

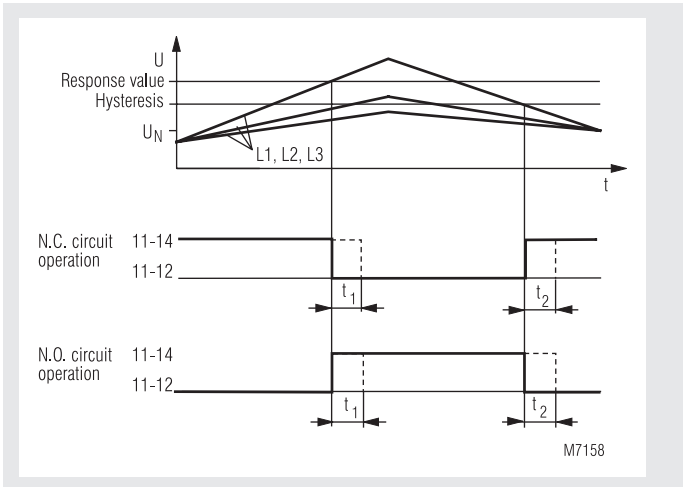
VARIMETER

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 t₁ on trip
- Optionally with delay t₂ 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

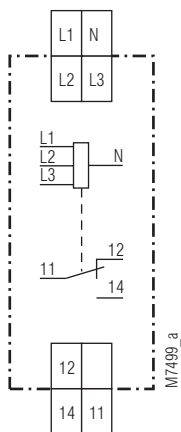
Notes

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 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
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_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 t₁
- 4 settable time delay t₂

- 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 t₁
Setting range
Nominal voltage
Variant, if required
Contact
Type