PSR-MC43-2SDO-1DO-24DC-SP - Safety relay module

1087569

https://www.phoenixcontact.com/us/products/1087569

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Safety relay module with IO-Link for emergency stop, safety doors, and light grids, to SIL 3, Cat. 4, PL e, 2 sensor circuits, automatic or manual, monitored start, 2 safe digital outputs, 1 signal output, U_S = 24 V DC, pluggable Push-in terminal block

Your advantages

- Up to Cat. 4/PL e in accordance with ISO 13849-1, SIL 3 in accordance with EN IEC 62061, SIL 3 in accordance with IEC 61508
- For emergency stop and safety door monitoring, plus evaluation of light grids
- For monitoring 4-wire control strips or safety shut-off mats in accordance with EN ISO 13856-1
- 2 sensor circuits
- 2 safe digital outputs
- 1 digital signal output
- Diagnostic data via IO-Link in combination with PSR-CT safety switches
- 1- and 2-channel control
- Manually monitored and automatic activation

Commercial data

Item number	1087569
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	NULL
Product key	DNA181
GTIN	4055626883960
Weight per piece (including packing)	157.1 g
Weight per piece (excluding packing)	126.06 g
Customs tariff number	85371098
Country of origin	DE

Technical data

Notes

Note on application

Note on application	Only for industrial use

Product properties

Product type	Safety relays
Product family	PSRmini
Application	Emergency stop
	Safety door
	Light grid
	Transponder
	Switching capacities
	Safety shut-off mats
Control	1 and 2 channel

Insulation characteristics: Air clearances and creepage distances between the power circuits

Overvoltage category	II
Degree of pollution	2

Times

Typical response time	< 200 ms (automatic start)
	< 175 ms (manual, monitored start)
Typ. starting time with U_s	< 200 ms (when controlled via A1)
Response time	< 10 ms
Restart time	< 1 s (Boot time)
Recovery time	250 ms (following demand of the safety function)

Electrical properties

Maximum power dissipation for nominal condition	4 W (U_B = U_{BL} = 30 V, I_{L1} = I_{L2} = 2.4 A)
Nominal operating mode	100% operating factor

Air clearances and creepage distances between the power circuits

Rated insulation voltage	63 V
Rated surge voltage/insulation	Safe isolation, 0.5 kw between logic and IO-Link
	Basic insulation 4 kV between all current paths and housing

Supply

Designation	L+/L-
Nominal voltage for I/O supply	24 V DC -20 % / +25 % (Provided via the IO-Link interface of the IO-Link master.)
Current consumption	typ. 8 mA
Protective circuit	Serial protection against polarity reversal; Suppressor diode

Supply

Designation	A1/A2
Rated control circuit supply voltage U_S	19.2 V DC ... 30 V DC
Rated control circuit supply voltage U_S	24 V DC -20 % / +25 % (provide external protection)
Rated control supply current I_S	typ. 72 mA
Power consumption at U_S	typ. 1.73 W
Inrush current	typ. 12 A (Δt < 10 µs)
Filter time	1 ms (For the logic. At A1 in the event of voltage dips at U_s)
Protective circuit	Parallel protection against polarity reversal; Suppressor diode (Provide external fuse protection, see safety notes. Fuse type: 5 AT)

Input data

Digital: Sensor circuit S0 (S10, S12, S22)

Description of the input	safety-related sensor inputs
	IEC 61131-2 type 3 (S10, S12) PNP (S22)
Number of inputs	3
Input voltage range "0" signal	0 V DC ... 5 V DC (S10, S12)
	For S22, see note in “Signal generator connection versions” section.
Input voltage range "1" signal	11 V DC ... 30 V DC (S10, S12)
	0 V (S22)
Input current range "0" signal	0 mA ... 2 mA (S10, S12)
Inrush current	< 5 mA (typ. with U_S at S10)
	< 5 mA (typ. with U_S at S12)
	> -7 mA (typ. with U_S at S22)
Filter time	max. 1.5 ms (Test pulse width, low test pulses (S10, S12))
	Test pulse rate = 5 x Test pulse width
	Deactivate the switch-on pulses for safety applications.
Concurrence	∞
Max. permissible overall conductor resistance	150 Ω
Protective circuit	Suppressor diode
Current consumption	< 5 mA (typ. with U_S at S10)
	< 5 mA (typ. with U_S at S12)
	> -7 mA (typ. with U_S at S22)

Digital: Sensor circuit S1 (S32, S42)

Description of the input	safety-related sensor inputs
	IEC 61131-2 type 3
Number of inputs	2
Input voltage range "0" signal	0 V DC ... 5 V DC
Input voltage range "1" signal	11 V DC ... 30 V DC
Input current range "0" signal	0 mA ... 2 mA
Inrush current	< 10 mA (typ. with U_S, Δt = 500 µs)

Filter time	max. 1.5 ms (Test pulse width of low test pulses)
	Test pulse rate = 5 x Test pulse width
	Deactivate the switch-on pulses for safety applications.
Concurrence	∞
Max. permissible overall conductor resistance	150 Ω
Protective circuit	Suppressor diode
Current consumption	< 5 mA (typ. with U_S)

Digital: Diagnostic input (DGN)

Description of the input	non-safety-related
	Potential A1/A2 or U_S
Number of inputs	1
Input voltage range	0 V DC ... 30 V DC
Protective circuit	Suppressor diode
Current consumption	typ. 30 mA

Digital: Start circuit (S34, S35)

Number of inputs	2
Input voltage range "1" signal	19.2 V DC ... 30 V DC
Inrush current	< 10 mA (typ. with U_S, Δt = 100 ms)
Max. permissible overall conductor resistance	150 Ω
Protective circuit	Suppressor diode
Current consumption	< 7 mA (typ. with U_S at S34)
	< 5 mA (typ. with U_S at S35)

IO-Link

Designation	IO-Link
Transmission speed	230 kbps (COM3)
Cycle Time	5 ms
Process data update	5 ms
Amount of process data	max. 31 Byte (Input data)
	max. 16 Byte (Output data)
Description of the input	IO-Link switching and communication cable
Number of inputs	1
Connection method	Spring-cage connection
Connection technology	3-conductor
Number of ports	1
Port type	Class A

Output data

Digital: 14, 24

Output description	Safety-related digital outputs
	PNP, IEC 61131-2 Type 2
Number of outputs	2
Protective circuit	Freewheeling circuit for inductive loads

Short-circuit protection	Yes
Output voltage	≥ 23 V DC (U_s - 1 V)
Leakage current	max. 1 mA (in the safe state)
Ohmic load	min. 12 Ω
Max. capacitive load	max. 10 µF (2.4 A load)
	max. 4.7 µF (1 A load)
Max. inductive load	max. 1 H
Limitation of the voltage induced on circuit interruption	max. 50 V
Output current	max. 2.4 A
Inrush current	max. 4.8 A (Δt = 10 ms)
Min. load current	2 mA
Switching frequency	1 Hz (Resistive, inductive, capacitive)
Output voltage when switched off	< 5 V DC (in the safe state)
Discharging circuit	No

Signal

Voltage	approx. 22 V DC
Switching frequency	1 Hz (Resistive, inductive, capacitive)
Protective circuit	Suppressor diode

Connection data

Connection technology

pluggable	yes

Conductor connection

Connection method	Push-in connection
Conductor cross-section rigid	0.2 mm² ... 1.5 mm²
Conductor cross-section flexible	0.2 mm² ... 1.5 mm²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 1.5 mm² (only together with CRIMPFOX 6)
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm² ... 1.5 mm² (only together with CRIMPFOX 6)
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

Signaling

Status display	5 x LED (green)
Operating voltage display	1 x LED (green, yellow, red)

Dimensions

Width	17.5 mm
Height	116.6 mm
Depth	114.5 mm

Material specifications

Color (Housing)	yellow (RAL 1018)

Housing material	PBT

Characteristics

Safety data

Stop category (EN 60204-1)	0

Safety data: EN ISO 13849

Performance level (PL)	e

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3

Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-40 °C ... 60 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m (Above sea level)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Shock	30g
Vibration (operation)	10 Hz ... 150 Hz, 5g

Approvals

CE

Identification	CE-compliant

Standards and regulations

Air clearances and creepage distances between the power circuits

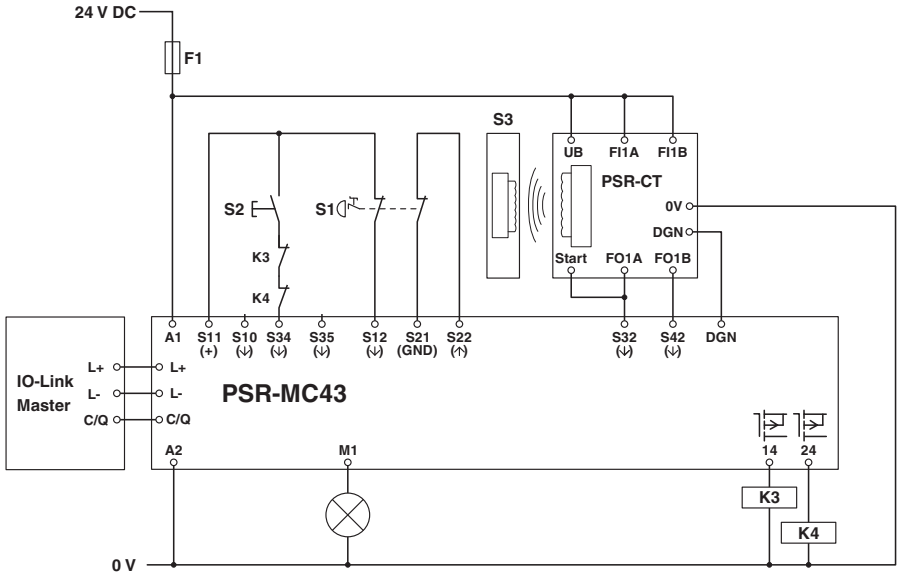
Standards/regulations	EN 60947-5-1

Mounting

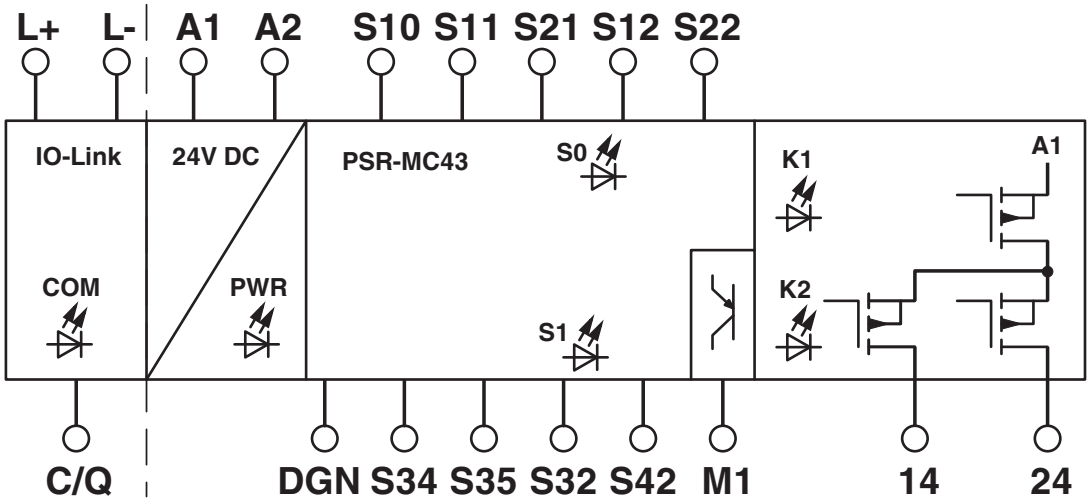
Mounting type	DIN rail mounting
Assembly note	See derating curve
Mounting position	vertical or horizontal

Drawings

Circuit diagram



Block diagram



Block diagram

Classifications

ECLASS

ECLASS-13.0	27371819

ETIM

ETIM 9.0	EC001449

UNSPSC

UNSPSC 21.0	39122200

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	d17c2d45-891f-457c-aaa6-bfca0eac327f

Phoenix Contact 2026 © - all rights reserved
https://www.phoenixcontact.com

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com