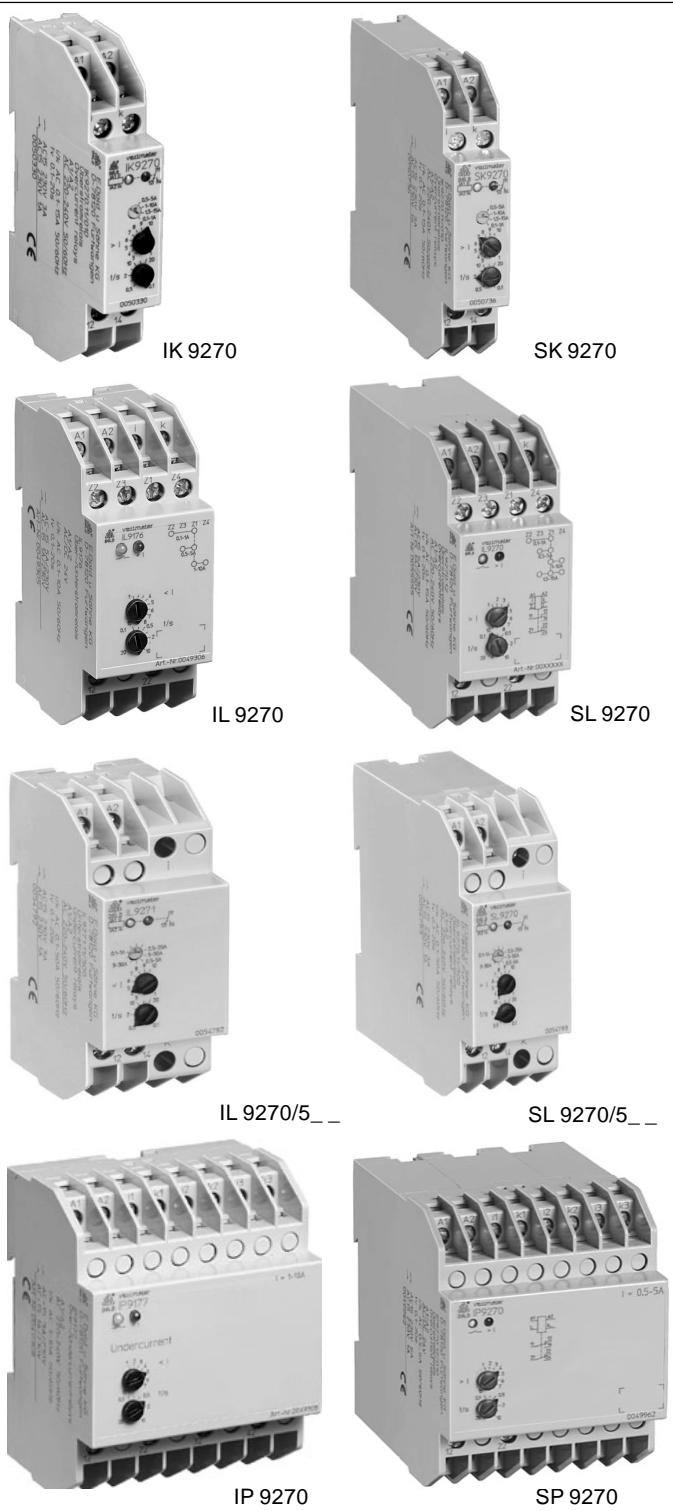


0224259



- According to IEC 255, EN 60 255, VDE 0435 part 303
- **Devices available in 2 enclosure versions:**
 - **I-model, e.g. IK _____, depth 61 mm**
with terminals at the bottom for installation systems and industrial distribution systems according to DIN 43 880
 - **S-model, e.g. SK _____, depth 100 mm**
with terminals at the top for cabinets with mounting plate and cable duct
- IP 9270, SP 9270: 3-phase
- IK 9270, SK 9270, IL 9270, SL 9270: single phase
- Measuring ranges from 0,1 ... 50 A
- IK 9270, SK 9270:
with 4 ranges settable by rotational switch, 1 changeover contact
- IL 9270, SL 9270:
with 5 ranges settable by rotational switch, 1 changeover contact or
with 4 programmable ranges settable by bridges,
2 changeover contacts
- IP 9270, SP 9270: with 1 range, 2 changeover contacts
- Settable response value
- Fixed hysteresis
- Settable time delay
- Closed circuit operation
- Optionally open circuit operation
- LED indicators
- With auxiliary voltage
- Auxiliary supply and measuring input galvanic separated
- Width IK 9270, SK 9270: 17,5 mm
IL 9270, SL 9270: 35 mm
IP 9270, SP 9270: 70 mm

Approvals and marking



Applications

Overcurrent detection in single phase or 3-phase voltage systems

Indicators

IK 9270.11, SK 9270.11

IL 9270.11/5_ _ ,

SL 9270.11/5_ _ :

LED green:

aux. supply connected

LED yellow:

output contacts switched

IL 9270, SL 9270,

IP 9270, SP 9270:

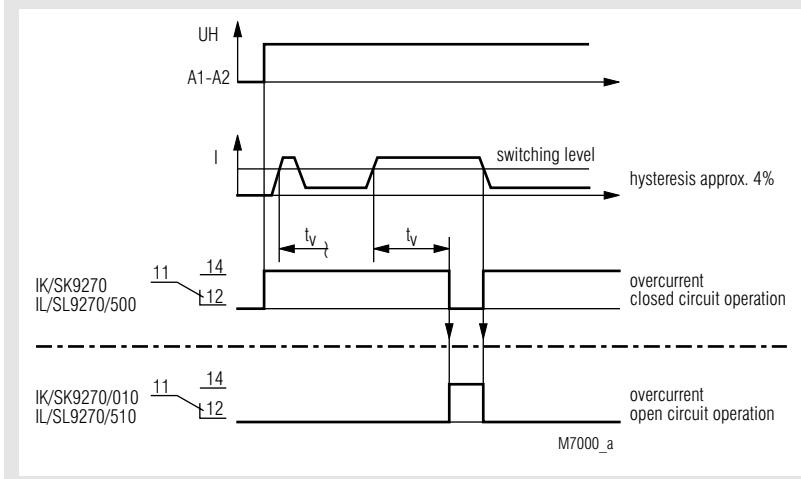
LED green:

current within limits

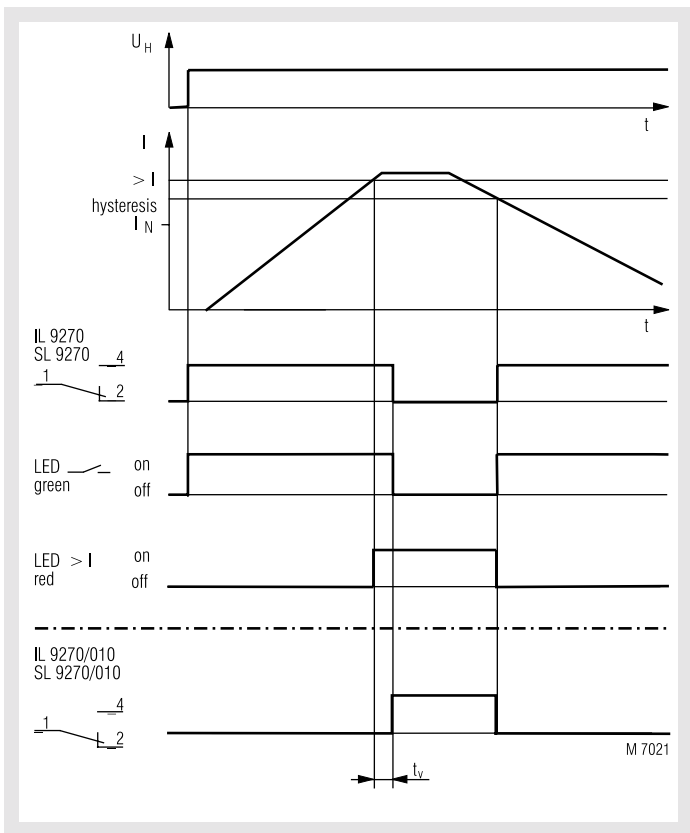
LED red I_{max} :

overcurrent

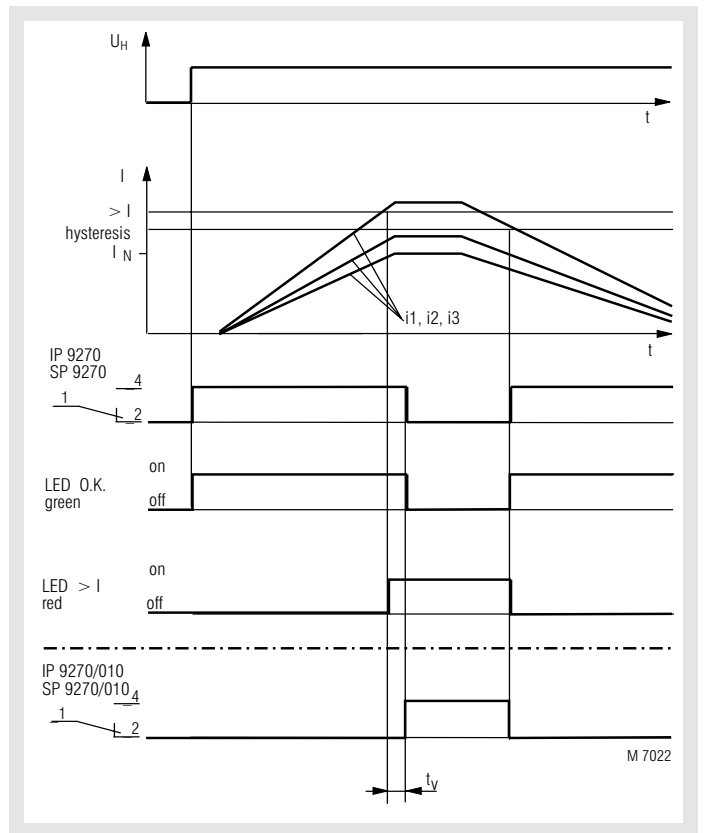
Function diagram IK/SK 9270, IL/SL 9270.11/500



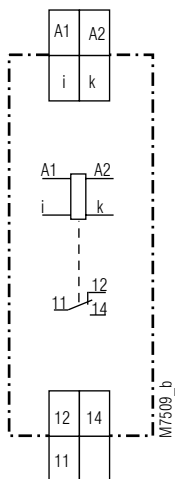
Function diagram IL 9270.12, SL 9270.12



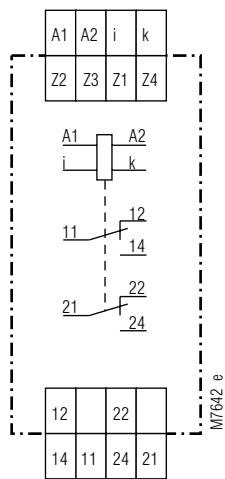
Function diagram IP 9270, SP 9270



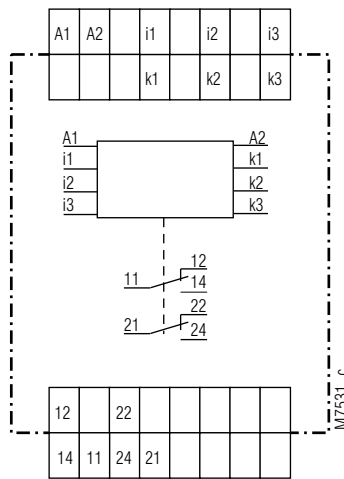
Circuit diagram



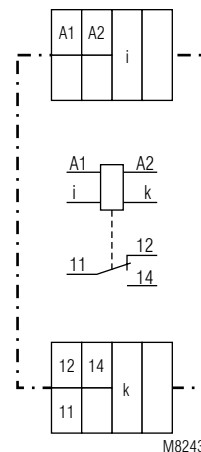
IK 9270.11, SK 9270.11



IL 9270.12, SL 9270.12



IP 9270.12, SP 9270.12



IL 9270.11/5_

Technical data

Input

Measuring ranges

IK 9270, SK 9270:

4 measuring ranges settable with switch:
 AC 0,1 ... 1 A
 AC 0,5 ... 5 A
 AC 1 ... 10 A
 AC 1,5 ... 15 A
 or optionally 1 measuring range:
 AC 0,1 ... 1 A; 0,5 ... 5 A; 1 ... 10 A;
 1,5 ... 15 A

IL 9270, SL 9270:

4 measuring ranges settable with bridges:
 AC 0,1 ... 1 A (bridge Z1-Z2)
 AC 0,5 ... 5 A (bridge Z1-Z3)
 AC 1 ... 10 A (bridge Z1-Z4)
 AC 1,5 ... 15 A (bridge Z1-Z3-Z4)

IL 9270/5_-, SL 9270/5_-:

5 measuring ranges settable with switch:
 AC 0,1 ... 1 A
 AC 0,5 ... 5 A
 AC 2,5 ... 25 A
 AC 3 ... 30 A
 AC 5 ... 50 A

IP 9270, SP 9270:

only single range:
 AC 0,1 ... 1 A; 0,5 ... 5 A; 1 ... 10 A;
 1,5 ... 15 A;

Measuring circuit

Nominal frequency of measuring current:

50 / 60 Hz
 at IL/SL 9270/500: 50 / 400 Hz

Maximum continuous measuring current

IK 9270, SK 9270: 20 A at 50°C ambient temperature
 IL 9270, SL 9270: 15 A at 60°C ambient temperature
 IL 9270/5_-, SL 9270/5_-: 60 A at 40°C ambient temperature
 50 A at 50°C ambient temperature

IP 9270, SP 9270:

20 A at 45°C ambient temperature
 15 A at 50°C ambient temperature

Max. overload:

30 A, for 3 sec

at IL/SL 9270/5_-: 80 A, for 3 sec

Temperature influence:

≤ 0,05 % / K

Reaction time:

see characteristic switching delay

Internal resistor:

< 5 mΩ

Setting ranges

Response value: infinite variable within measuring range
Hysteresis: approx. 4 % of setting value, fixed
Setting accuracy: ≤ ± 10 % of setting value
Repeat accuracy: ≤ ± 1 %
Switching delay: 0,1 ... 20 sec settable

Technical data

Auxiliary circuit

Auxiliary voltage U_H :

AC/DC 24 V, AC 220 ... 240 V
 other voltages on request

Voltage range

at AC: 0,8 ... 1,1 U_H
 at DC: 0,8 ... 1,25 U_H

Nominal consumption

at AC 230 V: 3,2 VA (2,3 V at IL/SL 9270/500)
 at DC 24 V: 0,8 W (0,4 W at IL/SL 9270/500)

Nominal frequency:

50 / 60 Hz

Frequency range:

± 5 %

Output

Contacts

IK 9270.11, SK 9270.11

IL/SL 9270.11/5_-:

1 changeover contact

IL 9270.12, SL 9270.12:

2 changeover contacts

IP 9270.12, SP 9270.12:

2 changeover contacts

5 A

Thermal current I_{th} :

Switching capacity

to AC 15
 NO contact:
 IK 9270, IL 9270/5_-: 3 A / AC 230 V
 IL 9270, IP 9270: 5 A / AC 230 V
 NC contact: 1 A / AC 230 V

EN 60 947-5-1

EN 60 947-5-1

EN 60 947-5-1

EN 60 947-5-1

Electrical life

to AC 15 at 1 A, AC 230 V

NO contact:

IK 9270, IL 9270/5_-: 3 x 10⁵ switching cycles

3 x 10⁵ switching cycles

to AC 15 at 2 A, AC 230 V

IL 9270, IP 9270:

2 x 10⁵ switching cycles

Short-circuit strength

max. fuse rating:

IK 9270, IL 9270/5_-: 4 A gL

EN 60 947-5-1

IL 9270, IP 9270:

10 A gL

EN 60 947-5-1

Mechanical life:

> 50 x 10⁶ switching cycles

General data

Operating mode: Continuous operation

Temperature range: - 20 ... + 60°C

Clearance and creepage distances

overvoltage category/

contamination level:

IEC 60 664-1

	IP/SP	IK/SK IL/SL devices /5_-	IL/SL
supply - contacts	4 kV / 2	4 kV / 2	4 kV / 2
supply - measuring circuit	6 kV / 2	6 kV / 2	4 kV / 2
measuring circuit - contacts	6 kV / 2	6 kV / 2	4 kV / 2
measuring circuit - measuring circuit	6 kV / 2	-	-

The contacts are not designed for voltage systems with 400 / 690 V.

Technical data

EMC

Electrostatic discharge:	8 kV (air)	EN 61 000-4-2
HF irradiation:	10 V / m	EN 61 000-4-3
Fast transients:	4 kV	EN 61 000-4-4
Surge voltages between wires for power supply		
IK 9270, IL 9270/5__:	2 kV	EN 61 000-4-5
IL 9270, IP 9270:	1 kV	EN 61 000-4-5
between wire and ground:		
IK 9270, IL 9270/5__:	4 kV	EN 61 000 4-5
IL 9270, IP 9270:	2 kV	EN 61 000-4-5
Interference suppression:	Limit value class B	EN 55 011
Degree of protection:	Housing: IP 40	EN 60 529
	Terminals: IP 20	EN 60 529

Housing:

Thermoplastic with V0 behaviour according to UL subject 94

Vibration resistance:

Amplitude 0,35 mm frequency 10 ... 55 Hz EN 60 068-2-6

Climate resistance:

20 / 060 / 04 EN 60 068-1

Terminal designation:

EN 50 005

Wire connection:

2 x 2,5 mm² solid or 2 x 1,5 mm² stranded ferruled

Terminals i/k at IL/SL 9270/5__:

1 x 16 mm² solid or 1 x 10 mm² stranded ferruled DIN 46 228-1/-2/-3

Wire fixing:

Flat terminals with self-lifting clamping piece EN 60 999
DIN rail EN 50 022

Mounting:

Weight

IK 9270:	70 g
SK 9270:	89 g
IL 9270:	122 g
SL 9270:	151 g
IP 9270:	200 g
SP 9270:	249 g

Dimensions

Width x height x depth

IK 9270:	17,5 x 90 x 61 mm
SK 9270:	17,5 x 90 x 100 mm
IL 9270:	35 x 90 x 61 mm
SL 9270:	35 x 90 x 100 mm
IP 9270:	70 x 90 x 61 mm
SP 9270:	70 x 90 x 100 mm

Standard types

IK 9270.11/010 AC 220 ... 240 V 50/60 Hz 0,1 ... 15 A
Article number: 0050330

SK 9270.11/010 AC 220 ... 240V 50/60Hz 0,1 ... 15 A
Article number:

- Single phase
- 4 programmable ranges up to 15 A
- Open circuit operation
- Auxiliary voltage U_H : AC 220 ... 240 V
- 1 changeover contact
- Width 17,5 mm

IP 9270.12/010 AC 220 ... 240 V 50/60 Hz 0,5 ... 5 A
Article number: 0049438

SP 9270.12/010 AC 220 ... 240 V 50/60 Hz 0,5 ... 5 A
Article number:

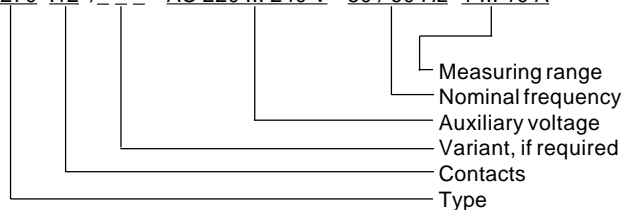
- 3-phase
- Range 0,5 ... 5 A
- Open circuit operation
- Auxiliary voltage U_H : AC 220 ... 240 V
- 2 changeover contacts
- Width 70 mm

Variants

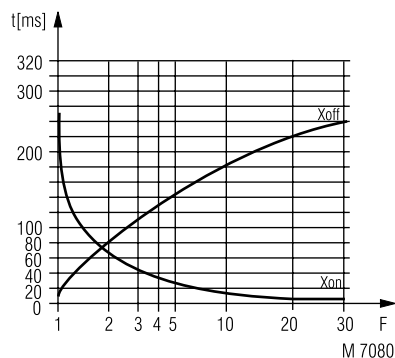
IK 9270.11, SK 9270.11:	single phase current relay, closed circuit operation, 1 changeover contact
IL 9270.12, SL 9270.12:	single phase current relay, closed circuit operation, 2 changeover contacts
IL 9270.12/010, SL 9270.12/010:	single phase current relay, open circuit operation, 2 changeover contacts
IL 9270.11/500, SL 9270.11/500:	same as IK/SK 9270.11, except with 5 measuring ranges from 0,1 ... 50 A
IL 9270.11/510, SL 9270.11/510:	same as IK/SK 9270.11/010, except with 5 measuring ranges from 0,1 ... 50 A
IP 9270.12, SP 9270.12:	3-phase current relay, closed circuit operation, 2 changeover contacts

Ordering example for variants

IP 9270 .12 / _ _ _ AC 220 ... 240 V 50 / 60 Hz 1 ... 10 A



Characteristics



Switching delay

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

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