

Lutze DRIVEFLEX® Cable

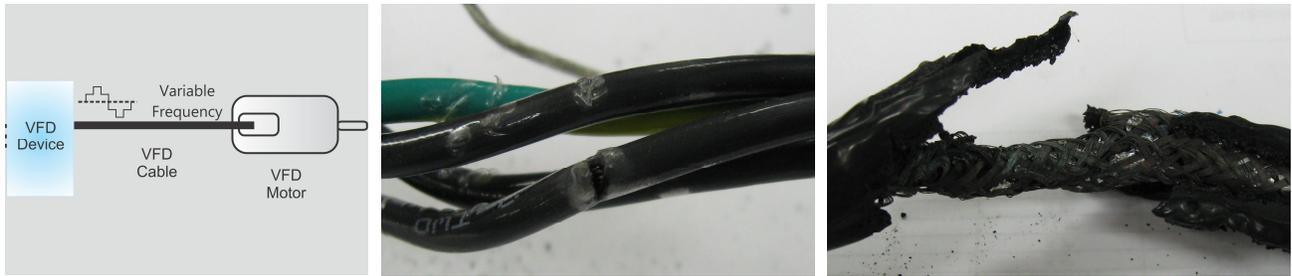
Improving motor longevity through superior cable design

In 2007 65% of all energy produced in the US was consumed by a motor. As Variable Frequency Drives (VFD) and motors have advanced exponentially in both their performance and their longevity, it is strange that cable performance connecting them has not advanced at a likewise rate. Typically a 600v rated THHN (nylon / PVC) insulated cable is used in the appropriate size and conductor relationship. This has been the standard for many years and has largely gone unquestioned in the industrial world. However, recently Lutze asked the question why is there not a better alternative in the area of VFD and Servo cable. As a result, Lutze has developed DRIVEFLEX® cable for the ultimate in VFD/Servo cable performance.



The Problem: VFD's use pulse width modulation (PWM) to create controllable AC power, which in turn creates undesirable power distortions. These power distortions are amplified in longer cable runs between the VFD and motor. These distortions, known as reflected wave phenomenon, are largely a result of a motors inability to use the energy stored in the cable at the same rate that the energy is produced by the drive. Additions of line filters and advanced features

such as auto tuning have helped to limit the effects of this, however they are a long way from eliminating it. The resulting voltage spikes, which are in excess of 1500v, are amplified in long runs. Add to that, Nylon’s hygroscopic properties (absorption of water into the polymer) and pitting will occur in traditional THHN cable. This pitting will lead to complete breakdown of the cable insulation.



The Solution: DRIVEFLEX® uses XLPE (cross linked polyethylene) insulation. XLPE is a higher performance insulator which is impervious to water. The chart below details test data using a typical 12awg 4 conductor cable for comparison.

Characteristic	XLPE	THHN
Nominal Voltage	1000v	600v
Charging Capacity	22 pF/ft	95 pF/ft
Impedance	83 ohms	36 ohms
Thermal Properties (Melting)	No	Yes
1000 V UL listed for VFD / Servo	Yes	No
TCER	Yes	Yes

As VFD's and motors continue to push the performance envelope, why not install a cable that provides the highest level of performance. For technical information as well as a cable sizing configurator, please visit www.DRIVEFLEX.com.

The image shows a screenshot of the DRIVEFLEX website's 'Horsepower Configurator' tool. The interface is set against a dark blue background with a starry pattern. At the top left is the DRIVEFLEX logo, and at the top right is the LUTZE SYSTEMATIC TECHNOLOGY logo with the phone number 1-800-447-2371. A navigation menu includes links for Home, Products, About VFD's, HP Configurator, Videos, Testimonials, Where to Buy, and Contact Us. The main heading is 'Horsepower Configurator'. The configuration area is divided into three sections: 'Construction' with radio buttons for 'Three or Four Conductor' (selected), 'Four Conductor plus 1 Control Pair', and 'Four Conductor plus 2 Control Pair'; 'Temperature Rating' with radio buttons for '75°C' (selected) and '90°C'; and 'Volts' with radio buttons for '230' (selected), '480', and '575'. Below these is a 'Horsepower (HP)' slider ranging from 3 to 400, with a 'CALCULATE' button to the right. A 'Product Quickfinder' dropdown menu is open on the right, listing five product options with icons: A216 DRIVEFLEX® VFD, A217 DRIVEFLEX® Servo I composite, A218 DRIVEFLEX® Servo II composite, A219 DRIVEFLEX® 3 Symmetrical Grounds 2kV, and A220 DRIVEFLEX® 3 Symmetrical Grounds 1kV.

To view Lutze's complete product portfolio please visit them at www.lutze.com.