PSR-SCP-24DC/ESD/5X1/1X2/300 - Safety relays

2981428

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e (EN ISO 13849), one- or two-channel operation, automatic or manual activation, 3 N/O contacts, 1 N/C contact, 2 N/O contacts with dropout delay of 0.2 s ... 300 s, plug-in screw terminal block

Your advantages

- Maximum of 3 undelayed and 2 dropout delay contacts
- Manually monitored and automatic activation
- Up to Cat. 3/4 and PL d/e in accordance with EN 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
- 1- and 2-channel control
- Adjustable delay time of 0.2 s ... 300 s (24 increments)
- Protective labels to prevent manipulation of the set time (PSR-ESD-300) or electronic protection against manipulation (PSR-ESD-30)

Commercial data

Item number	2981428
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA131
Catalog page	Page 230 (C-6-2019)
GTIN	4017918975227
Weight per piece (including packing)	424 g
Weight per piece (excluding packing)	424 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	PSRclassic
Application	Emergency stop
	Safety door
	Light grid
Mechanical service life	10x 10^6 cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Data management status

Article revision	17

Electrical properties

Maximum power dissipation for nominal condition	3.72 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	Basic insulation 4 kV: between all current paths and housing Safe isolation, reinforced insulation 6 kV: between 13/14, 23/24, 33/34, and the remaining current paths between 13/14, 23/24, 33/34 among one another

Input data

General

Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
Power consumption at U_S	typ. 3.72 W
Rated control supply current I_S	typ. 155 mA
Inrush current	200 mA (at U_S)
	< 40 mA (with U_s/I_x to S10)
	< 150 mA (with U_s/I_x to S12)
	> -60 mA (with U_s/I_x to S22)
	< 40 mA (with U_s/I_x to S34)
	< 40 mA (with U_s/I_x to S35)
Current consumption	< 40 mA (with U_s/I_x to S10)
	< 50 mA (with U_s/I_x to S12)
	> -40 mA (with U_s/I_x to S22)

	0 mA (with U_s/I_x to S34)
	< 5 mA (with U_s/I_x to S35)
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 %
Filter time	1 ms (at A1 in the event of voltage dips at U_s)
	max. 1.5 ms (at S10, S12; test pulse width)
	7.5 ms (at S10, S12; test pulse rate)
	Test pulse rate = 5 x Test pulse width
Typical response time	< 600 ms (automatic start)
	< 70 ms (manual start)
Typ. starting time with U_s	< 600 ms (when controlled via A1)
Typical release time	< 20 ms (when controlled via S11/S12 and S21/S22)
	< 20 ms (when controlled via A1)
Concurrence	∞
Recovery time	< 1 s
Maximum switching frequency	0.5 Hz
Protective circuit	Surge protection; Suppressor diode
Max. permissible overall conductor resistance	approx. 22 Ω (Input and start circuits at U_S)
Operating voltage display	1 x green LED
Status display	4 x LED (green)

Output data

Contact switching type	5 enabling current paths
	1 signaling current path
Contact material	$AgSnO_2$
Maximum switching voltage	250 V AC/DC (Observe the load curve)
Minimum switching voltage	5 V AC/DC
Limiting continuous current	6 A (N/O contact, pay attention to the derating)
	6 A (N/C contact)
Maximum inrush current	20 A (Δt ≤ 100 ms, undelayed contacts)
	8 A (delayed contacts)
Inrush current, minimum	10 mA
Sq. Total current	55 A^2 (observe derating)
Interrupting rating (ohmic load) max.	144 W (24 V DC, τ = 0 ms)
	288 W (48 V DC, τ = 0 ms)
	110 W (110 V DC, τ = 0 ms, delayed contacts: 77 W)
	88 W (220 V DC, τ = 0 ms)
	1500 VA (250 V AC, τ = 0 ms, delayed contacts: 2000 VA)
Maximum interrupting rating (inductive load)	42 W (24 V DC, τ = 40 ms, delayed contacts: 48 W)
	42 W (48 V DC, τ = 40 ms, delayed contacts: 40 W)
	42 W (110 V DC, τ = 40 ms, delayed contacts: 35 W)
	42 W (220 V DC, τ = 40 ms, delayed contacts: 33 W)
Switching capacity min.	50 mW
Switching capacity (360/h cycles)	4 A (24 V DC)
	4 A (230 V AC)

Switching capacity (3600/h cycles)	2.5 A (24 V (DC13))
	3 A (230 V (AC15))
Output fuse	10 A gL/gG (N/O contact)
	6 A gL/gG (N/C contact)

Connection data

Connection technology

pluggable	yes

Conductor connection

Connection method	Screw connection
Conductor cross section rigid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3

Dimensions

Width	45 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color (Housing)	yellow (RAL 1018)
Housing material	PBT

Characteristics

Safety data

Stop category	0
	1

Safety data: EN ISO 13849

Category	4 (Undelayed contacts)
	3 (delayed contacts)
Performance level (PL)	e (for delayed contacts PL d)

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3 (for delayed contacts SIL 2)

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3 (for delayed contacts SIL 2)

Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3 (for delayed contacts SIL 2)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-20 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 70 °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	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g

Approvals

CE

Certificate	CE-compliant

Standards and regulations

Air clearances and creepage distances between the power circuits

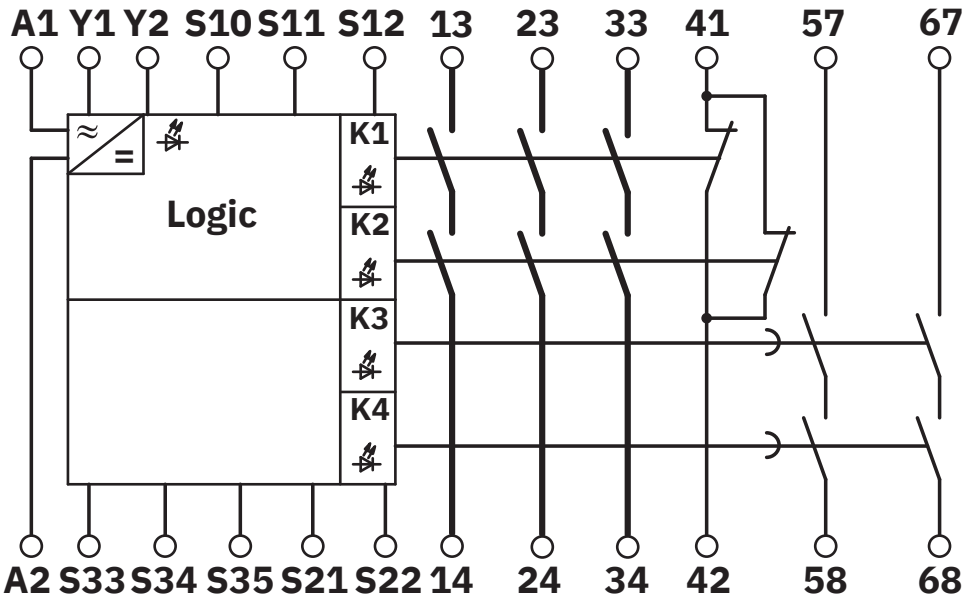
Standards/regulations	IEC 60664-1

Mounting

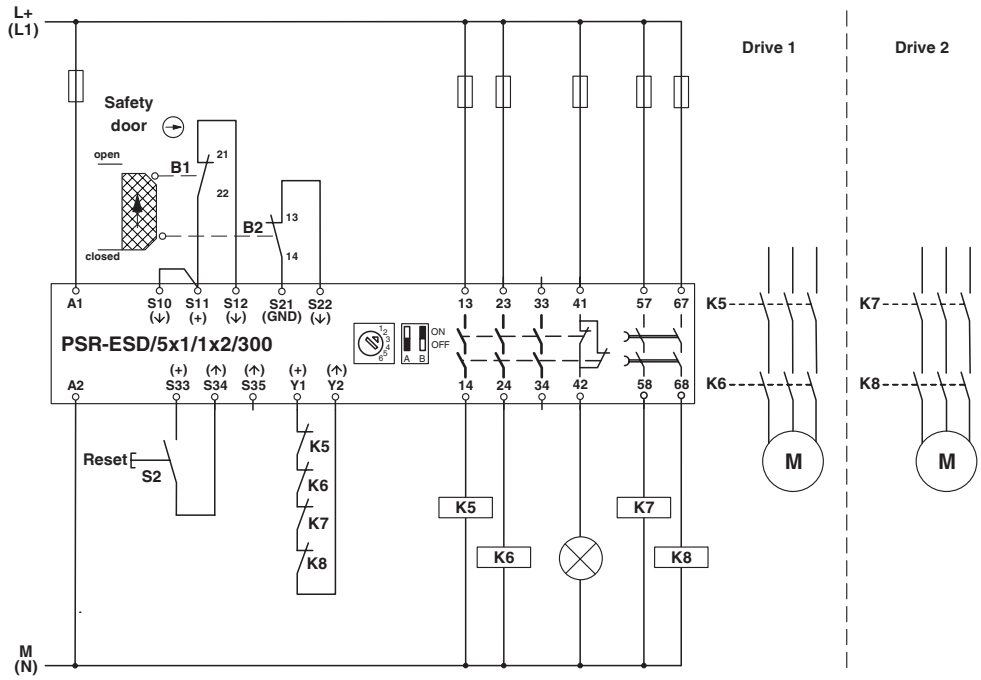
Mounting type	DIN rail mounting
Mounting position	any

Drawings

Circuit diagram



Circuit diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2981428

EAC
Approval ID: TR_TS_D_00573_c

Functional Safety
Approval ID: 01/205/5347.04/23

cULus Listed
Approval ID: E140324

Classifications

ECLASS

ECLASS-11.0	27371819
ECLASS-12.0	27371819
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	ca5a2a67-a45c-4a19-95d5-8784c790051e

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