

PSR-SPP- 24DC/ESD/4X1/30 - Safety relays



2981813

<https://www.phoenixcontact.com/gb/products/2981813>

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, automatic or manual activation, 2 N/O contacts with a fixed dropout delay of 0.1 s ... 30 s, pluggable Push-in 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
- Protective labels to prevent manipulation of the set time (PSR-ESD-300) or electronic protection against manipulation (PSR-ESD-30)
- Fixed delay times of 0.1 s ... 300 s

Technical data

Notes

Note on application

Note on application	Only for industrial use
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Product properties

Product type	Safety relays
Product family	PSRclassic
Application	Emergency stop
	Safety door
	Light grid
Mechanical service life	approx. 10^7 cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Data management status

Article revision	12
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Times

Typical response time	150 ms (Monitored/manual and auto-start)
Typical release time	20 ms (Undelayed contacts)
	100 ms
Delay time range	0.1 s ... 30 s ± 30 % (adjustable)
Recovery time	330 ms (Restart)
	1 s (Electric torque)

Electrical properties

Maximum power dissipation for nominal condition	1.8 W
Nominal operating mode	100% operating factor

Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V
Rated surge voltage/insulation	4 kV / basic insulation

Supply

Rated control circuit supply voltage U_S	24 V DC
Inrush current	typ. 250 mA

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	75 mA DC
Voltage at input/start and feedback circuit	approx. 24 V DC

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Typical response time	150 ms (Monitored/manual and auto-start)
Typical release time	20 ms (Undelayed contacts)
	100 ms (delayed contacts)
Typical release time range	0.1 s ... 30 s
Recovery time	330 ms (Restart)
	1 s (Electric torque)
Protective circuit	Suppressor diode, 33 V DC
Max. permissible overall conductor resistance	500 Ω (Input and reset circuit at U_N)
Operating voltage display	Green LED
Status display	LED K1/K2 and K3(t)/K4(t), green

Output data

Contact switching type	4 enabling current paths
Contact material	AgSnO ₂
Maximum switching voltage	250 V AC/DC
Minimum switching voltage	15 V AC/DC
Limiting continuous current	6 A (N/O contact)
Maximum inrush current	6 A
Inrush current, minimum	25 mA
Sq. Total current	120 A ² (see to derating)
Interrupting rating (ohmic load) max.	144 W (24 V DC, τ = 0 ms)
	288 W (48 V DC, τ = 0 ms)
	90 W (110 V DC, τ = 0 ms)
	88 W (220 V DC, τ = 0 ms)
	1500 VA (250 V AC, τ = 0 ms)
Maximum interrupting rating (inductive load)	42 W (24 V DC, τ = 40 ms)
	33 W (48 V DC, τ = 40 ms)
	25 W (110 V DC, τ = 40 ms)
	23 W (220 V DC, τ = 40 ms)
Switching capacity min.	0.4 W
Switching capacity (360/h cycles)	on request
Switching capacity (3600/h cycles)	3 A (24 V (DC13))
	3 A (230 V (AC15))
Output fuse	10 A gL/gG NEOZED (N/O contact)

Connection data

Connection technology

pluggable	yes
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Conductor connection

Connection method	Push-in connection
Conductor cross section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)

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Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

Dimensions

Width	22.5 mm
Height	112 mm
Depth	114.5 mm

Material specifications

Housing material	Polyamide
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Characteristics

Safety data

Stop category	0
	1

Safety data: EN ISO 13849

Category	4
Performance level (PL)	e

Safety data

Safety Integrity Level (SIL)	3
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Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3
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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
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

Standards and regulations

Air clearances and creepage distances between the power circuits

Standards/regulations	DIN EN 60947-1
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Mounting

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Mounting type	DIN rail mounting
Mounting position	any

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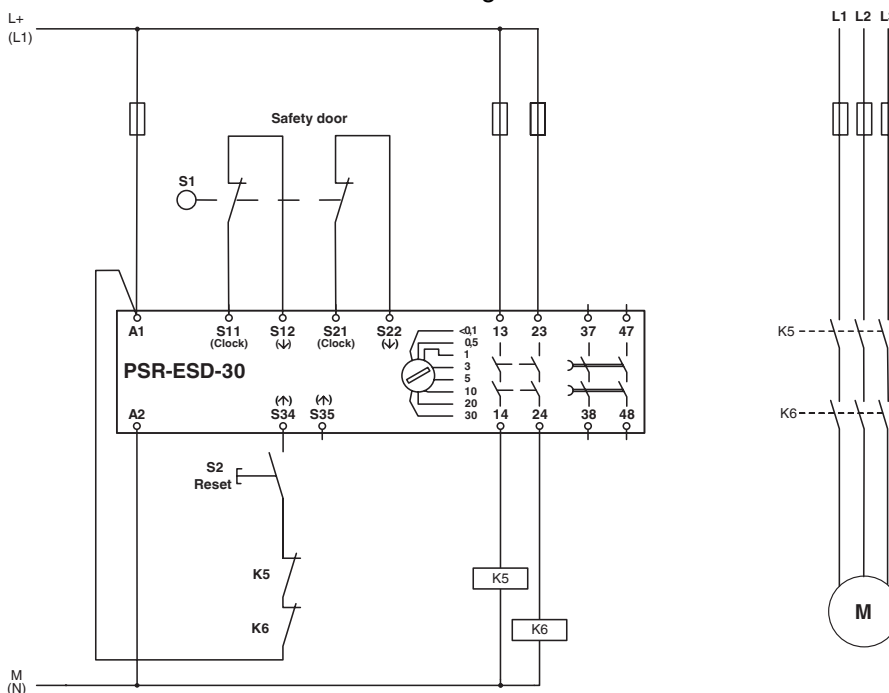


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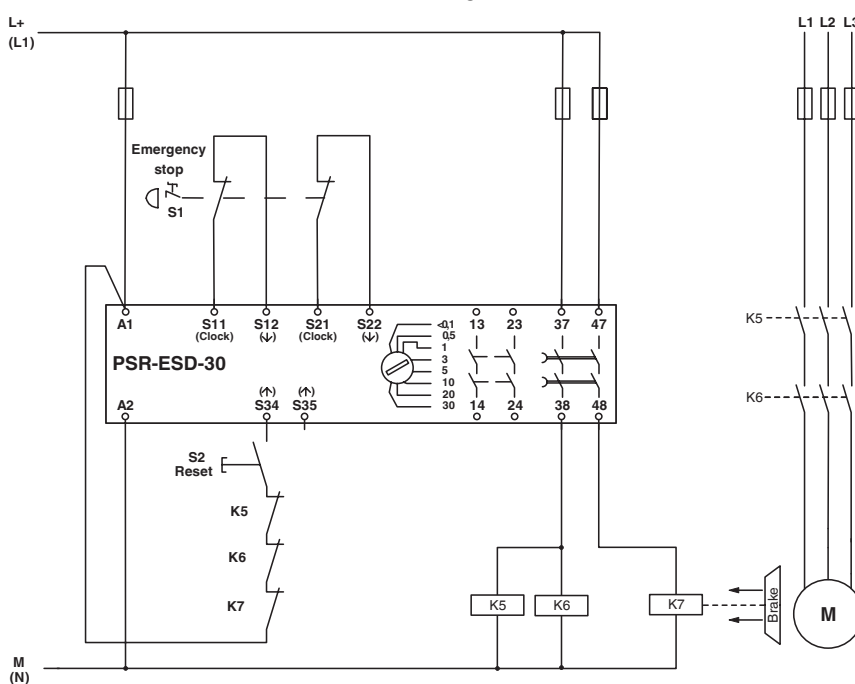
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Drawings

Circuit diagram



Circuit diagram



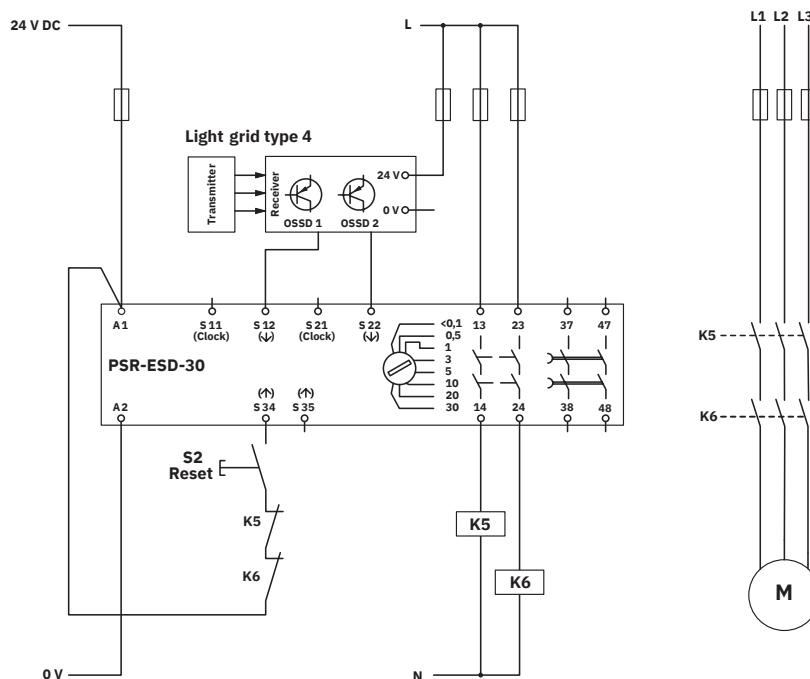
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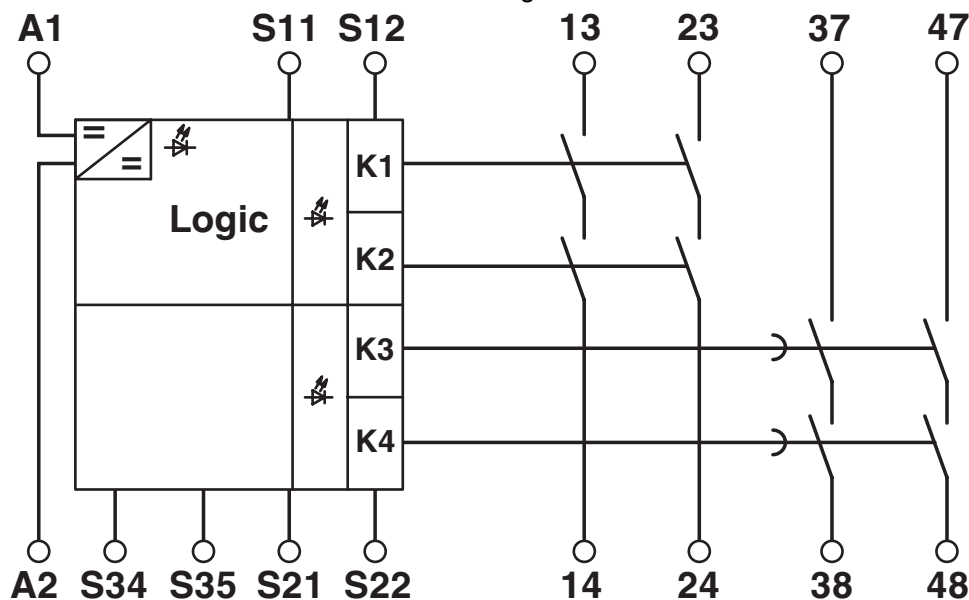
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Circuit diagram



Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/2981813>



EAC

Approval ID: TR_TS_D_00573_c



Functional Safety

Approval ID: 01/205/0656.04/23



cULus Listed

Approval ID: E140324

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Classifications

ECLASS

ECLASS-11.0	27371819
ECLASS-13.0	27371819
ECLASS-12.0	27371819

ETIM

ETIM 9.0	EC001449
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UNSPSC

UNSPSC 21.0	39122200
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	34, 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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	6f773305-d4ee-4c30-9f1d-e1978693fe90

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