

TECH BRIEF:

DINA SAFE DRIVE AND STANDSTILL MONITORS

DINA

Many machines pose hazards to the operator while trying to clear jams, setting up, or other operational aspects that requires interaction. There are many safe drive monitoring features that can be applied to make the operation safer, with safe speed monitoring and standstill monitoring the most prevalent. These are used not only during the normal automatic operation of the machine but also during manual operation of the machine to lower the risk and keep the operator safe.

The DINA safe drive monitors utilize a new, innovative approach: a parallel connection to the three-drive phases allows the frequency of the rotating field to be detected. This method for monitoring the drive can indicate specific motor speeds and standstill. It is cost effective because it does not require the use of sensors, encoders, or other measuring devices. The technology can be used for three- and single-phase drives, up to performance level e.

ANSI B11.19 – 2019 section 9.3.3 goes into great detail about safe speed monitoring functions. In combination with the safe speed monitoring safety function, the standard recommends hold-to-run enabling devices like our TFH232 foot switch or ZSD handheld device to run the machine. Upon the request of the manual control of the machine DN3PD2 can be used to allow the machine to run with possibility of various safe drive functions like Safely Limited Speed (SLS), Safe Speed Monitor (SSM), or Safe Speed Range (SSR). Either of the DINA units detects the standstill speed of the motor allowing safer unlocking function of the gate interlock.

STANDSTILL MONITOR



DN3PS2/33PS02

- 3-phase Back EMF monitoring
- Simple wiring
- Requires no external sensors
- Rated up to 600V AC
- Time delayed outputs possible
- 22.5mm housing
- PLe / Category 4

SAFE DRIVE MONITOR



DN3PD2/34PD01

- Monitoring of safe motion via the frequency of the rotating field of the motor
- Space-saving, no encoder required
- Simple parameterization via GO:BEYOND Software tool
- Time delay outputs possible
- Adjustable speed from 0 to 1200 Hz
- PLe / Category 4

SAFE DRIVE MONITOR

DN3PD2/34PD01

RELATED PRODUCTS

Enabling Devices:

ZSD Handheld
TFH232 Foot switch

STANDSTILL MONITOR

DN3PS2/33PS02

RELATED PRODUCTS

Initiate stop:

Control Devices

BDF100 Single operator
BDF200-2875 Four 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

AZM201 Door handle assembly
AZM300 IP69K rated
AZM400 Bi-stable bolt lock
MZM100 Electromagnet lock

Check out DINA Controller set up and parameterization videos on **YouTube**



DN3PS2 DN3PD2 SAFETY FUNCTIONS

- | | | |
|---|---|---|
| ✓ | ✓ | Safe Operating Stop [SOS]
While operation is stopped, either the drive's standstill or its defined position range is monitored. If the position range is unintentionally breached, the drive will be safely switched off. |
| ✓ | ✓ | Safe Torque OFF [STO]
The power supply to the drive will be immediately interrupted. This safety function is combined with other functions to prevent impermissible restart. |
| | ✓ | Safe Speed Range [SSR]
This safety function ensures that a minimal speed is maintained and a maximal speed is not exceeded. If the speed deviates from these limits, the drive will be safely switched off. |
| | ✓ | Safe Limited Speed [SLS]
Safe drive monitoring to ensure that a maximal speed is not exceeded. If the speed increases beyond a defined threshold, the drive will be safely switched off. |
| | ✓ | Safe Speed Monitor [SSM]
The reduced drive speed is safely monitored. |

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