

PDMS –
Protect Drive Monitoring System
Overview 08



Modular system
for safe speed
monitoring of drives

PDMS – Protect Drive

Safe speed monitoring of drives

With the modular system PDMS, which is short for Protect Drive Monitoring system, there are new possibilities for a user to monitor any drive systems.

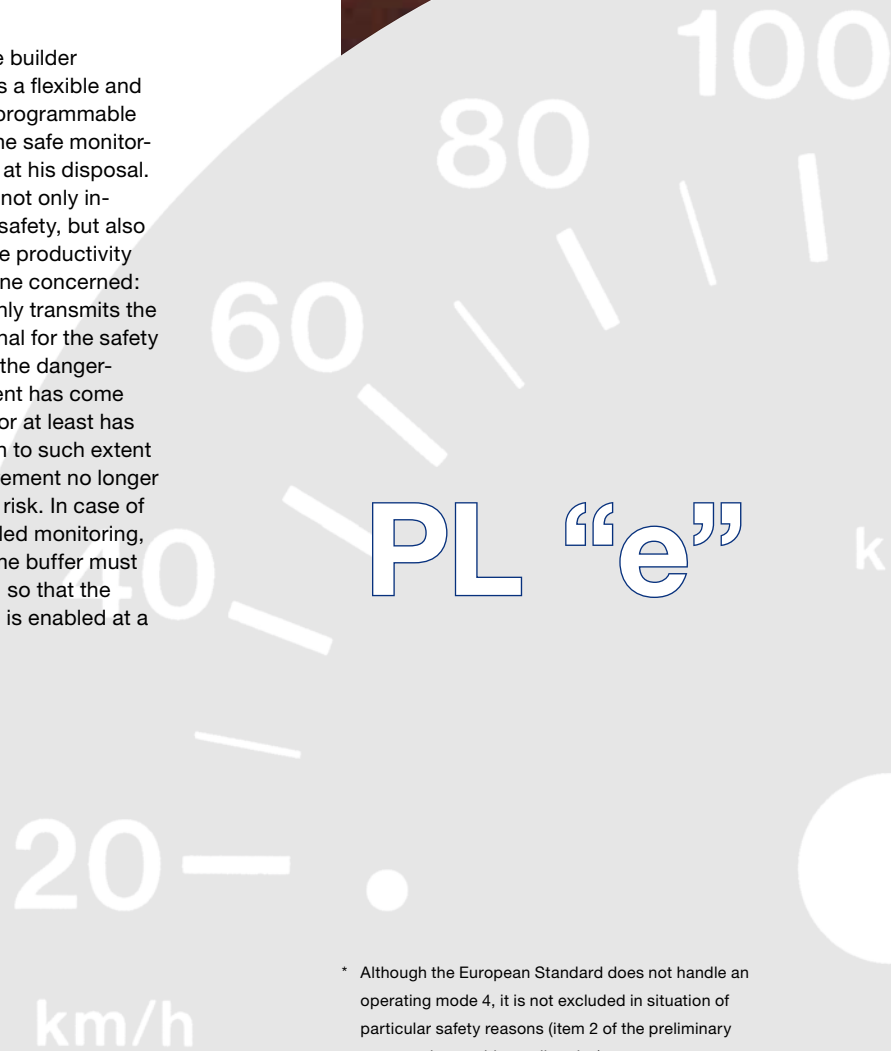
This system enables the machine builder monitoring the speed of, for instance, spindle or axle drives in a safe manner. To detect the movement, encoders, resolvers or two proximity switches can be used. The system monitors the signals from rotary and linear movements. The drive speed to be monitored can be individually programmed.

In this way, the maximum speeds for the special operating modes of, for instance NC machining centers, e.g. operating mode 1 (“automatic mode”), operating mode 2 (“set-up mode”), operating mode 3 (“process monitoring with enabling device”) and **operating mode 4 (“process monitoring without enabling device”)***, can be individually set and safely monitored in accordance with DIN EN 13128.

The PDMS system extends and completes the features of the modular PROTECT PSC safety system with monitoring functions for machinery and plants. The system meets all the requirements set forth for safety-related electronic components. The self-monitoring circuitry has a redundant structure, which means that the safety device remains safe, even in case of failure of a component.

Similar to PROTECT PSC, the functional components of PDMS are based on a modular system. The monitoring electronics, which is connected to the signal generator signal through a drive-specific cable adapter, is located on an input card. Every axle is monitored by means of its proper plugable input card. Inside the system rack, multiple and even different cards can be combined. Safe output cards transmit the signal to PROTECT PSC, where they are further processed. Appropriate cable adapters are available for a multitude of drive systems.

The machine builder therefore has a flexible and individually programmable system for the safe monitoring of drives at his disposal. This system not only increases the safety, but also enhances the productivity of the machine concerned: the PDMS only transmits the enabling signal for the safety guard when the dangerous movement has come to standstill or at least has slowed down to such extent that the movement no longer involves any risk. In case of time-controlled monitoring, a specific time buffer must be provided, so that the safety guard is enabled at a later time.



* Although the European Standard does not handle an operating mode 4, it is not excluded in situation of particular safety reasons (item 2 of the preliminary notes to the machinery directive)

Application

- Standstill monitoring
- Detection of maximum permitted speed of the drive, depending on the selected operating mode
- Possible to connect sensors directly like i.e. emergency stop control devices, operating mode switches or guard door safety switches

Example of assembly

Racks	Input cards	Output cards
here: Protect PDMS-R 4M R1G for 4 input cards and 1 output card	here: • 2 × Protect PDMS-I 1EG V7A • 1 × Protect PDMS-I 1RG V2 • 1 × Protect PDMS-I 1EG V9	here: • Protect PDMS-O PMG



Evaluable encoder signals

- Resolver
- Sinus/Cosinus
- TTL
- HTL
- PNP-proximity switch



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