VARIMETER
Overvoltage Relay, 3-phase
IK 9170, SK 9170

Translation of the original instructions

DOLD

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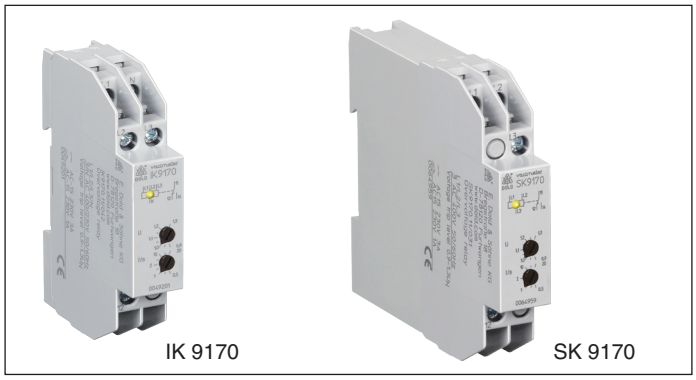
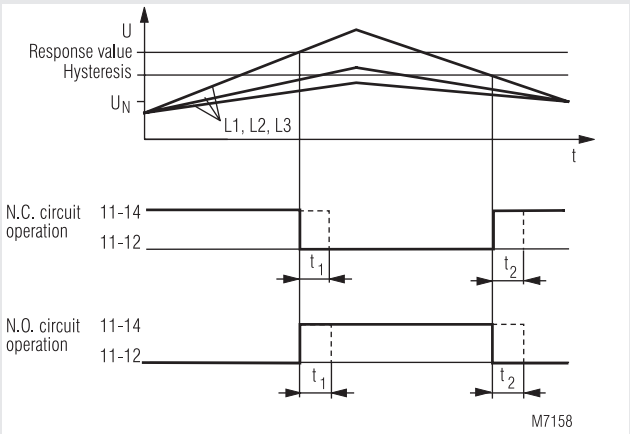
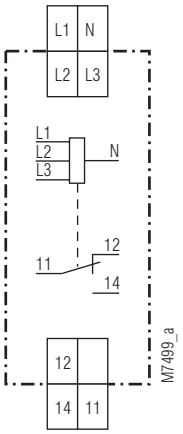


- According to IEC/EN 60255-1
- Monitoring of overvoltage in 3-phase systems
- Also for single phase
- Without auxiliary supply
- Settable response value
- N.C. circuit operation (optionally N.O. circuit operation)
- Optionally with or without N
- Optionally with delay t1 on trip
- Optionally with delay t2 on reset
- LED indicator for state of output relay
- Indepenent of phase sequence
- 1 changeover contact
- Devices available in 2 enclosure versions:
  IK 9170: Depth 59 mm, with terminals at the bottom for installation systems and industrial distribution systems according to DIN 43880
  SK 9170: Depth 98 mm, with terminals at the top for cabinets with mounting plate and cable duct
- Width 17.5 mm

Function Diagram



Circuit Diagram



IK 9170.11, SK 9170.11

Approvals and Markings

CE

Applications

Monitors overvoltage, in 3-phase voltage systems

Notes

The arithmetic mean value of each phase is measured against N. The variants without N measure L1 and L3 against L2.

Connection Terminals

Terminal designation	Signal description
L1, L2, L3, N	Voltage supply / Measuring inputs
11, 12, 14	Changeover contact (output relay)

Indicators

Yellow LED: Output contact active (11-14 closed)

Technical Data

Input Circuit

Nominal voltage U_N:	3/N AC 400/230 V (with neutral) 3 AC 400 V (without neutral)
Voltage range:	0.7 ... 1.3 U_N
Max. overload:	1.35 U_N, continuously
Nominal consumption:	Approx. 4 VA
Frequency range:	45 ... 65 Hz

Setting Ranges

Response value:	Adjustable: 0.9 ... 1.3 U_N
Hysteresis:	Approx. 4 % of setting value
Time delay t_1 / t_2:	0.5 ... 20 s

Output

Contacts		
IK 9170.11, SK 9170.11:	1 changeover contact	
Contact material:	AgNi 0.15 + 0.3 µm Au	
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 contact life		IEC/EN 60947-5-1
At AC 230 V, 1 A (cos φ = 0.5):	≥ 3 x 10^5 switching cycles	
Short circuit strength		
max. fuse rating:	4 A gG / gL	IEC/EN 60947-5-1
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:	< 2000 m	
Clearance and creepage distances		
Rated impulse voltage / pollution degree:	4 kV / 2	IEC 60664-1
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
1.4 GHz ... 2.0 GHz:	10 V / m	IEC/EN 61000-4-3
2.0 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:	4 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	
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 mm^2 solid or 2 x 1.5 mm^2 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		
IK 9170:	65 g	
SK 9170:	83 g	

Dimensions

Width x height x depth	
IK 9170:	17.5 x 90 x 59 mm
SK 9170:	17.5 x 90 x 98 mm

Standard Types

IK 9170.11 3/N AC 400/230V 50/60 Hz 0.9 ... 1.3 U_N
Article number: 0048645
SK 9170.11 3/N AC 400/230V 50/60Hz 0.9 ... 1.3 U_N
Article number: 0054743

- Adjustable response value: 0.9 ... 1.3 U_N
- Without time delay
- With N
- Closed circuit operation
- Output: 1 changeover contact
- Nominal voltage U_N: 3/N AC 400/230 V
- Width: 17.5 mm

Variants

IK 9170/001

- 0 N.C. circuit operation with N
- 1 N.C. circuit operation without N
- 2 N.O. circuit operation with N
- 3 N.O. circuit operation without N

- 0 Without time delay
- 3 Settable time delay t_1
- 4 Settable time delay t_2

- 0 Settable response value

Ordering example for variants

IK 9170 .11 /031 3 AC 400 V 0.9 ... 1.3 U_N 0.5 ... 20 s

- Time delay t_1
- Setting range
- Nominal voltage
- Variant, if required
- Contact
- Type