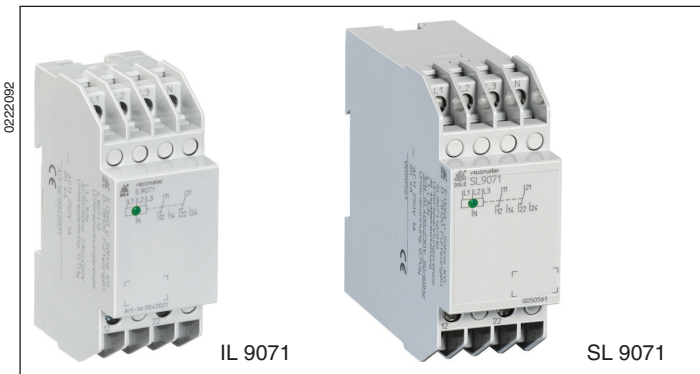


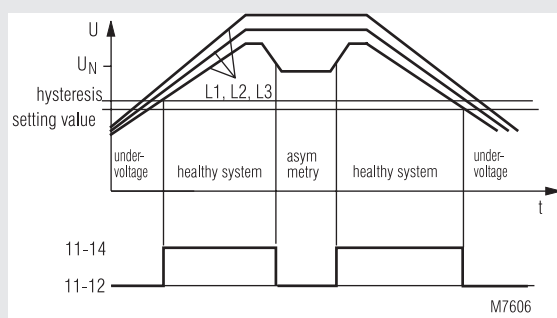
VARIMETER Undervoltage Relay IL 9071, SL 9071

Translation
of the original instructions



- According to IEC/EN 60255-1
- Identification of
 - Undervoltage
 - Phase failure
 - Asymmetry also with reverse voltage
 - Missing neutral in the system
 - Broken neutral on IL/SL 9071
 - Neutral exchanged against phase
- Single phase connection possible
- According to DIN VDE 0100-710 (for rooms used for medical purposes) as an option
- Fixed setting value (variable as an option)
- De-energized on trip
- LED indicator
- With safe disconnection according to IEC/EN 61140, IEC/EN 60947-1 between the Measuring Circuit and the contacts
- Independent of phase sequence
- 2 changeover contacts
- Devices available in 2 enclosure version:
 - IL 9071: Depth 61 mm with terminals at the bottom for installations systems and industrial distribution systems according to DIN 43880
 - SL 9071: Depth 98 mm with terminals at the top for cabinets with mounting plate and cable duct
- Width 35 mm

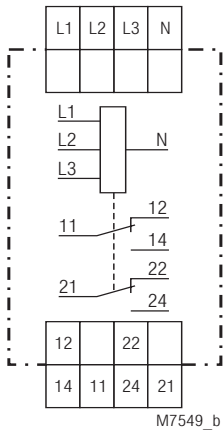
Function Diagram



Additional Information about this topic

- Datasheet undervoltage relay IK/IL 9171
- Relay workshop No. 15 and No. 16:
The meaning of asymmetry in 3 phase systems (only in German)

Circuit Diagram



IL 9071.12, SL 9071.12

Approvals and Markings



*) only IL 9071

Applications

Monitoring of three-phase voltage systems to identify undervoltage, asymmetry or phase failure and switching-on of safety lighting in accordance with DIN VDE 0108.

Neutral monitoring in 3-phase systems. In 3-phase systems with neutral often also single phase load are connected between phase and neutral. If the neutral is missing in a system like this unsymmetric voltages occur that could damage single phase consumers if the voltage rises too high. Also consumers can stop to work if the phase-neutral voltage gets too low. The IL 9071 detects this problem and can switch of the system immediately.

Indicators

Green LED: On, when the mains system is working properly (contact 11-14 and 21-24 closed)

Notes

For single phase operation the terminals L1, L2 and L3 have to be bridged

Technical Data

Input

Nominal voltage U_N :

Single-phase connection: AC 100 V, 115 V, 220 V, 230 V,
AC 400 V, 415 V, 440 V, 500V

3-phase without
Neutral connection: 3AC 100 V, 115 V, 220 V, 230 V,
3AC 400 V, 415 V, 440 V, 500 V

3-phasing with
Neutral connection: 3/N AC 100 V / 58 V; 3/N AC 110 V / 64 V;
3/N AC 200 V / 115 V; 3/N AC 220 V / 127 V;
3/N AC 230 V / 133 V; 3/N AC 400 V / 230 V;
3/N AC 415 V / 240 V; 3/N AC 440V / 254 V;
3/N AC 500 V / 290 V

Overload: AC 440 V on all measuring inputs,
for at least 1 h

Voltage range: 0.7 ... 1.1 U_N

Nominal consumption: Approx. 6 VA (L3-N)

Nominal frequency: 50 / 60 Hz

Frequency range: 45 ... 65 Hz

Input current at U_N : L1-N, L2-N: Approx. 1.5 mA
L3-N: Approx. 25 mA

Setting Ranges

Setting value U_{off}

IL 9071/010, SL 9071/010: 0.7 U_N or 0.85 U_N (hysteresis approx. 4 %)
IL 9071/117, SL 9071/117: 0.7 ... 0.95 U_N (hysteresis approx. 4 %)

Asymmetry identification

IL 9071/117, IL 9071/010,
SL 9071/117, SL 9071/010: Approx. 5 ... 10 % phase asymmetry

Output

Contacts

IL 9071.12, SL 9071.12: 2 changeover contacts

Contact material: AgNi

Switching voltage: AC 250 V

Thermal current I_{th} : 4 A

Switching capacity IEC/EN 60947-5-1
AC 15

NO contact: 3 A / AC 230 V

NC contact: 2 A / AC 230 V

Electrical life IEC/EN 60947-5-1
AC 15 at 1 A, AC 230 V:

5 x 10⁵ switching cycles

Short circuit strength

max. fuse rating: 4 A gG / gL IEC/EN 60947-5-1

Mechanical life: 30 x 10⁶ switching cycles

General Data

Operating mode: Continuous operation

Temperature range:

Operation: - 20 ... + 60 °C

Storage: - 25 ... + 60 °C

Relative air humidity: 93 % at 40 °C

Altitude: < 2000 m

Clearance and creepage distances

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

Between Measuring Circuit
and contacts: 6 kV / 2

EMC

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

HF irradiation

80 MHz ... 1 GHz: 10 V / m IEC/EN 61000-4-3

1 GHz ... 2 GHz: 10 V / m IEC/EN 61000-4-3

2 GHz ... 2.7 GHz: 10 V / m IEC/EN 61000-4-3

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

Surge voltages

Between
wires for power supply: 2 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

Technical Data

Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

Housing: Thermoplastic with V0 behaviour
according to UL subject 94

Vibration resistance: Amplitude 0.35 mm,
frequency 10 ... 55 Hz, IEC/EN 60068-2-6

Climate resistance: 20 / 060 / 04 IEC/EN 60068-1

Terminal designation: EN 50005

Wire connection: 2 x 2.5 mm² solid or
2 x 1.5 mm² stranded ferruled
DIN 46228-1/-2/-3/-4

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

Fixing torque: 0.8 Nm

Mounting: DIN rail IEC/EN 60715

Weight

IL 9071/010: 122 g

SL 9071/010: 168 g

Dimensions

Width x height x depth

IL 9071: 35 x 90 x 61 mm

SL 9071: 35 x 90 x 98 mm

Standard Types

IL 9071.12/010 3/N AC 400 / 230 V 0.85 U_N

Article number: 0047074

SL 9071.12/010 3/N AC 400 / 230 V 0.85 U_N

Article number: 0051006

- With asymmetry detection
- 2 changeover contacts
- Nominal voltage U_N : AC 230 / 3 AC 400 V
- Setting value: 0.85 U_N
- Width: 35 mm

Variants

IL 9071/117, SL 9071/117: According to DIN VDE 0100-710, rooms
used for medical purposes, variable
setting value

Ordering example for variants

IL 9071 .12 / _ _ _ 3/N AC 400 / 230 V 50/60 Hz 0.7 U_N

