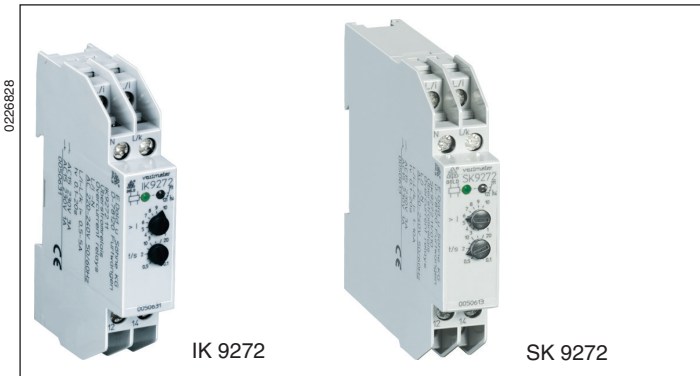


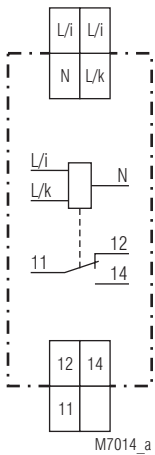
VARIMETER Overcurrent Relay IK 9272, SK 9272

Translation
of the original instructions



- According to IEC/EN 60255
- Single phase
- Measuring ranges from 0.05 ... 10 A
- Fixed hysteresis approx. 4 %
- Adjustable switching delay
- Closed circuit operation
- Optionally open circuit operation
- Automatic reset
- Optionally manual reset, reset button on the front
- LED indication for auxiliary voltage
- 1 changeover contact
- Devices available in 2 enclosure versions:
 - IK 9272: Depth 59 mm, with terminals at the bottom for installation systems and industrial distribution systems according to DIN 43880
 - SK 9272: Depth 98 mm, with terminals at the top for cabinets with mounting plate and cable duct
- Width 17.5 mm

Circuit Diagram



Approvals and Markings



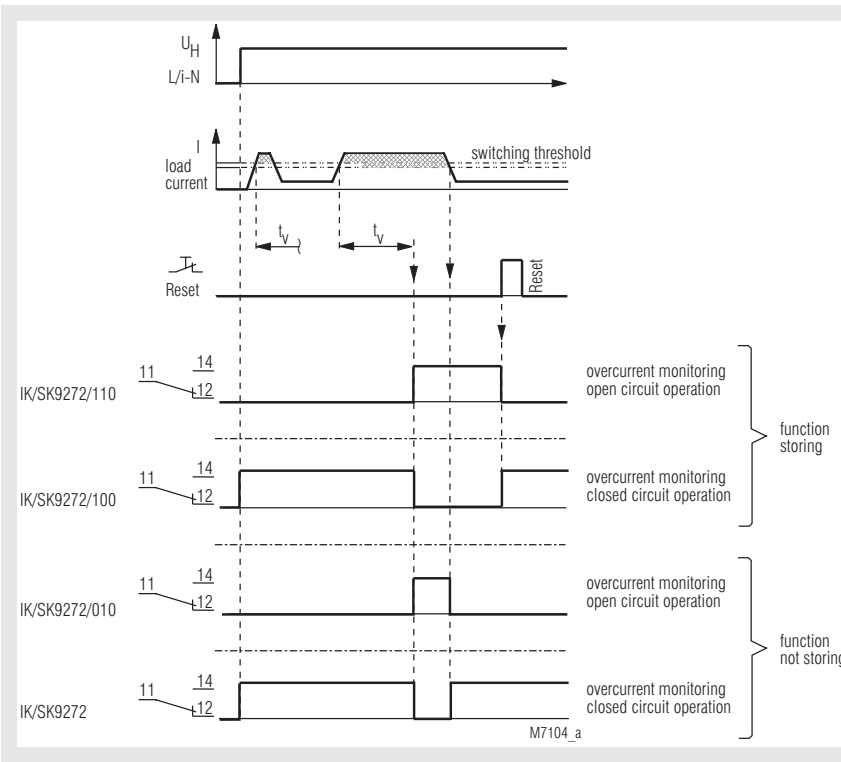
Application

Overcurrent detection in AC power supplies

Indication

Green LED: On when auxiliary supply connected
Yellow LED: On when output contacts switched

Function Diagram



Notes

Auxiliary voltage and measuring circuit are not galvanically separated. Thus they need the same reference potential "N", if there is no external separation, e.g. through a current transformer see Application Examples.

Technical Data

Input

Measuring range: AC 50 ... 500 mA
AC 0.1 ... 1 A
AC 0.5 ... 5 A
AC 1 ... 10 A
higher currents via external current transformer (2.5 VA)

Nominal frequency of measuring current: 50 / 60 Hz

Maximum continuous measuring current:
At AC 50 ... 500 mA: 2.5 A, at 50°C ambient temperature
At AC 0.1 ... 1 A: 5 A, at 50°C ambient temperature
At AC 0.5 ... 5 A: 11 A, at 50°C ambient temperature
At AC 1 ... 10 A: 15 A, at 50°C ambient temperature

Maximum overload:
At AC 50 ... 500 mA: 8 A, max. 3 s
At AC 0.1 ... 1 A: 10 A, max. 3 s
At AC 0.5 ... 5 A: 20 A, max. 3 s
At AC 1 ... 10 A: 20 A, max. 3 s

Temperature influence: ≤ 0.2 % / K
Reaction time: See characteristic switching delay

Setting Ranges

Response value: Infinite variable within measuring range
Hysteresis: Approx. 0.96 of setting value, fixed approx. 4 % hysteresis
Setting accuracy: ≤ ± 10 % of setting value
Repeat accuracy: ≤ ± 1 %
Time delay tv: 0.1 ... 20 s adjustable

Auxiliary Circuit

Auxiliary voltage U_H : AC 115 ... 127 V, AC 220 ... 240 V
Voltage range: 0.8 ... 1.1 U_H
Nominal consumption
At AC 230 V: 5.5 VA
Nominal frequency: 50 / 60 Hz
Frequency range: ± 5 %

Output

Contacts
IK 9272.11, SK 9272.11: 1 changeover contact
Thermal current I_{th} : 5 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
To AC 15 at 1 A, AC 230 V IEC/EN 60947-5-1
NO contact: 3 x 10⁵ switching cycles
Short circuit strength
max. fuse rating: 4 A gG / gL IEC/EN 60947-5-1
Mechanical life: > 10⁸ switching cycles

General Data

Operating mode: Continuous operation
Temperature range: - 20 ... + 60°C
Clearance and creepage distances
Rated impulse voltage / pollution degree: 4 kV / 2 IEC 60664-1

Technical Data

EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61000-4-2
HF irradiation: 10 V/m IEC/EN 61000-4-3
Fast transients: 4 kV IEC/EN 61000-4-4
Surge voltages
Between
wires for power supply: 1 kV IEC/EN 61000-4-5
Between wire and ground: 2 kV IEC/EN 61000-4-5
HF wire guided: 10 V IEC/EN 61000-4-6
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
20 / 060 / 04 IEC/EN 60068-1

Climate resistance: 20 / 060 / 04 IEC/EN 60068-1
Terminal designation: EN 50 005

Wire connection: 2 x 2.5 mm² solid or 2 x 1.5 mm² stranded ferruled
DIN 46228-1/-2/-3/-4

Wire fixing: Flat terminals with self-lifting clamping piece IEC/EN 60999-1
0.8 Nm IEC/EN 60999-1
Mounting: DIN rail IEC/EN 60715

Weight:
IK 9272: 65 g
SK 9272: 80 g

Dimensions

Width x height x depth:
IK 9272: 17.5 x 90 x 59 mm
SK 9272: 17.5 x 90 x 98 mm

Classification to DIN EN 50155 for IK 9272

Vibration and shock resistance: Category 1, Class B IEC/EN 61373
Protective coating of the PCB: No

Standard Types

IK 9272.11/010 AC 220 ... 240 V 50/60 Hz 10 A
Article number: 0050068
• Open circuit operation
• Output: 1 changeover contact
• Nominal voltage U_N : AC 220 ... 240 V
• Measuring range: 1 ... 10 A
• Width: 17.5 mm

SK 9272.11/010 AC 220 ... 240 V 50/60Hz 10 A
Article number: 0050613
• Open circuit operation
• Output: 1 changeover contact
• Nominal voltage U_N : AC 220 ... 240 V
• Measuring range: 1 ... 10 A
• Width: 17.5 mm

Variants

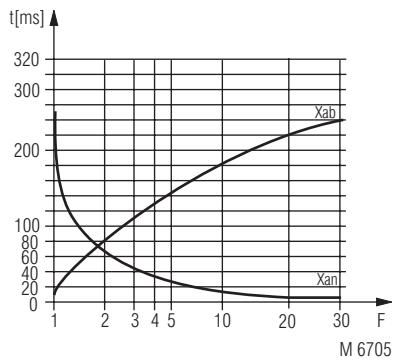
IK 9272: Closed circuit operation
IK 9272.11/100: Manual reset, closed circuit operation
IK 9272.11/110: Manual reset, open circuit operation

Ordering example for variants

IK 9272 .11 / _ _ AC 220 ... 240 V 50 / 60 Hz 10 A

Measuring range
Nominal frequency
Auxiliary voltage
Variant, if required
Contacts
Type

Characteristics

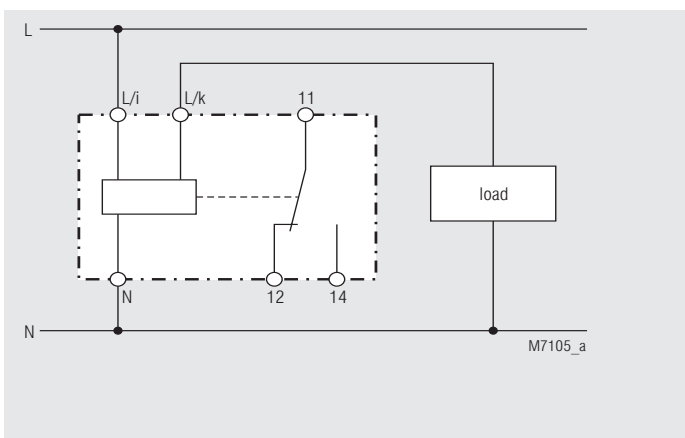


Switching delay

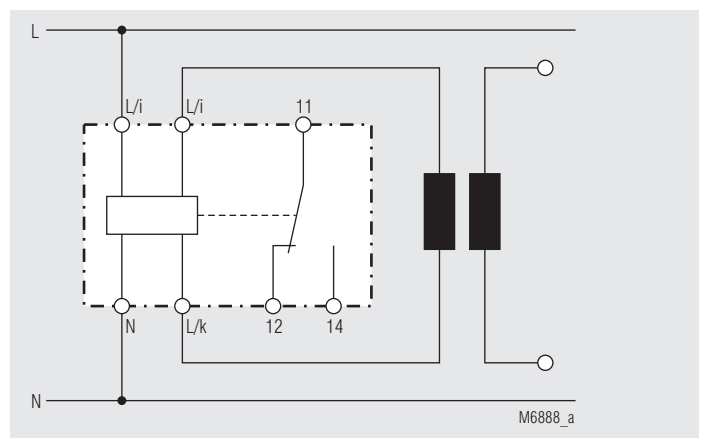
The characteristic shows the switching delay depending on the values of X_{an} - X_{ab} when switching the current on or off. A slow current change reduces the delay

$$F = \frac{I_{\text{applied}}}{I_{\text{setting}}}$$

Connection Examples



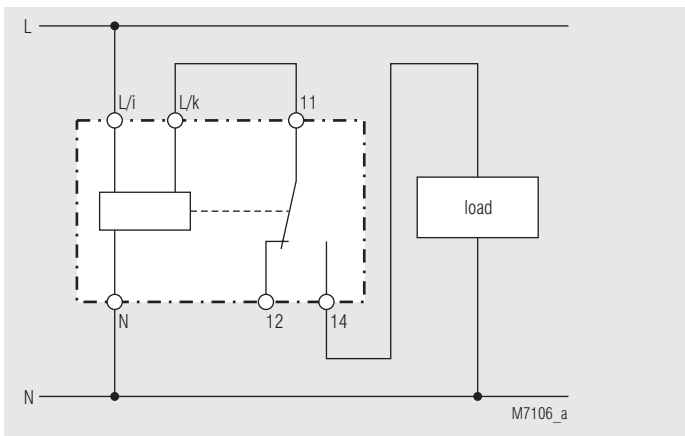
L/i - N Auxiliary voltage
L/i - L/k Current input



Connection Example with external galvanical separation, e.g. via current transformer.

Attention: On the secondary side of the current transformer is the potential L.

L/i is allowed to be changed, so that the secondary side of the current transformer has the potential N.



Connection Example for IK 9272/100

Load in series to the contact. When overcurrent the load is turned off. The fault is stored. New start by pressing reset button or auxiliary voltage off, on.

Maximum continuous measuring current for this application is 5 A:

