



# **Safety Product Guide**

think **SAFETY.** think **HUBBELL**SAFE.



### **Hubbell Safety Product Guide**

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# Safety First with Hubbell



### The safety of people and equipment matter most

### Too costly to ignore

Hubbell believes that every employee in every business has the right to a safe working environment. Not only is safety the key to allowing people to be confident and secure in their jobs, it is also critical to enhancing productivity, reducing downtime and avoiding significant accident expenses - all of which leads to sustainability and a lower Total Cost of Ownership (TCO).

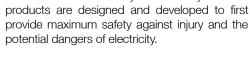
### Ensuring safety everywhere

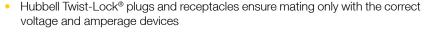
Potential safety hazards exist in almost every workplace environment—from open office areas and factory floors, to construction sites and retail spaces. That's why all employers are required to comply with strict safety codes and regulations. Many businesses pride themselves on the number of accident-free days,

which is achieved through established formal safety programs that include training, ongoing safety evaluations and documentation.

Hubbell Wiring Systems is committed to helping our customers maintain a safe workplace environment. Since introducing the first safety receptacle that set the industry standard, Hubbell has always

been focused on safety. That's why Hubbell products are designed and developed to first provide maximum safety against injury and the potential dangers of electricity.





- Hubbell's full line of watertight devices provides protection against electrical shock in wet environments
- All Hubbell ground fault receptacles and temporary power distribution systems provide a high level of personnel protection
- Hubbell Circuit-Lock® disconnects and MotorQuick® motor controllers enable safe control and disconnection of power in the industrial environment
- Lockout-tagout features and devices offer a means to protect employees by avoiding unintentional energizing of equipment during diagnostics or repair
- Hubbell wire management and hose and cable protection systems safeguard cables and cords, ultimately protecting people by preventing damaged circuits and minimizing trip hazards



### An essential core value

As an industry leader, Hubbell is extremely involved with regulatory associations and has an extensive knowledge of codes and regulations that businesses must comply with to ensure safety and reduce risk. From the latest version of the National Electric Code® (NEC) to NEMA requirements and OSHA regulations, Hubbell products comply with the latest codes to help our customers ensure proper safety in the workplace. As part of our ongoing commitment to safety, Hubbell holds numerous ShopTalk™ Seminars across the nation to provide up-to-date information on safety requirements, potential safety risks and products and solutions.

Hubbell understands the importance of making safety a core value in every business and the cost of non-compliance. Keeping people and equipment safe with Hubbell products reduces risk and liability.



NEC® is a registered trademark of the National Fire Protection Association (NFPA).



## **Connections for Wet and Damp Locations**



UL Enclosure Type No.	IEC 60529 Enclosure Classification Designation	Basic Description
3R	IP14	Rainproof and Sleet (Ice) Resistant; Outdoor
4	IP56	Watertight and Dusttight; Indoor and Outdoor
4X	IP56	Watertight, Dusttight and Corrosion-Resistant; Indoor and Outdoor
6	IP67	Watertight, Dusttight and Sleet (Ice) Resistant; Indoor and Outdoor
12	IP52	Industrial Use, Dusttight and Driptight; Indoor
	IP69k	Hot Water



### **Watertight Wiring Devices**

When it comes to safety, almost everyone knows that water and electricity can create a dangerous environment. From harsh factory and construction sites to laboratories and outdoor applications, ensuring a watertight seal for electrical devices is critical to ensuring maximum safety of personnel in any wet environment. Hubbell Watertight Twist-Lock® devices have become the industry standard for maintaining a watertight seal when in use and when disconnected as well as preventing unintentional disconnects.

### Watertight Safety-Shroud® Twist-Lock® Devices



- Maintains UL/CSA Enclosure Type 4X watertight seal when in use and when disconnected
- Constructed from engineered high impact thermoplastic for heavy-duty industrial applications
- Shroud meets or exceeds California OSHA 2510.7(6) electrical safety requirement for "skirted plugs" Title 8 Division 1 Chapter 4
- Reduces exposure to arcing when connecting and disconnecting under load

### Watertight Twist-Lock® and Straight Blade Devices



- Cone seal prevents water from accumulating at the cable entrance
- Collapsible bushing allows compression nut to fully rest on body
- Exclusive triple by-pass sealing system
- Corrosion-resistant nickel plated blades and stainless steel captive assembly screws
- UL Type 4, 4X, 6, 6P; IP65, IP66, IP67
- Double insulated elastomeric cover

**Watertight Locking Devices** 

Trate: tigitt =0	•9							
NEMA Rating Poles/		Wa	tertight Safety-S	hroud®	Watertight			
Color Coded by Voltag	je	Wires	Plug	Connector	Receptacle	Plug	Connector	Receptacle
15A 125V	L5-15	2P/3W	_	_	_	HBL24W47	HBL25W47	HBL65W47
15A 277V AC	L7-15	2P/3W	_	-	_	HBL24W34	HBL25W34	HBL65W34
20A 125V	L5-20	2P/3W	HBL2311SW	HBL2313SW	HBL2310SW	HBL26W47	HBL27W47	HBL67W47
20A 250V	L6-20	2P/3W	HBL2321SW	HBL2323SW	HBL2320SW	HBL26W48	HBL27W48	HBL67W48
20A 277V AC	L7-20	2P/3W	HBL2331SW	HBL2333SW	HBL2330SW	HBL26W49	HBL27W49	HBL67W49
20A 125/250V AC	L14-20	3P/4W	HBL2411SW	HBL2413SW	HBL2410SW	HBL26W74	HBL27W74	HBL67W74
20A 3Ø 250V	L15-20	3P/4W	HBL2421SW	HBL2423SW	HBL2420SW	HBL26W75	HBL27W75	HBL67W75
30A 3Ø 250V AC	L15-30	3P/4W	HBL2721SW	HBL2723SW	HBL2720SW	HBL28W75	HBL29W75	HBL69W75
30A 3Ø 480V AC	L16-30	3P/4W	HBL2731SW	HBL2733SW	HBL2730SW	HBL28W76	HBL29W76	HBL69W76











#### **Watertight Straight Blade Devices**

NEMA Rating Color Coded by	y Voltage	Poles/ Wires	Color	Plug	Connector	Receptacle with Lift Cover	Duplex Receptacle with Lift Cover
15A 125V	5-15	2P/3W	Yellow Black	HBL14W47A HBL14W47BK	HBL15W47A HBL15W47BK	HBL60W47 HBL60W47BK	HBL60W47D —
15A 250V	6-15	2P/3W	Yellow	HBL14W49	HBL15W49	HBL60W49	HBL60W49D
20A 125V	5-20	2P/3W	Yellow	HBL14W33A	HBL15W33A	HBL60W33	HBL60W33D
20A 250V	6-20	2P/3W	Yellow	HBL14W48	HBL15W48	HBL60W48	HBL60W48D





### **Convenient Power Access**

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### **Portable Outlet Boxes**

The thermoplastic elastomer material of the Portable Outlet Box provides a strong housing with enough capacity for multiple devices to fit, with cord feed through options available. The impact resistant PBT covers add to the durability of the box and the devices inside. There are several cord connectors available, ranging from standard to deluxe, providing unmatched strain relief. The covers provide a UL Type 3R weather resistant seal suitable for wet and damp locations. Portable Outlet Boxes are available pre-assembled or can be configured as needed.

### **Portable Outlet Boxes**



- Wiring room to accommodate the broadest range of device requirements in one size box
- Cord entry options include pre-defined range or 'build your own' option
- Fully thermoplastic elastomer housing exceeds UL crush requirements and is highly impact resistant, available in black or yellow
- Extended wall protects lift covers from impact damage
- · Brass inserts for maximum strength

#### **Covers for Portable Outlet Boxes and Panels**



- Impact resistant PBT material
- Stainless steel hinge and spring
- UL Type 3R seal on a panel or on a portable outlet box

#### Pre-Assembled Portable Outlet Boxes (with Cord Connector Installed)

Description	Cord Range Inches (mm)	Catalog Number
Portable Outlet Box, Deep, Yellow	.38"50" (9.7-12.7)	HBL3099
Portable Outlet Box, Deep, Feed Thru, Yellow	.38"50" (9.7-12.7)	HBL3090F
Portable Outlet Box, Deep, Yellow with (2) duplex plates	.38"50" (9.7-12.7)	HBL3000



### **Configurable Portable Outlet Boxes**

			Cord Connector Options		Deluxe
Empty Box Options	Catalog Number	Cord Range Inches (mm)	Gray Nylon	Black Nylon	Cord Connectors
Outlet Box, Yellow Outlet Box, Black Feed Thru Box, Yellow Feed Thru Box, Black	HBL3080 HBL3080BK HBL3080F HBL3080FBK	.38"50" (9.5-12.7) .50"63" (12.7-15.9) .63"75" (15.9-19.0) .75"88" (19.0-22.2)	SHC1039CR SHC1040CR SHC1041CR SHC1042CR	SHC2040CR SHC2041CR SHC2042CR	— CG810NM 074011341 074011342
Note: Includes Locknut.		.88"-1.00" (22.2-25.4) .59"-1.00" (15.0-25.4)		SHC2043CR SEC100BA	074011343 —

#### **Cover Plates for Portable Outlet Boxes and Panels**

Description	UL Type 3R	UL Type 1
Outlet box cover, duplex receptacle Outlet box cover, 1.39" diameter receptacle Outlet box cover, 1.572" diameter receptacle Outlet box cover; GFCI Outlet box coverplate, blank	HBL3056 HBL3057 HBL3058 HBL3061 HBL3054	HBL3051 HBL3052 HBL3055 HBL3060









#### **Environmental Specifiations**

Portable Outlet Boxes

Wet and Damp Locations

Covers (POB)

UL Type 3R and Wet Locations cover closed



Box Suitable for Wet and Damp Locations

IP44





### **Maximum Protection for Electrical Connections**





Demanding environments call for high-performance pin & sleeve connections. Hubbell traditional IEC Pin & Sleeve devices are IP67 and ensure watertight performance while protecting users with a super tough, non-conductive housing and shrouded contact pins. For those who want more, Hubbell has taken its highest-performing pin & sleeve devices and made them better with The Advantage™ Series - the only IEC 60309 switch rated connection in the world. These switch-rated connections are UL witnessed IP69K and UL Type 4X and 12 devices. They are designed for use in harsh environments, the devices offer protection against water and dust.

### Advantage™ Series Switch-Rated Pin & Sleeve



- · Approved as disconnecting means for both motor circuits and branch circuits
- Mates with existing installed base of IEC 60309-2 Pin and Sleeve devices
- UL witnessed IP69k and UL Type 4X and 12 environmental rating
- Continuous, un-switched ground path

IEC Watertight

100A

3ØY 120/208V

Pin & Sleeve



### **IEC Pin & Sleeve**



- Superior construction and engineered materials for maximum durability
- Sequential contact engagement ensures the ground mates first and breaks last
- Thermoset polyester interiors provide unsurpassed ability to withstand high amounts of heat which may result from overload or arching

### Water & Dust Ingress Protection:

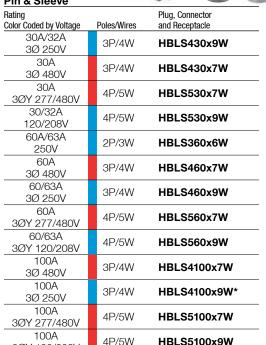
Extremely Hot (176°) and High Pressure Water (1450 psi) sprayed from various angles.

#### **IP69k Dust Test**

Device is placed in a dust chamber for 8 hours while a vacuum tries to pull dust into the sealed device



#### Advantage™ Series Switch-Rated Pin & Sleeve



3ØY 120/208V x= device: P (Plug), C (Connector), and R (Receptacle)

#### Rating Color Coded by Voltage Plug, Connector Poles/Wires and Receptacle 20A 3P/4W HBL420x7W 3Ø 480V 30A 3P/4W HBL430x9W 3Ø 250V 30A 3P/4W HBL430x7W 3Ø 480V 30A 3P/4W HBL430x5W 3Ø<u>600\</u> 30A 4P/5W HBL530x7W 3ØY 277/480V 60A 3P/4W HBL460x9W 250V 60A 3P/4W HBL460x7W <u>3Ø</u> 480V 60A 3P/4W HBL460x5W 3Ø 600V 60A 4P/5W HBL560x9W 3ØY 120/208V 100A HBL4100x9W 3P/4W 250V 100A 3P/4W HBL4100x7W 3Ø 480V 100A 3P/4W HBL4100x5W 3Ø 600V

4P/5W x= device: P (Plug), C (Connector), R (Receptacle) and B (Inlet)

HBL5100x9W

### Safety You Can See

# HUBBELLSAFE

### **Disconnects with LED Indicators**

Hubbell Wiring Device-Kellems has redefined the benchmark for safety with its new 30A motor disconnect switch. Six LEDs (3 line side/3 load side) have been incorporated into the cover, providing users critical information. Hubbell refers to this phase-indicating technology as **inSIGHT**." The integral LEDs provide both safety and convenience benefits. The **inSIGHT**" clearly differentiates itself with features you can literally see.

### Circuit-Lock® inSIGHT™ Unfused Disconnect Switches



- LEDs provide insight about the electrical status of the switch within the enclosure prior to removing the cover
- Personnel can quickly and safely identify abnormal conditions such as a welded contact or dropped phase
- Users are provided a secondary way to visually confirm make/break on all phases



# inSIGHT<sup>™</sup>

Insight (n): the power or act of seeing into a situation



\*For use on 3Ø Y circuits

NEC® 430.102(B) requires each motor controller to have a disconnect within line of sight from the motor and driven equipment. Hubbell's Circuit-Lock® Unfused Disconnect Switches meet these code requirements, and are UL listed as a manual motor controller and also "suitable as a motor disconnect."

NFPA 70E® 120.5(7) requires the use of an adequately rated portable test instrument and a known voltage source to verify the absence of internal voltage.







### 30 Amp Unfused Disconnect Switches with LEDs\*

Description	Non-Metallic	Stainless Steel Square Top	Stainless Steel Sloped Top
Disconnect switch with LEDs	HBLDS3P	HBLDS3SSP	HBLDS3SSRP
Disconnect switch with HBLAC1 auxiliary contact	HBLDS3PAC	_	_
Disconnect with Jog switch and LEDs	HBLDS3PJ	_	HBLDS3SSRPJ

### **LED Replacement Covers**

Description	Non-Metallic	Stainless Steel Square Top	Stainless Steel Sloped Top
Replacement cover for 30A switches with LEDs	HBLDS3RCP	HBLDS3SSRCP	HBLDS3SSRRCP
Note: For use with 3Ø Y configurations only			

### **Auxiliary Contacts**

Description	Catalog Number
"Break After Main Break", 1 set of n/o contacts, 1 set of n/c contacts	HBLAC1**
"Break Before Main Break", 1 set of n/o contacts for use with variable frequency drives	HBLAC2**

Note: \*Certified by NSF, International. \*\*Up to two auxiliary contacts per enclosure.





## Line of Sight Disconnect for Safety



#### NEC® 430.75(A) Disconnection

Motor control circuits shall be arranged so that they will be disconnected from all sources of supply when the disconnecting means is in the open position. The disconnecting means shall be permitted to consist of two or more separate devices, one of which disconnects the motor and the controller from the source(s) of power supply for the motor, and the other(s), the motor control circuit(s) from its power supply. Where separate devices are used, they shall be located immediately adjacent to each other.



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NSF - National Sanitation Foundation.

### **Motor Control**

Hubbell motor control devices can safely disconnect power at any point in a circuit without powering down other equipment and sacrificing productivity. The NEC® requires motor controllers on equipment like HVAC units, compactors and back-up generators to have a disconnect within line of sight and allows a controller and disconnect to be the same device. By combining both functions in one device, Hubbell Circuit-Lock® eliminates the confusion of which switch is a motor controller or disconnect, providing owners and operators with a renewed level of comfort and safety.

#### Circuit-Lock® Unfused Disconnect Switches



- Meets line of sight disconnect requirements to ensure maximum safety
- High visibility handle is lockable to meet OSHA lockout/tagout requirements 29CFR 1910.147
- NEC® 430.109(A)(6) recognizes that a manual motor controller and disconnect can be the same unit
- Certified by for hygiene in food processing applications

#### **Circuit-Lock® Fused Disconnect Switches**



IP66 SUITABILITY

- Certified for current interrupting at full rated current and voltage
- High visibility red handle can be locked in OFF position
- Type 4X enclosure with neoprene watertight gasket
- Accepts class "J" fuses

#### Circuit-Lock® Unfused Disconnect Switches 600V AC











			Stainless Steel	Stainless Steel
Description	on	Non-Metallic	Square Top	Sloped Top
	Disconnect switch	HBLDS3	HBLDS3SS	HBLDS3SSR
30A	With one HBLAC1 auxiliary contact	HBLDS3AC	HBLDS3SSAC	HBLDS3SSRAC
	For use with variable frequency drives	HBLDS3VFD	HBLDS3SSVFD	HBLDS3SSRVFD
60A	Disconnect switch	HBLDS6	HBLDS6SS	HBLDS6SSR
	With one HBLAC1 auxiliary contact	HBLDS6AC	HBLDS6SSAC	HBLDS6SSRAC
100A	Disconnect switch	HBLDS10	HBLDS10SS	HBLDS10SSR
	With one HBLAC1 auxiliary contact	HBLDS10AC	HBLDS10SSAC	HBLDS10SSRAC

Auxiliary Contacts for 30, 60 and 100 Amp Switches

Description	Break Adter Main Break	Break Before Main Break
Auxiliary contacts 1 set of n/o & n/c contacts	HBLAC1	HBLAC2



Circuit-Lock® Fused Disconnect Switches	
600V AC	IP66
Description	Catalog No.
30A disconnect switch	FDS30*
60A disconnect switch	FDS60*

Note: \*Class "J" fuses not included



Auxiliary	
Contacts	

Description	Normally Open	Normally Closed
A600 pilot duty	<b>HBLACFSNO</b>	<b>HBLACFSNC</b>





## "Try Out" After Lockout/Tagout



### **Jog Switch Disconnects**

In addition to all of the benefits of Hubbell's standard Circuit-Lock® disconnect, the jog switch version provides additional functionality. The black jog switch uses two auxiliary contacts for PLC communication. The jog has three settings: maintaining ON and OFF, as well as a momentary 'test' setting that enables users to send a bump/jog command to the PLC to energize a motor for a short period of time. These three settings offer several benefits:

### Circuit-Lock® Disconnect Switches with Jog Switch



- Cost savings by utilizing existing space in the motor disconnect enclosure, reducing parts and labor costs
- Convenience by having point of use control circuit to PLC within line of sight of the motor
- Added safety by allowing maintenance personnel the functionality to 'Try Out' after Lockout/Tagout



The highly visible red motor disconnect handle can be used to isolate power to a motor and meets OSHA LO/TO capabilities.

### Water & Dust Ingress Protection:

**IP69k Water Test** Extremely Hot (176°F) and High Pressure Water (up to 1450 psi) sprayed from various angles.

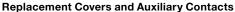
IP69k Dust Test Device is placed in a dust chamber for 8 hours while a vacuum tries to pull dust into the sealed device.

### 30 and 60 Amp Disconnects with Jog Switch\*

The jog switch control circuits can be wired to communicate back to

a PLC or VFD.

Amps	Description	Catalog Numbers
	Non-Metallic Disconnect with Jog Switch	HBLDS3J
	Non-Metallic Disconnect with NO+NC Aux Contact and Jog Switch	HBLDS3ACJ
30A	Non-Metallic Disconnect with NO Break Before Main Aux Contact and Jog Switch	HBLDS3VFDJ
	Stainless Steel Disconnect with Jog Switch	HBLDS3SSJ
	Sloped Stainless Steel Disconnect with Jog Switch	HBLDS3SSRJ
60A	Non-Metallic Disconnect with Jog Switch	HBLDS6J



replacement covers and Adamary contacts	
Description	Catalog Numbers
Replacement Cover for Non-Metallic 30A Disconnect with Jog Switch	HBLDS3RCJ
Replacement Cover for Stainless Steel 30A Disconnect with Jog Switch	HBLDS3SSRCJ
Replacement Cover for Sloped Stainless Steel 30A Disconnect with Jog Switch	HBLDS3SSRRCJ
Replacement Cover for Non–Metallic 60A Disconnect with Jog Switch	HBLDS6RCJ
"Break After Main Break", 1 set of n/o contacts, 1 set of n/c contacts	HBLAC1**
"Break Before Main Break", 1 set of n/o contacts	HBLAC2**
Note: *Certified by NSF, International. **Up to two auxiliary contacts per e	nclosure.











### **Installation Safety**



### NEC® 430.102 Location.

#### (A) Controller.

An individual disconnecting means shall be provided for each controller and shall disconnect the controller. The disconnecting means shall be located in sight from the controller location.

### (2) Controller Disconnect.

The controller disconnecting means required in accordance with 430.102(A) shall be permitted to serve as the disconnecting means for the motor if it is in sight from the motor location and the driven machinery location.



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NSF - National Sanitation Foundation.

### HUBBELL® Wiring Device-Kellems

### **Motor Control**

Hubbell motor control devices are also available for use with the Hubbell LINKOSITY® modular plug-and-play power distribution system. MotorQuick® offers the functionality of a motor disconnect switch with the safety of factory pre-wired connections. LINKOSITY® connections make motor change outs fast and simple. Heavy duty manual motor controllers are also available for controlling and disconnecting power to equipment.

### MotorQuick®



- Combines Circuit-Lock® motor disconnect with plug-and-play LINKOSITY® system for faster installation and replacement of motors
- Lockable handle meets OSHA lockout/tagout regulations
- Easily retrofits to existing hard wired installations with LINKOSITY® components
- Certified by ss for hygiene in food processing applications

### **Manual Motor Controllers**



- Available in double-pole and three-pole 30A and 60A 600V AC controllers
- Suitable as a motor disconnect
- Type 1 and Type 3R enclosures available
- Optional finger guards (HBLFG30) fit 30A, 40A and 50A controllers

### Type 1 30A 3 Pole 600V AC

Description	HBL1389D Non-Metallic
(1) pre-wired LINKOSITY® female receptacle (load side)	HBL1389MQR
5 ft. pre-wired LINKOSITY® female cable (load side)	HBL1389MQ5
(1) pre-wired LINKOSITY® male receptacle (line side)	HBL1389MQR2
(1) pre-wired LINKOSITY® female receptacle (load side)	











HBLDS3SS



HBLDS3SSR

Description
(1) pre-wired LINKOSITY® female receptacle (load side)
5 ft. pre-wired LINKOSITY® female cable (load side)
(1) pre-wired LINKOSITY® male receptacle (line side)
(1) pre-wired LINKOSITY® female receptacle (load side)

Non-Metallic Stainless Steel Squar HBLDS3MQR HBLDS3SSMC HBLDS3MQ5 HBLDS3SSMC

 Stainless Steel Slope Top

 HBLDS3SSMQR
 HBLDS3SSRMQR

 HBLDS3SSMQ5
 HBLDS3SSRMQ5

HBLDS3MQR2 HBLDS3SSMQR2 HBLDS3SSRMQR2

### Manual Motor Controller

Description	Double Pole	Three Pole
30A motor controller	HBL7832D	HBL7810D
In Type 1 enclosure; non-metallic cover	HBL1392D	HBL1389D
In metal Type 1 enclosure	HBL1372D	HBL1379D
In NEMA 3R non-metallic enclosure	HBL13R22D	HBL13R23D
In metal Type 3R enclosure	HBL13R92D	HBL13R89D
In NEMA 3R flip lid enclosure	HBL13R12D	HBL13R13D
60A motor controller	HBL7862D	HBL7863D





## Plug and Play Power System

# HUBBELLSAFE

### **Modular Power**

Factories and industrial environments often need flexible power distribution systems for all types of equipment. Hubbell LINKOSITY® modular power distribution system is ideal for ensuring safety when providing flexible power in these applications. Hubbell LINKOSITY® provides the necessary system components to create code compliant safe installations.

#### **LINKOSITY®**

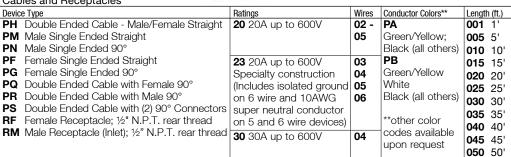


- Reconfigurable factory defined assemblies that can be easily installed as a cost effective alternative to conventional wiring methods
- Cables are UL listed as NEC® Type TC-ER with the crush and impact resistance of metal clad cable for maximum safety in industrial environments
- Enables fast installation and high technical performance for 20A and 30A circuits up to 600V
- Power assemblies available in straight blade and Twist-Lock® receptacles



### Power Components 20A, 30A up to 600V

Cables and Receptacles



Example Catalog Number: PH2306PB05



### LINKOSITY® Tees

LINKOSI I 1 1662	
Description	Catalog Numbers
M/F/F Tee, 20A, 2P	TX2002002002T00
M/F/F Tee, 20A, 3P	TX2003002003T00
M/F/F Tee, 20A, 4P	TX2004002004T00
M/F/F Tee, 20A, 5P	TX2005002005T00
M/F/F Tee, 20A SNIG, 4P	TX2304002304T00
M/F/F Tee, 20A SNIG, 6P	TX2306002306T00
M/F/F Tee, 20A SNIG, A Phase Tap	TX2306002304A00
M/F/F Tee, 20A SNIG, B Phase Tap	TX2306002304B00
M/F/F Tee, 20A SNIG, C Phase Tap	TX2306002304C00
M/F/F Tee, 30A, 4P	TX3004003004T00

### **Closure Caps**

Description	For use with Female Receptacle	Male Inlet
20A and 30A	CCMBC	CCFBC
Receptacle		
Closure Cap		



NEC® 670 on Industrial Machinery refers to NFPA 79-2015, Electrical Standard for Industrial Machinery where sections 13.1.2.3 and 13.1.7.1 specifically indicate that molded connections factory-applied to cable and cords are to be permitted.

### NEC® 336.10(7)

Permits type TC-ER cable in transitions between cable trays and the utilization equipment or devices when secured at intervals not more than 6 ft without continuous support.



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# Wire Security and Strain Relief



### NEC® 400.14 Pull at Joints and Terminals

Flexible cords and cables shall be connected to devices and to fittings so that tension is not transmitted to joints or terminals.

### **OSHA Regulation 29 CFR** 1926.405(g)(2)(iv) Strain relief.

Flexible cords shall be connected to devices and fittings so that strain relief is provided which will prevent pull from being directly transmitted to joints or terminal screws.

1926.405(g)(2)(v) Cords passing through holes. Flexible cords and cables shall be protected by bushings or fittings where passing through holes in covers, outlet boxes, or similar enclosures.



NEC® is a registered trademark of the National Fire Protection Association (NFPA).

### **Wire Management**

Hubbell wire mesh grips are designed to prevent strain from being transmitted to joints and terminals on electrical cords, cables and conduit. This provides greater security than using a fitting alone, making electrical systems safer by preventing cable pull-out and controlling cable arc-of-bend. The positive action mesh grips distributes loads equally over the cable jacket.

### **Strain Relief Grips**



- Multi-weave grip products provide arc-of-bend control minimizing cable damage and extending cable life
- Ideal for providing maximum safety where conduit is subject to vibration, motion or strain
- Stainless steel mesh is corrosion resistant and optional liquidtight fittings provide a watertight seal

### **Support Grips**



- Ideal for ensuring safety by supporting electrical cable service drops or hoses
- Positive action mesh grip design provides equal loading throughout the entire grip length
- Available in heavy duty, standard and light duty for a variety of applications



### Kellems® Deluxe **Cord Grips**

•	Grip Diameter Range	
Description	Inches (cm)	Catalog No.
Straight male	.250"312" (.6379)	07401001
thread; % in.	.312"375" (.7995)	07401002
N.P.T. thread size	.375"437" (.95-1.11)	07401003
Straight male	.187"250" (.4763)	07401004
thread; ½ in.	.250"375" (.6395)	07401006
N.P.T. thread size	.375"500" (.95-1.27)	07401008
	.500"625" (1.27-1.59)	07401010
90° male thread;	.250"312" (.6379)	07401071
% in. N.P.T.	.312"375" (.7995)	07401072
thread size	.375"437" (.95-1.11)	07401073
90° male thread;	.187"250" (.4763)	07401074
½ in. N.P.T.	.250"375" (.6395)	07401076
thread size	.375"500" (.95-1.27)	07401078
	.500"625" (1.27-1.59)	07401080*
45° male thread;	.250"312" (.6379)	074011236
½ in. N.P.T.	.375"500" (.951.27)	074011021
thread size	.500"625" (1.27-1.59)	074011237
45° male thread;	.500"625" (1.27-1.59)	074011049
3/4 in. N.P.T.	.625"750" (1.59-1.90)	074011051*
thread size	.750"875" (1.90-2.22)	074011239*

<sup>\*</sup> Cable jacket may have to be stripped to pass through

connector body.

### Single Eye, Closed Mesh\*\*

For permanent support when cable end is available to be installed through grip.

Cable Diameter	Approx. Breaking	-
Range Inches (cm)	Strength Lbs. (N)	Catalog No.
.50"62" (1.27-1.57)	530 (2,357)	02201013
.63"74" (1.60-1.88)	790 (3,514)	02201014
.75"99" (1.90-2.51)	1,020 (4,537)	02201015
1.00"-1.24" (2.54-3.15)	1,610 (7,161)	02201017
1.25"-1.49" (3.17-3.78)	1,610 (7,161)	02201018
1.50"-1.74" (3.81-4.42)	1,610 (7,161)	02201019

\*\*Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

#### Single Eye, Split Mesh, Rod Closing\*

For support when cable end is not available

Approx. Breaking	
Strength Lbs. (N)	Catalog No.
790 (3,514)	02203013
790 (3,514)	02203014
1,020 (4,537)	02203015
1,610 (7,161)	02203017
1,610 (7,161)	02203018
1,610 (7,161)	02203019
	Strength Lbs. (N) 790 (3,514) 790 (3,514) 1,020 (4,537) 1,610 (7,161) 1,610 (7,161)

\*\*Change catalog number from 022 to 024 for stainless steel. Consult factory for availability.

For complete listing of Hubbell Products, see our full line catalog.

### Protect Wires from Moisture and Damage



### Wire Management

Protecting electrical circuitry on the factory floor improves safety for both people and equipment by preventing mechanical damage and moisture from impacting the integrity of the wiring. Hubbell PolyTuff® non-metallic liquidtight conduit and fittings are commonly used between disconnect switches and equipment in industrial applications to protect wiring and improve safety. Metallic liquidtight fittings are also available for certain applications.

### PolyTuff® Non-Metallic Liquidtight Conduit and Tubing



- Non-metallic construction ends metal fatique and separation problems
- · Cuts cleanly with a knife or PVC cutter
- Handles twists, turns, bends, switchbacks and straightaways with ease
- Available with rigid PVC core PolyTuff® I or flexible corrugated wall PolyTuff® II

### PolyTuff® Liquidtight Fittings



- SwivelLok® nylon two-piece swivel body enables fitting to twist from 0° to 90°
- Neoprene O-ring ensures liquidtight seal at hub or enclosure

Straight with Male

Trade Size

1/4 (6)

3/8 (9)

1/2 (13)

34 (19)

1 (25) 11/4 (32)

11/2 (38)

Trade Size

3/8 (9)

1/2 (13)

34 (19)

1 (25)

2 (51)

(metric designator)

Non-Metallic Fittings

for Non-Metallic Conduit

SwivelLok® Multi-Position with Male Non-Metallic

**Liquidtight Fittings** 

(metric designator) Black

Black

F2025

P038NBKA

P050NBKA

P075NBKA

P100NBKA

P125NBK

P150NBK

P200NBK

PS0389NBK

PS0509NBK

PS0759NBK

**PS1009NBK** 

Gray

P038NGYA

P050NGYA

P075NGYA

P100NGYA

P125NGY

P150NGY

P200NGY

PS0389NGY

PS0509NGY

PS0759NGY

**PS1009NGY** 

Non-integral ferrule provides conduit seal and superior pullout protection

#### PolyTuff I® Conduit and PolyTuff II® Tubing





Polytuli li <sup>s</sup> tu	bing			
Trade Size		PolyTuff I	PolyTuff II	
(metric designator)	Feet (m)	Conduit	Tubing	
1/4 (10)	100 (30.5)	_	B2025	
3 <sub>8</sub> (12)	100 (30.5)	G1038	B2038	
1/2 (16)	100 (30.5)	G1050	B2050	
34 (21)	100 (30.5)	G1075	B2075	
1 (27)	100 (30.5)	G1100	B2100	
11/4 (35)	100 (30.5)	G1125	B2125	
1½ (41)	50 (15.2)	G1150	B2150	
2 (53)	50 (15.2)	G1200	B2200	

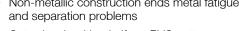
### SwivelLok®

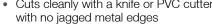


Trade Size (metric designator)	Fitting and Conduit Kit	Catalog No.
1/2 (13)	(2) PS0509NGY,	PS05GYKIT
34 (19)	6' G1050 (2) PS0759NGY, 6' G1075	PS07GYKIT

#### Fixed 90°Fittings for Non-Metallic Conduit

IOI NOII-MELAI	iic Conduit				
Trade Size			Trade Size		
(metric designator)	Black	Gray	(metric designator)	Black	Gray
1/4 (6)	F20259	_	34 (19)	P0759NBK	P0759NGY
3/8 (9)	P0389NBK	P0389NGY	1 (25)	P1009NBK	P1009NGY
1/2 (13)	P0509NBK	P0509NGY	11/4 (32)	P1259NBK	P1259NGY







- (1) Where flexibility is required for installation, operation, or maintenance.
- (2) Where protection of the contained conductors is required from vapors, liquids or solids.
- (3) For outdoor locations where listed and marked as suitable for the purpose.
- (4) For direct burial where listed and marked for the purpose.
- (5) Type LFNC shall be permitted to be installed in lengths longer than 1.8 m (6 ft) where secured in accordance with 356.30.
- (6) Type LFNC-B as a listed prewired assembly, trade size ½ through 1 conduit
- (7) For encasement in concrete where listed for direct burial and installed in compliance with 356.42.



NEC® is a registered trademark of the National Fire Protection



# Eliminate Tripping Hazards



#### UL355 4.3, 4.4

Cord Reels, that employ Ground-Fault Circuit Interrupter outlet(s) and are connected to the power supply by means of flexible cord with an attachment plug and/or that employ slip rings, shall be provided with open neutral protection as part of the GFCI.

AFL version allows cord reel installation to conform to **NEC® Article 511** concerning installation of electrical devices in commercial garages, repair facilities and storage locations by positioning the switch above the defined area where hazardous fumes may collect.



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### HUBBELL® Wiring Device-Kellems

### **Cable Management**

Cable reels can help eliminate unmanaged cords and cables that would otherwise cause trip hazards or an increased potential of electric shock. Hubbell offers a wide range of cord reels that provide cable protection, including watertight, industrial, commercial and static discharge reels with grounding jaw clamps for a low resistant ground termination for maximum safety.

### **Industrial Cord Reels**



- Provide safe convenient power and lighting for demanding industrial applications and environments
- All steel construction can be ceiling. wall or bench mounted
- Keeps cord organized and off the floor, saves time and money and improves safety while extending cord life

#### **Commercial Cord Reels**



- Lighter weight for the less demanding requirements of commercial and light industrial environments
- Eliminates unmanaged cords which can cause trip hazards or an increased potential of electric shock
- AFL version provides automatic lamp shut-off to switch power above the floor height requirement
- Holds cord at desired length and provides smooth cord retraction

### **Industrial Power Cord Reels**

	NEMA	Cable	Volts		Weight	
	Style	Feet (m)	AC	Cable Type	Lbs. (kg)	Catalog Number
connector	5-15R	45 (13.7)	125	#12/3 SJ	23 (10.4)	HBL45123C
connector	5-20R	45 (13.7)	125	#12/3 SJ	29 (13.2)	HBL45123C20
15A	5-15R	45 (13.7)	125	#12/3 SJ	29 (13.2)	HBL45123R
20A	5-20R	45 (13.7)	125	#12/3 SJ	29 (13.2)	HBL45123R20
15A GFCI	5-15R	45 (13.7)	125	#12/3 SJ	29 (13.2)	HBL45123GF15
20A GFCI	5-20R	45 (13.7)	125	#12/3 SJ	28 (12.7)	HBL45123GF20
20A (2) GFCI	5-20R	45 (13.7)	125	#12/3 SJ	25 (11.3)	HBL45123GF220WM1
onnector	5-20R	45 (13.7)	125	#12/3 SJ	23 (10.4)	HBL45123TL20
Rotation	_	_	_	-	5 (2.3)	HBL340PB
	connector 15A 20A 15A GFCI 20A GFCI 20A (2) GFCI connector	Style           connector         5-15R           connector         5-20R           15A         5-15R           20A         5-20R           15A GFCI         5-15R           20A GFCI         5-20R           20A (2) GFCI         5-20R           20nnector         5-20R	Style         Feet (m)           connector         5-15R         45 (13.7)           connector         5-20R         45 (13.7)           15A         5-15R         45 (13.7)           20A         5-20R         45 (13.7)           15A GFCI         5-15R         45 (13.7)           20A GFCI         5-20R         45 (13.7)           20A (2) GFCI         5-20R         45 (13.7)           connector         5-20R         45 (13.7)	Style         Feet (m)         AC           connector         5-15R         45 (13.7)         125           connector         5-20R         45 (13.7)         125           15A         5-15R         45 (13.7)         125           20A         5-20R         45 (13.7)         125           15A GFCI         5-15R         45 (13.7)         125           20A GFCI         5-20R         45 (13.7)         125           20A (2) GFCI         5-20R         45 (13.7)         125           connector         5-20R         45 (13.7)         125	Style         Feet (m)         AC         Cable Type           connector         5-15R         45 (13.7)         125 #12/3 SJ           connector         5-20R         45 (13.7)         125 #12/3 SJ           15A         5-15R         45 (13.7)         125 #12/3 SJ           20A         5-20R         45 (13.7)         125 #12/3 SJ           15A GFCI         5-15R         45 (13.7)         125 #12/3 SJ           20A GFCI         5-20R         45 (13.7)         125 #12/3 SJ           20A (2) GFCI         5-20R         45 (13.7)         125 #12/3 SJ           20nnector         5-20R         45 (13.7)         125 #12/3 SJ	Style         Feet (m)         AC         Cable Type         Lbs. (kg)           connector         5-15R         45 (13.7)         125         #12/3 SJ         23 (10.4)           connector         5-20R         45 (13.7)         125         #12/3 SJ         29 (13.2)           15A         5-15R         45 (13.7)         125         #12/3 SJ         29 (13.2)           20A         5-20R         45 (13.7)         125         #12/3 SJ         29 (13.2)           20A GFCI         5-15R         45 (13.7)         125         #12/3 SJ         29 (13.2)           20A GFCI         5-20R         45 (13.7)         125         #12/3 SJ         28 (12.7)           20A (2) GFCI         5-20R         45 (13.7)         125         #12/3 SJ         25 (11.3)           20 mnector         5-20R         45 (13.7)         125         #12/3 SJ         23 (10.4)









### **Commercial Cord Reels**

	Watts	Cable	Volts		Weight	
Cord End	(Max)	Feet (m)	AC	Cable Type	Lbs. (kg)	Catalog Number
Triple tap outlet; 15A	1200	40 (12.2)	125	12/3 SJTW	9 (4.1)	HBLC40123TT
Wire leads; 10A	1250	25 (7.6)	125	16/3 SJT	8.5 (3.9)	HBLC25163
HBL5969VBLK connector; 10A	1250	25 (7.6)	125	16/3 SJT	8.5 (3.9)	HBLC25163C
Metallic incandescent hand lamp with receptacle, yellow	1625	25 (7.6)	125	14/3 SJT	9.5 (4.3)	HBLC25143IN
Fluorescent hand lamp and in-line receptacle, white	1200	40 (12.2)	120	16/3 SJT	9 (4.1)	HBLC40163FL
Non-metallic incandescent hand lamp and automatic shut off switch, yellow	75	25 (7.6)	125	14/3 SJT	9 (4.1)	HBLC25163AIN
Fluorescent hand lamp and automatic shut off switch, white	13	40 (12.2)	120	18/2 SJTOW	8.2 (3.7)	HBLC40182AFL
LED hand lamp, with flashlight end, white	9	40 (12.2)	125	18/2 SJTOW	8.2 (3.7)	HBLC40182LED

# Prevent Damage to Cables

### **Hose and Cable Protection Systems**

Exposed cables, cords and hoses can be a trip hazard for pedestrians, as well as a potential shock hazard. Hubbell offers a variety of hose and cable protection systems that provide a safe ramping system for both pedestrians and vehicles to pass over cables and hoses.

#### TrukTrak® and TredTrak®



- · Safeguards cables and cords from vehicle and pedestrian traffic
- TrukTrak® is ideal for industrial environments where trucks and forklifts are present
- TredTrak® supports pedestrian and light vehicle traffic in public, institutional and commercial applications
- Complies with NEC Articles 518 and 525 for insulating cables at carnivals, amusement parks, convention centers and similar public areas

#### AccessTrak®



- Modular cable protection for compliance with ADA accessibility guidelines
- Expandable five channel system that limits exposure of cables and hoses
- Protects cable and hose diameters up to 1.31 inches





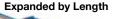
### TrukTrak® and TredTrak® Systems

nultiruit und nodinait Oyotomo		
Description	TrukTrak®	TredTrak®
5 Channel, blue and yellow	HBLTT5B	HBLTRED5B
5 Channel end caps (pair only), yellow	HBLTT5ECB	HBLTRED5ECB
5 Channel female end caps (2 females), yellow	_	HBLTRED5ECFB
5 Channel 45° right turn, blue and yellow	HBLTT545RB	_
5 Channel 45° left turn, blue and yellow	HBLTT545LB	_
5 Channel "X" fitting, blue and yellow	_	HBLTRED5XB
5 Channel "Y" fitting, blue and yellow	_	HBLTRED5YB
3 Channel, blue and yellow	HBLTT3B	_
3 Channel end caps (pair only), yellow	HBLTT3ECB	_
2 Channel, blue and yellow	HBLTT2B	_

Accestrate System

Access nak System	
Description	Catalog Number
5 Channel AccessTrak kit*, blue and gray	HBLAT5KITA
5 Channel AccessTrak trough, blue and gray	HBLAT5A
AccessTrak trough end rails (set), gray	HBLAT5ERA
AccessTrak ramps (set), blue	HBLAT5RAMPA
AccessTrak ramp end rails (set), gray	HBLAT5RAMPERA
*Consists of (1) HBLAT5A; (1 set) HBLAT5ERA; (1 set)	HBLAT5RAMPA; (2 sets)
LIDI DAMDEDA	

HBLRAMPERA.











#### NEC® 110.26(E)(2)

Outdoor. Outdoor electrical equipment shall be installed in suitable enclosures and shall be protected from accidental contact by unauthorized personnel, or by vehicular traffic.

### OSHA 1926.416(e)(1)

Requires that worn or frayed electrical cords or cables shall not be used. Precautions to mitigate wear include protection from damage and pinch points.



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## Delivery of Safe, Convenient Temporary Power



NEC® 590.6 Ground Fault Protection for Personnel. Requirements for GFCI protection for temporary wiring installations.

### NEC® 110.12(A) Unused Openings

Unused openings, other than those intended for the operation of equipment, those intended for mounting purposes, or those permitted as part of the design for listed equipment, shall be closed to afford protection substantially equivalent to the wall of the equipment.



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### HUBBELL® Wiring Device-Kellems

### **Temporary Power**

Construction sites and outdoor events need to ensure maximum safety when providing temporary electrical power for equipment and lighting, especially since these applications involve frequent plug-ins and disconnects. Hubbell temporary power distribution systems come in a variety of device types for protecting people against electrical shock in a wide range of applications and job sites.

### **SPIDER II® Temporary Power Boxes**



- Incorporates the most advanced ground fault module technology for safety
- Accommodates watertight straight blade and Safety-Shroud® Twist-Lock® receptacles
- Heavy Duty UL Type 3R metallic enclosure

### Portable Outlet Boxes and 50A Cable Sets and Receptacles



- Provides a safe rugged portable enclosure that can be used in many applications and complies with NEC® 110.12 regarding unused cable openings in metallic boxes
- Provides Type 3R protection with weatherproof cover plates
- Maximize strain relief protection with the addition of a Kellems® mesh grip

### **Temporary Power Boxes**

			Protection	Recepta	cle Type
Max Rating	Туре	Receptacle Rating	Overload/GFI	Straight Blade	Twist-Lock®
Spider® II	(7) Receptacles	20A, 125V	Yes/Yes	SDSB1A	SDTL1A
30A, 120/240V AC	(1) Twist-Lock® (inlet & outlet)	30A, 120/240V	No/No		
Spider® II	(7) Receptacles	20A, 125V	Yes/Yes	SBSB1A	SBTL1A
50A, 120/240V AC	(1) Twist-Lock® (inlet & outlet)	50A, 125/250V	No/No		
Spider® II	(6) Receptacles	20A, 125V	Yes/Yes	SBSB2	SBTL2
50A, 120/240V AC	(1) Twist-Lock® (inlet & outlet)	30A, 250V	Yes/Yes		
	(1) Twist-Lock® (inlet & outlet)	50A, 125/250V	No/No		
Spider® II	(6) Receptacles	20A, 125V	Yes/Yes	SCSB0	SCTL0
60A, 3Ø 120/208V	(1) Pin & Sleeve (inlet & outlet)	60A, 3ØY,	No/No		
		120/208V			
50A 120/240V AC	(6) Receptacles	20A, 125V	Yes/Yes	TPDS	TPDL
	(1) Twist-Lock®	30A, 250V	Yes/No		
	(1) Twist-Lock® (inlet & outlet)	50A 125/250V	No/No		

Catalog Numbers

HBLPOB1



Portable Outlet Boxes	100
Description	
Box w/ cord strain relief	vello

black (1) blank cover plate HBLPOB1BK Yellow box with cord strain relief gray HBLPOB1D\* (2) duplex (indoor) cover plates yellow **HBLPOB1DY** Non-Metallic FS Cover Plates HBLP14FS Blank gray plate with foam gasket HBLP8FS Duplex plate arav **HBLP8FSY** yellow Single receptacle gray plate 1.56" **HBLP7FS** 1.39 HBLP720FS Rectangular opening gray plate HBLP26FS

50A Cable Sets and Receptacles

and neceptacies	Carrier Comment	-
Description		Catalog Numbers
50A pre-wired wall moui	nted	SR50
receptacle, with 2 ft. wire	e leads	
50A cord set 5	60 ft.	SCB50
(input/output) 1	00 ft.	SCB100
60A cord set	6 ft.	SCC06
(input/output) 5	60 ft.	SCC50
60A, 3Ø 120/208V pin a	and	HBL560R9W
sleeve wall mounted rec	eptacle	
50A cord set for use 5	60 ft.	TPC50
with <b>TPDS</b> and <b>TPDL</b> 1	00 ft.	TPC100

### Increase Safety with Flexible Lighting Solutions



### **Temporary Lighting**

Hubbell Wiring Devices' line of temporary lighting products offers solutions for industrial jobs, or any application that requires flexible and dependable illumination. The full offering includes a wide range of products in construction site lighting and industrial lighting. Durable and built for longevity, our devices provide the safety and reliability essential at any industrial job site. Whether it's a hand light, cordless or wide area light, Hubbell has what you need.

### **Construction Site Lighting**



- Light strings for all applications in a variety
- · Light panels are spaced 10 feet apart and all panels, plugs and connectors are molded for added durability
- Highly impact-resistant material for easy transportation and storage when not in use.
- Consider choosing LED lighting for a durable bulb that saves energy, provides instant illumination and are rated to last 50,000 hours

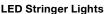
### **Maintenance and Work Lights**



- Fluorescent lights are designed with all electrical components located inside a closed chamber for
- Lamps remain cool while lighting large areas
- Work light models can be paired with an adjustable hanging kit or magnetic mounts for positioning flexibility
- Portable work lights can be transported and remounted, while long cords allow free movement in the work space

#### Metal Halide and LED Lights

LED Stringer Lights						
High bay LED light with wire guard	125V	120	14,000	5 ft.	HBLLEDHB120	
High bay metal halide light with wire guard	15A _	400	29,000	3 ft.	HBLMHHB400	
Description	Rating	Watts	Lumen Output	Cord Length	Catalog Number	



Description	No. of Fixtures	Rating	Cord Type	Lumen Output	Cord Length	Catalog Number
90 LEDs per fixture, light string with magnetic base included	1		18/2 SJTW	450*	20 ft.	HBL182S20LED
OO LEDa was finds on limbs about a	5		18/2 SJTW	450*	50 ft.	HBL182S50LED
90 LEDs per fixture, light string	10	15A	18/2 SJTW	450*	100 ft.	HBL182S100LED
60 LEDs per fixture, light string	1	125V	18/2 SJTW	1,100*	20 ft.	HBL182S20LEDH
with magnetic base included	5		18/2 SJTW	1,100*	50 ft.	HBL182S50LEDH
28W High power LED light string with inline ON/OFF switch	_		16 AWG SJTOW	2,928	6 ft.	HBLLS2834
Magnetic clip bracket for LED string fixtures	_	_	_	_	_	HBLSTMC
*Lumens per fixture.						

**LED Maintenance Worklights** 

Description	Outlet Rating	Rating	Cord Type	Lumen Output	Cord Length	Watts	Catalog Number
LED Industrial maintenance light	N/A		16/3 SJE0W	2928		28	HBLML2825L
LED work light with end light feature	N/A	15A 125V	18/2 SJT0W	920/120	25 ft.	9	HBLWL25LED
LED work light with end light feature & tool tap	12 Amp	1200	16/3 SJT0W	920/120		9	HBLWL25LEDT











OSHA 1926.56(a): OSHA Regulations for Construction, Minimum Illumination in Foot-Candles

### Lumens Area of Operation

General construction area lighting

maintenance areas

- General construction areas, concrete placement. excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field
- Indoors: warehouses, corridors, hallways, and exitways

Tunnels, shafts, and general underground work areas: (exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines approved cap lights shall be acceptable for use in the tunnel heading)

General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms carpenter shops, rigging lofts. and active store rooms, mess halls, and indoor toilets and workrooms





### Personnel Protection and Safety



For non-residential installations all receptacles installed in nondwelling locations specified in NEC® Article 210.8(B)(1) to (10) shall have ground fault circuit interrupter protection for personnel. These areas include:

- (1) Bathrooms
- Kitchens Roof Tops
- Outdoors
- Sinks (within 6' of edge)
- **Indoor Wet Locations**
- Locker Rooms/Shower Facilities
- Garages/Service Bays
- Crawl Spaces
- (10) Unfinished Basements



NEC® is a registered trademark of the National Fire Protection Association (NFPA).

### **Ground Fault Circuit Interrupters (GFCIs)**

Required by code, receptacles in any wet area must all be protected with ground fault circuit interrupters (GFCIs) that stop the flow of electric current to protect people in the presence of a ground fault. Hubbell offers AUTOGUARD™ and standard heavy duty GFCI receptacles. AUTOGUARD™ is a self-test version that continually tests electronic circuitry automatically. The AUTOGUARD™ unit features a green LED to indicate "power-on" and a red LED that is both a "trip indicator" when solid, and an "end of life indicator" when flashing. The GFCI sensing modules work in conjunction with hydraulic magnetic circuit breakers to interrupt power in the event of a ground fault condition.

### **Extra Heavy Duty GFCI Receptacles**





- · Patented tamper-resistant design limits improper access to energized contacts
- · Heavy duty brass bridge to withstand abuse
- Self-Test units continually tests and monitors for protection automatically
- No power at device face if reverse wired, eliminating false assumption of protection
- 10 kA Short Circuit Current Rating

### **Sensing Modules**



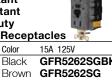
- · Monitors electrical circuit with no direct load present at the module
- Hydraulic breakers available from 1 to 50 AMP meets Mil-Std-202
- 120 and 240 volt modules available in automatic or manual "safe start" reset versions
- Enclosure Type 4X rating
- UL 1053 Compliant

#### Tamper-Resistant **Weather Resistant Extra Heavy Duty** Self Test GFCI Receptacles



screws.

Color Black Grav Ivorv Red White



GFR5262SGBK GFR5362SGBK GFR5262SGGY GFR5262SGI GFR5262SGR GFR5262SGW



20A 125V GFR5362SG GFR5362SGGY GFR5362SGI GFR5362SGR GFR5362SGW

### **GFCI Sensing Module** 50A Maximum



Description 120V AC Sensing Module GFSM120x 240V AC Sensing Module GFSM240x

x= A (Automatic) or M (Manual) Set

### **GFCI Sensing Module Circuit Breakers**



GFSMCB	120	40	1P
Ground Fault	120 Volt	1 thru	1P
Sensing Module	240 Volt	50 Amp	2P
Circuit Breaker	120/240 \/olt		ЗD

### Circuit Guard® Plug-In **GFCI Portable**



15A, 120V AC Description Catalog Number Three outlet plug-in GFP315A

<b>GFI Tester</b> 120V AC	
Description	Catalog Number
Ground fault tester	GFT2G

### Circuit Guard® Hard Wired 30A GFCI UL Type 4X Rated

OL Type TATE	ateu		100
Description	Voltage	Alarm	Catalog Number
Hard wired;	120V AC	None	GFHW13x05
manual and	120V AC	Audible	GFHW13x15
automatic set	240V AC	None	GFHW23x05
GFCIs.	240V AC	Audible	GFHW23x15
	120/240V AC	Audible	GFHW33x15
	3Ø 250V AC	None	GFHW53x
	3Ø 120/208V AC	None	GFHW43x

x= 1 (Automatic) or 0 (Manual) Set

### Minimize Electrical Shock Hazards



### **Ground Fault Circuit Interrupters (GFCIs)**

GFCIs are also critical for protecting people when using portable line cords and outlets in a variety of indoor and outdoor applications. Hubbell Circuit Guard® GFCI line cords are available with an Automatic Set feature for providing safety in applications where equipment is intended for continuous use but where temporary power failure is undesirable such as pumps, pressure washers or portable lighting. Manual Set GFCIs are also available for applications where operator injury might occur if equipment were to restart after a power failure such as drills, saws, lathes and grinders. "Portable GFCI" provides open-neutral protection for temporary power applications.

#### **Portable GFCI Line Cords**



- Provides a watertight housing for maximum safety in harsh environments
- Available with either automatic and manual set feature to fit the application
- Bright indicator light provides fault confirmation from a distance

#### **Portable GFCI Outlets**



- Ideal for providing safety in applications requiring multiple outlets
- Features gasketed cover to protect outlets not in use
- Ensures safety by interrupting power when leakage to ground is 4 to 6 milliamperes

### Circuit Guard® Portable GFCI **Line Cords**

15A 120V AC 18 in.

Description



GFP4C15x

GFP6C15x

GFP25C15x





**GFPOEMx** 

Description	Cat. No.
Manual set; plug; black	GFP5266C
Manual set; plug; yellow	GFP5266CY
Manual Set; plug with	GFP1C
1 ft Line cord	

20A 120V AC	3 ft.	GFP3C20M
x= A (Automatic)	or M (M	anual) Set

Length

6 ft.

15 ft. 25 ft.

#### Circuit Guard® Portable GFCI Line Cords



	•	•		
Rating	Length	Single	Triple Tap	w/ Flying Leads
15A	2 ft.	GFP2Cx	GFP2TT	x –
120V AC	15 ft.	_	_	GFP15Lx
	25 ft.	GFP25Cx	GFP25T	Tx –
	35 ft.	_	_	GFP35Lx

x= A (Automatic) or M (Manual) Set

### Circuit Guard® In-Line GFCI 2 ft. cord length





Description	Single	Triple Tap	Locking
15A 120V	AC GFPIL15	125x GFPIL15125T	RIx –
20A 120V	AC -	_	GFPIL20125LKx
20A 250V	AC -	_	GFPIL20250LKx
x= A (Autom	atic) or M (Mar	nual) Set	

### Circuit Guard® Wired On Straight Blade Portable GFCI Plugs

15A 125V AC Industrial Grade

Description	Cat. No.
Manual set; plug; black	GFP5266C
Manual set; plug; yellow	GFP5266CY
Manual Set; plug with	GFP1C
1 ft Line cord	

Commercial Grade	
Description	Cat. No.
Field Wireable; black	GFP515x

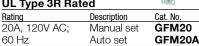
x= A (Automatic) or M (Manual) Set

#### **Multiple Outlet** Portable GFCI



Description	Rating	Cat. No.
4-Outlet; 2-Dup	lex; 15A 120V	AC <b>GFP15M</b>
Manual Set	20A 120V	AC GFP20M

### **GFCI Module UL Type 3R Rated**



### NEC® 590.6(A)

All 125-volt, single-phase, 15-, 20-, and 30-ampere receptacle outlets that are not a part of the permanent wiring of the building or structure and that are in use by personnel shall have ground-fault circuit-interrupter protection for personnel. For the purposes of this section, cord sets or devices incorporating listed ground-fault circuit-interrupter protection for personnel identified for portable use shall be permitted.



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## Comply with OSHA Safe Work Practices



#### NFPA 70E®:

 Electrical equipment enclosures can ONLY be accessed by qualified personnel with extensive protective clothing and equipment, including fire-resistant suits and hoods with non-conductive wands.

### NFPA 79: Electrical Standard for **Industrial Machinery**

- ALL utility receptacles must be GFCI protected
- ALL external utility receptacles must
- ALL covers must maintain enclosure rating



### **Arc Flash Safety**

An arc flash is a short circuit that travels through air from one live circuit to another. Problems including gaps in insulation, dust or corrosion on the surface of a conductor, or even use of substandard components can cause serious safety hazards and equipment failures. Arc flash incidents can be extremely costly to a business and can result in serious or even fatal burns, as well as damage to eyesight. Hubbell PANEL-SAFE™ and mechanical interlocks provide arc flash safety by ensuring isolation from live electrical components.

#### **PANEL-SAFE®**



- Available in Type 4 and 4X versions with protective clear cover
- Provides overcurrent protection for both power and data access ports
- Ensures safety with finger-safe contacts and Hubbell GFCI functionality
- Include products such as GCI protected receptacles, 5e ethernet access, 3A USB, DB9 or 3A circuit breaker

#### **Mechanical Interlock**



- Eliminates the possibility of making and breaking the circuit under load providing safe connections to portable
- Non-metallic enclosure can be connected to metallic conduit and not interfere with the ground continuity
- Highly visible red handle can be locked out to comply with OSHA lockout/tagout regulations
- UL/CSA certified as a manual motor controller and also as suitable as a disconnect







#### PANEL-SAFE® Access Ports

Description	NEMA TYPE 4, 12	NEMA TYPE 4X
Power Only		
20A 125V GFCI	PR20	-
with In-Cabinet Receptacle		
Data Only		
Cat. 5e Ethernet Access only	P5E	P4X5E
DB9 Interface Connector only	PDB9	_
DH + Combo (DB9/8M Din)	PDH5E	_
and Cat. 5e Ethernet		
Power and Data		
20A 125V GFCI	PR205E	PR4X205E
with In-Cabinet Receptacle		
and Cat. 5e Ethernet Access	DDOOSED	DD 4V005ED
20A 125V GFCI with In-Cabinet	PR205EB	PR4X205EB
Receptacle, Cat. 5e Ethernet Access and 3A Circuit Breaker		
	DAFFE	DAVACCE
15A 125V Power	P155E	P4X155E
and Cat. 5e Ethernet Access		
15A 125V Power, Cat. 5e Ethernet	P155EB	P4X155EB
Access and 3A Circuit Breaker		
15A 125V Power	P155E2	_
and (2) Cat. 5e Ethernet Access		
Power, Data and USB	P155EUSB	_
15A 125V Power, Cat. 5e		
and (1) 3A USB		
20A 125V GFCI, Cat 5e and:		
(1) USB Port	PR205EUSBA	-
(2) USB Ports	PR205EUSBA2	<b>-</b>

### **IEC Watertight Pin & Sleeve**

Rating Color Coded by Voltage	Poles/ Wires	Mechanical Interlock
20A 3Ø 480V	3P/4W	HBL420MI7W
30A 3Ø 250V	3P/4W	HBL430MI9W
30A 3Ø 480V	3P 4W	HBL430MI7W
30A 3Ø 600V	3P 4W	HBL430MI5W
30A 3ØY 277/480V	4P 5W	HBL530MI7W
60A 3Ø 250V	3P 4W	HBL460MI9W
60A 3Ø 480V	3P 4W	HBL460MI7W
60A 3Ø 600V	3P 4W	HBL460MI5W
60A 3ØY 120/208V	4P 5W	HBL560MI9W
100A 3Ø 250V	3P 4W	HBL4100MI9W
100A 3Ø 480V	3P 4W	HBL4100MI7W
100A 3Ø 600V	3P 4W	HBL4100MI5W
100A 3ØY 120/208V	4P 5W	HBL5100MI9W

For mating plug, replace MI with P. Ex. HBL420MI7W (mechanical interlock) to HBL420P7W (mating plug)

# Safe Maintenance and Repairs

# HUBBELLSAFE

### **Lockout, Tagout for Electrical Safety**

Lockout/tagout refers to specific procedures to safeguard people from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities. Hubbell offers many products that meet OSHA lockout/tagout regulations including integrated lockout features in pin and sleeve plugs and switched enclosures as well as a variety of dedicated lockout devices.

### PLUGOUT® and SWITCHOUT® Lockout Devices



- Provides an approved method of complying with OSHA lockout/tagout regulation
- Available in 15A, 20A, 30A and 60A plugout devices enclose the equipment plug and secure with a key padlock

#### **Locking Switches**



- Prevents unauthorized control of lighting or ventilation control
- · Keys supplied with each locking switch
- One piece integral grounding terminal provides a low resistance ground path



#### **Lockout Devices** Typical Devices Accommodated Catalog No Description 15 and 20A straight blade **HLDMP** Small yellow plugs;15A Twist-Lock® plugs lockout device 15 and 20A, 125V straight HLD Medium yellow lockout device blade plugs; 20 and 30A Twist-Lock® plugs Large yellow 20, 30 and 60A metallic and HLD2 lockout device non-metallic Pin and Sleeve: Hubbellock®; 50A Twist-Lock®

### **SWITCHOUT®**

**PLUGOUT®** 

Yellow Switchout Toggle switch	HSLDPK2*
device	

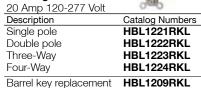
<sup>\*</sup> Two devices per package

plugs

**Keved PLUGOUT®** 

Red keyed	15 and 20A, 125V straight	HKLDR
Plugout; keyed	blade; plugs with holes in	
the same	blades	

#### AC Barrel Key Locking Switches





### Locking Switches

15 Amp 120-277 Volt	Dem D
Description	Catalog Numbers
Single pole	HBL1201L
Double pole	HBL1202L
Three-Way	HBL1203L
Four-Way	HBL1204L
20 Δmn 120-277 Volt	

20 Amp 120-277 Volt	
Description	Catalog Numbers
Single pole	HBL1221L
Double pole	HBL1222L
Three-Way	HBL1223L
Four-Way	HBL1224L
Replacement key	HBL1209



### NFPA 70E-2004 LO/TO Procedures 29CFR1910.147(a)(3)(i)

This section requires employers to establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start up or release of stored energy in order to prevent injury to employees.



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### **Enhanced Safety for Convenience Outlets**



### NEC® 500-503, 505

covers the requirements for electrical installations in locations classified as hazardous due to the materials handled, processed, or stored in those locations.

covers the regular or frequent application of flammable liquids, and combustible liquids, and combustible powder by spray operations at temperatures above flash points.

### NFPA 33 Standard for Spraying Applications Using Flammable or Combustible Materials

covers spray application of flammable or combustible materials by a variety of methods. Contains requirements for the maintenance of safe conditions as well as personal safety.

### NFPA 34 Standard for Dipping, Coating and Printing Processes Using Flammable or Combustible Liquids

covers fire and explosive hazards. Includes water-borne and water reducible materials.



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### **Hazardous Location Unfused Disconnect Switches. Mechanical Interlocks and Plugs**

Hubbell's hazardous location unfused disconnect and mechanical interlock switches are ideal for applications with the presence of flammable gases or vapors, or ignitable dusts and fibers. They are also suitable for use in outdoor or indoor damp, wet and dirty locations or in areas where frequent wash-downs, heavy rain or water spray routinely occur. The high visibility handles can be locked to meet OSHA lockout/tagout regulations.

Hubbell hazardous location mechanical interlocks and plugs offer superior safety. The plug and switch are interlocked so that the switch cannot be turned "ON" without the plug fully inserted, and the plug cannot be removed when the switch is in the "ON" position.

Marked as required in NEC 500-503, 505

Class I, Div. 1 & 2, Groups B,C,D Class I, Zones 1 & 2, Groups IIB+ H2, IIA Class II, Div. 1 & 2, Groups E,F,G NEMA 3, 4, 4X, 7(B,C,D), 9(E,F,G)

#### **Unfused Disconnect Switches**



- Compact size provides application flexibility and cost savings
- Fewer cover bolts reduces installation and maintenance time
- Removable ductile mounting lugs adjust to irregular mounting surfaces
- UL 98 certified switch

### **Unfused Mechanical Interlocks and Plugs**



- Plug and switch are interlocked for superior safety
- UL1686 C1 listed and fully interchangeable with other UL1686 C1 devices
- Compact size and footprint for easy placement
- NEMA 4X with receptacle lid turned shut or with plug locking ring tightened







### **Unfused Disconnect Switches**

Description	30 Amp	60 Amp	100 Amp
Disconnect switch, 3 Pole 600V AC/230V DC	HBLB7NFD13A	HBLB7NFD26A	HBLB7NFD21A
Disconnect switch with auxiliary contact, 3 Pole 600V AC/230V DC	HBLB7NFD13AA	HBLB7NFD26AA	HBLB7NFD21AA





#### **Unfused Mechanical Interlocks and Plugs**

Amp	Poles/Wires	Voltage AC	Receptacle	Plug
00	3 Pole, 2 Wire	600V AC	HBLVSQ3023	HBLVP3385
30	4 Pole, 3 Wire	600V AC	HBLVSQ3034	HBLVP3485
	3 Pole, 2 Wire	600V AC	HBLVSQ6023	HBLVP6385
60	4 Pole, 3 Wire	600V AC	HBLVSQ6034	HBLVP6485

Note: HBLVSQ Series 30A models come standard with 1" drilled and tapped conduit openings top and bottom plus two 1" x ¾" reducers and one ¾" close-up plug for maximum flexibility.

60A models come with one 11/2" opening on top and bottom and one 11/2" close-up plug.

### Protect Devices from Corrosion and Abuse



### **Specialty Devices**

Some environments can be particularly corrosive for electrical connections, calling for an extra level of safety and protection. Hubbell offers a wide range of plugs, connectors and receptacles that are specifically designed to withstand corrosive environments like chemical plants and wastewater treatment facilities.

### **Corrosion Resistant Plugs, Connectors and Receptacles**



- · Reinforced thermoplastic elastomer housing to resist ultraviolet rays, oil and chemicals
- Powerful nylon cord grips on plugs prevents strain on terminals and prevents cord pull-outs
- Plated contacts provide for reliable electrical connections and long life

### **Weatherproof Covers**



- UL listed for wet locations in both thermoplastic and cast aluminum with cover closed
- Suffix "WO" are listed for wet location with cover open and plug installed
- Available in single and dual receptacles with individual weatherproof covers for each receptacle

### Corrosion Resistant Straight Blade



Rating	Device	Catalog Number
15A 125V	Duplex Receptacle Single Receptacle Plug Connector	HBL52CM62 HBL52CM61 HBL52CM66C HBL52CM69C
20A 125V	Duplex Receptacle Single Receptacle Plug Connector	HBL53CM62 HBL53CM61 HBL53CM66C HBL53CM69C

### Corrosion Resistant

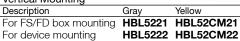




Rating         Device         Catalog Number           15A 125V         Duplex Receptacle Plug Connector         HBL47CM20C HBL47CM29C	=00.1		
Plug HBL47CM20C	Rating	Device	Catalog Number
COLLIECTOL HPT4/CM53C	15A 125V	Plug	HBL47CM20C
20A 125V Single Receptacle HBL23CM10 Plug HBL23CM11 Connector HBL23CM13	20A 125V	Single Receptacle Plug	HBL23CM10 HBL23CM11

### **Duplex Covers**



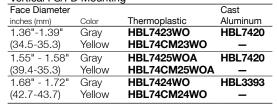


**Duplex Covers** Cast Aluminum for Horizontal Mounting

rionzoniai Mounting	
Description	Catalog Number
For FS/FD box mounting	HBL5206WO
For device mounting	HBL5205WO

### **Receptacle Covers**





Wet Locations: Thermoplastic w/ cover "open" Cast Aluminum w/ cover "closed"



### NEC®406.9(B) Receptacles in Wet Locations.

15- and 20-ampere, 125- and 250-volt receptacles installed in a wet location shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted. All 15- and 20-ampere, 125- and 250-volt nonlocking receptacles shall be listed weather-resistant type.

Exception: 15- and 20-ampere, 125- through 250-volt receptacles installed in a wet location and subject to routine high-pressure spray washing shall be permitted to have an enclosure that is weatherproof when the attachment plus is removed.



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# **HUBBELL®** Online Tools

### Safety eTour





Area



**Product Page** 

This interactive virtual tour of a plant allows visitors to explore an industrial facility and see the many **Hubbell safety solutions** employed in areas such as shipping, plating, molding, automated and manual assembly, and maintenance.

### **Online Literature**

Hubbell offers an extensive literature library for product support. Downloadable PDFs are available online at www.hubbell.com.

### Hubbell Wiring-Device Kellems Full Line Catalog







**Watertight Wiring Devices** 



**Temporary Lighting** 



Advantage<sup>™</sup> Series Pin and Sleeve Devices



**Selector Apps** 



Insulgrip® Wiring Devices



**Manual Motor Controllers** and Disconnects



Use the New Hubbell Twist-Lock® and Kellems® Apps Available on the App Store and Google Play Store.



www.hubbell.com

