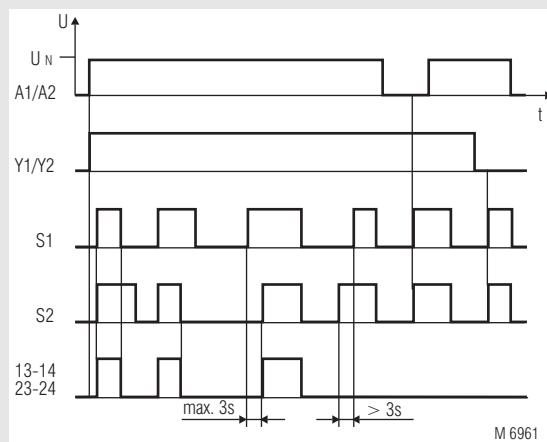




0221552

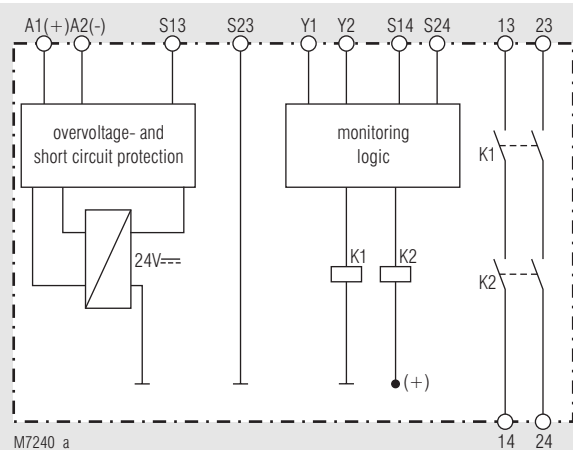
- According to EC Directive for machines 98/37/EG
- According to IEC/EN 60 204-1, ZH1-457
- Safety category 4 according to EN 954-1
- Inputs for 2 position switches
- Output: 2 NO contacts for AC 250 V
- Gold-plated contacts to switch small loads (input for PLC)
- Monitoring of external contactors for contact multiplication / reinforcement via feedback circuit
- Overvoltage and short circuit protection
- Wire connection: also 2 x 1,5 mm² stranded ferruled (isolated), DIN 46 228-1/-2/-3/-4 or 2 x 2,5 mm² stranded ferruled DIN 46 228-1/-2/-3
- Width 45 mm

Function diagram



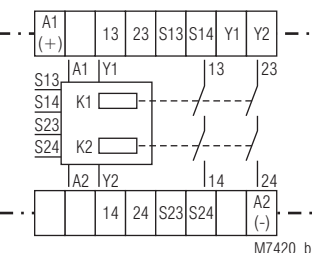
M 6961

Block diagram



M7240_a

Circuit diagram



M7420_b

Approvals and marking



For the existing BG certificate DOLD has not demanded for an extension. There has not been made any changes on the product since then.

* see variants

Applications

Monitoring of status of position switches on a safety gate

Notes

On closed gate the contacts of the position switches must be closed. The gold-plated contacts of the BD 5985N mean that this module is also suitable for switching small loads of 1 mA ... 7 VA, 1 mW ... 7 W in the range 0,1 ... 60 V, 1 ... 300 mA. The contacts also permit the maximum switching current. However, since the gold plating will be burnt off at this current level, the device is no longer suitable for switching small loads after this.

One or more extension modules BN 5989 or external contactors with positively-driven contacts may be used to multiply the number of contacts of the safety gate monitor BN 5985N.

Technical data

Input

Nominal voltage U_N:	DC 24 V, AC 24, 42, 110, 230, 240 V
Voltage range:	AC 0,8 ... 1,1 U_N
at 10 % residual ripple:	DC 0,9 ... 1,2 U_N
at 48 % residual ripple:	DC 0,8 ... 1,1 U_N
Nominal consumption:	AC 24 ... 230 V 4,0 VA
	DC 24 V 2,5 W

Nominal frequency:	50 / 60 Hz
Delay time for simultaneity demand:	max. 3 s
Recovery time:	1 s
Control contacts:	2 x 1 NO contacts
Control contact load:	DC 30 V / 10 mA
Device fuse protection:	internal with PTC

Output

Contacts

BD 5985N.02:	2 NO contacts
Operate / release time:	typ. 30 ms / typ. 30 ms
Contact type:	Relay, positively-driven
Nominal output voltage:	AC 250 V
	DC: see limit curve for arc-free operation

Thermal current I_{th} : see continuous current limit curve (max. 10 A in one contact path)

Switching capacity
to AC 15: 5 A / AC 230 V IEC/EN 60 947-5-1

Electrical life
to AC 15 at 2 A, AC 230 V: 10⁵ switching cycles IEC/EN 60 947-5-1

Permissible operating frequency: max. 360 switching cycles / h

Technical data

Short circuit strength

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

max. line circuit breaker: C 10 A

Mechanical life: 10 x 10⁶ switching cycles

General data

Operating mode: Continuous operation

Temperature range: - 15 ... + 55°C

Clearance and creepage distances

overvoltage category / contamination level: 4 kV / 2 IEC 60 664-1

EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61 000-4-2

HF irradiation: 10 V / m IEC/EN 61 000-4-3

Fast transients: 2 kV IEC/EN 61 000-4-4

Surge voltages between

wires for power supply: 1 kV IEC/EN 61 000-4-5

between wire and ground: 2 kV IEC/EN 61 000-4-5

HF-irradiation: 10 V IEC/EN 61 000-4-6

Interference suppression: Limit value class B EN 55 011

Degree of protection Housing: IP 40 IEC/EN 60 529

Terminal plate: IP 20 IEC/EN 60 529

Thermoplastic with V0 behaviour according to UL subject 94

Vibration resistance: Amplitude 0,35 mm, IEC/EN 60 068-2-6

frequency 10 ... 55 Hz

Climate resistance: 15 / 055 / 04 IEC/EN 60 068-1

Terminal designation: EN 50 005

Wire connection: 1 x 4 mm² solid or

1 x 2,5 mm² stranded ferruled (isolated)

or

2 x 1,5 mm² stranded ferruled (isolated)

DIN 46 228-1/-2/-3/-4 or

2 x 2,5 mm² stranded ferruled

DIN 46 228-1/-2/-3

Wire fixing: Plus-minus terminal screws M 3.5,

box terminal with wire protection

Mounting: DIN rail IEC/EN 60 715

Weight: 450 g

Dimensions

Width x height x depth: 45 x 74 x 121 mm

Standard type

BD 5985N.02 DC 24 V

Article number: 0035304 stock item

• Output: 2 NO contacts

• Nominal voltage U_N : DC 24 V

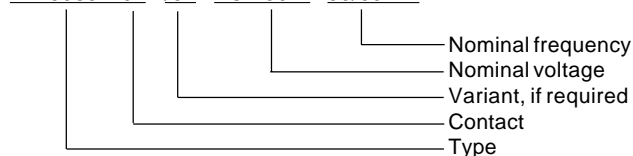
• Width: 45 mm

Variant

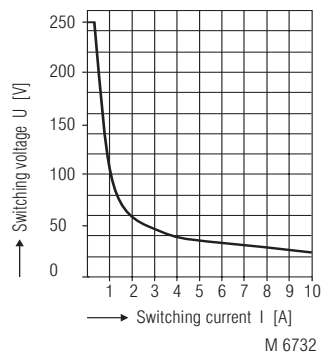
BD 5985N.02/61: with UL approval (Canada/USA)

Ordering example for Variant

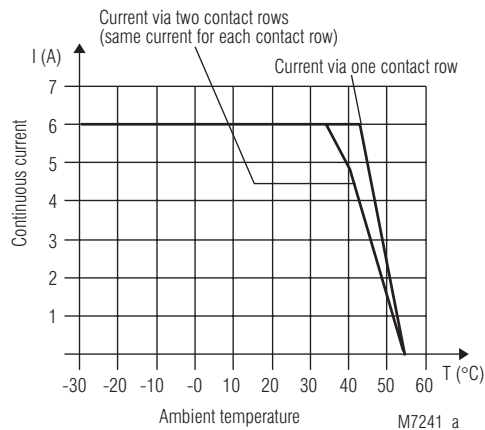
BD 5985N.02 /61 AC 230 V 50/60 Hz



Characteristics

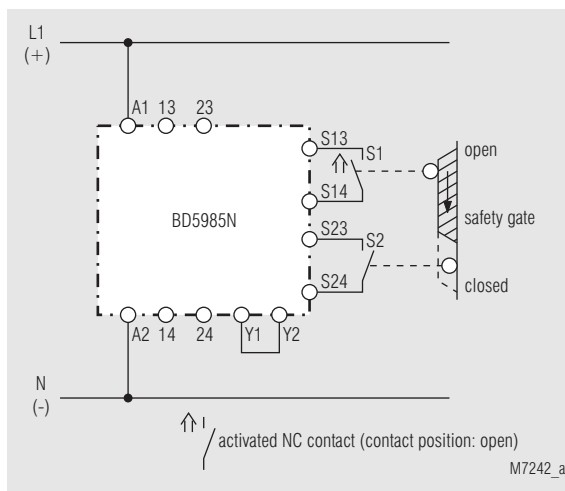


Limit curve for arc-free operation with resistive load

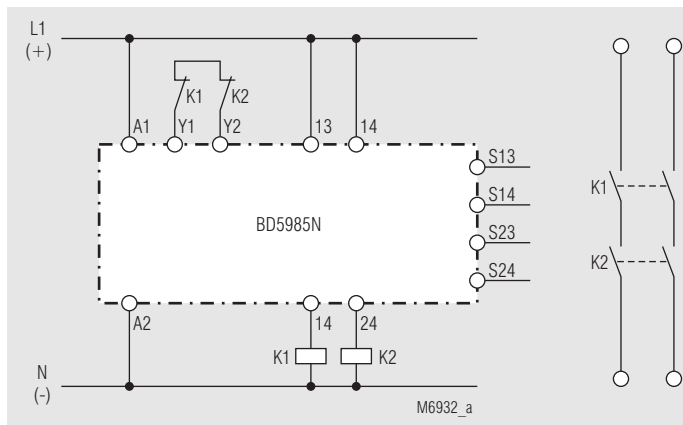


Continuous current limit curves as a function of ambient temperature

Application examples



Two-channel safety gate monitoring



Contact multiplication via external positively-driven contactors