

# PSR-SCP- 24UC/THC4/2X1/1X2 - Safety relays



2963721

<https://www.phoenixcontact.com/in/products/2963721>

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Safety relay for two-hand control devices in accordance with ISO 13851 type IIIC to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, synchronous activation monitoring < 0.5 s, 2 N/O contacts, 1 N/C contact, safe isolation, width: 22.5 mm, pluggable screw terminal block

## Your advantages

- For two-hand controls in accordance with ISO 13851 type IIIC
- Up to Cat. 4/PL e in accordance with ISO 13849-1, SIL 3 in accordance with IEC 62061, SIL 3 in accordance with IEC 61508
- 2 channel control
- Synchronous activation monitoring < 0.5 s
- Automatic activation
- Two enabling and one signaling current path

## Commercial Data

Item number	2963721
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	DNA
Product Key	DNA141
Catalog Page	Page 231 (C-6-2019)
GTIN	4017918818692
Weight per Piece (including packing)	219.7 g
Weight per Piece (excluding packing)	193.3 g
Customs tariff number	85371098
Country of origin	DE

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## Technical Data

### Product properties

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

### Electrical properties

Maximum power dissipation for nominal condition	1.44 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	6 kV / Safe isolation, increased insulation

### Input data

#### General

Nominal input voltage $U_N$	24 V AC/DC
Input voltage range	20.4 V AC/DC ... 26.4 V AC/DC
Input voltage range in reference to $U_N$	0.85 ... 1.1
Typical input current at $U_N$	125 mA AC 60 mA DC
Voltage at input/start and feedback circuit	approx. 24 V DC
Typical response time	50 ms
Typical release time	20 ms
Concurrence	< 0.5 s
Recovery time	1 s
Protective circuit	Fuse; PTC resistor Surge protection; Suppressor diode
Operating voltage display	Green LED
Status display	Green LED

### Output data

Contact type	2 enabling current paths 1 signaling current path
Contact material	AgSnO <sub>2</sub> , + 0.2 μm Au
Maximum switching voltage	250 V AC/DC
Minimum switching voltage	15 V AC/DC
Limiting continuous current	6 A (N/O contact) 5 A (N/C contact)

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Maximum inrush current	6 A
Inrush current, minimum	25 mA
Interrupting rating (ohmic load) max.	144 W (24 V DC, $\tau = 0$ ms)
	288 W (48 V DC, $\tau = 0$ ms)
	110 W (110 V DC, $\tau = 0$ ms)
	88 W (220 V DC, $\tau = 0$ ms)
	1500 VA (250 V AC, $\tau = 0$ ms)
Maximum interrupting rating (inductive load)	42 W (24 V DC, $\tau = 40$ ms)
	42 W (48 V DC, $\tau = 40$ ms)
	42 W (110 V DC, $\tau = 40$ ms)
	42 W (220 V DC, $\tau = 40$ ms)
Switching capacity min.	0.4 W
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 NEOZED (N/O contact)
	6 A gL/gG NEOZED (N/C contact)

## Relay

Output description	safety-related N/O contacts
Number of outputs	2

## Connection data

### Connection technology

pluggable	yes
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### Conductor connection

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

## Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

## Material specifications

Housing material	Polyamide
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## Characteristics

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## Safety data

Stop category	0
Type class	IIIC

## Safety data: EN ISO 13849

Category	4
Performance level (PL)	e

## Safety data: IEC 61508 - High demand

Designation	The details apply assuming the following calculation basis:  dop: 365.25 days (assumption) hop: 24 hours (assumption) tcycle: 3600 seconds (assumption) B10d for AC-15 6A: 300 000 (manufacturer's value)  Data only applies if the safety function is demanded at least once a year. Only applies if signal contact is left in position!
Safety Integrity Level (SIL)	3
SFF <sub>Single-channel</sub>	99.9 %
SFF <sub>Two-channel</sub>	98.61 %
Mean time to a dangerous failure (MTTF <sub>D</sub> )	94529 Years
Probability of a hazardous failure per hour (PFH <sub>D</sub> )	$1.21 \times 10^{-9}$
Diagnostic coverage (DC)	96.82 %
Proof test interval	240 Months

## Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3
SFF <sub>Single-channel</sub>	99.9 %
SFF <sub>Two-channel</sub>	97.94 %
Mean time to a dangerous failure (MTTF <sub>D</sub> )	72601 Years
Probability of a hazardous failure on demand (PFD <sub>AVG</sub> )	$1.35 \times 10^{-4}$
Diagnostic coverage (DC)	86.4 %
Proof test interval	240 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 ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Maximum altitude	max. 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

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## 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
Mounting position	any
Connection method	Screw connection

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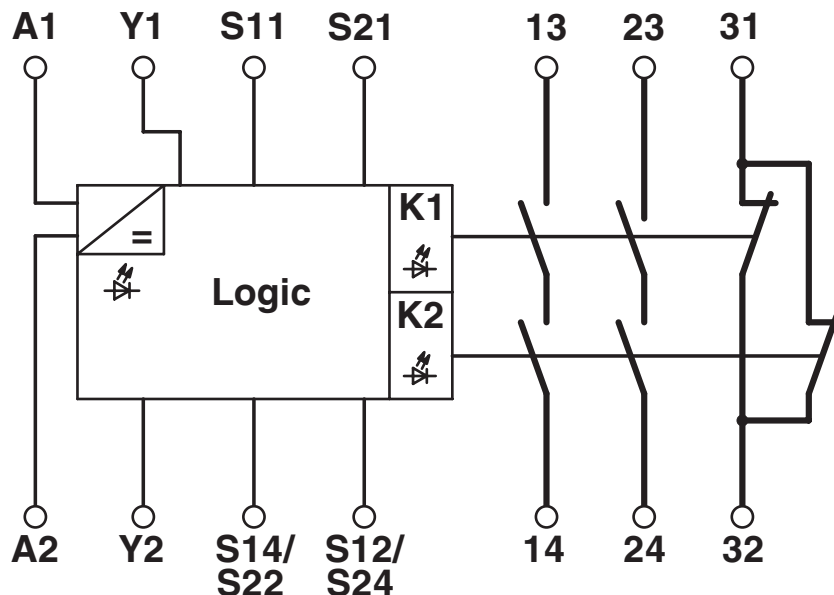


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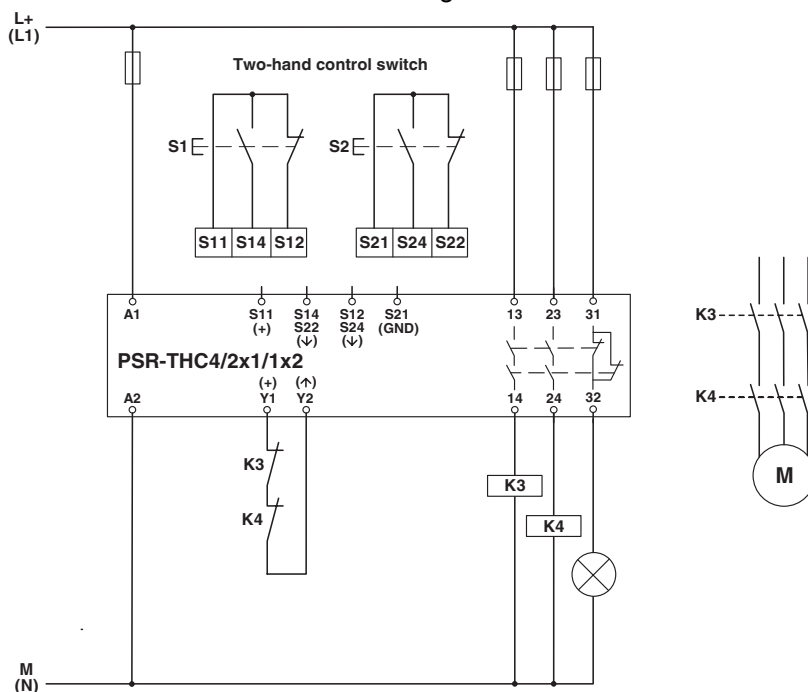
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## Drawings

Circuit diagram



Circuit diagram



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## Approvals



**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: 01/205/0542.03/21



**Functional Safety**

Approval ID: 968/EZ 346.03/21

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## Classifications

### ECLASS

ECLASS-11.0	27371821
ECLASS-13.0	27371821
ECLASS-12.0	27371821

### ETIM

ETIM 8.0	EC001452
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### UNSPSC

UNSPSC 21.0	39121100
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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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