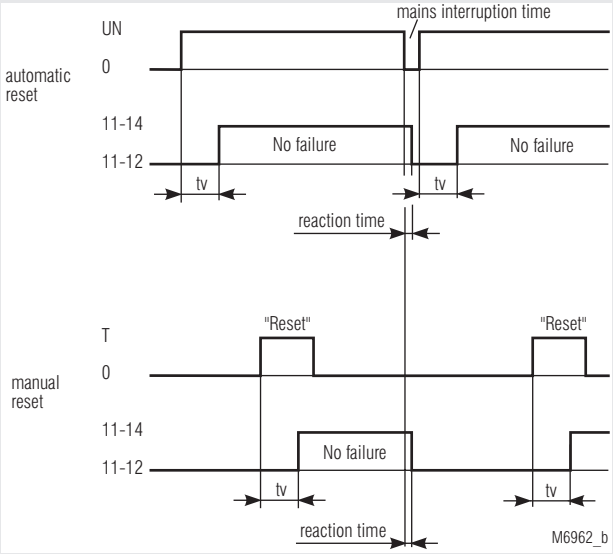
VARIMETER
Undervoltage Relay To Detect Auto-Reclosing
IL 9079, SL 9079

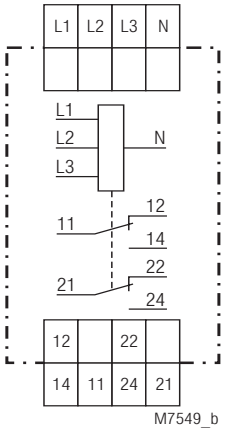
0225283



Function Diagram



Circuit Diagram



IL 9079.12, SL 9079.12

- According to IEC/EN 60 255-1
- Fast detection of undervoltage or phase failure in three-phase voltage systems
- Detects auto reclosing of 20 ms
- Adjustable response value 0.55 ... 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
- Independant 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 43 880
  SL 9079: depth 98 mm, with terminals at the top for cabinets for mounting plate and cable duct
- Width 35 mm

Approvals and Markings

A025518 *) nur 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 resetted during auto reclosing and some not. Because of this uncontrollable situations may occur.
By detecting these fast auto reclosings and addition of a certain time delay at reclosing the OFF-time is lengthened and every device has the time to reset. The circuit goes into a defined OFF state and is automatically resetted after the adjusted time delay or by manual reset if the automatic reset is disabled by an external circuit (see connection examples).

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.

All technical data in this list relate to the state at the moment of edition. We reserve the right for technical improvements and changes at any time.

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 kΩ

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 ... 1.05 U_N
SL 9079/103 3 AC 400 V:	adjustable 0.8 ... 1.05 U_N
SL 9079/103 3 AC 500 V:	adjustable 0.7 ... 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	
Switching voltage:	AC 250 V	
Thermal current I_{th}:	4 A	
Switching capacity		
to AC 15		
NO contact:	3 A / AC 230 V	IEC/EN 60 947-5-1
NC contact:	1 A / AC 230 V	IEC/EN 60 947-5-1
Electrical life		IEC/EN 60 947-5-1
to 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:		
Operation:	- 20 ... + 60 °C	
Storage:	- 25 ... + 60 °C	
Relative air humidity:	93 % at 40 °C	
Altitude:	< 2,000 m	
Clearance and creepage distances		
rated rated impulse voltage voltage /		
pollution degree:	4 kV / 2	IEC 60 664-1
EEMC		
Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
HF irradiation		
80 MHz ... 1 GHz:	10 V / m	IEC/EN 61 000-4-3
1 GHz ... 2 GHz:	10 V / m	IEC/EN 61 000-4-3
2 GHz ... 2.7 GHz:	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	

Technical Data

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
Fixing torque:	0.8 Nm	
Mounting:	DIN rail	IEC/EN 60 715
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

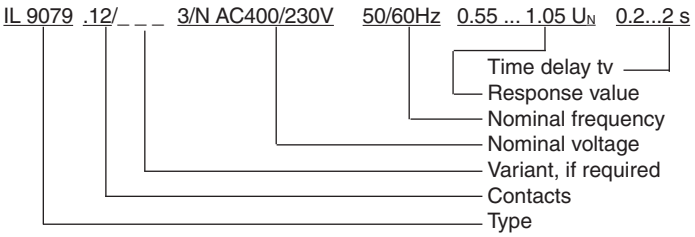
IL 9079.12/002 3/N AC 400 / 230 V 0.55 ... 1.05 U_N 0.2 ... 2 s
Article number: 0047842
SL 9079.12/002 3/N AC 400 / 230 V 0.55 ... 1.05 U_N 0.2 ... 2 s
Article number: 0054759

- 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

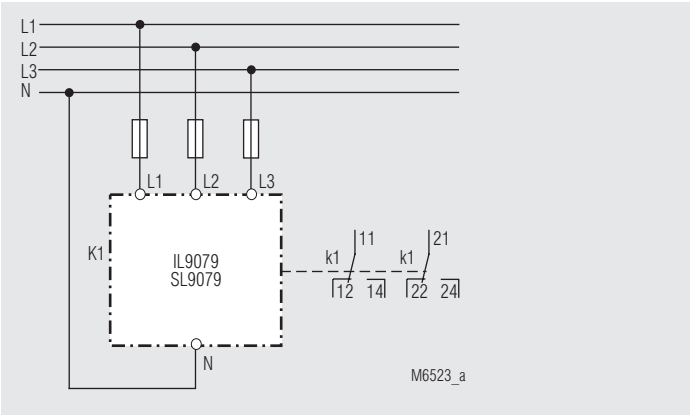
Variants

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,
3 AC 400 V:	adjustable response value 0.8 ... 1.05 U_N
3 AC 500 V:	adjustable response value 0.7 ... 1.05 U_N with transformator for mains with harmonic content

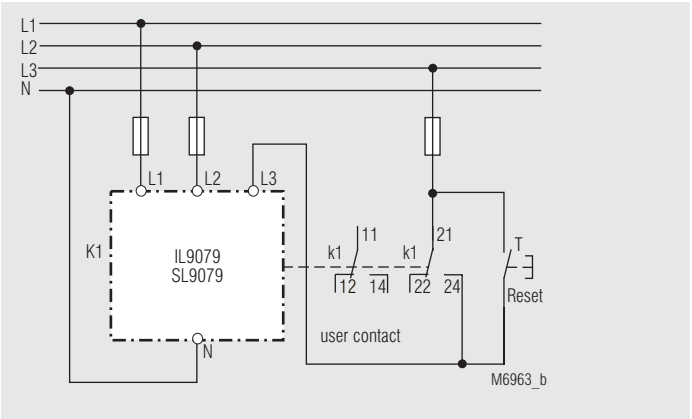
Ordering example for variants



Connection Examples

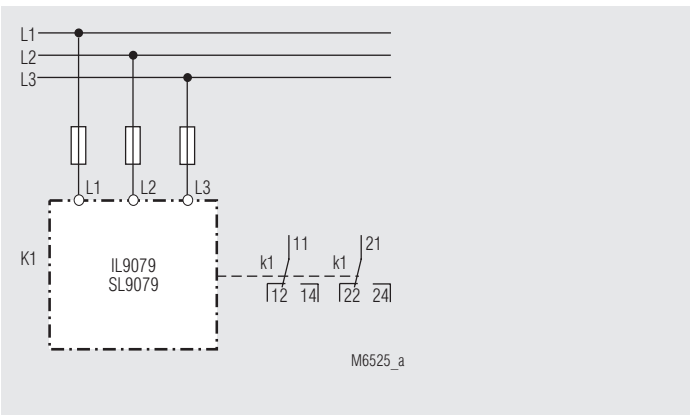


IL/SL 9079 and IL/SL 9079/002

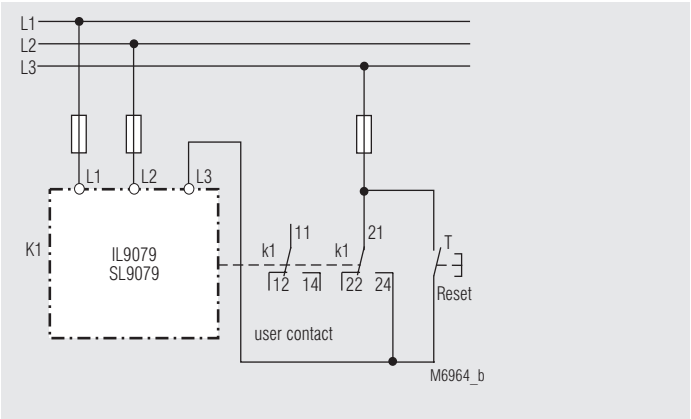


IL/SL 9079 and IL/SL 9079/002

Connection Examples



IL/SL 9079/001 and /003; SL 9079/103



IL/SL 9079/001 and /003; SL 9079/103