

PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



2981541

<https://www.phoenixcontact.com/us/products/2981541>

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2-channel over-speed and zero-speed safety relay up to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, 4 N/O contacts, suitable for connecting incremental encoders and initiators, width: 45 mm, plug-in Push-in terminal block

Your advantages

- Easy configuration via software (PSR-RSM4)
- Up to SIL 3 in accordance with IEC 61508
- Standard sensors can be connected

Commercial data

Item number	2981541
Packing unit	1 pc
Sales key	DN01
Product key	DNA242
Catalog page	Page 244 (C-6-2019)
GTIN	4017918996833
Weight per piece (including packing)	363.6 g
Weight per piece (excluding packing)	363.069 g
Customs tariff number	90328900
Country of origin	DE

Technical data

Product properties

Product type	Safety device
Application	Over-speed safety relay
	Zero-speed safety relay
Mechanical service life	> 50x 10 ⁶ cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Electrical properties

Maximum power dissipation for nominal condition	2.4 W
Nominal operating mode	100% operating factor
Interfaces	Encoder
	Initiator connection

Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V
Rated surge voltage/insulation	4 kV / Basic isolation, (safe isolation, reinforced insulation and 6 kV between input circuit and enabling current paths.)

Input data

General

Nominal input voltage U_N	24 V DC
Input voltage range in reference to U_N	0.85 ... 1.1
Typical input current at U_N	100 mA
Voltage at input/start and feedback circuit	approx. 24 V DC
Typical response time	15 ms
Typical release time	12 ms
Recovery time	1 s
Protective circuit	Surge protection; Suppressor diode
Limit frequency	2 kHz (IN1, IN2)
	400 kHz (RJ45)
Status display	Green LED

Output data

Contact switching type	4 enabling current paths
Contact material	AgNi10, + 5 μ m Au
Maximum switching voltage	250 V AC/DC (when the gold layer is destroyed)
	60 V AC/DC (with gold layer existing)
Minimum switching voltage	100 mV AC/DC
Limiting continuous current	5 A
	100 mA (alarm outputs)
Maximum inrush current	6 A

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Inrush current, minimum	1 mA
Sq. Total current	$42.25 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2 + I_3^2 + I_4^2)$
Interrupting rating (ohmic load) max.	67 W (24 V DC, $\tau = 0 \text{ ms}$)
	36 W (48 V DC, $\tau = 0 \text{ ms}$)
	43 MW (110 V DC, $\tau = 0 \text{ ms}$)
	68 MW (220 V DC, $\tau = 0 \text{ ms}$)
Switching capacity min.	1 mW
Switching capacity (3600/h cycles)	2 A (24 V (DC13))
	3 A (230 V (AC15))
Output fuse	6 A gL

Clock/signal

Number of outputs	4
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Connection data

Connection technology

pluggable	yes
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Conductor connection

Connection method	Push-in connection
Conductor cross section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

Dimensions

Width	45 mm
Height	112 mm
Depth	114.5 mm

Material specifications

Color	yellow
Housing material	Polyamide

Characteristics

Safety data

Stop category	0
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Safety data: EN ISO 13849

Category	4
Performance level (PL)	e

Safety data: IEC 61508 - High demand

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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)	-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)

Standards and regulations

Air clearances and creepage distances between the power circuits

Standards/regulations	DIN EN 60664-1
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Mounting

Mounting type	DIN rail mounting
Assembly instructions	in rows with zero spacing
Mounting position	any

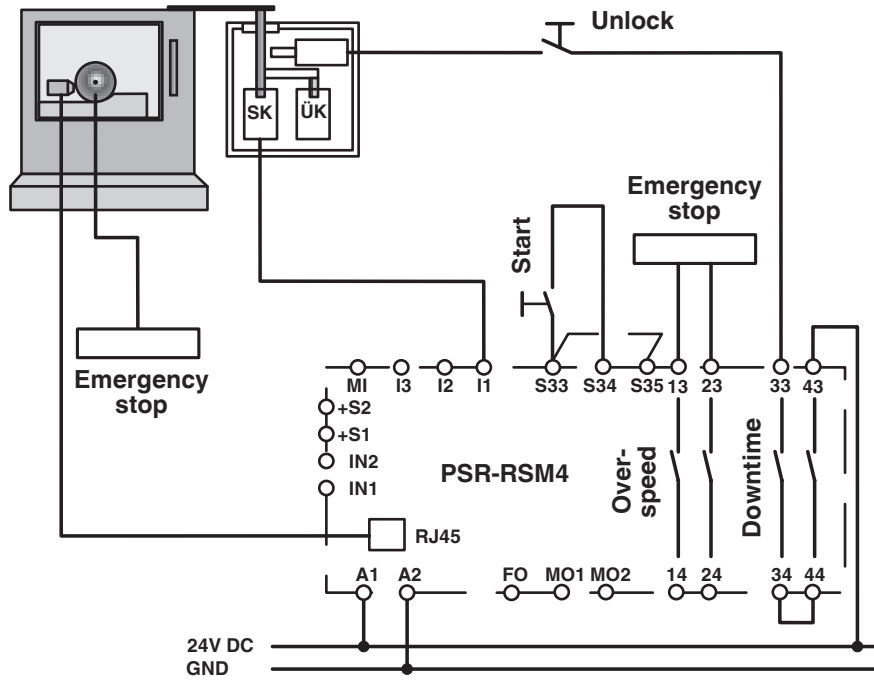
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Drawings

Diagram



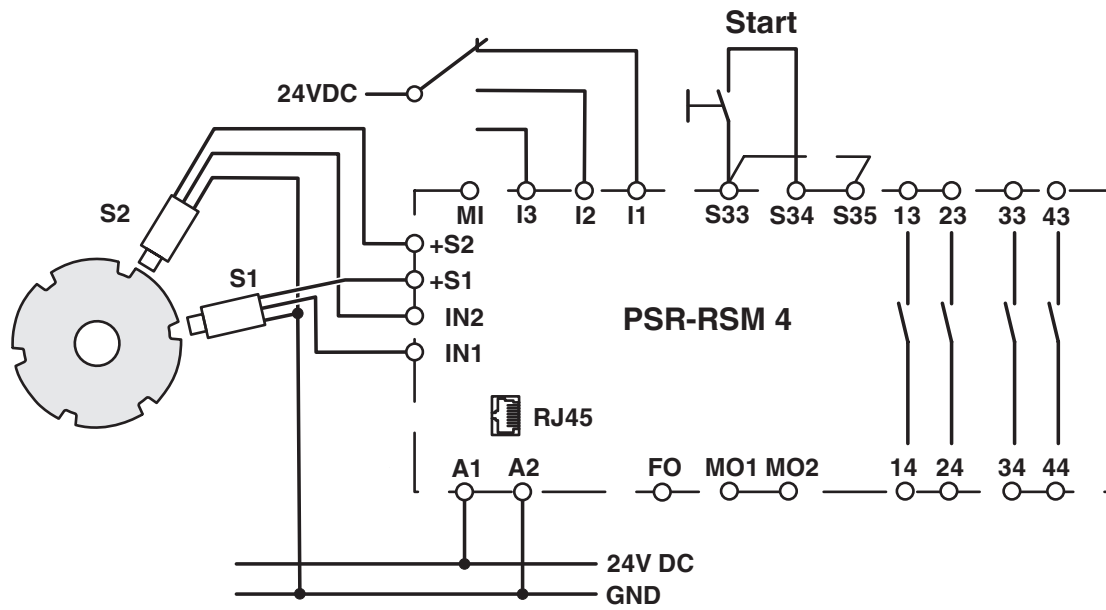
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Circuit diagram

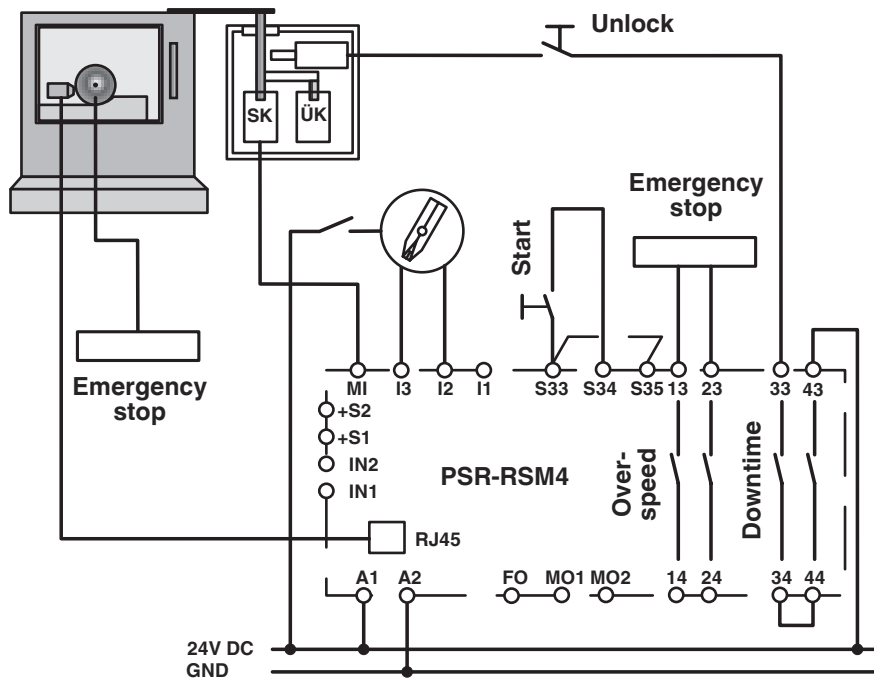


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Diagram



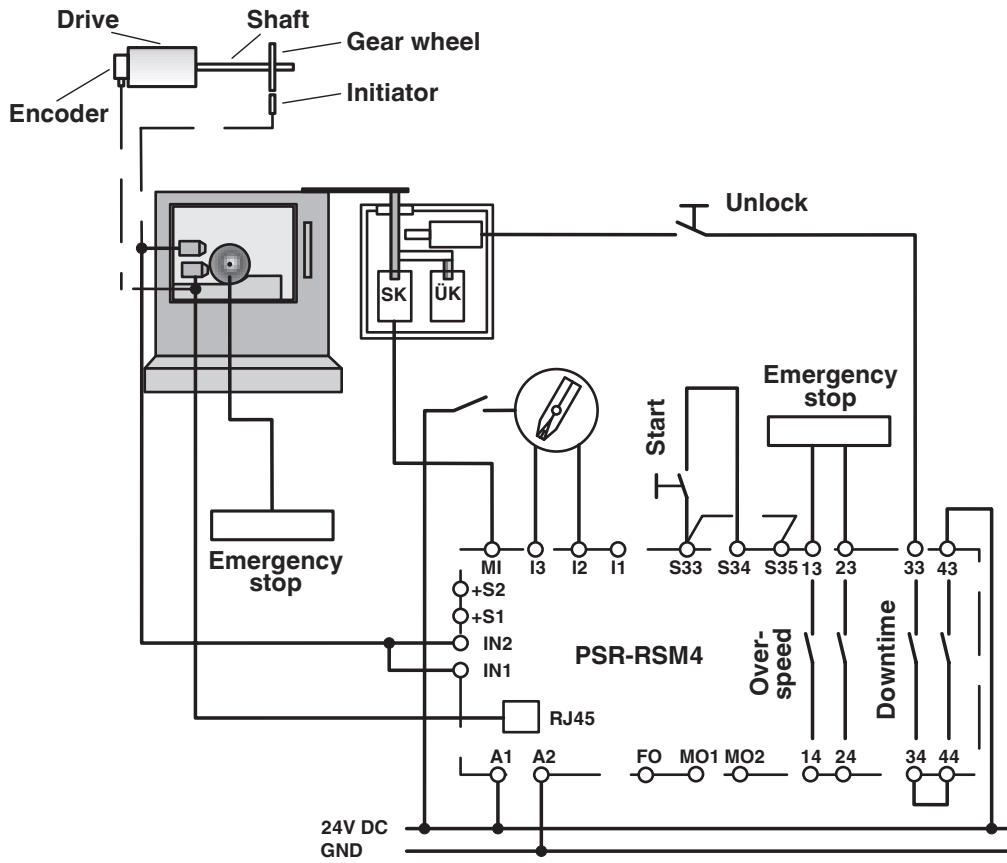
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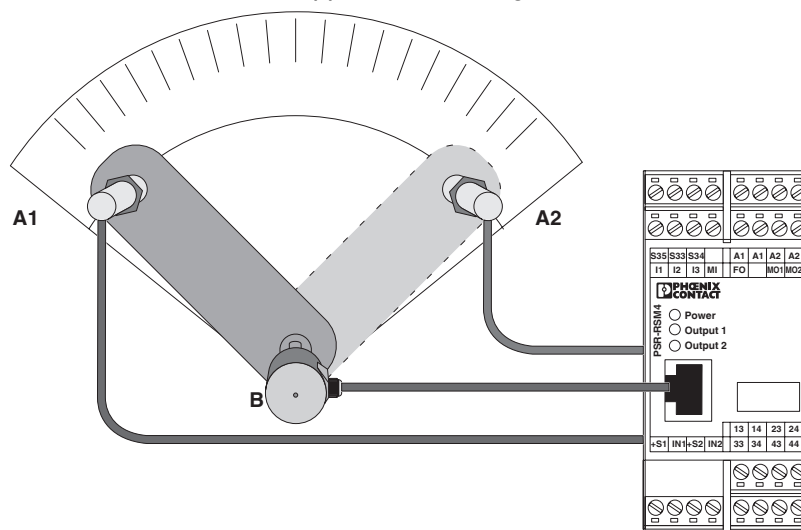
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Diagram



Application drawing

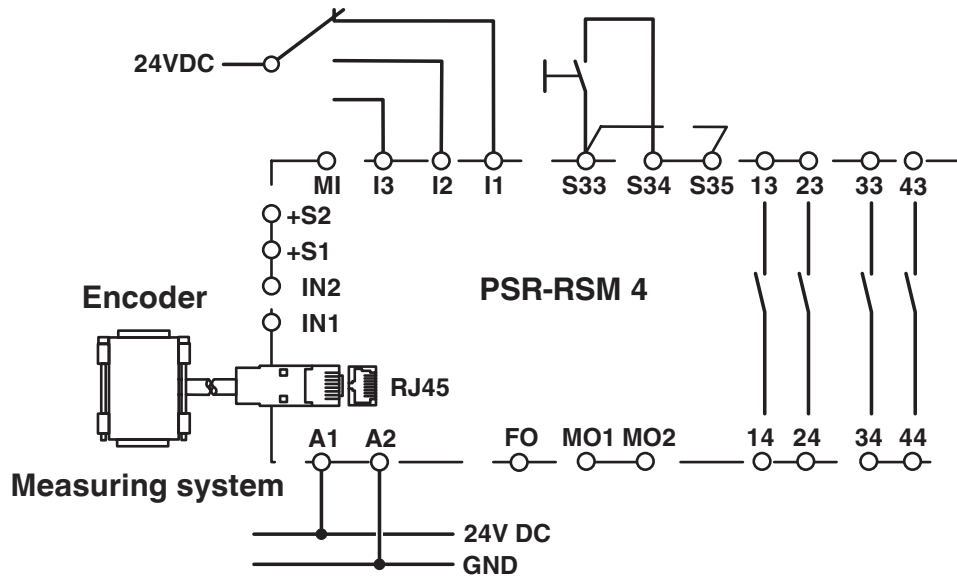


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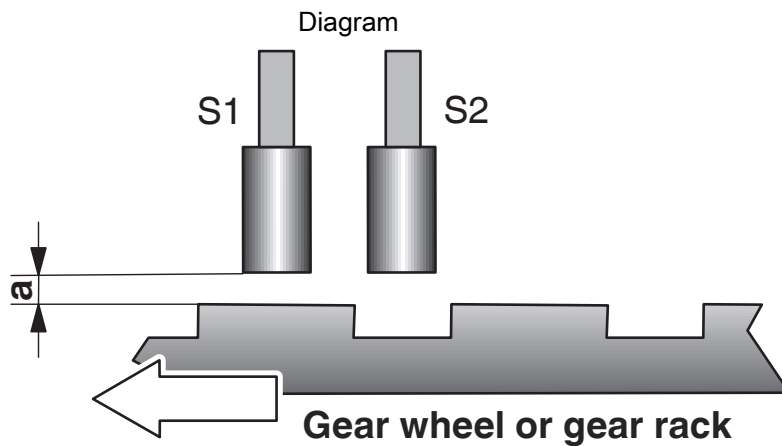
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Diagram

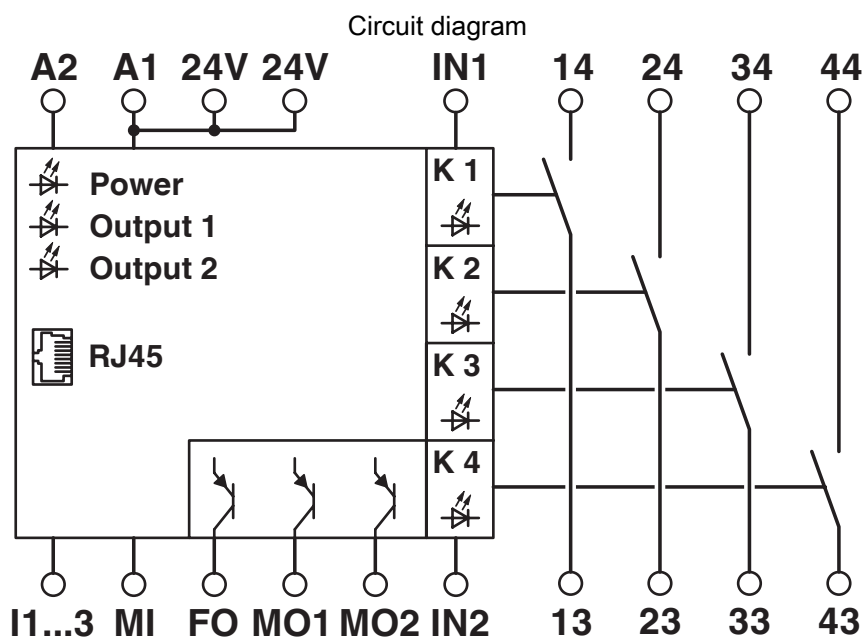
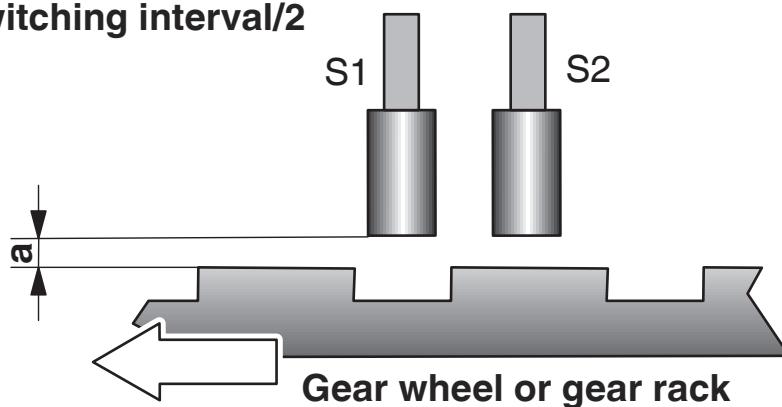


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$a = \text{Switching interval}/2$



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2981541>



EAC

Approval ID: TR TS_D_01838-19



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324

Functional Safety

Approval ID: 968/EZ/213/10/22

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27371811
ECLASS-12.0	27371811
ECLASS-13.0	27371811

ETIM

ETIM 9.0	EC001448
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UNSPSC

UNSPSC 21.0	39122300
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Environmental product compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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Accessories

PSR-CONF-WIN1.0 - Configuration and diagnostic software

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Configuration software for parameterizing the PSR-RSM4 safe downtime and over-speed safety relay, with programming cable

CABLE-25/8/250/RSM/E-SIMO611D - Adapter cable

2901746

<https://www.phoenixcontact.com/us/products/2901746>



Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 25/8-pos., cable length: 2.5 m, for controller: Siemens, Heidenhain

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CABLE-15/8/250/RSM/INDEL - Adapter cable

2902338

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: INDEL



CABLE- 9/8/250/RSM/ELAU - Adapter cable

2902984

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 9/8-pos., cable length: 2.5 m, for controller: ELAU



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CABLE-15/8/100/RSM/BM - Adapter cable

2904108

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 1 m, for controller: Baumüller



CABLE-25/8/250/RSM/SIMO611D - Adapter cable

2981583

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 25/8-pos., cable length: 2.5 m, for controller: Siemens, Heidenhain



PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



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CABLE-25/8/250/RSM/ARADEx - Adapter cable

2981596

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 25/8-pos., cable length: 2.5 m, for controller: Aradex



CABLE-15/8/250/RSM/SIMO611D - Adapter cable

2981606

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Siemens, Heidenhain



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CABLE-15/8/250/RSM/MHD/G - Adapter cable

2981619

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Indramat



CABLE-15/8/250/RSM/SIN800 - Adapter cable

2981622

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Siemens



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CABLE-15/8/250/RSM/FM-NC - Adapter cable

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Siemens



CABLE-15/8/250/RSM/DKC - Adapter cable

2981648

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Indramat



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CABLE-15/8/250/RSM/AMK - Adapter cable

2981651

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: AMK



CABLE-15/8/250/RSM/SEW-X15 - Adapter cable

2981664

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: SEW



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CABLE-15/8/250/RSM/PD - Adapter cable

2981758

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Parker Drives



CABLE- 9/8/250/RSM/LENZE - Adapter cable

2981826

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 9/8-pos., cable length: 2.5 m, for controller: Lenze



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CABLE-15/8/250/RSM/KINETIX - Adapter cable

2986698

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Allen-Bradley (Kinetix)



CABLE-15/8/250/RSM/IHDUNI-SP - Adapter cable

2986973

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), 15/8-pos., cable length: 2.5 m, for controller: Control Techniques, type: Unidrive SP



PSR-SPP- 24DC/RSM4/4X1 - Safety relay module



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CABLE-15/8/250/RSM/INDRADYN-2 - Adapter cable

2986986

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), cable length: 2.5 m, for controller: Bosch Rexroth Indramat, type: IndraDrive - IndraDyn



CABLE-20/8/250/RSM/FANUC - Adapter cable

2986999

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Cable adapter for PSR over-speed safety relays (PSR-RSM4 and PSR-MM30), cable length: 2.5 m, for controller: FANUC CN



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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com