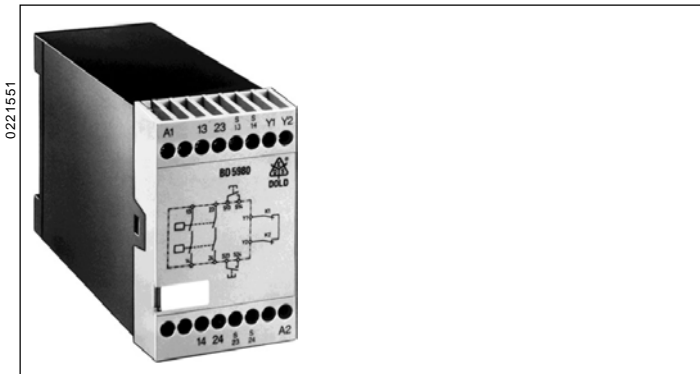
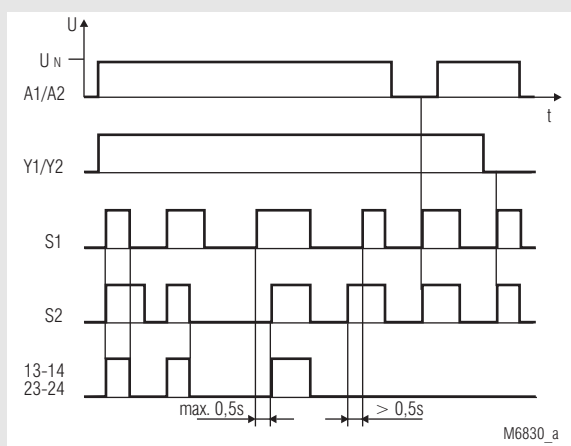


Two-hand safety relay BD 5980N safemaster



- 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 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



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 V¹⁾ + AC 24 V²⁾
DC 24 V¹⁾ + AC 42 V²⁾
DC 24 V¹⁾ + AC 110 V²⁾
DC 24 V¹⁾ + AC 230 V²⁾
DC 24 V¹⁾ + AC 240 V²⁾

BD 5980N.02/024:

¹⁾ DC 24 V at terminals A3-A4
²⁾ 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:

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

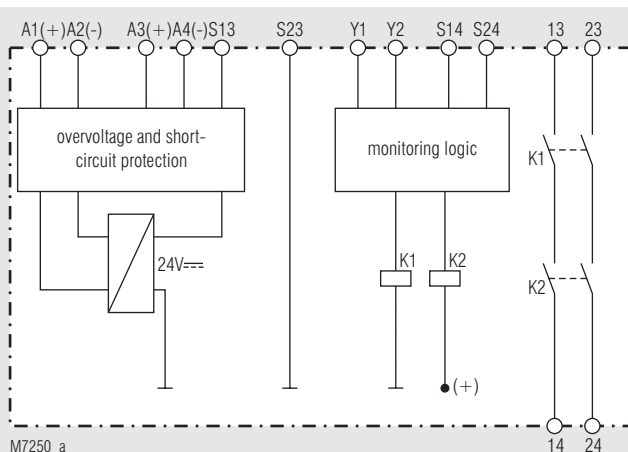
to AC 15 at 2 A, AC 230 V:

10⁵ switching cycles IEC/EN 60 947-5-1

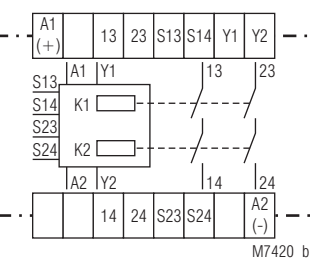
Permissible operating frequency:

max. 1200 switching cycles / h

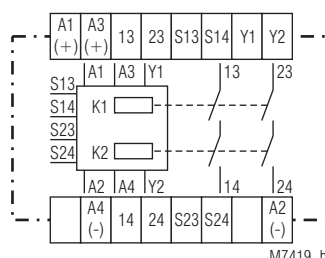
Block diagram



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 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

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

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: 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

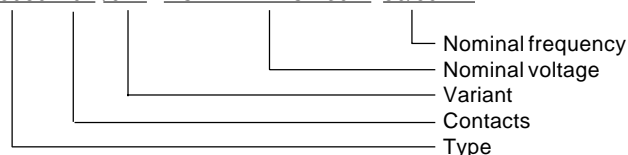
Variants

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

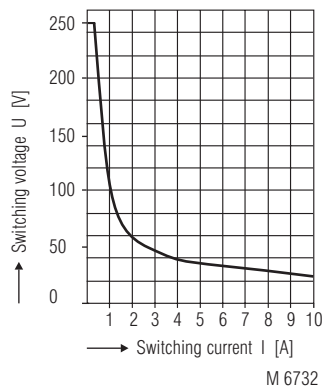
BD 5980N.02/024: dual voltage version

Ordering example for Variants

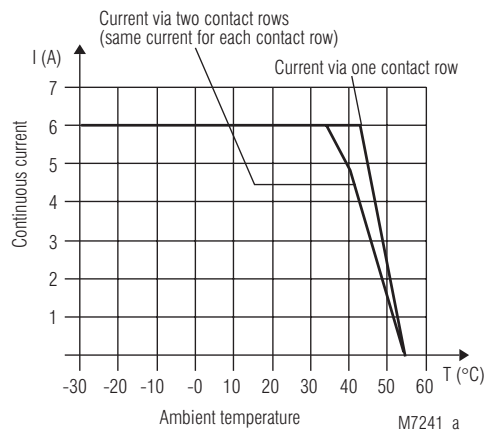
BD 5980N.02 /024 DC 24 V + AC 230 V 50/60 Hz



Characteristics

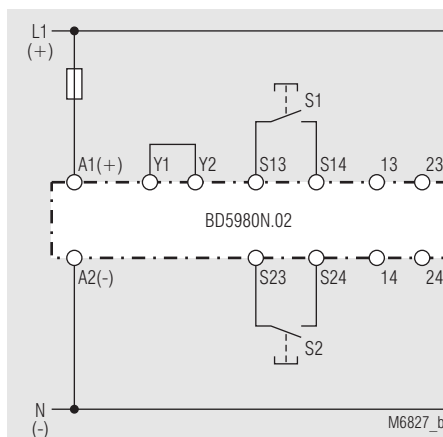


Limit curve for arc-free operation with resistive load

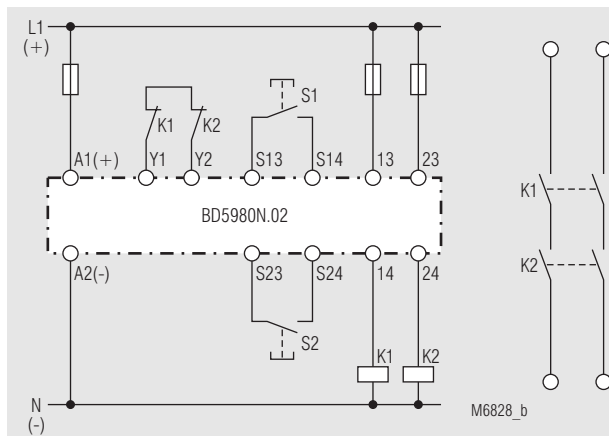


Continuous current limit curve as a function of ambient temperature

Application examples



Two-hand control



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