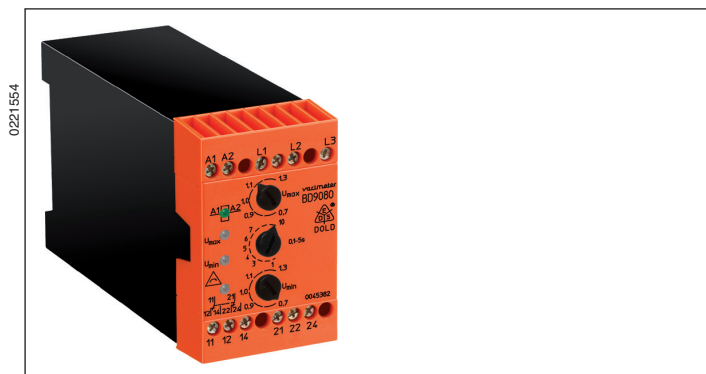
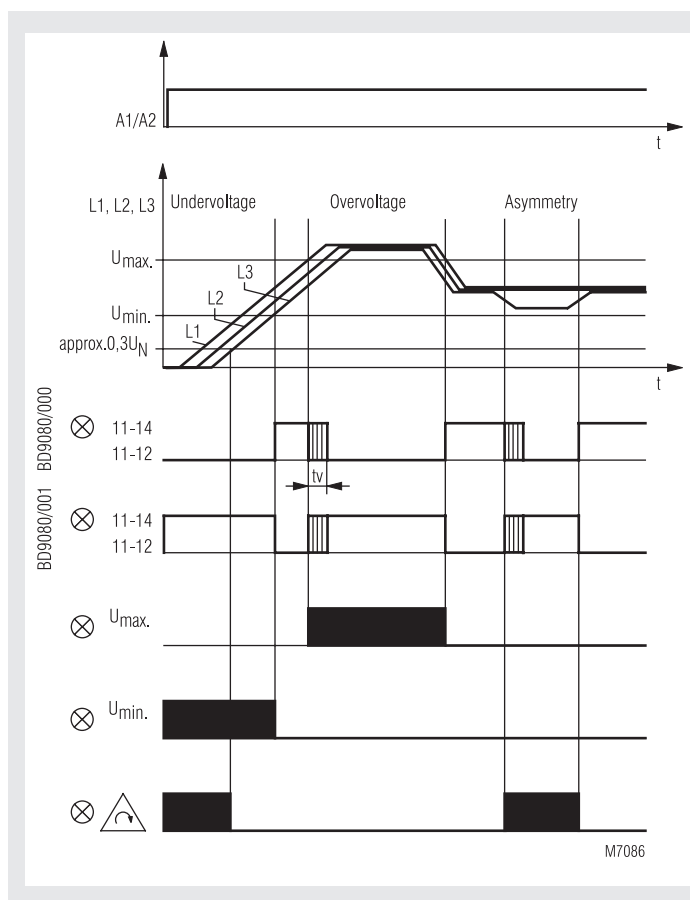


VARIMETER PRO Phase Monitor BD 9080



- According to IEC/EN 60 255, DIN VDE 0435-303
- 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
- 2 changeover contacts
- As option available with open circuit operation
- Width 45 mm

Function Diagram



Approvals and Marking



*) see Variants

Applications

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

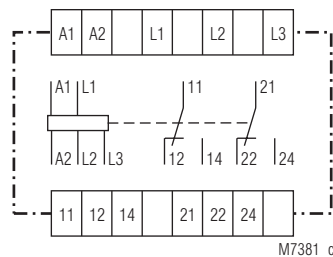
Indication

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_H the permitted range of voltage of the network to be monitored.

Circuit Diagram



Technical Data	
Input Circuit	
Nominal voltage U_N L1 / L2 / L3:	3 AC 230, 400, 690 V (other voltages on request)
Setting range:	0.7 ... 1.3 U_N
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:	≤ 5 % x U_A (U_A = response value)
Asymmetry detection Voltage:	$U_A \pm 8$... 20 %
Fault angle:	approx. $120^\circ \pm 15^\circ$
Temperature influence:	≤ 0.08 % / K
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
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:	2 A / AC 230 V IEC/EN 60 947-5-1
NC contact:	1 A / AC 230 V IEC/EN 60 947-5-1
to DC 13	
NO contact:	1 A / DC 24 V IEC/EN 60 947-5-1
NC contact:	1 A / DC 24 V IEC/EN 60 947-5-1
Electrical life: to AC 15 at 1 A, AC 230 V:	IEC/EN 60 947-5-1
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 IEC/EN 60 947-5-1
Mechanical life:	≥ 50 x 10^6 switching cycles
General Data	
Operating mode:	Continuous operation
Temperature range:	- 20 ... + 60°C
Clearance and creepage distances rated impuls voltage / pollution degree	
auxiliary voltage:	6 kV / 2 IEC 60 664-1
Contact / contact:	4 kV / 2 IEC 60 664-1
EMC	
Electrostatic discharge:	8 kV (air) IEC/EN 61 000-4-2
HF irradiation:	10 V/m IEC/EN 61 000-4-3
Fast transients:	2 kV IEC/EN 61 000-4-4
Surge voltages between	
wires for power supply:	1 kV IEC/EN 61 000-4-5
between wire and ground:	2 kV IEC/EN 61 000-4-5
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

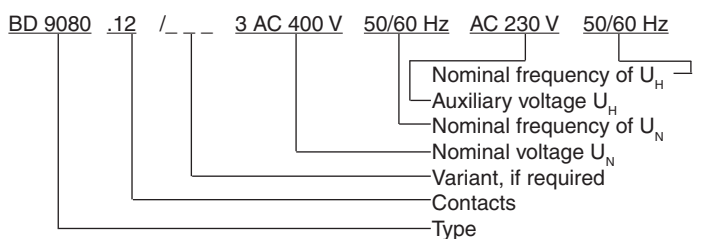
Technical Data	
Vibration resistance:	Amplitude 0.35 mm IEC/EN 60 068-2-6 frequency 10 ... 55 Hz,
Climate resistance:	20 / 060 / 04 IEC/EN 60 068-1
Wire connection:	2 x 2.5 mm ² solid DIN 46 228-1/-2/-3/-4 or 2 x 1.5 mm ² stranded wire with sleeve DIN 46 228-1/-2/-3/-4
Wire fixing:	Flat terminals with self-lifting clamping piece IEC/EN 60 999-1
Mounting:	DIN rail IEC/EN 60 715
Weight:	325 g

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

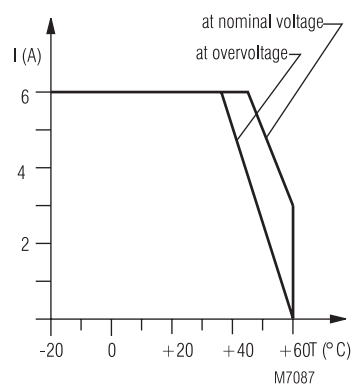
Standard Type	
BD 9080.12 3 AC 400 V AC 230 V	
Article number:	0045382 stock item
• Output:	2 changeover contacts
• Nominal voltage U_N :	3 AC 400 V
• Auxiliary voltage U_H :	AC 230 V
• Closed circuit operation	
• Width:	45 mm

Variants	
BD 9080.12/61 3 AC 400 AC 400 V, 3 AC 480 AC 480 V: BD 9080.12/001: BD 9080.12/020:	with UL-approval open circuit operation output relay indicates only under- and overvoltage with extended temperature range of - 40 ... + 70 °C
BD 9080.12/200:	Remark At an ambient temperature of + 70°C the device has to be mounted with 2 cm space to the neighbour units and the necessary air circulation must be provided. The contact current must not be more then 2 A. The life of the product may be reduced by the higher ambient temperature!

Ordering example for variant



Characteristic



Continuous current limit curve

Connection Examples

