise being imposed on DeviceNet power. Auxiliary power trunk cables are 4-pin mini style patchcords. Either mini or micro style connectors are available as auxiliary power drop cables.

Features

- Male connector with external threads for cable extensions
- Heavy duty STOOW 16 AWG cable or standard 18 AWG or 20 AWG cable
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Ratcheting coupling nut for vibration resistance

Specifications

Certifications	UL recognized and CSA certified
Mechanical	
Coupling Nut Material	Epoxy Coated Zinc
Connector Material	Molded oil-resistant PVC
Contacts	Gold over nickel-plated brass
Cable Material	Oil-resistant yellow PVC jacket, UL recognized and CSA certified, 16 AWG cable: 600V, 18 AWG and 22 AWG cable: 300V
Bend Radius	10x diameter
Cable Diameter	16 AWG: 11 mm (0.42 in), 18 AWG: 7.4 mm (0.29 in), 22 AWG: 5 mm (0.21 in)
Electrical	
Cable Rating	16 AWG: UL STOOW VW–1 105C 600V, CSA ST 105C 600V FT2, UV oil and water resistant; 18 AWG, 22 AWG: UL AWM style 2661 VW–1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant
Assembly Rating	Mini 16 AWG: 600V 10 A; Mini or micro 18 AWG or 22 AWG: 250V, 4 A
Environmental	
Enclosure Type Rating	IP 67; NEMA 6P 1200 psi (8720 kPa) washdown
Operating Temperature—C (F)	–20…+105° (–4…+221°)

Dimensions—mm (in)

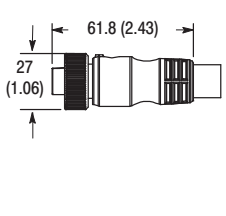


Figure A
Straight Female

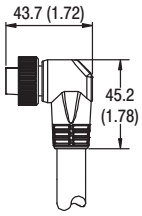


Figure B
Right Angle Female

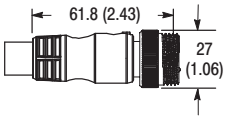


Figure C
Straight Male

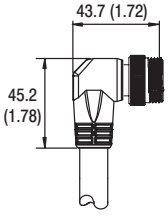


Figure D
Right Angle Male

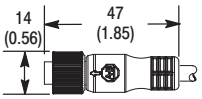


Figure E
Straight Female

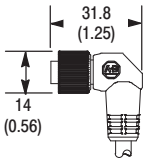


Figure F
Right Angle Female

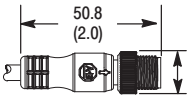


Figure G
Straight Male

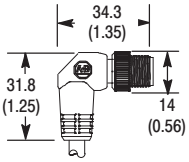
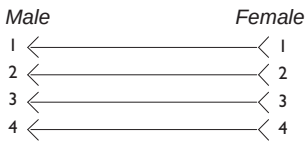


Figure H
Right Angle Male

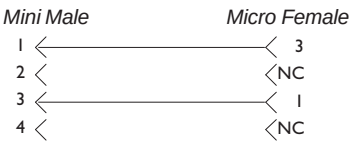
Dimensions are approximate. Illustrations are not drawn to scale.

Wiring Diagrams

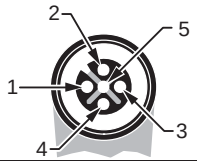
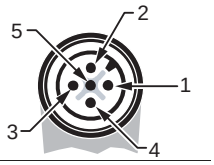
Mini to Mini and Micro to Micro Patchcords



Mini to Micro Patchcords



Pinout and Color Code

	Face View Pinout			
				
	Mini Connector		Micro Connector	
Color Code	Male	Female	Male	Female
16 AWG Cable	1 Black 2 White	3 Red 4 Green	—	
18 AWG Cable	1 Black 2 Blue	3 Brown 4 White	1 Brown 2 White 3 Blue	4 Black 5 Not used

Note: Pinout diagram for end device connector may differ, see page 6–49.

Product Selection

16AWG STOOW cable

Male / Female	Cat. No.		
	Cable	Straight Mini (Figure C)	Right Angle Mini (Figure D)
Cable	889–C4AFC–S§	889N–M4AFC–*F	889N–E4AFC–*F
Straight Mini (Figure A)	889N–F4AFC–*F	889N–F4AFNM–‡	889N–F4AFNE–‡
Right Angle Mini (Figure B)	889N–R4AFC–*F	889N–R4AFNM–‡	889N–R4AFNE–‡

18AWG AWM cable

Male / Female	Cat. No.		
	Cable	Straight Mini (Figure C)	Right Angle Mini (Figure D)
Cable	889–C4AE–S§	889N–M4AE–‡	889N–E4AE–‡
Straight Mini (Figure A)	889N–F4AE–‡	889N–F4AENM–‡	889N–F4AENE–‡
Right Angle Mini (Figure B)	889N–R4AE–‡	889N–R4AENM–‡	889N–R4AENE–‡
Straight Micro (Figure E)	889D–F4AE–‡	889D–F2AEN4M–D‡	889D–F2AEN4E–D‡
Right Angle Micro (Figure F)	889D–R4AE–‡	889D–R2AEN4M–D‡	889D–R2AEN4E–D‡

22AWG AWM cable

Male / Female	Cat. No.		
	Cable	Straight Micro (Figure G)	Right Angle Micro (Figure H)
Cable	889–C4AC–S§	889D–M4AC–‡	889D–E4AC–‡
Straight Micro (Figure E)	889D–F4AC–‡	889D–F4ACDM–‡	889D–F4ACDE–‡
Right Angle Micro (Figure F)	889D–R4AC–‡	889D–R4ACDM–‡	889D–R4ACDE–‡

* Replace symbol with length in feet, 6, 12, or 20 standard (i.e. **889N–F4AFC–6F**).
‡ Replace symbol with length in meters, 2, 5, or 10 standard (i.e. **889D–F4ACDM–2**).
§ Replace symbol with length in meters 50, 100 or 200 (i.e. **889–C4AC–S50**).

Auxiliary Power

Power Bulkhead Pass-thru

Specifications

Mechanical		
Shell and Lockout Material	Nickel-plated brass	
Connector Insert Material	PVC	Nylon
Gasket	Neoprene	
Thrust Washer	Nylon	Steel Aloy
Contact Material	Gold-plated palladium nickel	
Electrical		
Assembly Rating	600V, 8 A	250V, 4 A
Environmental		
Enclosure Type Rating	IP 67	
Operating Temperature—C (F)	–20…+105° (–4…+221°)	–20…+80° (–4…+176°)

Description

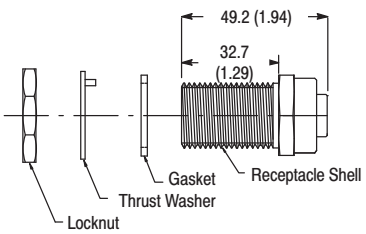
Bulkhead pass-through connectors are passive male to female connectors within a threaded metal housing. These connectors increase system modularity and ease installation in through-panel applications.

Features

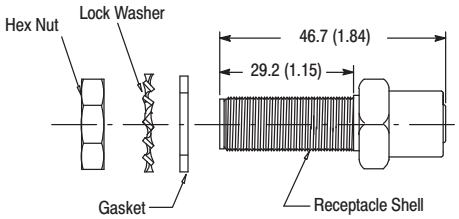
- Male to female bulkhead passthru provides flexibility in thru-panel installations
- 4-pin mini version for use with Auxiliary Power for DeviceNet

Dimensions—mm (in)

Mini



Micro



Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Connection Type	Cat. No.
Mini 4-pin	889A–CXN4–M4
Micro 4-pin	1485A–CXRS–D5

Note: Stainless steel mini version may be ordered by adding "S" to the cat. no. (e.g., **889AS–CXN4–M4).**

Auxiliary Power

4-pin Female Receptacles

Auxiliary Power Receptacle

Bulkhead pass-through connectors are passive male to female connectors within a threaded metal housing. These connectors increase system modularity and ease installation in through-panel applications.

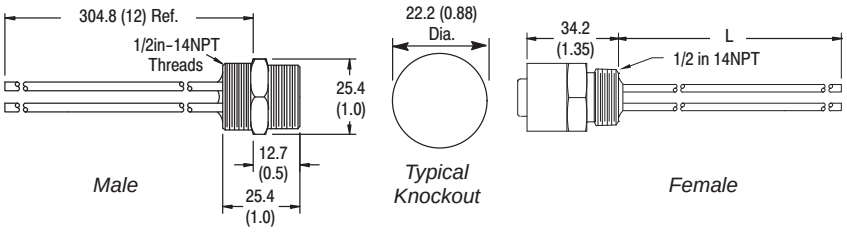
Features

- Male to female bulkhead passthru provides flexibility in thru-panel installations
- 4-pin mini version for use with Auxiliary Power for DeviceNet

Specifications

Mechanical	
Receptacles Shell Material	Female: Aluminum with clear sealant Male: Die-cast zinc with clear sealant
Connector Insert Material	PVC
Contact Material	Gold over nickel-plated brass
Wire Insulation Material	Oil resistant PVC, 16AWG stranded copper, 600V, UL recognized and CSA certified
Electrical	
Cable Rating	600V
Assembly Rating	600V, 10 A
Environmental	
Enclosure Type Rating	IP 67, NEMA 6P, 1200 psi (8720 kPa) washdown
Operating Temperature—C (F)	–30…+105° (–22…+221°)

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Face View		Cable			Cat. No.	
Male	**Female**	**Wire Color**	**Wire Rating**	**Length—m (ft)**	**Male**	**Female**
		1 Black 2 White 3 Red 4 Green	16 AWG 600V 10 A	0.3 (1)	**888N–M4AF1–1F**	**888N–D4AF1–1F**
				0.9 (3)	**888N–M4AF1–3F**	**888N–D4AF1–3F**

Note: Pinout diagram for end device connector may differ, see page 6–49.

Mating Components & Accessories

Description	Cat. No.
Mounting Nuts	**889A–U1NUT–10★**
Flat Sealing Washers	**889A–U1FSL–10★**

★ Sold in bags of 10.

Auxiliary Power

4-Pin Mini Style
Power Trunk Tee

Specifications

Mechanical	
Coupling Nuts	Epoxy-coated zinc
Material	Mini: TPE; Micro: PUR
Contacts	Gold-plated palladium nickel
Electrical	
Assembly Rating	Mini: 600V, 10 A; Micro: 250V, 4 A
Environmental	
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13; IP 67; 1200 psi (8720 kPa) washdown
Operating Temperature—C (F)	–20…+70° (–4…+158°)

Description

Power Trunk Tees allow connecting devices to the power trunk line. The T-port is sealed to NEMA 6P with mini quick-disconnect. The customer will connect onto the trunkline using the Power Trunk Tee and an associated Power Drop cordset.

Features

- Passive
- Sealed (NEMA 6P)
- 4-pin mini quick-disconnect

Dimensions—mm (in)

Figure A

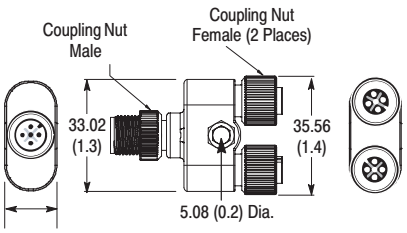
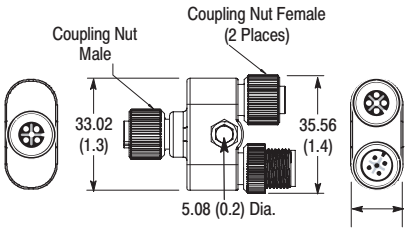
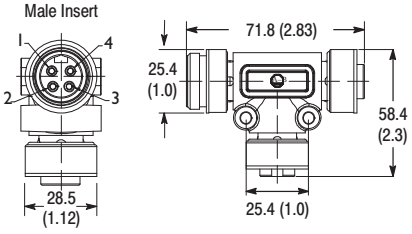


Figure B





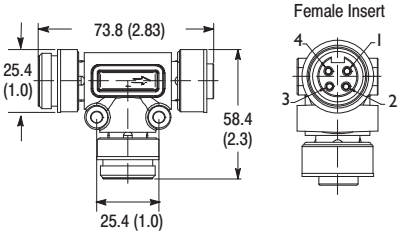


Figure C

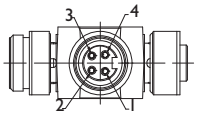


Figure D

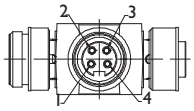
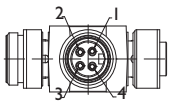
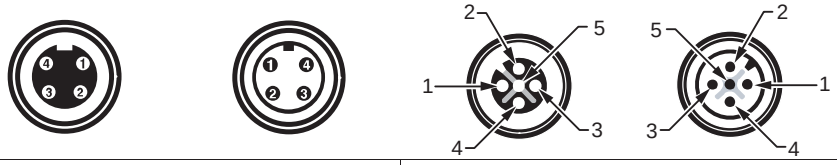


Figure E

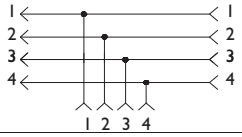
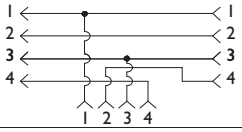
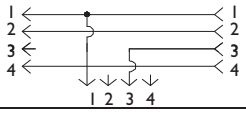


Dimensions are approximate. Illustrations are not drawn to scale.

Pinout and Color Code

	Face View Pinout			
				
Color Code	Mini Connector		Micro Connector	
	Female	Male	Female	Male

Product Selection

T–port Use	Wiring Diagram	Trunk Connectors	Drop Connector	Drop Orientation	Cat. No.
Auxiliary Power		Micro	Micro Female	Figure A	1485P–RDR5
				Figure B	1485P–DRR5
Power/Single Channel E-stop		Mini	Mini Female	Figure C	898N–43PB–N4KF
				Figure D	898N–43PB–N4KT
Auxiliary Power/ Single Channel E–stop Power Input				Figure C	898N–43AB–N4KF
			Mini Male	Figure E	898N–43BB–NM4KF

Note: Pinout diagram for end device connector may differ, see page 6–49.

DeviceNet™ Auxiliary Power Round Media

Single-Channel Safety Shorting Plugs

Auxiliary Power

Male Shorting Plug

Specifications

Mechanical	
Coupling Nut Material	Epoxy-coated zinc
Material	Red Santoprene
Contacts	Gold over nickel-plated brass
Electrical	
Assembly Rating	600V, 10 A
Environmental	
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13, IP 67, 1200 psi (8720 kPa) washdown
Operating Temperature—C (F)	–25…+70° (–13…+158°)

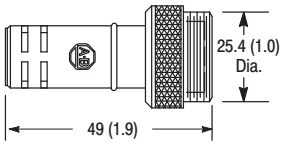
Description

Auxiliary power/single-channel safety shorting plugs provide a return current path for the single-channel safety circuit when used with appropriate auxiliary power/single-channel safety T-ports. These shorting plugs are offered in both male and female versions.

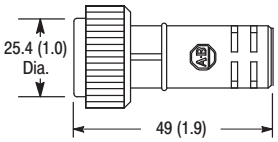
Features

- Male and female connector shorting plugs
- Four-pin mini style
- For use with auxiliary power/ single-channel safety T-ports

Dimensions—mm (in)



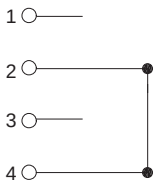
Male Mini Style Shorting Plug



Female Mini Style Shorting Plug

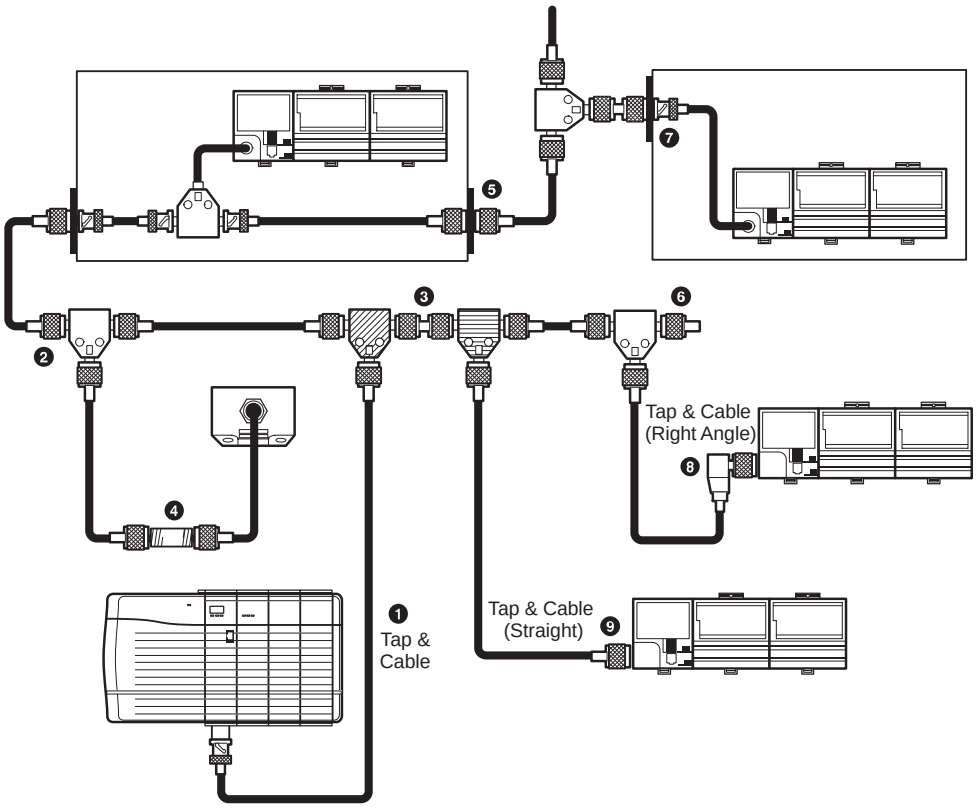
Dimensions are approximate. Illustrations are not drawn to scale.

Product Selection

Connector Style	Configuration	End Style	Pinout	Wiring Diagram	Cat. No.
Mini	Straight	Male			**898N–41AU–NM4**
		Female			**898N–41AU–N4**

ControlNet™ IP 67 TNC Media

Typical Configuration



❶ Ruggedized IP 67 T-Tap Body (TNC to BNC) . . . . . page 6–58
❷ Plug Connector . . . . . page 6–58
❸ Plug-Plug Barrel Connector . . . . . page 6–58
❹ Jack-Jack Barrel Connector . . . . . page 6–58
❺ Jack-Jack, Isolated Bulkhead . . . . . page 6–58
❻ 75 ohm Network Terminator . . . . . page 6–58
❼ BNC to TNC, Isolated Bulkhead . . . . . page 6–58
❽ Adaptor for ArmorPoint—Right Angle Connector,Thick Cable, TNC to TNC . . . . . page 6–58
❾ Adaptor for ArmorPoint—Straight Connector, TNC to TNC . . . . . page 6–58

As the premier industrial network for I/O control, ControlNet is targeted for harsh industrial environments. Typical ControlNet BNC and Ethernet RJ45 connectors are not designed to withstand conditions such as high vibration, water, etc. that can make installation difficult and lead to costly downtime.

To ease those issues, Rockwell Automation has developed ruggedized Ingress Protection: Particle/Dust Rating of 6 and Water Rating of 7 (IP 67) media using a TNC design. TNC components simplify installation because they penetrate the bulkhead easily and eliminate the need for wire glands. TNC components also increase reliability and decrease downtime in harsh environments such as stamping press, water washdown, and marine applications. And, finally, TNC components will be used with Armor products on ControlNet for On-Machine™ installations.

Designed for applications with cable movement, TNC components are well-suited to handle the constant stress of robotic motion or applications in which segments are routinely connected and/or disconnected. Consider using TNC connectors for any network connection outside a protected enclosure (i.e., outside a cabinet) or for any location where shock/vibration is present. ❶

❶ BNC (and Ethernet RJ45) are still good low-cost solutions for connections inside an enclosure or for connections in a benign office environment.

ControlNet™ IP 67 TNC Media

TNC Media

Tap and Cable Assembly Kit

Specifications

Temperature—C (F): **Operating** **Storage**	IEC 60068–2–1; IEC 60068–2–2 –20…70° (–4…158°) ambient –40…85° (–40…185°) ambient
Humidity	IEC 60068–2–30; 5 to 95% noncondensing
Vibration: **Operating**	IEC 60068–2–6 10…500 Hz (4…15 minute cycle); 10 g peak (all axis)
Vibration: **Packaged**	NSTA Project 1A ASTM; D999–75; Truck bed simulation
Mechanical Shock: **Operating** **Non-operating**	IEC 60068–2–27; 3 shocks per axis—category I 30 g peak (all axis) 50 g peak (all axis)
Mechanical Shock: **Packaged**	Drop test ASTM; D775–80
Sealing	IEC 529—IP 67 when fully mated

Features

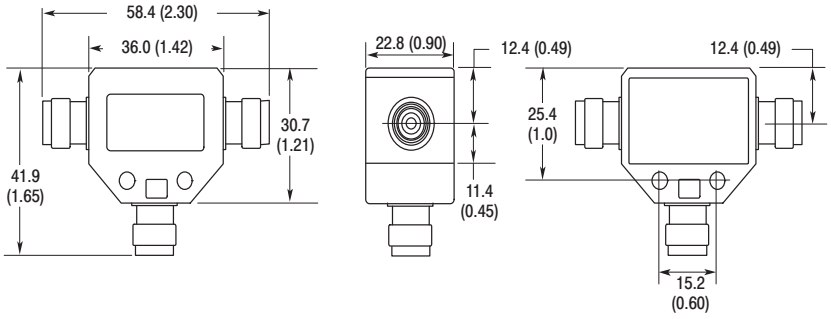
- Thread connectors
- IP67 rated
- Rugged durable construction

Description

Sealed media components are ControlNet taps and connectors suitable for use in harsh environments.

The sealed tap contained in the kit protects the BNC connector, which is not water-tight.

Dimensions—mm (inches)



Front View *Side View* *Back View*

Product Selection

Description	Cat. No.
Ruggedized IP 67 T-tap body (TNC to BNC)	1786–TCT2BD1
Plug connector	1786–TNCL10
Plug-plug barrel connector	1786–TNCLP4
Jack-jack barrel connector	1786–TNCJ4
Jack-jack, isolated bulkhead	1786–TNCJI4
75 ohm network terminator	1786–TNCLXT4
BNC to TNC, isolated bulkhead	1786–BNC2TNC
Adaptor for ArmorPoint—Right angle connector, thick cable (TNC to TNC)	1786–TPRT2T
Adaptor for ArmorPoint—Straight connector (TNC to TNC)	1786–TPST2T

EtherNet™ M12 Media

Description

As EtherNet becomes increasingly utilized in industrial control, survival of physical media in rugged or harsh environments is becoming a necessity. Typical EtherNet RJ45 style connectors are not designed to withstand conditions such as high vibration, fluids, and other contaminants that can make installation difficult and lead to costly downtime. To address these application challenges Rockwell Automation offers industry standard 4-pin D–coded M12 connectors with an IP 67 rating.

Styles

Note: EtherNet RJ45 connectors remain good low–cost solutions for connections inside an enclosure or for connections in a benign office environment.

M12 EtherNet

Field Attachable

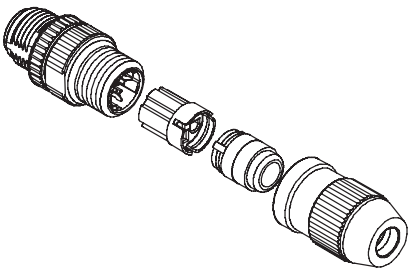
Specifications

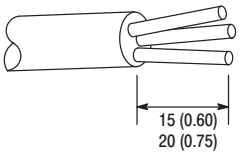
Mechanical	
Coupling Nut	Zinc die-cast
Connector Shell Material	Zinc die-cast or polyamide
Contacts	Gold-plated palladium nickel
Maximum IDC Installation	10 times
Conductor Outside Diameter	Unshielded: 26 AWG–22 AWG: 1.0…1.6 mm (0.04…0.063) 24 AWG–22 AWG: 1.2…1.6 mm (0.04…0.063 in)
Electrical	
Assembly Rating	32V, 4 A
Environmental	
Enclosure Type Rating	IP67
Operating Temperature—C (F)	–25…85° (–13…185°)
Installation Temp.—C (F)	–5…50° (23…185°)

Features

- Field installable with no hand tools needed
- Straight male or female shielded versions
- Allows easy modification of existing cable installations
- Insulation displacement technology for secure and reliable installation
- Metal body unit excellent in shielding applications

Dimensions—mm (in)





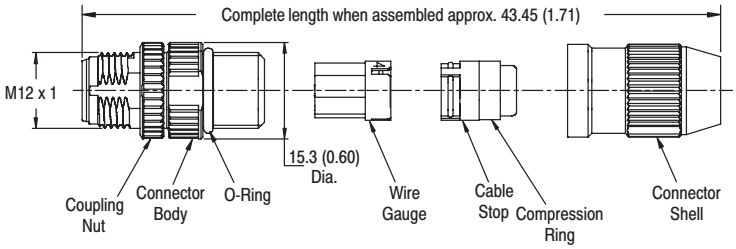
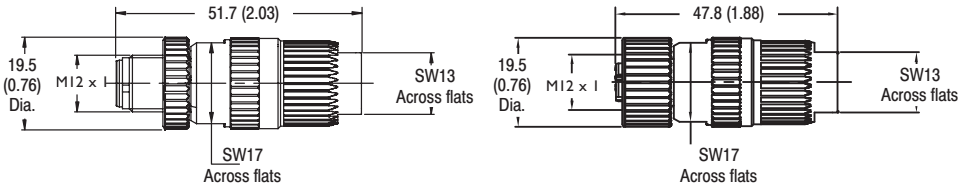


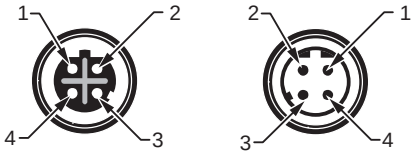
Figure A



Male *Female*

Figure B

Pinout and Color Code

Color Code	Face View Pinout 4–Pin
	
A	1 Yellow 2 White 3 Orange 4 Blue

Product Selection

Pin Count	Connector Body	Cable Jacket Diameter—mm (in)	Wire Size	Assembly Rating	Dimensions	Cat. No.	
						Straight Female	Straight Male
4-Pin	Polyamide Small body unshielded	4.0…5.1 (0.16…0.20)	26…22 AWG	32V 4 A	Figure A	—	1585D–M4DC–H
	Zinc die-cast Large body shielded	5.5…7.2 (0.22…0.28)	24…22 AWG		Figure B	1585D–F4DC–SH	1585D–M4DC–SH

EtherNet™ M12 Media

4-Pin, M12 Receptacle & M12 to RS45 Adaptor

M12 Ethernet

4-Pin M12 EtherNet Receptacle

EtherNet M12 to RS45 Adaptor

Features

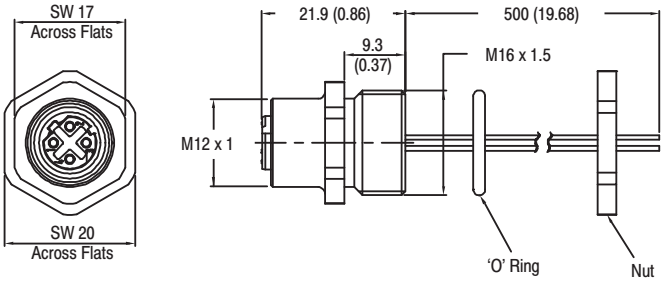
- 22 AWG conductors
- Female receptacle
- 4-pin D-coded M12 configuration
- Viton® o-ring
- M12 to RS45 bulkhead

Specifications

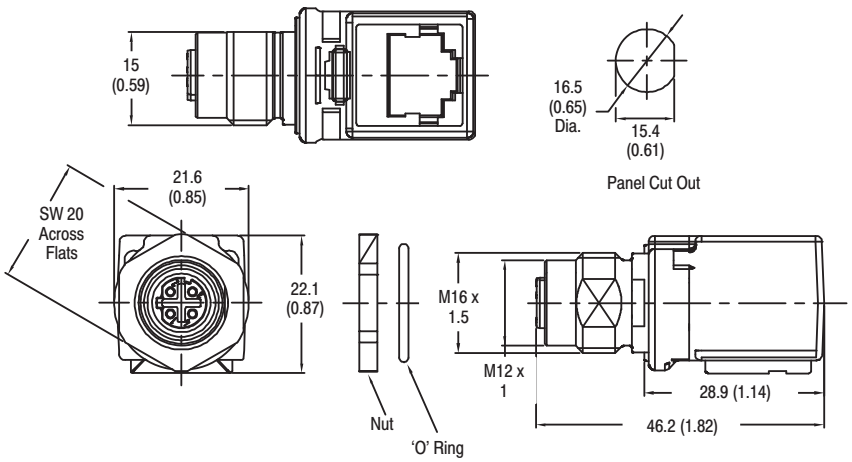
Electrical Ratings	32V 4 A
Receptacle Shell	Nickel-plated brass
Contacts	Brass with nickel plating
Wire Insulation	Oil-resistant PVC, 22 AWG stranded copper, 300V, UL recognized
Enclosure Protection	IP 67, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	–20…+85° (–4…+185°)
Approvals	UL recognized for Canada and USA

Dimensions—mm (in)

Ethernet Receptacle Female



Ethernet Adaptor M12 Female to RJ45 Female Right Angle



Product Selection

Description	Connector Body	Panel Mount Threads	Wire Color	Assembly Rating	Cat. No.
EtherNet M12 Female Receptacle	Brass with Nickel Plating	M16 x 1.5	1 Yellow 2 White 3 Orange 4 Blue	22 AWG 32V 4 A	**1585D–D4AC9–0M5**
Female M12 Receptacle to RJ45 Female Adaptor Right Angle	Polyamide and Brass with Nickel Plating	PG 9	—		**1585A–DD4JD**

Contents

Quick Selection Guide

	 **1738** **ArmorPoint**	 **1732** **ArmorBlock, Armor WeldBlock**	 **1792D** **ArmorBlock MaXum**	 **1792D** **ArmorBlock High Current**
Description	• Hardened modular IP 69K I/O platform based on IP 20 1734 Point I/O	• Hardened discrete block style I/O for up to 16 device connections	• Hardened I/O package with modular design for up to 16 device connections	• Hardened I/O package with high current (5…10 A) output
Features	• Modular design • 30 I/O types • Integration with ArmorStart • Sealed IP 69K housing (AC I/O modules are IP 67) • Variety of networks supported • Variety of field connector types	• Discrete design • Compact footprint • Sealed IP 69K housing • Variety of networks supported • Variety of field connector types	• Input or output versions • Selectable filters • Selectable output fault latching • Compatible with sinking/sourcing/ 2-wire devices • Advanced diagnostics • DeviceLogix™	• 5…10 A solid state outputs • Selectable filters • Configured inputs for PNP (sourcing) or NPN (sinking) devices
Available Models	• Adaptors: DeviceNet, ControlNet, EtherNet, ProfiBus DP • I/O AC and DC: Digital in/out, Analog in/out, Thermocouple, RTD, SSI (Encoder), RS-232, RS-485 7-5	• DeviceNet, EtherNet/IP, Profibus DP • 24V DC I/O • 8-input • 8-output • 8-self-configuring • 16-input • 16-output • 16-self-configuring 7-17	• 24V DC Digital from 4 to 16 points 7-23	• 8 in/8 out 7-28

Introduction

Rockwell Automation offers a variety of single- and multi-point I/O solutions for use in your networked On-Machine control architecture. Solutions range from modular, expandable systems to single-block platforms.

ArmorPoint™ I/O

1738 ArmorPoint I/O is the foundation for the next generation of On-Machine products from Rockwell Automation. The modular architecture of ArmorPoint is based on the POINT I/O system and reuses the circuitry of the adaptor and I/O designs. The system is IP 69K-compliant on all models except AC I/O versions (which are IP 67) and has other certifications necessary to provide a complete On-Machine solution. ArmorPoint I/O modules offer one to eight points per module. Choose from 30 different I/O types with connector choices of M8, M12, or M23 quick-disconnect terminations.

The I/O modules are interfaced to a network through a communication adaptor, which includes a built-in power supply that converts incoming 24V DC power to 5V DC backplane power. The I/O modules receive power from the power supply through the backplane. ArmorPoint I/O offers flexibility, supporting up to 63 I/O modules per network node. A bus extension module allows for separation of modules on the same node.

Four versions of DeviceNet™ communication adaptors are available, along with ControlNet, EtherNet/IP, and Profibus DP adaptors. The **1738–ADNX** provides the added flexibility of a DeviceNet sub-net. Each adaptor supports a maximum of 13 to 17 I/O modules, with a maximum of 10A field power. The family includes hardened power supplies to allow for isolation, i.e. AC from DC, analog from digital, inputs from outputs. Module replacement is easy since modules are held on the base by unique latching mechanisms—no screws needed. ArmorPoint connects directly to ArmorStart™ on the same network node.

ArmorBlock™ I/O

The 1732 ArmorBlock I/O modules have a compact style with a low profile. 1732 ArmorBlock modules are packaged in a sealed housing rated for IP 69K and NEMA 4X. A 1732 ArmorBlock I/O module contains digital I/O circuits, a built-in power supply, and a built-in DeviceNet, EtherNet/IP, or Profibus DP I/O adaptor. The DeviceNet network supplies power to the ArmorBlock system and on some models also to the I/O. On those units with DeviceNet powered I/O, a diagnostic bit is provided for short circuits and overcurrent. Inputs and outputs are powered by an external 24V DC source which is independent of the network. An external 24V DC power source is required for Profibus DP.

I/O blocks are available with 8 or 16 I/O points. Electronic fusing provides protection for output load devices and easy resetting. Units are available as 8 or 16 inputs, 8 or 16 outputs or 8 or 16 self-configuring modules. The self-configuring modules contain both input and output functionality. With these self-configuring modules, the user is not required to “configure” anything and any combination of input and outputs are available (e.g., 7+1, 11+5, 4+4). The self-configuring units have automatic output monitoring.

1732 ArmorBlock I/O modules are designed for back-panel or On-Machine mounting. The 8 point modules can be front or side mounted, the 8 or 16 point modules can be horizontally or vertically mounted. Enclosure costs are eliminated because each block is packaged in a rated sealed housing. I/O terminations are DC micro (M12) quick-disconnects or pico (M8) quick-disconnects. These modules do not require a separate base.

Armor WeldBlock I/O

The 1732 Armor WeldBlock is designed for use in typical welding applications. The design resists the effects of weld slag and magnetic fields found in close proximity to the weld head. The sealed IP 67, light-weight metal housing, of plated aluminum, protects the electronics which are the same as those in other 1732 ArmorBlocks and is ideal for end-of-arm robot applications. Armor WeldBlocks are available in DeviceNet and EtherNet I/P with 24V DC,16 point inputs only or 16 point self-configuring I/O. I/O and network connections are DC Micro (M12).

ArmorBlock MaXum™ I/O

1792D ArmorBlock MaXum™ I/O family features space-saving, sealed-housing blocks suitable for On-Machine™ mounting. ArmorBlock MaXum takes advantage of the KwikLink™ flat media system for DeviceNet™ communication. Up to sixteen 24V DC points can be addressed per DeviceNet node. Local control is accomplished through DeviceLogix™ Smart Component Technology.

An ArmorBlock MaXum I/O block contains digital I/O circuits, a built-in power supply, and a built-in DeviceNet I/O adaptor. I/O blocks are available in sizes of 2, 4, 8, and 16 I/O. Electronic fusing provides protection for output load devices and easy resetting.

ArmorBlock MaXum I/O blocks are designed for back-panel or On-Machine mounting. Blocks can be mounted vertically or horizontally. Enclosure costs are eliminated because each block is packaged in a sealed housing rated for IP 67 and NEMA 4X and 6P. I/O terminations are DC micro (M12) quick-disconnect terminations.

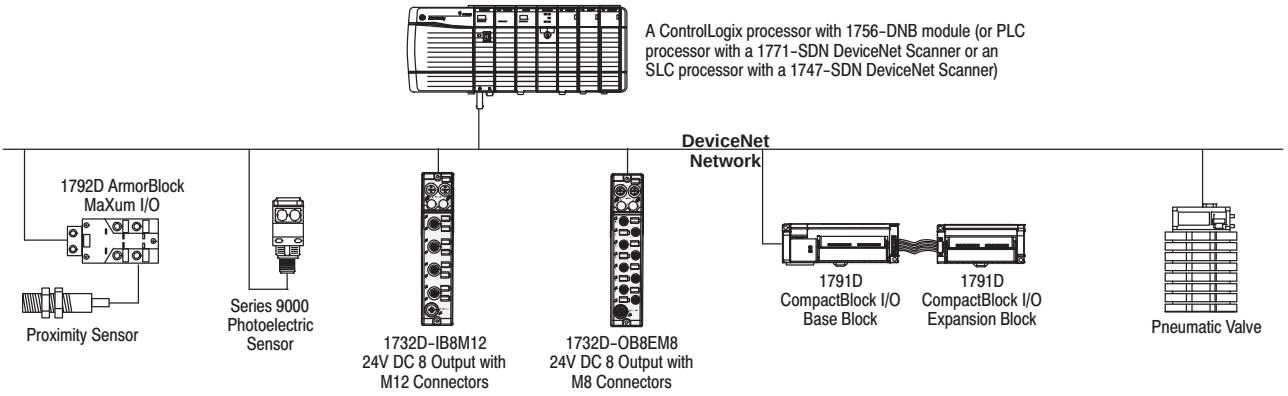
ArmorBlock™ High-Current

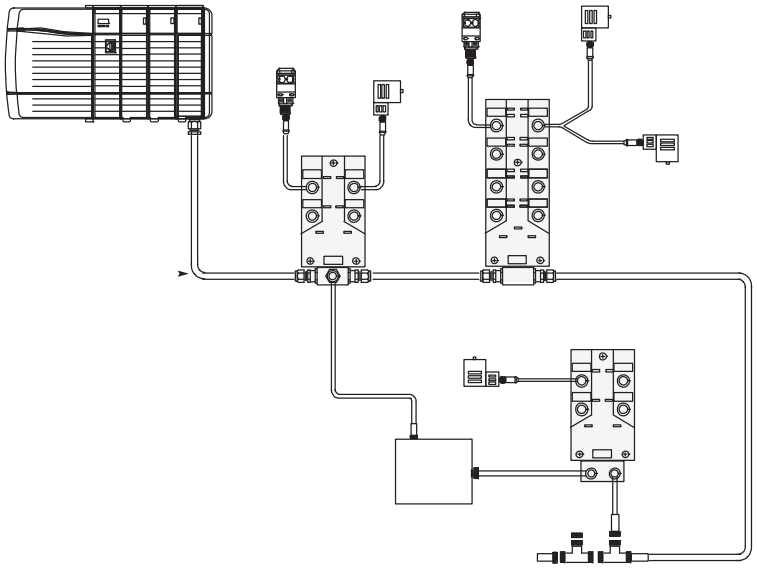
1792D High-Current ArmorBlock I/O blocks include solid state outputs that can accommodate up to 40 A maximum per module. These blocks are packaged in a housing rated for IP 52 and NEMA Type 5 and Type 12. They do not require a separate base. Local control is accomplished through DeviceLogix™ Smart Component Technology.

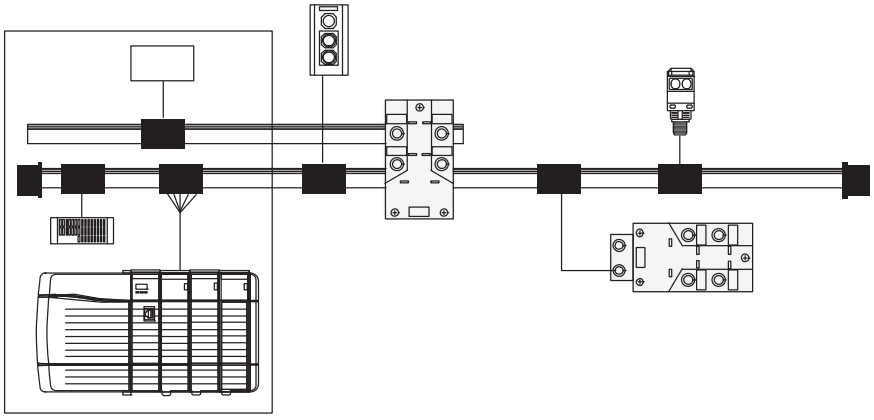
Typical Configurations

Typical Configuration

DeviceNet Communication







ArmorPoint

ArmorPoint is a 24V DC modular On-Machine™ I/O that extends the features and benefits of the POINT I/O™ IP 20 system into an IP 69K-compliant system. ArmorPoint I/O offers flexibility, ease of application, and just-what-you-need granularity in one to eight points to reduce system cost and size. The 1738 ArmorPoint I/O is the foundation for the next generation of On-Machine products from Rockwell Automation.

The ArmorPoint I/O family consists of modular components that snap together to form the ArmorPoint I/O system. Required components are:

- **Communication Adaptor—**An ArmorPoint I/O communication interface module provides the interface between a fieldbus network and the ArmorPoint I/O backplane (POINTBus™). A terminating base, used with the last I/O module, ships with the adaptor.
- **I/O Module—**ArmorPoint I/O modules plug into the mounting base and convert field device signals into control status indicators. Mechanical keying of each module to its base guards against applying improper voltage to the module.
- **Mounting Base—**The mounting base provides the mounting locations for the I/O modules. The mounting base also forms the interconnect for the I/O backplane communication and field power distribution. The mounting base is part of the I/O module catalog number and ships with the I/O module.

As well as a series of optional components including an expansion power unit, field power distributor module and bus extension bases.

Specifications

Enclosure Type Rating	IP 69K❶ and NEMA 4X
Mounting Type	On-Machine
Operating Temperature—C (F)	–20…60° (–4…140°)
1738–APB	–10…60° (14…140°)
1738–EP24DC	–20…85° (–4…185°)
Storage Temperature—C (F)	–40…85° (–40…185°)
Relative Humidity	IEC 60068–2–30 (Test Db, Unpackaged Non-operating Damp Heat): 5–95% noncondensing
Shock, Operating	IEC 60068–2–27 (Test Ea, Unpackaged Shock): 30 g peak acceleration
1738–OW4M12, 1738–OW4M12AC4	IEC 60068–2–27 (Test Ea, Unpackaged Shock): 15 g peak acceleration
Shock, Non-operating	IEC 60068–2–27 (Test Ea, Unpackaged Shock): 50 g peak acceleration
Vibration	IEC 60068–2–6 (Test Fc, Operating): 5 g @ 10…500 Hz
1738–OW4M12, 1738–OW4M12AC4	IEC 60068–2–6 (Test Fc, Operating): 2 g @ 10…500 Hz
Dimensions (HxWxD), Approx. **I/O Modules** **Communication Adaptor Modules**	 120 x 72 x 42 mm (4.72 x 2.83 x 1.65 in) 112 x 72 x 65 mm (4.41 x 2.83 x 2.56 in)
Weight **I/O Modules** **Communication Adaptor Modules**	 0.29 kg (0.64 lb) 0.36 kg (0.80 lb)
Approvals ❷	C-Tick, DeviceNet and CE marked for all applicable directives

❶ All 1738 products are IP 69K except AC I/O, which is IP 67.
❷ When product is marked. See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

Features

- Sealed IP 69K and NEMA 4X rated housing
- Thirty I/O types
- Modular design with unique latching mechanisms
- Industry-standard M8, M12, and M23 quick-disconnects
- IP 67 motor starter integration with ArmorStart™
- Change-of-state (COS) connections (polling available in configuration mode)
- Auto Device Replacement (ADR)
- Removal and Insertion Under Power (RIUP)
- Compatible with DeviceNet™ interfaces, ControlNet™, EtherNet/IP ™, and Profibus DP communication adaptors.

Communication Adaptors

An ArmorPoint I/O communication interface module provides the interface between a fieldbus network and the ArmorPoint I/O backplane (POINTBus™). A terminating base, used with the last I/O module, ships with the adaptor. An I/O adaptor supports up to a maximum of 63 I/O modules.

Adaptor modules are available for ControlNet, DeviceNet (with and without subnet connectivity), EtherNet/IP, or Profibus DP networks. The DeviceNet adaptors are available in four styles, based on connectivity: DC micro (M12) terminations, mini pass-through terminations, mini drop termination, and adaptor with subnet connectivity.

Communication Adaptor Modules

Termination Type	Input Voltage Range	Field Side Power Requirements	Inrush Current	Power Consumption (W) at 24V	Power Dissipation, Max.	Cat. No.
M12 Quick-Disconnect	10…28.8V DC	24V DC (+20% = 28.8V DC) @ 400 mA	6 A for 10 ms	8.0 W	2.8 W @ 28.8V	**1738–ADN12**
Mini Connector—Drop		24V DC (+20% = 28.8V DC) @ 400 mA				**1738–ADN18**
Mini Connector—Pass-through		24V DC (+20% = 28.8V DC) @ 400 mA				**1738–ADN18P**
M12 Quick-Disconnect		24V DC (+4% = 25V DC) @ 30 mA				**1738–ADNX**
TNC Connector		24V DC (+20% = 28.8V DC) @ 425 mA				**1738–ACNR**
M12 Quick-Disconnect		24V DC (+4% = 25V DC) @ 30 mA		4.5 W		**1738–AENT**
M12 Quick-Disconnect		24V DC (+20% = 28.8V DC) @ 400 mA		8.0 W		**1738–APB**

ArmorPoint I/O Communication Adaptors

Cat. No.	Description	Number of I/O Points, Max. ❶
DeviceNet		
1738–ADN12 **1738–ADN18** **1738–ADN18P**	**DeviceNet I/O Adaptor** • A total of 63 ArmorPoint I/O modules can be assembled on a single DeviceNet node • Expansion power supplies may be used to provide additional POINTBus backplane current	252
1738–ADNX	**DeviceNet I/O Adaptor with Expansion Port** • A total of 63 ArmorPoint I/O modules can be assembled on a single DeviceNet node • Expansion power supplies may be used to provide additional POINTBus backplane current • Expansion network port allows for a DeviceNet subnet. • Increases the reach of DeviceNet from 500 to 1500 meters • Increases nodes per DeviceNet scanner from 63 to more than 126 (dependent on DeviceNet scanner capacity)	252
ControlNet		
1738–ACNR	**ControlNet I/O Adaptor** • A total of 63 ArmorPoint I/O modules can be assembled on a single ControlNet node • Expansion power supplies may be used to provide additional POINTBus backplane current • Up to 25 direct connections and 5 rack connections are allowed	252
EtherNet/IP		
1738–AENT	• EtherNet/IP Twisted Pair Media I/O Adaptor • A total of 63 ArmorPoint I/O modules can be assembled on a single EtherNet/IP node • Expansion power supplies may be used to provide additional POINTBus backplane current • Refer to the User Manual to determine the ratings for direct and rack connections allowed	252
Profibus DP		
1738–APB	• Profibus DP I/O Adaptor • A total of 63 ArmorPoint I/O modules can be assembled on a single Profibus DP node • Expansion power supplies may be used to provide additional POINTbus backplane current	252

❶ Using the eight-point digital I/O modules.

Mating Cables

ArmorPoint Network Adaptor Mating Cables

ArmorPoint Cat. No.	Network	Flat Media	Page Ref	Thick Round	Page Ref	Thin Round	Page Ref
1738–ADN12 1738–ADNX	DeviceNet	**1485K–P§F5–R5**	6–17	**1485R–P§M5–R5**	6–27	**1485R–P§R5–D5**	6–27
1738–ADN18P 1738–ADN18	DeviceNet	**1485K–P§F5–N5**	6–17	**1485R–P§N5–M5**	6–27	**1485R–P§D5–N5**	6–27
1738–ACNR	ControlNet	—	—	—	—	**1786–TPST2T**	6–58
	ControlNet	—	—	—	—	**1786–TPRT2T**	6–58
1738–AENT	EtherNet/IP	—	—	—	—	**1585D–M4DC–H**	6–61
1738–APB	Profibus DP	—	—	—	—	—	—

ArmorPoint Auxiliary Power Mating Cables

	Flat Media		Round Media			
ArmorPoint Cat. No.	Auxiliary Power Flat Media Connection	Page Ref	Cordset (Single-ended)	Page Ref	Patchcord (Double-ended)	Page Ref
1738–ADN12 1738–ADNX 1738–ADN18P 1738–ADN18 1738–ACNR 1738–AENT 1738–APB	**1485T–P1E4–C§–N4**	6–20	**889N–F4AFC–★F**	6–51	**889N–F4AFNM–***	6–51

* = length in meters (1, 2, 3, 5, and 10 standard).
‡ = length in meters (2, 5, and 10 standard).
§ = length in meters (1, 2, 3, 4, 5, and 6 standard).
★ = length in feet (6, 12, and 20 standard).

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult “Page Ref” listed in the above tables.

I/O Modules

ArmorPoint I/O modules plug into the mounting base and convert field device signals into control status indicators. Mechanical keying of each module to its base guards against applying improper voltage to the module.

Digital I/O Modules

The 1738 digital I/O modules support:

- A wide variety of voltage interface capabilities.
- Isolated and nonisolated module types.
- Point-level output fault states for short-circuit and wire-off diagnostics.
- Choice of direct-connect or rack-optimized communications.
- Field-side diagnostics on select modules.

ArmorPoint Digital DC Input Modules

General purpose 24V DC inputs including 2- and 3-wire proximity sensors.

No. of Inputs	Voltage		Input Delay Time, ON to OFF ❶	Input Current			POINTBus Current (mA)	Power Dissip-ation Max. (DC)	Termination Type	Cat. No.
	On-State Input, Nom.	Operating Range		On-State Min.	On-State Max.	Off-State Max.				
2 Sink	24V DC	10V DC… 28.8V DC	0.5 ms hardware + (0…65 ms select-able)	2 mA	5 mA	1.5 mA	75	0.7 W @ 28.8V	DC micro (M12)	1738–IB2M12
4 Sink								1.0 W @ 28.8V		1738–IB4M12
									Pico 3-pin (M8)	1738–IB4M8
8 Sink									DC micro (M12) ❷	1738–IB8M12
									M23	1738–IB8M23
									Pico 3-pin (M8)	1738–IB8M8
									DC micro (M12)	1738–IV8M12
									M23	1738–IV8M23
									Pico 3–pin (M8)	1738–IV8M8
4 Source									DC micro (M12)	1738–IV4M12

ArmorPoint Digital DC Output Modules

24V DC electronically protected output modules. The 1738–OB2EPM12 module has 24V DC electronically protected, fast-switching high-current outputs.

Number of Outputs	On-State Output Voltage		Output Current Rating, Max.	POINTBus Current (mA)	Power Dissipation, Max.	Termination Type	Cat. No.
	Nominal	Range					
2 Source	24V DC	10V DC… 28.8V DC	2.0 A per module, 1.0 A per channel	75	0.8 W @ 28.8V DC	DC micro (M12)	1738–OB2EM12
			4.0 A per module, 2.0 A per channel				1738–OB2EPM12
4 Source			2.0 A per module, 1.0 A per channel		1.2 W @ 28.8V DC		1738–OB4EM12
						Pico 3-pin (M8)	1738–OB4EM8
8 Source						DC micro (M12) ❷	1738–OB8EM12
						M23	1738–OB8EM23
						Pico 3-pin (M8)	1738–OB8EM8
4 Sink					2.9 W @ 28.8V DC	DC micro (M12)	1738–OV4EM12

ArmorPoint Digital Contact Output Modules

Individually isolated contact output modules.

No. of Outputs	Voltage, On-State Output, Nom.	Output Delay Time, ON to OFF, Max.❸	Contact Resistance, Initial	Output Current		POINTBus Current (mA)	Power Dissip-ation, Max.	Termination Type	Cat. No.
				Rating, Max.	Leakage, Off-State, Max.				
4 Form A (N.O.) relays, isolated	24V DC	26 ms	30 mΩ	—	1.2 mA and bleed resistor thru snubber circuit @ 240V AC	80	0.5 W	DC micro (M12)	1738–OW4M12
								AC micro 4-pin ❹	1738–OW4M12AC

❶ Input ON-to-OFF delay time is the time from a valid input signal to recognition by the module.
❷ Quantity 4
❸ Time from valid output off signal to relay de-energization by module.
❹ Quantity 2

Mating Cables

ArmorPoint Digital DC Input Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1738–IB8M12 1738–IV8M12	(2) DC Micro	879D–F4ACDM–*	3–61	879D–C3ACD4M–‡	3–61	871A–VS4–DM	3–77
	(2) Pico 3-Pin	879PZ–F3ABDM4–*	3–113				
	(2) Pico 4-Pin	879PZ–F4ABDM–*	3–113				
	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				
1738–IB2M12 1738–IB4M12 1738–IV4M12	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				
1738–IB4M8 1738–IB8M8 1738–IV8M8	(1) DC Micro	889D–F4ABP3M–*	3–109	889P–M3AB–‡	3–107	871A–TS3–PM	3–121
	(1) Pico 3-Pin	889P–F3ABPM–*	3–107				
	(1) Pico 4-Pin	889P–F4ABPM3–*	3–107				
1738–IB8M23 1738–IV8M23	(1) M23 12-Pin	889M–F11RMMU–*	3–129	889M–U11RM–‡	3–129	889M–M12AH–T	3–133

ArmorPoint Digital DC Output Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1738–OB8EM12	(2) DC Micro	879D–F4ACDM–*	3–61	879D–C3ACD4M–‡	3–61	871A–VS4–DM	3–77
	(2) Pico 3-Pin	879PZ–F3ABDM4–*	3–113				
	(2) Pico 4-Pin	879PZ–F4ABDM–*	3–113				
	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				
1738–OB2EM12 1738–OB2EP12 1738–OB4EM12 1738–OV4EM12	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				
1738–OB4EM8 1738–OB8EM8	(1) DC Micro	889D–F4ABP3M–*	3–109	889P–M3AB–‡	3–107	871A–TS3–PM	3–121
	(1) Pico 3-Pin	889P–F3ABPM–*	3–107				
	(1) Pico 4-Pin	889P–F4ABPM3–*	3–107				
1738–OB8EM23	(1) M23 12-Pin	889M–F11RMMU–*	3–129	889M–U11RM–‡	3–129	889M–M12AH–T	3–133

ArmorPoint Digital Contact Output Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1738–OW4M12	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
1738–OW4M12AC	(1) AC Micro 4-Pin	889R–F4AERM–*	3–85	889R–M4AEA–‡	3–85	—	—

* = length in meters (1, 2, 3, 5, and 10 standard).
‡ = length in meters (2, 5, and 10 standard).

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult “Page Ref” listed in the above tables.

Digital I/O Modules

ArmorPoint Digital AC Input Modules

General-purpose AC inputs including 2- and 3-wire proximity sensors.

No. of Inputs	On-State Input Voltage		Input Delay Time, ON to OFF, Hardware Delay, Max. ❶	Input Current		Input Impedance Nom.	POINTBus Current (mA)	Power Dissip-ation Max.	Termination Type	Cat. No.
	Nom.	Range		On-State Min.	Off-State Max.					
2	120V AC	65V AC… 132V AC	20 ms hardware filter plus 0…65 ms digital filter programmable in increments of 1 ms	3.7 mA	2.5 mA	10.6 k	75	0.7 W @ 28.8V DC	AC micro 3-pin ❷	1738–IA2M12AC3
									AC micro 4-pin ❷	1738–IA2M12AC4

ArmorPoint Digital AC Output Modules

General purpose AC outputs.

No. of Outputs	Voltage		Output Current Rating	POINTBus Current (mA)	Power Dissipation, Max.	Termination Type	Cat. No.
	On-State Output, Nom.	On-State Output, Range					
2	120V/220V AC	74V AC… 264V AC	1.5 A (2 channels @ 0.75 A each)	75	0.8 W @ 28.8V DC	AC 3-pin ❷	1738–OA2M12AC3

❶ Input ON-to-OFF delay time is the time from a valid input signal to recognition by the module.
❷ Quantity 2

Analog I/O Modules

The 1738 analog I/O modules support:

- 4…20 mA inputs and outputs
- 0…10V inputs and outputs
- RTD inputs
- Thermocouple inputs

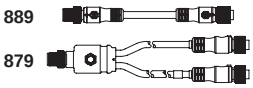
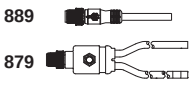
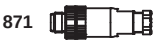
ArmorPoint Analog Input Modules

No. of Inputs	Input		Absolute Accuracy ❶	Input Step Response, per Channel	Input Conversion Type	Current		Power Dissip-ation, Max.	Termina-tion Type	Cat. No.
	Signal Range	Resolution Bit				POINTBus (mA)	External DC Power Supply			
2 single-ended	4…20 mA 0…20 mA	16 bits–over 21 mA 0.32 µA/cnt	0.1% Full Scale @ 25°C	70 ms @ Notch = 60 Hz (default) 80 ms @ Notch = 50 Hz 16 ms @ Notch = 250 Hz 8 ms @ Notch = 500 Hz	Delta Sigma	75	10mA @ 24V DC	0.6 W @ 28.8V DC	DC micro (M12)	1738–IE2CM12
2 single-ended	0…10V ±10V	15 bits plus sign 320 µV/cnt in unipolar or bipolar mode	0.1% Full Scale @ 25°C				15mA @ 24V DC	0.75 W @ 28.8V DC		1738–IE2VM12
2 single-ended RTD	0…600 Ω	16 bits–9.5 mV per count 0.03°C per count (pt 385 @ 25°C)	0.1% Full Scale @ 25°C❷	—	—	220	15mA @ 24V DC	1.0 W		1738–IR2M12❸
2 single-ended Thermo-couple, Millivolt	±75 mV	15 bits plus sign 2.5 mV per count	0.1% Full Scale @ 25°C❷	—	—	175	—	1.0 W		1738–IT2IM12❸

❶ Includes offset, gain, nonlinearity and repeatability error terms.
❷ Analog and temperature input modules support these configurable parameters and diagnostics: open-wire with LED and electronic reporting; four-alarm and annunciation set-points; calibration mode and electronic reporting; under- and over-range and electronic reporting; channel signal range and update rate and on-board scaling; filter-type; temperature scale; channel update rate.
❸ See also *Temperature Input Modules—Additional Specifications* see page 7–12.

Mating Cables

ArmorPoint AC Input Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	 Recommended Patchcord (Double-ended)	Page Ref	 Recommended Male Cordset (Single-ended)	Page Ref	 Recommended Field Attachable Connector	Page Ref
1738–IA2M12AC3	(1) AC Micro 3-Pin	**889R–F3AERM–***	3–85	**889R–M3AEA–‡**	3–85	**871A–TS3–RM**	3–97
1738–IA2M12AC4	(1) AC Micro 4-Pin	**889R–F4AERM–***	3–85	**889R–M4AEA–‡**	3–85	—	—

ArmorPoint AC Output Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1738–OA2M12AC3	(1) AC Micro 3-Pin	**889R–F3AERM–***	3–85	**889R–M3AEA–‡**	3–85	**871A–TS3–RM**	3–97

ArmorPoint Analog Input Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1738–IE2CM12 **1738–IE2VM12** **1738–IR2M12**	(1) DC Micro	**889D–F4SCDM–***	—	**889D–M4SC–‡**	—	**889D–M4DC–SH**	3–79
1738–IT2IM12	(1) DC Micro	—	—	—	—	**871A–TS4CJC–DM**	3–77

* = length in meters (1, 2, 3, 5, and 10 standard).
‡ = length in meters (2, 5, and 10 standard).

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult “Page Ref” listed in the above tables.

Thermocouple and RTD Input Modules—Additional Specifications

	Cat. No.	
Description	**1738–IR2M12**	**1738–IT2IM12**
Number of Inputs	2 single-ended RTD	2 single-ended Isolated Thermocouple, Millivolt
Thermocouple Type and Resolution Average Over Span	—	Type B, 30…1820 °C, 3 counts/°C Type C, 0…2315 °C, 6 counts/°C Type E, –270…1000 °C, 24 counts/°C Type J, –210…1200 °C, 21 counts/°C Type K, –270…1372 °C, 13 counts/°C Type N, –270…1300 °C, 11 counts/°C Type R, –50…1768.1 °C, 4 counts/°C Type S, –50…1768.1°C, 4 counts/°C Type T, –270…400 °C, 15 counts/°C
Cold Junction Compensation Range	—	0–70 °C
Input Update Rate, per Module	20 ms @ Notch = 50 Hz 17 ms @ Notch = 60 Hz (default) 10 ms @ Notch = 100 Hz 8 ms @ Notch = 120 Hz 5 ms @ Notch = 200 Hz 4 ms @ Notch = 240 Hz 3 ms @ Notch = 300 Hz 3 ms @ Notch = 400 Hz 2 ms @ Notch = 480 Hz	20 ms @ Notch = 50 Hz 17 ms @ Notch = 60 Hz (default) 10 ms @ Notch = 100 Hz 8 ms @ Notch = 120 Hz 5 ms @ Notch = 200 Hz 4 ms @ Notch = 240 Hz 3 ms @ Notch = 300 Hz 3 ms @ Notch = 400 Hz 2 ms @ Notch = 480 Hz
Input Data Format	Signed integer	Signed integer

ArmorPoint Analog Output Modules

No. of Outputs	Output Signal Range	Output Resolution Bits	Absolute Accuracy	Step Response to 63% of FS	Output Conversion Rate	POINTBus Current (mA)	External DC Power Supply Current	Power Dissipation Max.	Termination Type	Cat. No.
2 single-ended	4…20 mA 0…20 mA	13 bits–over 21 mA 2.5 µA/cnt	0.1% Full Scale @ 25°C❶❷	24 µs	16 µs	75	50 mA @ 24V DC (including outputs @ 20 mA)	1.0W @ 28.8V DC	DC micro (M12)	**1738–OE2CM12**
2 single-ended	0…10V ±10V	14 bits (13 plus sign) 1.28 mV/cnt in unipolar or bipolar mode	0.1% Full Scale @ 25°C❶❷	20 µs	20 µs		35 mA @ 24V DC (including outputs @ 3 mA)			**1738–OE2VM12**

❶ Includes offset, gain, non-linearity and repeatability error terms.
❷ Analog output modules support these configurable parameters and diagnostics: open-wire with LED and electronic reporting (OE2C only); fault mode; idle mode; alarms; channel signal range and on-board scaling.

Mating Cables

ArmorPoint Analog Output Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1738–OE2CM12 1738–OE2VM12	(1) DC Micro	**889D–F4SCDM–***	—	**889D–M4SC–‡**	—	**889D–M4DC–SH**	3–79

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult “Page Ref” listed in the above tables.

Specialty I/O Modules

- Counter Modules
- SSI Modules
- Serial Interface Modules (RS–232, RS–485, RS–422)

ArmorPoint Counter Modules

The input voltage range is 5V DC (1738–IJ) or 15…24V DC (1738–VHSC24). The module returns the count or frequency in the form of a 24-bit binary number (0…16,777,215) expressed in a 32-bit word. Each counter has a user-selectable preset and rollover value associated with it.

The operation of the counter and encoder modes is nearly identical. The difference between the two modes is in the type of feedback (one-phase versus two-phase) for the count direction (up or down). In encoder mode, a transition is expected on B for counting to proceed in a direction, whereas, in counter mode, the B input may be left at a static level. All operating modes are selected by writing appropriate configuration data to the module.

ArmorPoint Counter Modules

No. of Counters	Voltage, On-State Input, Nom.	Field Power Bus	No. of Compare Windows	Output Groups	Input Frequency, Max.	Output Delay Time, OFF to ON	Current, On-State Input, Min.	POINTBus Current (mA)	Termination Type	Cat. No.
1	5V DC	Voltage dependent on Field Power Source❶	—	—	1.0 MHz counter and encoder X1 configurations (no filter) 500 kHz encoder X2 configuration (no filter) 250 kHz encoder X4 configuration (no filter)	—	≥5 mA	160	M23	**1738–IJM23**
1	24V DC		4	1 group of 2		25µs (load dependent)❷		110	M23	**1738–VHSC24M23**

❶ Field power source via the field power connection on the network adaptor, **1738–EP24DC**, or **1738–FPD**.

❷ OFF to ON delay is time from a valid output "on" signal to output energization.

Mating Cables

ArmorPoint Counter Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1738–IJM23 **1738–VHSC24M23**	(1) M23 12-Pin	**889D–F4SCDM–***	—	**889D–M4SC–‡**	—	**889M–M12AH–T**	3–133

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult "Page Ref" listed in the above tables.

ArmorPoint Synchronous Serial Interface Modules

The **Synchronous Serial Interface Absolute Encoder Module** collects serial data from industrial absolute-position encoding sensors that use standard SSI protocol, including linear, rotary, and optical distance measuring devices. The module is inserted into a ArmorPoint I/O terminal base that provides common power, communications, and wiring connections for the SSI sensors. The module converts a serial data stream from an SSI sensor into absolute position data readable as a 32-hexadecimal value. Gray or binary-code capable with gray to binary conversion, increasing or decreasing SSI count indication, 2 SSI word comparator values, and SSI word latching with I1 input.

ArmorPoint Serial Interface Modules

The **1738–232ASCM12 and 1738–485ASCM12 serial-interface modules** offer a serial-link communication interface solution for peripheral products with RS–232 (use the **1738–232ASCM12**), RS–485, and RS–422 ports (use the **1738–485ASCM12**). These modules allow a device with serial-interface output (i.e., bar code readers) to communicate up to 128 bytes of ASCII data onto any network supported by ArmorPoint I/O. Each module is a single-channel, full-duplex interface and is rated for up to 38.4k baud. LED indicators on the modules offer diagnostics for the module, POINTBus backplane, and transmit/receive status indication.

ArmorPoint Serial I/O Modules

Inputs/Outputs	POINTBus Current (mA)	External DC Power Supply Current	Power Dissipation, Max.	Termination Type	Cat. No.
1 Synchronous Serial Interface Channel	110	10…28V DC 0.75 A max.	0.94 W	M23	**1738–SSIM23**
1 Serial Interface Channel, RS232	95	10…28V DC 1.0 A max.	1.75 W @ 28.8V DC	DC micro (M12)	**1738–232ASCM12**
1 Serial Interface ChannelM RS485, RS422	95	10…28V DC 1.0 A max.	1.75 W @ 28.8V DC		**1738–485ASCM12**

Mating Cables

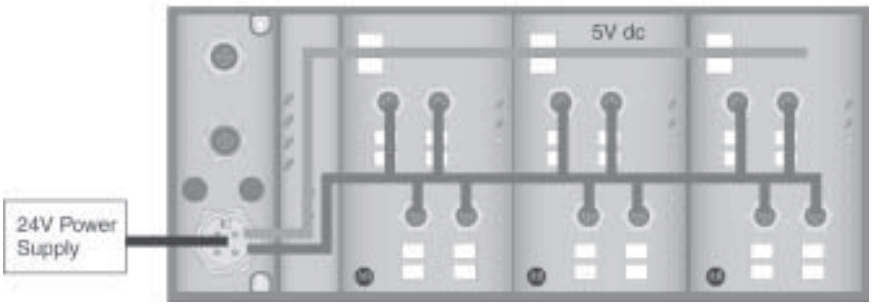
ArmorPoint Serial I/O Module Mating Cables

ArmorPoint Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1738–SSIM23	(1) M23 12-Pin	—	—	—	—	**889M–M12AH–T**	3–133
1738–232ASCM12 **1738–485ASCM12**	(1) DC Micro	**889D–F4SCDM–***	—	**889D–M4SC–⁜**	—	**889D–M4DC–SH**	3–79

Power Supplies

ArmorPoint I/O adaptors (**1738–ADN12, –ADN18, –ADN18P, –ADNX, –ACNR, –AENT, –APB**) have built-in POINTBus power supplies. All ArmorPoint I/O modules are powered from the POINTBus by either an adaptor or expansion power supply. For power specifications see *Communication Adaptor Modules*.

ArmorPoint Communication Adaptor and I/O Modules



An auxiliary 24V DC power supply provides power to the POINTBus backplane and I/O modules. You can connect up to 12 I/O modules and an adaptor with a maximum of 10 A field power, using the auxiliary power.

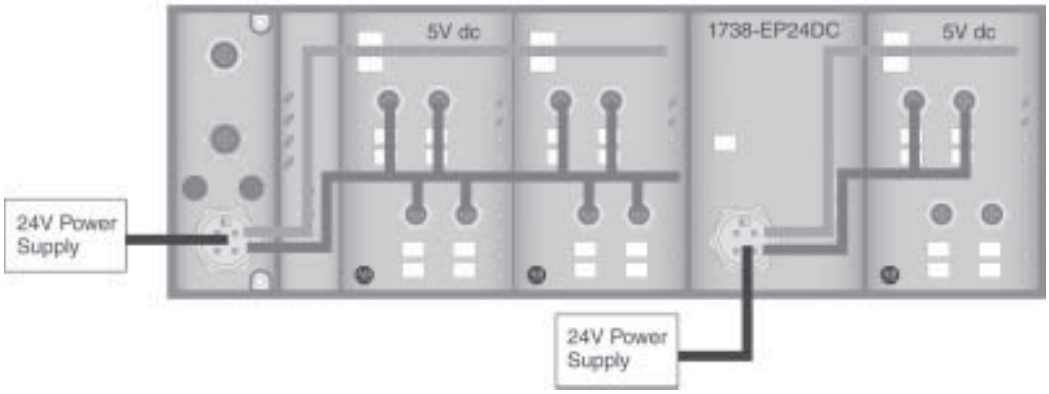
ArmorPoint Expansion Power Unit

The ArmorPoint I/O Expansion Power Unit (**1738–EP24DC**) passes 24V DC field power to the I/O modules to the right of it. This unit extends the backplane bus power and creates a new field voltage partition segment for driving field devices for up to 17 I/O modules. The expansion power unit separates field power from I/O modules to the left of the unit, effectively providing functional and logical partitioning for:

- Separating field power between input and output modules
- Separating field power to the analog and digital modules
- Grouping modules to perform a specific task or function

Power to the POINTBus backplane and I/O modules is brought in through the auxiliary power connector. You can connect up to 12 I/O modules and an adaptor with a maximum of 10 A field power, using the auxiliary power. Additional I/O modules require the use of one or more ArmorPoint I/O 24V DC expansion power units.

ArmorPoint I/O System with 24V DC Expansion Power Unit (1738–EP24DC)

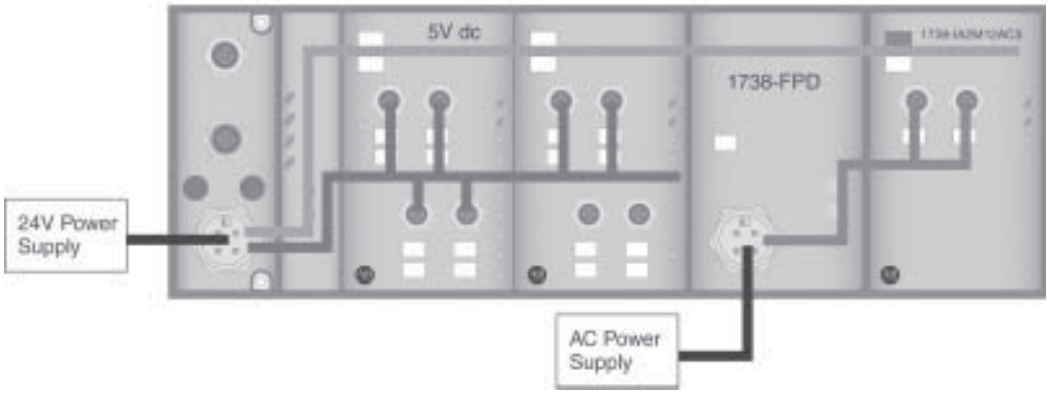


The auxiliary power supports up to 12 I/O modules and an adaptor with a maximum of 10 A field power. The 24V DC expansion power unit (1738–EP24DC) extends the backplane bus power to support up to 12 more I/O modules. Connect additional expansion power units to expand the I/O assembly up to the maximum of 63 I/O modules.

ArmorPoint Field Power Distributor

The ArmorPoint I/O Field Power Distributor Module (1738–FPD) passes through all ArmorPoint I/O backplane signals, but does not provide additional POINTBus backplane power. The field power distributor gives you the ability to change the field power distribution source for I/O modules to the right of the field power distributor. This facilitates logical or functional partitioning of low-channel count, high I/O mix applications using any of the communication adaptors. Use the field power distributor with a broad range of voltage inputs including 5V DC to 250V DC and/or 24V AC to 240V AC applications and I/O modules.

ArmorPoint I/O System with Field Power Distributor (1738–FPD)



The ArmorPoint field power distributor (1738–FPD) discontinues the I/O circuit power bus in order to change the field power source for I/O modules to the right of it. This allows a broad range of voltage inputs in the I/O assembly.

Power Input Voltage Range	Field Side Power Requirements	Inrush Current, Max.	POINTBus Output Current Rating	Power Consumption, Max.	Cat. No.
10…28.8V DC	24V DC (+20% = 28.8V DC max.) @ 400 mA	6 A for 10 ms	1.3 A	9.8 W @ 28.8V DC	**1738–EP24DC**
5…150V DC 24…240V AC	—	—	—	—	**1738–FPD**

Accessories, Cables and Cordsets

Bus Extension Bases (1738–EXT1, –EXT3)

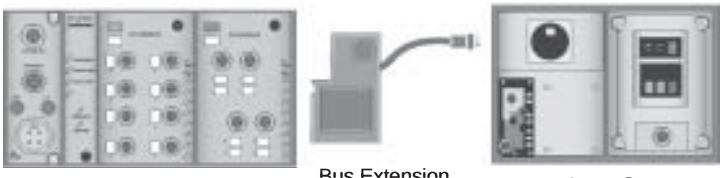
An ArmorPoint I/O bus extension base allows the backplane to be extended to additional I/O or the ArmorStart IP 67 motor starter. May require the addition of an auxiliary power module. Refer to the installation manual (publication 1738–IN018A–EN–E) to determine if a 1738–EP24DC or 1738–FPD is needed after a bus extension base.

ArmorPoint Bus Extension Bases

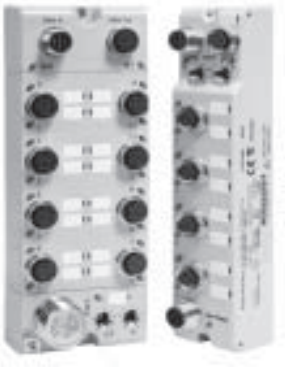
Description	Cat. No.
ArmorPoint 1 meter bus extension base	**1738–EXT1**
ArmorPoint 3 meter bus extension base	**1738–EXT3**

ArmorPoint to ArmorStart Bus Extension Bases

Description	Cat. No.
ArmorPoint to ArmorStart 1 meter bus extension base	**280A–EXT1**



ArmorBlock I/O



ArmorBlock™ I/O

The 1732 ArmorBlock I/O modules have a compact style with a low profile. 1732 ArmorBlock modules are packaged in a sealed housing rated for IP 69K and NEMA 4X. A 1732 ArmorBlock I/O module contains digital I/O circuits, a built-in power supply, and a built-in DeviceNet, EtherNet/IP, or Profibus DP I/O adaptor. The DeviceNet network supplies power to the ArmorBlock system and on some models also to the I/O. On those units with DeviceNet network powered I/O, a diagnostic bit is provided for short circuits and overcurrent. Inputs and outputs are powered by an external 24V DC source which is independent of the network. An external 24V DC power source is required for Profibus DP.

I/O blocks are available with 8 or 16 I/O points. Electronic fusing provides protection for output load devices and easy resetting. Units are available as 8 or 16 inputs, 8 or 16 outputs or 8 or 16 self-configuring modules. The self-configuring modules contain both input and output functionality. With these self-configuring modules, the user is not required to “configure” anything and any combination of input and outputs are available (e.g., 7+1, 11+5, 4+4). The self-configuring units have automatic output monitoring.

1732 ArmorBlock I/O modules are designed for back-panel or On-Machine mounting. The 8 point modules can be front or side mounted, the 8 or 16 point modules can be horizontally or vertically mounted. Enclosure costs are eliminated because each block is packaged in a rated sealed housing. I/O terminations are DC micro (M12) quick-disconnects or pico (M8) quick-disconnects. These modules do not require a separate base.

Specifications

Enclosure Type Rating	IP 69K and NEMA 4X
Mounting Type	Panel, On-Machine
Operating Temperature—C (F)	IEC 60068–2–1 (Test Ad, Operating Cold), IEC 60068–2–2 (Test Bd, Operating Dry Heat), IEC 60068–2–14 (Test Nb, Operating Thermal Shock): –20…60° (–4…140°)
Storage Temperature—C (F)	IEC 60068–2–1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068–2–2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068–2–14 (Test Na, Unpackaged Nonoperating Thermal Shock): –45…85° (–49…185°)
Relative Humidity	IEC 60068–2–30 (Test Db, Unpackaged Nonoperating Damp Heat): 5…95% noncondensing
Shock, Operating	IEC 60068–2–27 (Test Ea, Unpackaged Shock): 30 G
Shock, Non–Operating	IEC 60068–2–27 (Test Ea, Unpackaged Shock): 50 G
Vibration	IEC 60068–2–6 (Test Fc, Operating): 5G @ 10…500 Hz
Certifications ❶	cULus, CE, C-Tick
Dimensions (HxWxD), Approx.	8 point: 48 x 69 x 174 mm (1.9 x 2.7 x 6.9 in) 16 point: 43 x 69 x 179 mm (1.7 x 2.5 x 7.0 in)

❶ When product is marked. See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

Armor WeldBlock I/O

The 1732 Armor WeldBlock is designed for use in typical welding applications. The design resists the effects of weld slag and magnetic fields found in close proximity to the weld head. The sealed IP 67, light-weight metal housing, of plated aluminum, protects the electronics which are the same as those in other 1732 ArmorBlocks and is ideal for end-of-arm robot applications. Armor WeldBlocks are available in DeviceNet and EtherNet I/P with 24V DC,16 point inputs only or 16 point self-configuring I/O. I/O and network connections are DC Micro (M12).

Features

- Sealed housing rated for IP 69K and NEMA 4X eliminate enclosure costs.
- Low installation cost and easy to replace without rewiring because industry-standard mini or M12 DC micro connectors are used for connection to the DeviceNet network and auxiliary power supply. I/O connectors are sealed M8 pico or M12 DC micro styles.
- 8 and 16 point self-configuring I/O allows input/output mix to a granularity of one.
- Removal and Insertion Under Power (RIUP) makes it possible to replace a module without impacting the network operation.
- Isolated auxiliary power maintains power to the outputs if main power fails so that you can have the option of holding outputs in their last state.
- Outputs electronically protected
- Complies with Open DeviceNet Vendor Association, Inc. (ODVA) conformance test software.

Digital I/O Blocks

DeviceNet, 24V DC, 8 and 16 Point

Inputs—Sink	Outputs—Source	Max. Continuous Output Current Rating per Point/Module	Max. Surge/Inrush Output Current Rating per Point	Max. Current for Input Device Power per Point	Potential Max. Aux. Current per Module	Network Current Draw	I/O Connectors	Cat. No.
8	0	NA	NA	0.8 A	0.45 A	100 mA	(8) M8	**1732D–IB8M8**
							(4) M12	**1732D–IB8M12**
0	8	0.5/4.0 A	1.2 A	NA	4.0 A	100 mA	(8) M8	**1732D–OB8EM8**
							(4) M12	**1732D–OB8EM12**
8 self-configuring ❹		0.5/4.0 A	1.2 A	0.8 A	4.0 A	100 mA	(8) M8	**1732D–8CFGM8**
							(4) M12	**1732D–8CFGM12**
16	0	NA	NA	0.8 A	0.9 A	75 mA	(8) M12	**1732D–IB16M12M12**
								1732D–IB16M12MINI
0	16 ❶	2.0/8.0 A ❶	4.8 A	NA	0.1 A/8.0 A ❷	100 mA	(8) M12	**1732D–OB16M12M12**
								1732D–OB16M12MINI
16 self-configuring ❹		0.5/8.0 A	1.2 A	0.8 A	0.9 A/8.0 A ❷	100 mA	(8) M12	**1732D–16CFGM12M12**
								1732D–16CFGM12MN

Digital I/O Blocks with Network Powered I/O and Diagnostics

DeviceNet, 24V DC,16 Point

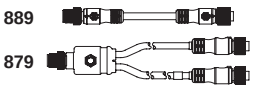
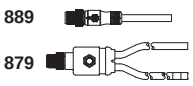
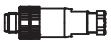
I/O diagnostics provide one fault bit per modules to indicate a short circuit or overcurrent on any I/O point. Inputs and/or outputs powered by network where noted.

Inputs—Sink, Powered by Network	Outputs—Source	Max. Continuous Output Current Rating per Point/Module	Max. Surge/Inrush Output Current Rating per Point	Max. Current for Input Device Power per Point	Potential Max. Aux. Current per Module	Max. Network Current Draw for Module Operation Plus I/O	I/O Connectors	Cat. No.
8 (2 each on 4 connectors)	8 (2 each on 4 connectors)	0.5/4.0 A	1.2 A	0.8 A	4.0 A	0.1 A + I/O (1.0 A max.)	(8) M12	**1732D–8X81212D**
8 (2 each on 4 connectors)	8 (2 each on 4 connectors)	1.4A/8.0 A ❸	3.1 A	0.8 A	8.0 A	0.1 A + I/O (1.0 A max.)	(8) M12	**1732D–8X81212HD**
8 (1 on each connector)	8 (1 on each connector and powered by network)	0.5/4.0 A	1.2 A	0.8 A	NA	0.1 A + I/O (5.0 A max.)	(8) M12	**1732D–8I8O1212D**
16 powered by network	0	NA	NA	0.8 A	NA	75 mA + I/O (0.95 A max.)	(8) M12	**1732D–IB161212D**

❶ Maximum current on all I/O connectors exceeds total for the module.
❷ Module operation power and input device power, from Auxiliary Power Connector pins 2 and 3, are separate and isolated from the I/O output power, from Auxiliary Power Connector pins 1 and 4. Both auxiliary power consumption totals need to be noted.
❸ Maximum current on all I/O connectors exceeds total for the module.
❹ Each of the self-configuring I/O points can be either an input (sink) or an output (source), e.g. 16 points: 13 in –3 out, 6 in – 10 out, etc. or 8 points: 6 in – 2 out, 1 in – 7 out, etc.

Mating Cables

I/O Connections—DC Micro (M12) or Pico (M8)

ArmorBlock Cat. No.	End Device Connector and Quantity	 Recommended Patchcord or V-Cable (Double-Ended)	Page Ref	 Recommended Male Cordset or V-Cable (Single-Ended)	Page Ref	 Recommended Male Field Attachable Connector	Page Ref
1732D–IB8M8 1732D–0B8EM8 1732D–8CFGM8	(1) DC Micro	**889D–F4ABP3M–***	3–109	**889P–M3AB–‡**	3–107	**871A–TS3–PM**	3–121
	(1) Pico 3-pin	**889P–F3ABPM–***	3–107				
	(1) Pico 4-pin	**889P–F4ABPM3–***	3–107				
1732D–IB8M12 1732D–OB8EM12 1732D–8CFGM12 1732D–IB16M12M12 1732D–IB16M12MINI 1732D–OB16M12M12 1732D–OB16M12MINI 1732D–16CFGM12M12 1732D–16CFGM12MN 1732D–8X81212D 1732D–8I8O1212D 1732D–8X81212HD 1732D–IB161212D	(2) DC Micro	**879D–F4ACDM–***	3–61	**879D–C3ACD4M–‡**	3–61	**871A–VS4–DM**	3–77
	(2) Pico 3-pin	**879PZ–F3ABDM4–***	3–113				
	(2) Pico 4-pin	**879PZ–F4ABDM–***	3–113				
	(1) DC Micro	**889D–F4ACDM–***	3–47	**889D–M4AC–‡**	3–47	**871A–TS4–DM**	3–77
	(1) Pico 3-pin	**889P–F3ABDM4–***	3–57				
	(1) Pico 4-pin	**889P–F4ABDM–***	3–57				

DeviceNet Network Connections—Mini or Micro (M12)

ArmorBlock Cat. No.	Network Connection	Flat Media	Page Ref	Thick Round	Page Ref	Thin Round	Page Ref
1732D–IB16M12MINI 1732D–OB16M12MINI 1732D–16CFGM12MN	Mini	**1485K–P§F5–N5**	6–17	**1485R–P§N5–M5**	6–27	**1485R–P§D5–N5**	6–27
All other 1732D	Micro	**1485K–P§F5–R5**	6–17	**1485R–P§M5–R5**	6–27	**1485R–P§R5–D5**	6–27

Auxiliary Power Connections—Mini or Micro (M12)

ArmorBlock Cat. No.	ArmorBlock Aux. Power Connector Style	Flat Media		Round Media			
		Auxiliary Power Flat Media Connection	Page Ref	Thick Round	Page Ref	Thin Round	Page Ref
1732D–IB8M12 1732D–0B8EM12 1732D–8CFGM12 1732D–IB8M8 1732D–0B8EM8 1732D–8CFGM8	4-Pin DC Micro	**889D–F2ACDM–K§**	6–19	Cordset: **889D–F2AC–‡** Patchcord: **889D–F2AEN4M–D§**	6–51	Cordset: **889D–F4AC–‡** Patchcord: **889D–F4ACDM–***	3–47
1732D–IB16M12M12 1732D–IB16M12MINI 1732D–OB16M12M12 1732D–OB16M12MINI 1732D–16CFGM12M12 1732D–16CFGM12MN 1732D–8X8M12M12D 1732D–8X8M12M12HD	4-Pin Mini	**1485T–PIE4–C§N4**	6–20	Cordset: **889N–F4AFC–★F** Patchcord: **889N–F4AFNM–***	6–51	Terminal Chamber: **871A–TS4–N1**	3–29
1732D–8I8OM12M12D 1732D–IB16M12M12D	Not applicable, inputs/outputs powered by network						

* = length in meters (1, 2, 3, 5, and 10 standard).
‡ = length in meters (2, 5, and 10 standard).
§ = length in meters (1, 2, 3, 4, 5, and 6 standard).
★ = length in feet (6, 12, and 20 standard).

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult "Page Ref" listed in the above tables.

EtherNet/IP & Profibus DP Digital I/O Blocks

EtherNet/IP, 24V DC, 16 Point

Inputs—Sink	Outputs—Source	Max. Output Current per Point/Module	Max. Output Surge/Inrush Current per Point	Max. Current for Input Device Power per Point	Potential Max. Aux. Current per Module	I/O Connectors	Cat. No.
16	0	NA	NA	0.8 A	1.1 A	(8) M12	**1732E–IB16M12**
0	16	2.0/8.0 A ❶	4.8 A	NA	1.15 A/8.0 A ❷	(8) M12	**1732E–OB16M12**
16 self-configuring ❸		0.5/8.0 A	1.2 A	0.8 A	1.15 A/8.0 A ❷	(8) M12	**1732E–16CFGM12**

Profibus DP, 24V DC, 8 and 16 Point Digital I/O Blocks

Inputs—Sink	Outputs—Source	Max. Cont. Output Current Rating per Point/Module	Max. Surge/ Inrush Output Current Rating per Point	Max. Current for Input Device Power per Point	Potential Max. Aux. Current per Module	I/O Connectors	Cat. No.
8	0	NA	NA	0.8 A	0.45 A	(8) M8	**1732P–IB8M8**
						(4) M12	**1732P–IB8M12**
0	8	0.5/4.0 A	1.2 A	NA	4.0 A	(8) M8	**1732P–OB8EM8**
						(4) M12	**1732P–OB8EM12**
8 self-configuring ❸		0.5/4.0 A	1.2 A	0.8 A	4.0 A	(8) M8	**1732P–8CFGM8**
						(4) M12	**1732P–8CFGM12**
16	0	NA	NA	0.8 A	1.0 A	(8) M12	**1732P–IB16M12**
0	16	2.0/8.0 A ❶	4.8 A	NA	0.2/8.0 A ❷	(8) M12	**1732P–OB16M12**
16 self-configuring ❸		0.5/8.0 A	1.2 A	0.8 A	1.0/8.0 A ❷	(8) M12	**1732P–16CFGM12**

Armor WeldBlock

DeviceNet WeldBlocks, 24V DC, 16 Point

Inputs—Sink	Outputs—Source	Max. Cont. Output Current Rating per Point/Mod.	Max. Surge/ Inrush Output Current Rating per Point	Max. Current for Input Device Power per Point	Potential Max. Aux. Current per Module	Network Current Draw	I/O Connectors	Cat. No.
16	0	NA	NA	0.8 A	0.9 A	75m A	(8) M12	**1732D–IB161212W**
16 self-configuring ❸		0.5/8.0 A	1.2 A	0.8 A	0.9/8.0 A ❷	100m A	(8) M12	**1732D–16CFG1212W**

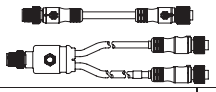
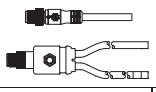
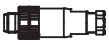
EtherNet/IP WeldBlocks, 24V DC, 16 Point

Inputs—Sink	Outputs—Source	Max. Output Current per Point/Module	Max. Output Surge/Inrush Current per Point	Max. Current for Input Device Power per Point	Potential Max. Aux. Current per Module	I/O Connectors	Cat. No.
16	0	NA	NA	0.8 A	1.1 A	(8) M12	**1732E–IB16M12W**
16 self-configuring ❸		0.5/8.0 A	1.2 A	0.8 A	1.15/8.0 A ❷	(8) M12	**1732E–16CFGM12W**

❶ Maximum current on all I/O connectors exceeds total for the module.
❷ Module operation power and input device power, from Auxiliary Power Connector pins 2 and 3, are separate and isolated from the I/O output power, from Auxiliary Power Connector pins 1 and 4. Both auxiliary power consumption totals need to be noted.
❸ Each of the self-configuring I/O points can be either an input (sink) or an output (source), e.g. 16 points: 13 in –3 out, 6 in – 10 out, etc. or 8 points: 6 in – 2 out, 1 in – 7 out, etc.

Mating Cables

I/O Mating Cables, DC Micro (M12) or Pico (M8)

ArmorBlock Cat. No.	End Device Connector and Quantity	889 / 879  Recommended Patchcord or V-cable (Double-ended)	Page Ref	889 / 879  Recommended Male Cordset or V-cable (Single-ended)	Page Ref	871  Recommended Male Field Attachable Connector	Page Ref
1732E–*** **1732D–IB16M12M12W** **1732D–16CFGM12M12W** **1732P–IB8M12** **1732P–0B8EM12** **1732P–8CFGM12** **1732P–IB16M12** **1732P–0B16M12** **1732P–16CFGM12**	(2) DC Micro	**879D–F4ACDM–***	3–109	**879D–C3ACD4M–‡**	3–107	**871A–VS4–DM**	3–121
	(2) Pico 3-pin	**879PZ–F3ABDM4–***	3–107				
	(2) Pico 4-pin	**879PZ–F4ABDM–***	3–107				
	(1) DC Micro	**889D–F4ACDM–***	3–61	**889D–M4AC–‡**	3–61	**871A–TS4–DM**	3–77
	(1) Pico 3-pin	**889P–F3ABDM4–***	3–113				
	(1) Pico 4-pin	**889P–F4ABDM–***	3–113				
1732P–IB8M8 **1732P–0B8EM8** **1732P–8CFGM8**	(1) DC Micro	**889D–F4ABP3M–***	3–47	**889P–M3AB–‡**	3–47	**871A–TS3–PM**	3–77
	(1) Pico 3-pin	**889P–F3ABPM–***	3–57				
	(1) Pico 4-pin	**889P–F4ABPM3–***	3–57				

Network Mating Cables, DeviceNet Micro, EtherNet M12, or Profibus DP Micro

ArmorBlock Cat. No.	Network Connector Type	Flat Media	Page Ref	Thick Round	Page Ref	Thin Round	Page Ref
1732D–IB161212W **1732D–16CFG1212W**	DeviceNet (Micro)	**1485K–P★F5–R5**	6–17	**1485R–P★M5–R5**	6–27	**1485R–P★R5–D5**	6–27
1732E–IB16M12 **1732E–OB16M12** **1732E–16CFGM12** **1732E–IB16M12W** **1732E–16CFGM12W**	EtherNet/IP (EtherNet M12)	—	—	—	—	**1585D–M4DC–H**	6–61
1732P–***	Profibus DP Micro (reverse key M12)	—	—	—	—	—	—

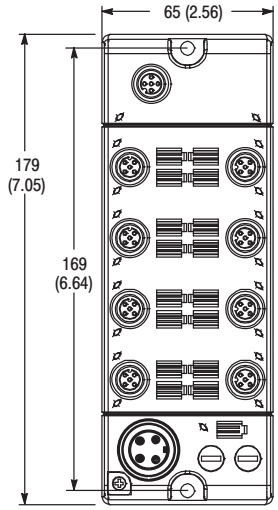
Auxiliary Power Mating Cables, Mini or DC Micro (M12)

ArmorBlock Cat. No.	Aux. Power Connection Type	Flat Media		Round Media			
		Auxiliary Power Flat Media Connection	Page Ref	Thick Round	Page Ref	Thin Round	Page Ref
1732E–*** **1732D–IB16M12M12W** **1732D–16CFGM12M12W** **1732P–IB16M12** **1732P–OB16M12** **1732P–16CFGM12**	4-pin Mini	**1485T–P1E4–C§–N4**	6–20	Cordset: **889N–F4AFC–§** Patchcord: **889N–F4AFNM–***	6–51	Terminal Chamber: **871A–TS4–N1**	3–29
1732P–IB8M8 **1732P–IB8M12** **1732P–0B8EM8** **1732P–0B8EM12** **1732P–8CFGM8** **1732P–8CFGM12**	4-pin DC Micro	**889D–F2ACDM–K***	6–19	Cordset: **889D–F4AC–‡** Patchcord: **889D–F2AEN4M–D***	6–51	Cordset: **889D–F4AC–‡** Patchcord: **889D–F4ACDM–***	3–47

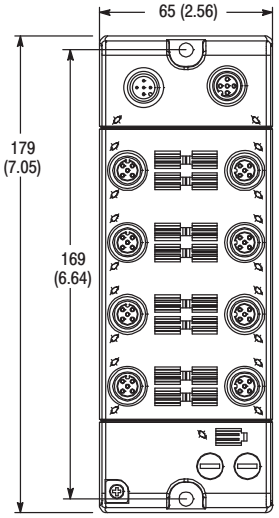
* = length in meters (1, 2, 3, 5, and 10 standard).
‡ = length in meters (2, 5, and 10 standard).
§ = length in meters (1, 2, 3, 4, 5, and 6 standard).
★ = length in feet (6, 12, and 20 standard).

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult “Page Ref” listed in the above tables.

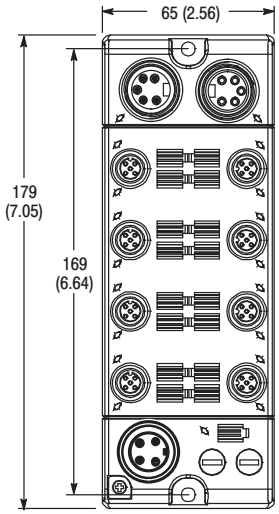
Dimensions—mm (in)



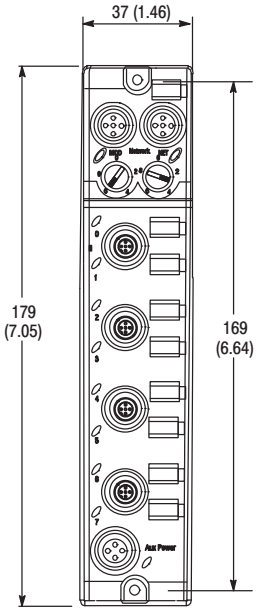
1732E-IB16M12
1732E-OB16EM12
1732E-16CFGM12
1732E-IB15M12W
1732E-I6CFGM12W



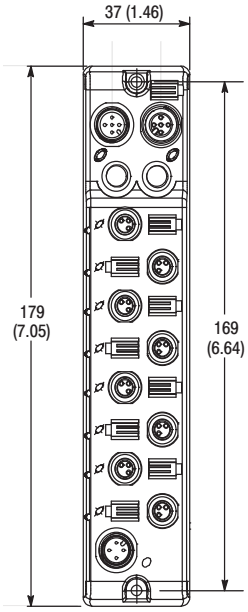
1732D-8I8OM12M12D
1732D-8I8O1212D
1732D-IB161212D



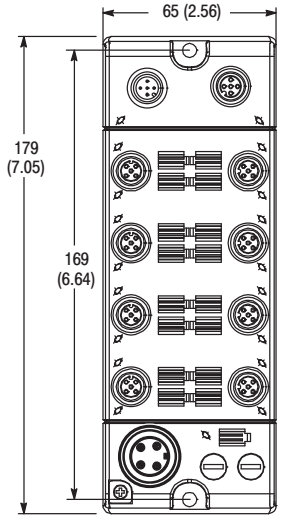
1732D-IB16M12MINI
1732D-OB16M12MINI
1732DE-16CFGM12MN



1732D-IB8M12
1732D-OB8EM12
1732D-8CFGM12
1732P-IB8M12
1732P-OB8EM12
1732P-8CFGM12



1732D-IB8M8
1732D-OB8EM8
1732D-8CFGM8
1732P-IB8M8
1732P-OB8EM8
1732P-8CFGM8



1732D-IB16M12M12
1732D-OB16M12M12
1732D-16CFGM12M12
1732D-8X81212D
1732D-8X81212HD
1732D-IB161212W
1732D-16CFG1212W
1732P-IB16M12
1732P-OB16M12
1732P-16CFGM12

ArmorBlock

ArmorBlock MaXum with Mini Pass-Thru Trunk and Power Base

ArmorBlock MaXum with Flat Cable Base

4-Port ArmorBlock MaXum with Micro Base

The 1792D ArmorBlock MaXum™ I/O family features space-saving, sealed-housing blocks suitable for On-Machine™ mounting. ArmorBlock MaXum takes advantage of the KwikLink™ flat media system for DeviceNet™ communication. Up to sixteen 24V DC points can be addressed per DeviceNet node. Local control is accomplished through DeviceLogix™ Smart Component Technology.

An ArmorBlock MaXum I/O block contains digital I/O circuits, a built-in power supply and a built-in DeviceNet I/O adaptor. I/O blocks are available in sizes of 2, 4, 8, and 16 I/O. The DeviceNet network supplies power to inputs and attached sensors. Electronic fusing provides protection for output load devices and easy resetting.

Specifications

Enclosure Type Rating	IP 67, NEMA 4X and 6P
Mounting Type	On-Machine
Operating Temperature—C (F)	–25…60° (–13…140°)
Storage Temperature—C (F)	–25…80° (–13…176°)
Relative Humidity	5…100%
Shock, Operating	30 g peak acceleration 11 (±1) ms pulse width
Shock, Nonoperating	50 g peak acceleration, 11 (±1) ms pulse width
Vibration	10 g @ 10.500 Hz per IEC 68–2–6
Certifications	CSA, CE, C-Tick, ODVA
Dimensions (HxWxD), Approx.	
8-connector I/O blocks	48.26 x 68.6 x 174 mm (1.9 x 2.7 x 6.85 in)
4-connector I/O blocks	48.26 x 68.6 x 120 mm (1.9 x 2.7 x 4.7 in)
2-connector block	48.26 x 68.6 x 120 mm (1.9 x 2.7 x 4.7 in)
Weight	
8-connector I/O blocks	0.6 kg (1.3 lb)
4-connector I/O blocks	0.5 kg (1.1 lb)
2-connector block	0.5 kg (1.1 lb)
Cable bases	0.2 kg (0.5 lb)

❶ When product is marked. See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

ArmorBlock MaXum I/O blocks are designed for backpanel or On-Machine mounting. Blocks can be mounted vertically or horizontally. Enclosure costs are eliminated because each block is packaged in a sealed housing rated for IP 67 and NEMA 4X and 6P. I/O terminations are M12 DC micro quick-disconnect terminations.

ArmorBlock MaXum I/O blocks have a compact style with a low profile. ArmorBlock MaXum blocks are packaged in a sealed housing rated for IP 67 and NEMA 4X and 6P. Each I/O block requires a separate base for connection to a DeviceNet trunk or drop cable, using either the KwikLink flat media system or standard round media.

A 1792D I/O block has a built-in DeviceNet I/O adaptor port that interfaces the I/O with a DeviceNet link to communicate with a scanner port for a programmable controller processor. DeviceNet I/O update period can be shortened by transferring I/O values only when a change-of-state has occurred.

Features

- Sealed housing rated for IP 67, and NEMA 4X and 6P eliminate enclosure costs.
- Low installation cost and easy to replace without rewiring, because industry-standard mini or M12 micro connectors are used for connection to the DeviceNet network and output-circuit power supply; and M12 micro connectors are used for connection to each sensor or actuator.
- Point-level diagnostics simplify troubleshooting.
- Only active device that connects directly to the DeviceNet KwikLink™ flat media system.
- Removal and Insertion Under Power (RIUP) makes it possible to replace a module without impacting the network operation.
- Isolated auxiliary power maintains power to the outputs if main power fails so that you can have the option of holding outputs in their last state.
- Outputs electronically protected from failing with option to auto-restart or latch off.
- Complies with Open DeviceNet Vendor Association, Inc. (ODVA) conformance test software.
- DeviceLogix™ Smart Component Technology lets you control outputs and manage status information locally, within the block.

Digital Input Blocks

Number of Inputs	Number of Connectors	Diagnostics	Voltage, On-State, Nom.	Voltage, On-State, Range	Current, Off-State, Max.	DeviceNet Current (mA)	Cat. No.
16 Sink/Source	8	Connector-level	24V DC	10V DC…25V DC	1.5 mA	700 mA ❶	1792D–16BVT0D
		Point-level				650 mA ❶	1792D–16BVT0CD
8 Sink/Source	4	Connector-level				470 mA ❷	1792D–8BVT0D
	8	Point-level				470 mA ❷	1792D–8BV0D
4 Sink/Source	4					220 mA ❸	1792D–4BV0D
2 Sink/Source	2					130 mA ❹	1792D–2BV0D

Digital Output Blocks

Number of Outputs	Number of Connectors	Diagnostics	Voltage, On-State, Nom.	Voltage, On-State, Range	Current, On-State, Max.	DeviceNet Current (mA)	Cat. No.
4 Source	4	Point-level	24V DC	10V DC…30V DC	2.0 A	80 mA	1792D–0B4D
8 Source	8	Point-level			1.0 A	80 mA	1792D–0B8D
16 Sink	8	None			0.3 A	150 mA	1792D–0VT16E

Digital Combination Blocks

Number of Inputs	Number of Connectors	Diagnostics	Inputs		Outputs			DeviceNet Current (mA)	Cat. No.
			Operating Voltage	Current, Off-State Input, Max.	Number of Outputs	Operating Voltage	Current, On-State Output, Max.		
12 Sink/ Source	8	Connector-level	10V DC… 25V DC	1.5 mA	4 Source	10V DC… 30V DC	0.5 A	570 mA ❺	1792D–12BVT4D
		Point-level					2.0 A	1.6 A	1792D–12BT4PE
8 Sink/ Source	8	Connector-level			8 Source		0.5 A	470 mA ❷	1792D–8BVT8D
		Point-level					0.5 A	470 mA ❷	1792D–8BVT8CD
							0.5 A	1.4 A	1792D–8BT8PE
4 Sink/ Source	4	Connector-level			4 Source		1.0 A	220 mA ❸	1792D–4BVT4D
	8	Point-level					1.0 A	220 mA ❸	1792D–4BV4D
2 Sink/ Source	4				2 Source		1.0 A	130 mA ❹	1792D–2BVA2D
8 Sink	8	None			8 Source (powered by network)		0.3 A	470 mA ❷	1792D–8BIO8E

❶ DeviceNet Current specified with 16 sensors drawing 25 mA @ 24V DC.
❷ DeviceNet Current specified with 8 sensors drawing 25 mA @ 24V DC.
❸ DeviceNet Current specified with 4 sensors drawing 25 mA @ 24V DC.
❹ DeviceNet Current specified with 2 sensors drawing 25 mA @ 24V DC.
❺ DeviceNet Current specified with 12 sensors drawing 25 mA @ 24V DC.

Mating Cables

Digital Input or Output Blocks Mating Cables

ArmorBlock Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1792D–0B4D 1792D–0B8D 1792D–2BV0D 1792D–4BV0D 1792D–8BV0D	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				
1792D–0BVT16E 1792D–16BVT0D 1792D–8BVT0D	(2) DC Micro	879D–F4ACDM–*	3–61	879D–C3ACD4M–‡	3–61	871A–VS4–DM	3–77
	(2) Pico 3-Pin	879PZ–F3ABDM4–*	3–113				
	(2) Pico 4-Pin	879PZ–F4ABDM–*	3–113				
	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				
1792D–16BVT0CD	(2) DC Micro	879D–F4ACD5M–*	3–61	879D–F4D5M + (2) 889D–M4AC–‡	3–57, 3–59	871A–VS5–DM	3–77
	(2) Pico 3-Pin	879D–F4D5M + (2) 889P–F3ABDM4–*	3–57, 3–59				
	(2) Pico 4-Pin	879D–F4D5M + (2) 889P–F4ABDM–*	3–57, 3–59				
	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				

Digital Combination Blocks Mating Cables

ArmorBlock Cat. No.	End Device per Connector	Recommended Patchcord (Double-ended)	Page Ref	Recommended Male Cordset (Single-ended)	Page Ref	Recommended Field Attachable Connector	Page Ref
1792D–2BVA2D 1792D–4BV4D	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				
1792D–12BVT4D 1792D–4BVT4D 1792D–8BVT8D 1792D–8BIO8E	(2) DC Micro	879D–F4ACDM–*	3–61	879D–C3ACD4M–‡	3–61	871A–VS4–DM	3–77
	(2) Pico 3-Pin	879PZ–F3ABDM4–*	3–113				
	(2) Pico 4-Pin	879PZ–F4ABDM–*	3–113				
	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				
1792D–12BT4PE 1792D–8BT8PE 1792D–8BVT8CD	(2) DC Micro	879D–F4ACD5M–*	3–61	879D–F4D5M + (2) 889D–M4AC–	3–57, 3–59	871A–VS5–DM	3–77
	(2) Pico 3-Pin	879D–F4D5M + (2) 889P–F3ABDM4–*	3–57, 3–59				
	(2) Pico 4-Pin	879D–F4D5M + (2) 889P–F4ABDM–*	3–57, 3–59				
	(1) DC Micro	889D–F4ACDM–*	3–47	889D–M4AC–‡	3–47	871A–TS4–DM	3–77
	(1) Pico 3-Pin	889P–F3ABDM4–*	3–57				
	(1) Pico 4-Pin	889P–F4ABDM–*	3–57				

* = length in meters (1, 2, 3, 5, and 10 standard).
‡ = length in meters (2, 5, and 10 standard).

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult “Page Ref” listed in the above tables.

ArmorBlock MaXum Cable Bases

Each ArmorBlock MaXum I/O block except for the **1792D–88HC** high current block, requires a separate cable base.

Cat. No.	Description
1792D–CB12	ArmorBlock MaXum I/O Cable Base with Micro (M12) connectors.
1792D–CB12JP	ArmorBlock MaXum I/O Cable Base with Micro (M12) connectors and jumpered DeviceNet power
1792D–CBFM	ArmorBlock MaXum I/O Cable Base for KwikLink flat media
1792D–CB18	ArmorBlock MaXum I/O Cable Base with Mini connectors and passthrough for DeviceNet
1792D–CB18JP	ArmorBlock MaXum I/O Cable Base with Mini connectors and jumpered DeviceNet power
1792D–CB18P	ArmorBlock MaXum I/O Cable Base with Mini connectors, DeviceNet passthrough, and auxiliary power input connection
1792D–CB18PT ❶	ArmorBlock MaXum I/O Cable Base with Mini round connectors, DeviceNet passthrough, and auxiliary power input and output connections ❶
1792D–CB23	ArmorBlock MaXum I/O Cable Base with 17-Pin M23 Connectors
1792D–KPLT	KEMPF Interface Plate

❶ Compatible only with MaXum blocks with a maximum of 4 I/O connectors.

Mating Cables

ArmorBlock MaXum Network Mating Cables

ArmorBlock Cat. No.	Network	Flat Media	Page Reg	Thick Round	Page Reg	Thin Round	Page Reg
1792D–CB12 **1792D–CB12JP**	DeviceNet	**1485K–P§F5–R5**	6–17	**1485R–P§M5–R5**	6–27	**1485R–P§R5–D5**	6–27
1792D–CB18 **1792D–CB18JP**	DeviceNet	**1485K–P§F5–N5**	6–17	**1485R–P§N5–M5**	6–27	**1485R–P§D5–N5**	6–27
1792D–CB18P **1792D–CB18PT**	DeviceNet	**1485K–P§F5–N5**	6–17	**1485R–P§N5–M5**	6–27	**1485R–P§D5–N5** **1485R–P§M5–R5**	6–27
1792D–CBFM	DeviceNet	**1485C–P1E*** **1485C–P1G*** **1485C–P1K***	6–12	—	—	—	—

ArmorBlock MaXum Auxiliary Power Mating Cables

	Flat Media		Round Media			
ArmorBlock Cat. No.	Auxiliary Power Flat Media Connection	Page Reg	Cordset (Single-ended)	Page Reg	Patchcord (Double-ended)	Page Reg
1792D–CB12	**889D–F2ACDM–K§**	6–19	Cordset: **889D–F4AC–‡** Patchcord: **889D–F2AEN4M–D§**	6–51	Cordset: **889D–F4AC–‡** Patchcord: **889D–F4ACDM–§**	3–47
1792D–CB18 **1792D–CB18P** **1792D–CB18PT**	**1485T–P1E4–C§–N4**	6–20	**889N–F4AFC–★F**	6–51	**889N–F4AFNM–§**	6–51
1792D–CB12JP **1792D–CB18JP**	Internally jumpered from network power	—	Internally jumpered from network power	—	Internally jumpered from network power	—
1792D–CBFM	**1485C–P1L***	6–12	—	—	—	—

* = length in meters (75, 200, or 420).
‡ = length in meters (2, 5, and 10 standard).
§ = length in meters (1, 2, 3, 4, 5, and 6 standard).
★ = length in feet (6, 12, and 20 standard).

Note: The mating cables shown on this page represent straight PVC models. For additional configurations, materials, and specifications, please consult “Page Ref” listed in the above tables.

1792 ArmorBlock High Current

DeviceNet Digital Inputs and Outputs

ArmorBlock

ArmorBlock High Current

Features

- 5…10 amp solid-state outputs
- AutoBaud
- Selectable off-to-on or on-to-off input filters
- Inputs are configured for PNP (sourcing) or NPN (sinking) devices
- Point level diagnostics: output no load and short circuit/overcurrent
- Auxiliary power detection
- DeviceLogix™

Specifications

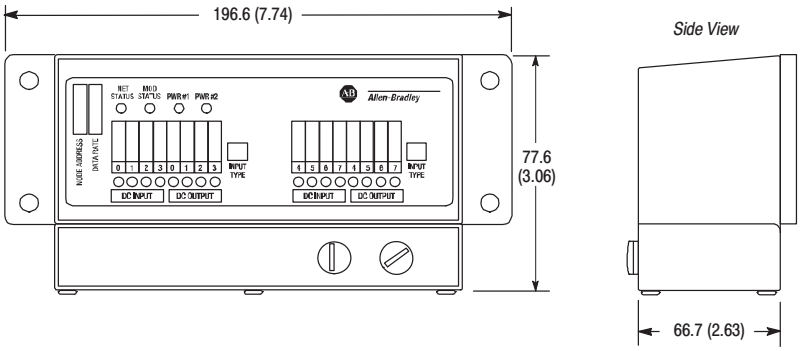
	Inputs	Outputs
Enclosure Type Rating	IP 52, NEMA Type 5 and Type 12	
Mounting Type	Panel	
Operating Voltage Range	8…30V DC	10…30V DC
Current, Off-State Input, Max	1.2 mA	
Operating Temperature—C (F)	–20…60° (–4…140°)	
Storage Temperature—C (F)	–40…85° (–40…185°)	
Relative Humidity	5…95% noncondensing	
Shock, Operating	30 g peak acceleration 11 (±1) ms pulse width	
Shock, Nonoperating	50 g peak acceleration, 11 (±1) ms pulse width	
Vibration	10 g @ 10.500 Hz per IEC 68–2–6	
Certifications	CSA, CE, C-Tick, ODVA	
Dimensions (HxWxD), Approx.	67 x 197 x 78 mm (2.7 x 7.8 x 3.1 in)	
Weight	0.7 kg (1.5 lb)	

❶ When product is marked. See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

Description

This 8 input/8output ArmorBlock module is capable of driving 5–10 amps per solid-state output, eliminating the need for interposing relays. These modules communicate over DeviceNet using polled, cyclic or change-of-state messaging. Local control is accomplished through DeviceLogix™ Smart Component Technology.

Dimensions—mm (in)



Product Selection

Number of			Current			Diagnostics	Cat. No.
Inputs	Outputs	Connectors	Off-State Input, Max	Per Output, Max	DeviceNet (mA)		
8 Sink/Source ❶	8 Source ❶	1	1.2 mA	6 outputs @ 5 A ea. 2 outputs @ 10 A ea. 40 A total	100 mA	Point-level	**1792D–88HC**
Components for a user-fabricated assembly for field connections. Includes connector, hood and pins							**1792D–88HCCON**
Pre-made cable assembly for field connectors							**1792D–88HCCBL**

❶ Two sets of four.

Contents

Three-Phase Power Media

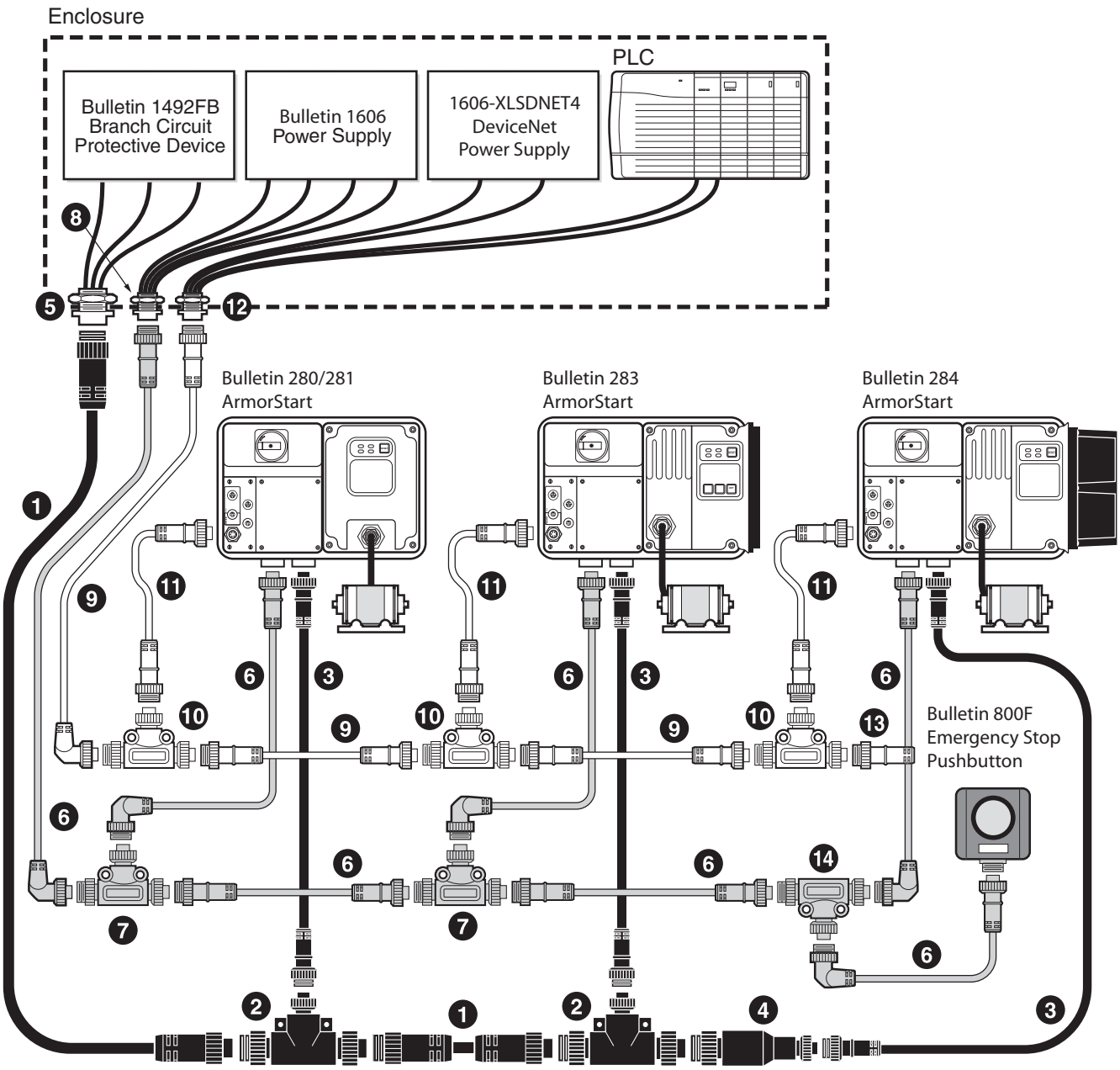
	 Three-Phase Power Trunk Cable	 Three-Phase Power Drop Cable	 Three-Phase Power Tees and Reducers	 Three-Phase Power Receptacles	 Three-Phase Power Accessories
Description	• Cordset - Cable with Integrel Female or Male connector on one end • PatchCord - Cable with integrel female or male connector on each end	• Cordset - Cable with Integrel Female or Male connector on one end • PatchCord - Cable with integrel female or male connector on each end	• Tee - Connects to a single drop line to trunk with Quick Change connectors • Reducing Tee - Connects to a single drop line (Mini) to trunk (Quick Change) connector • Reducer - Connects from Quick Change male connector to Mini Female connector	• Female receptacles are a panel mount connector with flying leads • Male receptacles are a motor juction box mounted connector with flying leads	• Sealing Caps offered in versions to interface with female or male connectors • Locking Clips clamshell design clips over three power phase connector to limit customer access
Features	• Rated for Motor Branch Circuits • Straight or Right Angle Connectors • 4-pin connector type • Cable Rating: TC-ER/STOOW • Multiple Standard lengths	• Rated for Motor Branch Circuits • Straight or Right Angle Connectors • 4-pin connector type • Cable Rating: TC-ER/STOOW • Multiple Standard lengths	• Rated for Motor Branch Circuits • Trunk Tee, Reducing Tee and Reducer • 4-pin connector type	• Rated for Motor Branch Circuits • Male and female configurations • 4-pin connector type • 1/2 in. NPT • Available in 1 meter length	• Sealing Caps - Available in Quick Change and Mini styles • Locking Clips are design for the Quick Change and Mini style connectors
Rated Voltage	• 600V	• 600V	• 600V	• 600V	—
Connector Body Dimensions	• Straight: 88.9 mm x 38.6 mm • Right Angle:75.5 mm x 74 mm	• Straight: 56. mm x 25.4 mm • Right Angle: 44.9 mm x 40.4 mm	• Trunk Tee: 108 mm x 73.6 mm • Reducing Tee: 108 mm x 65.5 mm • Reducer: 112.5 mm x 38.1 mm	• M22 Female: 33.45 mm x 25.45 mm M22 Male: 28.04 mm x .25.45 mm M35 Female: 71.12 mm x 38.10 mm M35 Male: 63.50 mm x 38.10 mm	—
Additional Information	• See page 8-6	• See page 8-8	• See page 8-10	• See page 8-12	• See page 8-19

Control Power Media

	 Control Power Cordsets & Patchcords	 Control Power T-ports	 Control Power Receptacles	 Control Power Shorting Plugs	 Control Power Accessories
Description	• Cable with integral connector on either one or both ends	• Cable with single male connector attached to two female connectors	• Panel mount connector with flying leads	• Integral connector with leads shorted for specific application requirements	• Sealing caps, mounting nuts, and sealing washers
Features	• 6-pin/5-used configuration • Male and female • Straight or right angle versions • 16 AWG conductors, cable dual rated UL TC/Open Wiring and STOOW • Multiple Standard lengths	• 6-pin/5-used configuration • Compact design • Color-coded E-stop in and E-stop out configurations	• 6-pin/5-used configuration • Male and female • 16 AWG conductors • 1/2 NPT mounting threads • Multiple standard lengths	• 6-pin/5-used configuration • Male • Multiple versions color coded for simple identification	• Rugged durable construction • Designed to mate with Control Power media
Rated Voltage	• 600V	• 600V	• 600V	• 600V	—
Connector Body Dimensions	• Straight: 56 x 25 mm (2.2 x 1 in.) • Right Angle:40 x 45 mm (1.6 x 1.8 in.)	• 72 x 64 mm (2.8 x 2.5 in.)	• 30 x 25 mm (1.2 x 1 in.)	• 56 x 25 mm (2.2 x 1 in.)	—
Additional Information	• See page 8-14	• See page 8-16	• See page 8-17	• See page 8-18	• See page 8-19

Selection Criteria

ArmorStart Media Diagram



1. 3-Phase Power Patchcord (Trunk) .. 8-6
2. 3-Phase Power T-port 8-10
3. 3-Phase Power Patchcord (Drop) ... 8-8
4. 3-Phase Power Reducer 8-10
5. 3-Phase Power Receptacle 8-12
6. Control Power Patchcord 8-14
7. Control Power T-port (E-Stop IN) ... 8-16
8. Control Power Receptacle 8-17
9. DeviceNet Patchcord (Trunk) 6-24
10. DeviceNet T-port 6-34
11. DeviceNet Patchcord (Drop) 6-26
12. DeviceNet Receptacle 6-28
13. DeviceNet Terminator 6-33
14. Control Power T-port (E-Stop OUT) 8-16

Description

The ArmorStart Power Media offers both three-phase and control power cable system of cordsets, patchcords, receptacles, tees, reducers and accessories to be utilized with the ArmorStart Distributed Motor Controller. These cable system components shall allow quick connection of ArmorStart Distributed Motor Controllers and thereby reducing installation time. They shall provide for repeatable, reliable connection of the three-phase and control power to the ArmorStart Distributed Motor Controller and motor by providing a plug and play environment that also avoids system mis-wiring.

Compared to the traditional conduit installations, with the ArmorStart Power Media you profit and benefit from:

- Reduce commissioning time
- Plug and Play design eliminates wiring errors
- Increased system design flexibility
- No special tools required
- Reduced Labor Costs

Three-Phase Power Media

The three-phase power media offers both mini and quick change disconnect cables that provide a secure connection to the ArmorStart Distributed Motor Controller. Connector can be straight or right angled and are physically keyed to prevent wiring mishaps. The cabling options include:

- Cordsets: Cable with integral male or female connector at one end and flying leads at the other
- Patchcords: Cable with integral connector at each end (one male, one female)

Available in 0.5 m, 1 m, 1.5 m, 2 m, 2.5 m, 3 m, 4 m, 6 m, 8 m, 10 m, 12 m, or 14 m lengths.

The three-phase tees and reducer offers flexibility in system design. The 4-pin T-port connects a single drop line to the trunk.

The receptacles provide a termination point at the panel and motor junction box. The female receptacles can be used for a panel mount connection. The male receptacles can be used for a quick disconnect at the motor junction box.

The three-phase power media components are rated for motor branch circuits per UL 2237.

Control Power Media

The control power media offers a mini disconnect cables that provide a secure connection to the ArmorStart Distributed Motor Controller. The control power media components are a 6-pin/5-used configuration to prevent mis-wiring with network connectors. Connector can be straight or right angled and are physically keyed to prevent wiring mishaps. The cabling options include:

- Cordsets: Cable with integral male or female connector at one end and flying leads at the other

Available in 2 m, 5 m, or 10 m lengths.

- Patchcords: Cable with integral connector at each end (one male, one female)

Available in 1 m, 2 m, 3 m, 5 m, or 10 m lengths.

The control power tees offers flexibility in system design. The 6-pin/5-used T-port connects a single drop line to the trunk. Two types of tees are offered. The E-stop In tee is used to connect to the Bulletin 800F On-Machine E-Stop station using a control power media patchcord. The E-stop Out tee is used with cordset or patchcord to connect to the ArmorStart Distributed Motor Controller.

The receptacles provide a termination point at the panel and ArmorStart Distributed Motor Controller. The female receptacles can be used for a panel mount connection. The male receptacles will be used for a quick disconnect at the ArmorStart Distributed Motor Controller with gland plate design.

Trunk Cables

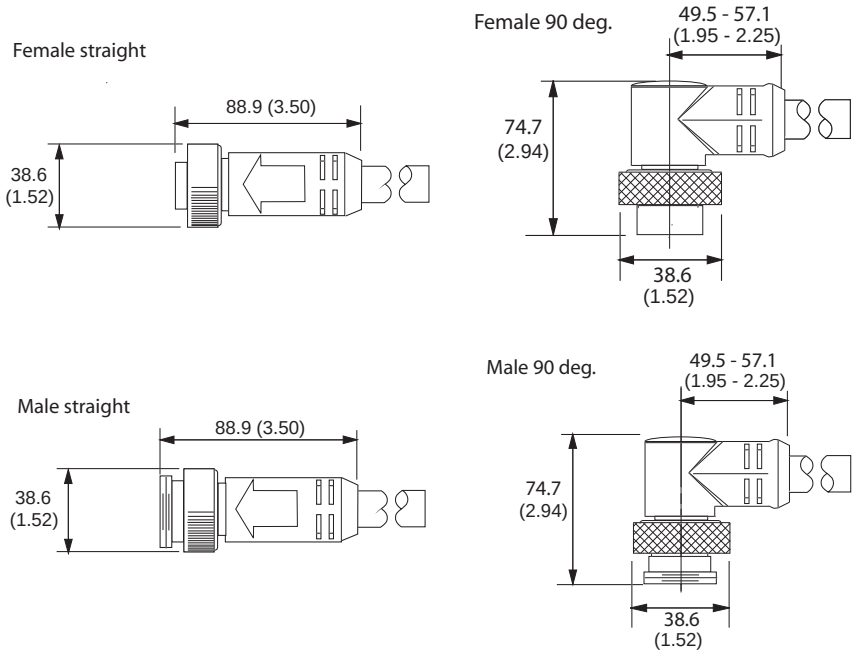
Specifications

Certifications	UL
Standards Compliance	UL 2237
Mechanical	
Coupling Nut	Black Anodized Aluminum
Housing	Black PVC
Insert	Black PVC
Cable Diameter	0.775 in. +/- 0.12 in. (19.68 mm +/- 0.5 mm)
Electrical	
Contacts	Copper Alloy with Gold over Nickel Plating
Cable	Black PVC, dual rated UL TC/Open Wiring and STOOW
Cable Rating	600V AC/DC
Assembly Rating	600V @ 25 A, Symmetrical Amps RMS Fault: 65 kA when used with Class CC, T, or J type fuses
Environmental	
Enclosure Type Rating	IP67, NEMA 4 & 6P; 1200 psi washdown
Operating Temperature	UL Type TC 600V 90 °C Dry 75 °C Wet, Exposed Run (ER) or MTW 600V 90 °C or STOOW 105 °C 600V - CSA STOOW 600V FT2

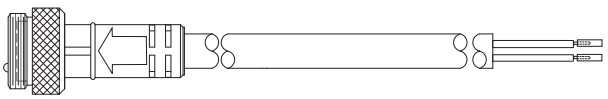
Features

- Rated for motor branch circuits per UL 2237
- One piece molded design
- Can be used as a drop cable for 25 A rated ArmorStart Distributed Motor Controller or when desired to minimize voltage drops on extended cable runs

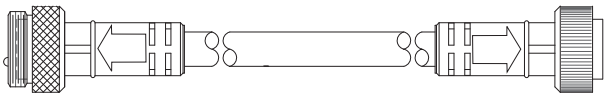
Dimensions—mm (inches)



Dimensions are approximate. Illustrations are not drawn to scale.

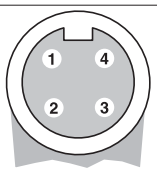


Example of Cordset



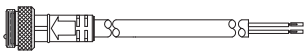
Example of Patchcord

Pinout and Color Code

	Face View Pinout	
	4-Pin	
	 Female	 Male
Color Code	1 Black 2 Green/Yellow Extended PIN	3 Red 4 White

Product Selection

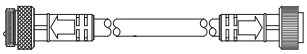
Cordsets



Pin Count	Assembly Rating	Cat. No.			
		Straight Female	Right-Angle Female	Straight Male	Right-Angle Male
4-Pin	600V, 25 A	280-PWRM35E-M∗	280-PWRM35F-M∗	280-PWRM35G-M∗	280-PWRM35H-M∗

∗ Replace symbol with 05 (0.5 m (1.62 ft)), 1(1 m (3.3 ft)), 015(1.5 m (4.9 ft)),2(2 m (6.5 ft)),025 (2.5 m (8.1 ft)), 3 (3 m (9.8 ft)), 4 (4 m (13.1 ft)), 6 (6 m (19.7 ft)),8(8 m (26.2 ft)),10 (10 m (32.8 ft)), 12 (12 m (39.4 ft)), or 14 (14 m (45.9 ft)).

Patchcords



Pin Count	Assembly Rating	Cat. No.			
		Straight Female Straight Male	Right-Angle Female Straight Male	Straight Female Right-Angle Male	Right-Angle Female Right-Angle Male
4-Pin	600V, 25 A	280-PWRM35A-M∗	280-PWRM35B-M∗	280-PWRM35C-M∗	280-PWRM35D-M∗

∗ Replace symbol with 05 (0.5 m (1.62 ft)), 1(1 m (3.3 ft)), 015(1.5 m (4.9 ft)),2(2 m (6.5 ft)),025 (2.5 m (8.1 ft)), 3 (3 m (9.8 ft)), 4 (4 m (13.1 ft)), 6 (6 m (19.7 ft)),8(8 m (26.2 ft)),10 (10 m (32.8 ft)), 12 (12 m (39.4 ft)), or 14 (14 m (45.9 ft)).

Drop Cables

Specifications

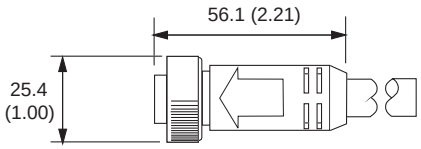
Certifications	UL
Standards Compliance	UL 2237
Mechanical	
Coupling Nut	Black Anodized Aluminum
Housing	Black PVC
Insert	Black PVC
Cable Diameter	0.43 in. +/- 0.12 in. (10.9 mm +/- 0.5 mm)
Electrical	
Contacts	Brass with Gold over Nickel Plating
Cable	Black PVC, dual rated UL TC/Open Wiring and STOOW
Cable Rating	600V AC/DC
Assembly Rating	600V @ 10 A, Symmetrical Amps RMS Fault: 65 kA when used with Class CC, T, or J type fuses
Environmental	
Enclosure Type Rating	IP67, NEMA 4 & 6P; 1200 psi washdown
Operating Temperature	UL Type TC 600V 90 °C Dry 75 °C Wet, Exposed Run (ER) or MTW 600V 90 °C or STOOW 105 °C 600V - CSA STOOW 600V FT2

Features

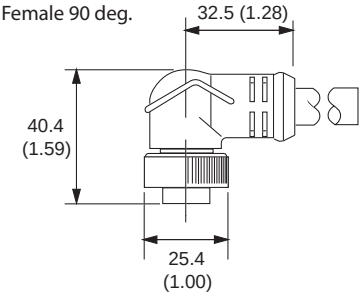
- Rated for motor branch circuits per UL 2237
- One-piece molded design
- Can be used as a trunk cable for 10 A rated ArmorStart Distributed Motor Controller

Dimensions—mm (inches)

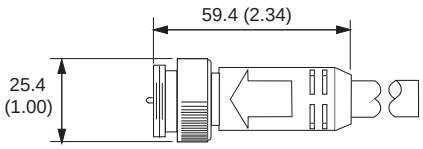
Female straight



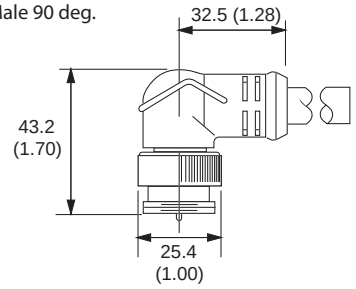
Female 90 deg.



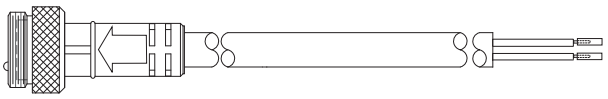
Male straight



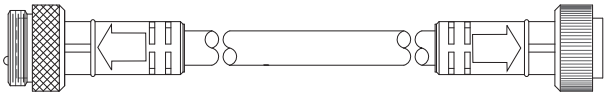
Male 90 deg.



Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset



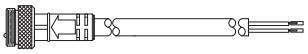
Example of Patchcord

Pinout and Color Code

	Face View Pinout	
	4-Pin	
	 Female	 Male
Color Code	1 Black 2 White	3 Red 4 Green/Yellow Extended PIN

Product Selection

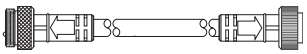
Cordsets



Pin Count	Assembly Rating	Cat. No.			
		Straight Female	Right-Angle Female	Straight Male	Right-Angle Male
4-Pin	600V, 10 A	280-PWRM22E-M∗	280-PWRM22F-M∗	280-PWRM22G-M∗	280-PWRM22H-M∗

∗ Replace symbol with 05 (0.5 m(1.62 ft), 1(1 m(3.3 ft), 015(1.5 m(4.9 ft),2(2 m(6.5 ft),025 (2.5 m(8.1 ft), 3 (3 m(9.8 ft), 4 (4 m(13.1 ft), 6 (6 m(19.7 ft),8(8 m(26.2 ft),10 (10 m(32.8 ft), 12 (12 m (39.4 ft), 14 (14 m(45.9 ft)

Patchcords



Pin Count	Assembly Rating	Cat. No.			
		Straight Female Straight Male	Right-Angle Female Straight Male	Straight Female Right-Angle Male	Right-Angle Female Right-Angle Male
4-Pin	600V, 10 A	280-PWRM22A-M∗	280-PWRM22B-M∗	280-PWRM22C-M∗	280-PWRM22D-M∗

∗ Replace symbol with 05 (0.5 m(1.62 ft), 1(1 m(3.3 ft), 015(1.5 m(4.9 ft),2(2 m(6.5 ft),025 (2.5 m(8.1 ft), 3 (3 m(9.8 ft), 4 (4 m(13.1 ft), 6 (6 m(19.7 ft),8(8 m(26.2 ft),10 (10 m(32.8 ft), 12 (12 m (39.4 ft), 14 (14 m(45.9 ft)

Three Phase Power Tees and Reducer - 4-Pole

Power Tees & Reducer

Specifications

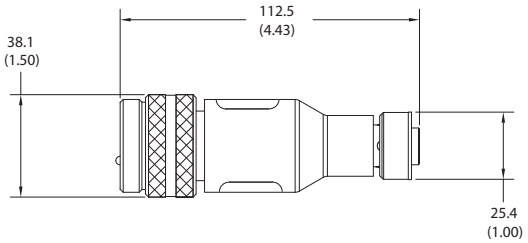
Certifications	UL
Standards Compliance	UL 2237
Mechanical	
Coupling Nut	Black Anodized Aluminum (Trunk), Black Zinc Diecast (Drop)
Housing	Black PVC
Insert	Black PVC
Electrical	
Contacts	Copper Alloy with Gold over Nickel Plating
Voltage	600V AC/DC
Assembly Rating	Trunk Tee: 25 A Reducing Tee: Trunk 25 A / Drop 15 A Reducer: 15 A - Symmetrical Amps RMS Fault: 65 kA when used with Class CC, T, or J type fuses
Environmental	
Enclosure Type Rating	IP67, NEMA 4 & 6P; 1200 psi washdown

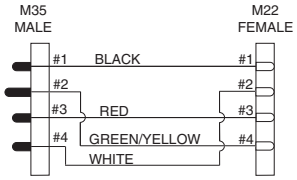
Features

- Rated for motor branch circuits per UL 2237
- 4-pin T-port connects a single drop line to the trunk
- 4-pin configuration

Dimensions—mm (inches)

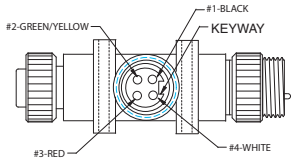
Reducer

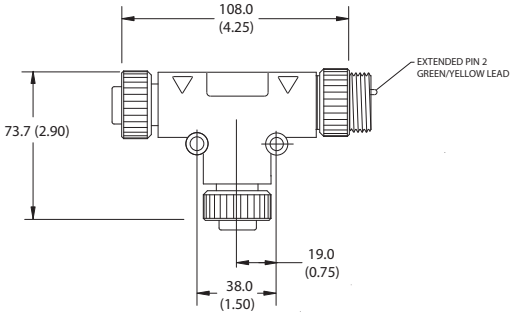


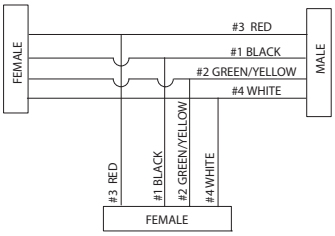


WIRING DIAGRAM

Power Tee

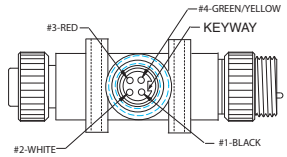


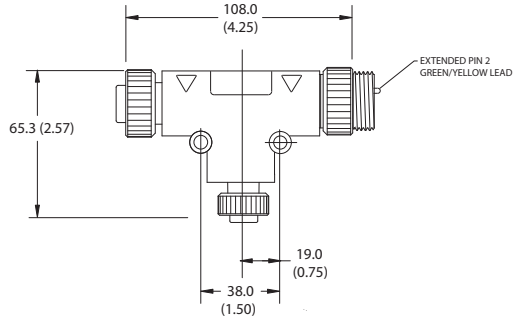


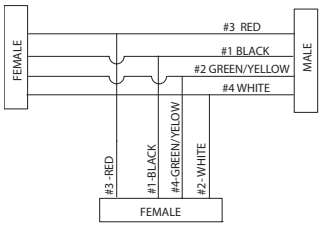


WIRING DIAGRAM

Power Tee - reducing drop







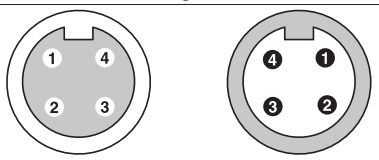
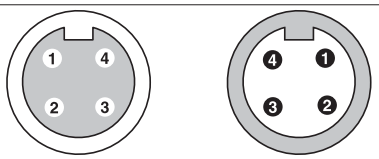
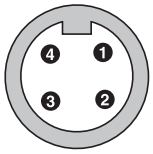
WIRING DIAGRAM

Dimensions are approximate. Illustrations are not drawn to scale.

Allen-Bradley

Three Phase Power Tees and Reducer - 4-Pole

Pinout and Color Code

Assembly Rating	Color Code	Face View Pinout 4-Pin Quick Change Connector	Face View Pinout 4-Pin Mini Connector
Trunk Tee: 25 A	A	 Female Male 1 Black 3 Red 2 Green/Yellow 4 White Extended PIN	
Reducing Tee: Trunk 25 A / Drop 15 A	B	 Female Male 1 Black 3 Red 2 Green/Yellow 4 White Extended PIN	 Female 1 Black 3 Red 2 White 4 Green/Yellow Extended PIN
Reducer: Trunk 25 A / Drop 15 A	C	 Male 1 Black 3 Red 2 Green/Yellow 4 White Extended PIN	 Female 1 Black 3 Red 2 White 4 Green/Yellow Extended PIN

Product Selection

Tees and Reducing Adapters

Description	Assembly Rating	Color Code	Cat. No.
M35, 3-Phase Power Tee, 4 pole	25 A	A	280-T35
M35, 3-Phase Power Tee Reducing drop M22, 4 pole	Trunk 25 A / Drop 15 A	B	280-RT35
M35, 3-Phase Reducing Adapter, 4 pole	15 A	C	280-RA35

Three Phase Power Receptacles, Male and Female

16 & 10 AWG, 1/2 in. NPT Mount

Power Receptacles

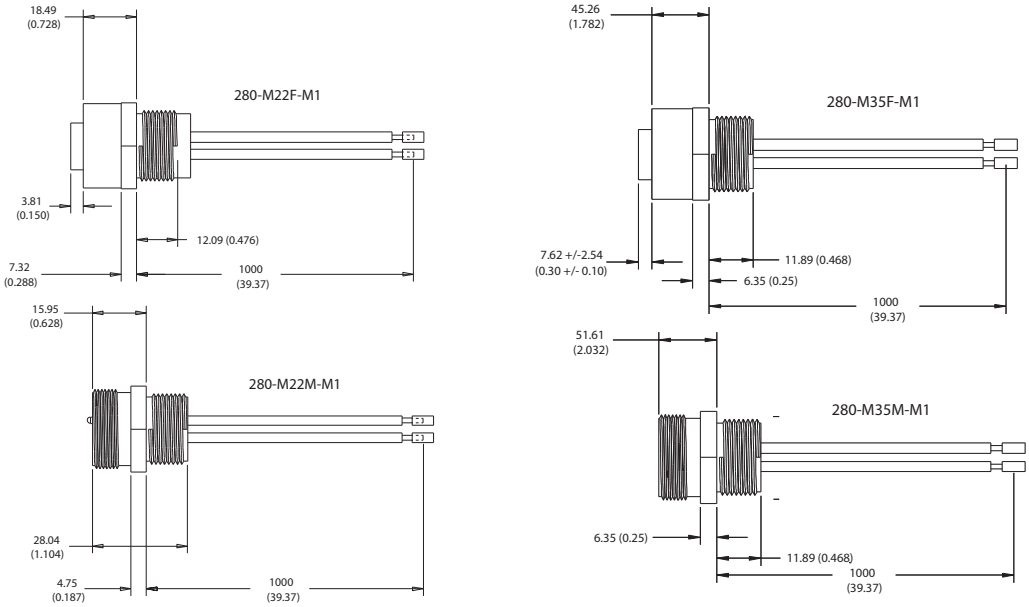
Specifications

Certifications	UL
Standards Compliance	UL 2237
Mechanical	
Insert	Black PVC
Receptacle Shell Material	Black Anodized Aluminum (female) and Zinc DieCast, Black E-Coat (male)
Electrical	
Contacts	Copper Alloy with Gold over Nickel Plating (Trunk), Brass with Gold over Nickel Plating (Drop)
Cable Rating	600V AC/DC
Assembly Rating	4 pin - 16 AWG, 600V @ 10 A 4 pin - 10 AWG, 600V @ 25 A - Symmetrical Amps RMS Fault: 65 kA when used with Class CC, T, or J type fuses
Environmental	
Enclosure Type Rating	IP67, NEMA 4 & 6P; 1200 psi washdown

Features

- Rated for motor branch circuits per UL 2237
- 16 & 10 AWG conductors
- 4-pin configuration
- Female receptacles can be used for panel mount connection
- Male receptacles can be used for quick disconnect motor junction box
- 1/2 in-14 NPT threads

Dimensions—mm (inches)

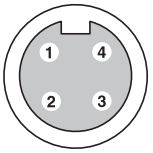
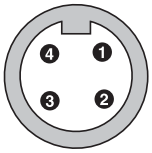


Dimensions are approximate. Illustrations are not drawn to scale.

Three Phase Power Receptacles, Male and Female

16 & 10 AWG, 1/2 in. NPT Mount

Pinout and Color Code

Assembly Rating	Color Code	Face View Pinout 4-Pin			
		 Female	 Male	 Female	 Male
16 AWG 600V 10 A	A			1 Black 2 White	3 Red 4 Green/Yellow Extended PIN
10 AWG 600V 25 A	B	1 Black 2 Green/Yellow Extended PIN	3 Red 4 White		

Product Selection

Receptacles

Pin Count	Assembly Rating	Color Code	Cat. No. Female	Cat. No. Male
4-Pin	16 AWG 600V 10 A	A	280-M22F-M1	280-M22M-M1
4-Pin	10 AWG 600V 25 A	B	280-M35F-M1	280-M35M-M1

Control Power Trunk and Drop Cables

6-pin/5-used 16 AWG, STOOW PVC

Trunk & Drop Cables

Specifications

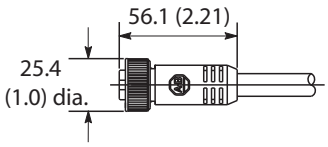
Mechanical	
Coupling Nut	Black epoxy coated zinc
Overmold	Red Riteflex TPE
Insert	Yellow Riteflex TPE
Contacts	Brass / gold over palladium Nickel
Cable	Grey PVC, 16 AWG, dual rated UL TC/Open Wiring and STOOW
Cable Diameter	0.775 in. +/- 0.12 in. (19.68 mm +/- 0.5 mm)
Electrical	
Cable Rating	UL Type TC 600V 90 °C Dry 75 °C Wet, Open Wiring or MTW 600V 90 °C or STOOW 105 °C 600V - CSA STOOW 600V FT2
Assembly Rating	600V, 10 A
Environmental	
Enclosure Type Rating	IP67, NEMA 6P, 1200 psi washdown
Operating Temperature	-20…90°C (-4…194°F)

Features

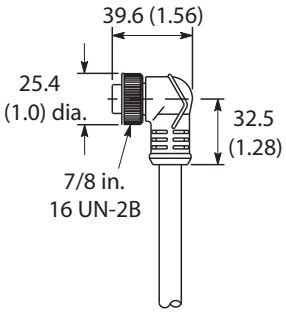
- 6-pin/5-used configuration to prevent mis-wiring with network connectors
- One piece molded design
- 16 AWG exposed run (ER) rated cable
- Red overmolds to indicate presence of E-stop wiring

Dimensions—mm (inches)

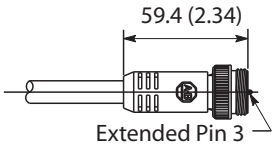
Dimensions are approximate. Illustrations are not drawn to scale.



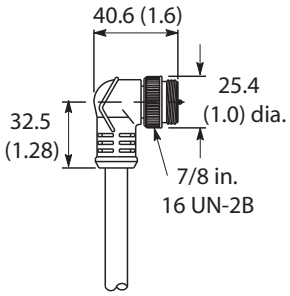
Female straight



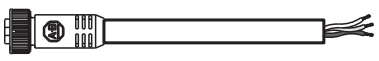
Female 90 deg.



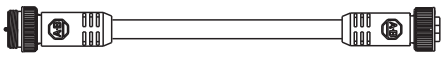
Male straight



Male 90 deg.



Example of Cordset



Example of Patchcord

Pinout and Color Code

	Face View Pinout	
	6-pin/5-used	
	 Female	 Male
Color Code	1 Red 2 Black 3 Green	4 Blank/Not Used 5 Blue 6 White

Product Selection

Cordsets

Pin Count	Assembly Rating	Cat. No.			
		Straight Female	Right-Angle Female	Straight Male	Right-Angle Male
6-Pin/5-used	16 AWG 600V 10 A	889N-F65GF-∗	889N-R65GF-∗	889N-M65GF-∗	889N-E65GF-∗

∗ Replace symbol with length in meters (2, 5, or 10 standard)

Patchcords

Pin Count	Assembly Rating	Cat. No.			
		Straight Female Straight Male	Right-Angle Female Straight Male	Straight Female Right-Angle Male	Right-Angle Female Right-Angle Male
6-Pin/5-used	16 AWG 600V 10 A	889N-F65GFNM-❄	889N-R65GFNM-❄	889N-F65GFNE-❄	889N-R65GFNE-❄

❄ Replace symbol with length in meters (1, 2, 3, 5, or 10 standard)

T-Ports

Features

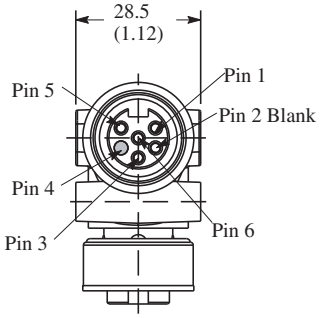
- 6-pin/5-used configuration to prevent mis-wiring with network connectors
- One piece molded design
- Durable compact design

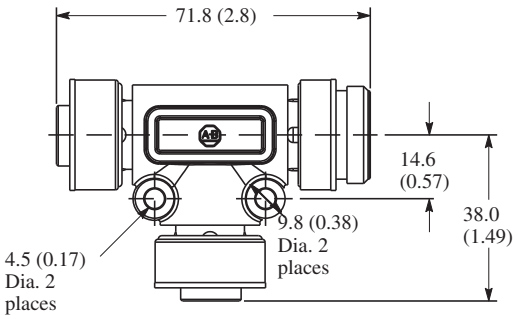
Specifications

Mechanical	
Coupling Nut	Black epoxy coated zinc
Housing	Riteflex TPE
Insert	Yellow Riteflex TPE
Contacts	Brass / gold over palladium Nickel
Electrical	
Assembly Rating	600V, 10 A
Environmental	
Enclosure Type Rating	IP67, NEMA 6P, 1200 psi washdown
Operating Temperature	-20…90°C (-4…194°F)

Dimensions—mm (inches)

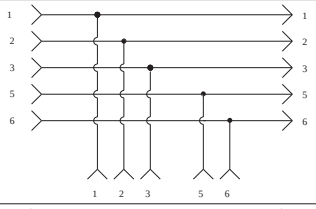
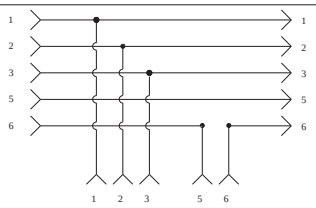
Dimensions are approximate. Illustrations are not drawn to scale.





Product Selection

T-Ports

Pin Count	Assembly Rating	Overmold Color	Wiring Diagram	Cat. No.
E-stop In	600V 10 A	Red		898N-653ES-NKF
E-stop Out		Black		898N-653ST-NKF

Pinout and Color Code

	Face View Pinout	
	6-pin/5-used	
	 Female	 Male
Color Code	1 Red 2 Black 3 Green	4 Blank/Not Used 5 Blue 6 White

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Receptacles

Specifications

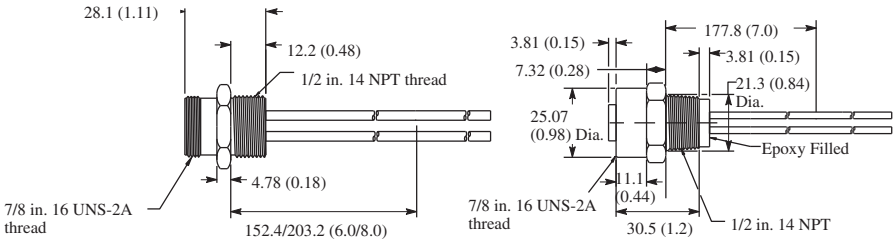
Mechanical	
Receptacle Shell	Male: Black epoxy coated zinc diecast Female: Black anodized Aluminum
Insert	Yellow PVC
Contacts	Brass / gold over palladium Nickel
Electrical	
Assembly Rating	600V, 10 A
Environmental	
Enclosure Type Rating	IP67, NEMA 6P, 1200 psi washdown
Operating Temperature	-20…90°C (-4…194°F)

Features

- 6-pin/5-used configuration to prevent mis-wiring with network connectors
- 1/2 inch - 14 NPT threads

Dimensions—mm (inches)

Dimensions are approximate. Illustrations are not drawn to scale.



Pinout and Color Code

	Face View Pinout	
	6-pin/5-used	
	 Female	 Male
Color Code	1 Red 2 Black 3 Green	4 Blank/Not Used 5 Blue 6 White

Product Selection

Receptacles

Pin Count	Assembly Rating	Cat. No.	
		Female	Male
6-Pin/5-used	16 AWG 600V 10 A	888N-D65AF1-∗	888N-M65AF1-∗

∗ Replace symbol with length in meters (0.3 or 1 standard)

Shorting Plugs

Specifications

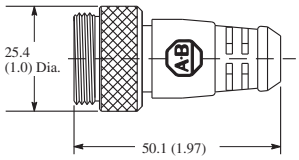
Mechanical	
Coupling Nut	Black epoxy coated zinc
Overmold	Riteflex TPE
Insert	Yellow Riteflex TPE
Contacts	Brass / gold over palladium Nickel
Electrical	
Assembly Rating	600V, 10 A
Environmental	
Enclosure Type Rating	IP67, NEMA 6P, 1200 psi washdown
Operating Temperature	-20…90°C (-4…194°F)

Features

- 6-pin/5-used configuration to prevent mis-wiring with network connectors
- 1/2 inch - 14 NPT threads

Dimensions—mm (inches)

Dimensions are approximate. Illustrations are not drawn to scale.



Product Selection

Shorting Plugs

Configuration	Assembly Rating	Overmold Color	Wiring Diagram	Cat. No.
E-stop In	600V 10 A	Red	1. 2. N/C 3. N/C 4. Blank 5. N/C 6.	889A-M65SP61
E-stop Out		Black	1. N/C 2. N/C 3. N/C 4. Blank 5. 6.	889A-M65SP65

Pinout and Color Code

	Face View Pinout	
	6-pin/5-used	
	 Female	 Male
Color Code	1 Red 2 Black 3 Green	4 Blank/Not Used 5 Blue 6 White

Allen-Bradley

Accessories

Specifications

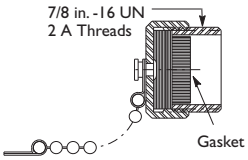
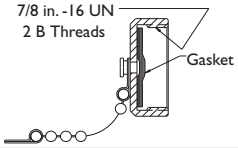
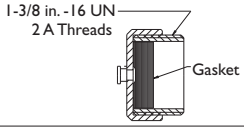
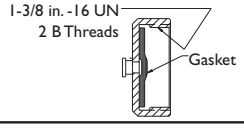
	Locking Clips	Sealing Caps
Mechanical		
Material	ABS/PC Plastics	Anodized Aluminum
Color	Black	Gray
Electrical		
	Non-Current Carrying , No ratings required	
Environmental		
Enclosure Type Rating	No rating required	IP67, NEMA 4 & 6P; 1200 psi washdown

Product Selection

Locking Clips

Description	Package Quantity	Cat. No.
The clam shell design clips over the three-phase power media trunk connection, to limit customer access.	10	280-MTRLC-M35
The clam shell design clips over the three-phase power media drop connection, to limit customer access.	10	280-MTRLC-M22

Sealing Caps

Connector Style	Material	Thread Configuration	Dimensions	Cat. No.
Mini	Aluminum	External		1485A-C1
		Internal		889A-NCAP
Quick Change		External		889A-QMCAP
		Internal		889A-QCAP

Mounting Nuts and Flat Seals

Description	Package Quantity	Cat. No.
Mounting nuts for 1/2 in. - 14 NPT threaded receptacles	10	889A-U1NUT-10
Flat sealing washers for 1/2 in. - 14 NPT threaded receptacles	10	889A-U1FSL-10

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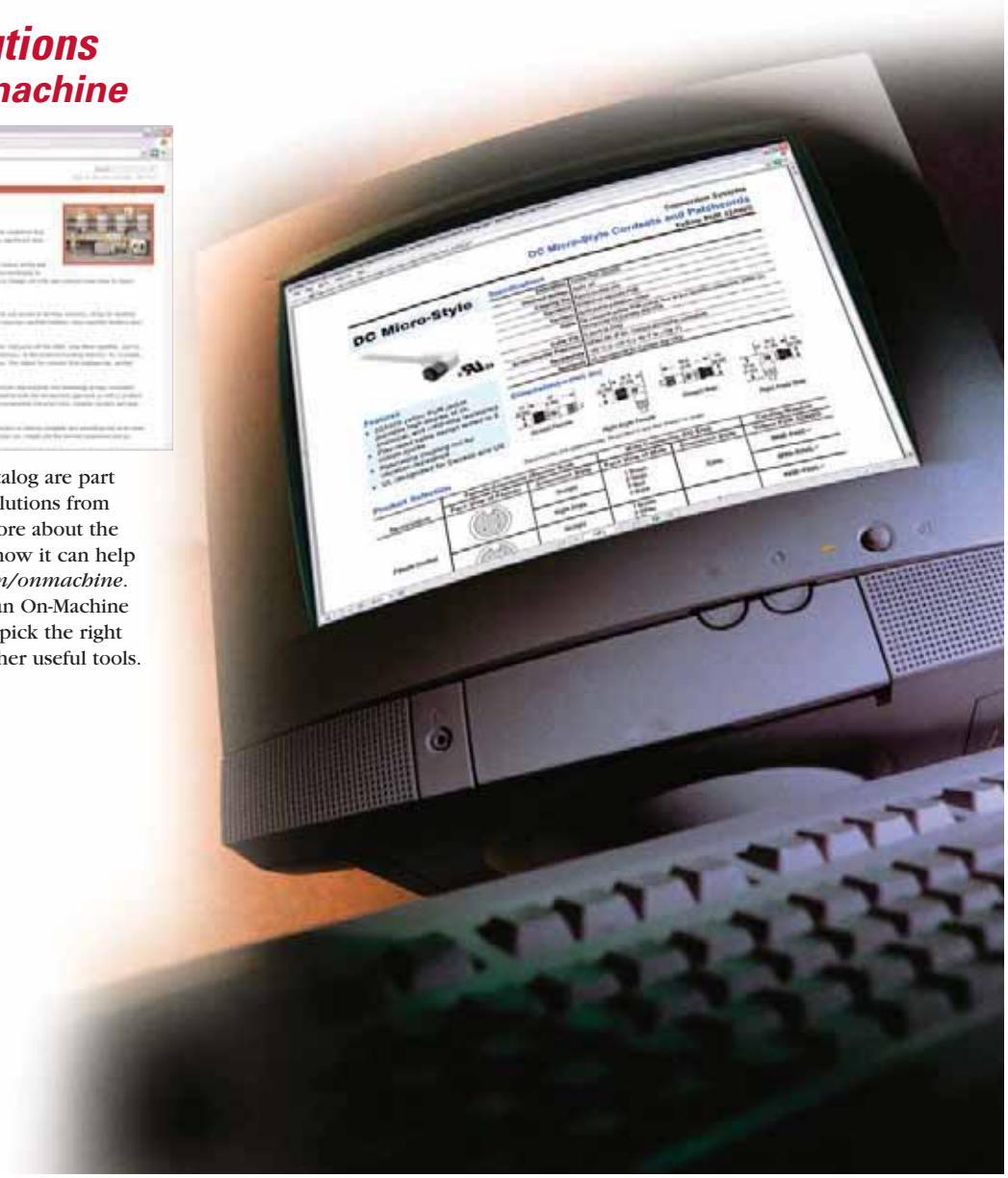
To get started, point your browser to *www.ab.com/onmachine.*



Product Catalogs

Industrial Controls
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The Motion Book
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Control-Matched Variable Speed AC & DC Motors
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