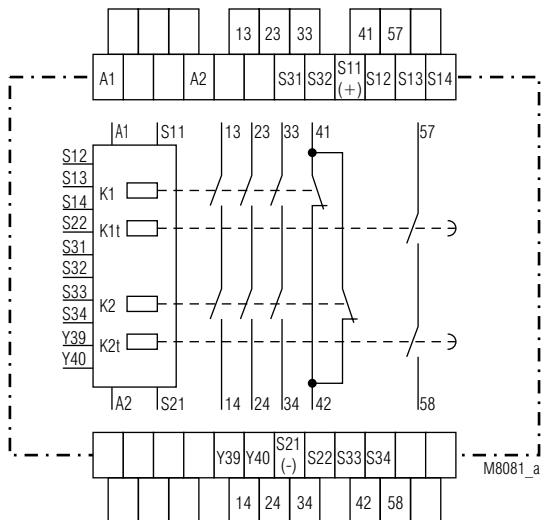
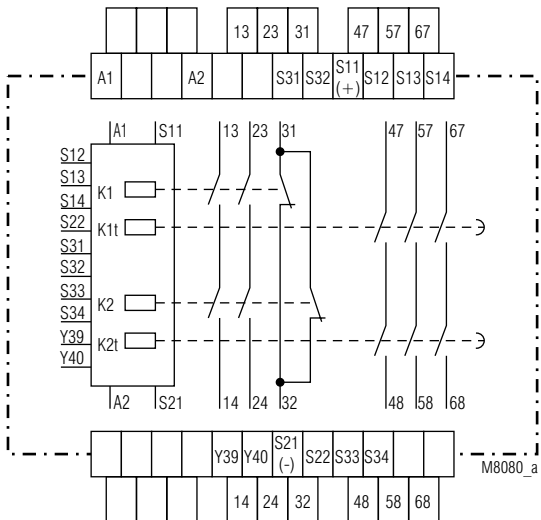


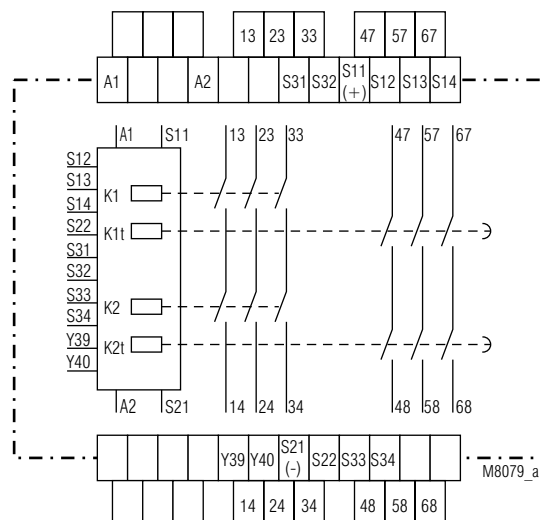
Circuit diagrams



BI 5928.47



BI 5928.92



BI 5928.93

Notes

The gold plated contacts of the BH 5928 mean that this module is also suitable for switching small loads of 1 mA - 7 VA, 1 mW - 7 W in the range 0,1 - 60 V, 1 - 300 mA. The contacts also permit the maximum switching current. However since the gold plating will be burnt off at this current level, the device is no longer suitable for switching small loads after this. The terminal S21 permits the operation of the device in IT-systems with insulation monitoring, serves as a reference point for testing the control voltage and is used to connect the E-stop loop when cross fault monitoring is selected.

Connecting the terminal S21 to the protective ground bridges the internal short-circuit protection of Line A2(-). The short-circuit protection of line A1(+) remains active.

Y39 - Y40 must be closed to have timed outputs. By opening the bridge between Y39 and Y40 the time delay can be interrupted immediately. Without bridge the contacts switch without delay.

The time setting has to be sealed by the user after test.

Technical data

Input

Nominal voltage U_N :

BH 5928: DC 24 V, AC/DC 24 V
BI 5928: AC 110 V, 230 V

Voltage range:

AC
0,85 ... 1,1 U_N
DC AC/DC

at 10% residual ripple: 0,9 ... 1,1 U_N 0,95 ... 1,1 U_N

at 48% residual ripple: 0,8 ... 1,1 U_N 0,8 ... 1,1 U_N

Nominal consumption:

AC approx. 6,0 VA
DC approx. 3,5 W

Nominal frequency:

50 / 60 Hz

Min. Off-time:

1 s

Control voltage on S11:

DC 23 V at U_N

Control current over

S12, S32:

40 mA at U_N each

Min. voltage on

S12, S32:

DC 21 V when relay activated

Short-circuit protection:

Internal PTC

Overvoltage protection:

Internal VDR

Technical data	
Output	
Contacts	
BH 5928.47, BI 5928.47:	3 NO, 1 NC contacts instantaneous and 1 NO contact release delayed
BH 5928.91:	2 NO contacts instantaneous, and 2 NO contacts release delayed
BH 5928.92, BI 5928.92:	2 NO, 1 NC contacts instantaneous and 3 NO contacts release delayed
BH 5928.93, BI 5928.93:	3 NO contacts instantaneous and 3 NO contacts release delayed
Operate delay typ. at U_N:	
Manual start:	40 ms
Automatic start:	500 ms
Release delay typ. at U_N:	
Disconnecting the supply:	40 ms
Disconnecting S12, S22, S31 and S32:	15 ms
Time delay tv (release delayed):	Auxiliary supply must be connected for time delay Time ranges: 0,1 ... 1 s 3,0 ... 30 s 0,3 ... 3 s 6,0 ... 60 s 0,5 ... 5 s 30 ... 300 s 1,0 ... 10 s Other ranges or values on request Fixed values: 1 s, 3 s, 5 s, 10 s, 300 s ± 1 % of setting value
Repeat accuracy:	positive guided
Contact type:	positive guided
Nominal output voltage:	AC 250 V DC: see limit curve for arc-free operation
Max switching current:	DC: see limit curve for arc-free operation
Switching of low loads: (Contact 5 μ Au)	≥ 100 mV ≥ 1 mA
Thermal current I_{th}: in 1 contact path:	max. 5 A
Switching capacity to AC 15	
NO contact:	AC 3 A / 230V EN 69 947-5-1
NC contact	AC 2 A / 230 V EN 60 947-5-1
to DC 13:	AC 8 A / 24 V EN 60 947-5-1
Electrical life to AC 15 at 2 A, AC 230 V:	10 ⁵ switching cycles EN 60 947-5-1
Permissible operating frequency:	max. 1200 switching cycles / h with manual restart and short release delay time
Short circuit strength max. fuse rating:	6 A gL EN 60 947-5-1
line circuit breaker:	C 8 A
Mechanical life:	10 x 10 ⁶ 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
HF irradiation:	10 V / m EN 61 000-4-3
Fast transients:	2 kV EN 61 000-4-4
Surge voltages between	
wires for power supply:	1 kV EN 61 000-4-5
between wire and ground:	2 kV EN 61 000-4-5
HF-line-conducted:	10 V EN 61 000-4-6
Interference suppression:	Limit value class B EN 55 011
Degree of protection:	Housing: IP 40 EN 60 529 Terminals: IP 20 EN 60 529
Housing:	Thermoplastic with V0 behaviour according to UL subject 94
Vibration resistance:	Amplitude 0,35 mm EN 60 068-2-6 frequency 10 ... 55 Hz

Technical data	
Climate resistance:	15 / 055 / 04 EN 60 068-1
Terminal designation:	EN 50 005
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:	Box terminal with wire protection, removable terminal strips
Mounting:	DIN rail EN 50 022
Weight:	400 g
Dimensions	
Width x height x depth:	
BH 5928:	45 x 84 x 118 mm
BI 5928:	67,5 x 84 x 118 mm
Standard type	
BH 5928.93 DC 24 V 0,5 ... 5 s	
Article number:	0050369
• Output:	3 NO contacts instantaneous and 3 NO contacts release delayed
• Nominal voltage U _N :	DC 24 V
• Time delay tv:	0,5 ... 5 s
• Width:	45 mm
Variants	
BH 5928._ _/001:	with fix time delay fixed times: 1 s, 3 s, 5 s, 10 s, 300s other times on request
BH 5928.91/002:	with absolute time scale time ranges: 0,3 ... 3 s, 3 ... 30 s contact fusing 6 A fast, 4 A slow for DC 24 V
Ordering example for variants:	
B_ 5928. _ _ / _ _ _ AC/DC 24 V 50/60 Hz 1... 10 s	
	0,1 ... 1 s 0,3 ... 3 s 0,5 ... 5 s 1 ... 10 s 30 ... 300 s for fixed time end of scale value, other ranges on request only for AC/DC at BH 5928: DC 24 V at BI 5928: AC 230 V /000 standard, not stated in type number (for settable time ranges) /001 fixed time .47 = 3 NO contacts, 1 NC contact instantaneous and 1 NO contact release delayed .91 = 2 NO contacts instantaneous and 2 NO contacts release delayed (only at BH 5928) .92 = 2 NO contacts, 1 NC contact instantaneous and 3 NO contacts release delayed .93 = 3 NO contacts instantaneous and 3 NO contacts release delayed H: width 45 mm I: width 67,5 mm