

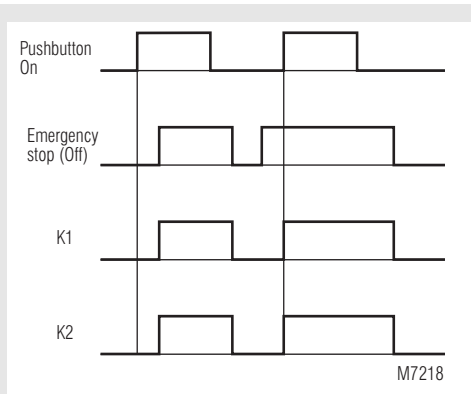
Emergency Stop Module BG 5924, IP 5924 safemaster



A 0225592

- According to EU directive for machines 98/37/EG
- According to IEC/EN 60 204-1, VDE 0113 part 1 (1998-11)
- Safety category 4 according to EN 954-1
- Single channel operation
- Output: max. 4 NO contacts
- AC 230 V model with galvanic separation
- For thermal currents to 7 A
- LED indicator for channel 1 / 2 and state of operation
- Short circuit detection between terminal Y1 and common
- BG 5924 with:
 - Removable terminal strips
 - 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
- BG 5924: width 22,5 mm
- IP 5924: width 70 mm

Function diagram



Approvals and marking



Applications

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

Indicators

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

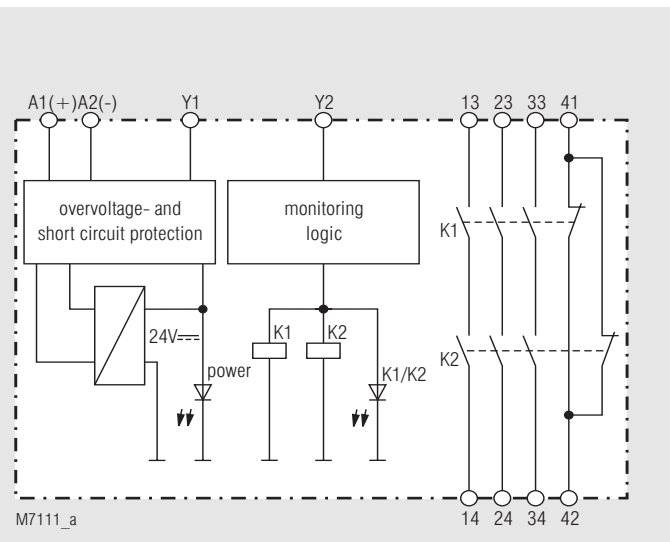
Indicators

ATTENTION - AUTOMATIC START!

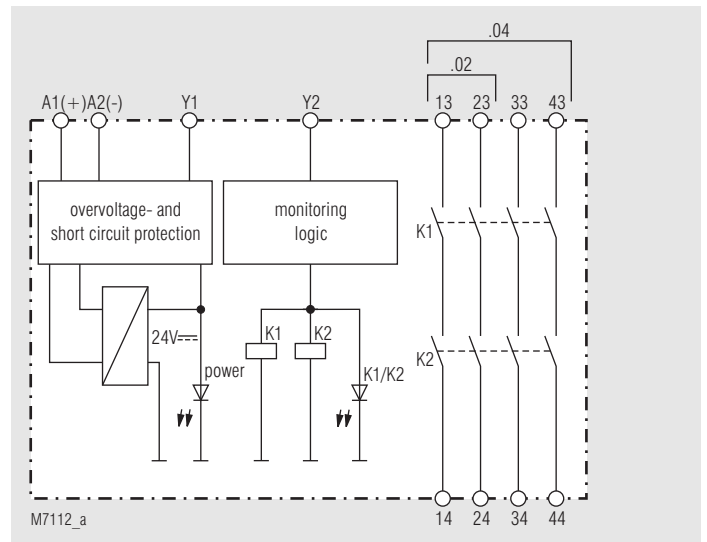


According to IEC/EN 60 204-1 part 9.2.5.4.2 and 10.8.3 it is not allowed to restart automatically after emergency stop. Therefore the machine control has to disable the automatic start after emergency stop.

Block diagrams

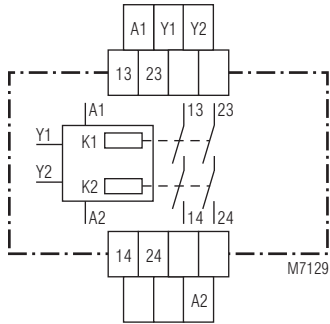


BG 5924.48, BG 5924.48/207, IP 5924.48

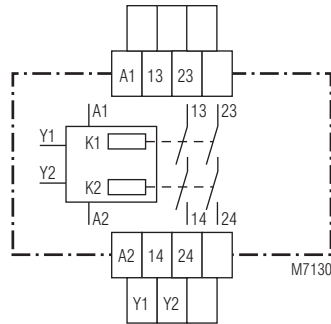


BG 5924.02, BG 5924.02/207, BG 5924.04, BG 5924.04/207, IP 5924.02, IP 5924.04

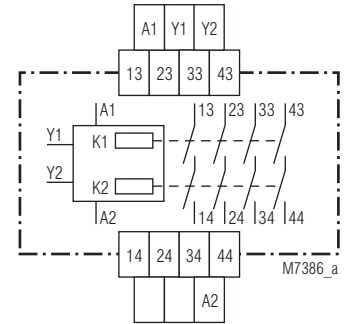
Circuit diagrams



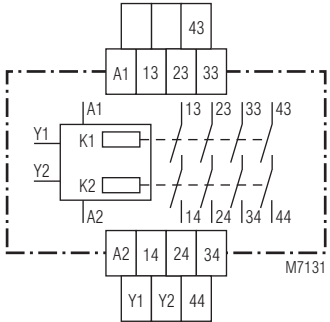
BG 5924.02



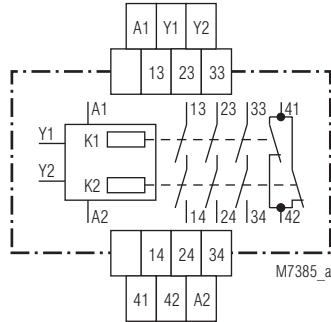
BG 5924.02/207



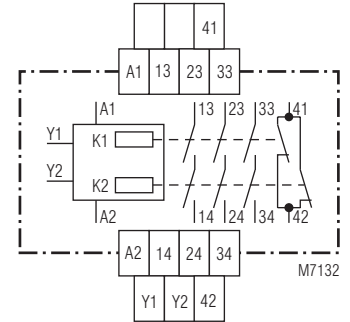
BG 5924.04



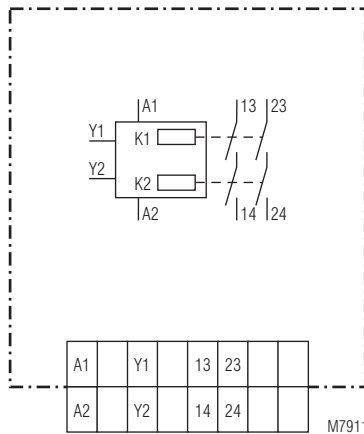
BG 5924.04/207



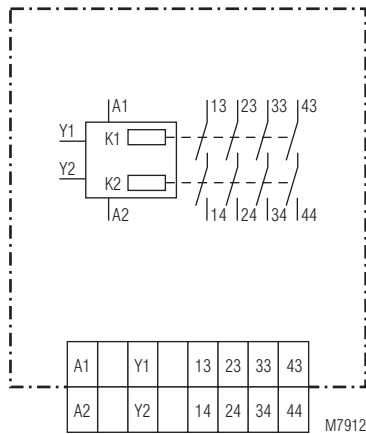
BG 5924.48



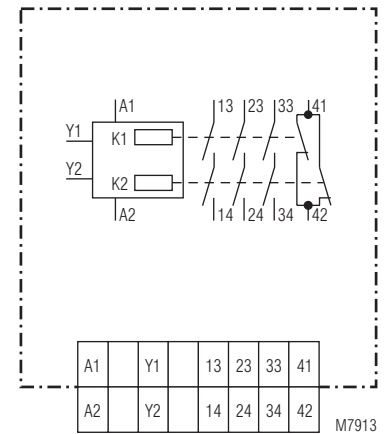
BG 5924.48/207



IP 5924.02



IP 5924.04



IP 5924.48

Technical data

Input

Nominal voltage U_N :

BG 5924: DC 24 V
AC/DC 24 V
AC 230 V
IP 5924: AC/DC 24, 48 V
AC 110, 230 V

Nominal frequency:

50 / 60 Hz
Voltage range:
at 10 % residual ripple:
DC 0,8 ... 1,1 U_N
at 48 % residual ripple:
DC 0,8 ... 1,1 U_N

Nominal consumption

AC/DC 24 V: DC 1,2 W AC 2 VA
AC 230 V: 3,5 VA

Control voltage on Y1

AC/DC 24 V: typ. DC 23 V
AC 230 V: max. 45 V short pulse
Control current:
typ. DC 45 mA
Recovery time:
0,5 s

Output

Contacts

BG 5924.02, IP 5924.02: 2 NO contacts
BG 5924.04, IP 5924.04: 4 NO contacts
BG 5924.48, IP 5924.48: 3 NO, 1 NC contacts

The NO contacts are safety contacts.
ATTENTION! The NC contacts 41-42 can only be used for monitoring.

Operate delay:

Release delay:

Contact type:

Thermal current I_{th} :

BG 5924.04/207
terminal 43/44:
max. 5 A
BG 5924.48, BG 5924.48/207
terminal 41/42:
max. 5 A

Nominal output voltage:

Switching capacity

to AC 15

NO contact:

NC contact:

to DC 13

NO contact:

Electrical life

to AC 15 at 2 A, AC 230 V:

Permissible operating frequency:

Short circuit strength

max. fuse rating:

line circuit breaker:

Mechanical life:

General data

Operating mode:

Temperature range:

max. 100 ms

max. 35 ms

positive guided

max. 5 A / 7 A**

max. 5 A

max. 5 A

** device mounted with distance to

next device (see total current limit curve)

AC 250 V

IEC/EN 60 947-5-1

to AC 15

NO contact:

3 A / AC 230 V

NC contact:

2 A / AC 230 V

to DC 13

NO contact:

max. 5 A / 7 A** / DC 24 V

Electrical life

to AC 15 at 2 A, AC 230 V:

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

Permissible operating frequency:

600 switching cycles / h

Short circuit strength

max. fuse rating:

4 A gL

IEC/EN 60 947-5-1

line circuit breaker:

C 8 A

Mechanical life:

10 x 10⁶ switching cycles

General data

Operating mode:

Continuous operation

Temperature range:

- 15 ... + 55 °C

Technical data

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 wire guided: 10 V IEC/EN 61 000-4-6

Interference suppression Limit value class B EN 55011
 Housing: IP 40 IEC/EN 60 529
 Terminals: IP 20 IEC/EN 60 529

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

Climate resistance:

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

Terminal designation:

EN 50 005

Wire connection:

BG 5924: 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

IP 5924: 2 x 2,5 mm² solid or 2 x 1,5 mm² stranded ferruled DIN 46 228-1/-2/-3/-4

Wire fixing:

Box terminal with wire protection, removable terminal strips

Mounting:

DIN rail IEC/EN 60 715

Weight:

BG 5924: 210 g, IP 5924: 206 g

Dimensions

Width x height x depth:

BG 5924: 22,5 x 84 x 121 mm
 IP 5924: 70 x 90 x 59 mm

Standard type

BG 5924.48 AC/DC 24 V

Article number: 0050982
 • Output: 3 NO, 1 NC contacts
 • Nominal voltage U_N : AC/DC 24 V
 • Width: 22,5 mm

IP 5924.48 AC/DC 24 V 50/60 Hz

Article number: 0053262
 • Output: 3 NO, 1 NC contacts
 • Nominal voltage U_N : AC/DC 24 V
 • Width: 70 mm

Variant

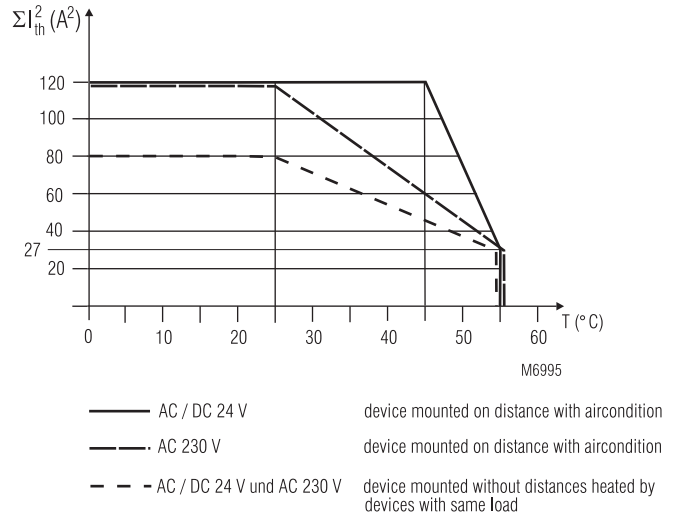
BG 5924. __ /60: with CSA/UL-approval
 BG 5924. __ /61: with UL-approval
 BG 5924. __ /207: special terminal arrangement, (see circuit diagrams), for AC/DC 24 V or AC 230 V

Ordering example for Variant

BG 5924 .48 / _ / _ AC/DC 24 V
 _____ Nominal voltage
 _____ Variant, if required
 _____ Contact
 _____ Type

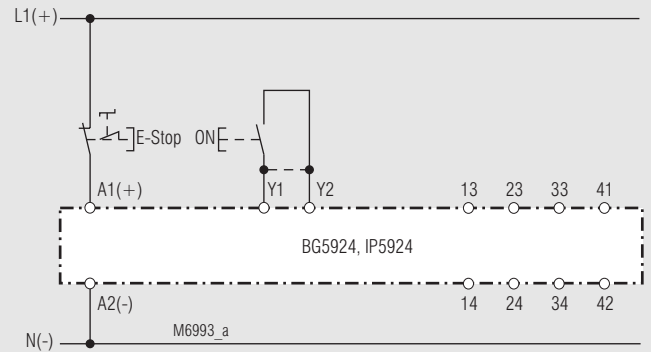
IP 5924 .48 AC 230 V
 _____ Nominal voltage
 _____ Contact
 _____ Type

Characteristics

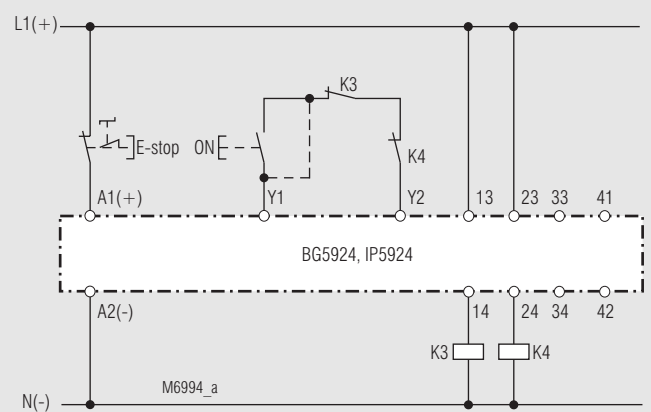


Total current limit curve

Application examples



Single channel emergency-stop circuit without feed back loop, with or without automatic restart.
 For automatic restart terminals Y1-Y2 must be linked.
 No ON-pushbutton necessary.



Contact reinforcement by external contactors, 2-channel controlled. For currents > 7 A the output contacts can be reinforced by external contactors. Functioning of the external contactors is monitored by looping the NC contacts into the start circuit (Y1-Y2).