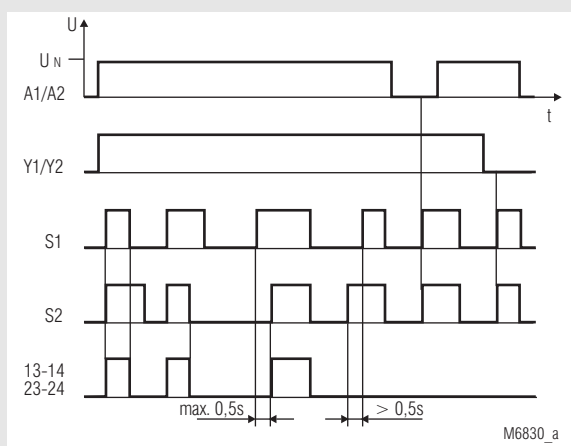


- According to EC Directive for machines 98/37/EG
- Safety level Type III-A according to EN 574 (02-1997)
- Safety category 2 according to EN 954-1
- Optionally dual-voltage version
- Wire connection: also 2 x 1,5 mm<sup>2</sup> stranded ferruled (isolated), DIN 46 228-1/-2/-3/-4 or 2 x 2,5 mm<sup>2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

#### Nominal frequency:

50 / 60 Hz

#### 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:

internal with PTC

#### 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

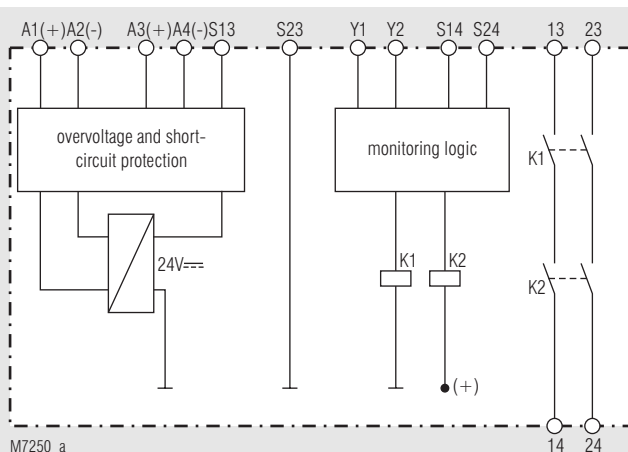
to AC 15 at 2 A, AC 230 V:

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

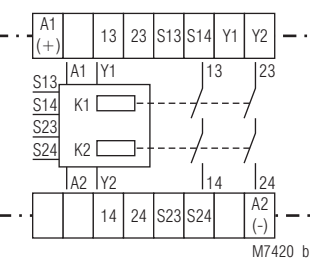
#### Permissible operating frequency:

max. 1200 switching cycles / h

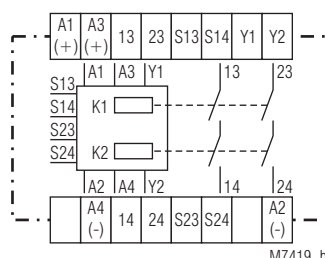
### Block diagram



### 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

**Mechanical life:** 10 x 10<sup>6</sup> 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

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

**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

EN 50 005

### Terminal designation:

**Wire connection:** 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

**Mounting:** DIN rail IEC/EN 60 715

**Weight:** 410 g

## Dimensions

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

## 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

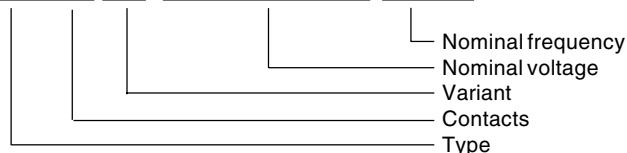
## Variants

BD 5980N.02/61: with UL approval (Canada/USA)

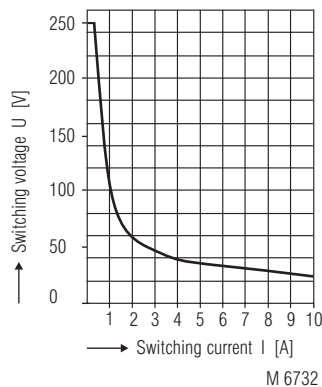
BD 5980N.02/024: dual voltage version

## Ordering example for Variants

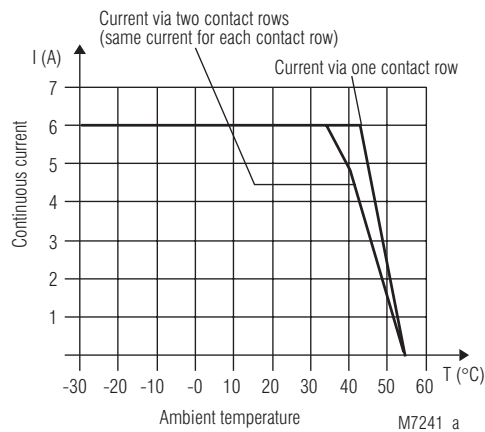
BD 5980N.02 /024 DC 24 V + AC 230 V 50/60 Hz



## Characteristics

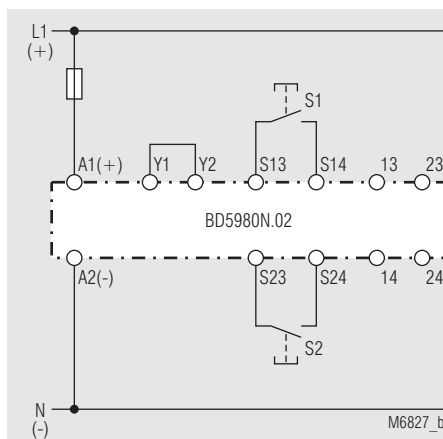


Limit curve for arc-free operation with resistive load

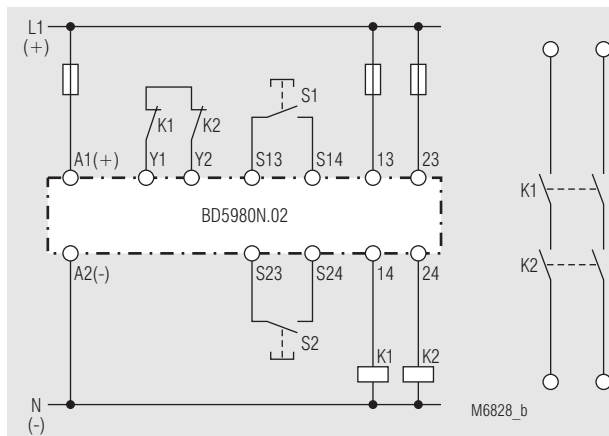


Continuous current limit curve as a function of ambient temperature

## Application examples



## Two-hand control



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