

PSR-SCP- 24DC/MXF1/4X1/2X2/B - Safety relays



2902725

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Multifunctional safety relay for emergency stop and safety doors up to SIL 3, Cat. 4, PL e, automatically or manually monitored activation, 4 N/O contacts, 3 safety functions, 2 shutdown levels, plug-in screw terminal block

Your advantages

- Up to Cat. 4/PL e in accordance with EN ISO 13849-1, SIL 3 in accordance with EN 62061, SIL 3 in accordance with IEC 61508
- 3 safety functions in one device
- Low housing width of only 22.5mm
- No software configuration required
- Also available with push-in connection

Commercial Data

Item number	2902725
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	DN01
Product Key	DNA191
Catalog Page	Page 234 (C-6-2019)
GTIN	4046356673006
Weight per Piece (including packing)	286.6 g
Weight per Piece (excluding packing)	221 g
Customs tariff number	85371098
Country of origin	DE

Technical Data

Product properties

Product type	Safety relays
Application	Emergency stop Safety door
Mechanical service life	10x 10 ⁶ cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Electrical properties

Maximum power dissipation for nominal condition	3 W
Nominal operating mode	100% operating factor

Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V AC
Rated surge voltage/insulation	4 kV/basic isolation (safe isolation, reinforced insulation and 6 kV between input circuit, enabling current paths and safety circuit 1 (13/14, 23/24) and safety circuit 2 (43/44, 53/54).)

Input data

General

Nominal input voltage U_N	24 V DC
Input voltage range in reference to U_N	0.85 ... 1.1
Typical input current at U_N	125 mA (with actuated relays) 55 mA (Two-channel 24 V/0 V + max. 200 mA control (message outputs 32/62) with non-actuated relays)
Current consumption	typ. 5 mA (I_{max}/I_x inputs) 20 mA (in electric torque)
Voltage at input/start and feedback circuit	24 V -15 % / +10 % (first channel: 24 V; second channel: 0 V)
Filter time	max. 1.5 ms (Test pulse duration; for all equivalent inputs) min. 7.5 ms (Test pulse rate; for all equivalent inputs)
Typical response time	175 ms (monitored/manual start) 250 ms (automatic start)
Typ. starting time with U_s	250 ms (when controlled via A1)
Typical release time	25 ms (when controlled via S11/I1,I3,I5 and S21/I2,I4,I6) 20 ms (when controlled via A1)
Concurrence	∞
Recovery time	1 s (Availability time after activation of sensor circuit: 100ms)
Maximum switching frequency	0.5 Hz
Protective circuit	Surge protection; Suppressor diode
Max. permissible overall conductor resistance	100 Ω
Operating voltage display	1 x green LED
Status display	5x LED green

Output data

Contact switching type	4 enabling current paths
	2 semiconductor alarm outputs
Contact material	AgCuNi, +0.2 ... 0.4 µm Au
Maximum switching voltage	250 V AC/DC
Minimum switching voltage	10 V AC/DC
Limiting continuous current	6 A (N/O contact)
	max. 100 mA (Alarm output (24 V DC))
Maximum inrush current	6 A
Inrush current, minimum	10 mA
Sq. Total current	$72 \text{ A}^2 (I_{\text{TH}}^2 = I_1^2 + I_2^2 + I_3^2 + I_4^2)$
Interrupting rating (ohmic load) max.	1500 VA (250 V AC, $\tau = 0 \text{ ms}$)
	66 W (220 V DC, $\tau = 0 \text{ ms}$)
	66 W (110 V DC, $\tau = 0 \text{ ms}$)
	100 W (48 V DC, $\tau = 0 \text{ ms}$)
	144 W (24 V DC, $\tau = 0 \text{ ms}$)
Maximum interrupting rating (inductive load)	48 W (24 V DC, $\tau = 40 \text{ ms}$)
	43 W (48 V DC, $\tau = 40 \text{ ms}$)
Switching capacity min.	0.1 W
Switching capacity (360/h cycles)	5 A (0,1 Hz; DC13; 24 V)
Switching capacity (3600/h cycles)	3 A (AC15; 230 V)
Output fuse	6 A gL/gG NEOZED (N/O contact)
	4 A gL/gG NEOZED (for low-demand applications)

Connection data

Connection technology

pluggable	yes
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Conductor connection

Connection method	Screw connection
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3

Dimensions

Width	22.5 mm
Height	112.2 mm
Depth	114.5 mm

Material specifications

Color	yellow
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Characteristics

Safety data

Stop category	0
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Safety data: EN ISO 13849

Category	4
Performance level (PL)	e (5 A DC13; 3 A AC15; 8760 cycles/year)

Safety data: EN 50156

Safety Integrity Level (SIL)	3
Safety Integrity Level (SIL)	3
Probability of a hazardous failure per hour (PFH _D)	1.93×10^{-10} (5 A DC13; 3 A AC15; 8760 cycles/year)
Proof test interval	240 Months (Mission time)
Safety Integrity Level (SIL)	3
Probability of a hazardous failure on demand (PFD _{AVG})	1.45×10^{-4}
Proof test interval	60 Months

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-20 °C ... 45 °C (see derating curve)
Ambient temperature (storage/transport)	-25 °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)

Standards and regulations

Air clearances and creepage distances between the power circuits

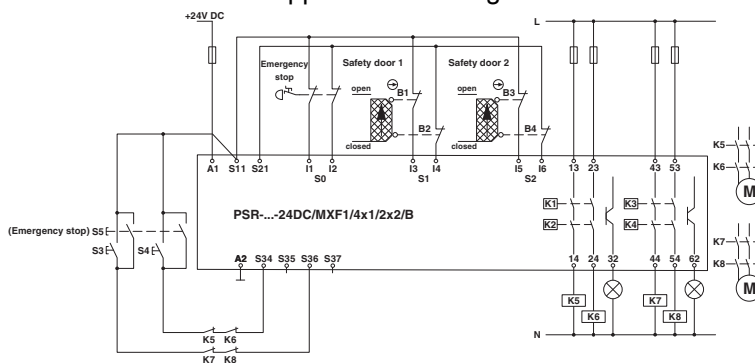
Standards/regulations	DIN EN 50178/VDE 0160
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Mounting

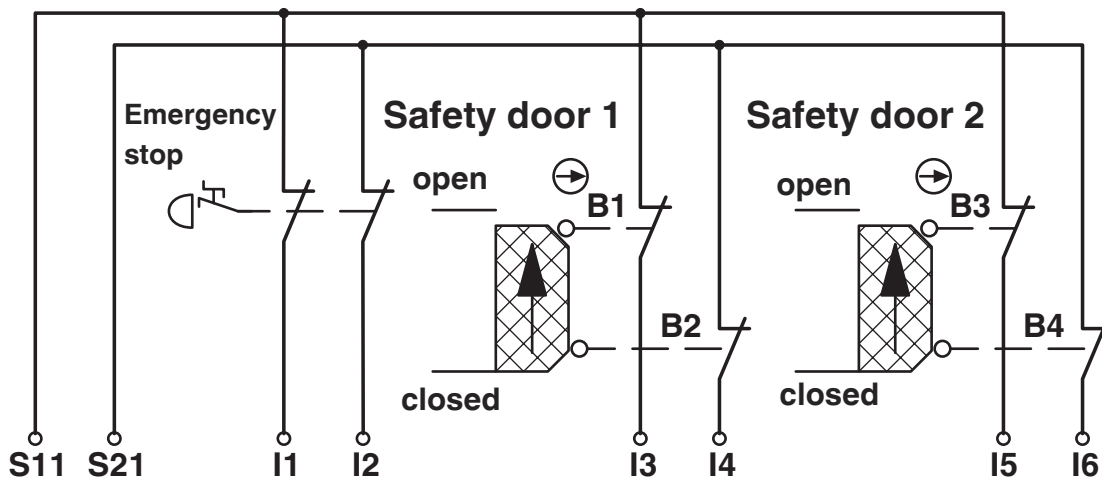
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Mounting position	vertical or horizontal
Connection method	Screw connection

Drawings

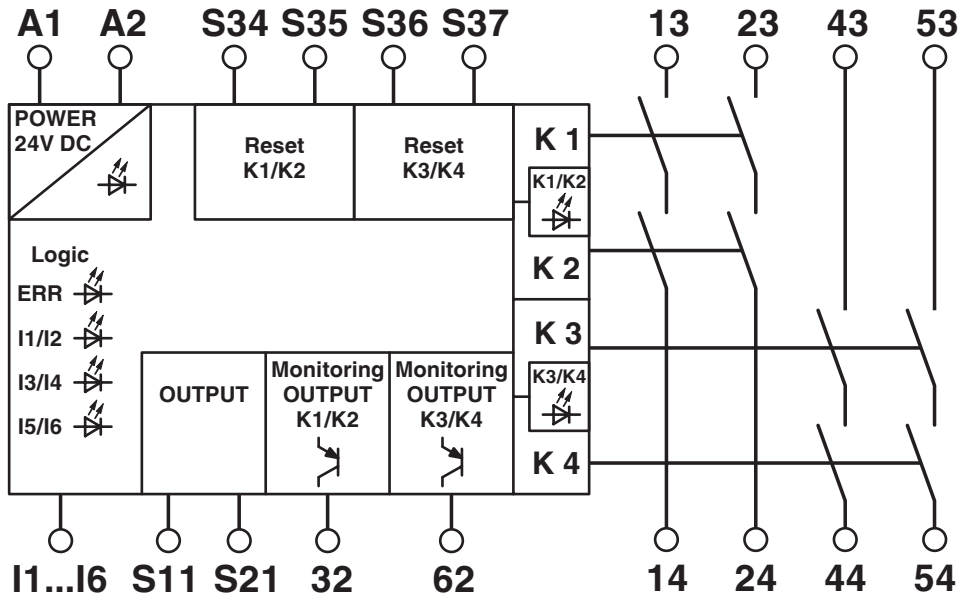
Application drawing



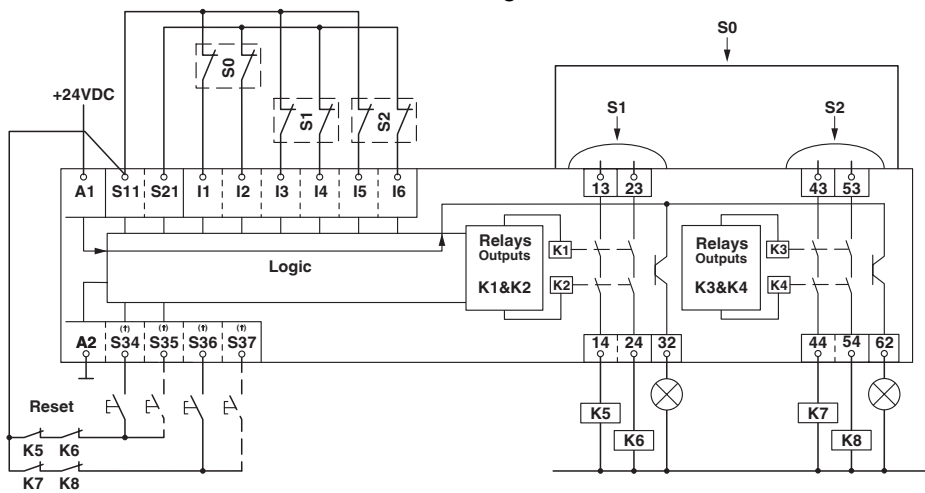
Circuit diagram



Circuit diagram



Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2902725>



EAC

Approval ID: RU C-DE.A*30.B.01082



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324

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Classifications

ECLASS

ECLASS-11.0

27371819

ETIM

ETIM 8.0

EC001449

UNSPSC

UNSPSC 21.0

39122200

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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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