PHŒNIX CONTACT

# Coupling relay - PSR-PS40-1NO-1DO-24DC-SC - 2700398

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (http://phoenixcontact.com/download)

Coupling relay for SIL 3 high- and low-demand applications, couples digital output signals to the I/O, 1 enabling current path, 1 digital signal output, safe state off applications, test pulse filter, fixed screw terminal block

Why buy this product

☑ 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

☑ Approved for Class I, Zone 2 applications

☑ Low housing width of just 6.8 mm

☑ Self-regulation with device-internal lock

☑ Manually monitored and automatic activation in a single device

☑ Long service life thanks to filtering of controller test pulses

☑ 1 enabling current path, 1 digital signal output

☑ Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation
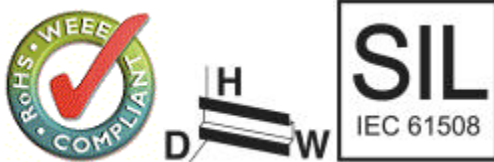
Key Commercial Data

Packing unit	1 STK
Weight per Piece (excluding packing)	120.000 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

PHŒNIX
CONTACT

Coupling relay - PSR-PS40-1NO-1DO-24DC-SC - 2700398

Technical data

Dimensions

Width	6.8 mm
Height	93.1 mm
Depth	102.5 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)
Shock	15g
Vibration (operation)	2g
Maximum altitude	$\leq$ 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. 1.2 W
Rated control supply current I_S	typ. 50 mA
Inrush current	400 mA ($\Delta t < 10$ µs at U_s)
Current consumption	< 5 mA (Y1-Y2)
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 % (Y1-Y2)
Typ. starting time with U_s	< 200 ms (when controlled via A1, automatic start)
Typical release time	< 35 ms (when controlled via A1)
Recovery time	500 ms
Status display	2 x green LEDs
Maximum switching frequency	0.5 Hz
Max. permissible overall conductor resistance	150 Ω (Y1-Y2)
Filter time	max. 2 ms (at A1-A2; test pulse width)
	$\geq$ 100 ms (at A1-A2; test pulse rate)

Output data

Contact type	1 enabling current path
Contact material	$AgSnO_2$
Minimum switching voltage	12 V AC/DC
Maximum switching voltage	250 V AC/DC
Limiting continuous current	6 A (observe derating)
Inrush current, minimum	3 mA
Maximum inrush current	6 A
Sq. Total current	36 A^2 (observe derating)

Coupling relay - PSR-PS40-1NO-1DO-24DC-SC - 2700398

Technical data

Output data

Switching capacity	min. 60 mW
Output fuse	6 A gL/gG (N/O contact)
	4 A gL/gG (for low-demand applications)

Alarm outputs

Number of outputs	1 (digital, PNP)
Voltage	22 V DC (U_s - 2 V)
Current	max. 100 mA
Maximum inrush current	500 mA (Δt = 1 ms at U_s)
Short-circuit protection	no
Output fuse	150 mA fast blow (signal output)

General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with IEC/EN 61810-3 (EN 50205)
Mechanical service life	10 x 10^6 cycles
Nominal operating mode	100% operating factor
Net weight	123.9 g
Mounting type	DIN rail mounting
Assembly instructions	See derating curve
Mounting position	vertical, horizontal, with front of module upward
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Control	single-channel
Housing material	PBT
Housing color	yellow

Connection data

Connection method	Screw connection
pluggable	no
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.	26
Conductor cross section AWG max.	12
Stripping length	12 mm
Screw thread	M3

Safety-related characteristic data

PHŒNIX
CONTACT

Coupling relay - PSR-PS40-1NO-1DO-24DC-SC - 2700398

## Technical data

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
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, EN 60079-15
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Safe isolation, reinforced insulation 6 kV from control circuit, start circuit, signal output to the enabling current path; 4 kV / basic insulation between all current paths and housing
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	2g
Conformance	CE-compliant
UL, USA/Canada	cULus
	Class I, Zone 2, AEx nA nC IIC T4 / Ex nA nC IIC Gc T4 X
GL	C, EMC2

Drawings

Block diagram

Circuit diagram

PHŒNIX CONTACT
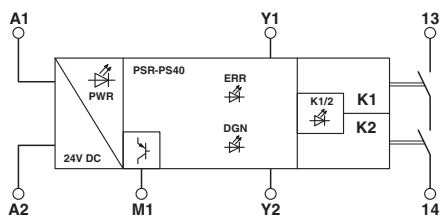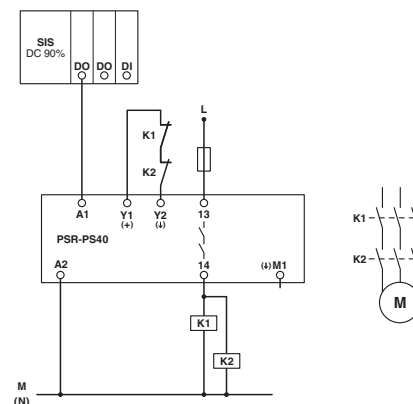
Coupling relay - PSR-PS40-1NO-1DO-24DC-SC - 2700398

Classifications

eCl@ss

eCl@ss 5.1	27371901
eCl@ss 6.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

ETIM

ETIM 5.0	EC001449

Approvals

Approvals

Approvals

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

Ex Approvals

Approval details

UL Listed (UL) http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 140324

cUL Listed (UL) http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 140324

EAC   7500651.22.01.00244

GL http://www.gl-group.com/newbuilding/approvals/index.html 11253-14 HH

Functional Safety   44-780-13755203

cULus Listed (UL)us