Semiconductor contactor BF 9250, BH 9250 powerswitch

0231842

BF 9250 up to 10 A

BF 9250 up to 50 A

BF 9250 up to 25 A

BH 9250 up to 10 A

- According to IEC/EN 60 947-4-2, IEC/EN 60 947-4-3
- 1-, 2- and 3-pole models
- Load current up to 50 A
- For AC load up to 480 V
- Switching at zero crossing
- Protected by varistors
- As option temperature protection of the power semiconductors with monitoring output
- Mounting on DIN-rail
- As option with LED indicators
- As option with control input X1 with low current consumption e.g. to be controlled by a PLC
- As option up to 3 separate semiconductor contactors in one unit
- BF 9250: width 22.5 mm, 45 mm and 90 mm
  BH 9250: width 45 mm, 67.5 mm and 112.5 mm

Applications

Fast and noiseless switching of:
- heating elements
- motors
- valves
- lighting

Indication

BF 9250._ _/001 and /002
BH 9250._ _/001

green LED:	on, when voltage on A1/A2
yellow LED:	on, when voltage on X1
red LED:	on, when overtemperature

BF 9250._ _/003

green LED A1:	on, when A1 connected
green LED A3:	on, when A3 connected
green LED A5:	on, when A5 connected

BF 9520._ _/004

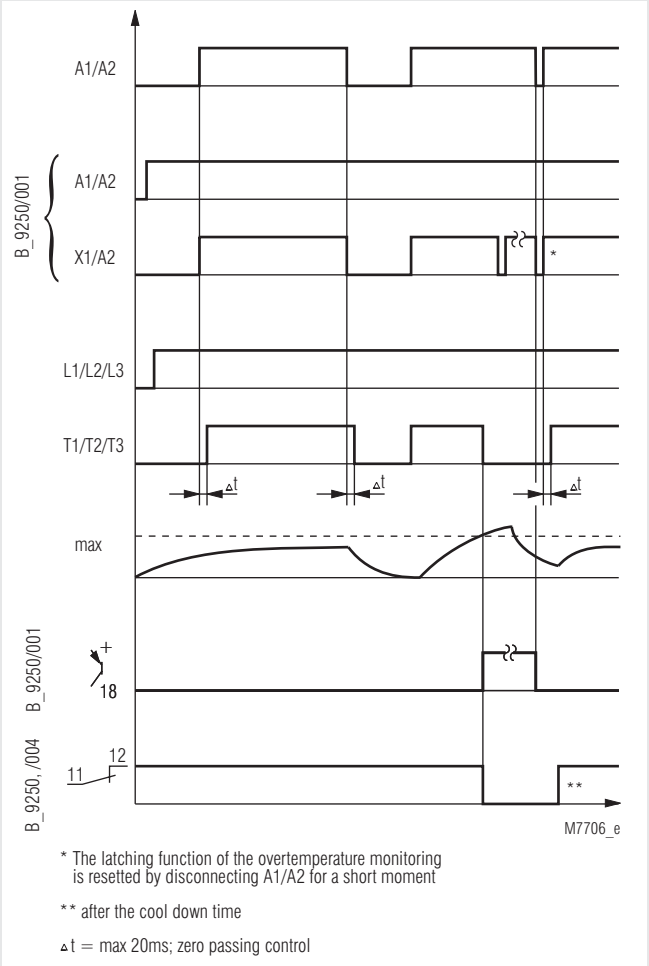
green LED A1:	on, when A1 connected
green LED A2:	on, when A2 connected
green LED A3:	on, when A3 connected

Approvals and marking

CE cULus* Canada / USA

* pending

Function diagram



* The latching function of the overtemperature monitoring is resetted by disconnecting A1/A2 for a short moment

** after the cool down time

Δt = max 20ms; zero passing control

Technical data

Input

Control voltage
BF 9250._ _
A1/A2: AC/DC 110 ... 230 V
BF 9250._ _/003:
A1/A2: DC 24 V, control of T_a
A3/A4: DC 24 V, control of T_b
A5/A6: DC 24 V, control of T_c
BF 9250._ _/004:
A1/A4: DC 24 V, control of T_a
A2/A4: DC 24 V, control of T_b
A3/A4: DC 24 V, control of T_c

Auxiliary voltage U_H A1/A2: DC 24 V
Voltage tolerance: ± 10 %
Pick-up voltage: DC 20 V
Drop-out voltage: DC 8 V
Input current: 35 mA

BF 9250._ _ _/001
Control input X1
Control voltage: DC 3 ... 48 V
Pick-up voltage: DC 3 V
Drop-out voltage: DC 2 V
Input current: 0,5 mA at DC 3 ... 10 V
10 mA at DC 10 ... 48 V

Output

Load output T1, T2, T3
Load currents at 100 % duty cycle:

BF 9250 **BH 9250**	Ambient temperature	Devices without heat sink	Devices with small heat sink	Devices with large heat sink
1-pole	25°C	13 A	30 A	55 A
	40°C	10 A	25 A	50 A
2-pole	25°C	7 A	17.5 A	28 A
	40°C	6,5 A	15 A	25 A
3-pole	25°C	6 A	14 A	20 A
	40°C	5 A	10 A	15 A

Tasks are for AC 51: Switching of resistive/inductive loads of cos φ = 0.1 ... 1

Current reduction over 40°C

BF 9250 **BH 9250**	Device without heat sink	Device with small heat sink	Device with large heat sink
1-pole	0.2 A / °C	0.4 A / °C	0.6 A / °C
2-pole	0.2 A / °C	0.3 A / °C	0.4 A / °C
3-pole	0.2 A / °C	0.2 A / °C	0.3 A / °C

Load voltage range: AC 24 ... 530 V
Frequency range: 50 / 60 Hz
Leakage current in off state at nominal voltage U_N and nominal frequency
(Tj=125°C, max.): 1.0 mA
at load voltage up to: AC 480 V
Peak inverse voltage: ± 1 200 Vp
Short circuit current
at t=10 ms
BF 9250.01; .02; .92;
BH 9250.01; .02: 600 A
BF 9250.03; .93;
BH 9250.03: 400 A
Power dissipation
P = 1.2 [V] x I eff. [A] / k [W]
with k as formfactor and
k = 1.1 for sinusoidal current

Technical data

Semiconductor fuse

			Semiconductor fuse		
BF 9250 **BH 9250**	I_N	load limit integral of the semiconductor	Type	Article-No.	Brand
1-pole devices	10 A	1800 A^2s	fuse 10 x 38	6003434.16	SIBA
	25 A	1800 A^2s	fuse 10 x 38	6003434.30	SIBA
	50 A	1800 A^2s	NH-00	2020920.63	SIBA
2-pole devices	2x6.5 A	1800 A^2s	fuse 10 x 38	6003434.10	SIBA
	2x15 A	1800 A^2s	fuse 10 x 38	6003434.20	SIBA
	2x25 A	1800 A^2s	fuse 10 x 38	6003434.30	SIBA
3-pole devices	3x5 A	800 A^2s	fuse 10 x 38	6003434.8	SIBA
	3x10 A	800 A^2s	fuse 10 x 38	6003434.16	SIBA
	3x15 A	800 A^2s	fuse 10 x 38	6003434.20	SIBA

Varistor voltage: AC 510 V

Semiconductor monitoring output

Output (Terminal 18)**:** transistor, plus switching
switched auxiliary voltage: DC 24 V
Switching capacity: 100 mA, short circuit proof
Residual voltage: typ. 0.6 V

Output (NC contact 11, 12)
Switching capacity: AC 240 V / 2.0 A cos φ = 1
AC 240 V / 1.0 A cos φ = 0.6 inductive
DC 24 V / 1.0 A

Variants

BF 9250._ _/001: With low current input X1
BH 9250._ _/001: With bigger diameter for control wires

BF 9250.92/003,
BF 9250.93/003: 2 or 3 power semiconductor controlled by a separate input with galvanic isolation, without temperature monitoring of the semiconductors

BF 9250.02/004,
BF 9250.03/004: 2 or 3 power semidconductor controlled by a separate input with common ground with temperature monitoring of the semiconductors signal output not latching without LED display of ϑ.

Odering example for Variants