Coupling relay - PSR-SCP- 24DC/FSP2/2X1/1X2 - 2986575

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Safe coupling relay for SIL 2 high and low-demand applications, couples digital output signals to the I/O, 2 enabling current paths, 1 alarm contact, module for safe state off applications, integrated test pulse filter, plug-in screw terminal blocks, width: 17.5 mm

Product Features

- Narrow 17.5 mm housing
- Up to SIL 2 according to EN 61508
- Forcibly guided contacts according to EN 50205
- Easy proof test according to IEC 61508 thanks to integrated signal contact
- Long service life thanks to filtering of controller test pulses
- Two enabling current paths
- Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation

Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	180.0 g
Custom tariff number	85364900
Country of origin	Germany

Technical data

Note

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

Dimensions

Width	17.5 mm
Height	99 mm

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Technical data

Dimensions

Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 70 °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)
Shock	15g
Vibration (operation)	10 Hz ...150 Hz, 2g
Maximum altitude	≤ 2000 m (Above sea level)

Input data

Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
Power consumption at U_S	typ. 1.32 W
Rated control supply current I_S	typ. 55 mA
Typical inrush current	max. 100 mA
Typical pick-up time	50 ms
Typical release time	50 ms
Recovery time	1 s
Maximum switching frequency	0.5 Hz
Filter time	max. 5 ms (at A1 in the event of voltage dips at U_s)
	max. 2 ms (Test pulse width; high test pulse at A1/A2)
	≥ 100 ms (Test pulse width; high test pulse at A1/A2)
	Test pulse rate = 80 x Test pulse width
	max. 5 ms (Test pulse width; low test pulse at A1/A2)
	≥ 50 ms (Test pulse rate; low test pulse at A1/A2)
	Test pulse rate = 15 x Test pulse width

Output data

Contact type	2 enabling current paths
	1 confirmation current path
Contact material	AgCuNi, + 0.2 µm Au
Minimum switching voltage	15 V AC/DC (N/O contact / N/C contact)
Maximum switching voltage	250 V AC/DC (N/O contact / N/C contact, observe the load curve)
Limiting continuous current	5 A (N/O contact, pay attention to the derating)
	100 mA (N/C contact)
Inrush current, minimum	5 mA (N/O contact / N/C contact)
Maximum inrush current	5 A (N/O contact)
	100 mA (N/C contact)

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Output data

Sq. Total current	50 A^2 (observe derating)
Interrupting rating (ohmic load) max.	120 W (24 V DC, τ = 0 ms, N/C contact: 2.4 W)
	192 W (48 V DC, τ = 0 ms, N/C contact: 4.8 W)
	162 W (60 V DC, τ = 0 ms, N/C contact: 6 W)
	66 W (110 V DC, τ = 0 ms, N/C contact: 11 W)
	60 W (220 V DC, τ = 0 ms, N/C contact: 22 W)
	1250 VA (250 V AC, τ = 0 ms, N/C contact: 25 VA)
Maximum interrupting rating (inductive load)	72 W (24 V DC, τ = 40 ms, N/C contact: 2.4 W)
	43 W (48 V DC, τ = 40 ms, N/C contact: 4.8 W)
	41 W (60 V DC, τ = 40 ms, N/C contact: 6 W)
	35 W (110 V DC, τ = 40 ms, N/C contact: 11 W)
	48 W (220 V DC, τ = 40 ms, N/C contact: 22 W)
Switching capacity	min. 75 mW
Output fuse	10 A gL/gG (N/O contact)
	4 A gL/gG (for low-demand applications)
	4 A gL/gG (N/C contact)

General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Mechanical service life	10 x 10^6 cycles
Net weight	137.48 g
Mounting type	DIN rail mounting
Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Mounting position	any
Control	single-channel
Housing material	PBT

Connection data

Connection method	Screw connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	24

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Connection data

Conductor cross section AWG max.	12
Stripping length	7 mm
Screw thread	M3

Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	2 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be ≥ 90%)
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	2 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be ≥ 90%)
Designation	EN ISO 13849
Performance level (PL)	c
Category	1
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	1 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be ≥ 90%)
Designation	IEC 50156
Safety Integrity Level (SIL)	2

Standards and Regulations

Shock	15g
Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178/VDE 0160
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Safe isolation, reinforced insulation 6 kV between the control circuits (A1/A2), (31/32), (13/14, 23/24)
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ...150 Hz, 2g
Conformance	CE-compliant

Classifications

eCl@ss

eCl@ss 4.0	27371102
eCl@ss 4.1	27371102
eCl@ss 5.0	27371901
eCl@ss 5.1	27371901

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Classifications

eCl@ss

eCl@ss 6.0	27371819
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819

ETIM

ETIM 2.0	EC001449
ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449

UNSPSC

UNSPSC 6.01	30211901
UNSPSC 7.0901	39121501
UNSPSC 11	39121501
UNSPSC 12.01	39121501
UNSPSC 13.2	39121501

Approvals

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UL Listed / cUL Listed / Functional Safety / EAC / EAC / GL / cULus Listed

Ex Approvals

Approvals submitted

Approval details

UL Listed

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Approvals

cUL Listed

Functional Safety

EAC

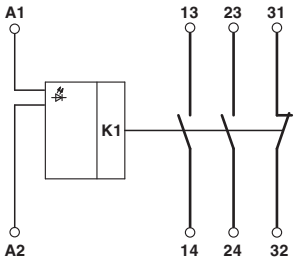
EAC

GL

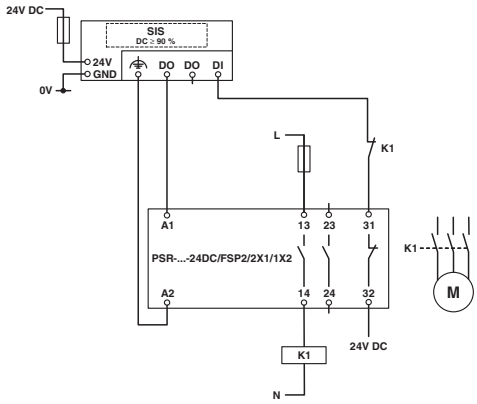
cULus Listed

Drawings

Circuit diagram



Circuit diagram



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Circuit diagram