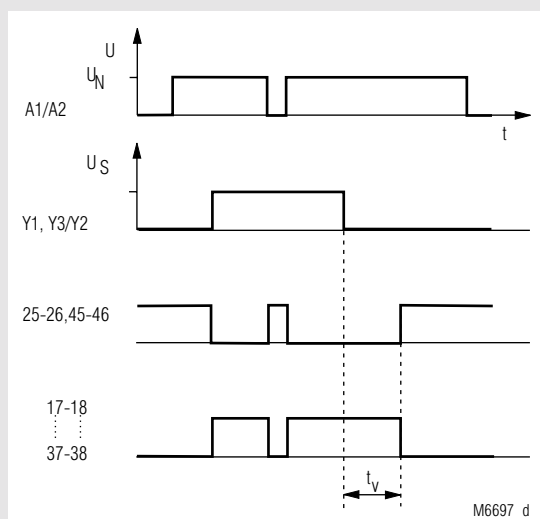


Delay module BG 7925, BH 7925, release delay safemaster

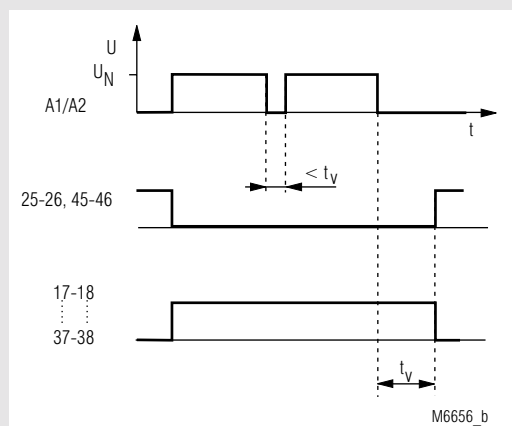


- According to EC-Directive for machines 98/37/EG
- According to EN 61 812-1, EN 60 204-1
- Adjustable time delay
- Long time stability by digital timing circuit
- With auxiliary voltage
- 1 timing circuit
- Optionally with 2 timing circuits
- Optionally fixed time delay
- Optionally without auxiliary voltage on BH 7925
- BH 7925 in dual voltage version
- BH 7925 optionally for AC 230 V
- Output: 1 NC contact, 1 NO contact, positive guided or 1 NC contact, 3 NO contacts, positive guided
- Indication of state of operation
- Removable terminal strips
- Wire connection: also 2 x 1,5 mm² stranded ferruled (isolated), DIN 46 228-4 or 2 x 2,5 mm² stranded ferruled DIN 46 228-1/-2/-3
- BG 7925: width 22,5 mm
- BH 7925: width 45 mm

Function diagram for devices with auxiliary voltage



Function diagram for devices without auxiliary voltage



Approvals and marking



Application

Delayed switch-off in safety-control circuits, stop-category 1 according to DIN EN 60 204-1

Indication

upper LED: on when operating voltage applied
lower LEDs: on when output relay activated

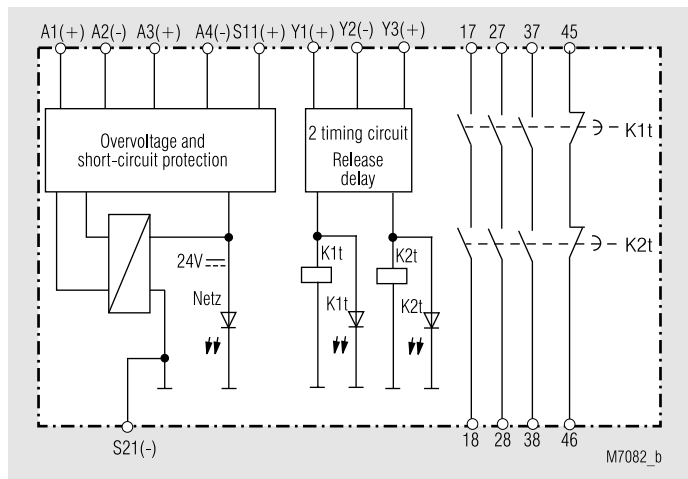
Notes

The output contacts of the two timing circuits are connected in series. This results in so-called switch off redundancy, i.e. the contact path is opened reliably after expiry of the predefined delay time, even if a contact in this path is welded.

AC-models can be connected to DC 24 V via terminals A3-A4.

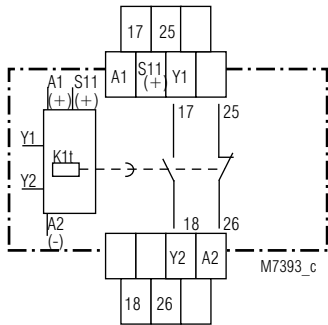
For units with auxiliary supply the control of the time circuits is made via terminals Y1, Y3/Y2 (see application examples). Plus is connected to Y1, Y3 and minus to Y2. Units without auxiliary supply are controlled with the nominal voltage U_N .

Block diagram

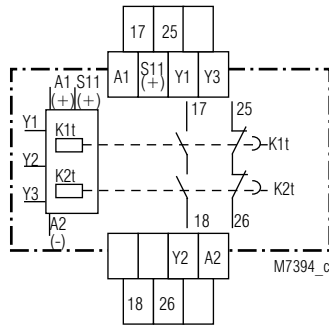


Block diagram for units with 2 timing circuits. In units with only 1 circuit K2t is missing.

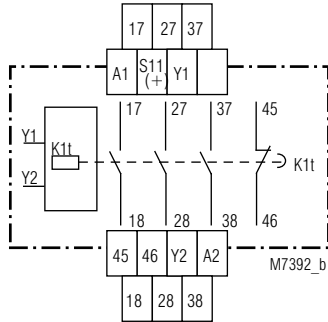
Circuit diagrams



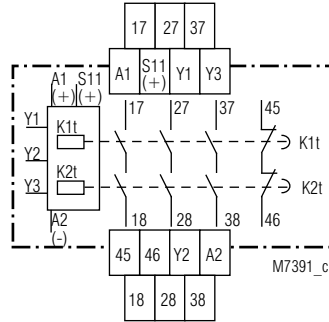
BG 7925.21, BG 7925.21/001
1 timing circuit



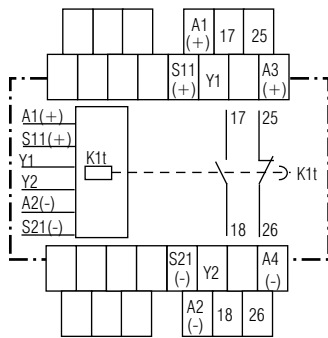
BG 7925.21/002, BG 7925.21/003
2 timing circuits



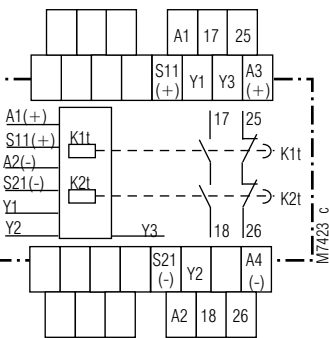
BG 7925.96, BG 7925.96/001
1 timing circuit



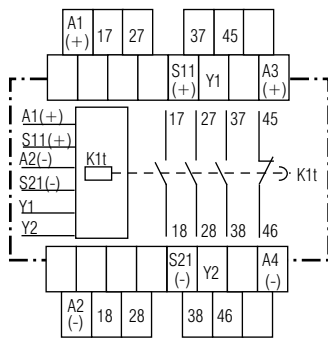
BG 7925.96/002, BG 7925.96/003
2 timing circuits



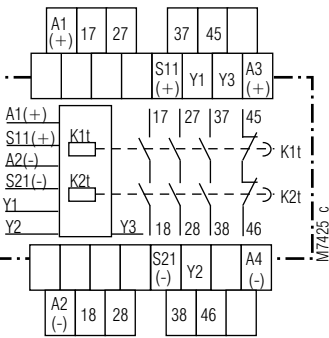
BH 7925.21/_00, BH 7925.21/_01
1 timing circuit



BH 7925.21/_02, BH 7925.21/_03
2 timing circuits



BH 7925.96/_00, BH 7925.96/_01
1 timing circuit



BH 7925.96/_02, BH 7925.96/_03
2 timing circuits

On units with 1 timing circuit and no auxiliary supply the terminals S11, S21, Y1 and Y2 do not exist.

Technical data

Time circuit

Time ranges:

adjustable	fixed
0,1 ... 1 s	1 s
0,3 ... 3 s	3 s
0,5 ... 5 s	5 s
1 ... 10 s	10 s
3 ... 30 s	30 s
10 ... 100 s	
30 ... 300 s	
3 ... 30 min	

Longer time on request. Units without auxiliary supply are available only up to 10 s with 1 timing circuit or 5 s with 2 timing circuits.

Repeat accuracy:

±1 % of the setting value

Min. turn-on time:

10 % of full scale value
50 % of full scale value for units without auxiliary supply

Input

Nominal voltage U_N (Auxiliary voltage U_H)

BG 7925:

AC/DC 24 V

BH 7925:

AC/DC 24 V¹⁾ and AC 230 V²⁾

¹⁾ on terminals A3 - A4

²⁾ on terminals A1 - A2

Voltage range:

with 10 % residual ripple:

AC 0,8 ... 1,1 U_N

with 48 % residual ripple:

DC 0,9 ... 1,1 U_N

Nominal frequency:

50 / 60 Hz

Control voltage U_s at Y1, Y2, Y3:

typically DC 24 V

Output

Contacts

BG 7925.21, BH 7925.21:

1 NO contact, 1 NC contact

BG 7925.96, BH 7925.96:

3 NO contacts, 1 NC contact

Contact type:

Relay, positively-driven

Nominal output voltage:

AC 10 ... 250 V

DC 10 ... 110 V

Thermal current I_{th} :

max. 5 A

Switching capacity

to AC 15:

EN 60 947-5-1

3 A / AC 230 V for the NO contact

1 A / AC 230 V for the NC contact

BG/BH 7925.21:

2 A / AC 230 V for the NC contact

BG/BH 7925.96:

EN 60 947-5-1

to AC 15 at 3 A, AC 230 V:

≥ 2,5 x 10⁵ switching cycles

Permissible operating frequency:

max. 2000 switching cycles / h
please note minimum closing time

Short circuit strength

max. fuse rating:

6 A gL EN 60 947-5-1

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)

EN 61 000-4-2

Fast transients:

2 kV

EN 61 000-4-4

Surge voltages

between

wires for voltage supply:

1 kV

EN 61 000-4-5

between wire and ground:

2 kV

EN 61 000-4-5

HF irradiation:

10 V

EN 61 000-4-6

Interference suppression:

limit value class B

EN 55011

Degree of protection:

Housing: IP 40

EN 60 529

Terminal plate: IP 20

EN 60 529

Housing:

Thermoplastic with V0 behaviour
according to UL subject 94

Technical data	
Vibration resistance:	Amplitude 0,35 mm, EN 60 068-2-6 frequency 10 ... 55 Hz
Climate resistance:	15 / 055 / 04 EN 60 068-1
Wire connection:	1 x 4 mm ² solid or 1 x 2,5 mm ² stranded ferruled (isolated) or 2 x 1,5 mm ² stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2,5 mm ² stranded ferruled DIN 46 228-1/-2/-3
Wire fixing:	Terminal screws M 3,5 Box terminal with wire protection
Mounting:	DIN rail EN 50 022
Weight:	210 g

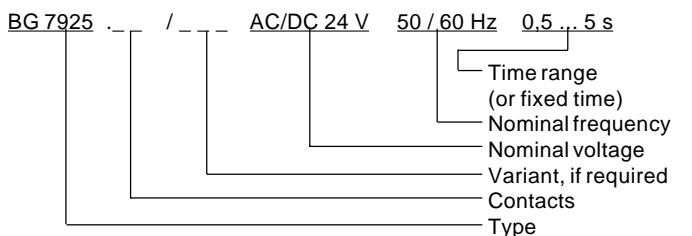
Dimensions	
Width x height x depth	
BG 7925:	22,5 x 84 x 118 mm
BH 7925:	45 x 84 x 118 mm

Standard types	
BG 7925.21 AC/DC 24 V 50/60 Hz 1 ... 10 s	
Article number:	0049628
• With auxiliary voltage	
• 1 timing circuit	
• Adjustable time delay 1 ... 10 s	
• Output:	1 NO contact, 1 NC contact
• Nominal voltage U _N :	AC/DC 24 V
• Width:	22,5 mm
BH 7925.21/100 AC/DC 24 V + AC 230 V 50/60Hz 1 ... 10 s	
Article number:	
• Without auxiliary voltage	
• 1 timing circuit	
• Adjustable time delay 1 ... 10 s	
• Output:	1 NO contact, 1 NC contact
• Nominal voltage U _N :	AC/DC 24 V + AC 230 V
• Width:	45 mm

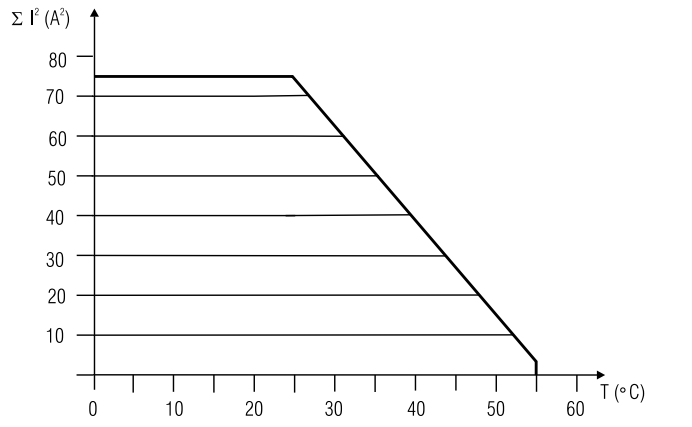
Variants				1 timing circuit		2 timing circuits		
	without auxiliary supply	with auxiliary supply	AC/DC 24 V	AC/DC 24 V + AC 230 V	adjustable	fixed	adjustable	fixed
BG 7925.21		X	X		X			
BG 7925.21/001		X	X			X		
BG 7925.21/002		X	X				X	
BG 7925.21/003		X	X					X
BG 7925.96		X	X		X			
BG 7925.96/001		X	X			X		
BG 7925.96/002		X	X				X	
BG 7925.96/003		X	X					X
BH 7925.21		X		X	X			
BH 7925.21/001		X		X		X		
BH 7925.21/002		X		X			X	
BH 7925.21/003		X		X				X
BH 7925.96		X		X	X			
BH 7925.96/001		X		X		X		
BH 7925.96/002		X		X			X	
BH 7925.96/003		X		X				X
BH 7925.21/100	X			X	X			
BH 7925.21/101	X			X		X		
BH 7925.21/102	X			X			X	
BH 7925.21/103	X			X				X
BH 7925.96/100	X			X	X			
BH 7925.96/101	X			X		X		
BH 7925.96/102	X			X			X	
BH 7925.96/103	X			X				X

BG 7925 modules require auxiliary voltage. BH 7925 modules are available with or without auxiliary voltage.

Ordering example for Variants



Characteristics



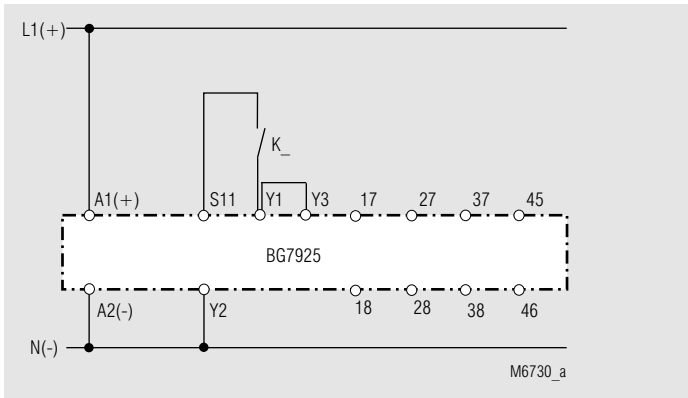
$$\Sigma I^2 = I_1^2 + I_2^2 + I_3^2$$

I_1, I_2, I_3 - Current in contact paths

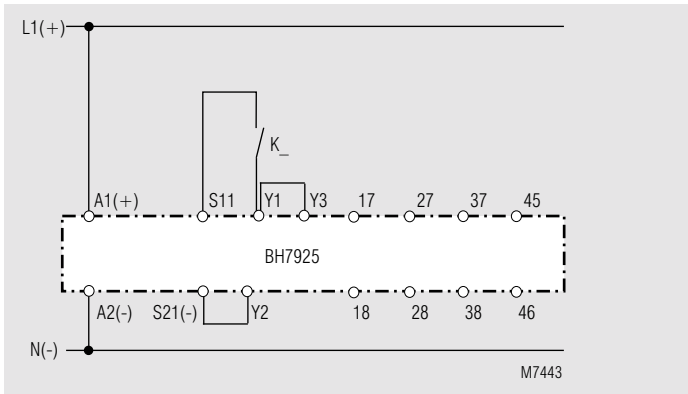
Max. current at 55°C over 3 contact paths = 1 A $\hat{=}$ 1² x 3 = 3 A²

Quadratic total current limit curve

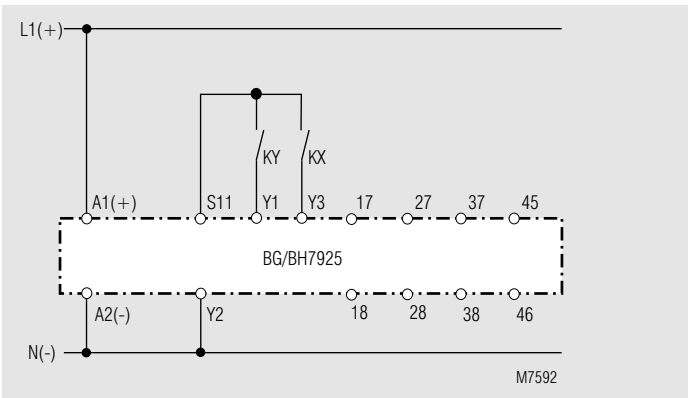
Application examples



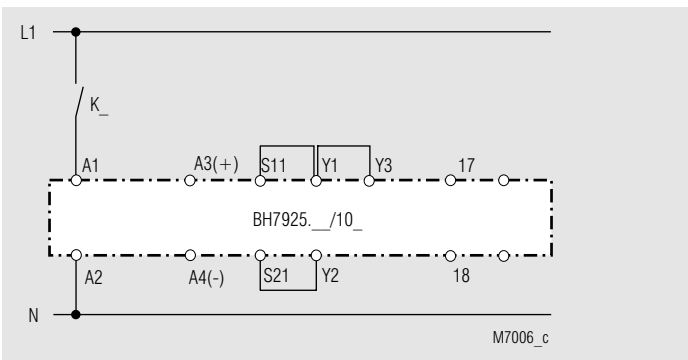
Versions with auxiliary voltage.
Time control with internal voltage S11(+)



Versions with auxiliary voltage.
Time control with internal voltage S11(+), S21(-)

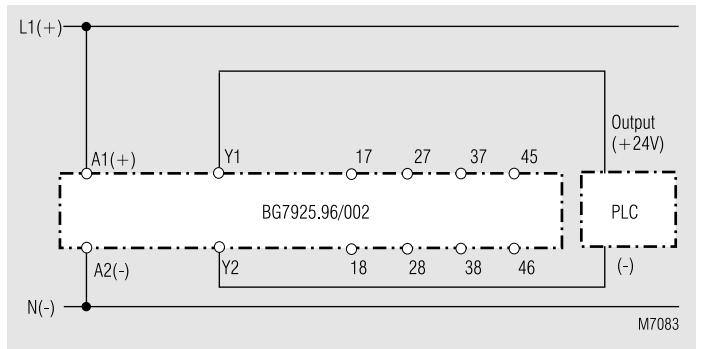


Versions with auxiliary voltage.
Seperate control of 2 timing circuits with internal voltage S11 (+).



Versions without auxiliary voltage.
Control of timing circuits over K1.

Application examples



Time control with external voltage (e.g. PLC)
If voltage peaks ≥ 500 V are expected, they have to be limited by suitable means.