

0239971



- According to IEC/EN 62 020
- for AC and pulsating DC currents (Type A to IEC 60755 A2)
- 9 tripping values from 10 mA to 10 A
- Connected to core balance transformer, e. g. DOLD ND 5019
- Selection of manual or automatic reset
- With prewarning
- With test and reset button
- Broken wire detection
- Short reaction time
- With adjustable delay t_v
- De-energized on trip
- LED indication for auxiliary supply and state of contact
- 2 x 1 changeover contact
- With sealable cover
- **Devices available in 2 enclosure versions:**
 - IL 5882: 63 mm deep with terminals near to the bottom to be mounted in consumer units or industrial distribution systems according to DIN 43 880
 - SL 5882: 100 mm deep with terminals near to the top to be mounted in cabinets with mounting plate and cable ducts
- 35 mm width

Approvals and marking



Application

Detection of insulation faults in grounded voltage systems. The differential current relay is used to maintain electrical plants before faults occur. Decrease in insulation can be detected and indicated early without interruption of operation.

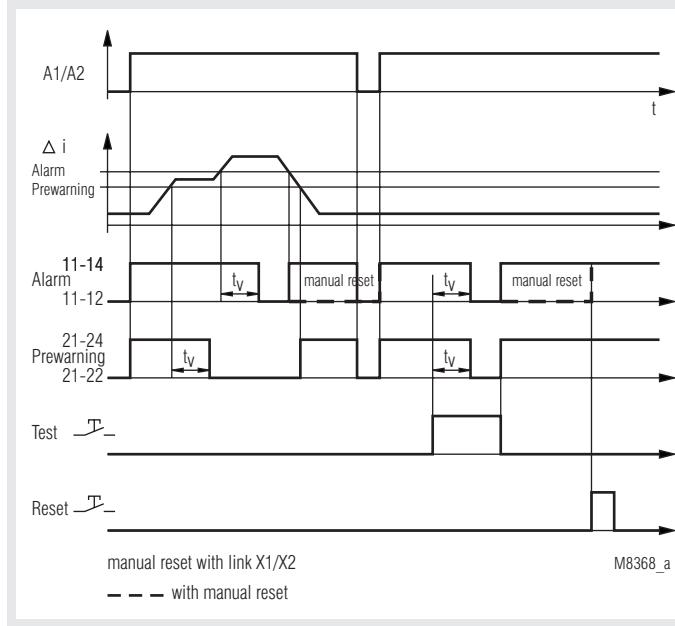
Function

The function of the IL/SL 5882 can be compared to a fault current circuit breaker unit. It detects and indicates residual currents, but does not disconnect. The measurement is done by an external differential current transformer e. g. ND 5019 which is connected via terminals i and k to the IL/SL 5882. All conductors of the voltage system to be monitored are run through the CT except the ground wire. In a fault free voltage system the sum of all current is 0 and the CT induces no secondary voltage. If due to an insulation fault a fault current flows to ground, the current difference in the CT creates a measuring current, which is detected and measured by the IL/SL 5882. A broken wire in the sensing circuit would disable the measurement, therefore a special circuit detects broken wire and forces the unit to trip.

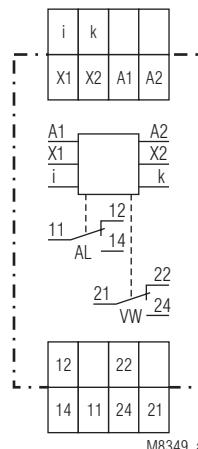
The unit has 2 x 1 changeover contacts. Contact 11-12-14 for alarm (AL) and 21-22-24 for prewarning (VW). Prewarning is detected at 70 % of the selected alarm value. With external bridge X1-X2 the alarm is stored and has to be reset by pressing the reset button or by disconnecting the auxiliary supply. Without bridge X1-X2 the unit works with auto-reset and the fault is not stored. With the button "Test" a fault can be simulated (Alarm). Each contact is delayed with an adjustable time delay t_v (same delay time for alarm and pre-warning).

To avoid unauthorised adjustment of the potentiometers the unit has a transparent cover that could be sealed with lacquer. Two holes above the push buttons allow activation of test and reset.

Function diagram



Circuit diagram



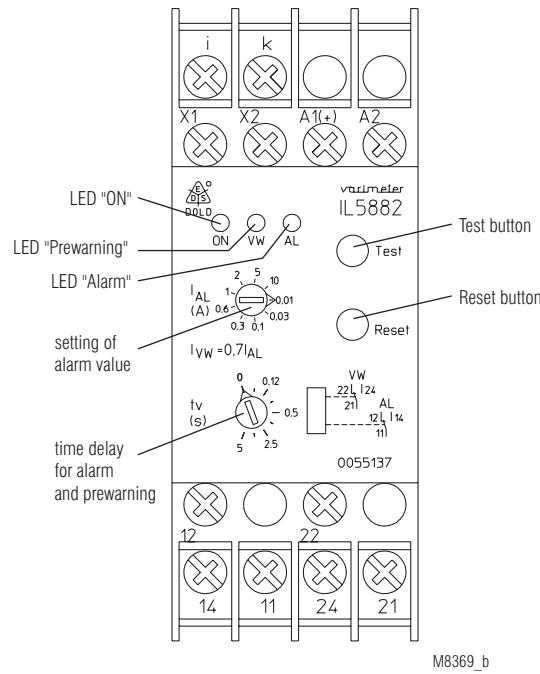
Indication

green LED:	on, when supply connected
2 red LEDs:	on, when insulation failure (prewarning and alarm)

Note

If time is set to 0 and a pulsating fault current is flowing (e.g. 1-way rectified) the output relay may flicker because of the short reaction time. By increasing the time delay this effect can be avoided.

Setting and adjustment



M8369_b

Technical Data

Input

Auxiliary voltage U_H : AC/DC 12 V, AC/DC 24 ... 230 V

Voltage range:

AC:	0.8 ... 1.1 U_N
DC:	0.9 ... 1.25 U_N

Nominal frequency U_H :

Nominal consumption

AC 230 V:	50 ... 400 Hz
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Measuring value adjustable via rotational switch:

AC 0.01; 0.03 A; 0.1 A; 0.3 A; 0.6 A
1 A; 2 A; 5 A; 10 A
20 Hz ... 2 kHz
at failure current < 50 Hz and the function "auto reset", a time delay must be adjusted, so that the relay does not buzz before switching

Frequency range:

approx. 4% of trip value, fixed
$\leq \pm 15\%$
$\leq \pm 1\%$
$\leq \pm 0.05\% / K$
10 ... 30 ms

Response delay t_v:	0 ... 10 s adjustable (logarithmic scale in order to allow also short time delay to be adjusted without problems)
Output	

Contacts:

IL / SL 5882.38:	1 changeover contact for Prewarning, 1 changeover contact for Alarm
Thermal current I_{th}:	

Switching capacity

to AC 15:	5 A
NO contact:	3 A / AC 230 V
NC contact:	1 A / AC 230 V
Electrical life	3×10^5 switching cycles

to AC 15 at 1 A, AC 230 V: EN 60 947-5-1

Technical Data

Short circuit strength

max. fuse rating:	4 A gL	EN 60 947-5-1
Mechanical life:	$\geq 10^8$ switching cycles	

General Data

Operating mode:

Continuous

-20 ... +60°C

Temperature range:

Clearance and creepage distances

rated impuls voltage /

pollution degree

supply / contacts:

supply / measuring circuit:

EMC

Surge voltages:

HF-interference:

Electrostatic discharge:

HF-irradiation:

Fast transients:

Surge voltages:

Interference suppression:

Degree of protection:

Housing:

Terminals:

Housing:

Vibration resistance:

Climate resistance:

Terminal designation:

Wire connection:

Wire fixing:

Mounting:

Weight

IL 5882:

SL 5882:

approx. 125 g

approx. 150 g

Dimensions

Width x height x depth:

IL 5882: 35 x 90 x 63 mm

SL 5882: 35 x 90 x 100 mm

Standard types

IL 5882.38 AC/DC 24 ... 230 V 50 / 60 Hz

Article number: 0055138

- De-energized on trip
- Auxiliary voltage U_H :
- Width: 35 mm

SL 5882.38 AC/DC 24 ... 230 V 50 / 60 Hz

Article number: 0055515

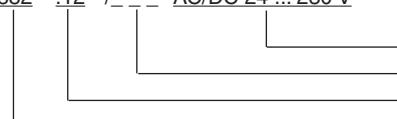
- De-energized on trip
- Auxiliary voltage U_H :
- Width: 35 mm

Varianten

IL 5882.12/002: with 2 changeover contacts for alarm and no pre-warning

Ordering example for Varianten

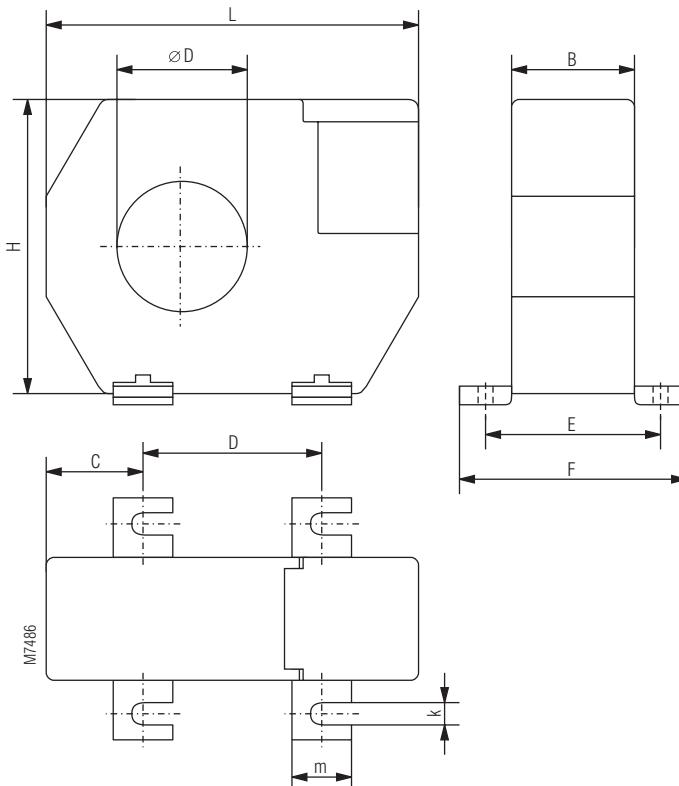
IL 5882 .12 / _ AC/DC 24 ... 230 V



Auxiliary voltage Variant, if required
Contacts Type

Accessories

ND 5019 Differential current transformer

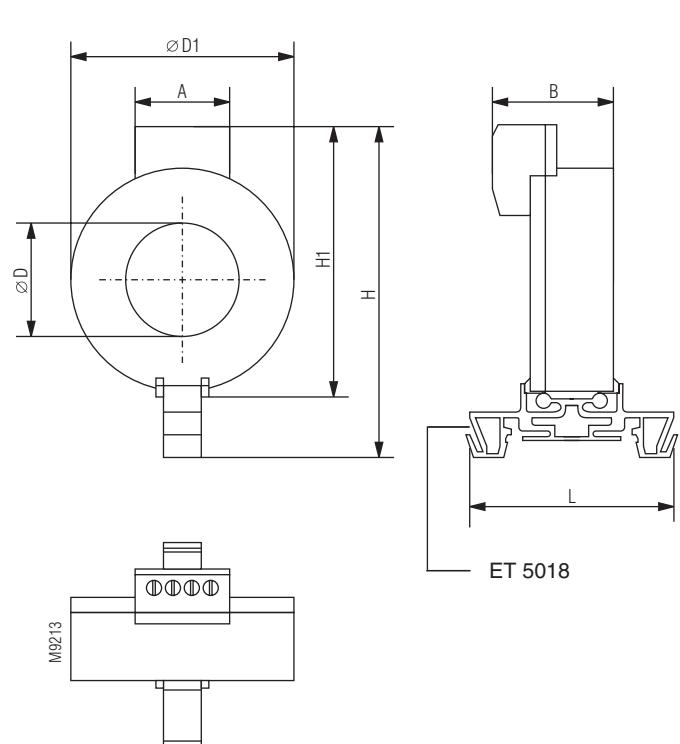
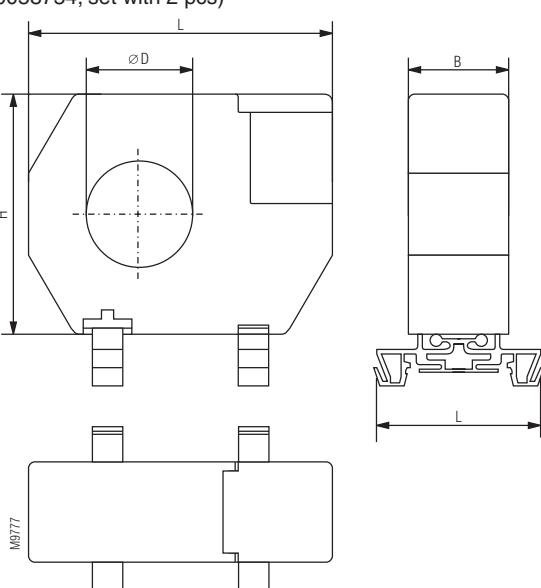


for Screw connection

Dimensions in mm			
	ND 5019/035	ND 5019/070	ND 5019/105
øD	35	70	105
L	100	130	170
B	33	33	33
H	79	110	146
C	26	32	38
D	48.5	66	94
E	46	46	46
F	61	61	61
k	6.5	6.5	6.5
m	16	16	16

Weight			
	ND 5019/035	ND 5019/070	ND 5019/105
kg	0.15	0.24	0.5

The current transformers ND 5019/035, ND 5019/070, ND 5019/105 can also be mounted on DIN-rail. To do this the metal screw fixings have to be removed and have to be replaced by 2 mounting clips (ET5018: art.no. 0058754; set with 2 pcs)



for DIN rail mounting

Dimensions in mm		
	ND 5019/020	ND 5019/030
øD	20	30
øD1	46	59
L	55	55
B	32	32
A	25	25
H	77	87
H1	60	70

Weight		
	ND 5019/020	ND 5019/030
kg	0.07	0.085

Technical Data

Ambient temperature:

- 10°C ... + 50°C / 263 K ... 323 K

Inflammability class:

V0 according to UL94

Nominal insulation voltage according to IEC 60 664-1:

AC 630 V

Rated impuls voltage / pollution degree:

6 kV/3

Voltage test according to DIN VDE 0435-303 / IEC/EN 60 255:

AC 3 kV

Transformation ratio:

500 / 1

Length of connection wires

Type of wire:

Single wire 0.75 mm²:

up to 1 m

Twisted pair 0.75 mm²:

up to 10 m

Screened wire 0.75 mm² screen on terminal k:

up to 25 m

Screw connection:

(only at ND 5019/035, ND 5019/070, ND 5019/105)

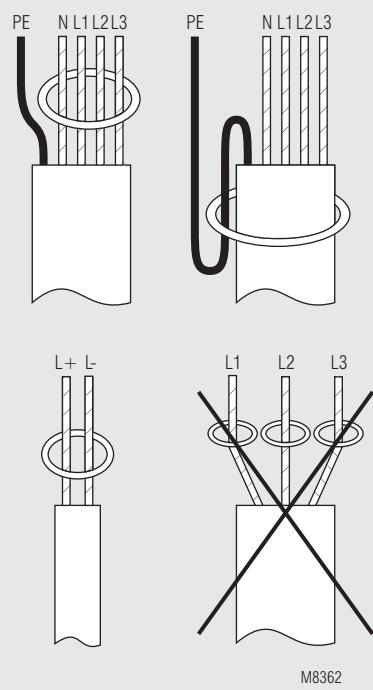
M 5

DIN rail mounting:

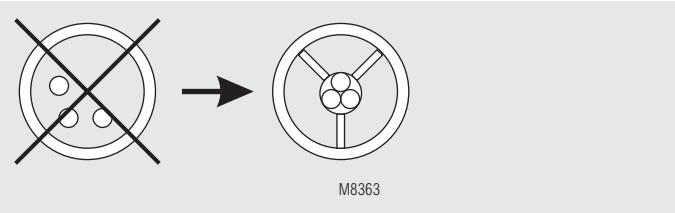
using mounting adapter ET 5018

The delivery of ND 5019/020 and ND 5019/030 includes the DIN rail mounting adapter ET 5018.

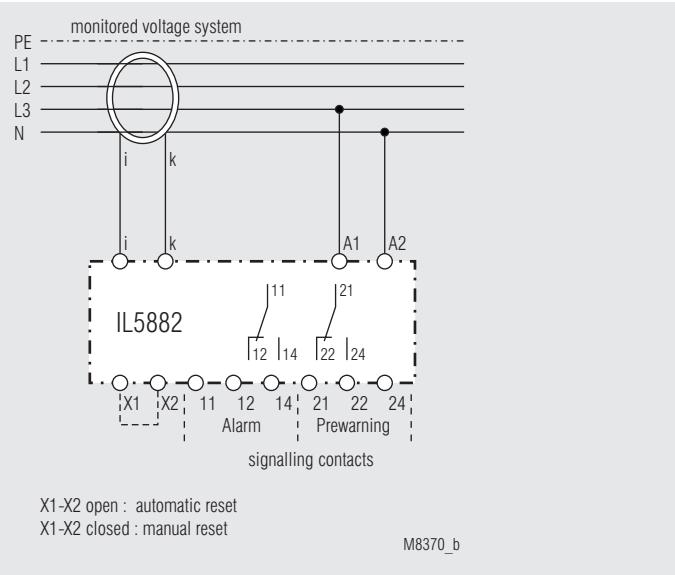
Installation of wires



To avoid interference with high starting currents



Connection example



Attention:

As the auxiliary supply has no galvanic separation, the secondary circuit of the CT must not be connected to ground. A ground connection will lead to a damage of the unit!