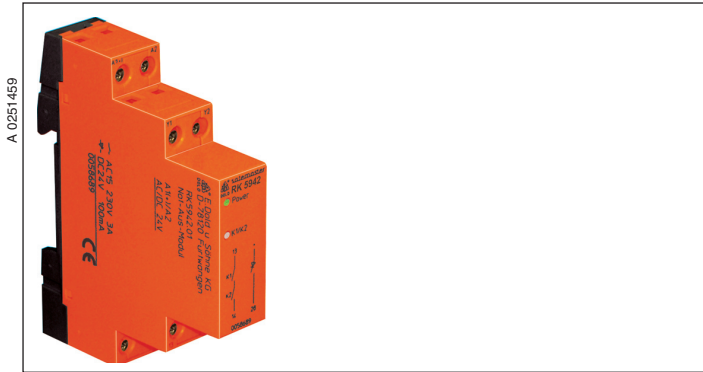
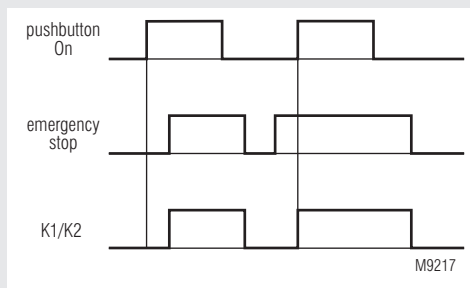


Emergency Stop Module RK 5942, extremely small safemaster



- According to
 - SIL Claimed Level (SIL CL) 3 to EN 62061
 - Performance Level (PL) e to DIN EN ISO 13849-1
 - Category 4 to EN 954-1
- Single channel operation
- Output: 1 NO contact and 1 monitoring logic output
- LED-indicator for relay 1 / 2 and supply voltage
- Wire connection: max. cross section for connection each 1 x 6 mm² solid, each 1 x 4 mm² stranded ferruled, each 2 x 2.5 mm² wire with twin ferrule; min. cross section for connection: each 1 x 1 mm² stranded ferruled or 1 x 1.5 mm² solid
- Width 17.5 mm and 64 mm depth

Function diagramm



Approvals and marking



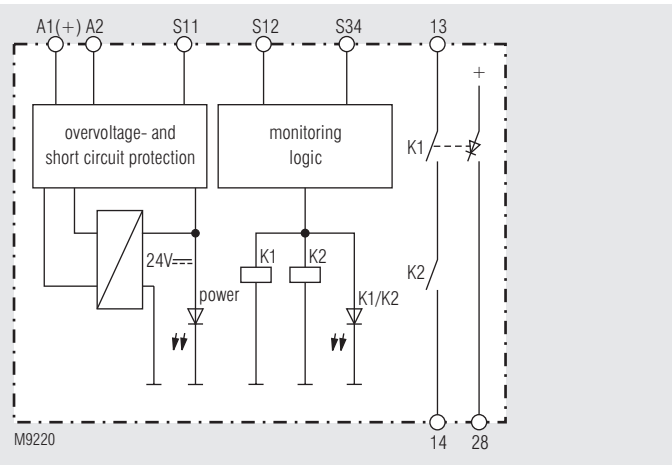
Applications

- Protection of people and machines
- Emergency stop circuits on machines

Indicators

LED Power: on, when supply connected
 LED K1/K2: on, when relay K1 and K2 energized

Block diagrams



Note

ATTENTION - AUTOMATIC START!

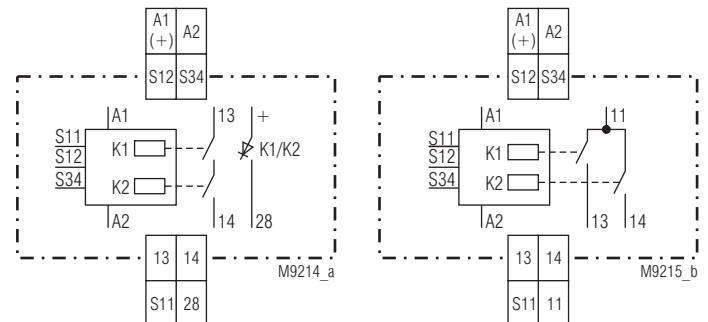


According to IEC/EN 60 204-1 part 9.2.5.4.2 and 10.8.3 it is not allowed to restart automatically after emergency stop. Therefore the machine control has to disable the automatic start after emergency stop.



With single-channel connection safety category 4 can only be achieved when the input circuit is carried out failsafe. This can be done by selecting the right cable material and suitable wire arrangement.

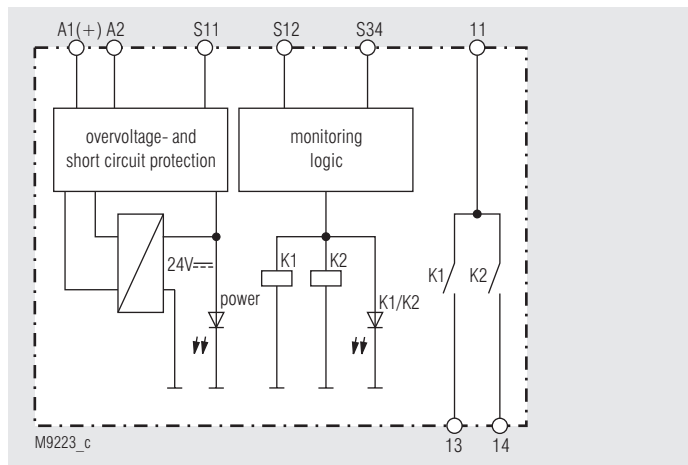
Circuit diagrams



RK 5942.02

RK 5942.03

RK 5942.02



RK 5942.03

Technical Data

Input

Nominal voltage U_N:	DC 24 V
Nominal frequency:	50 / 60 Hz
Voltage range:	
at 10 % residual ripple:	DC 0.9 ... 1.1 U_N
Nominal consumption	
DC 24 V:	DC 2.2 W
Control voltage on S11	
DC 24 V:	typ. DC 22.5 V
Control current	
DC 24 V:	typ. DC 95 mA
Recovery time:	0.5 s

Output

Contacts	1 NO contact, 1 semiconductor contact The NO contacts are safety contacts. ATTENTION ! The relay with semiconductor output is available as DC
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device only.

The semiconductor output can only be used for monitoring.

Operate delay

DC 24 V:	typ. DC 80 ms
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Release delay

DC 24 V:	typ. DC 70 ms
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Contact type:

	positive guided
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Thermal current I_{th} :

	max. 5 A (see continuous current limit curve)
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Nominal output voltage:

	AC 250 V
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Switching capacity

to AC 15:		
NO contacts:	3 A / AC 230 V	IEC/EN 60 947-5-1
to DC 13:		
NO contacts:	4 A / 24 V	IEC/EN 60 947-5-1

Electrical life

at 5 A, AC 230 V $\cos \varphi = 1$:	> 10^5 switching cycles
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according to DC 13

semiconductor output: DC 24 V, 100 mA, short circuit strong

Output voltage

at 100 mA:	21.5 V
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Permissible operating frequency:

	600 switching cycles / h
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Short circuit strength

max. fuse rating:	6 A gL	IEC/EN 60 947-5-1
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line circuit breaker:

	B 6
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Mechanical life: 10 x 10^6 switching cycles

General Data

Operating mode: Continuous operation

Temperature range: - 15 ... + 55 °C

Clearance and creepage distances

rated impuls voltage / pollution degree:	4 kV / 2	IEC 60 664-1
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EMC

Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
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HF-irradiation:	10 V / m	IEC/EN 61 000-4-3
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Fast transients:	2 kV	IEC/EN 61 000-4-4
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HF-wire guided:	10 V	IEC/EN 61 000-4-6
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Interference suppression:	Limit value class B	EN 55 011
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Degree of protection

Housing:	IP 40	IEC/EN 60 529
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Terminals:	IP 20	IEC/EN 60 529
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Housing: Thermoplastic with V0 behaviour

according to UL subject 94

Vibration resistance: Amplitude 0.35 mm

frequency 10 ... 55 Hz, IEC/EN 60 068-2-6

15 / 055 / 04 IEC/EN 60 068-1

EN 50 005

Climate resistance:

Terminal designation:

Wire connection

max. cross section:

each 1 x 6 mm² solid,

each 1 x 4 mm² stranded ferruled,

each 2 x 2.5 mm² wire with twin ferrule

Technical Data

min. cross section:	each 1 x 1 mm ² stranded ferruled or 1 x 1.5 mm ² solid
Wire fixing:	Plus-minus terminal screws M 3.5 box terminals
Mounting:	DIN rail IEC/EN 60 715
Weight:	110 g

Dimensions

Width x height x depth:	17.5 x 90 x 71 mm
Mounting depth:	64 mm

Safety related data

Probability of dangerous

Failure per Hour (PFH_D):	1.03 · 10 ⁻⁹ 1/h
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Safe Failure Fraction (SFF):

	97.3 %
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Proof Test Intervall (T1):

	20 Years
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The values stated above are valid for the standard type. Safety data for other variants are available on request

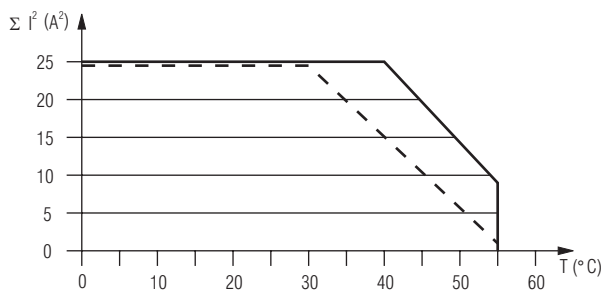
Standard types

RK 5942.02 DC 24 V

Article number: 0058690

- Output: 1 NO contact, 1 semiconductor output
- Nominal voltage U_N : DC 24 V
- Width: 17.5 mm

Characteristics

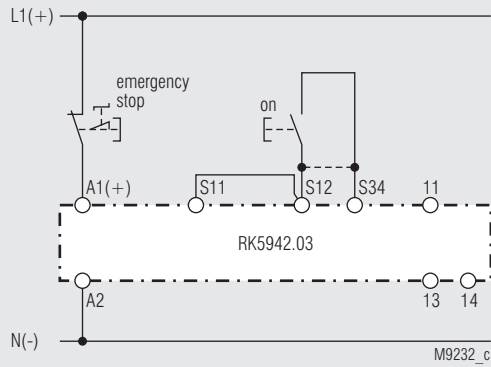


— device mounted on distance with air circulation.
max. current at 55°C = 3A ≙ 9A²

- - - device mounted without distance heated by
devices with same load,
max. current at 55°C = 1,5A ≙ 2,25A²

Continuous current limit curve

Applications



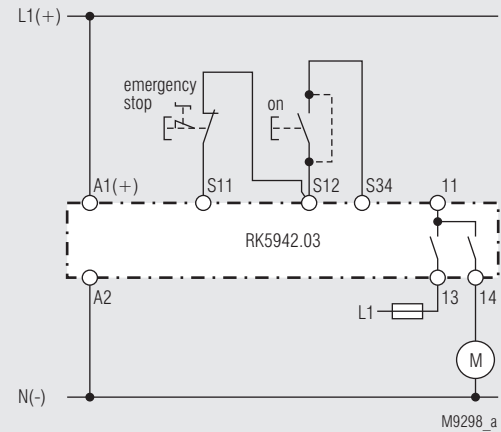
Single channel emergency-stop circuit without feed back loop, with or without automatic restart.

For automatic restart terminals S12 - S34 must be linked.

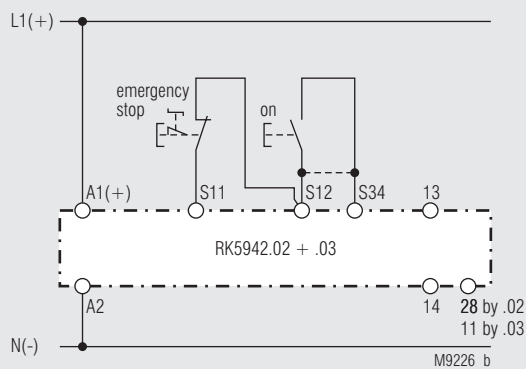
No ON-pushbutton necessary.

ATTENTION ! This application can only be used for RK 5942.03.

Applications



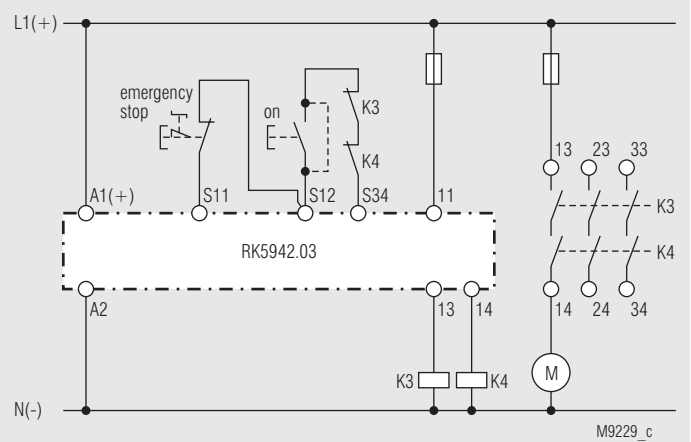
ATTENTION ! For applications of safety stops the load must be connected to the contacts in series with 2 NO contacts.



Single channel emergency-stop circuit without feed back loop, with or without automatic restart.

For automatic restart terminals S12 - S34 must be linked.

No ON-pushbutton necessary.



Contact reinforcement by external contactors.

At a thermal current $I_{th} > 5$ A the output contacts can be reinforced by external contactors with positively guided contacts.

Functioning of the external contactors is monitored by looping the NC contacts into the start circuit (S12 - S34).

ATTENTION ! For applications of safety stops the load must be connected to the contacts in series with 2 NO contacts.

