

Coupling relay - PSR-PC32-2NO-1NC-24-230UC-SP - 2700582

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Coupling relay for SIL 3 high and low-demand applications, couples digital signals to the I/O, 24 V ... 230 V wide-range input, 2 enabling current paths (1x up to 60 V, 1x up to 250 V) 1 confirmation current path, safe state off applications, pluggable Push-in terminal block


The figure shows a version with a screw connection

Your advantages

- Up to SIL 3 according to IEC 61508
- Forcibly guided contacts according to EN 50205
- Easy proof test according to IEC 61508
- Slim design
- Wide-range input



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 916370
GTIN	4046356916370

Technical data

Note

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

Width	17.5 mm
Height	117.4 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °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)

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Power supply

Rated control circuit supply voltage U_S	24 V AC/DC ... 230 V AC/DC -15 % ... +10 %
Rated control supply current I_S	75 mA (24 V DC)
	34 mA (48 V DC)
	97 mA (42 V AC)
	28 mA (120 V AC)
	16 mA (230 V AC)
Power consumption at U_S	1.8 W (with DC)
	2.1 W (with AC)
Apparent power	typ. 4.1 VA
Inrush current	typ. 16 A ($\Delta t < 100 \mu s$ at U_S)
	< 5 mA (at terminal blocks 24V/GND at U_D)
Filter time	10 ms (24 V DC, A1 in the event of voltage dips at U_S)
	max. 1.5 ms (at A1-A2; test pulse width; at 24 V DC)
	7.5 ms (at A1-A2; test pulse rate; at 24 V DC)
	Test pulse rate = 5 x Test pulse width
Diagnostic supply voltage U_D	24 V DC -15 % / +10 %
Input current at U_D	< 5 mA (at terminal blocks 24V/GND at U_D)
Protective circuit	U_S : surge protection Varistor 275 V
	U_D : surge protection 33 V suppressor diode
	U_D : Polarity protection

Relay outputs: enabling current path

Output name	Enabling current path
Output description	safety-related N/O contacts
Number of outputs	2 (undelayed)
Contact type	2 enabling current paths
Contact material	AgSnO ₂
Switching voltage	min. 12 V AC/DC
	max. 250 V AC/DC (13/14, observe the load curve)
	max. 60 V AC/DC (93/94, observe the load curve)
Limiting continuous current	6 A (observe derating)
Inrush current	min. 3 mA
	max. 6 A
Sq. Total current	72 A ² (observe derating)
Switching capacity	min. 60 mW
Switching frequency	max. 1 Hz
Mechanical service life	10x 10 ⁶ cycles
Switching capacity (360/h cycles)	4 A (24 V (DC13))
	5 A (230 V (AC 15))
Output fuse	6 A gL/gG

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Technical data

Relay outputs: enabling current path

	4 A gL/gG (for low-demand applications)
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Relay outputs: return current/signaling current path

Output name	Confirmation current path
Output description	Safety-related N/C contacts
Number of outputs	1 (undelayed)
Contact type	1 confirmation current path
Contact material	AgCuNi, + Au
Switching voltage	min. 3.3 V AC/DC
	max. 26.4 V DC
Limiting continuous current	100 mA
Inrush current	min. 1 mA
	max. 100 mA
Switching capacity	min. 3.3 mW
Output fuse	150 mA fast blow

Times

Typical response time at US	< 100 ms (with U _s when controlled via A1)
Typical release time at US	< 200 ms (with U _s when controlled via A1)
Recovery time	< 500 ms

General

Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3
Nominal operating mode	100% operating factor
Net weight	226.5 g
Mounting position	vertical or horizontal
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Housing material	PBT
Housing color	yellow
Operating voltage display	1 x yellow LED
Status display	1 x green LED, 1 x yellow LED

Connection data

Connection method	Push-in connection
pluggable	Yes
Conductor cross section solid	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross-section AWG	24 ... 16
Conductor cross-section flexible with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)

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Technical data

Connection data

Conductor cross-section flexible with ferrule and plastic sleeve	0.25 mm ² ... 1.5 mm ² (only together with CRIMPFOX 6)
Stripping length	8 mm

Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3 (< 15% of the overall SIL)
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3 (< 15% of the overall SIL)
Designation	EN 50156-2
Safety Integrity Level (SIL)	3 (Reference IEC 61508)

Standards and Regulations

Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178, EN 60079-15
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Basic insulation 4 kV between all current paths and housing
	Safe isolation, reinforced insulation 2.5 kV between (93/94) and (31/32, 24V/GND)
	Safe isolation, reinforced insulation 6 kV: between (A1/A2) and (13/14) and (31/32, 24V/GND) between (A1/A2) and (93/94) between (13/14) and (93/94)
Degree of pollution	2
Overvoltage category	III
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant
ATEX	# II 3 G Ex nA nC IIC T4 Gc
IECEX	Ex nA nC IIC T4 Gc
UL, USA/Canada	cULus
	Class I, Zone 2, AEx nA nC IIC T4 / Ex nA nC IIC Gc T4 X
	Class I, Div. 2, Groups A, B, C, D, T4
Environmental simulation test	ISA-S71.04 (G3)

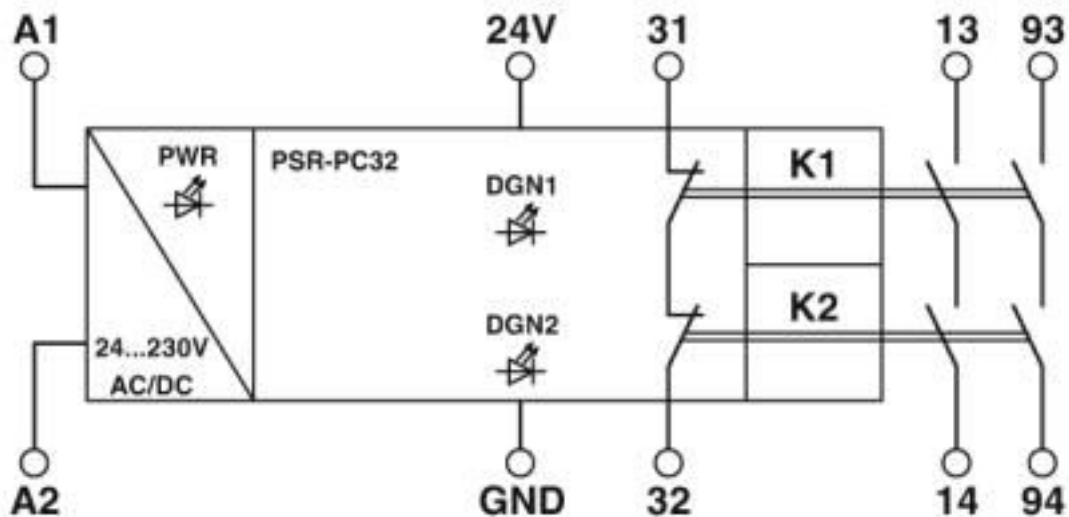
Environmental Product Compliance

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

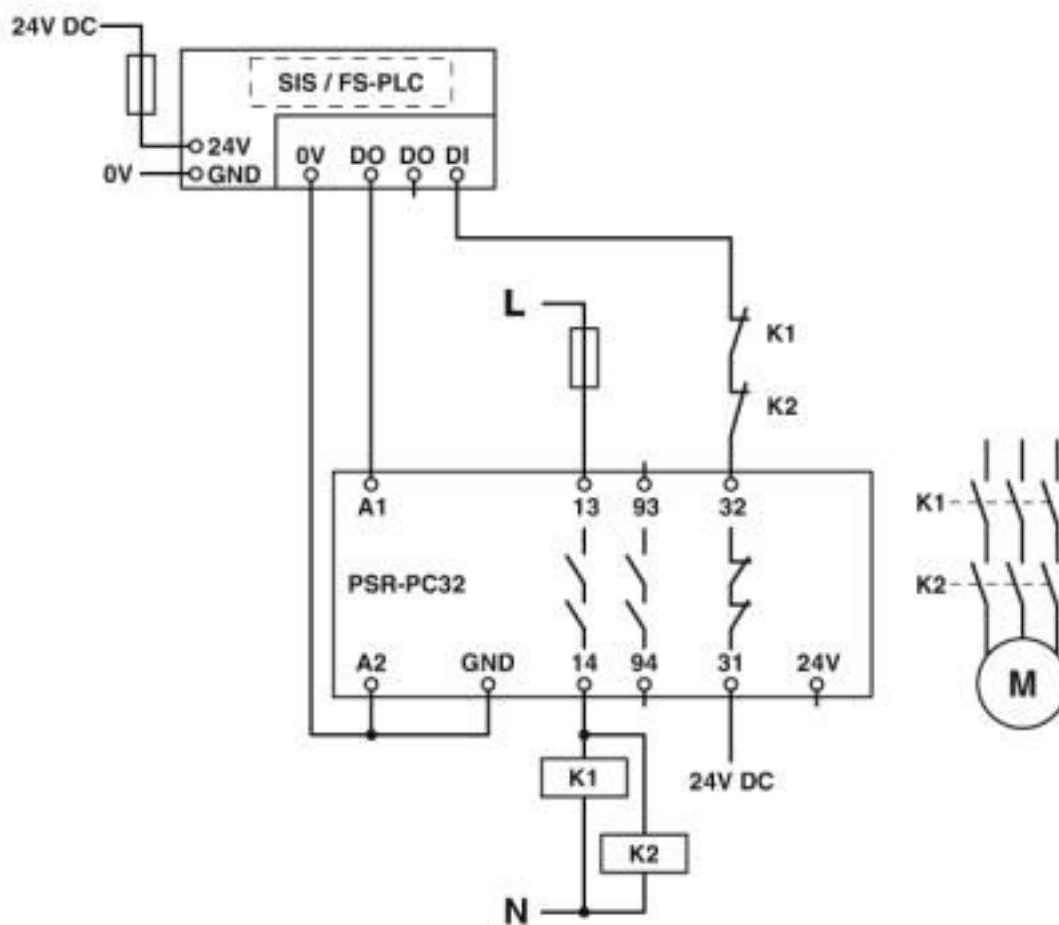
Drawings

Coupling relay - PSR-PC32-2NO-1NC-24-230UC-SP - 2700582

Block diagram



Circuit diagram



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Classifications

eCl@ss

eCl@ss 10.0.1	27371819
eCl@ss 4.0	40020600
eCl@ss 4.1	40020600
eCl@ss 5.0	27371900
eCl@ss 5.1	27371900
eCl@ss 6.0	27371800
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

ETIM

ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

Approvals

Approvals

Approvals

UL Listed / cUL Listed / Functional Safety / cULus Listed

Ex Approvals

UL Listed / cUL Listed / IECEx / ATEX / cULus Listed

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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Functional Safety		44-780-15124308
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Approvals

cULus Listed



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