TECHNICAL APPLICATION NOTE

LEVITON

powerswitch®

Safety Disconnect Switches for Use with Variable Frequency Drives



Powerswitch® safety disconnect switches and mechanical interlocks from Leviton are well suited for applications involving Variable Frequency Drives (VFDs).

VFDs are used extensively throughout many commercial and industrial applications to control motor and pump loads. The benefits include reduced energy consumption, extended equipment life and more efficient process control. However, there are some installation requirements that require additional consideration.

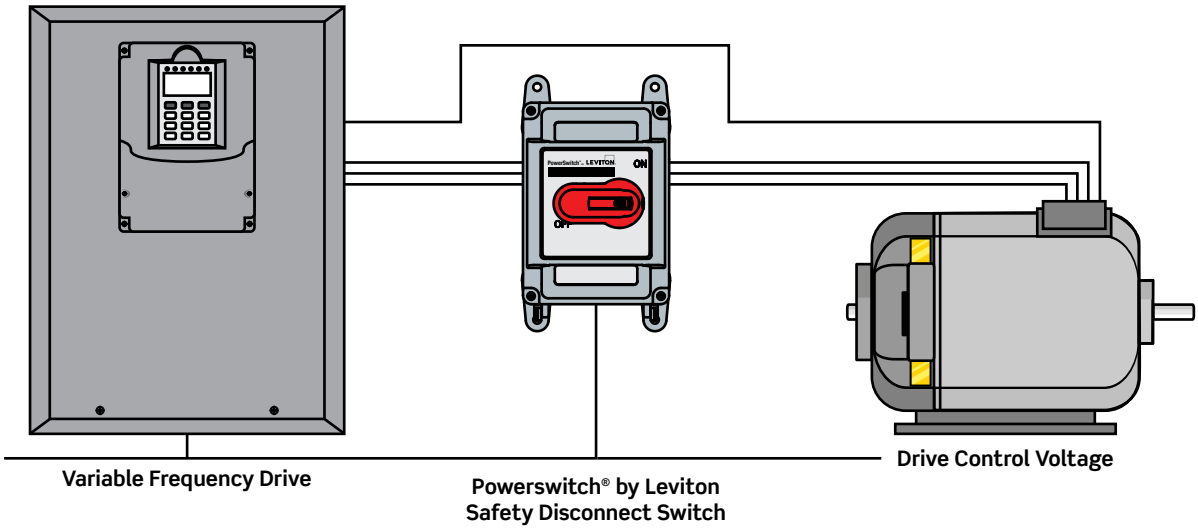
Article 430 of the National Electrical Code (NEC) requires that a disconnecting means for the motor be installed in sight of the motor and driven equipment. If the VFD is installed in sight, and has an integral disconnect, that would satisfy the NEC requirement. However, in many cases the VFD is located within a motor control center that is located outside of the "line of sight" requirement. In this case, a separate disconnect is required for the motor, which would be installed between the VFD and motor.

A standard disconnect switch is not appropriate for this application, as disconnecting the motor in this type of installation could damage the VFD, the disconnect switch, and/or the motor, resulting in costly repairs and create a potential safety hazard for workers. In order to avoid this situation, the disconnect switch should employ an early break, late make auxiliary contact. This would be used to signal to the VFD that the motor is being disconnected before actual power disconnect, and would signal reconnection to the VFD after power to the motor has been restored.



The Leviton Powerswitch® line of safety disconnects come standard with an early break auxiliary contact, making them ideal for use with VFD installations. And, for cord connected equipment, Powerswitch mechanical interlocks employ the same auxiliary contact arrangement.

◀ Shown at left: DS30-AX



All Powerswitch® Safety Disconnects and Mechanical Interlocks are shipped with one normally-open auxiliary contact installed. A second auxiliary contact – either normally-open or normally-closed – may be added.

Powerswitch® Safety Disconnects			
Amperage:	Voltage:	Non-Fused:	Fused:
30A	600V AC	DS30-AX	DS30-FAX
60A	600V AC	DS60-AX	DS60-FAX
100A	600V AC	DS100-AX	—

Powerswitch® Mechanical Interlocks (Representing most common configurations, see www.leviton.com for full offering)			
Amperage:	Voltage:	Non-Fused:	Fused:
20	3Ø240	420MI9W	420MF9W
	3Ø480	420MI7W	420MF7W
	3Ø600	420MI5W	420MF5W
30	3Ø240	430MI9W	430MF9W
	3Ø480	430MI7W	430MF7W
	3Ø600	430MI5W	430MF5W
60	3Ø240	460MI9W	460MF9W
	3Ø480	460MI7W	460MF7W
	3Ø600	460MI5W	460MF5W
100	3Ø240	4100MI9W	—
	3Ø480	4100MI7W	—
	3Ø600	4100MI5W	—
	3ØY120/208	5100MI9W	—



Auxiliary Contacts		
Description:	Cat. No.:	For Use With:
NO, 10A, early break	AUXNO	Fused or Non-Fused Devices
NC, 10A, early break	AUXNCNF	Non-Fused Devices
	AUXNCF	Fused Devices

Leviton Manufacturing Co., Inc.
201 North Service Road, Melville, NY 11747 • Tech Line: 1-800-824-3005 (8:30AM-7:00PM E.S.T. Mon-Fri) • FAX: 1-800-832-9538
Visit us on the web at: www.leviton.com/industrial • email: industrial@leviton.com
© 2014 Leviton Manufacturing Co., Inc. All rights reserved. Subject to change without notice.