

2900525

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e in accordance with EN ISO 13849, 2-channel operation, 2 enabling current paths, nominal input voltage: 24 V DC, plug-in screw terminal block

Your advantages

- Up to Cat. 4/PL e in accordance with EN ISO 13849-1, SIL 3 in accordance with EN 62061, SIL 3 in accordance with IEC 61508
- · Manually monitored and automatic activation in a single device
- · Reinforced insulation
- · 2 channel control
- 2 enabling current paths, 1 signaling current path

Commercial Data

Item number	2900525
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DNA114
Catalog Page	Page 229 (C-6-2019)
GTIN	4046356515658
Weight per Piece (including packing)	192.6 g
Weight per Piece (excluding packing)	137.48 g
Customs tariff number	85371098
Country of origin	DE



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Technical Data

Product properties

Product type	Safety relays
Product family	PSRclassic
Application	Emergency stop
	Safety door
Mechanical service life	approx. 10 ⁷ cycles
Relay type	Electromechanical relay with force-guided contacts in accordance with IEC/EN 61810-3

Electrical properties

Maximum power dissipation for nominal condition	16.44 W ($U_S = 26.4 \text{ V}$, $I_L^2 = 72 \text{ A}^2$, $P_{Total max} = 2.04 \text{ W} + 14.4 \text{ W}$)
Nominal operating mode	100% operating factor

Air clearances and creepage distances between the power circuits

Rated insulation voltage	250 V
Rated surge voltage/insulation	See section "Insulation coordination"

Input data

General

Rated control circuit supply voltage U_S	24 V DC -15 % / +10 %
Power consumption at U _S	typ. 1.68 W (DC)
Rated control supply current I _S	typ. 70 mA
Input voltage range in reference to U _N	0.85 1.1
Typical input current at U _N	70 mA DC (at Us)
Inrush current	$< 3.5 \text{ A } (\Delta t = 3 \text{ ms at U}_s)$
	< 100 mA (Δt = 500 ms, with U _s /I _x at S12)
	$>$ -100 mA (Δt = 300 ms, with U _s /I _x at S22)
	< 6 mA (with U _s /I _x to S34)
	< 6 mA (with U _s /I _x to S35)
Current consumption	typ. 38 mA (S12)
	typ38 mA (S22)
	typ. 0 mA (with U _s /I _x to S34)
	typ. 1 mA (with U _s /I _x to S35)
Voltage at input/start and feedback circuit	approx. 24 V DC
Filter time	5 ms (at A1 in the event of voltage dips at U _s)
	No test pulses permitted
Typical response time	100 ms (Monitored/manual start)
	150 ms (automatic start)
Typ. starting time with U _s	250 ms (when controlled via A1)
Typical release time	20 ms (on demand via the sensor circuit)
	45 ms (on demand via A1)
Concurrence	ω



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Recovery time	1 s (following demand of the safety function)
	< 1 s (Boot time)
Protective circuit	Surge protection; Suppressor diode
Max. permissible overall conductor resistance	approx. 50 Ω (Input and start circuits at $\rm U_S)$
Operating voltage display	Green LED
Status display	Green LED

Output data

Contact switching type	2 enabling current paths
	1 signaling current path
Contact material	AgSnO ₂ , + 0.2 μm Au
Maximum switching voltage	250 V AC
Minimum switching voltage	10 V AC/DC
Limiting continuous current	6 A (Observe derating and load limit curve)
Maximum inrush current	6 A
Inrush current, minimum	10 mA
Sq. Total current	72 A ² (Enabling current paths)
	36 A ² (Signaling current path 31/32)
Interrupting rating (ohmic load) max.	see load limit curve
Switching capacity min.	100 mW
Switching capacity in accordance with IEC 60947-5-1	6 A (DC13, enabling current paths)
	5 A (AC15, enabling current paths)
	2 A (DC13, signaling current paths)
	1.5 A (AC15, signaling current paths)
Output fuse	10 A gL/gG (Enabling current paths)
	4 A gL/gG (Low-demand enabling current paths)
	6 A gL/gG (Signaling current path)

Connection data

Connection technology

pluggable	yes
Conductor connection	
Connection method	Screw connection
Conductor cross section rigid	0.2 mm ² 2.5 mm ²
Conductor cross section flexible	0.2 mm² 2.5 mm²
Conductor cross-section AWG	24 12
Stripping length	7 mm
Screw thread	M3

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm



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Material specifications

Housing material	Polyamide
Characteristics	
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Safety data	
Stop category	0
Safety data: EN ISO 13849	
Category	4
Performance level (PL)	e (5 A DC13; 5 A AC15; 8760 switching cycles/year)
Safety data: IEC 61508 - High demand	
Equipment type	Type A
Safety Integrity Level (SIL)	3
Probability of a hazardous failure per hour (PFH _D)	5.5 x 10 ⁻¹⁰ (5 A DC13; 5 A AC15; 8760 switching cycles/year)
Proof test interval	240 Months
Duration of use	240 Months
Safety data: IEC 61508 - Low demand	
Equipment type	Type A
Safety Integrity Level (SIL)	3
Probability of a hazardous failure on demand (PFD _{AVG})	1.37 x 10 ⁻⁴
Proof test interval	66 Months

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Ambient temperature (operation)	-20 °C 55 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C 70 °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

Standards and regulations

Air clearances and creepage distances between the power circuits

Standards/regulations	DIN EN 60947-1
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Mounting

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



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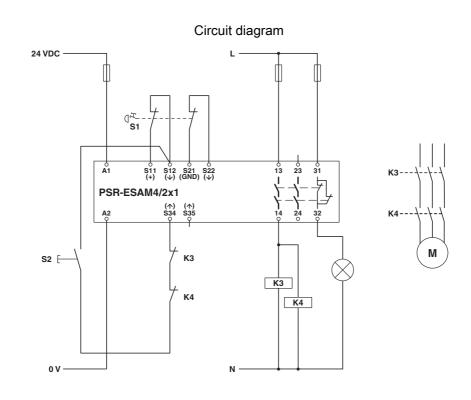
Connection method	Screw connection
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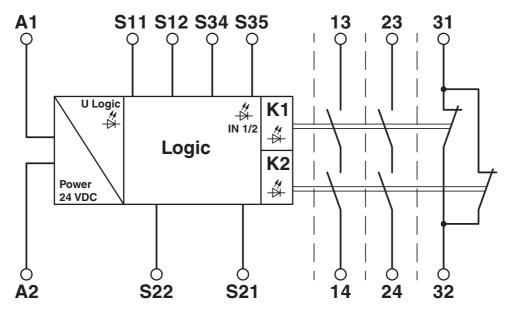
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Drawings



Circuit diagram





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Approvals

🌣 To download certificates, visit the product detail page: https://www.phoenixcontact.com/pc/products/2900525



EAC

Approval ID: TR_TS_D_00573_c



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324



Functional Safety

Approval ID: 01/205/5117.03/21



Functional Safety

Approval ID: 968/EZ 496.04/21

cULus Listed



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Classifications

UNSPSC 21.0

ECLASS

ECLASS-11.0	27371819
ECLASS-13.0	27371819
ECLASS-12.0	27371819
ETIM	
ETIM 8.0	EC001449
UNSPSC	

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Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"



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Accessories

CP-MSTB - Coding profile

1734634

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Coding profile, is inserted into the slot on the plug or inverted header, red insulating material



CR-MSTB - Coding section

1734401

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Coding section, inserted into the recess in the header or the inverted plug, red insulating material



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