PRYSMIAN CABLES & SYSTEMS

AIRGUARD® VFD CABLE

Performance | **Innovation** | **Reliability**

Process Controls

Today's manufacturing facilities can fall into various classifications, some of which are listed below:

- Assembly or Chemical Plants
- Food Processing Plants
- Pulp, Paper, Lumber, and Steel Mills
- Mining Facilities
- Power Generation Plants
- Refineries/Refining
- Textile Facilities
- Water Treatment Plants

All of these facilities require control over the speed of the processing systems. Speed control can be obtained through multiple forms; however, the AC drive with Pulse Width Modulation (PWM) control offers benefits over all other process control systems; namely reduced maintenance costs, increased productivity, more energy efficient, and higher quality control.

Variable Frequency Drives (VFDs) employ the PWM technique for controlling AC motors by keeping a consistent voltage to frequency ratio that maintains a constant flux in the motor which provides variable speed control. If not accounted for, this technique of using switched power devices for control can create problems. Some of the potential problems include

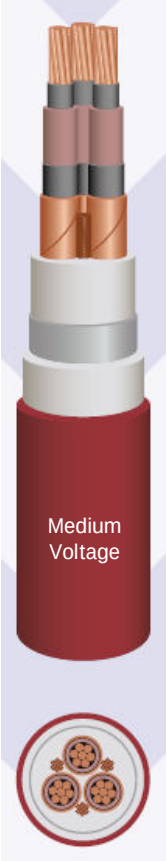
Harmonics
Electromagnetic Interference
Transients
Stray Ground Currents
High Voltages
Motor Bearing Currents

Fortunately, choosing the right cable for VFD applications mitigates the possible problems. Prysmian's AIRGUARD® cable is the right cable.

Industrial Cable for Variable Frequency Drives

Prysmian's AIRGUARD® cables, which are available for both low and medium voltage applications, provide a polymeric armored cable construction that is ideally suited for VFD control systems.

The AIRGUARD® cable incorporates the optimal six conductor design: three phase conductors and three ground conductors that are symmetrically spaced within the cable, which mitigate stray system currents.



The longitudinally applied, overall aluminum laminate provides a barrier for interference as well as providing a path for high harmonic currents, which prolongs motor bearing life.

Installations

AIRGUARD® cables were designed with mechanical protection in mind. The polymeric armor layer provides higher crush resistance and sidewall bearing pressure capabilities than any commonly used armored product. The aluminum laminate which is bonded to a chemically resistant polymer, provides both a chemical and hydrocarbon barrier that improves cable reliability. The AIRGUARD® cable is the next generation replacement for Continuously Corrugated and Welded (CCW) type cables.

Ratings

A list representing some of the ratings available for AIRGUARD® cables is provided below:

Low Voltage AIRGUARD® Cable
UL Type TC
UL CT Test
UL Type XHHW & XHHW-2
UL Exposed Run (ER)
UL Sunlight Resistant
IEEE 383 & 1202 Flame Test
ICEA T-29-520 at 210,000 BTU/hr
Oil I & II Resistance
Direct Buried
CSA FT4 Flame Test
CSA Cold Bend (-40°C)
NEC Class I Division II

Medium Voltage AIRGUARD® Cable
UL CT Test
UL Type MV-90 & MV-105
UL Sunlight Resistant
UL 1309 Marine Shipboard
US Coast Guard
IEEE 1580 Marine Cable
American Bureau of Shipping (ABS)
IEEE 383 & 1202 Flame Test
ICEA T-29-520 at 210,000 BTU/hr
Oil I & II Resistance
Direct Buried
CSA Type MV-90 & MV-105
CSA FT4 Flame Test
CSA Cold Bend & Cold Impact (-40°C)
NEC Class I Division II
MSHA Certified (Type MP & MP-GC)
IEC Certified to 60502-2

Cable Sizes

Low Voltage AIRGUARD® Cable
1/0 AWG through 750kcm

Medium Voltage AIRGUARD® Cable
#2 AWG through 1000kcm

Comparisons

Prysmian's patented AIRGUARD® cable is a direct replacement for CCW type cable with the benefit of improved impact performance (5 X CCW) and improved sidewall bearing pressure of 3000lbs/ radial-foot (2 X CCW).

Key Design Features

Aluminum or Copper Conductor
Crosslinked Polyethylene Insulation (LV)
Ethylene Propylene Rubber Insulation (MV)
Polymeric Armor
Longitudinally Applied Aluminum Laminate
PVC Jacket

Prysmian's AIRGUARD® cables are manufactured to the latest versions of the following industry standards:

Low Voltage
UL 44
UL 1277
ICEA S-93-658
NEMA WC-70

Medium Voltage
UL 1072
ICEA S-93-639
NEMA WC74
CSA C68.3
CSA C68.10

Optional manufacturing capabilities are further detailed below:

- Various PVC jacket colors:
  Black, Blue, Red, Yellow
- Compressed stranded conductors
- Low smoke zero halogen jacket
- Non-Leaded PVC

The KEY is choosing the right cable for the right application

700 Industrial Drive
Lexington, South Carolina
29072
1.800.845.8507
www.prysmianusa.com

PRYSMIAN CABLES & SYSTEMS

137 Commerce Drive
R.R. #3
Prescott, Ontario K0E1T0
1-800-263-4405 (West-CAN)
1-800-361-1418 (East-CAN)
www.prysmiancanada.com