

VARIMETER

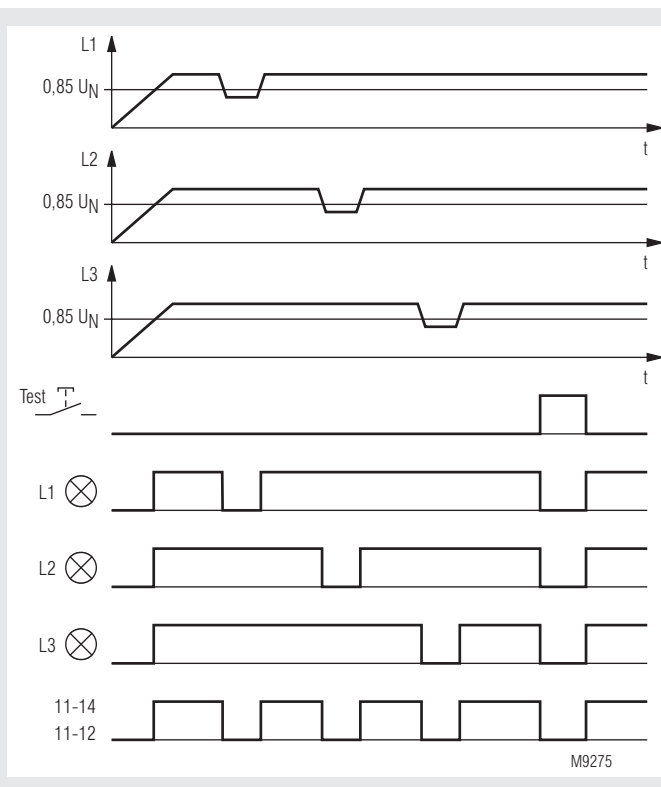
Undervoltage Relay, 3-Phase With Test Key IL 9176

Translation
of the original instructions

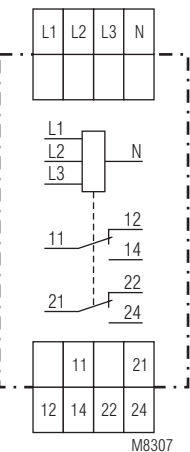


- According to IEC/EN 60255
- Detection of
 - Undervoltage 1 up to 3-phase, $0.85 \times U_N$
 - Phase failure
- Without auxiliary voltage
- De-energized on trip
- LED indicator for L1, L2, L3 with test key to simulate failure
- 2 changeover contacts
- Width 35 mm

Function Diagram



Circuit Diagram



Approvals and Markings



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:	2 W
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 60947-5-1
NC contact:	2 A / AC 230 V IEC/EN 60947-5-1
Electrical life Acc.to AC 15 bei 1 A / AC 230 V:	5 x 10 ⁶ switching cycles IEC/EN 60947-5-1

Technical Data

Short circuit strength

Max. fuse rating: 4 A gG / gL IEC/EN 60947-5-1
Mechanical life: 30 x 10⁸ switching cycles

General Data

Temperature range: - 20 ... + 60°C

Clearance and creepage distance

Rated impulse voltage /
pollution degree: 4 kV / 2 IEC 60664-1

Test voltage

Input / output AC 2.5 kV IEC/EN 61810-4-2

EMC

Electrostatic discharge (ESD): 8 kV (air) IEC/EN 61000-4-2

Fast transients: 4 kV IEC/EN 61000-4-4

Surge voltage

Between

wires for power supply: 1 kV IEC/EN 61000-4-5

Between wire and ground: 2 kV IEC/EN 61000-4-5

Interference suppression: Limit value class B EN 55011

Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

Housing: Thermoplastic with VO behaviour
according to UL subject 94

Vibration resistance:

Amplitude 0.35 mm,
Frequency 10 ... 55 Hz, IEC/EN 60068-2-6

20 / 060 / 04 IEC/EN 60068-1

Climate resistance:

Leiteranschluß: 2 x 2.5 mm² solid or
2 x 1.5 mm² stranded wire with sleeve
DIN 46228-1/-2/-3/-4

Wire connection: Flat terminals with self-lifting
clamping piece IEC/EN 60999-1

Mounting: DIN-rail IEC/EN 60715

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)