SCHMERSAL Tech Briefs:
DN3PS2 Standstill Monitor

Overview

After the removal of power to a motor, a machine may still pose hazardous conditions because of flywheel overrun, spindle momentum, or unstable rest positions for example. Guard locking devices protecting such type or machines and equipment need to remain locked until dangerous conditions have abated. Hazardous motions must be monitored to insure that the machine has reached a safe speed or standstill before the locked safety guards can be opened.

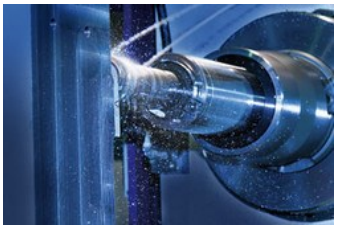
One common practice to monitor standstill is by monitoring the back electromotive force (EMF) directly off of a motor. An EMF reading in the low millivolt range from the line voltage will represent a safe state for the opening of a locked guard.

The DN3PS2 is a safety rated standstill monitoring relay which uses back electromotive force to detect standstill. 1 or 3 phase motors of up to 600VAC can be monitored without the need of any additional external sensors. The monitoring ability of the DN3PS2 allows it to be used in applications with VFD and up to PLe per ISO 13849 and SIL 3 per IEC 61508.

Features

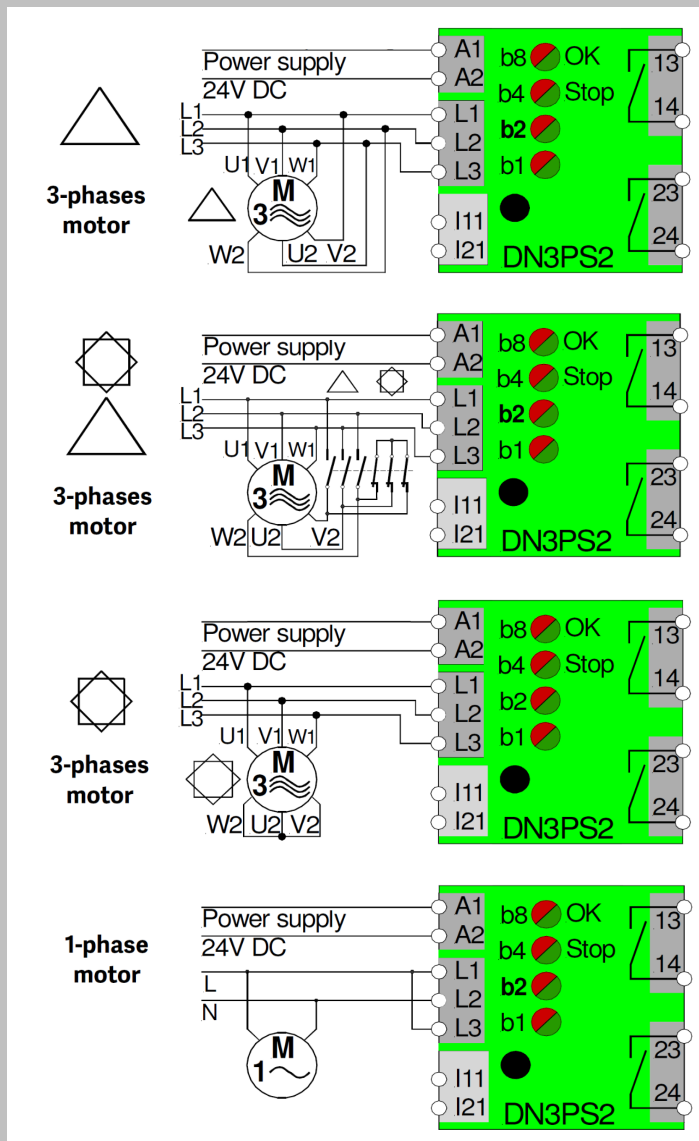
- Compact 22.5mm housing
- 600VAC monitoring
- Cat.4 / PLe / SIL 3
- Simple wiring and setup
- LED device status
- Can be used in VFD systems
- 1 or 3 phase motors
- Requires no external sensors

Applications



- Machine tool Industry for CNC machines
- High Speed packaging machines
- Bakery Equipment for the Food Industry
- High Speed Stretch wrapping machines
- Material handling Robot cell applications
- High Speed conveyor applications
- Batch processing mixing Applications
- Woodworking industry
- Woodworking CNC machines

Wiring Examples



Ordering Details

DN3PS2-33PS02

Related products

Initiate stop:

Control Devices

BDF100	Single operator
BDF200-2875	4 operators, field configurable

Panel mounted pushbuttons

N Series	IP69K / Hygienic
R series	Robust / metal
EX-R series	Explosive environments

Guard Locks:

Solenoid interlocks

AZM161	6 contacts, 4 actuating planes
AZM170	Compact, QD options
AZM190	Slim design

Electronic Safety Locks

AZM200	Door handle assembly
AZM300	IP69K rated
AZM400	Bi-stable bolt lock
MZM100	Electromagnet lock

Product Extension

DNDS

In addition to standstill, some applications may require the monitoring of safe speeds during operator interaction. Setup modes, as that seen in printing machines, which require motion must be monitored to prevent speeds from exceeding the safe setup speeds.

The modular DNDS system can be programmed via dipswitches to monitor up to 3 different speeds by the means of an encoder, resolver or proximity sensors to PLe per ISO 13849 and SIL 3 per IEC 61508. Please consult factory for additional information.

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