

Coupling relay - PSR-SCP- 24DC/FSP/1X1/1X2 - 2981978

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Coupling relay for SIL 3 high/low demand applications, couples digital output signals to the periphery, 1 enabling current path, 1 signal contact, module for safe state off applications, test pulse filter, fuse, plug-in screw connection, 17.5 mm width

Why buy this product

- Narrow 17.5 mm housing
- Up to SIL 3 according to IEC 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
- With built-in, replaceable fuse in the enabling current path
- One enabling current path
- 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 STK
GTIN	 4 046356 448352
GTIN	4046356448352
Weight per Piece (excluding packing)	180.000 g
Custom tariff number	85364900
Country of origin	Germany

Technical data

Note

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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	99 mm
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 %
Rated control supply current I_s	typ. 55 mA
Power consumption at U_s	typ. 1.32 W
Inrush current	max. 100 mA
Typ. starting time with U_s	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	1 enabling current path
	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)

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Output data

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)
Sq. Total current	25 A ² (observe derating)
Interrupting rating (ohmic load) max.	120 W (24 V DC, $\tau = 0$ ms, N/C contact: 2.4 W)
	192 W (48 V DC, $\tau = 0$ ms, N/C contact: 4.8 W)
	162 W (60 V DC, $\tau = 0$ ms, N/C contact: 6 W)
	66 W (110 V DC, $\tau = 0$ ms, N/C contact: 11 W)
	60 W (220 V DC, $\tau = 0$ ms, N/C contact: 22 W)
	1250 VA (250 V AC, $\tau = 0$ ms, N/C contact: 25 VA)
Maximum interrupting rating (inductive load)	72 W (24 V DC, $\tau = 40$ ms, N/C contact: 2.4 W)
	43 W (48 V DC, $\tau = 40$ ms, N/C contact: 4.8 W)
	41 W (60 V DC, $\tau = 40$ ms, N/C contact: 6 W)
	35 W (110 V DC, $\tau = 40$ ms, N/C contact: 11 W)
	48 W (220 V DC, $\tau = 40$ ms, N/C contact: 22 W)
Switching capacity	min. 75 mW
Output fuse	5 A T fuse (N/O contact)
	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
Nominal operating mode	100% operating factor
Net weight	188.4 g
Mounting type	DIN rail mounting
Mounting position	any
Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Control	single-channel
Housing material	PBT
Housing color	yellow

Connection data

Connection method	Screw connection
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Connection data

pluggable	Yes
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
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)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$)
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$)
Designation	EN ISO 13849
Performance level (PL)	e (Diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 99\%$)
Category	4 (Diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 99\%$)
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	3 (max. 10% of the entire SIL; diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$)
Designation	EN 50156
Safety Integrity Level (SIL)	3

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), (21/22), (13/14)
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant

Environmental Product Compliance

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Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Approvals

Approvals

Approvals

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

Ex Approvals

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			968/EZ 365.05/16
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EAC			EAC-Zulassung
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cULus Listed			
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