

# Coupling relay - PSR-PS22-1NO-1NC-24VDC-SC - 2702524

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 confirmation current path, safe state off applications, test pulse filter, fixed screw terminal block

## Your advantages

- ✓ Up to SIL 3 according to IEC 61508
- ✓ Forcibly guided contacts according to EN 50205
- ✓ Easy proof test according to IEC 61508
- ✓ Low housing width of just 6.8 mm
- ✓ Long service life thanks to filtering of controller test pulses
- ✓ 1 enabling current path, 1 diagnostic 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 pc
GTIN	 4 055626 280240
GTIN	4055626280240

## Technical data

### Note

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

### 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

# Coupling relay - PSR-PS22-1NO-1NC-24VDC-SC - 2702524

## Technical data

### Ambient conditions

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)

### Power supply

Rated control circuit supply voltage $U_s$	24 V DC -15 % / +10 % (A1/A2)
	20.4 V DC ... 26.4 V DC
Rated control supply current $I_s$	typ. 45 mA
Input voltage range "0" signal	0 V DC ... 5 V DC (for safe Off)
Input current range "0" signal	0 mA ... 2 mA (for safe Off)
Power consumption at $U_s$	typ. 1.08 W
Inrush current	typ. 150 mA ( $\Delta t < 5$ ms at $U_s$ )
Filter time	max. 3 ms (at A1-A2 in the event of voltage dips at $U_s$ )
	max. 3 ms (at A1-A2; low test pulse width)
	≥ 50 ms (at A1-A2; low test pulse rate)
	max. 17 ms (at A1-A2; high test pulse width)
	≥ 600 ms (at A1-A2; high test pulse rate)
Diagnostic supply voltage $U_D$	24 V DC -15 % / +10 % (21/0V)
Input current at $U_D$	6 mA (at the contacts 21/0V for $U_D$ ; + 100 mA depending on load at contact 22)
Inrush current at $U_D$	typ. 200 mA ( $\Delta t < 1$ ms; for contacts 21 - 0 V at $U_D$ )
Protective circuit	Serial protection against polarity reversal 33 V suppressor diode (A1-A2)33 V suppressor diode (21/0V)

### Relay outputs: enabling current path

Output name	Enabling current path
Output description	2 N/O contacts in series, without delay, floating
Number of outputs	1 (safety-related N/O contacts: 13/14)
Contact type	1 enabling current path
Contact material	AgSnO <sub>2</sub>
Switching voltage	min. 12 V AC/DC
	max. 250 V AC/DC (Observe the load curve)
Limiting continuous current	6 A (High demand)
	4 A (Low demand)
Inrush current	min. 3 mA
	max. 6 A
Sq. Total current	36 A <sup>2</sup> (observe derating)
Switching capacity	min. 60 mW
Switching frequency	max. 1 Hz
Mechanical service life	10x 10 <sup>6</sup> cycles
Switching capacity according to IEC 60947-5-1	4 A (24 V (DC13))
	5 A (250 V (AC15))

# Coupling relay - PSR-PS22-1NO-1NC-24VDC-SC - 2702524

## Technical data

### Relay outputs: enabling current path

Output fuse	6 A gL/gG
	4 A gL/gG (for low-demand applications)

### Relay outputs: return current/signaling current path

Output name	Confirmation current path
Output description	2 N/C contacts in series, without delay, not floating (reference ground: A2)
Number of outputs	1 (safety-related N/C contacts: 21/22)
Contact type	1 confirmation current path
Contact material	AgCuNi, + Au
Output voltage	Output of diagnostic supply voltage at contact 22: $U_D - 1.6\text{ V}$
Switching voltage	min. 20.4 V DC max. 26.4 V DC
Limiting continuous current	100 mA
Inrush current	min. 1 mA max. 100 mA
Switching capacity	min. 20 mW
Switching frequency	max. 1 Hz
Mechanical service life	$10 \times 10^6$ cycles
Output fuse	150 mA Fast-blow

### Times

Typical pickup time at US	< 150 ms (with $U_s$ when controlled via A1)
Typical release time at US	< 30 ms (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	71.494 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	2 x green LEDs
Indication	1 x red LED

### Connection data

# Coupling relay - PSR-PS22-1NO-1NC-24VDC-SC - 2702524

## Technical data

### Connection data

Connection method	Screw connection
pluggable	no
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 12
Stripping length	12 mm
Screw thread	M3
Torque	0.5 Nm ... 0.6 Nm

### Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
	3
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3
	3
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, 6 kV reinforced insulation from the control circuit (A1/A2) and diagnostics circuit (0V/21/22) to the enabling current path (13/14)
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

# Coupling relay - PSR-PS22-1NO-1NC-24VDC-SC - 2702524

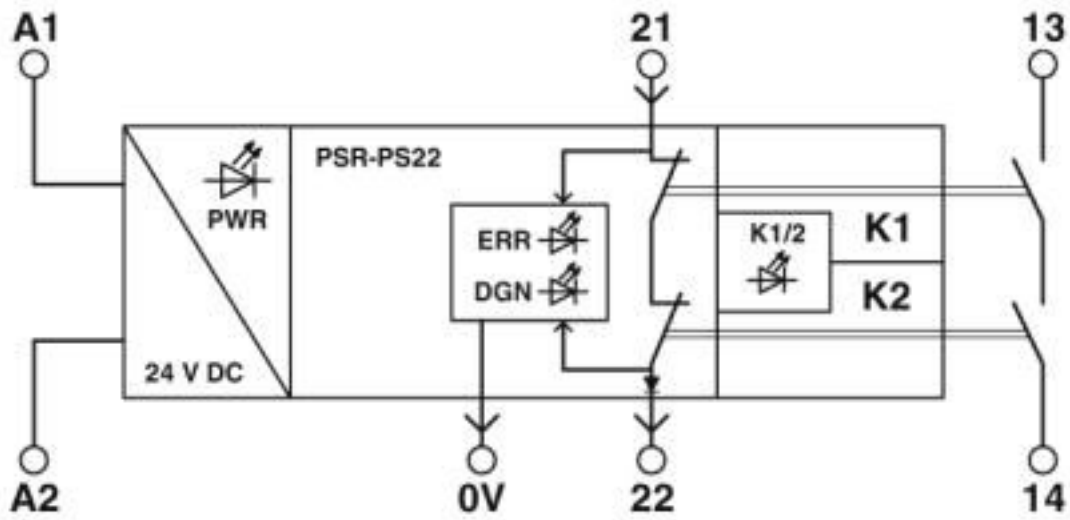
## Technical data

### Environmental Product Compliance

	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"
--	---

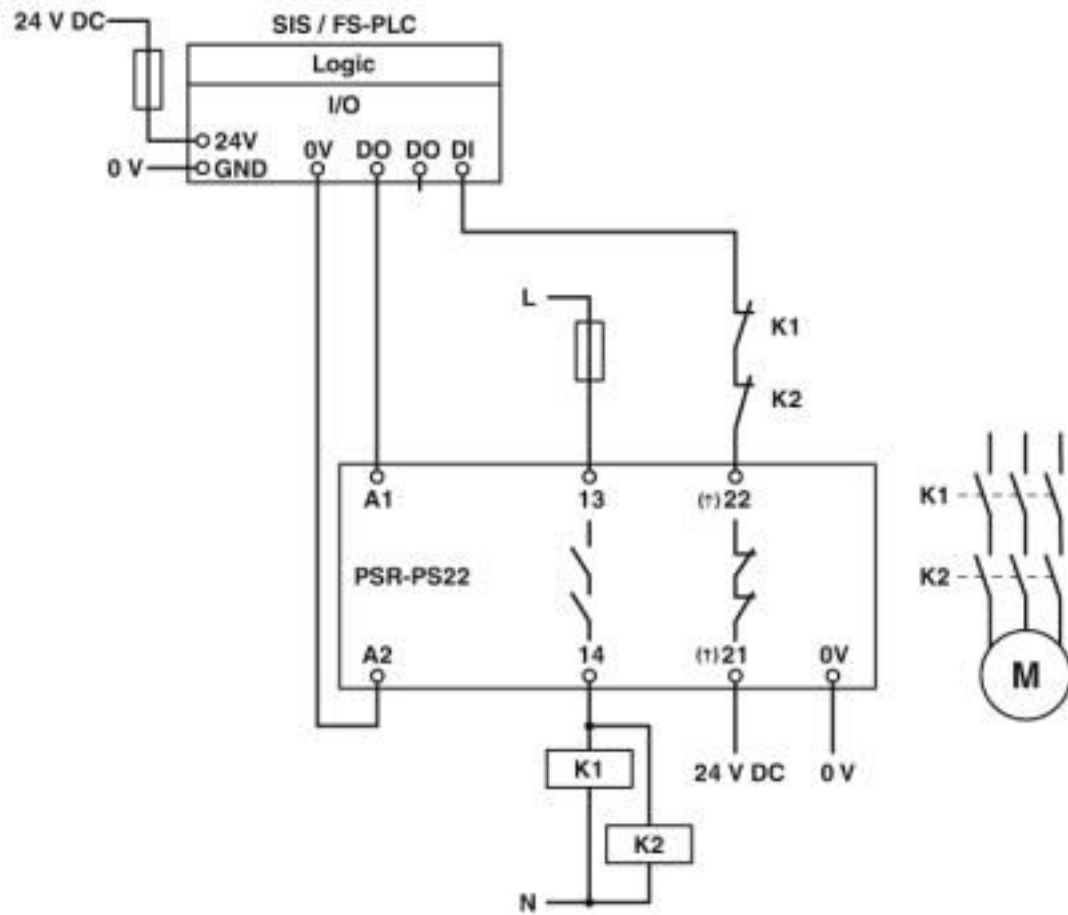
## Drawings

Block diagram



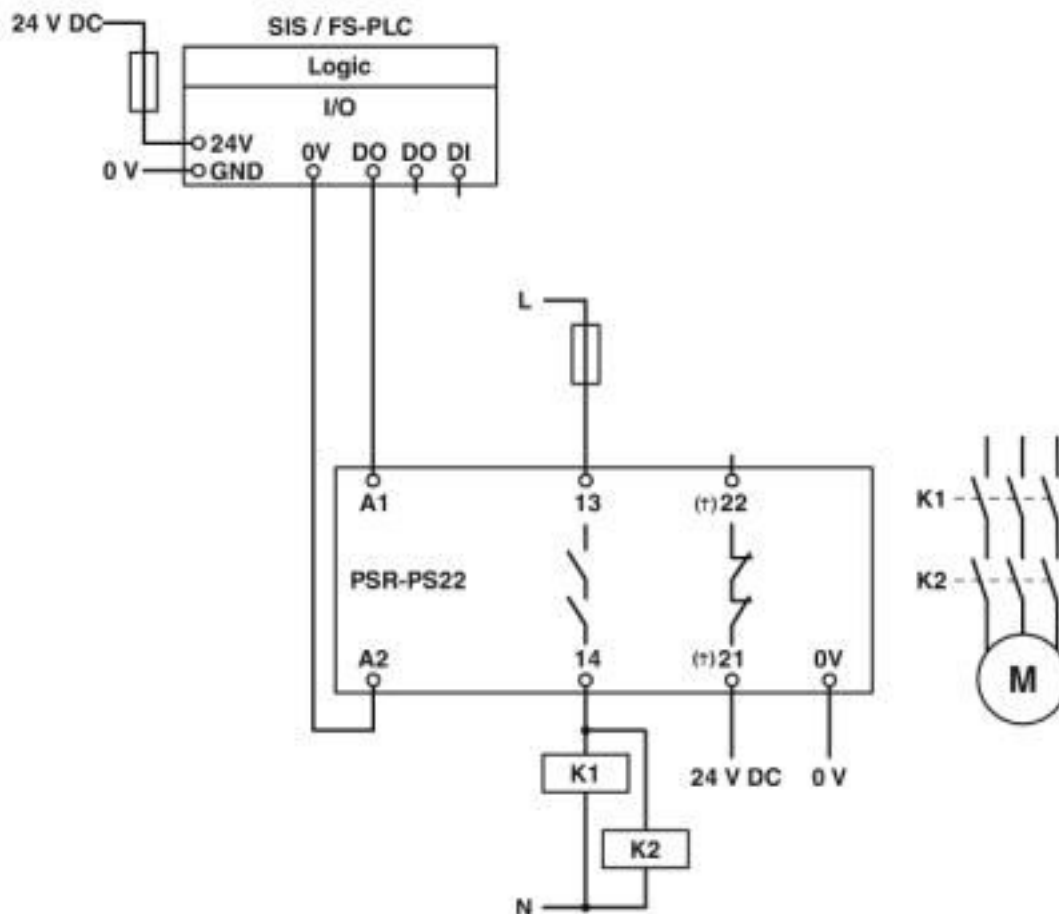
# Coupling relay - PSR-PS22-1NO-1NC-24VDC-SC - 2702524

Circuit diagram



# Coupling relay - PSR-PS22-1NO-1NC-24VDC-SC - 2702524

Circuit diagram



## Classifications

eCl@ss

eCl@ss 10.0.1	27371819
eCl@ss 5.1	27371901
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

# Coupling relay - PSR-PS22-1NO-1NC-24VDC-SC - 2702524

## Approvals

### Approvals

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

### Ex Approvals

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

### Approval details

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
------------	--	---	---------------

Functional Safety			44-780-15124306
-------------------	--	--	-----------------

EAC			RU C- DE.A*30.B.01082
-----	--	--	--------------------------

cULus Listed			
--------------	--	--	--

## Accessories

### Accessories

#### Terminal marking

Zack Marker strip, flat - ZBF 6:UNBEDRUCKT - 0808710



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10



Phoenix Contact 2020 © - all rights reserved  
<http://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Safety Relays](#) category:*

*Click to view products by [Phoenix Contact](#) manufacturer:*

Other Similar products are found below :

[7-1618103-5](#) [1351-1X](#) [1618082-4](#) [1618111-1](#) [C200HDA003](#) [C200HMR432](#) [C200HMR832](#) [C200HMR833](#) [C28PEDRA](#) [20-050-36X](#)  
[C500ETL01](#) [C500OD415CN](#) [2-1618068-0](#) [9-1618103-2](#) [SP10-ETL01](#) [22-060X](#) [C200HNC112](#) [C200HOD214](#) [C500CN812N](#) [4NK0AQY](#)  
[1100X](#) [1100-42X](#) [V23050A1012A551](#) [6-1618082-4](#) [7-1618103-6](#) [WTD-101X](#) [SP16DRD](#) [SP16DRA](#) [C500-CE243](#) [C500-IDS02-V1](#)  
[607.5111.020](#) [DOLD 48173](#) [CS AR-02V024](#) [CS AR-22V024](#) [CS AR-22V230](#) [CS AR-46V024](#) [750136](#) [PSR-MS21-1NO-1DO-24DC-SC](#)  
[600PSR-165/300-CU](#) [SR6V6K18](#) [SR4M4005](#) [BPS 36-1](#) [BP34 - 101057553](#) [2TLA010033R3000](#) [2TLA010033R2000](#) [2TLA010033R0000](#)  
[2TLA010028R1000](#) [2TLA010017R0100](#) [2TLA010026R0400](#) [SCR 2-W22-2.5](#)