

<b>APPLICATION NOTE</b>	<b>FECA-AN-171</b>
<b>Motor Wiring Distances With VFD</b>	

<b>Inverter type</b>	FRENIC Series Drives
<b>Software version</b>	All versions
<b>Required options</b>	Not required
<b>Related documentation</b>	-
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<b>Revision</b>	None

**Introduction:**

When a motor is driven by a VFD with a PWM wave output, the motor terminals and insulation can be subject to surge voltages generated by the switching elements of the IGBT. When the motor wiring length is long, surge voltage will deteriorate the motor insulation and can lead to motor failure. If the data from the VFD Instruction Manual is the same or different, refer to the table below for motor wiring distances for all Fuji VFD's. Refer to the wiring practices in the related instruction manual for other details about motor wiring practices.

**Motor wiring**

<b>Motor Wiring</b>			
<b>Inverters 7.5Hp and larger</b>			
Motor insulation level	1000V	1300V	1600V
230VAC Input Voltage	1312Ft	1312Ft	1312Ft
460VAC Input Voltage	66Ft	328Ft	1312Ft
575VAC Input Voltage	N/A	N/A	328Ft
<b>Inverters 5Hp and smaller</b>			
Motor insulation level	1000V	1300V	1600V
230VAC Input Voltage	328Ft	328Ft	328Ft
460VAC Input Voltage	66Ft	165Ft	165Ft
575VAC Input Voltage	N/A	N/A	165Ft

\*Note- for motor wiring distances longer than the one listed in the table above, consult Fuji Electric.

For further information: Refer to the **FRENIC-Mini, Multi, Ace, Eco, HVAC and MEGA Instruction Manual** and **User's Manuals**. Also refer to the **Motor, Communication and Option Manuals** in use.