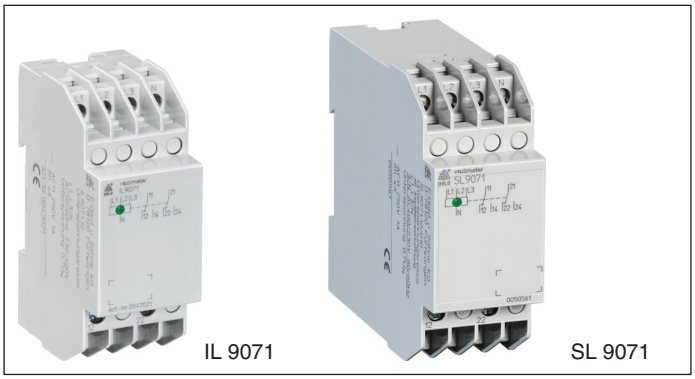
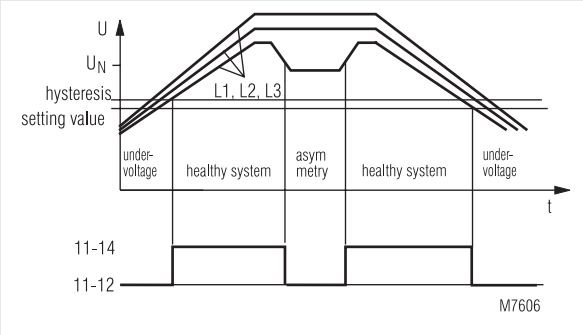
VARIMETER
Undervoltage Relay
IL 9071, SL 9071

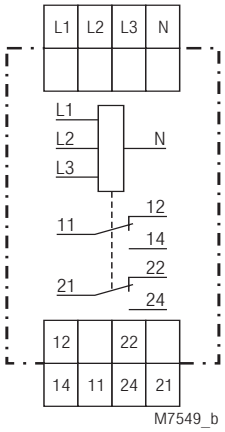
0222092



Function Diagram



Circuit Diagram



IL 9071.12, SL 9071.12

- According to IEC/EN 60 255, DIN VDE 0435-303
- 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)
- Closed circuit operation principle
- LED indicator
- With safe disconnection according to IEC/EN 61 140,
  IEC/EN 60 947-1 between the Measuring Circuit and the contacts
- Independant 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 43 880
  SL 9071: depth 98 mm with terminals at the top for cabinets with mounting plate and cable duct
- Width 35 mm

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)

Approvals and Markings

CE

Application

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.

Indication

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:	3/N AC 400 / 230 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	
Thermal current I_{th}:	4 A	
Switching capacity		IEC/EN 60 947-5-1
AC 15		
NO contact:	3 A / AC 230 V	
NC contact:	2 A / AC 230 V	
Electrical life		IEC/EN 60 947-5-1
AC 15 at 1 A, AC 230 V:	5 x 10^5 switching cycles	
Short circuit strength		
max. fuse rating:	4 A gL	IEC/EN 60 947-5-1
Mechanical life:	30 x 10^6 switching cycles	

General Data

Operating mode:	Continuous operation	
Temperature range:	- 20 ... + 60°C	
Clearance and creepage distances		
rated rated impulse voltage voltage / pollution degree:	4 kV / 2	IEC 60 664-1
between Measuring Circuit and contacts	6 kV / 2	
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:	4 kV	IEC/EN 61 000-4-4
Surge voltages between		
wires for power supply:	2 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	
Vibration resistance:	Amplitude 0.35 mm, frequency 10 ... 55 Hz, IEC/EN 60 068-2-6	
Climate resistance:	20 / 060 / 04	IEC/EN 60 068-1
Terminal designation:	EN 50 005	
Wire connection:	2 x 2.5 mm² solid or 2 x 1.5 mm² stranded ferruled 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		
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

- Setting value
- Nominal frequency
- Nominal voltage
- Variant, if required
- Contacts
- Type

Specifiaction for Tender for IL 9071

Undervoltage relay according to IEC/EN 60 255, DIN VDE 0435-303 to be built in consumer units with identification of phase and neutral failure in 3 phase systems with neutral-line 230/400 V, setting value 0.85 U_N, closed circuit operation, 2 changeover contacts, LED indicator.
Width 35 mm.
Type IL 9071.12
Manufactured by: E. DOLD & SÖHNE KG

Undervoltage relay according to IEC/EN 60 255, DIN VDE 0435-303 to be built in consumer units with identification of phase and neutral failure in 3 phase systems with neutral-line 230/400 V, setting value 0.7 U_N, closed circuit operation, 2 changeover contacts, LED indicator.
Width 35 mm.
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