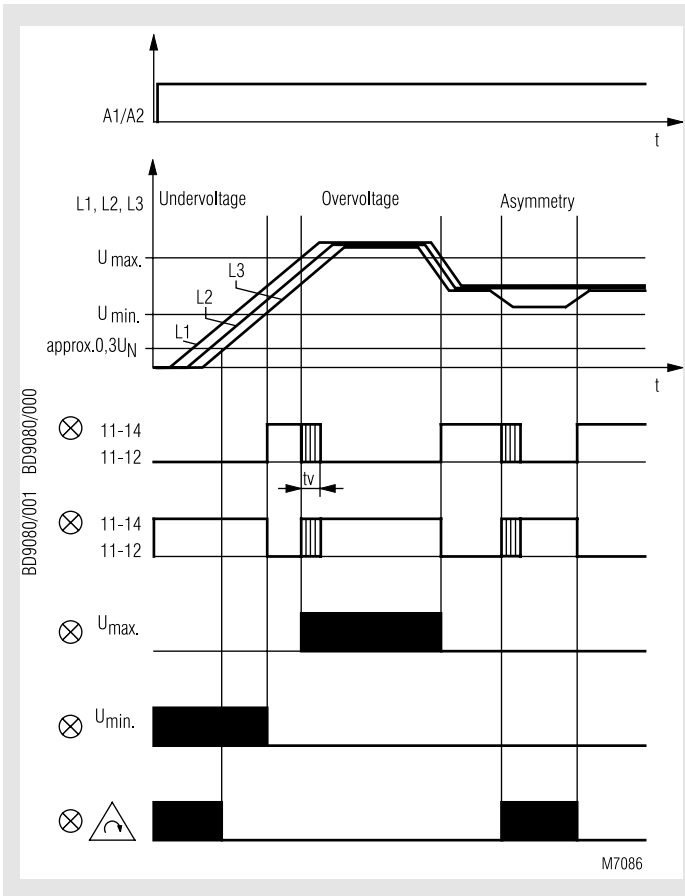


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- According to IEC 255, EN 60 255, VDE 0435 part 303
- Monitoring of
 - Under- and overvoltage
 - Asymmetry
 - Phase failure
 - Phase sequence
- Release time adjustable between 0,1 ... 5 s
- One LED in each case for
 - Auxiliary voltage A1/A2
 - Overvoltage U_{max}
 - Undervoltage U_{min}
 - Asymmetry / Phase sequence / Power failure
 - Contact position
- Closed circuit operation
- Available open circuit operation
- 2 changeover contacts
- Width 45 mm

Function diagram



Approvals and marking



Applications

For mounting three-phase networks for undervoltage, overvoltage, phase sequence, asymmetry, power failure.

Indication

1. LED A1 / A2: on when operating voltage present
2. LED U_{max} : on in event of overvoltage
3. LED U_{min} : on in event of undervoltage
4. LED Δ : on in event of:
 - asymmetry
 - incorrect phase sequence
 - power failure
5. LED: on when output relay activated

Notes

Measurement procedures: arithmetical mean value measurement over several half-waves of rectified phase voltages L1/L2 and L2/L3. Reference phase is L3. Networks with or without neutral can be monitored. The auxiliary voltage to be applied to A1/A2 can also be taken from the three-phase network which is to be monitored. This reduces to 0,8 - 1,1 U_N the permitted range of voltage of the network to be monitored.

Technical data

Input circuit

Nominal voltage U_N

L1 / L2 / L3: 3 AC 230, 400, 690 V (other voltages on request)

Overload capacity of U_N : $1,5 U_N / 2 U_N$ (10 s) max. 1 000 V

Nominal frequency of U_N : 50 / 60 Hz

Frequency range of U_N : 45 ... 65 Hz

Accuracy: $\leq \pm 0,5 \%$ of U_N

Power consumption with U_N : L1 approx. 0,5 mA

L2 approx. 0,5 mA

L3 approx. 0,8 mA

Hysteresis: $\leq 5 \%$ x U_A (U_A = response value)

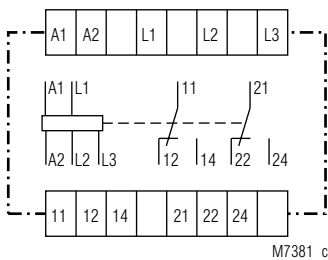
Asymmetry detection

Voltage: $U_A \pm 10 \dots 20 \%$

Fault angle: approx. $120^\circ \pm 15^\circ$

Temperature influence: $\leq 0,08 \%$ / K

Circuit diagram



Technical data

Auxiliary circuit

Auxiliary voltage U_H

A1 / A2: AC 110, 230, 400 V
AC/DC 24 ... 60 V,
AC/DC 110 ... 230 V
(other voltages on request)

Voltage range of U_H : 0,8 ... 1,1 U_H
Nominal frequency of U_H : 50 / 60 Hz
Frequency range of U_H : 45 ... 500 Hz
Nominal consumption: 2,4 VA

Setting ranges

$U_{max.}$: 0,7 ... 1,3 U_N
 $U_{min.}$: 0,7 ... 1,3 U_N
Setting range: $\leq \pm 10\%$ of U_N

Output circuit

Contacts

BD 9080.12: 2 changeover contacts
Response-/Release time: approx. 900 / 150 ms
Time delay t_v : 0,1 ... 5 s
Thermal current I_{th} : 6 A (see continuous current limit curve)
Switching capacity
to AC 15
NO contact: 3 A / AC 230 V EN 60 947-5-1
NC contact: 1 A / AC 230 V EN 60 947-5-1
Electrical life: EN 60 947-5-1
to AC 15 at 1 A, AC 230 V:
NO contact: 2,5 x 10⁵ switching cycles
Permissible switching frequency: 20 switching cycles / s
Short circuit strength
max. fuse rating: 4 A gL EN 60 947-5-1
Mechanical life: $\geq 50 \times 10^6$ switching cycles

General data

Operating mode: Continuous operation
Temperature range: - 20 ... + 60°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
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: Frequency 10 ... 55 Hz,
Amplitude 0,35 mm EN 60 068-2-6
20 / 060 / 04 EN 60 068-1
Climate resistance:
Wire connection: 2 x 2,5 mm² solid DIN 46 288 or
2 x 1,5 mm² stranded wire with sleeve
DIN 46 228-1/-2/-3/-4
Wire fixing: Flat terminals with self-lifting
clamping piece EN 60 999
Mounting: DIN rail EN 50 022
Weight: 325 g

Dimensions

Width x height x depth: 45 x 74 x 133 mm

Standard type

BD 9080.12 3 AC 400 V AC 230 V
Article number: 0045382 stock item
• Output: 2 changeover contacts
• Nominal voltage U_N : 3 AC 400 V
• Auxiliary voltage U_H : AC 230 V
• Closed circuit operation
• Width: 45 mm

Variant

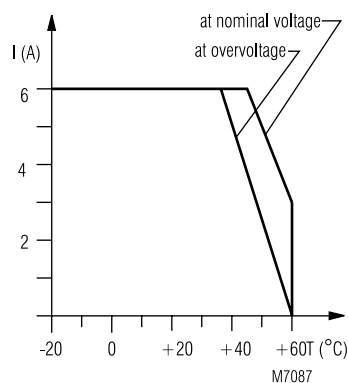
BD 9080.12/001 Open circuit operation

Ordering example for Variant

BD 9080 .12 / 3 AC 400 V 50/60 Hz AC 230 V 50/60 Hz

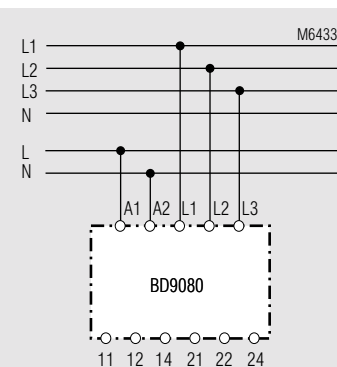
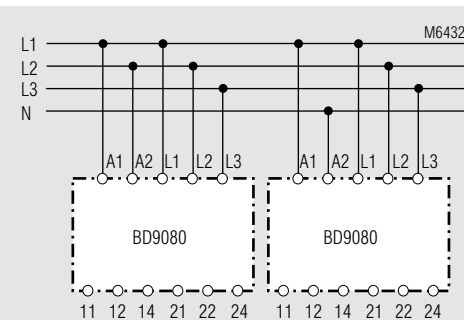
Nominal frequency of U_H
Auxiliary voltage U_H
Nominal frequency of U_N
Nominal voltage U_N
Variant, if required
Contacts
Type

Characteristic



Continuous current limit curve

Connection examples



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