



Selecting Compliant VFD Cable Under NFPA 79

The variable frequency drive cable market has been marred by an assortment of products, described by the manufacturers as VFD cables, but lacking the essential properties required to perform effectively and reliably in many applications. The introduction of cable construction requirements and recommendations under National Fire Protection Agency [NFPA] 79 article 4.4.2.8 is a good step to ensuring that suitable cable constructions are specified for such applications.

New 2018 VFD Cable Design Requirements

Paragraph 4.4.2.8 of NFPA 79 / 2018 Edition says:

“Electrical conductors and equipment supplied by power conversion equipment as part of adjustable speed drive systems and servo drive systems shall be listed flexible motor supply cable marked RHH, RHW, RHW-2, XHH, XHHW or XHHW-2.”

The requirements of NFPA 79 help to ensure that conductors can provide reliable long term insulation performance and effective conduction of the drive output signals with minimal cabling losses.

Source: NFPA.ORG / NFPA 79 2018, [archived revision information](#)



Belden ensures compliance with NFPA 79

As an early developer of Variable Frequency Drive specific cables, Belden deeply understands the very specific design attributes that determine how a VFD cable effectively mitigates potential issues associated with a high frequency switching, solid-state power supply. An example would be a variable frequency inverter found in modern AC and servo drives.

Belden’s premium 100% ground and 300% ground VFD cables were co-developed with a drive manufacturer, then tested and proven reliable in over 20 years of VFD applications. These cables are fully compliant with the new requirements of NFPA 79.

It is important to avoid products with thermoplastic insulation and construction-grade stranding. Belden’s testing and experience also show that other design attributes – especially the selection of insulation materials within the XLPE family and the optimization of the grounding system to carry high frequency currents – significantly influence the performance of VFD cables in real life applications. Belden VFD cables live up to these standards.

For additional assurance, know that Belden VFD cables carry a 10-year factory warranty. No other manufacturer can match it.

This information provided by:
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Belden Offers a Broad VFD Portfolio

- Premium Industrial Grade
- Premium + Signal Pair
- High Flex
- Machine Grade
- Low Smoke Zero Halogen



For more information, call Greg Consalvi at 951-683-6625

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