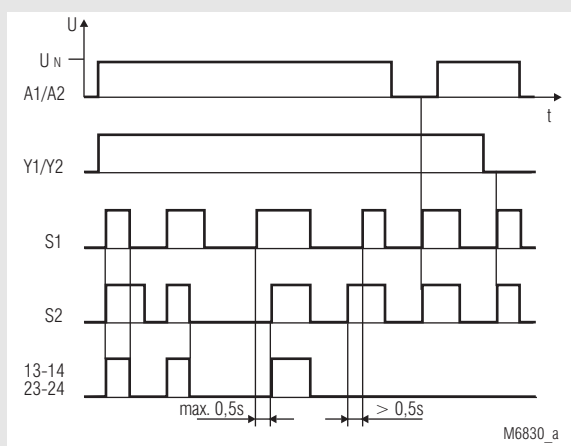


- According to EC Directive for machines 98/37/EG
- Safety level Type III-A according to EN 574 (02-1997)
- Safety category 2 according to EN 954-1
- Optionally dual-voltage version
- Wire connection: also 2 x 1,5 mm<sup>2</sup> stranded ferruled (isolated), DIN 46 228-1/-2/-3/-4 or 2 x 2,5 mm<sup>2</sup> stranded ferruled DIN 46 228-1/-2/-3
- Width 45 mm

### Function diagram



### Approvals and marking



\* see variants

### Application

Designed for use in press controls in metalworking as well as in other working machines with dangerous closing movements.

### Technical data

#### Input

#### Nominal voltage $U_N$

BD 5980N.02:

- DC 24 V,
- AC 24, 42, 110, 230, 240 V
- DC 24 V<sup>1)</sup> + AC 24 V<sup>2)</sup>
- DC 24 V<sup>1)</sup> + AC 42 V<sup>2)</sup>
- DC 24 V<sup>1)</sup> + AC 110 V<sup>2)</sup>
- DC 24 V<sup>1)</sup> + AC 230 V<sup>2)</sup>
- DC 24 V<sup>1)</sup> + AC 240 V<sup>2)</sup>

BD 5980N.02/024:

- <sup>1)</sup> DC 24 V at terminals A3-A4
- <sup>2)</sup> DC 24 V at terminals A1-A2

#### Voltage range:

at 10 % residual ripple:

at 48 % residual ripple:

#### Nominal consumption:

- AC 0,8 ... 1,1  $U_N$
- DC 0,9 ... 1,2  $U_N$
- DC 0,8 ... 1,1  $U_N$
- AC 24 V ... 230 V 4,0 VA
- DC 24 V 2,5 W
- 50 / 60 Hz

#### Nominal frequency:

#### Delay time for simultaneity demand:

0,5 s

#### Control contacts:

2 x 1 NO contacts

#### Current via control contacts:

35 mA at 24 V

The control lines must not exceed a length of 30 m and must be routed separately from line cables internal with PTC

#### Device fuse protection:

#### Output

#### Contacts

BD 5980N.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

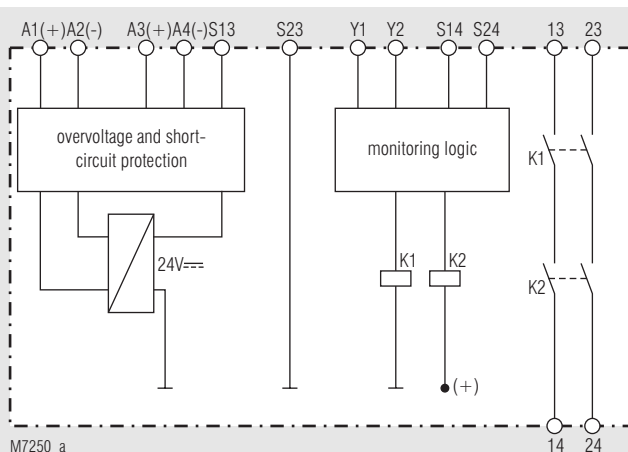
to AC 15 at 2 A, AC 230 V:

10<sup>5</sup> switching cycles IEC/EN 60 947-5-1

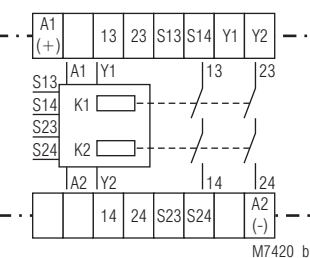
#### Permissible operating frequency:

max. 1200 switching cycles / h

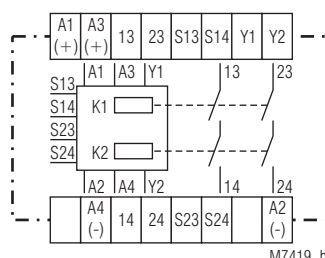
### Block diagram



### Circuit diagrams



BD 5980N.02



BD 5980N.02/024

## Technical data

### Short circuit strength

max. fuse rating:	6 A gL	IEC/EN 60 947-5-1
max. line circuit breaker:	C 10 A	
<b>Mechanical life:</b>	10 x 10 <sup>6</sup> switching cycles	

## General data

<b>Operating mode:</b>	Continuous operation
<b>Temperature range:</b>	- 15 ... + 55°C

### Clearance and creepage distances

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

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

### Surge voltages between

wires for power supply:	2 kV	IEC/EN 61 000-4-5
between wire and ground:	4 kV	IEC/EN 61 000-4-5
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	

### Housing:

### Vibration resistance:

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

	frequency 10 ... 55 Hz
--	------------------------

	15 / 055 / 04 IEC/EN 60 068-1
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<b>Terminal designation:</b>	EN 50 005
<b>Wire connection:</b>	1 x 4 mm <sup>2</sup> solid or 1 x 2,5 mm <sup>2</sup> stranded ferruled (isolated) or 2 x 1,5 mm <sup>2</sup> stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2,5 mm <sup>2</sup> stranded ferruled DIN 46 228-1/-2/-3

### Wire fixing:

	Plus-minus terminal screws M 3,5, box terminal with wire protection
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<b>Mounting:</b>	DIN rail	IEC/EN 60 715
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<b>Weight:</b>	410 g
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## Dimensions

<b>Width x height x depth:</b>	45 x 74 x 121 mm
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## Standard type

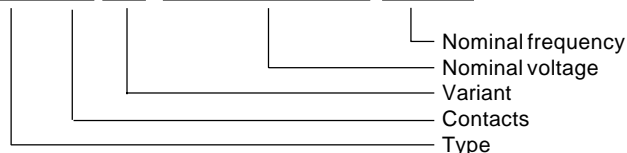
BD 5980N.02 DC 24 V		
Article number:	0035300	stock item
• Nominal voltage $U_N$ :	DC 24 V	
• Simultaneity:	0,5 s	
• Output:	2 NO contacts	
• Width:	45 mm	

## Variants

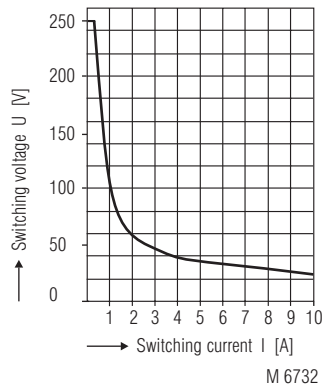
BD 5980N.02/61:	with UL approval (Canada/USA)
BD 5980N.02/024:	dual voltage version

## Ordering example for Variants

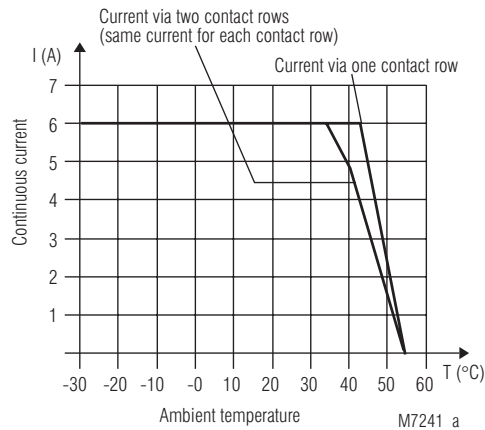
BD 5980N.02 /024 DC 24 V + AC 230 V 50/60 Hz



## Characteristics

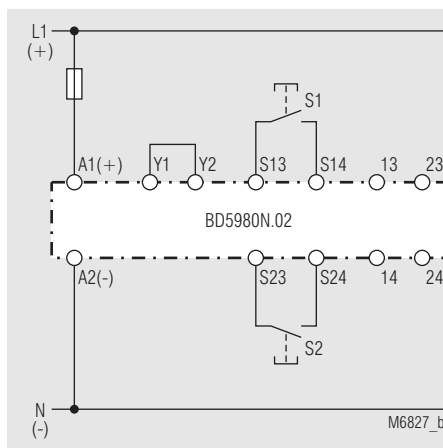


Limit curve for arc-free operation with resistive load

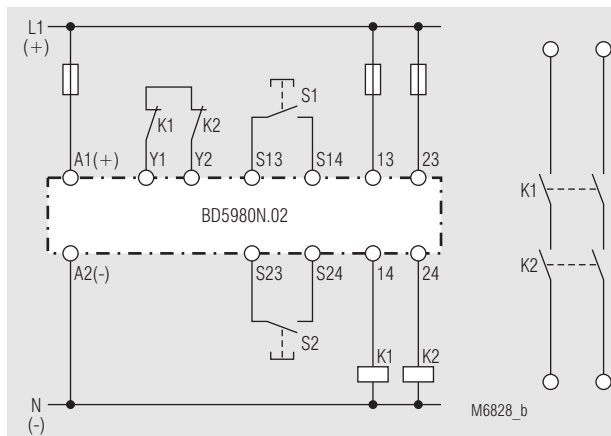


Continuous current limit curve as a function of ambient temperature

## Application examples



## Two-hand control



Two-hand control with contact reinforcement via external positively-driven contactors