

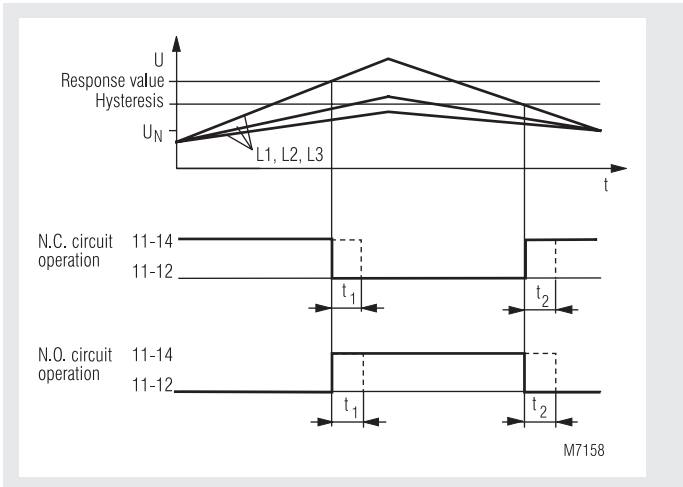
## VARIMETER

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



- According to IEC/EN 60 255, DIN VDE 0435-303
- 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 t<sub>1</sub> on trip
- Optionally with delay t<sub>2</sub> on reset
- LED indicator for state of output relay
- Independent 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 43 880
  - SK 9170: depth 98 mm, with terminals at the top for cabinets with mounting plate and cable duct
- Width 17.5 mm

### Function Diagram



### Approvals and Markings



### Applications

Monitors overvoltage, in 3-phase voltage systems

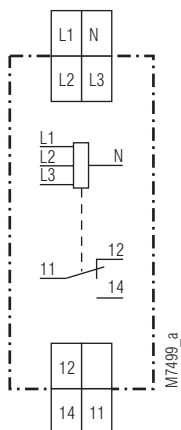
### Notes

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

### Indicators

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

### Circuit Diagram



IK 9170.11, SK 9170.11

### 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  
**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 contact life

at AC 230 V, 1 A ( $\cos \varphi = 0.5$ ):  $\geq 3 \times 10^5$  switching cycles

##### Short circuit strength

**max. fuse rating:** 4 A gL IEC/EN 60 947-5-1  
**Mechanical life:**  $\geq 30 \times 10^6$  switching cycles

## Technical Data

### General Data

**Operating mode:** Continuous operation  
**Temperature range:** - 20 ... + 60°C

### Clearance and creepage distances

rated impulse voltage /  
pollution degree: 4 kV / 2 IEC 60 664-1

### EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61 000-4-2  
HF irradiation  
80 MHz ... 1 GHz: 20 V / m IEC/EN 61 000-4-3  
1 GHz ... 2 GHz: 20 V / m IEC/EN 61 000-4-3  
2 GHz ... 2.7 GHz: 1 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: 1 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  
20 / 060 / 04 IEC/EN 60 068-1

### Climate resistance:

**Terminal designation:** EN 50 005

**Wire connection:** 2 x 2.5 mm<sup>2</sup> solid or  
2 x 1.5 mm<sup>2</sup> stranded ferruled  
DIN 46 228-1/-2/-3/-4

**Wire fixing:** Flat terminals with self-lifting  
clamping piece IEC/EN 60 999-1  
DIN rail IEC/EN 60 715

### Mounting:

**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<sub>N</sub>  
Article number: 0048645  
SK 9170.11 3/N AC 400/230V 50/60Hz 0.9 ... 1.3 U<sub>N</sub>  
Article number: 0054743  
• Adjustable response value: 0.9 ... 1.3 U<sub>N</sub>  
• Without time delay  
• with N  
• Closed circuit operation  
• Output: 1 changeover contact  
• Nominal voltage U<sub>N</sub>: 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<sub>1</sub>
- 4 settable time delay t<sub>2</sub>
- 0 settable response value

## Ordering example for variants

IK 9170 .11 /031 3 AC 400 V 0.9 ... 1.3 U<sub>N</sub> 0.5 ... 20 s

Time delay t<sub>1</sub>  
Setting range  
Nominal voltage  
Variant, if required  
Contact  
Type