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Set comprised of 35 safety relays for emergency stops, safety doors, and light grids up to SIL 2, Cat. 3, PL d, 1- or 2-channel operation, automatic or manual, monitored start, 3 enabling current paths, 1 signaling current path, $U_S = 24 \text{ V DC}$, plug-in screw terminal block

The figure shows a product version of the article

Your advantages

- Up to Cat. 3/PL d in acc. with EN ISO 13849-1, SIL 2 in acc. with EN IEC 62061, SIL 2 in acc. with IEC 61508
- 3 enabling current paths, 1 signaling current path
- 1- and 2-channel control
- Manually monitored and automatic activation



Commercial data

Item number	1301404
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DN1112
GTIN	4063151547127
Weight per piece (including packing)	5,804 g
Weight per piece (excluding packing)	5.453 g
Customs tariff number	85371098
Country of origin	DE

PSR-ME20-3NO-1NC-24DC-SC-SET35 - Safety relays



1301404

<https://www.phoenixcontact.com/us/products/1301404>

Set consists of

PSR-ME20-3NO-1NC-24DC-SC - Safety relays

1301402

<https://www.phoenixcontact.com/us/products/1301402>



Safety relay for emergency stops, safety doors, and light grids up to SIL 2, Cat. 3, PL d, 1- or 2-channel operation, automatic or manual, monitored start, 3 enabling current paths, 1 signaling current path, $U_S = 24 \text{ V DC}$, plug-in screw terminal block

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
Control	1 and 2 channel
Mechanical service life	approx. 10^7 cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Insulation characteristics

Overvoltage category	III
Degree of pollution	2

Times

Typical response time	200 ms (automatic start)
	200 ms (manual, monitored start)
Typ. starting time with U_S	200 ms (when controlled via A1)
Typical release time	25 ms (on demand via the sensor circuit)
	60 ms (on demand via A1)
Restart time	< 1 s (Boot time)
Recovery time	< 500 ms (following demand of the safety function)

Electrical properties

Maximum power dissipation for nominal condition	16.6 W ($U_S = 26.4$ V, $I_L^2 = 72$ A ² , $P_{Total\ max} = 2.2$ W + 14.4 W)
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V
Rated surge voltage/insulation	Basic insulation 4 kV between all output current paths
	Basic insulation 4 kV between all output current paths/logic paths and housing
	Safe isolation, reinforced insulation 6 kV between 250 V load current paths and 24 V logic paths

Supply

Designation	A1/A2
Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
Rated control supply current I_S	typ. 70 mA (at U_S)
Power consumption at U_S	typ. 1.68 W

Inrush current	< 5.2 A (typ. with U_S , $\Delta t = 2$ ms)
Filter time	5 ms (in the event of voltage dips at U_S)
Protective circuit	Serial protection against polarity reversal
	Suppressor diode

Input data

General

Rated control supply current I_S	typ. 70 mA (at U_S)
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Digital: Sensor circuit (S10, S12, S22)

Description of the input	safety-related sensor inputs
Number of inputs	3
Input voltage range "0" signal	0 V DC ... 5 V DC (S10, S12)
Input voltage range "1" signal	20.4 V ... 26.4 V
Input current range "0" signal	0 mA ... 2 mA
Inrush current	< 100 mA (typ. with U_S at S10/S12)
	> -100 mA (typ. with U_S at S22)
Filter time	1 ms (Test pulse width of low test pulses)
	1 s (Test pulse rate for low test pulse)
	No brightness test pulses / high test pulses permitted.
Concurrence	∞
Max. permissible overall conductor resistance	50 Ω
Protective circuit	Suppressor diode
Current consumption	38 mA (typ. with U_S at S10/S12)
	-38 mA (typ. with U_S at S22)

Digital: Start circuit (S34, S35)

Description of the input	non-safety-related
Number of inputs	2
Input voltage range "1" signal	20.4 V ... 26.4 V
Inrush current	< 7 mA (typ. with U_S at S34)
	< 8 mA (typ. with U_S at S35)
Filter time	No test pulses permitted
Max. permissible overall conductor resistance	50 Ω
Protective circuit	Suppressor diode
Current consumption	2 mA (typ. with U_S at S34)
	3 mA (typ. with U_S at S35)

Output data

Relay: Enabling current paths (13/14, 23/24, 33/34)

Output description	2 N/O contacts each in series, safety-related, floating
Number of outputs	3
Contact switching type	3 enabling current paths
Contact material	AgSnO ₂

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Switching voltage	min. 10 V AC/DC
	max. 250 V AC/DC
Switching power	min. 100 mW
Inrush current	min. 10 mA
	max. 6 A
Switching capacity	5 A (AC15)
	6 A (DC13)
Limiting continuous current	6 A (Observe derating and load limit curve)
Sq. Total current	72 A ² (observe derating)
Switching frequency	max. 0.5 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	10 A gL/gG
	4 A gL/gG (for low-demand applications)

Relay: Signaling current path (41/42)

Output description	2 N/C contacts parallel, non-safety-related, floating
Number of outputs	1
Contact switching type	2 NC parallel
Contact material	AgSnO ₂
Switching voltage	min. 10 V AC/DC
	max. 250 V AC/DC
Switching power	min. 100 mW
Inrush current	min. 10 mA
	max. 6 A
Switching capacity	3 A (AC15)
	2 A (DC13)
Limiting continuous current	6 A
Sq. Total current	36 A ²
Switching frequency	max. 0.5 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	6 A gL/gG

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
Tightening torque	0.5 Nm ... 0.6 Nm

Signaling

Status display	2 x LED (green)
Operating voltage display	1 x LED (green)

Dimensions

Width	22.5 mm
Height	112.2 mm
Depth	114.5 mm

Material specifications

Color (Housing)	traffic gray B (RAL 7043)
Housing material	PA

Characteristics

Safety data

Stop category (EN 60204-1)	0
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Safety data: EN ISO 13849

Performance level (PL)	d
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Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	2
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Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	2
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Safety data: EN IEC 62061

Safety Integrity Level (SIL)	2
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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 ... 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

Identification	CE-compliant
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1301404

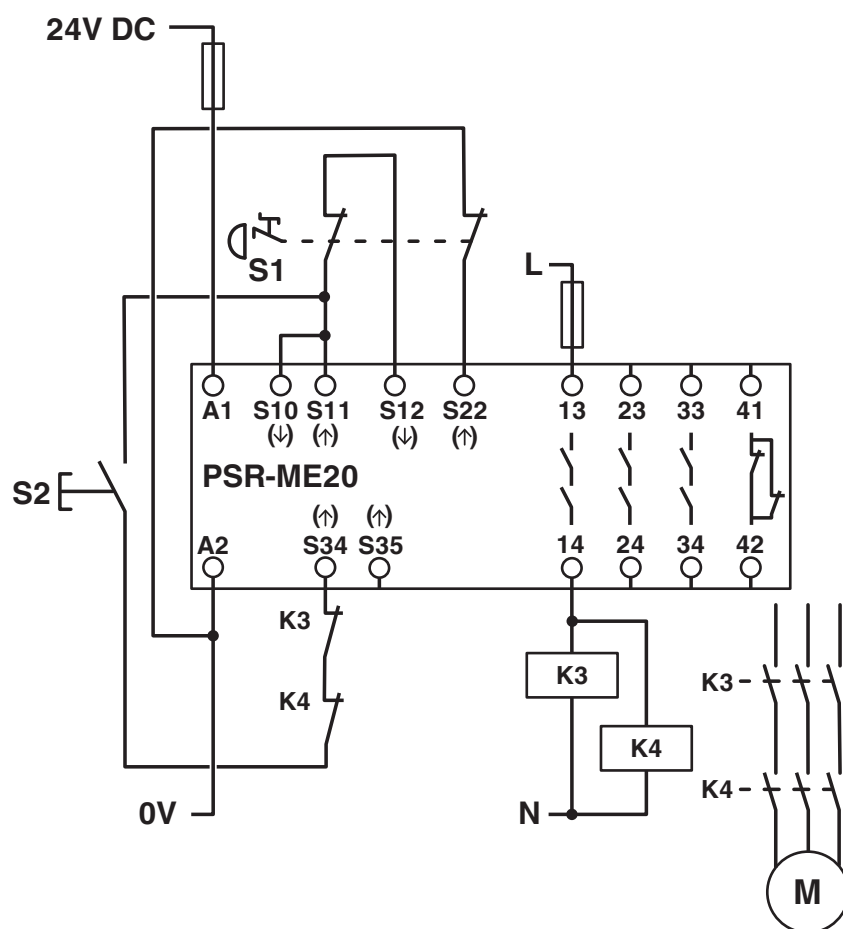
<https://www.phoenixcontact.com/us/products/1301404>

Mounting

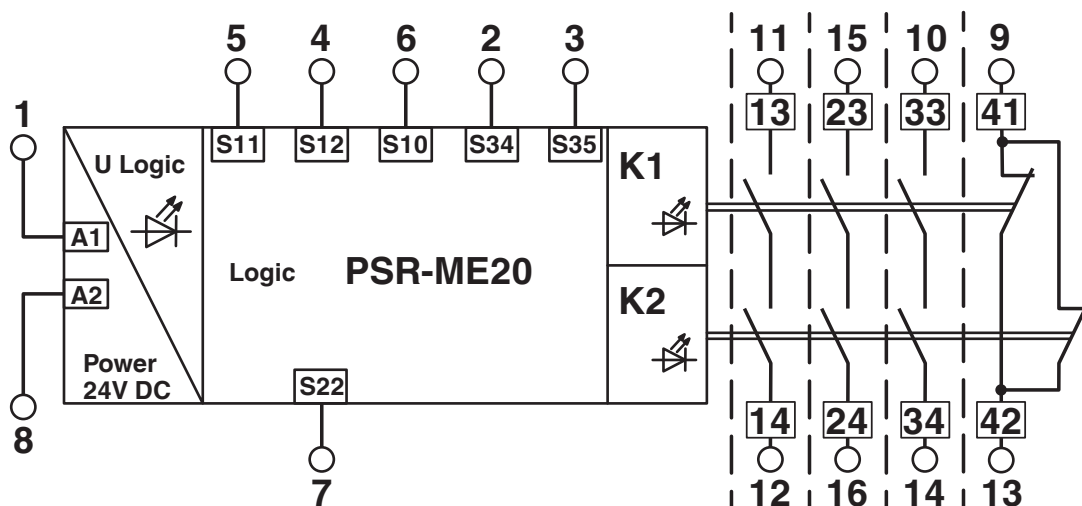
Mounting type	DIN rail mounting
Assembly note	See derating curve
Mounting position	vertical or horizontal

Drawings

Circuit diagram



Block diagram



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Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1301404>



Functional Safety

Approval ID: 44 780 15124324



Functional Safety

Approval ID: 44 205 15124324



cULus Listed

Approval ID: E140324

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Classifications

ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819

ETIM

ETIM 10.0	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	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	66adeb0f-24ea-46e2-9921-0a65bb3c3c18