

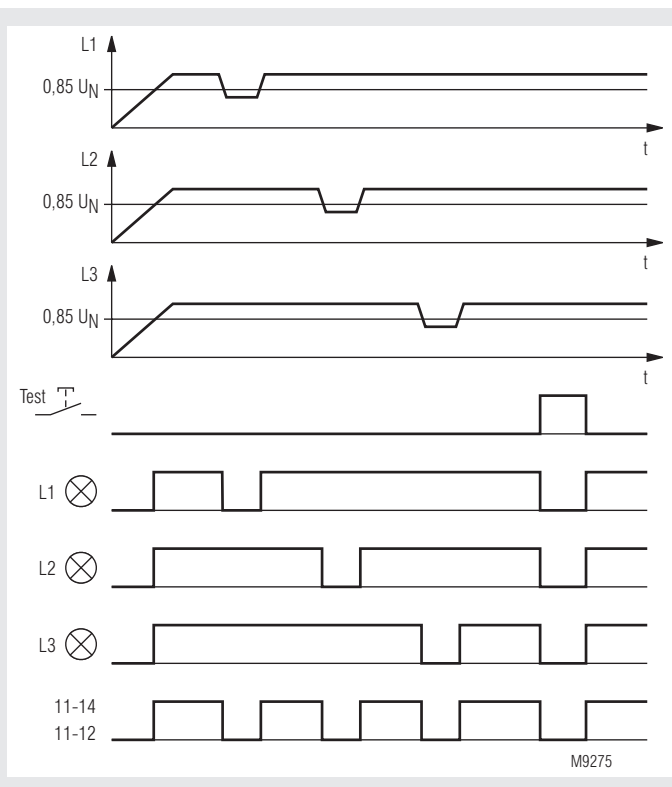
VARIMETER

Undervoltage Relay, 3-Phase With Test Key IL 9176



- According to IEC/EN 60 255
- Detection of
 - undervoltage 1 up to 3-phase, $0.85 \times U_N$
 - phase failure
- Without auxiliary voltage
- De-energized on trip
- LED indicator for L1, L2, L3 with test key to simulate failure
- 2 changeover contacts
- Width 35 mm

Function Diagram



Approval and Marking



Application

Voltage monitoring of 3-phase systems
IL 9176.12/108 for installations according to DIN VDE 0108

Function

On a healthy voltage system all 3 LEDs are on. The output contacts 11-14 and 21-24 are closed. By pressing the test button a failure is simulated and the relay contacts de-energise. This allows to test the circuit. When having asymmetric loads in the circuit the unit detects also a broken neutral wire. If the voltage drops below $0.85 \times U_N$ in one phase, the corresponding LED and the relay contacts switch off.

Indication

- L1: phase voltage L1 present
- L2: phase voltage L2 present
- L3: phase voltage L3 present

Technical Data

Input (L1, L2, L3, N)

Nominal voltage U_N : 3/N AC 400 / 230 V
Max. overload: $1.1 U_N$, continuously
Nominal frequency: 50 / 60 Hz
Frequency range: 45 ... 65 Hz

Input current

L1: 25 mA / AC 230 V
L2: 1 mA / AC 230 V
L3: 1 mA / AC 230 V

Nominal consumption:

Response value: $0.85 U_N$, fixed
Hysteresis: approx. 5 % U_N

Start up delay

($0_V \rightarrow U_N$): approx. 500 ms

Release delay

($U_N \rightarrow 0_V$): approx. 70 ms

Output

Contact: 2 changeover contacts
Thermal current I_{th} : 2 x 4 A

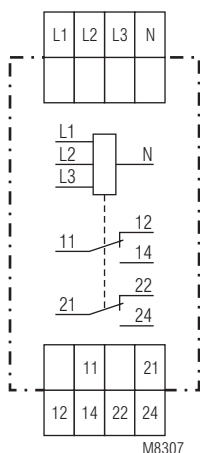
switching capacity
 according to AC 15:

NO contact: 3 A / AC 230 V IEC/EN 60 947-5-1
 NC contact: 2 A / AC 230 V IEC/EN 60 947-5-1

Electrical life

acc.to AC 15 bei 1 A / AC 230 V: 5×10^6 switching cycles IEC/EN 60 947-5-1

Circuit Diagram



Technical Data

Short circuit strength

Max. fuse rating: 4 A gL IEC/EN 60 947-5-1
Mechanical life: 30 x 10⁸ switching cycles

General Data

Temperature range: - 20 ... + 60°C

Clearance and creepage distance

rated impuls voltage /
pollution degree: 4 kV / 2 IEC 60 664-1

Test voltage

Input / output AC 2.5 kV IEC/EN 61 810-4-2

EMC

Electrostatic discharge (ESD): 8 kV (air) IEC/EN 61 000-4-2

Fast transients: 4 kV IEC/EN 61 000-4-4

Surge voltage

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 VO behaviour
according to UL subject 94

Vibration resistance:

Amplitude 0.35 mm,
Frequency 10 ... 55 Hz, IEC/EN 60 068-2-6

20 / 060 / 04 IEC/EN 60 068-1

Climate resistance:

Leiteranschluß: 2 x 2.5 mm² solid or
2 x 1.5 mm² stranded wire with sleeve
DIN 46 228-1/-2/-3/-4

Wire connection: Flat terminals with self-lifting

clamping piece IEC/EN 60 999-1

Mounting: DIN-rail IEC/EN 60 715

Weight: 105 g

Dimensions

Width x height x depth: 35 x 90 x 59 mm

Standard Type

IL 9176.12 3/N AC 400/230V 50/60 Hz

Article number: 0059134

- Nominal voltage U_N : 3/N AC 400/230 V
- Output: 2 changeover contacts
- Width: 35 mm

Variant

IL 9176.12/108: with Marking „Für Anlagen nach
DIN VDE 0108“ (for systems according
to DIN VDE 0108)