

## 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

### Your advantages

- ✓ 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
GTIN	 4 046356 553322
GTIN	4046356553322
Weight per Piece (excluding packing)	108.770 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
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#### Dimensions

Width	17.5 mm
Height	99 mm

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## Technical data

### Dimensions

Depth	114.5 mm
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### 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)
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
Operating voltage display	1 x yellow LED
Protective circuit	Surge protection Suppressor diode, 33 V (A1 - A2)
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
Maximum switching voltage	250 V AC/DC (N/O contact / N/C contact, observe the load curve)
Minimum switching voltage	15 V AC/DC (N/O contact / N/C contact)
Limiting continuous current	5 A (N/O contact, pay attention to the derating)
	100 mA (N/C contact)
Maximum inrush current	5 A (N/O contact)
	100 mA (N/C contact)
Inrush current, minimum	5 mA (N/O contact / N/C contact)
Sq. Total current	50 A <sup>2</sup> (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)

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### Technical data

#### Output data

	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
Mechanical service life	$10 \times 10^6$ cycles
Output fuse	10 A gL/gG (N/O contact)
	4 A gL/gG (for low-demand applications)
	150 mA Fast-blow (N/C contact)

#### General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Nominal operating mode	100% operating factor
Net weight	108.77 g
Mounting position	any
Mounting type	DIN rail mounting
Degree of protection	IP20
	IP54
Min. degree of protection of inst. location	IP54
Housing material	PBT
Housing color	yellow

#### Connection data

Connection method	Screw connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
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
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### Technical data

#### Safety-related characteristic data

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 $\geq 90\%$ )
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 $\geq 90\%$ )
Designation	EN ISO 13849
Performance level (PL)	c (Diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$ )
Category	1 (Diagnostic coverage (DC) of the control unit at A1/A2 must be $\geq 90\%$ )
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 $\geq 90\%$ )
Designation	EN 50156
Safety Integrity Level (SIL)	2

#### Standards and Regulations

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
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Conformance	CE-compliant

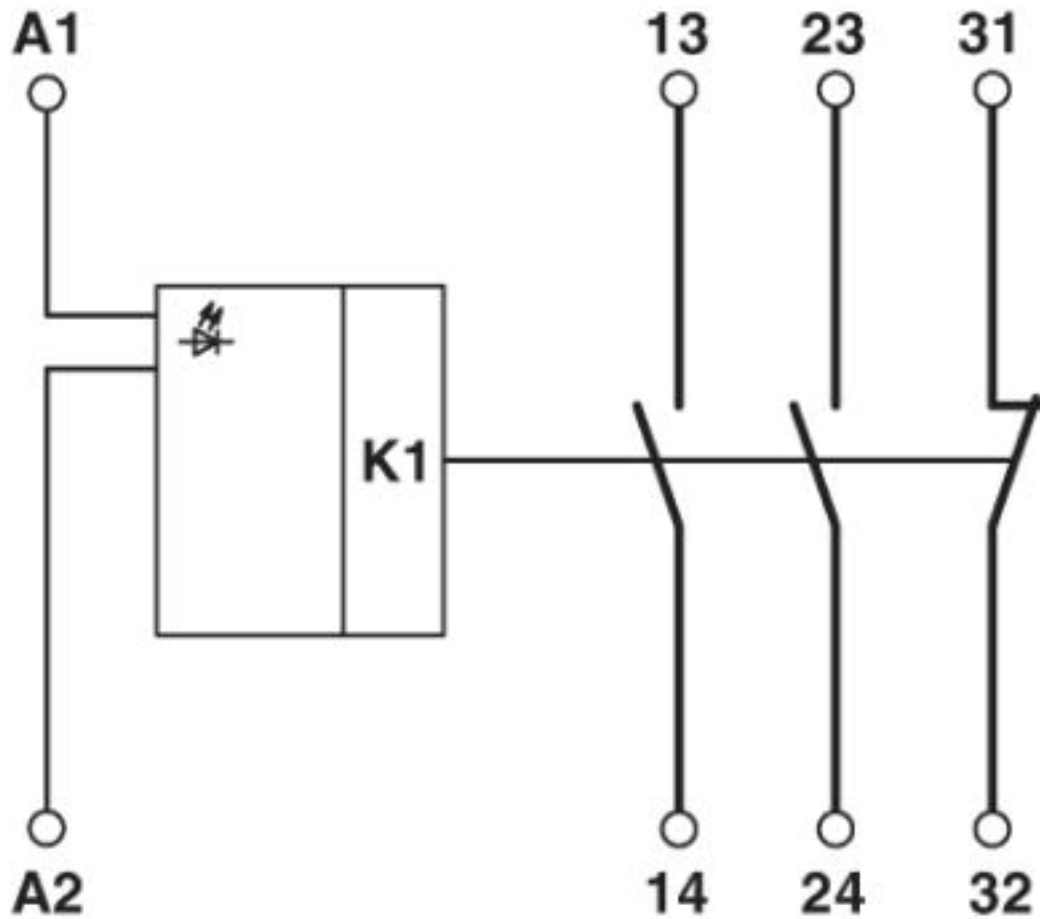
#### Environmental Product Compliance

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

### Drawings

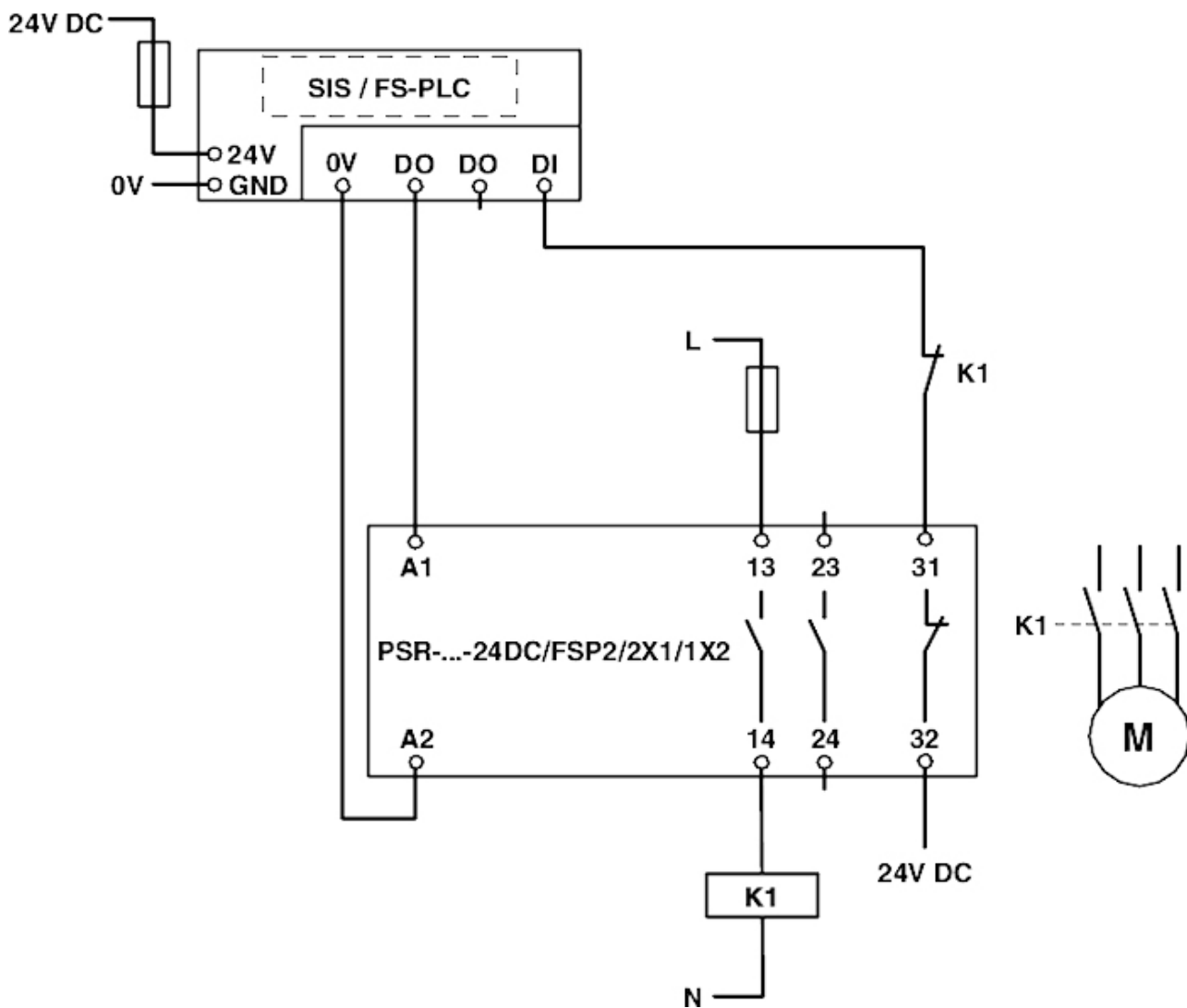
## Coupling relay - PSR-SCP- 24DC/FSP2/2X1/1X2 - 2986575

Circuit diagram



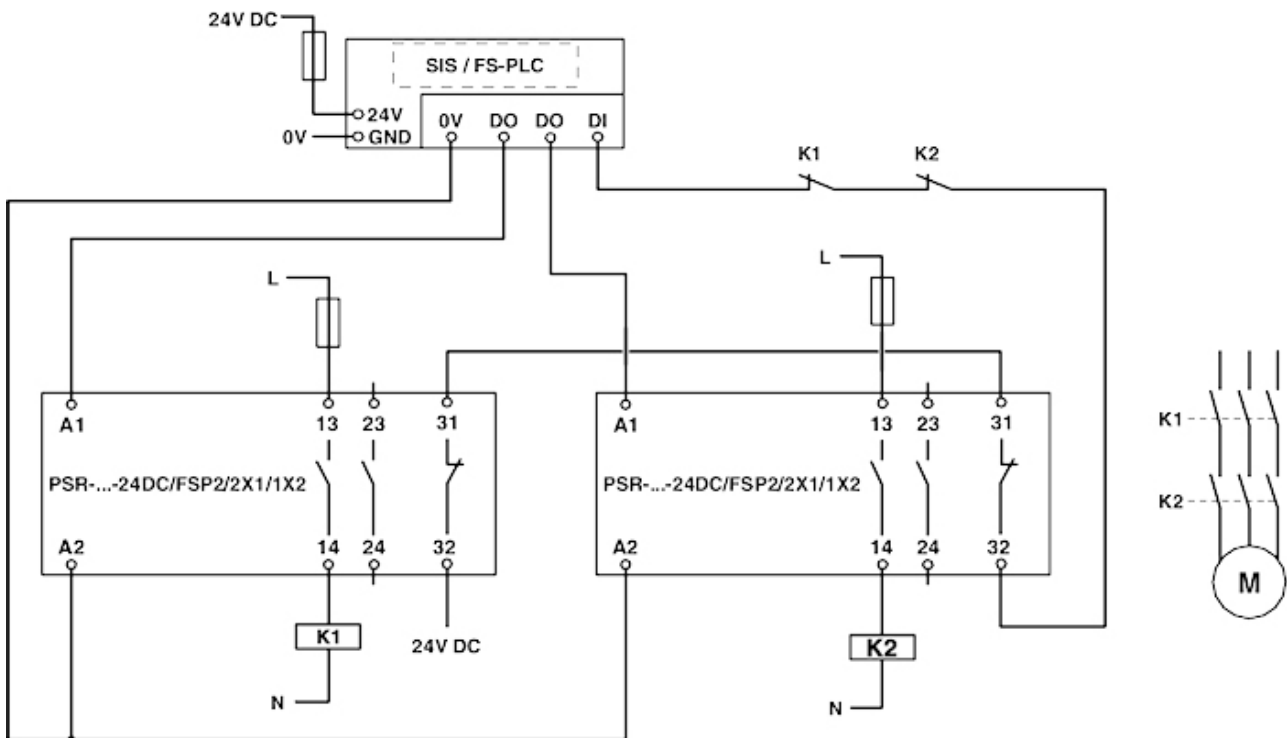
# Coupling relay - PSR-SCP- 24DC/FSP2/2X1/1X2 - 2986575

Circuit diagram



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Circuit diagram



## Classifications

eCl@ss

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 2.0	EC001449
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## Classifications

### ETIM

ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449

### UNSPSC

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

## Approvals

### Approvals

#### Approvals

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

#### Ex Approvals

### Approval details

GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	13979-15HH
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UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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Functional Safety			968/EZ 365.06/15
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<https://www.phoenixcontact.com/gb/products/2986575>



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### Approvals

EAC			EAC-Zulassung
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UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
EAC			RU C- DE.A*30.B.01082
EAC			RU C- DE.A*30.B.01082
Functional Safety			968/EZ 365.06/15
GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	13979-15HH

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