

VARIMETER Short-time Voltage Drop Relay IL 9079, SL 9079

Translation
of the original instructions



Your advantages

- Preventive maintenance
- For better productivity

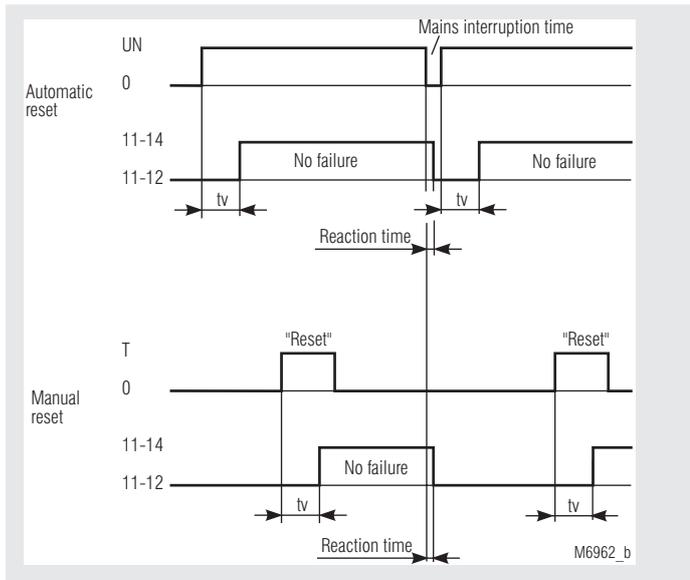
Features

- According to IEC/EN 60255-1
- Fast detection of undervoltage or phase failure in three-phase voltage systems
- Detects auto reclosing of 20 ms
- Adjustable response value $0.55 \dots 1.05 U_N$
- Operate delay to generate a defined reset signal
- Manual reset possible with external circuit
- Single-phase connection possible
- Optionally fixed response value $0.8 U_N$
- De-energized on trip
- Green LED indicate for closed contact
- Independent of phase sequence
- 3p4w connection
- Optionally for 3p3w systems
- 2 changeover contacts
- Devices available in 2 enclosure versions:
 - IL 9079: Depth 59 mm, with terminals at the bottom for installation systems and industrial distribution systems according to DIN 43880
 - SL 9079: Depth 98 mm, with terminals at the top for cabinets for mounting plate and cable duct
- Width 35 mm

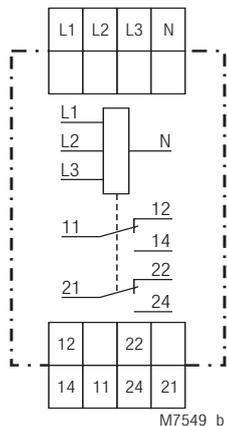
Product Description

The voltage relays IL 9079 and SL 9079 of the VARIMETER series detect short undervoltages or short phase failures. Monitoring is simple and does not require a great deal of wiring, as no auxiliary voltage is required. Early detection of impending failures and preventive maintenance prevent costly damage and as a user you benefit from the operational safety and high availability of your system.

Function Diagram



Circuit Diagram



IL 9079.12, SL 9079.12

Approvals and Markings



*) Only IL 9079

Applications

Monitoring of voltage systems to detect auto reclosing as e.g. generated by the energy supplier in the case of flash-overs or switching procedures. It is possible that in control circuits some of the devices are reset during auto reclosing and some not. Because of this uncontrollable situations may occur.

In the operating mode with fault storage, the reset button must be pressed after switching on the operating voltage. In this application - see connection example - an automatic (faulty) restart of the system is avoided, whereby the above-mentioned control systems can be returned to a defined initial state. A short interruption causes the output relay to drop out and store this error state. Only after pressing the reset button the system does restart with an adjustable restart delay

Connection Terminals

Terminal designation	Signal description
L1, L2, L3, N	Phase voltages L1, L2, L3
N	Neutral
11, 12, 14 21, 22, 24	Changeover contacts (output relay)

Function

The voltage of each phase is measured against N (with devices without N L1 and L2 are measured against L3). If at least 1 phase voltage goes under the response value (e.g. $0.8 U_N$) the green LED goes off and the output relay deenergizes (fault condition). Only when all 3 phases go over the reset value (e.g. $0.85 U_N$) again the output relay energizes after the adjustable operate delay t_v and the green LED comes on.

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 :

IL/SL 9079.12 and /002: 3/N AC 400 / 230 V
IL/SL 9079.12/001 and /003: 3 AC 400 V, 3 AC 500 V
SL 9079/103: 3 AC 400 V, 3 AC 500 V

Maximum overload: $1.1 U_N$, permanent

Nominal consumption: Approx. 8 VA

Nominal frequency: 50 / 60 Hz

Input resistance: Approx. 150 k Ω

Setting Ranges

Response / Reset value

IL/SL 9079.12 and /001: $0.8 U_N / 0.85 U_N$
IL/SL 9079/002 und /003: Adjustable $0.55 \dots 1.05 U_N$
SL 9079/103 3 AC 400 V: Adjustable $0.8 \dots 1.05 U_N$
SL 9079/103 3 AC 500 V: Adjustable $0.7 \dots 1.05 U_N$
hysteresis 4 %

Detection of auto-reclosing: ≥ 20 ms at response value $0.8 U_N$
 ≥ 35 ms at response value $0.6 U_N$

Reaction time on phase failure:

Approx. 40 ms at response value $0.8 U_N$
Approx. 55 ms at response value $0.6 U_N$

Reclosing delay:

Adjustable, 0.2 ... 2 s

Output

Contacts:

IL 9079.12, SL 9079.12: 2 changeover contacts

Contact material: AgNi

Measured nominal voltage: AC 250 V

Thermal current I_{th} : 4 A

Switching capacity

To AC 15

NO contact: 3 A / AC 230 V IEC/EN 60947-5-1

NC contact: 1 A / AC 230 V IEC/EN 60947-5-1

Electrical life IEC/EN 60947-5-1

To AC 15 at 1 A, AC 230 V: 5×10^5 switching cycles

Short circuit strength

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

Mechanical life: 30×10^6 switching cycles

Technical Data

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

EEMC

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

2.5 GHz ... 6 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

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

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

20 / 060 / 04 IEC/EN 60068-1

Climate resistance: EN 50005

Terminal designation:

Wire connection: 2 x 2.5 mm² solid or

2 x 1.5 mm² stranded ferruled

DIN 46228-1/-2/-3/-4

Insulation of wires or

sleeve length: 10 mm

Wire fixing:

Flat terminals with self-lifting

clamping piece IEC/EN 60999-1

0.8 Nm

Mounting: DIN rail IEC/EN 60715

Weight

IL 9079: 110 g

SL 9079: 137 g

Dimensions

Width x height x depth

IL 9079: 35 x 90 x 59 mm

SL 9079: 35 x 90 x 98 mm

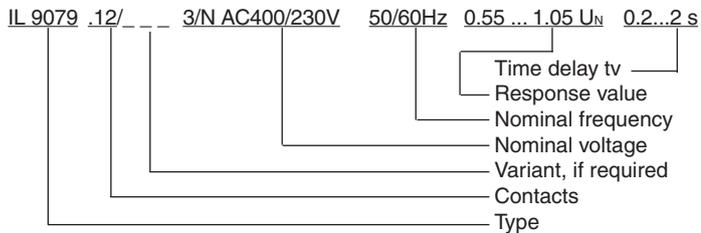
Standard Types

IL 9079.12/002	3/N AC 400 / 230 V	0.55 ... 1.05 U_N	0.2 ... 2 s
Article number:	0047842		
SL 9079.12/002	3/N AC 400 / 230 V	0.55 ... 1.05 U_N	0.2 ... 2 s
Article number:	0054759		
• 3p4w connection			
• Output:	2 changeover contacts		
• Nominal voltage U_N :	3/N AC 400 / 230 V		
• Adjustable response value:	0.55 ... 1.05 U_N		
• Adjustable reclosing delay:	0.2 ... 2 s		
• Width:	35 mm		

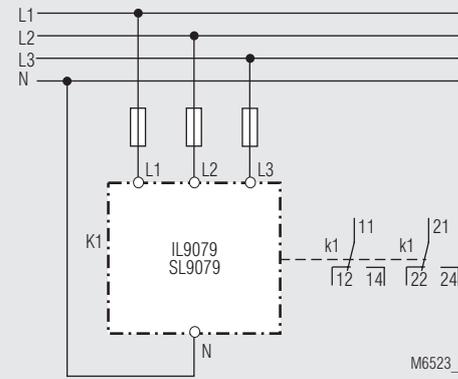
Variants

IL 9079:	For 3p4w systems, fixed response value 0.8 U_N
IL 9079/001:	For 3p3w systems, fixed response value 0.8 U_N
IL 9079/002:	For 3p4w systems, adjustable response value 0.55 ... 1.05 U_N
IL 9079/003:	For 3p3w systems, adjustable response value 0.55 ... 1.05 U_N
IL 9079/103:	For 3p3w systems, Adjustable response value 0.8 ... 1.05 U_N 3 AC 400 V: Adjustable response value 0.7 ... 1.05 U_N 3 AC 500 V: Adjustable response value 0.7 ... 1.05 U_N with transformer for mains with harmonic content

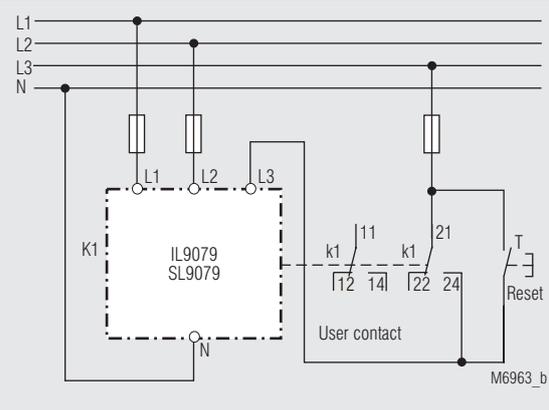
Ordering example for variants



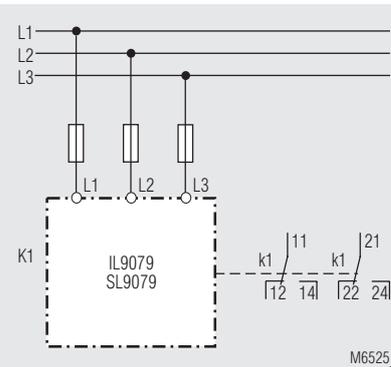
Connection Examples



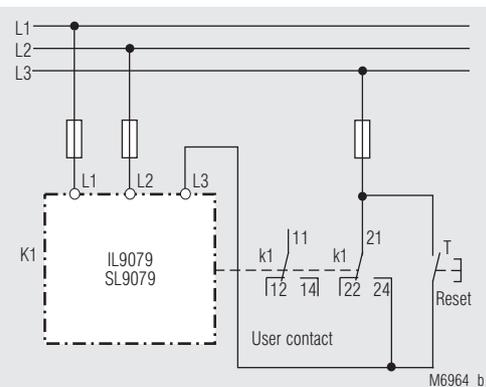
IL/SL 9079 and IL/SL 9079/002 without fault storage



IL/SL 9079 and IL/SL 9079/002 with fault storage



IL/SL 9079/001 and /003; SL 9079/103 without fault storage



IL/SL 9079/001 and /003; SL 9079/103 with fault storage

