Safety relays - PSR-SCP- 24DC/ESD/4X1/30 - 2981800

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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, automatic or manual activation, 2 N/O contacts dropout delayed from 0.1 s to 30 s, plug-in screw connection terminal blocks

Product Features

- Maximum of 3 undelayed and 2 dropout delay contacts
- Manually monitored and automatic activation
- Up to Cat. 3/4 and PL d/e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508
- For emergency stop and safety door monitoring, plus evaluation of light grids (suitable light grids available on request)
- Protective labels to prevent manipulation of the set time (PSR-ESD-300) or electronic protection against manipulation (PSR-ESD-30)
- Single and two-channel control

Key commercial data

package_quantity	1
GTIN	4046356117968

Technical data

Note

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

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 45 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Max. permissible relative humidity (operation)	75 %
Max. permissible humidity (storage/transport)	75 %

Input data

Nominal input voltage U_N	24 V DC
Input voltage range in reference to U_N	0.85 ... 1.1
Typical input current at U_N	75 mA DC

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Technical data

Input data

Voltage at input/start and feedback circuit	approx. 24 V DC
Typical response time	150 ms (Monitored/manual and auto-start)
Typical release time	20 ms (undelayed contacts)
Typical release time	100 ms (delayed contacts)
Typical release time range	0.1 s ... 30 s
Recovery time	330 ms (Restart)
Recovery time	1 s (Electric torque)
Status display	LED K1/K2 and K3(t)/K4(t), green
Max. permissible overall conductor resistance	500 Ω (Input and reset circuit at U_N)

Output data

Contact type	2 undelayed enabling current paths
Contact type	2 enabling current paths delayed
Contact material	$AgSnO_2$
Minimum switching voltage	15 V AC/DC
Maximum switching voltage	250 V AC/DC
Limiting continuous current	6 A (N/O contact)
Inrush current, minimum	25 mA
Maximum inrush current	6 A
Sq. Total current	120 A^2 (see to derating)
Interrupting rating (ohmic load) max.	144 W (24 V DC, τ = 0 ms)
Interrupting rating (ohmic load) max.	288 W (48 V DC, τ = 0 ms)
Interrupting rating (ohmic load) max.	90 W (110 V DC, τ = 0 ms)
Interrupting rating (ohmic load) max.	88 W (220 V DC, τ = 0 ms)
Interrupting rating (ohmic load) max.	1500 VA (250 V AC, τ = 0 ms)
Maximum interrupting rating (inductive load)	42 W (24 V DC, τ = 40 ms)
Maximum interrupting rating (inductive load)	33 W (48 V DC, τ = 40 ms)
Maximum interrupting rating (inductive load)	25 W (110 V DC, τ = 40 ms)
Maximum interrupting rating (inductive load)	23 W (220 V DC, τ = 40 ms)
Switching capacity min.	0.4 W
Output fuse	10 A gL/gG NEOZED (N/O contact)

General

Relay type	Electromechanically forcibly guided, dust-proof relay.
Mechanical service life	Approx. 10^7 cycles
Mounting type	DIN rail mounting
Degree of protection	IP20
Min. degree of protection of inst. location	IP54
Mounting position	any
Category according to EN 13849-1	4
Stop category	0 (undelayed contacts)
Stop category	1 (delayed contacts)

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General

Designation	Air and creepage distances between the power circuits
Standards/regulations	DIN EN 60947-1
Rated surge voltage / insulation	4 kV / basic insulation
Rated insulation voltage	250 V
Pollution degree	2
Surge voltage category	II

Connection data

Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section stranded min.	0.2 mm²
Conductor cross section stranded max.	2.5 mm²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12
Stripping length	7 mm
Screw thread	M3
Connection method	Screw connection

Safety-related characteristic data

Stop category	0
Stop category	1
Safety Integrity Level (SIL)	3
$SFF_{Single-channel}$	99.98 %
$SFF_{Two-channel}$	97.62 %
Mean time to a hazardous failure ($MTTF_d$)	63311 Years
Probability of a hazardous failure per hour (PFH_D)	1.80×10^{-9}
Diagnostic coverage (DC)	99 %
Proof test interval	240 Months
Duration of use	240 Months
Designation	EN ISO 13849
Performance level (PL)	e
Category	4
Mean time to a hazardous failure ($MTTF_d$)	124.23 Years
Diagnostic coverage (DC_{avg})	99 %
CCF	Passed
T_{10d}	45.63 Years
Duration of use	240 Months
Safety Integrity Level Claim Limit (SIL CL)	3
PFH_D	$1{,}80 \times 10^{-9}$
Proof test interval	240 Months
Duration of use	240 Months

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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

ETIM

ETIM 2.0	EC001449
ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449

UNSPSC

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

approvals

UL Listed / GOST / cUL Listed / Functional Safety / cULus Listed /

Approval details

UL Listed

GOST

cUL Listed

Functional Safety

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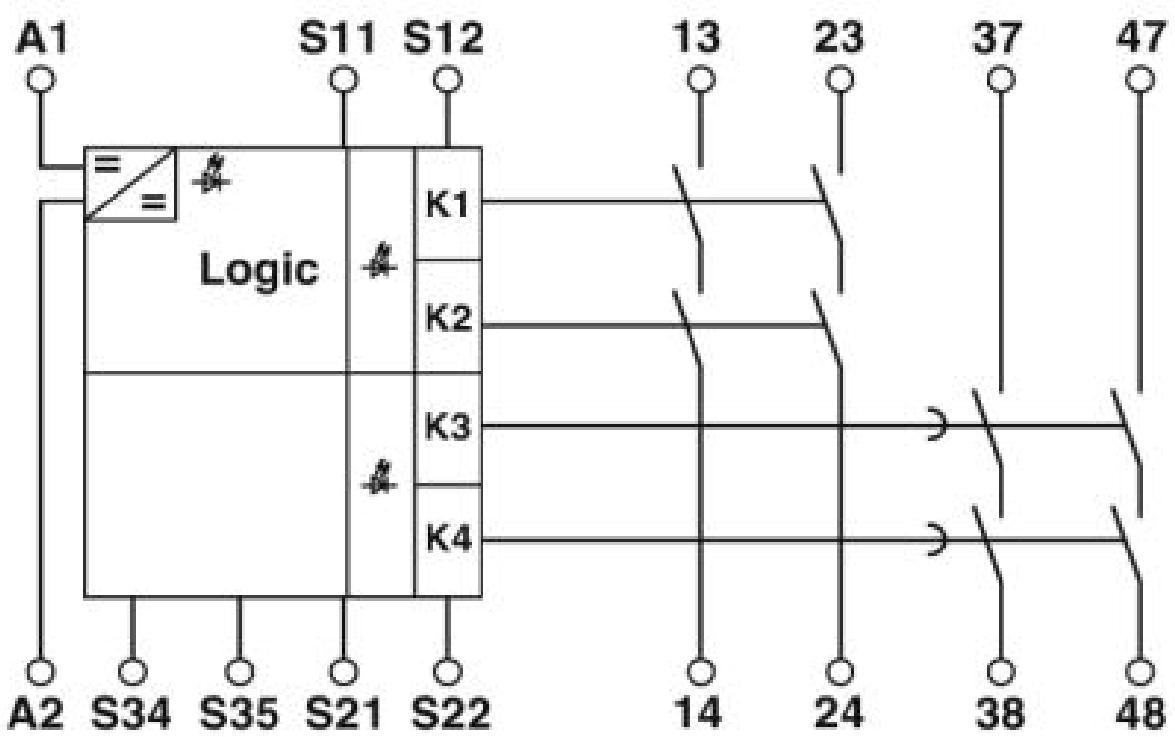
approvals

cULus Listed

Drawings

Circuit diagram



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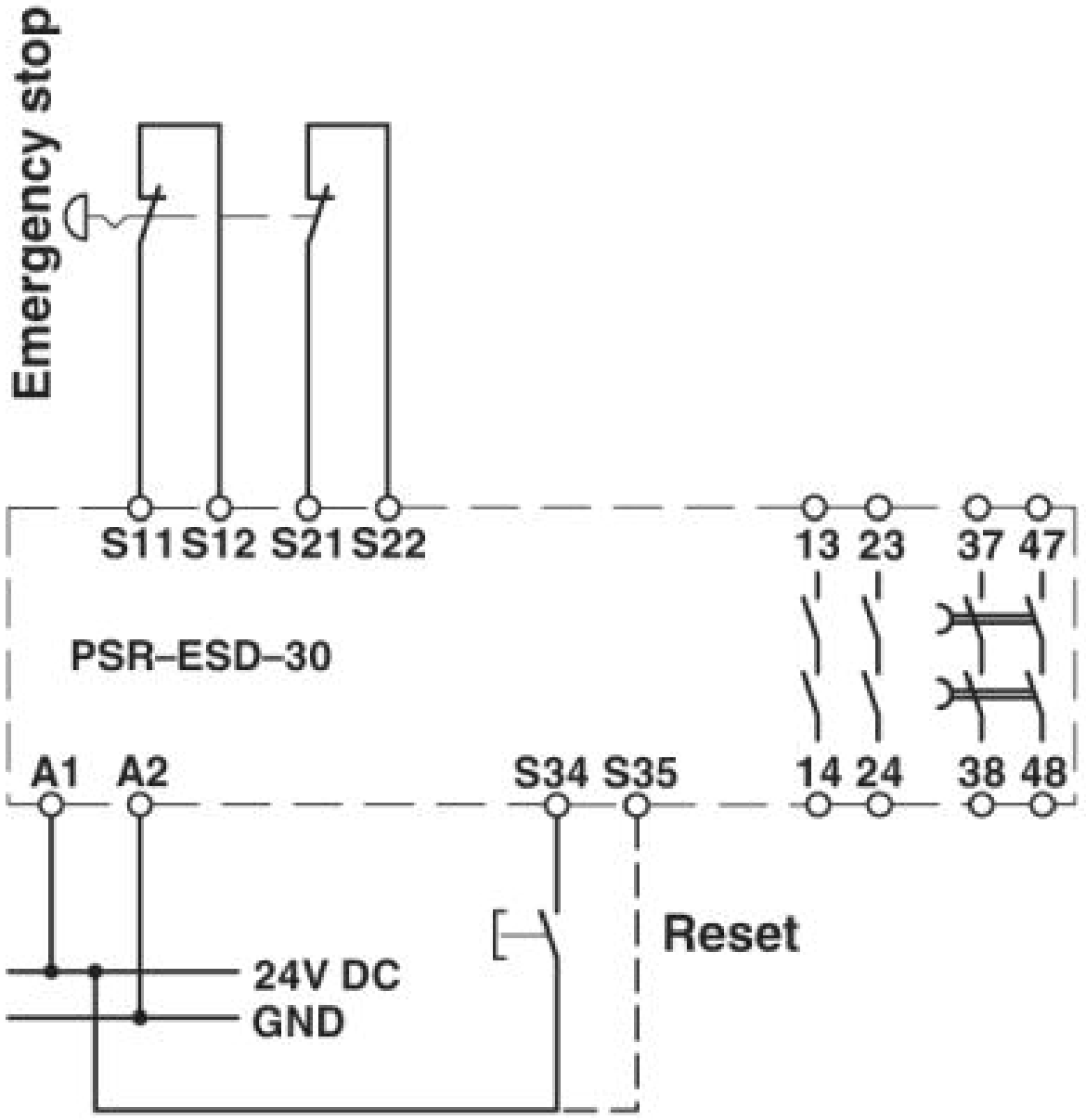

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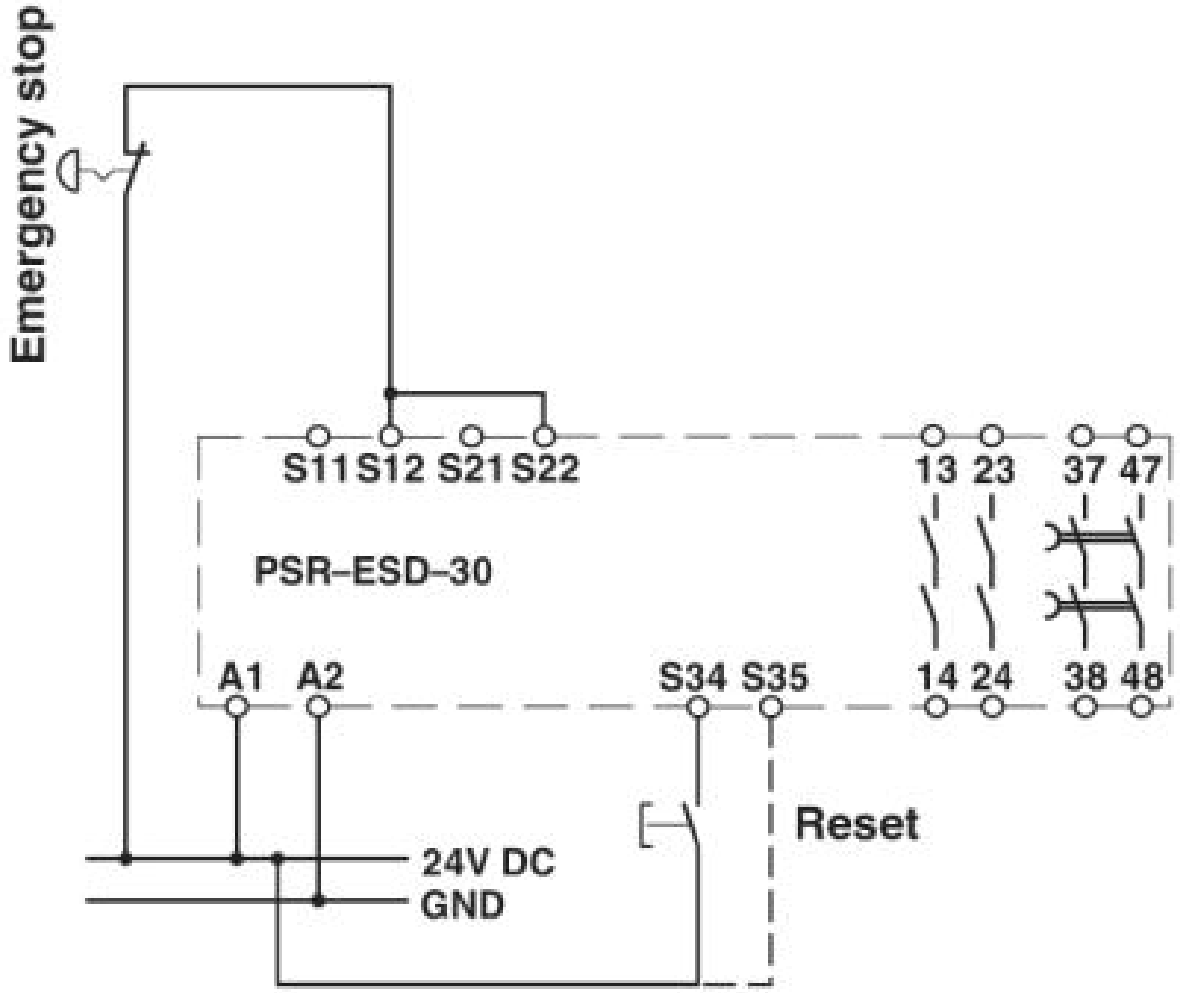

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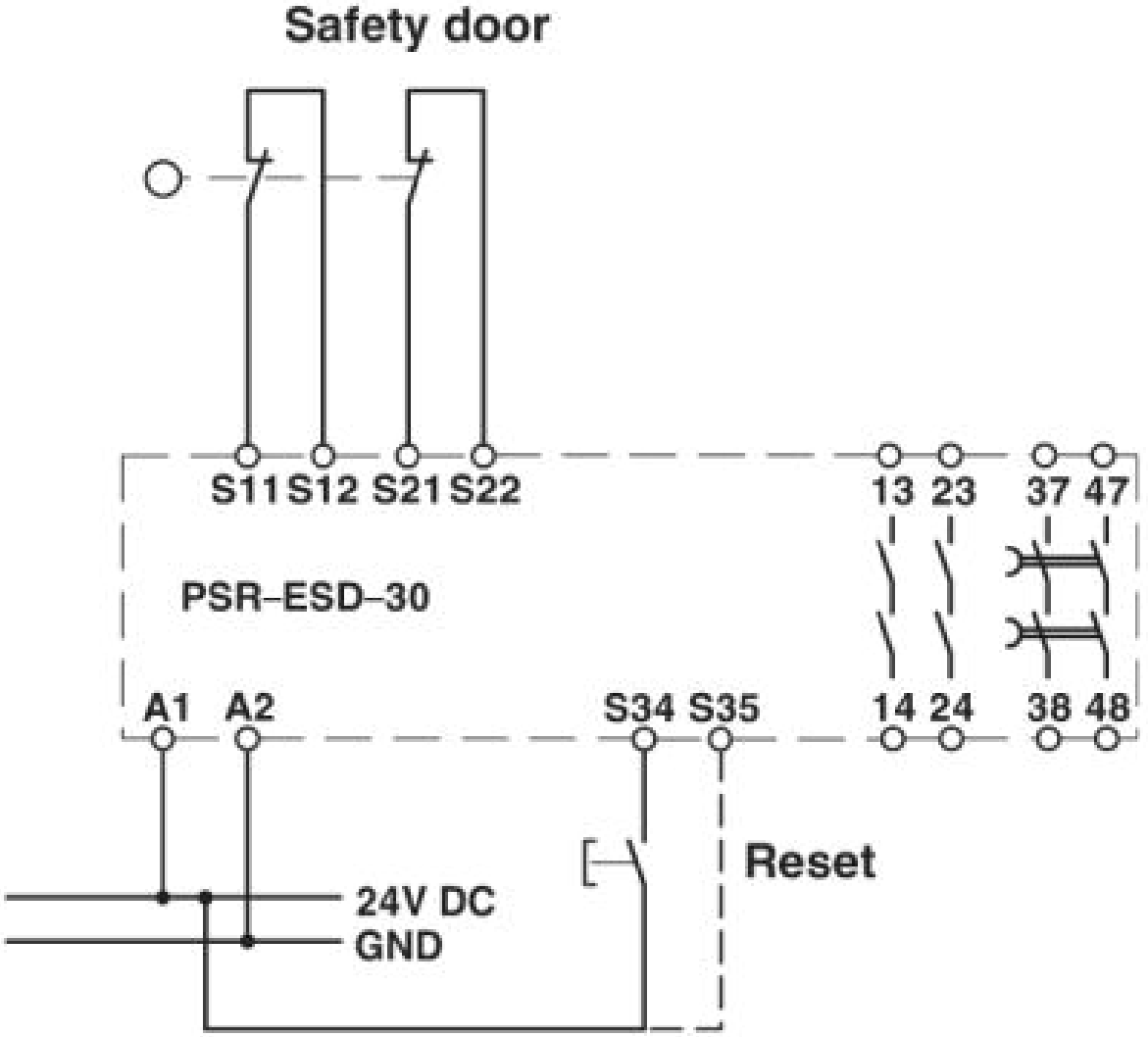

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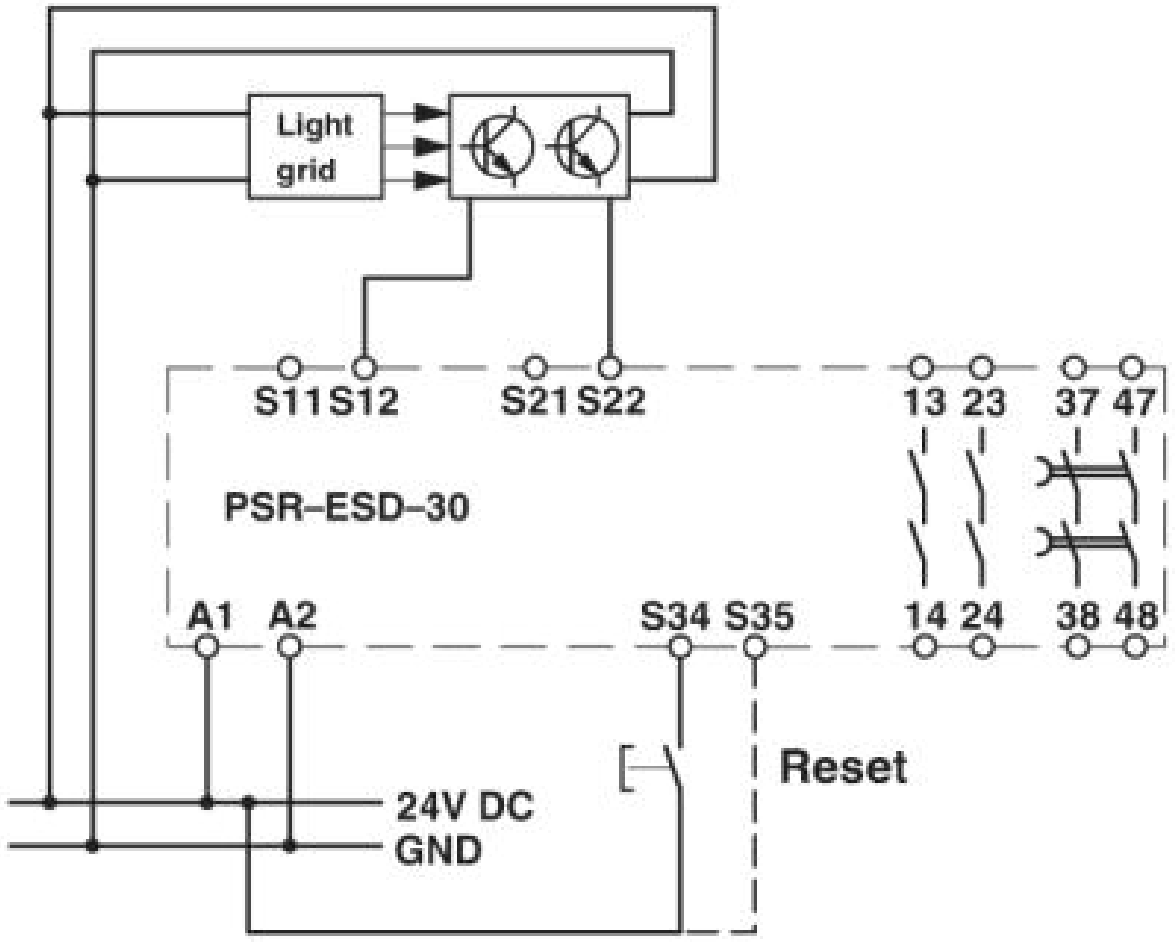

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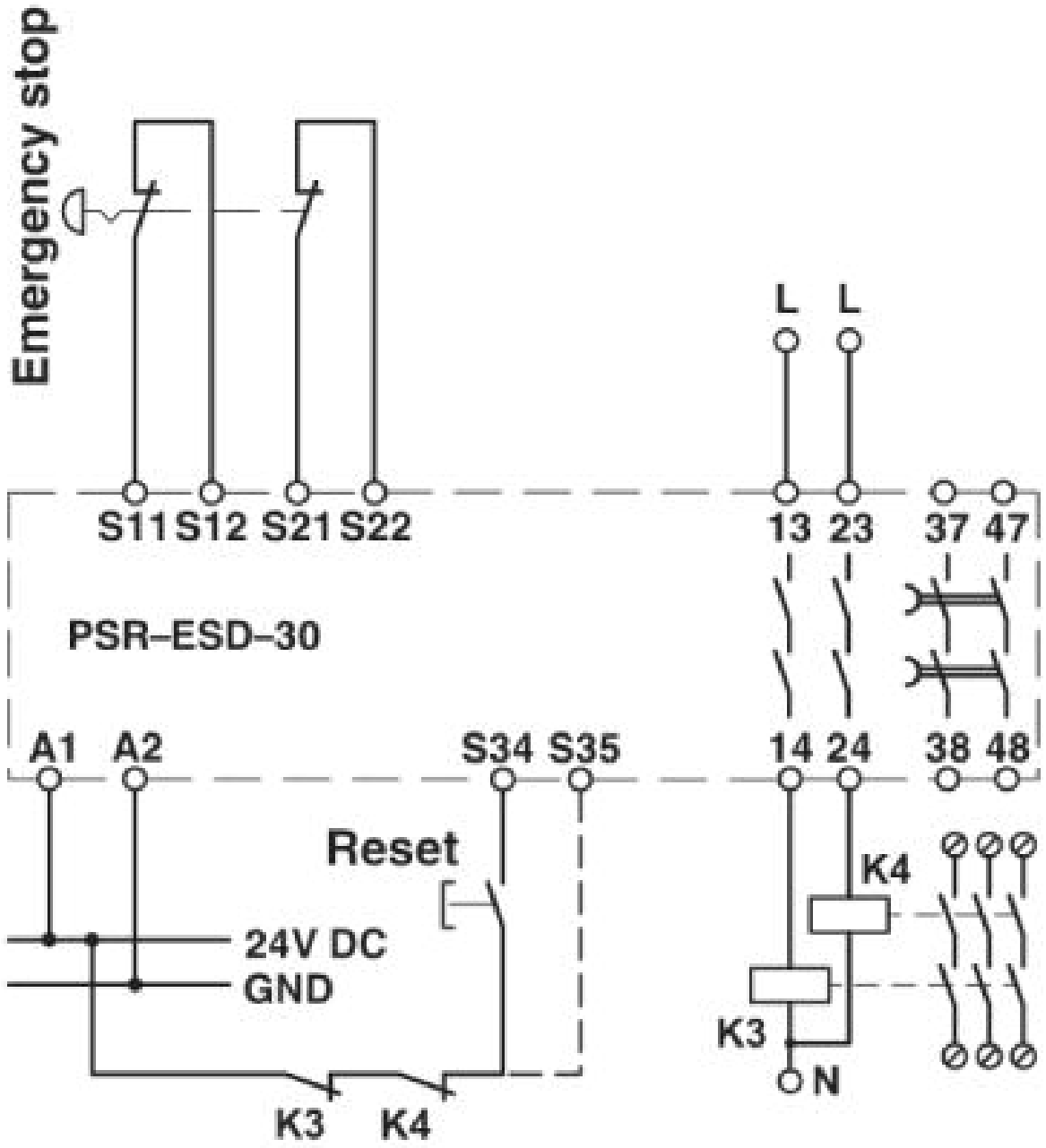

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