

PSR-SCP- 24UC/ESA2/4X1/1X2/B - Safety relays



2963802

<https://www.phoenixcontact.com/pc/products/2963802>

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Safety relay for emergency stop and safety door up to SIL 1, Cat. 1, PL c, depending on the application up to SIL 3, Cat. 4, PL e, single-channel operation, 4 enabling current paths, $U_S = 24 \text{ V DC}$, plug-in screw terminal blocks

Your advantages

- Up to Cat. 1/PL c in accordance with ISO 13849-1, SIL 1 in accordance with EN IEC 62061, SIL 1 in accordance with IEC 61508
- Depending on the application, 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
- Basic insulation
- 1-channel control

Commercial data

Item number	2963802
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DNA111
Catalog page	Page 229 (C-6-2019)
GTIN	4017918892661
Weight per piece (including packing)	212.4 g
Weight per piece (excluding packing)	210.5 g
Customs tariff number	85371098
Country of origin	DE

Technical data

Product properties

Product type	Safety relays
Product family	PSRclassic
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

Times

Typical response time	< 100 ms (For U _s autostart)
	< 100 ms (with U _s manual start)
Typ. starting time with U _s	< 100 ms (with U _s / when controlled via A1)
Typical release time	< 10 ms (At U _s on demand via sensor circuit)
	< 100 ms (At U _s /on demand via A1)
Recovery time	< 1 s (Boot time)

Electrical properties

Maximum power dissipation for nominal condition	16 W (U _S = 26.4 V, I _L ² = 72 A ² , P _{Total max} = 1.6 W + 14.4 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 A1/A2 and 13/14, 23/24, 33/34, 43/44 between S11/S12/S33/S34 and 13/14, 23/24, 33/34, 43/44 between 51/52 and 13/14, 23/24, 33/34, 43/44

Supply

Rated control circuit supply voltage U _S	24 V DC -15 % / +10 %
Rated control supply current I _S	typ. 55 mA (at U _S)
Power consumption at U _S	typ. 1.32 W
Inrush current	< 3.5 A (typically with U _S , Δt = 2 ms)
Filter time	2 ms (in the event of voltage dips at U _S)
Protective circuit	Serial protection against polarity reversal; Suppressor diode

Input data

Digital: Logic (S12)

Description of the input	safety-related
Number of inputs	1
Input voltage range "0" signal	0 V DC ... 5 V DC
Input voltage range "1" signal	20.4 V ... 26.4 V

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Input current range "0" signal	0 mA ... 2 mA
Inrush current	80 mA (typically with U_S , $\Delta t = 150$ ms)
Filter time	No brightness test pulses / high test pulses permitted.
	1 ms (Test pulse width of low test pulses)
	1 s (Test pulse rate for low test pulse)
Max. permissible overall conductor resistance	50 Ω
Protective circuit	Suppressor diode
Current consumption	typ. 50 mA (with U_S at S11)
	typ. 52 mA (with U_S supplied externally)

Digital: Start circuit (S34)

Description of the input	non-safety-related
Number of inputs	1
Input voltage range "1" signal	20.4 V ... 26.4 V
Inrush current	< 6 mA (typically with U_S , $\Delta t = 65$ ms)
Filter time	No test pulses permitted
Max. permissible overall conductor resistance	50 Ω
Protective circuit	Suppressor diode
Current consumption	0 mA (typically with U_S)

Output data

Relay: Enabling current paths (13/14, 23/24, 33/34, 43/44)

Output description	2 N/O contacts in series, safety-related, floating
Number of outputs	4
Contact switching type	4 enabling current paths
Contact material	AgSnO ₂
Switching voltage	min. 10 V
	max. 250 V AC
Switching capacity	min. 100 mW
Inrush current	min. 10 mA
	max. 20 A ($\Delta t = 100$ ms)
Switching capacity in accordance with IEC 60947-5-1	3 A (AC15)
	5 A (DC13)
Limiting continuous current	6 A
Sq. Total current	72 A ² (observe derating)
Switching frequency	max. 0.5 Hz
Interrupting rating (ohmic load) max.	Observe derating and load limit curve
Maximum interrupting rating (inductive load)	Observe derating and load limit curve
Output fuse	10 A gL/gG (High demand)
	4 A gL/gG (Low demand)

Relay: Signaling current path (51/52)

Output description	2 N/C contacts parallel, non-safety-related, floating
Number of outputs	1

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Contact switching type	1 signaling current path
Contact material	AgSnO ₂
Switching voltage	min. 5 V
	max. 250 V AC
Switching capacity	min. 50 mW
Inrush current	min. 10 mA
	max. 6 A
Switching capacity in accordance with IEC 60947-5-1	1.5 A (AC15)
	5 A (DC13)
Limiting continuous current	6 A (Signaling current path)
Sq. Total current	36 A ²
Switching frequency	max. 0.5 Hz
Interrupting rating (ohmic load) max.	Observe derating and load limit curve
Maximum interrupting rating (inductive load)	Observe derating and load limit curve
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 green LEDs
Operating voltage display	1 x green LED

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

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

Characteristics

Safety data

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Stop category	0
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Safety data: EN ISO 13849

Category	4
Performance level (PL)	e (3 A DC13; 3 A AC15; 8760 switching cycles/year)
	e (5 A DC13; 3 A AC15; 4380 switching cycles/year)

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3
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Safety data: IEC 61508 - Low demand

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 ... 65 °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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Standards and regulations

Air clearances and creepage distances between the power circuits

Standards/regulations	DIN EN 60947-1
	DIN EN 60664-1

Mounting

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

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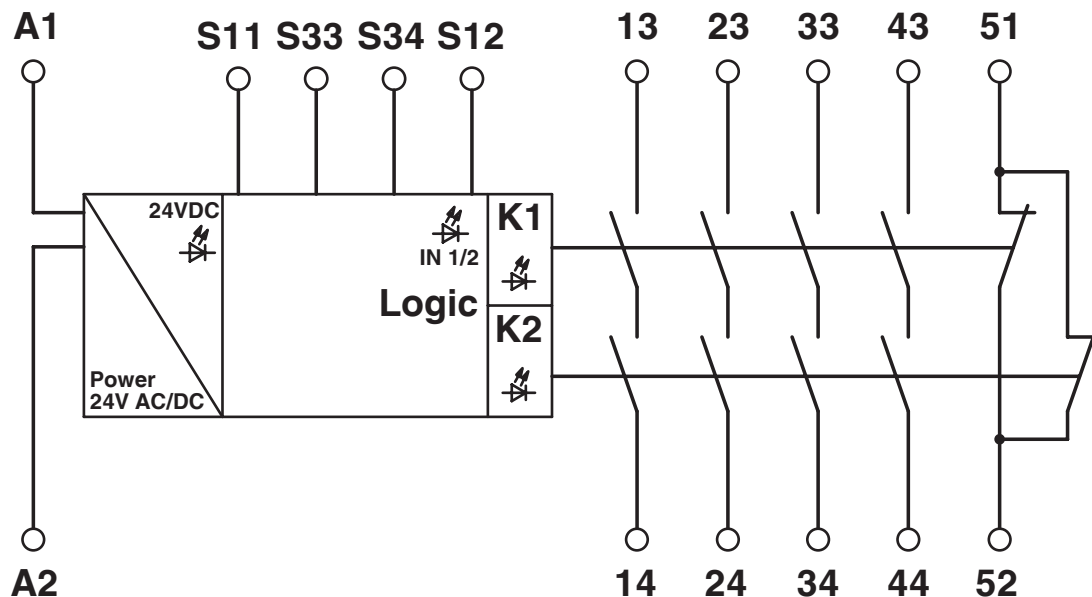


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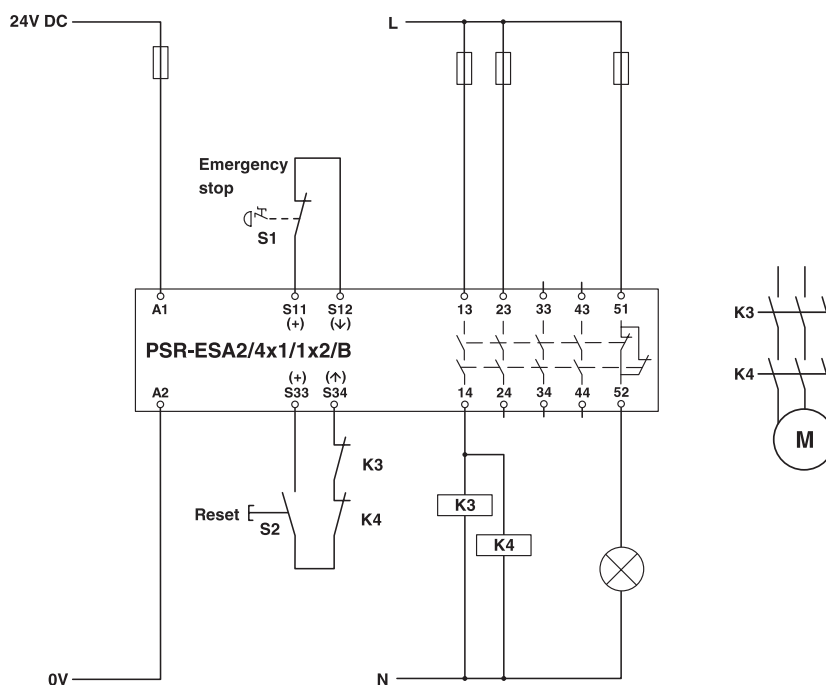
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Drawings

Circuit diagram



Circuit diagram



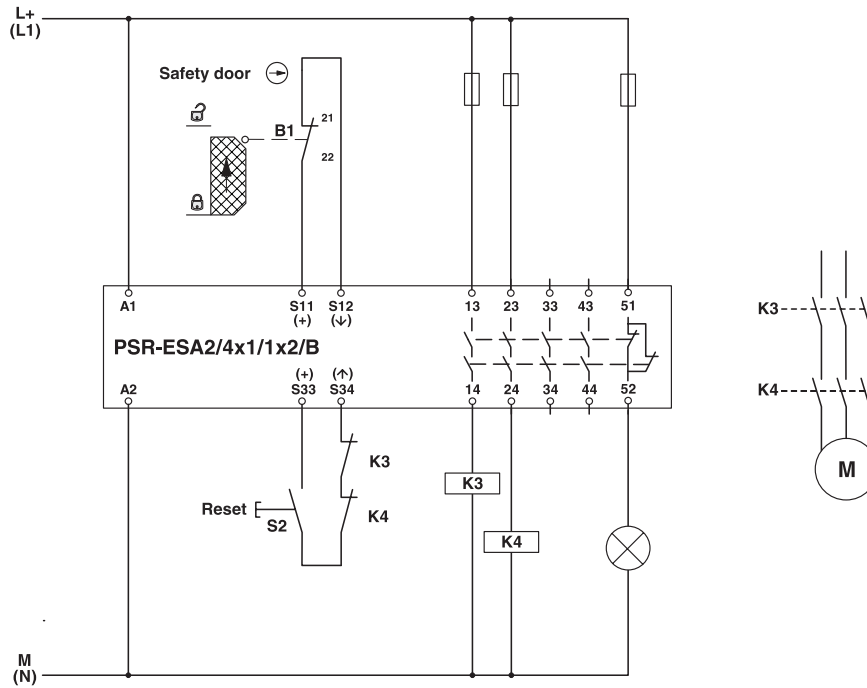
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Circuit diagram



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Approvals

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EAC

Approval ID: TR_TS_D_00573_c



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324



Functional Safety

Approval ID: 01/205/0653.03/21



EAC

Approval ID: TR_TS_D_00573_c



cUL Listed

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UL Listed

Approval ID: FILE E 140324



Functional Safety

Approval ID: 01/205/0653.03/21

Functional Safety

Approval ID: 968/EZ405.03/21

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Classifications

ECLASS

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

ETIM

ETIM 8.0	EC001449
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UNSPSC

UNSPSC 21.0	39122200
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Environmental product compliance

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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Accessories

CP-MSTB - Coding profile

1734634

<https://www.phoenixcontact.com/pc/products/1734634>

Coding profile, is inserted into the slot on the plug or inverted header, red insulating material



CR-MSTB - Coding section

1734401

<https://www.phoenixcontact.com/pc/products/1734401>

Coding section, inserted into the recess in the header or the inverted plug, red insulating material



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CRIMPFOX 6 - Crimping pliers

1212034

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Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

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