

**TECHNICAL  
APPLICATION  
NOTE**

## Safety Disconnect Switches and Mechanical Interlocks for use with Variable Frequency Drives



**Powerswitch® safety disconnect switches, LEV Series mechanical interlocks, as well as standard series mechanical interlocks from Leviton are all 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.

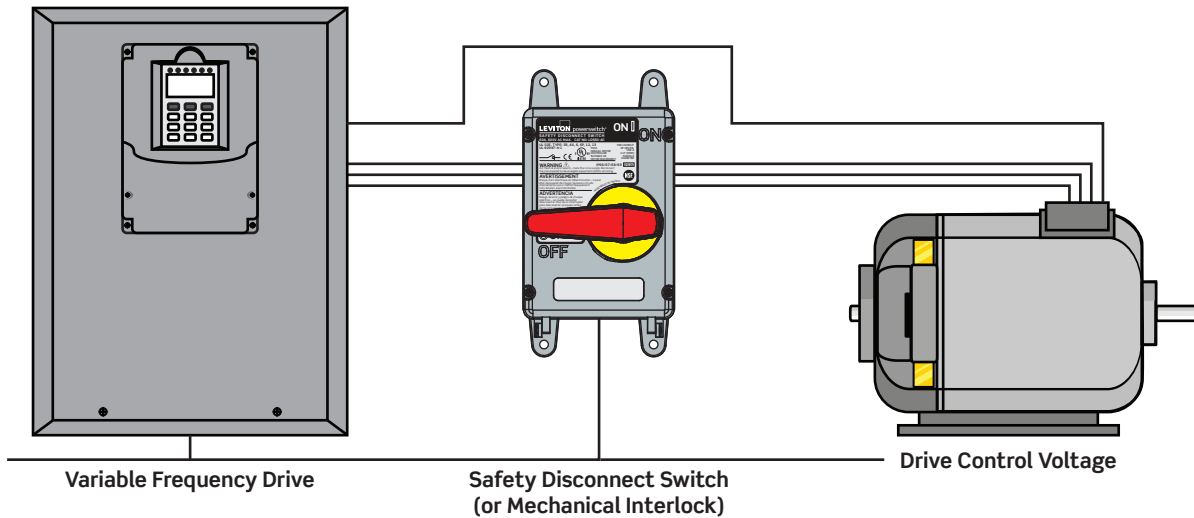
Article 430 of the National Electrical Code (NEC) requires that a disconnecting means for the motor be installed in sight of the motor and driven equipment. If the VFD is installed in sight, and has an integral disconnect, that would satisfy the NEC requirement. However, in many cases the VFD is located 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 features devices that come standard with an early break auxiliary contact, making them ideal for use with VFD installations. And, for cord connected equipment, LEV Series and standard series mechanical interlocks employ the same auxiliary contact arrangement.**

◀ Shown at left: LDS30-AX



## Powerswitch® Safety Disconnects - Non-Metallic

Amp	Volt	SAFETY DISCONNECTS			SAFETY DISCONNECTS WITH INFORM™ TECHNOLOGY		
		Non-Fused	Non-Fused w/ AUXNO	Fused	Non-Fused	Non-Fused w/ AUXNO	Curve Top, Non-Fused
30/32	600	LDS30-AX	LDS30-AC	LDS30-FAX	LDS30-AXS	LDS30-ACS	LDS30-CTS
					LDS30-AXC	LDS30-ACC	LDS30-CTC
					LDS30-MB	LDS30-AMB	LDS30-CTM
60	600	LDS60-AX	LDS60-AC	LDS60-FAX	—	—	—
100	600	LDS10-AX	LDS10-AC	LDS10-FAX	—	—	—

KEY: Inform Technology Wifi Modbus RTU

## Powerswitch® Safety Disconnects - Stainless Steel

Amp	Volt	Non-Fused	Non-Fused w/ AUXNO	Slope-Top, Non-Fused	Slope-Top, Non-Fused w/ AUXNO
30/32	600	MDS3-AX	MDS3-AC	MDS3-ST	MDS3-AST
60	600	MDS6-AX	MDS6-AC	—	—
80	600	MDS8-AX	MDS8-AC	—	—
100	600	MDS1-AX	MDS1-AC	—	—

## LEV Series Mechanical Interlocks

(Representing most common configurations, see [www.leviton.com](http://www.leviton.com) for more)

Amp	Volt	Non-Fused	Fused
20	3Ø240	420MI9WLEV	420MF9WLEV
	3Ø480	420MI7WLEV	420MF7WLEV
	3Ø600	420MI5WLEV	420MF5WLEV
30	3Ø240	430MI9WLEV	430MF9WLEV
	3Ø480	430MI7WLEV	430MF7WLEV
	3Ø600	430MI5WLEV	430MF5WLEV
60	3Ø240	460MI9WLEV	460MF9WLEV
	3Ø480	460MI7WLEV	460MF7WLEV
	3Ø600	460MI5WLEV	460MF5WLEV
100	3Ø240	4100MI9WLEV	—
	3Ø480	4100MI7WLEV	—
	3Ø600	4100MI5WLEV	—
	3ØY120/208	5100MI9WLEV	—

## Auxiliary Contacts

Cat. No.	Description
AUXNO	Non-Fused Auxiliary Contact, Rated 10 A 600 V, Normally Open, For Use With 30/32, 60 and 80 A Devices
AUXNC-NF	Non-Fused Auxiliary Contact, Rated 10 A 600 V, Normally Closed, For Use With 30/32, 60 and 80 A Devices
AUXNO-NF1	Non-Fused Auxiliary Contact, Rated 10 A 600 V, Early Break, For Use With 100 A Devices
AUXNO-F1	Fused Auxiliary Contact, Rated 10 A 600 V, Normally Open, For Use With 30/32 A Devices
AUXNC-F1	Fused Auxiliary Contact, Rated 10 A 600 V, Normally Closed, For Use With 30/32 A Devices
AUXNO-F2	Fused Auxiliary Contact, Rated 10 A 600 V, Normally Open, For Use With 60 and 100 A Devices
AUXNC-F2	Fused Auxiliary Contact, Rated 10 A 600 V, Normally Closed, For Use With 60 and 100 A Devices

Visit our Website at:  
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