

# Safety relays - PSR-SPP-120UC/ESAM4/3X1/1X2/B - 2901425

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e according to EN ISO 13849, 1 or 2-channel operation, 3 enabling current paths, nominal input voltage: 120 V AC/DC, plug-in spring-cage terminal block

The figure shows 120 UC version

## Your advantages

- Up to Cat.4/PL e according to EN ISO 13849-1, SILCL 3 according to EN 62061, SIL 3 according to IEC 61508
- Manually monitored and automatic activation in a single device
- 3 enabling current paths, 1 signaling current path
- Single and two-channel control
- Basic insulation



## Key commercial data

package_quantity	1
GTIN	4046356592031

## 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

Input voltage range	110 V AC/DC ... 120 V AC/DC
Input voltage range in reference to $U_N$	0.85 ... 1.1
Typical input current at $U_N$	38 mA
Voltage at input/start and feedback circuit	~ 24 V DC
Typical response time	40 ms (man. start)
Typ. starting time with $U_s$	330 ms (when controlled via A1)
Typical release time	60 ms (when controlled via A1)
Typical release time	20 ms (when controlled via S11/S12 and S21/S22)
Concurrence input 1/2	$\infty$
Recovery time	1 s
Status display	Green LED
Maximum switching frequency	0.5 Hz
Max. permissible overall conductor resistance	50 $\Omega$

### Output data

Contact type	3 enabling current paths
Contact type	1 signaling current path
Contact material	AgSnO <sub>2</sub> , + 0.2 $\mu$ m Au
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 <sup>2</sup>
Interrupting rating (ohmic load) max.	144 W (24 V DC, $\tau$ = 0 ms)
Interrupting rating (ohmic load) max.	230 W (48 V DC, $\tau$ = 0 ms)
Interrupting rating (ohmic load) max.	68 W (110 V DC, $\tau$ = 0 ms)
Interrupting rating (ohmic load) max.	88 W (220 V DC, $\tau$ = 0 ms)
Interrupting rating (ohmic load) max.	2000 VA (250 V AC, $\tau$ = 0 ms)
Maximum interrupting rating (inductive load)	48 W (24 V DC, $\tau$ = 40 ms)
Maximum interrupting rating (inductive load)	40 W (48 V DC, $\tau$ = 40 ms)
Maximum interrupting rating (inductive load)	35 W (110 V DC, $\tau$ = 40 ms)
Maximum interrupting rating (inductive load)	33 W (220 V DC, $\tau$ = 40 ms)
Switching capacity min.	100 mW
Output fuse	10 A gL/gG NEOZED (N/O contact)
Output fuse	6 A gL/gG NEOZED (N/C contact)

### General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Mechanical service life	Approx. 10 <sup>7</sup> 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	one and two channel

### Connection data

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

### Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3
Designation	EN ISO 13849
Performance level (PL)	e
Category	4
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	3
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/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

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### Standards and Regulations

Vibration (operation)	10 Hz ...150 Hz, 2g
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### Environmental Product Compliance

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

## 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 / Functional Safety / EAC / EAC / cULus Listed /

### Approval details

UL Listed 
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cUL Listed 
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Functional Safety 
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## Approvals

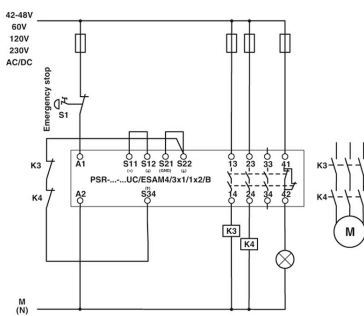
EAC EAC

ERC

cULus Listed

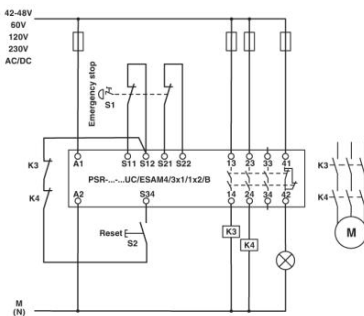
## Drawings

### Application drawing



Single-channel emergency stop monitoring

### Application drawing



Two-channel emergency stop monitoring

### Circuit diagram

