

# Low Voltage AIRGUARD™

A proven, rugged product for harsh environments





## Linking the future

As the worldwide leader in the cable industry, Prysmian Group believes in the effective, efficient and sustainable supply of energy and information as a primary driver in the development of communities.

With this in mind, we provide major global organisations in many industries with best-in-class cable solutions, based on state-of-the-art technology. Through two renowned commercial brands – Prysmian and Draka – based in more than 50 countries, we're constantly close to our customers, enabling them to further develop the world's energy and telecoms infrastructures, and achieve sustainable, profitable growth.

In our energy business, we design, produce, distribute and install cables and systems for the transmission and distribution of power at low, medium, high and extra-high voltage.

In telecoms, the Group is a leading manufacturer of all types of copper and fibre cables, systems and accessories – covering voice, video and data transmission.

Drawing on over 130 years' experience and continuously investing in R&D, we apply excellence, understanding and integrity to everything we do, meeting and exceeding the precise needs of our customers across all continents, at the same time shaping the evolution of our industry.

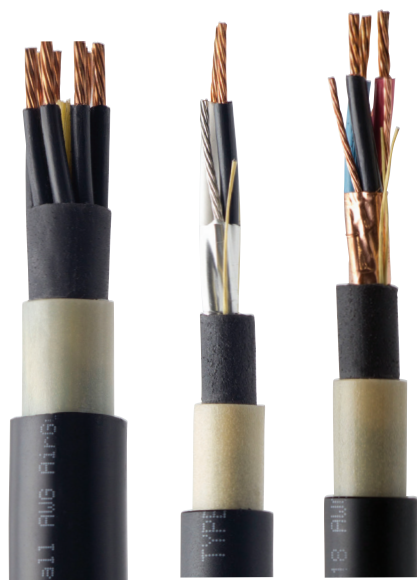
## Cable solutions to support the OGP industry around the world

In applications ranging from drilling, extraction and storage equipment to platform and processing facilities operation, Prysmian's state-of-the-art cable systems support many major customers in the oil, gas and petrochemical industry, along with related businesses.

Whether they're deployed in Brazil, the Gulf of Mexico, the North Sea or South-East Asia, our cable solutions are proving their value in harsh offshore and onshore environments; helping customers minimize environmental impact and achieve sustainable, profitable growth.







## Low Voltage AIRGUARD™

Prysmian's Low Voltage AIRGUARD™ Power Cables are primarily designed for applications in the harsh environments found in the heavy industrial and offshore markets. Its rugged polymeric AIRBAG™ armor and chemical barrier protection package makes it the ideal cable choice for tough harsh environmental conditions. AIRGUARD™ provides the solution to the deficiencies often encountered with MC-HL cables including armor breakage encountered during installation and in applications requiring recurring bending after installation, as well as poor performance in areas of high vibration (e.g. motor connections). It also provides a safer and lower installed cost alternative to MC-HL cables due to faster, "No Knife/ No Saw" cable preparation and substantially reduced cost of cable glands.

Low Voltage AIRGUARD™ has been designed to reduce installation costs in the field while improving the overall cable performance as compared to Type MC and MC-HL alternatives, which can often be costly, time consuming, and difficult to install.

Low Voltage AIRGUARD™ is rated for installations in cable tray for exposed runs (Type TC-ER), conduit, and direct burial. It exceeds the stringent crush and impact resistance of UL 2225 for MC-HL cables and is permitted for use in Class I Division 1 and Zone 1 hazardous locations (TC-ER-HL) in accordance with National Electrical Code (2014) Sections 501.10(A)(2)(3) and 505.15(B)(i). Prysmian's patented AIRGUARD™ design affords far greater protection against water ingress and chemical attack than traditional MC Armored Cables. It also provides users the ease of installation of a tray cable while providing better mechanical and environmental protection than traditional metal clad cables.

### SPECIFICATIONS

ASTM B3 & ASTM B8

ICEA S-82-558 (NEMA WC70)  
UL 44 (XHHW-2) 600V

UL 1202/FT-4  
UL 1277  
NEC Article 336.10(7)  
UL 2225  
NEC Article 501.10(A)(2)(3)  
NEC Article 505.15(B)(1)(i)  
CSA 22.2 No. 03

MSHA

Class B Soft Drawn Concentric  
Lay Stranded Bare Copper  
Conductors

Cable Rating  
XHHW-2 Multiple Conductors  
Direct Buried  
Sunlight Resistant  
Oil Resistant  
Flame Retardant  
TC-ER Exposed Run Rating

TC-ER- HL  
TC-ER- HL Class I Division 1  
TC-ER-HL Class I Zone 1  
-40°C / -35°C Cold Bend/  
Cold Impact  
Mine Safety & Health  
Administration



# Enhanced Performance with no cutting tools required & no kinks

## Low Voltage AIRGUARD™ Features

- "No Knife? No Saw? No Problem!" installation makes terminating & splicing safer for electricians, and it greatly reduces the chances of damage to the conductors.
- Low Voltage AIRGUARD™ provides users the ease of installation of a tray cable
- Superior crush and impact resistance as compared to MC-HL cables when tested in accordance with UL-2225
- Smaller minimum bending radius as compared to metal clad cables
- Prysmian's patented Polymeric AIRBAG™ armor eliminates the concern of kinking or breaking of corrugated aluminum armor during installation or subsequent bending in service that is often associated with Type MC-HL cables
- Reduced installation costs due to increased flexibility, ease of pulling, faster and safer cable preparation
- Use of less costly cable glands with significantly reduced installation time
- AIRBAG™ layer provides superior protection from the ingress of harmful fluids, hydrocarbon and chemicals
- Rated for installation in cable tray, for exposed runs (Type TC-ER), conduit, duct, direct burial, and aerial applications in Class I Division 2, Zone 2, and unclassified locations
- Permitted for use in Class I Division 1 and Zone 1 hazardous locations (Type TC-ER-HL) in accordance with National Electrical Code (2014) Sections 501.10(A)(2)(3) & 505.15(B)(i)
- Rated for -40C/ -35C cold bend/ cold impact per CSA 22.2 No. 03

## SPECIFICATIONS

- ASTM B3 & ASTM B8
- ICEA S-95-658 (NEMA WC 70)
- ICEA S-73-532 (NEMA WC57)
- ICEA S-82-552 (NEMA WC55)
- MSHA
- UL 44 (XHHW-2)
- IEEE 1202 (Flame Retardant)
- UL 1277 (TC-ER)
- UL 2225 (TC-ER-HL)



# Low Voltage AIRGUARD™ Advantages

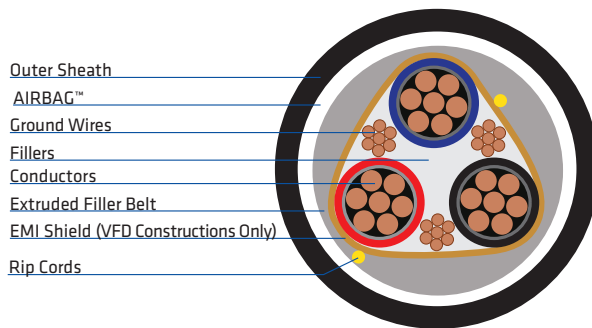
Reduced installation cost while improving the overall cable performance in harsh environments!



VFD Cable

## Strippability – No Knife!? No Saw? No Problem!

The ability to strip a cable quickly without damaging the phase conductors is critical in reducing installation cost. The combination of Low Voltage AIRGUARD'S unique design and strategically placed rip cords allows it to be stripped up to two or three times faster than Metal Clad cables without the worry of nicked or damaged phase conductors. Low Voltage AIRGUARD™ cables do not require the use of a saw (as in the case of CCW cables) which results in increased personnel safety and reduces the potential for damage to the underlying core.



**Chemical Resistance** – Heavy Industrial plants require cable that will stand up to corrosive chemicals and hydrocarbons. Whether installing in a direct burial application, in tray, or in the air, Low Voltage AIRGUARD's proprietary Polymeric Layer provides the best protection in the market for the broadest range of chemicals.

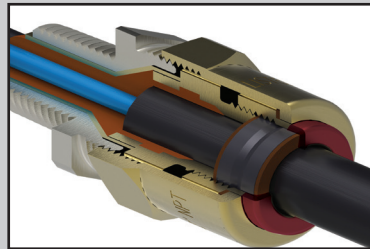
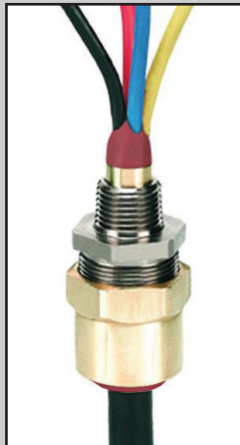
**Mechanical Resistance** – AIRGUARD™ is known for its Mechanical Strength. When Prysmian's R&D engineers were designing Prysmian's new Low Voltage AIRGUARD™ it was imperative that the traditional toughness of the prior MV designs be passed on to the Low Voltage AIRGUARD™ in crush tests. It is stronger than metallic armored cables.

**Flame** – Not propagating a fire is a critical design of any cable for the industrial market. Low voltage AIRGUARD™ passes all the industry standard flame tests, including IEEE 1202, FT-4 and IEEE 210,000 BTU flame test.

**VFD** – Low Voltage AIRGUARD™ VFD cables are designed with three symmetrically placed ground wires and an aluminum or copper sheath to contain the generation of high frequency electromagnetic interference (EMI) imposed on the cable when installed in a circuit containing a Variable Frequency Drive. In the event of catastrophic cable damage, this shield, plus the 3 ground wires, should contain any arcing and effectively conduct system fault current to ground. VFD designs up to 2kV are also available.

**Product Range** – Low Voltage AIRGUARD™ is available in 600V Power, Control & Instrumentation, from #16 AWG to 1000 kcmil. Standard stocked items include instrumentation cables, control cables to 37/C, and power cables to 3/C 750 kcmil.

## Accessories



**Glands** – Prysmian's Bicon offers a gland suitable for use with TC-ER-HL cables. Bicon's 424BT family of glands is putty-sealed, Explosion Proof and rated for Class I, Division 1 hazard locations.



**Prysmian Cable Flexi-Peeler Cable Stripping Tool**  
Stripping Patterns: Circular, spiral and lengthwise  
Cable OD Range: 0.18" to 1.57"  
Part Number: 4320-1030

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# Low Voltage AIRGUARD™ Product Range

## Power - Low Voltage | 3/C & 4/C | 600 Volt

Product Number	Number and Circuit Conductor Size	Insulation Thickness	Number of Grounding Conductor	Ground Wires Size	Conductor Diameter	Nominal Overall Insulation (OD)	Nominal Overall Cable (OD )	Nominal Cable Weight	Minimum Bending Radius	‡ Ampacity (Amps)	Gland, Explosion Proof, Class 1 Division 1, Barrier Type
		Mils	#	AWG	Inches	Inches	Inches	lbs/Mft	Inches	‡90°C	
394075	3/C #14 AWG	30	3	18 AWG	0.071	0.135	0.620	227	2.5	25	424BT03
†394040	4/C #14 AWG	30	1	14 AWG	0.71	0.135	0.660	248	2.7	20	424BT03
394076	3/C #12 AWG	30	3	16 AWG	0.089	0.153	0.660	273	2.7	30	424BT03
†394042	4/C #12 AWG	30	1	12 AWG	0.089	0.153	0.705	304	2.9	24	424BT03
394077	3/C #10 AWG	30	3	14 AWG	0.113	0.177	0.715	344	2.9	40	424BT03
†394044	4/C #10 AWG	30	1	10 AWG	0.113	0.177	0.765	390	3.1	32	424BT04
394078	3/C #8 AWG	45	3	14 AWG	0.142	0.238	0.860	508	3.5	55	424BT04
394079	3/C #6 AWG	45	3	12 AWG	0.176	0.274	0.980	655	4.0	75	424BT04
*394080	3/C #4 AWG	45	3	12 AWG	0.225	0.321	1.035	851	5.5	95	424BT15
*394081	3/C #2 AWG	45	3	10 AWG	0.83	0.379	1.215	1180	6.1	130	424BT15
*394082	3/C #1/0 AWG	55	3	10 AWG	0.360	0.476	1.435	1649	7.2	170	424BT06
*394083	3/C #2/0 AWG	55	3	10 AWG	0.402	0.518	1.530	1960	7.7	195	424BT06

## VFD - Low Voltage | 3/C & 4/C | 600 Volt

Product Number	Number and Circuit Conductor Size	Insulation Thickness	Number of Grounding Conductor	Ground Wires Size	Conductor Diameter	Nominal Overall Insulation (OD)	Nominal Overall Cable (OD )	Nominal Cable Weight	Minimum Bending Radius	‡ Ampacity (Amps)	Gland, Explosion Proof, Class 1 Division 1, Barrier Type
		Mils	#	AWG	Inches	Inches	Inches	lbs/Mft	Inches	‡90°C	
394039	3/C #14 AWG	30	3	18 AWG	0.071	0.135	0.630	247	7.5	15	424BT03
394041	3/C #12 AWG	30	3	16AWG	0.089	0.153	0.670	296	8.1	20	424BT03
394043	3/C #10 AWG	30	3	14 AWG	0.113	0.177	0.725	364	8.7	30	424BT03
394045	3/C #8 AWG	45	3	14 AWG	0.142	0.238	0.905	544	10.9	55	424BT04
394046	3/C #6 AWG	45	3	12 AWG	0.178	0.274	0.990	696	11.9	75	424BT04
*394047	3/C #4 AWG	45	3	12 AWG	0.225	0.321	1.095	898	13.2	95	424BT15
*394048	3/C #2 AWG	45	3	10 AWG	0.283	0.379	1.225	1236	14.7	130	424BT15
*394049	3/C #1/0 MCM	55	3	10 AWG	0.360	0.476	1.445	1719	17.3	170	424BT06
*394050	3/C #2/0 MCM	55	3	10 AWG	0.402	0.518	1.540	2017	18.5	195	424BT06
*20127515	3/C #4/0 KCM	55	3	8 AWG	0.512	0.63	1.83	3450	13	260	424BT07
*20127514	3/C #250 KCM	65	3	8 AWG	0.558	0.70	1.98	4024	14	290	424BT07
*20127942	3/C #350 KCM	65	3	7 AWG	0.661	0.80	2.22	5312	16	350	424BT08
*20127513	3/C #400 KCM	65	3	7 AWG	0.706	0.85	2.41	6008	17	380	424BT09
*20147056	3/C #500 KCM	65	3	6 AWG	0.789	0.93	2.53	7194	18	430	424BT09
*306451A	3/C #750 KCM	80	3	5 AWG	0.973	1.09	3.02	10518	22	535	-----

### PRODUCT NOTES:

† Conductor count includes insulated grounding conductor colored green.

‡ Per 2014 NEC TABLE 310.15(B)(16) (formerly Table 310.16) "Allowable Ampacities of Insulated Conductors Rated up to and including 2000 Volts, 60°C through 90°C (140°F through 194°F), Not More Than Three Current-Carrying Conductors"

\*Cables not marked "-HL" (per UL 2225, overall cable diameter must be 1.00 inch or less to be marked "-HL")

## Control - Low Voltage 600 Volt

Product Number	Number and Circuit Conductor Size	Insulation Thickness	Conductor Diameter	Nominal Overall Insulation (OD)	Nominal Overall Cable (OD)	Nominal Cable Weight	Minimum Bending Radius	‡ Ampacity (Amps)	Gland, Explosion Proof, Class 1 Division 1, Barrier Type
		Mils	Inches	Inches	Inches	Lbs/Mft	Inches	‡90°C	
394061	5/C #14 AWG	30	0.071	0.135	0.700	278	2.8	15	424BT03
394067	5/C #12 AWG	30	0.089	0.153	0.750	337	3.0	20	424BT03
394073	5/C #10 AWG	30	0.113	0.177	0.820	429	3.4	30	424BT04
394062	7/C #14 AWG	30	0.071	0.135	0.740	327	3.0	15	424BT03
394068	7/C #12 AWG	30	0.089	0.153	0.800	404	3.2	20	424BT04
394074	7/C #10 AWG	30	0.113	0.177	0.915	564	3.7	28	424BT04
394063	9/C #14 AWG	30	0.071	0.135	0.830	399	3.4	17.5	424BT04
394069	9/C #12 AWG	30	0.089	0.153	0.940	538	3.8	21	424BT04
394064	12/C #14 AWG	30	0.071	0.135	0.950	519	3.8	12.5	424BT04
*394070	12/C #12 AWG	30	0.089	0.153	1.030	650	5.2	15	424BT04
*394065	19/C #14 AWG	30	0.071	0.135	1.070	693	5.4	12.5	424BT15
*394071	19/C #12 AWG	30	0.089	0.153	1.165	885	5.9	15	424BT15
*394066	37/C #14 AWG	30	0.071	0.135	1.355	1137	6.8	10	424BT06
*394072	37/C #12 AWG	30	0.089	0.153	1.490	1495	7.5	12	424BT06

## Instrumentation - Low Voltage 600 Volt | IS/OS Cables

Product Number	Number and Circuit Conductor Size	Insulation Thickness	Conductor Diameter	Nominal Overall Insulation (OD)	Nominal Overall Cable (OD)	Nominal Cable Weight	Minimum Bending Radius	‡ Ampacity (Amps)	Gland, Explosion Proof, Class 1 Division 1, Barrier Type
		Mils	Inches	Inches	Inches	Lbs/Mft	Inches	‡90°C	
394051	1/PR #16 AWG	30	0.059	0.123	0.575	175	6.9	10.0	424BT02
394052	1/TR #16 AWG	30	0.059	0.123	0.595	197	7.2	10.0	424BT02
394053	2/PR #16 AWG	30	0.059	0.123	0.770	311	9.3	10.0	424BT04
394054	4/PR #16 AWG	30	0.059	0.123	0.850	411	10.2	10.0	424BT04
394059	4/TR #16 AWG	30	0.059	0.123	1.050	540	12.6	9.0	424BT15
394055	8/PR #16 AWG	30	0.059	0.123	1.090	664	13.1	9.0	424BT15
*394056	12/PR #16 AWG	30	0.059	0.123	1.275	901	15.3	8.1	424BT06
*394060	12/TR #16 AWG	30	0.059	0.123	1.545	1104	18.6	7.2	424BT06
*394057	24/PR #16 AWG	30	0.059	0.123	1.685	1506	20.3	6.3	424BT07
*394058	36/PR #16 AWG	30	0.059	0.123	1.970	2201	23.7	6.3	424BT07

### PRODUCT NOTES:

‡ Per 2014 NEC TABLE 310.15(B)(16) (formerly Table 310.16) "Allowable Ampacities of Insulated Conductors Rated up to and including 2000 Volts, 60°C through 90°C (140°F through 194°F), Not More Than Three Current-Carrying Conductors"

\* Cables not marked "–HL" (per UL 2225, overall cable diameter must be 1.00 inch or less to be marked "–HL")

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# Linking the future

View all of our AIRGUARD™ products including  
Medium Voltage at : [na.prysmiangroup.com](http://na.prysmiangroup.com)

United States - 700 Industrial Drive | Lexington, SC 29072 | +1-800-845-8507  
[na.prysmiangroup.com/oil-gas](http://na.prysmiangroup.com/oil-gas)

Canada - 137 Commerce Drive | R. R #3 | Johnstown, Ontario K0E1T1  
1-800-845-8507 (US) | 1-800-263-4405 (West-CAN) | 1-800-361-1418 (East-CAN)

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