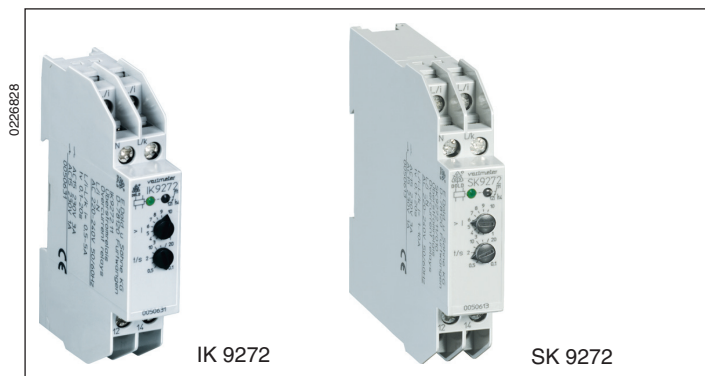
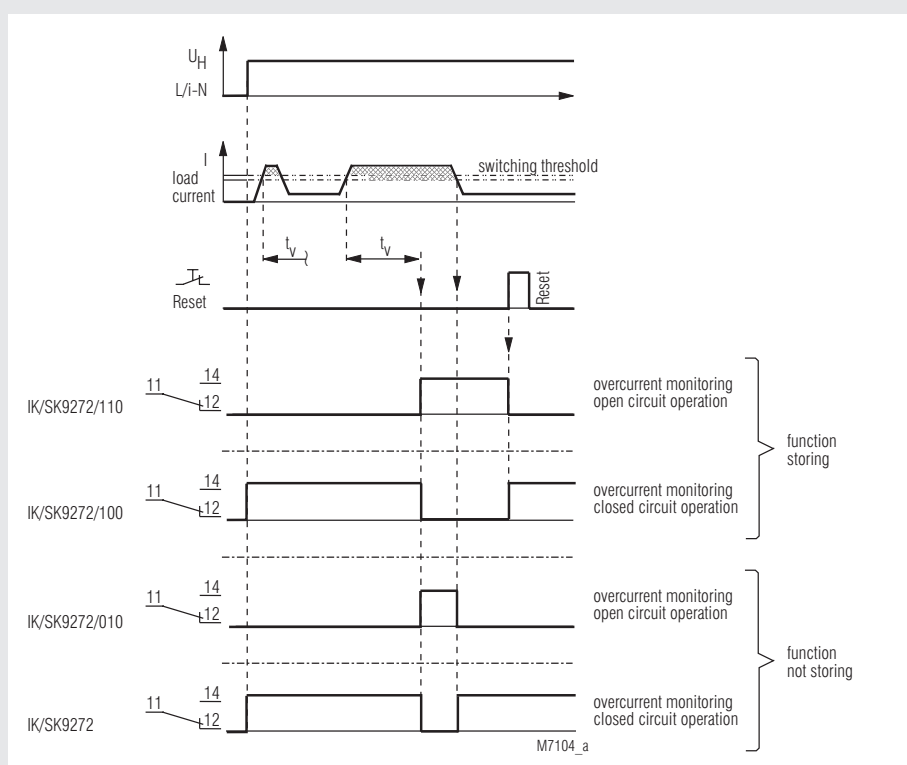


VARIMETER Overcurrent Relay IK 9272, SK 9272

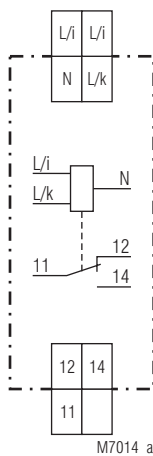


- According to IEC/EN 60 255, DIN VDE 0435-303
- single phase
- Measuring ranges from 0.05 ... 10 A
- Fixed hysteresis approx. 4 %
- Adjustable switching delay
- Closed circuit operation
- Optionally open circuit operation
- Automatic reset
- Optionally manual reset, reset button on the front
- LED indication 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 43 880
 - SK 9272:** depth 98 mm, with terminals at the top for cabinets with mounting plate and cable duct
- Width 17.5 mm

Function Diagram



Circuit Diagram



M7014_a IK 9272, SK 9272

Approvals and Marking



Application

Overcurrent detection in AC power supplies

Indication

green LED: on when auxiliary supply connected
yellow LED: on when output contacts switched

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 60 947-5-1
NC contact:	1 A / AC 230 V IEC/EN 60 947-5-1
Electrical life to AC 15 at 1 A, AC 230 V	IEC/EN 60 947-5-1
NO contact:	3 x 10 ⁵ switching cycles
Short circuit strength	
max. fuse rating:	4 A gL IEC/EN 60 947-5-1
Mechanical life:	> 10 ⁸ switching cycles

General Data

Operating mode:	Continuous operation
Temperature range:	- 20 ... + 60°C
Clearance and creepage distances rated impuls voltage / pollution degree:	4 kV / 2 IEC 60 664-1

Technical Data

EMC	
Electrostatic discharge:	8 kV (air) IEC/EN 61 000-4-2
HF irradiation:	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:	1 kV IEC/EN 61 000-4-5
between wire and ground:	2 kV IEC/EN 61 000-4-5
HF wire guided:	10 V IEC/EN 61 000-4-6
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
Wire connection:	2 x 2.5 mm ² solid or 2 x 1.5 mm ² stranded ferruled DIN 46 228-1/-2/-3/-4
	Flat terminals with self-lifting clamping piece IEC/EN 60 999-1
	DIN rail IEC/EN 60 715
Wire fixing:	
Mounting:	
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

Standard Types

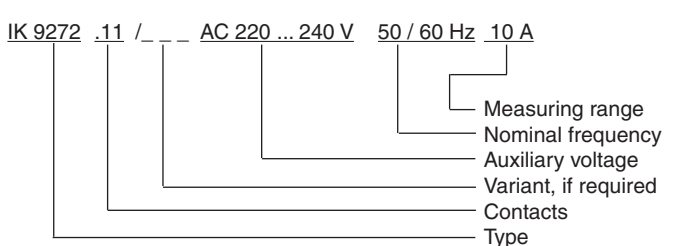
IK 9272.11/010	AC 220 ... 240 V	50/60 Hz	10 A
Article number:		0050068	
• Open circuit operation			
• Output:		1 changeover contact	
• Nominal voltage U_N :		AC 220 ... 240 V	
• Measuring range:		1 ... 10 A	
• Width:		17.5 mm	

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	

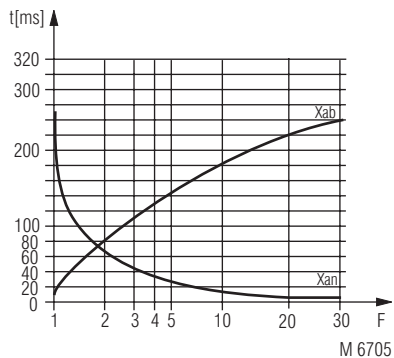
Variants

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



Characteristics

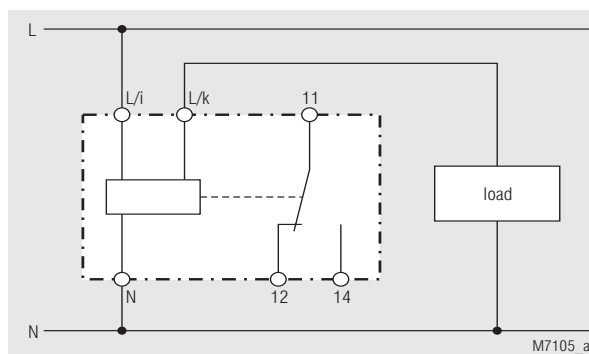


Switching delay

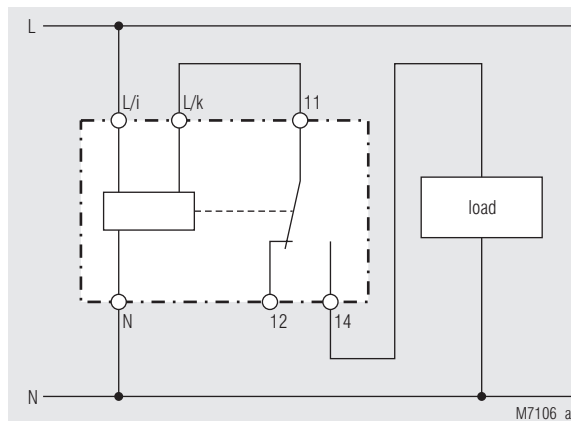
The characteristic shows the switching delay depending on the values of X_{an} - X_{ab} when switching the current on or off. A slow current change reduces the delay

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

Connection Examples



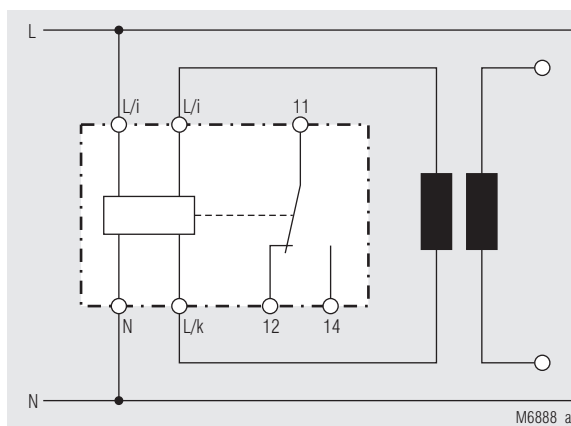
L/i - N auxiliary voltage
L/i - L/k current input



Connection Example 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:



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.

