PSR-PC32-2NO-1NC-24-230UC-SC - Coupling relay

2700581

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Coupling relay for SIL 3 high and low-demand applications, couples digital signals to the I/O, 24 V ... 230 V wide-range input, 2 enabling current paths (1x up to 60 V, 1x up to 250 V) 1 confirmation current path, safe state off applications, plug-in screw terminal block

Your advantages

- Up to SIL 3 in accordance with IEC 61508
- Force-guided contacts in accordance with EN 50205
- Easy proof test according to IEC 61508
- Slim design
- Wide-range input
- Corrosion protection through protective coating on the PCB

ELEKTROGERÄTE RÜCKNAHME

Commercial data

Item number	2700581
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN01
Product key	DNA182
GTIN	4046356916066
Weight per piece (including packing)	185.72 g
Weight per piece (excluding packing)	157.28 g
Customs tariff number	85364900
Country of origin	DE

Technical data

Notes

Note on application

Note on application	Only for industrial use

Product properties

Product type	Coupling relay
Product family	PSRmini
Application	Safe switch off
	High demand
	Low demand
	Ex
Control	1 and 2 channel
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Insulation characteristics

Overvoltage category	II, III (See the section “Insulation coordination”)
Degree of pollution	2

Times

Typ. starting time with U_s	< 100 ms (with U_s when controlled via A1)
Typical release time	< 200 ms (with U_s when controlled via A1)
Recovery time	< 500 ms

Electrical properties

Maximum power dissipation for nominal condition	5.7 W (at I_L^2 = 72 A²)
Nominal operating mode	100% operating factor
Rated insulation voltage	250 V AC
Rated surge voltage	See the section “Insulation coordination”

Supply

Designation	A1/A2
Rated control circuit supply voltage U_S	24 V AC/DC ... 230 V AC/DC -15 % ... +10 %
Rated control supply current I_S	75 mA (24 V DC)
	34 mA (48 V DC)
	97 mA (42 V AC)
	28 mA (120 V AC)
	16 mA (230 V AC)
Power consumption at U_S	1.8 W (with DC)
	2.1 W (with AC)
Apparent power	typ. 4.1 VA
Inrush current	typ. 16 A (Δt < 100 µs at U_s)
	10 ms (24 V DC, A1 in the event of voltage dips at U_s)

Filter time	max. 1.5 ms (at A1-A2; test pulse width; at 24 V DC)
	Test pulse rate = 5 x Test pulse width
Protective circuit	Surge protection; Varistor 275 V

Supply

Designation	24V/GND
Diagnostic supply voltage U_D	24 V DC -15 % / +10 %
Input current at U_D	< 5 mA
Inrush current at U_D	< 5 mA (typ.)
Protective circuit	Surge protection; 33 V suppressor diode
	Serial protection against polarity reversal

Output data

Relay: Enabling current paths (13/14, 93/94)

Output description	2 NO contacts each in series, without delay, floating
Number of outputs	2 (safety-related)
Contact switching type	2 enabling current paths
Contact material	$AgSnO_2$
Switching voltage	min. 12 V AC/DC
	max. 250 V AC/DC (13/14)
	max. 60 V AC/DC (93/94)
Switching power	min. 60 mW
Inrush current	min. 3 mA
	max. 6 A
Switching capacity (360/h cycles)	4 A (24 V (DC13))
	5 A (230 V (AC 15))
Limiting continuous current	6 A (observe derating)
Sq. Total current	72 A^2 (observe derating)
Switching frequency	max. 0.1 Hz
Mechanical service life	10x 10^6 cycles
Output fuse	6 A gL/gG
	4 A gL/gG (for low-demand applications)

Relay: Confirmation current path (31/32)

Output description	2 N/C contacts in series, without delay, floating/non-floating, depending on the application
Number of outputs	1 (safety-related)
Contact switching type	1 confirmation current path
Contact material	AgCuNi, + Au
Switching voltage	min. 3.3 V DC
	max. 26.4 V DC
Switching power	min. 3.3 mW
Inrush current	min. 1 mA
	max. 100 mA
Limiting continuous current	100 mA

Switching frequency	max. 0.1 Hz
Mechanical service life	10x 10^6 cycles
Output fuse	150 mA fast blow

Connection data

Connection technology

pluggable	yes

Conductor connection

Connection method	Screw connection
Conductor cross-section rigid	0.2 mm² ... 2.5 mm²
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12
Stripping length	7 mm
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm

Signaling

Status display	1 x LED (green), 1 x LED (yellow)
Operating voltage display	1 x LED (yellow)

Dimensions

Width	17.5 mm
Height	112.2 mm
Depth	114.5 mm

Material specifications

Color (Housing)	yellow (RAL 1018)
Housing material	PA

Characteristics

Safety data

Stop category (EN 60204-1)	0

Safety data: EN 50156-2

Safety Integrity Level (SIL)	3 (Reference IEC 61508)

Safety data: IEC 61508 - High demand

Safety Integrity Level (SIL)	3 (< 15% of the overall SIL)

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	3 (< 15% of the overall SIL)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-40 °C ... 70 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m (Above sea level)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g

Approvals

ATEX

Identification	Ⓔx II 3G Ex ec nC IIC T4 Gc
Certificate	UL 22 ATEX 2912X

IECEx

Identification	Ex ec nC IIC T4 Gc
Certificate	IECEx UL 22.0037X

UL, USA/Canada

Identification	cULus
Certificate	E140324

UL Ex, USA / Canada

Identification	Class I, Zone 2, AEx ec nC IIC T4 / Ex ec nC IIC Gc T4 X
	Class I, Div. 2, Groups A, B, C, D, T4
Certificate	E360692

CE

Identification	CE-compliant

Environmental simulation test

Identification	G3
Certificate	ISA-S71.04

CCC / China-Ex

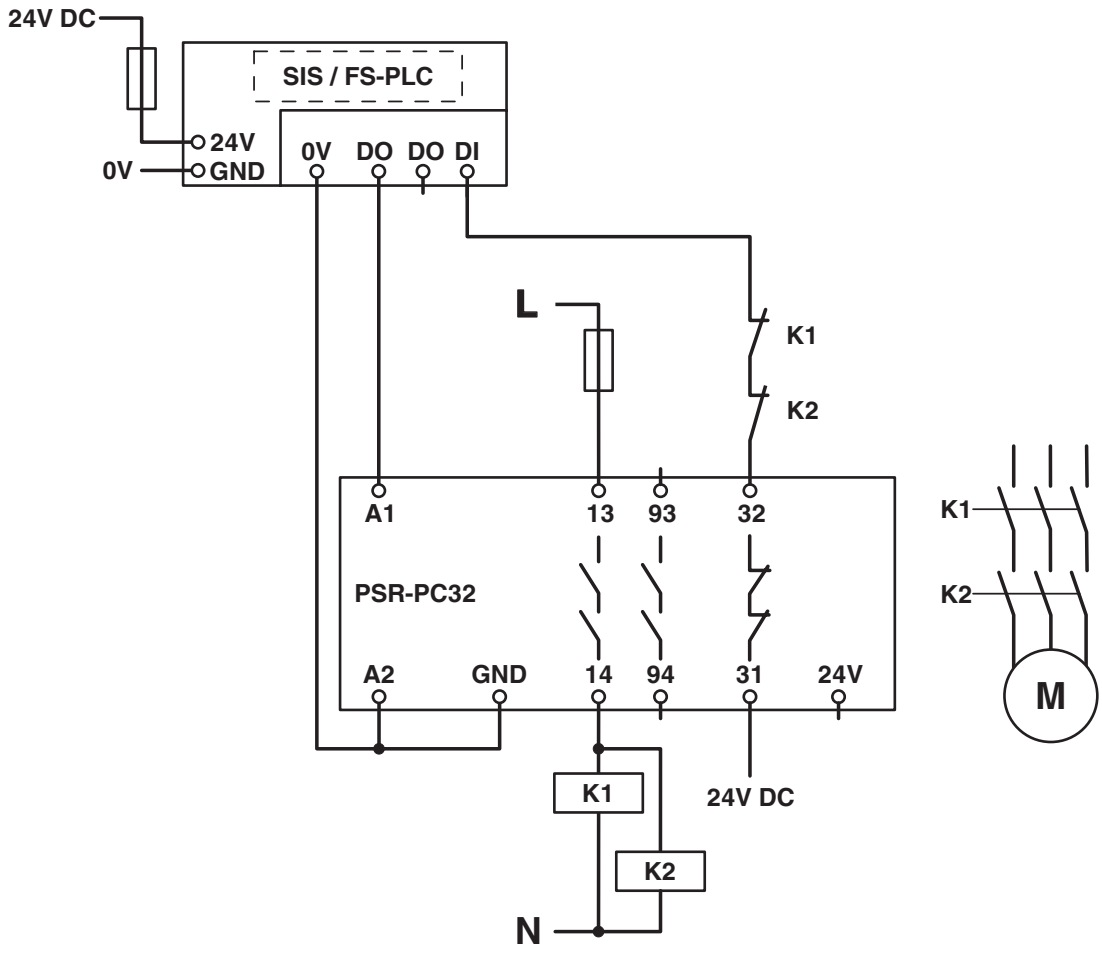
Identification	Ex ec nC IIC T4 Gc
Certificate	2022122304115695

Mounting

Mounting type	DIN rail mounting
Assembly note	See derating curve
Mounting position	vertical or horizontal

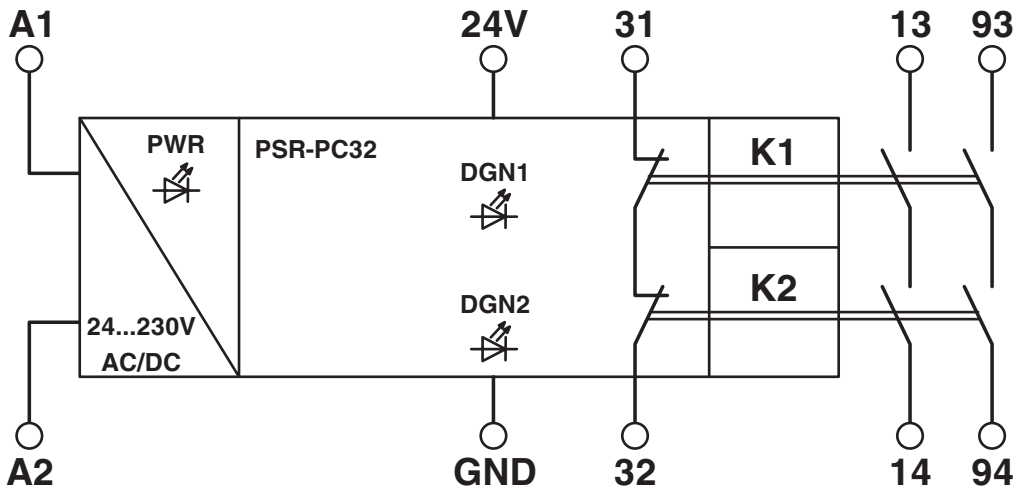
Drawings

Circuit diagram



Example application

Block diagram



Block diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2700581

Functional Safety
Approval ID: 442055124302

Functional Safety
Approval ID: 4478015124308

cULus Listed
Approval ID: E140324

IECEx
Approval ID: IECEx ULD 22.0037X

ATEX
Approval ID: UL 22 ATEX 2912X

cULus Listed
Approval ID: E360692

CCC
Approval ID: 2022122304115695

Classifications

ECLASS

ECLASS-13.0	27371819
ECLASS-15.0	27371819

ETIM

ETIM 10.0	EC001449

UNSPSC

UNSPSC 21.0	39122200

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(a)-I, 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	9eddf264-067b-403c-9bd0-7b8e51826b75

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