

## Safety relays - PSR-MS45-1NO-1DO-24DC-SC - 2904955

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




Safety relay for emergency stop and safety doors up to SILCL 3, Cat. 4, PL e, 1 or 2-channel operation, manual, monitored start, 1 enabling current path,  $U_S = 24$  V DC, fixed screw terminal block

### Your advantages

- Up to Cat.4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061
- Low housing width of just 6.8 mm
- Two-channel control
- 1 enabling current path, 1 digital signal output
- Manual and monitored activation



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 904056
GTIN	4046356904056
Weight per Piece (excluding packing)	69.000 g
Custom tariff number	85371098
Country of origin	Germany

### Technical data

#### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
-------------------------	---

#### Dimensions

Width	6.8 mm
Height	93.1 mm
Depth	102.5 mm

#### Ambient conditions

## Safety relays - PSR-MS45-1NO-1DO-24DC-SC - 2904955

### Technical data

#### Ambient conditions

Ambient temperature (operation)	-40 °C ... 60 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Maximum altitude	≤ 2000 m (Above sea level)

#### Power supply

Rated control circuit supply voltage $U_s$	24 V DC -15 % / +10 %
	20.4 V DC ... 26.4 V DC
Rated control supply current $I_s$	typ. 42 mA
Power consumption at $U_s$	typ. 1 W
Inrush current	4.5 A ( $\Delta t < 120 \mu s$ at $U_s$ )
Filter time	1 ms (at A1 in the event of voltage dips at $U_s$ )
Protective circuit	Surge protection Suppressor diode
	Protection against polarity reversal for rated control circuit supply voltage

#### Digital inputs

Input voltage range "0" signal	0 V DC ... 5 V DC (for safe Off; at S12)
Input current range "0" signal	0 mA ... 2 mA (for safe Off; at S12)
Inrush current	< 20 mA (with $U_s/I_x$ to S12)
	< 10 mA (with $U_s/I_x$ at the start circuit)
	< 5 mA (with $U_s/I_x$ to S22/ $U_s$ )
	> -15 mA (with $U_s/I_x$ to S22/0V)
Current consumption	< 5 mA (with $U_s/I_x$ to S12)
	< 5 mA (with $U_s/I_x$ to S22/ $U_s$ )
	< 10 mA (with $U_s/I_x$ at the start circuit)
	> -5 mA (with $U_s/I_x$ to S22/0V)
Filter time	max. 1.5 ms (at S12, S22; test pulse width)
	min. 7.5 ms (at S12, S22; test pulse rate)
	Test pulse rate = 5 x Test pulse width
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 %
Max. permissible overall conductor resistance	150 $\Omega$

#### Relay outputs: enabling current path

Output name	Enabling current path
Output description	safety-related N/O contacts
Number of outputs	1 (undelayed)
Contact type	1 enabling current path
Contact material	AgSnO <sub>2</sub>
Switching voltage	min. 12 V AC/DC
	max. 250 V AC/DC (Observe the load curve)
Limiting continuous current	6 A (observe derating)

## Safety relays - PSR-MS45-1NO-1DO-24DC-SC - 2904955

### Technical data

#### Relay outputs: enabling current path

Inrush current	min. 3 mA
	max. 6 A
Sq. Total current	36 A <sup>2</sup> (observe derating)
Switching capacity	min. 60 mW
Switching frequency	max. 0.5 Hz
Mechanical service life	10x 10 <sup>6</sup> cycles
Output fuse	6 A gL/gG (N/O contact)
	4 A gL/gG (for low-demand applications)

#### Alarm outputs

Output description	non-safety-related
Number of outputs	1 (digital, PNP)
Voltage	22 V DC (U <sub>s</sub> - 2 V)
Current	max. 100 mA
Maximum inrush current	500 mA (Δt = 1 ms at U <sub>s</sub> )
Short-circuit protection	no

#### Times

Typical response time at US	< 175 ms
Typical release time at US	< 20 ms (when controlled via A1 or S12 and S22.)
Recovery time	< 500 ms

#### General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with IEC/EN 61810-3 (EN 50205)
Nominal operating mode	100% operating factor
Net weight	69 g
Mounting position	vertical or horizontal
Mounting type	DIN rail mounting
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Housing material	PBT
Housing color	yellow
Operating voltage display	1 x green LED
Status display	2 x green LEDs

#### Connection data

Connection method	Screw connection
pluggable	no
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>

<https://www.phoenixcontact.com/gb/products/2904955>



## Safety relays - PSR-MS45-1NO-1DO-24DC-SC - 2904955

### Technical data

#### Connection data

Conductor cross section AWG min.	26
Conductor cross section AWG max.	12
Stripping length	12 mm
Screw thread	M3

#### Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3
Designation	EN ISO 13849
Performance level (PL)	e (4 A DC13; 5 A AC15; 8760 switching cycles/year)
Category	4
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	3

#### Standards and Regulations

Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178
Rated insulation voltage	250 V AC
	250 V AC
Rated surge voltage/insulation	Safe isolation, reinforced insulation 6 kV between input circuit and enabling current path Basic insulation 4 kV between all current paths and housing
Degree of pollution	2
Overvoltage category	III
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant

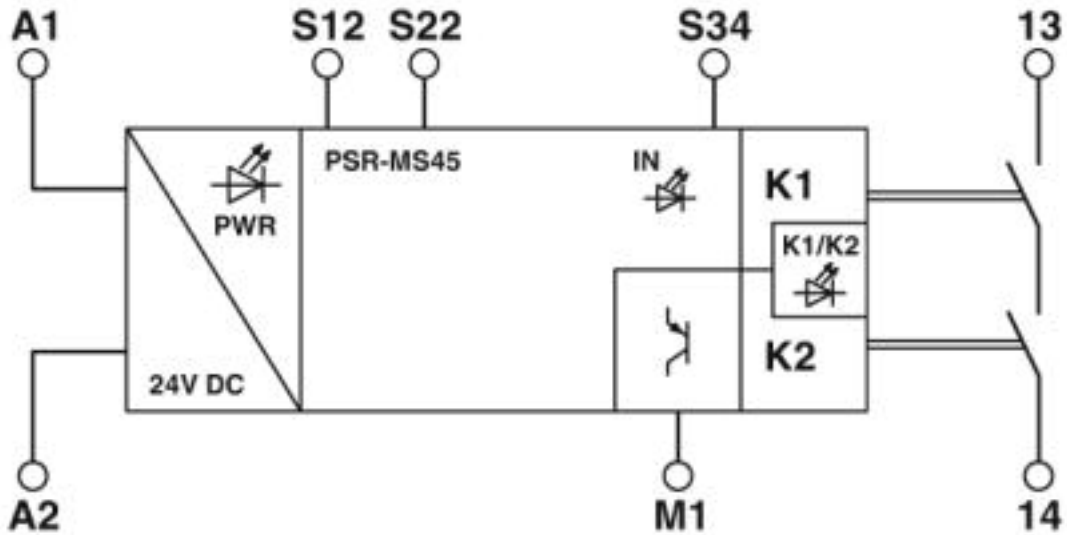
#### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

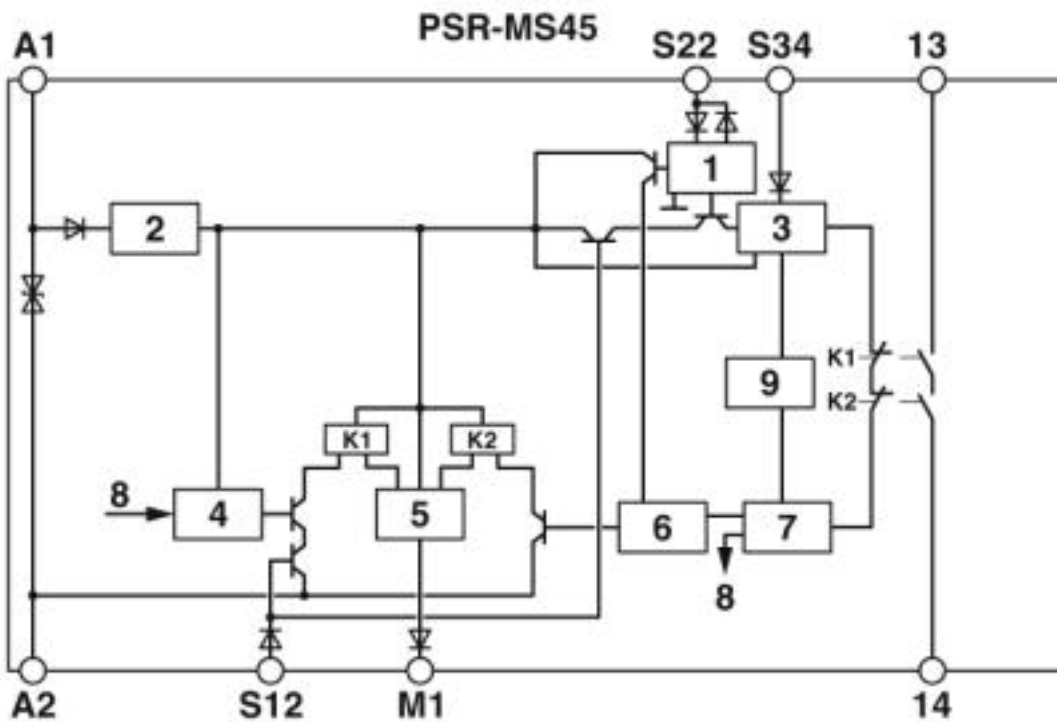
### Drawings

# Safety relays - PSR-MS45-1NO-1DO-24DC-SC - 2904955

Block diagram



Block diagram



- Key:
- 1 = Input circuit
  - 2 = Voltage limitation
  - 3 = Start circuit
  - 4 = Control circuit channel 1
  - 5 = Control circuit signal output
  - 6 = Control circuit channel 2
  - 7 = Start channel 1 and 2
  - 8 = Channel 1





# Safety relays - PSR-MS45-1NO-1DO-24DC-SC - 2904955

## Classifications

### ETIM

ETIM 6.0	EC001449
ETIM 7.0	EC001449

### UNSPSC

UNSPSC 13.2	39121501
-------------	----------

## Approvals

### Approvals

#### Approvals

UL Listed / cUL Listed / Functional Safety / UL Listed / cUL Listed / Functional Safety / EAC / EAC

#### Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
-----------	---	---	---------------

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
------------	---	---	---------------

Functional Safety			44-205-13755202
-------------------	---	--	-----------------

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
-----------	---	---	---------------

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
------------	---	---	---------------

Functional Safety			44-205-13755202
-------------------	---	--	-----------------

<https://www.phoenixcontact.com/gb/products/2904955>



## Safety relays - PSR-MS45-1NO-1DO-24DC-SC - 2904955

### Approvals

EAC	The EAC certification mark, consisting of the letters "EAC" in a stylized, bold font.	RU C- DE.A*30.B.01082
-----	---	--------------------------

EAC	The EAC certification mark, consisting of the letters "EAC" in a stylized, bold font.	RU C- DE.A*30.B.01082
-----	---	--------------------------

Phoenix Contact 2019 © - all rights reserved  
<http://www.phoenixcontact.com>



# SCATTERGOOD & JOHNSON LTD

ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS

Est.1899

At Scattergood & Johnson Ltd, we pride ourselves on being a technical distributor to specialist industries.

Working with a range of quality product suppliers across a number of specialist markets, we are not your average 'box shifter' - we are your technical and supply chain partner.

We fully support every product we sell - for free! Our internal team and external sales engineers can answer any product or application question, no matter the complexity.

Backing up this technical ability is a range of 50,000+ products available from stock for nationwide next day delivery (same day if required!), or you can collect what you need from any of our trade counters around the UK.

Select your specialist interest below to learn more about how we can help.



Online, In Branch and On the Road - Scattergood & Johnson Ltd, there when you need us.

# [www.scatts.co.uk](http://www.scatts.co.uk)