

Safety relays - PSR-SPP-230AC/ESAM2/3X1/1X2/B - 2901431

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Safety relay for emergency stop and safety door up to SIL 1, SIL CL 1, Cat. 1, PL c, depending on the application up to SIL 3, SIL CL 3, Cat. 4, PL e, single-channel operation, 3 enabling current paths, nominal input voltage of 230 V AC/DC, plug-in spring-cage terminal block

The figure shows a version with a screw connection

Your advantages

- Up to Cat. 1/PL c according to ISO 13849-1, SILCL 1 according to IEC 62061, SIL 1 according to IEC 61508
- Depending on the application, up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- Single-channel control
- Basic insulation



Key commercial data

package_quantity	1
GTIN	4046356592178

Technical data

Note

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

Width	22.5 mm
Height	112 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °C
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)	10 Hz ... 150 Hz, 2g
Maximum altitude	≤ 2000 m (Above sea level)

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Technical data

Input data

Nominal input voltage U_N	230 V AC
Input voltage range in reference to U_N	0.85 ... 1.1
Typical input current at U_N	22 mA
Voltage at input/start and feedback circuit	~ 24 V DC
Typical response time	50 ms (manual start)
Typical response time	300 ms (automatic start)
Typ. starting time with U_s	300 ms (when controlled via A1 or S11/S12)
Typical release time	20 ms (when controlled via S11/S12)
Typical release time	150 ms (when controlled via A1)
Recovery time	1 s
Status display	2 x green LEDs
Maximum switching frequency	0.5 Hz
Max. permissible overall conductor resistance	50 Ω

Output data

Contact type	3 enabling current paths
Contact type	1 signaling current path
Contact material	AgSnO ₂ , gold-flashed
Minimum switching voltage	10 V AC/DC
Maximum switching voltage	250 V AC/DC
Limiting continuous current	6 A (N/O contact)
Limiting continuous current	5 A (N/C contact)
Inrush current, minimum	10 mA
Maximum inrush current	6 A
Sq. Total current	72 A ²
Interrupting rating (ohmic load) max.	144 W (at 24 V DC)
Interrupting rating (ohmic load) max.	230 W (at 48 V DC)
Interrupting rating (ohmic load) max.	68 W (at 110 V DC)
Interrupting rating (ohmic load) max.	88 W (at 220 V DC)
Interrupting rating (ohmic load) max.	2000 VA (for 250 V AC)
Maximum interrupting rating (inductive load)	48 W (at 24 V DC)
Maximum interrupting rating (inductive load)	40 W (at 48 V DC)
Maximum interrupting rating (inductive load)	35 W (at 110 V DC)
Maximum interrupting rating (inductive load)	33 W (at 220 V DC)
Switching capacity min.	100 mW
Output fuse	10 A gL/gG NEOZED (Enabling current paths)
Output fuse	6 A gL/gG NEOZED (Signaling current paths)

General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Mechanical service life	Approx. 10 ⁷ cycles

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Technical data

General

Nominal operating mode	100% operating factor
Net weight	99.9 g
Mounting type	DIN rail mounting
Mounting position	any
Degree of protection	IP54
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Control	single-channel

Connection data

Connection method	Spring-cage connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

Safety-related characteristic data

Stop category	0
Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
Safety Integrity Level (SIL)	1 (up to SIL 3 depending on the application)
Designation	EN ISO 13849
Performance level (PL)	c (up to PL e depending on the application)
Category	1 (up to Cat. 4 depending on the application)
Safety Integrity Level Claim Limit (SIL CL)	1 (up to SILCL 3 depending on the application)

Standards and Regulations

Shock	15g
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	4 kV / basic insulation (safe isolation, reinforced insulation, and 6 kV between A1-A2/logic/enabling and signaling current paths)
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ... 150 Hz, 2g

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
China RoHS	No hazardous substances above threshold values

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Classifications

eCl@ss

eCl@ss 4.0	27371102
eCl@ss 4.1	27371102
eCl@ss 5.0	27371901
eCl@ss 5.1	27371901
eCl@ss 6.0	27371819
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

ETIM

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

UNSPSC

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

Approvals

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

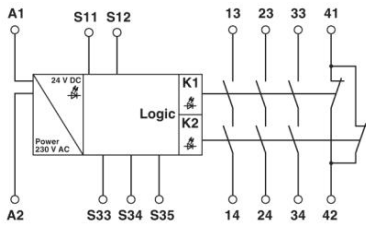
Approval details

UL Listed
cUL Listed
EAC
ERC
Functional Safety
cULus Listed

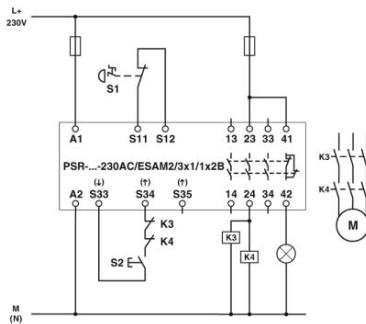
Drawings

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Circuit diagram

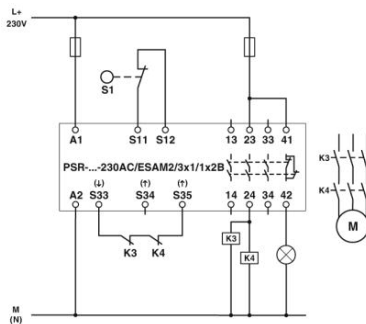


Circuit diagram



Single-channel emergency stop monitoring

Circuit diagram



Single-channel safety door monitoring

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