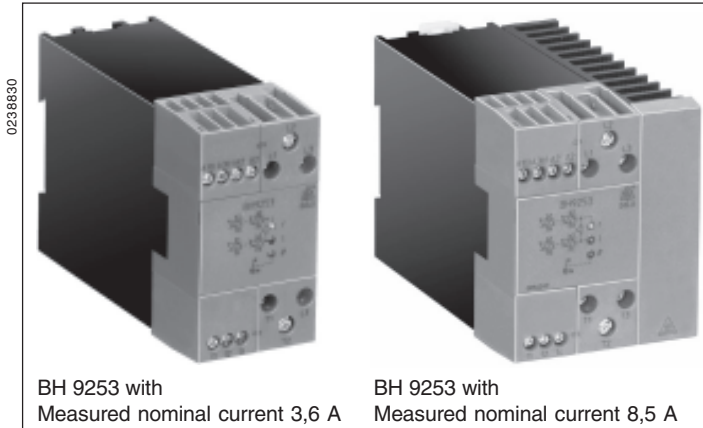
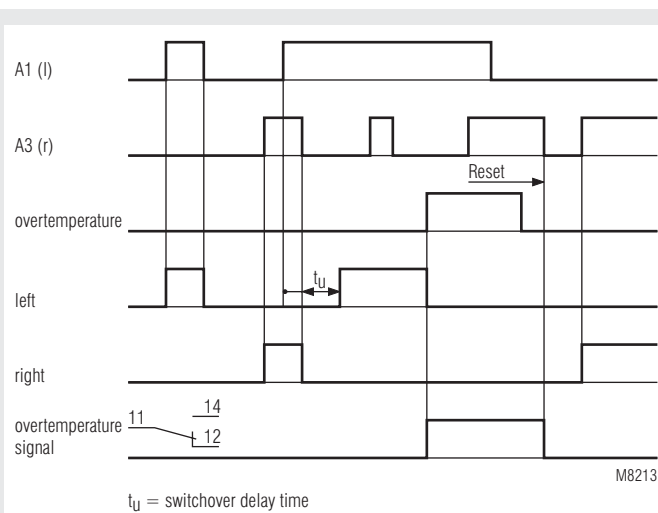


Reversing contactor BH 9253 powerswitch



- According to IEC/EN 60 947-1, IEC/EN 60 947-4-2
- Switching at zero-crossing
- To reverse 3 phase squirrel cage motors up to 5,5 kW at 400 V, 7,5 kW at 500 V
- Electrical interlocking of both directions
- Temperature monitoring to protect the power semiconductors
- Measured nominal current up to 11,5 A
- LEDs for status indication
- Galvanic separation between control circuit and power circuit
- 45 mm; 67,5 mm; 112,5 mm width

Function diagram



Approvals and marking



* pending

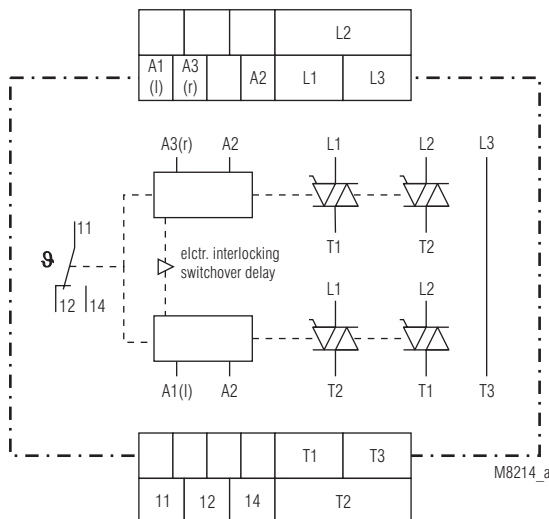
Function

The reversing contactor BH 9253 is used to reverse the direction of 3-phase squirrel cage motors by switching 2 phases. An electrical interlocking disables the control of both directions at the same time. The reversing contactor has a short on and off delay time. When reversing the phases a switchover delay is guaranteed.

Temperature sensing

To protect the power semiconductors the unit incorporates temperature monitoring. When overtemperature is detected the power semiconductors switch off and an output relay as well as a red LED is activated. This state is stored. When the temperature is back to normal the semiconductors can be activated again by switching off and on the control voltage.

Circuit diagram



Indication

yellow LED "Links":
yellow LED "Rechts":
red LED:

on, when left direction active
on, when right direction active
on, when overtemperature

Technical data**Input****Nominal voltage**

A1,A2 / A3,A2: AC/DC 24 V;
AC 110 ... 127 V, AC 220 ... 240 V, AC 400 V
control voltage A1, A3 has to be connected
to the same potential
(see application example)

Voltage range:

AC: 0,8 ... 1,1 U_N
DC: 0,8 ... 1,25 U_N

Nominal consumption

at AC 230 V: 4 VA, 0,8 W
at DC 24 V: 0,3 W

Nominal frequency:

50 / 60 Hz

Pick-up delay:

max. 30 ms

Drop-out delay:

typically 25 ms

Switch-over delay t_v:

100 ms (other values on request)

Permissible residual voltage:

30 % U_N

Load output**Motor power:**

max. 5,5 kW at 400 V, 7,5 kW at 500 V
start max. 2 s

Device without heat sink

Measured thermal current¹⁾: 5 A

Example for operation mode

for motor with 1,5 kW / 400 V: 3,6 A: AC 53a: 6-2: 100-140²⁾
according to IEC/EN 60 947-4-2

Device with heat sink**width 67,5 mm**

Measured thermal current¹⁾: 10 A

Example for operation mode

for motor with 4 kW / 400 V: 8,5 A: AC 53a: 6-2: 100-160²⁾
according to IEC/EN 60 947-4-2

Device with heat sink**width 112,5 mm**

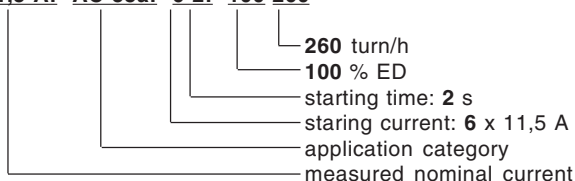
Measured thermal current¹⁾: 20 A

Example for operation mode

for motor with 5,5 kW / 400 V: 11,5 A: AC 53a: 6-2: 100-260²⁾
according to IEC/EN 60 947-4-2

¹⁾ The measured thermal current is the arithmetic mean of starting and measured nominal current of the motor in a turn cycle.

²⁾ Def.: **11,5 A: AC 53a: 6-2: 100-260**



The max. starting current of 100A for 1s, 70 A for 2s and 60A for 5s should not be passed.

Load voltage range: AC 24 ... 500 V

Peak inverse voltage: 1 200 Vp

Frequency range: 50 / 60 Hz

Surge current 10 ms: 350 A

Semiconductor fuse: 610 A²s

Varistor voltage: AC 510 V

Monitoring output**Contacts**

BH 9253.11: 1 changeover contact

Thermal current I_{th}: 5 A

Switching capacity

at AC 15

NO: 3 A / AC 230 V IEC/EN 60 947-5-1

NC: 1 A / AC 230 V IEC/EN 60 947-5-1

Short circuit strength

max. fuse rating: 4 A gL IEC/EN 60 947-5-1

Technical data**General data****Operating mode:**

Continuous operation

Temperature range:

- 20 ... + 60 °C

Current reduction over 40 °C: 0,2 A / °C

Clearance and creepage distances

rated impuls voltage /

pollution degree:

4 kV / 2

IEC 60 664-1

EMC

Surge voltages:

5 kV / 0,5 J

HF-interference:

2,5 kV

Electrostatic discharge:

8 kV (air)

IEC/EN 61 000-4-2

HF irradiation:

10 V / m

IEC/EN 61 000-4-3

Fast transients:

4 kV

IEC/EN 61 000-4-4

Surge voltages between

wires for power supply:

1 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 55 011

Degree of protection:

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 IEC/EN 60 068-2-6

frequency 10 ... 55 Hz

Climate resistance:

20 / 040 / 04

IEC/EN 60 068-1

Terminal designation:

EN 50 005

Wire connection

Load terminals:

1 x 10 mm² solid or

1 x 6 mm² stranded ferruled

Control terminals:

2 x 2,5 mm² solid or

2 x 1,5 mm² stranded ferruled

DIN 46 228-1/-2/-3/-4

Wire fixing:

terminal screws M3,5; box terminals

with self-lifting wire protection

DIN rail

IEC/EN 60 715

Mounting:**Weight:**

Width 45 mm:

420 g

Width 67,5 mm:

640 g

Width 112,5 mm:

1 060g

Dimensions**Width x height x depth:**

45 x 84 x 121 mm

67,5 x 84 x 121 mm

112,5 x 84 x 121 mm

Standard type

BH 9253.11 AC 220 ... 240 V 50 / 60 Hz 3,6 A 100 ms

Article number:

• Output: 1 changeover contact

• Nominal voltage U_N: AC 220 ... 240 V

• Switchover delay: 100 ms

• Width: 45 mm

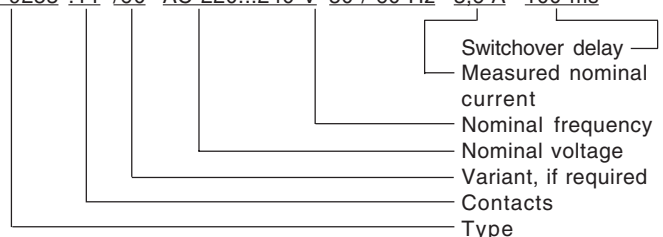
Variant

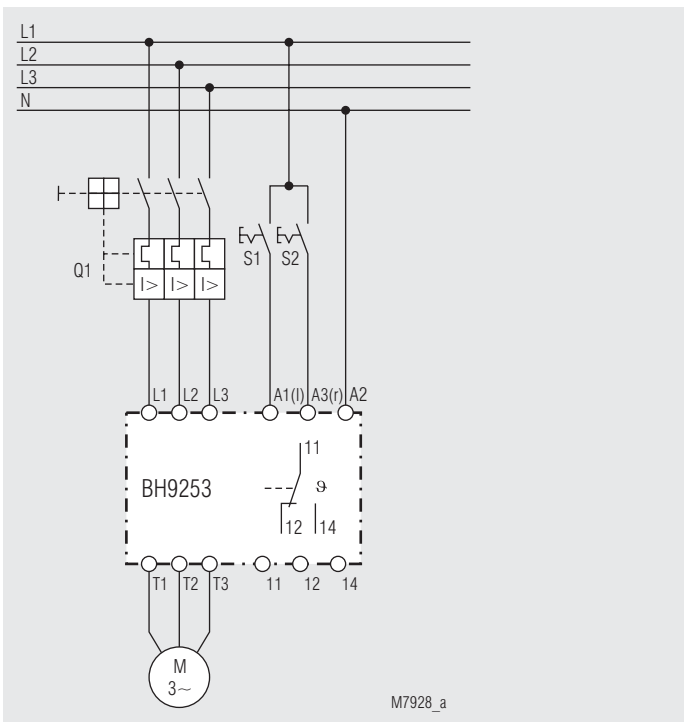
BH 9253.11/61:

with UL-Approval

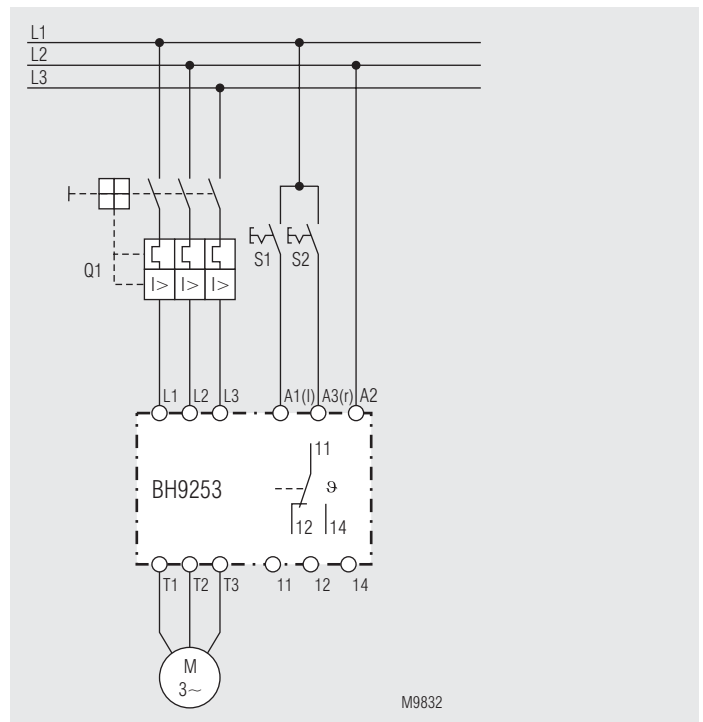
Ordering example for variant

BH 9253 .11 /60 AC 220...240 V 50 / 60 Hz 3,6 A 100 ms

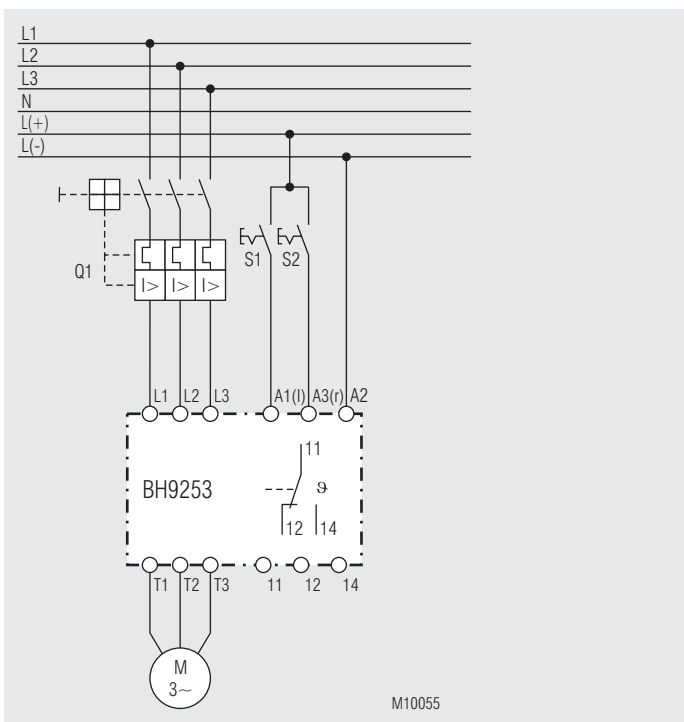




230/400 V AC-Mains
AC 230 V control voltage



230/400 V AC-Mains
AC 400 V control voltage



230/400 V AC-Mains
AC/DC 24 V control voltage

ATTENTION!



A1 and A3 has to be connected to the same phase. The common connection is terminal A2.

Connecting a parallel load between A1 and A2 as well as A3 and A2 is not allowed

