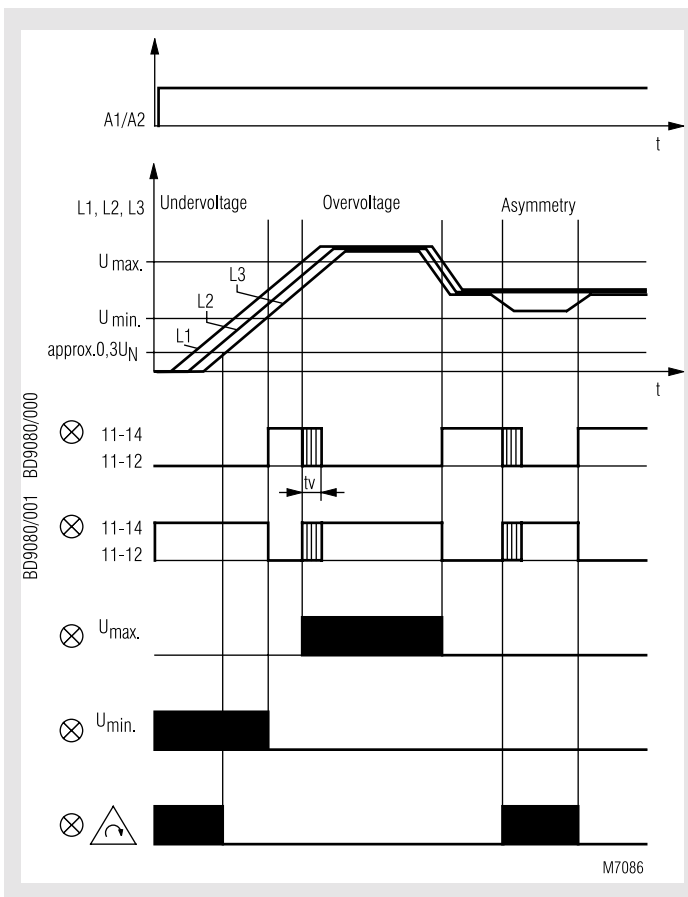


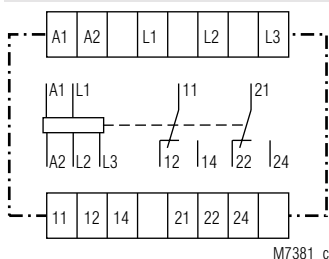
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Function diagram



Circuit diagram



- 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

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. $120^\circ \pm 15^\circ$

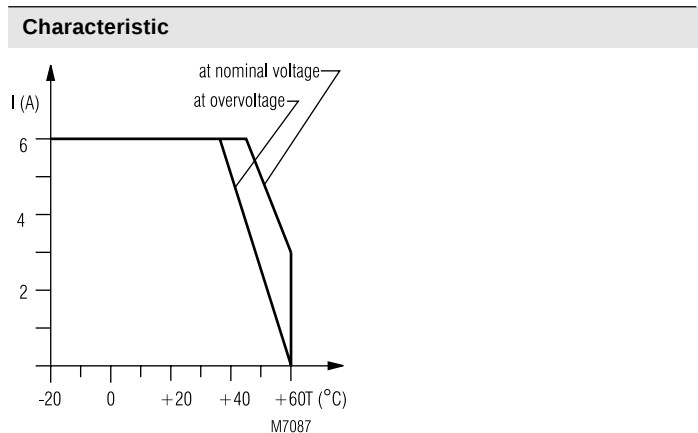
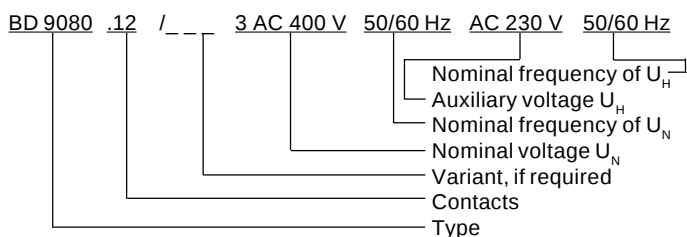
Temperature influence: $\leq 0,08 \%$ / K

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:	
to AC 15 at 1 A, AC 230 V:	
NO contact:	2,5 x 10 ⁵ 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 mm ² solid DIN 46 288 or	
2 x 1,5 mm ² 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



Continuous current limit curve

