

TECH BRIEF: PROGRAMMABLE SAFETY CONTROLLER PSC1

FEATURES

UNIVERSAL FIELDBUS COMPATABILITY

- Supports common fieldbus systems (adjustable via software)
- Supports secure fieldbus protocols (-PNPS, -ECFS, -PBPS)



INTEGRATED SERIAL DIAGNOSTIC BUS GATEWAY

- Connect up to 31 Schmersal SD bus sensors
- Gateway communicates extended diagnostic data to field-bus
- Set via software (communication to machine controller).

SAFE CROSS-COMMUNICATION – ETHERNET SMMC (SAFETY MASTER TO MASTER COMMUNICATION)

- Exchange data via the local Ethernet SMMC communication.
- Safe cross-communication with up to 4 PSC1 controllers
- Free mixing of PSC1-C-10 and PSC1-C-100 safety controllers

SAFE REMOTE I/O COMMUNICATION – ETHERNET SDDC (SAFETY DEVICE TO DEVICE COMMUNICATION)

- decentralized application structure
- local communication is realized via the Ethernet SDDC protocol
- expansion module **PSC1-E-37-14DI-4DO-2RO-RIO ***

* only used with PSC1-C-100-FB1 or FB2 option.

SAFE DRIVE MONITORING

For safe drive monitoring many safety features are supported:

- **Safe shut-down:** Safe Torque OFF (STO)
- **Safe stopping:** Safe Stop 1 (SS1), Safe Stop 2 (SS2), Safe Operating Stop (SOS)
- **Safe movement:** Safely-Limited Speed (SLS), Safe Direction (SDI)
- **Safe monitoring:** Safe Cam (SCA)
- **Safe Positioning:** Safely-Limited Position (SLP), Safely-Limited Increment (SLI), Safe Emergency Limit (SEL)

The drive monitoring is carried out depending on the application requirements, with one or two encoder systems.

The following encoder signals are supported:

- **1 Encoder system:** TTL, SIN/COS, SSI (Gray code / binary code)
- **2 Encoder systems:** TTL, SIN/COS, SSI (Gray code / binary code), Resolver, HTL

PROGRAMMING SOFTWARE

PSC1-A-91-SAFEPLC2

- Drag and drop application development environment
- Library of safe switching devices
- Simple signal tracking by color representation and messages
- Easy to detect safety functions for logic, Safe Drive Monitoring, SD-bus, and encoder elements
- Online or Offline simulation
- Configurable user permissions
- Free software with licensed dongle.



PSC1-C-10

Features

- 14 safe inputs
- 4 adj. safe semiconductor outputs
- 2 safe relay outputs
- 2 signaling outputs
- 2 pulse outputs for contact sensors
- Expandable up to 2 I/O modules (central)
- Universal communication interface

ORDERING CODES

PSC1-C-10-①-②

- ① <Blank> Without drive monitor
- SDM1** Safe Drive Monitor, 1 axis
- SDM2** Safe Drive Monitor, 2 axes
- ② <Blank> Without connectivity
- FB1** Master-to-Master com. Profinet, EtherCAT, EthernetIP fieldbus
- FB2** Master-to-Master com. Profibus fieldbus
- MC** Memory Card (SDHC)

Expansion modules

PSC1-E-31-12DI-10DIO

- I/O expansion module offering:
 - 12 safe inputs
 - 10 safe configurable input/output
 - 2 auxiliary semiconductors

PSC1-E-33-12DI-6DIO-4RO

- I/O expansion module offering:
 - 12 safe inputs
 - 6 safe configurable input/output
 - 4 safe relay outputs
 - 2 auxiliary semiconductors

ACCESSORIES

PSC1-A-90-PROG-CABLE

SafePLC2 programming cable

PSC1-A-99-SD-MEMORY-CARD

SDHC memory card - Capacity: 16 GB



PSC1-C-100

Features

- 14 safe inputs
- 20 adjustable safe in-/outputs
- 4 adj. safe semiconductor outputs
- 2 safe relay outputs
- 6 signaling outputs
- 2 pulse outputs for contact sensors
- Expandable up to 8 I/O modules (central / decentral)
- Expandable with up to 6 safe drive monitoring modules (max. 12 axes)
- Universal communication interface

ORDERING CODES

PSC1-C-100-①

- ① <Blank> Without connectivity
- FB1** Master-to-Master com. Profinet, EtherCAT, EthernetIP fieldbus
- FB2** Master-to-Master com. Profibus fieldbus
- MC** Memory Card (SDHC)

Expansion modules

PSC1-E-131-12DI-10DIO

- I/O expansion module offering:
 - 12 safe inputs
 - 10 safe configurable input/output
 - 2 auxiliary semiconductors

PSC1-E-133-12DI-6DIO-4RO

- I/O expansion module offering:
 - 12 safe inputs
 - 6 safe configurable input/output
 - 4 safe relay outputs
 - 2 auxiliary semiconductors

PSC1-E-37-14DI-4DO-2RO-RIO

- 14 safe inputs
- 4 adj. safe semiconductor outputs
- 2 safe relay outputs
- 2 signaling outputs
- 2 pulse outputs for contact sensors

Safe drive monitors

- PSC1-E-21-SDM1** 1 encoder, 1 axis
- PSC1-E-22-SDM1-2** 2 encoder, 1 axis
- PSC1-E-23-SDM2** 1 encoder, 2 axis
- PSC1-E-24-SDM2-2** 2 encoder, 2 axis