

PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

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 documentation. Our general terms of use for downloads are valid.



Safety relay for emergency stop, safety doors, and light grids up to SIL 3, Cat. 4, PL e, 1 or 2-channel operation, automatic or manual, monitored start, 3 enabling current paths, $U_S = 24 \text{ V DC}$, plug-in screw terminal block

Your advantages

- Up to Cat. 4/PL e in accordance with EN ISO 13849-1, SIL 3 in accordance with EN IEC 62061
- 1- and 2-channel control
- 3 enabling current paths, 1 digital signal output
- Manually monitored and automatic activation in a single device
- Cross-circuit detection

Commercial data

Item number	1082024
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	02
Product key	DNA181
GTIN	4055626812144
Weight per piece (including packing)	235.1 g
Weight per piece (excluding packing)	185.26 g
Customs tariff number	85371098
Country of origin	DE

PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

Technical data

Product properties

Product type	Safety relays
Product family	PSRmini
Application	Emergency stop
	Safety door
	Transponder
	Light grid
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Times

Typical response time	< 100 ms (automatic start)
	< 100 ms (manual, monitored start)
Typ. starting time with U_S	< 100 ms (when controlled via A1)
Typical release time	< 20 ms (on demand via the sensor circuit)
	< 20 ms (when controlled via A1; applicative deactivation via A1/A2 is not permitted)
Restart time	< 1 s (Boot time)
Recovery time	500 ms (following demand of the safety function)

Electrical properties

Maximum power dissipation for nominal condition	17.21 W (at $U_B = 30\text{ V}$, $I_L^2 = 72\text{ A}^2$)
Nominal operating mode	100% operating factor

Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V AC
	250 V AC
Rated surge voltage/insulation	Basic insulation 4 kV between all current paths
	Basic insulation 4 kV between all current paths and housing

Supply

Designation	A1/A2
Rated control circuit supply voltage U_S	19.2 V DC ... 30 V DC
Rated control circuit supply voltage U_S	24 V DC -20 % / +25 % (provide external protection)
Rated control supply current I_S	typ. 75 mA
Power consumption at U_S	typ. 1.8 W
Inrush current	typ. 2.2 A ($\Delta t = 300\ \mu\text{s}$ at U_S)
Filter time	1 ms (at A1 in the event of voltage dips at U_S)
Protective circuit	Serial protection against polarity reversal
	Suppressor diode 33 V

Input data

Digital: Sensor circuit (S10, S12, S22)

PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

Description of the input	safety-related sensor inputs
	NPN (S10, S12), PNP (S22)
Number of inputs	3
Input voltage range "0" signal	0 V ... 5 V (S10, S12)
Input voltage range "1" signal	19.2 V ... 30 V
Input current range "0" signal	0 mA ... 2 mA (S10, S12)
Inrush current	< 5 mA (Typically with U_S at S10/S12, $\Delta t = 500 \mu s$)
	> -5 mA (typically with U_S at S22/0 V, $\Delta t = 500 \mu s$)
Filter time	max. 3 ms (Test pulse width of low test pulses)
	> 1 s (Test pulse rate for low test pulse)
	Where test pulse width < 1 ms: test pulse rate = 5 x test pulse width
	max. 1 ms (Test pulse width, high test pulse)
	> 100 ms (Test pulse rate, high test pulse)
	Unless test pulses are safety-related, they should be disabled.
Concurrency	∞
Max. permissible overall conductor resistance	150 Ω
Protective circuit	Suppressor diode 38.6 V
Current consumption	< 4 mA (typically with U_S at S10/S12)
	> -15 mA (typically with U_S at S22/0 V)

Digital: Start circuit (S34, S35)

Description of the input	non-safety-related
	NPN
Number of inputs	2
Input voltage range "1" signal	19.2 V DC ... 30 V DC
Inrush current	< 10 mA (typically with U_S , $\Delta t = 500 \mu s$)
Max. permissible overall conductor resistance	150 Ω
Protective circuit	Suppressor diode 38.6 V
Current consumption	2.5 mA (Typically with U_S at S34)
	1 mA (Typically 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
Switching voltage	min. 5 V AC/DC
	max. 250 V AC/DC (Observe the load curve)
Switching capacity	min. 50 mW
Inrush current	min. 10 mA AC/DC
	max. 6 A
Switching capacity in accordance with IEC 60947-5-1	5 A (24 V (DC13))

PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

	5 A (250 V (AC15))
Limiting continuous current	6 A
Sq. Total current	72 A ² (observe derating)
Switching frequency	0.5 Hz
Mechanical service life	10x 10 ⁶ cycles
Output fuse	6 A gL/gG

Signal: M1

Output description	PNP non-safety-related
Number of outputs	1
Voltage	approx. 23 V DC ($U_s - 1$ V)
Current	max. 100 mA
Maximum inrush current	1 A ($\Delta t = 5$ ms at U_s)
Switching frequency	0.5 Hz (ohmic)
Protective circuit	33 V suppressor diode
Short-circuit protection	Yes

Connection data

Connection technology

pluggable	yes
-----------	-----

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	112.4 mm
Depth	114.5 mm

Material specifications

Housing material	Polyamide
------------------	-----------

Characteristics

Safety data

PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

Stop category	0
---------------	---

Safety data: EN ISO 13849

Category	4
Performance level (PL)	e (5 A DC13; 8760 switching cycles/year or 5 A AC15; 2190 switching cycles/year)

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3
------------------------------	---

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3
------------------------------	---

Safety data: EN IEC 62061

Safety Integrity Level (SIL)	3
------------------------------	---

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-40 °C ... 60 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °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 for $\Delta t = 11$ ms (continuous shock: 10g for $\Delta t = 16$ ms)
Vibration (operation)	10 Hz ... 150 Hz, 2g

Approvals

CE

Identification	CE-compliant
----------------	--------------

Standards and regulations

Air clearances and creepage distances between the power circuits

Standards/regulations	EN 60947-5-1
-----------------------	--------------

Mounting

Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Mounting position	vertical or horizontal
Connection method	Screw connection

PSR-MC45-3NO-1DO-24DC-SC - Safety relays

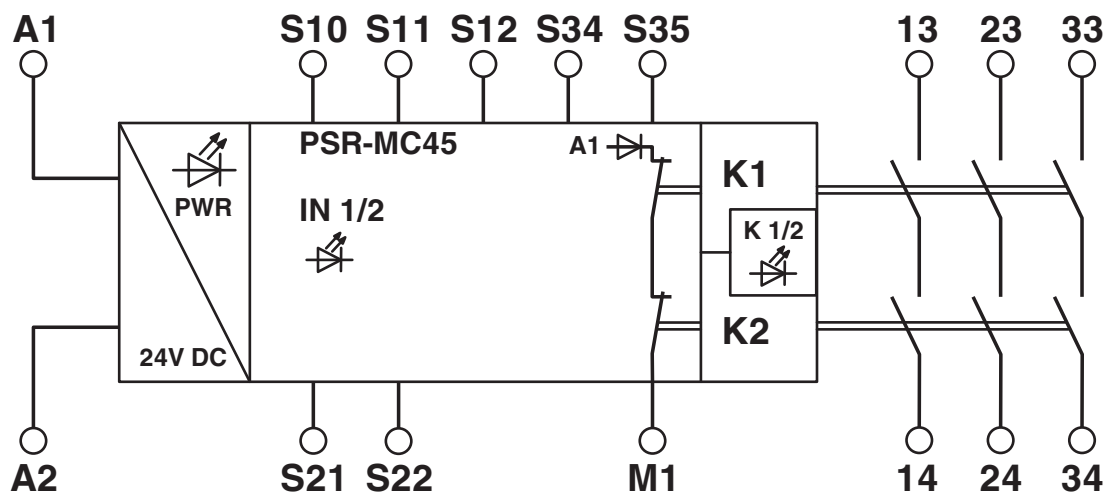


1082024

<https://www.phoenixcontact.com/mx/products/1082024>

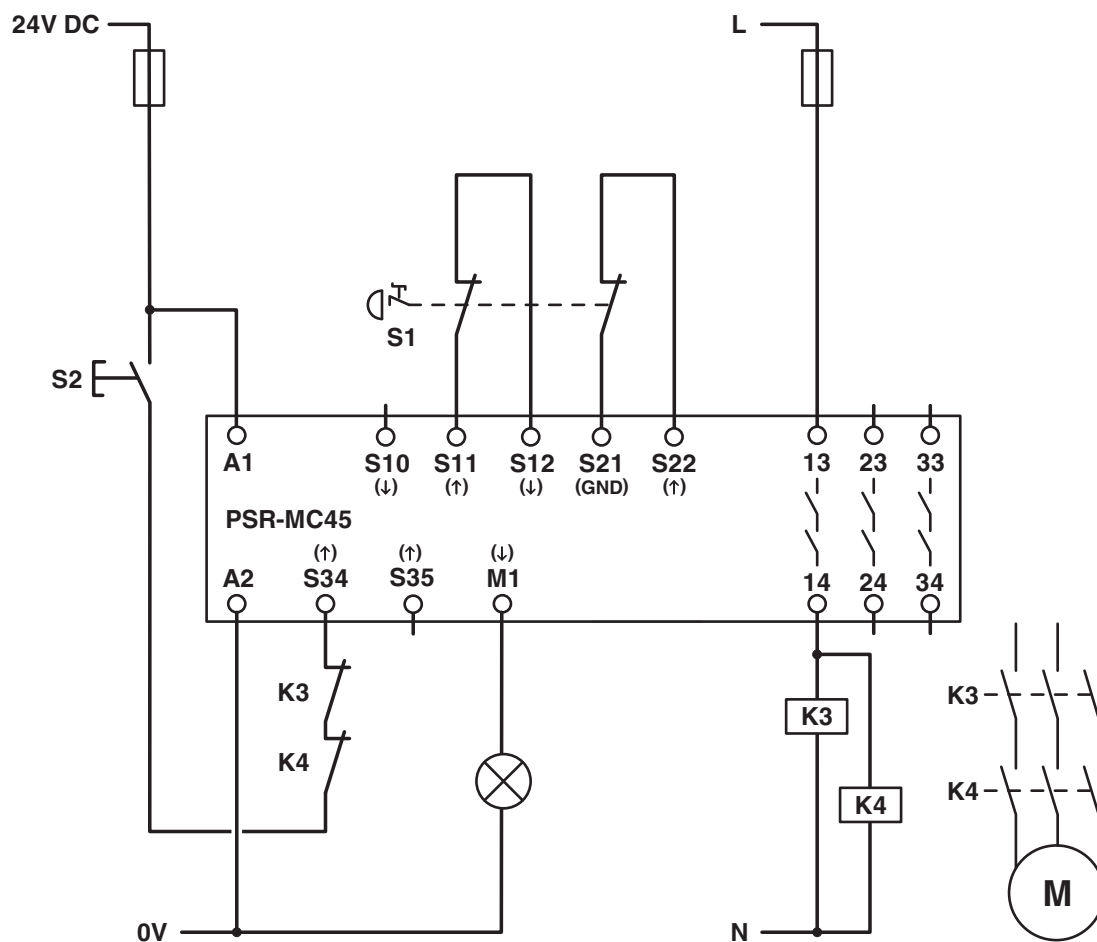
Drawings

Block diagram



Block diagram

Circuit diagram



PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/mx/products/1082024>



EAC

Approval ID: RU*C-DE.*08.B.00010



EAC

Approval ID: RU D-DE.B*00573/18



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324



Functional Safety

Approval ID: 44-780-15124316



Functional Safety

Approval ID: 44-205-15124316

cULus Listed

PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

Classifications

ECLASS

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

ETIM

ETIM 8.0	EC001449
----------	----------

UNSPSC

UNSPSC 21.0	39122200
-------------	----------

PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

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"

1082024

<https://www.phoenixcontact.com/mx/products/1082024>

Accessories

CP-MSTB - Coding profile

1734634

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

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



PSR-MC45-3NO-1DO-24DC-SC - Safety relays



1082024

<https://www.phoenixcontact.com/mx/products/1082024>

CRIMPFOX 6 - Crimping pliers

1212034

<https://www.phoenixcontact.com/mx/products/1212034>



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

Phoenix Contact 2023 © - all rights reserved

<https://www.phoenixcontact.com>

PHOENIX CONTACT S.A. de C.V.

Lago Alberto No. 319 - Piso 9

Colonia Granada, Delegación Miguel Hidalgo, México, Ciudad de México, C.P. 11520

+52/55/1101-1380

ventas@phoenixcontact.com.mx