

# ISO-DIN EARTH LEAKAGE RELAY

**WARNING!**

- Carefully read the manual before the installation or use.
- This device is to be installed by qualified personnel, complying to current standards, to avoid damages.
- Before any maintenance operation on the device, remove supply inputs.
- Products illustrated herein are subject to alteration and changes without prior notice.

**Description**

- Earth leakage relay type A
- DIN modular box (2 modules)
- Backlighted LCD display
- True RMS
- External residual current transformer
- Fail safe function (settable)
- Visualization of the differential current and the instrument's status
- RS485 interface communication (Modbus RTU)
- On the front panel, TEST and RESET button

**Display functions**

- Thanks to LCD display, the user can view very quickly the measurements, the alarms and can access to all settings.
- Green: detected current lower than set threshold
- Yellow: detected current higher than WARNING threshold but lower than TRIP threshold
- Flashing yellow: short circuit on residual current transformer
- Red: detected current higher than TRIP threshold and relay activation
- Flashing red: open residual current transformer circuit (or not connected)
- Blue: device setting menu

**Keyboard functions**

RESET key – To reset the relay after tripping

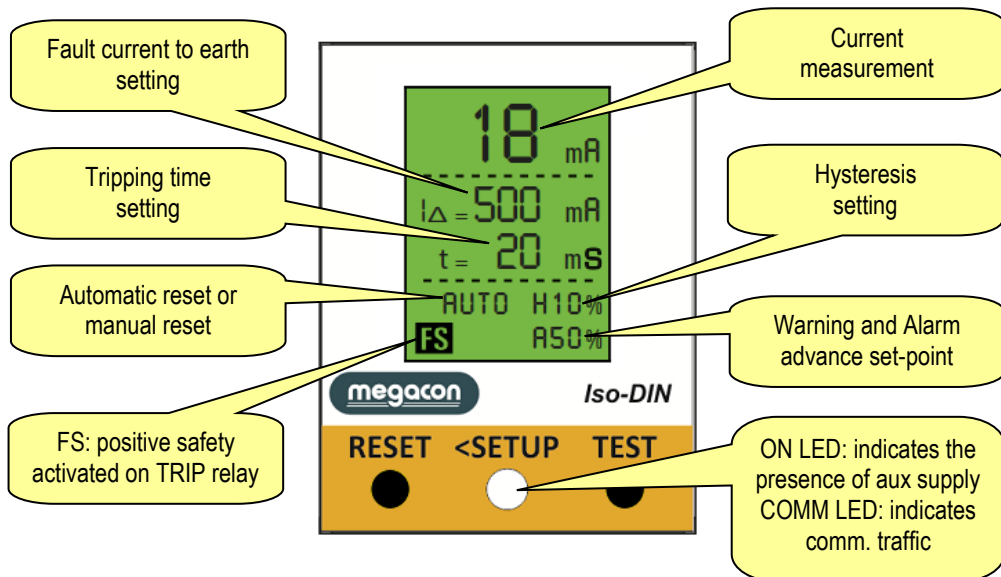
TEST key – Causes tripping of the relay

Press RESET key at least 2 seconds – Used to enter settings menu.

Into menu setting the RESET key – Used to scroll menu pages.

Into menu setting the TEST key – Used to select among possible choices and to modify settings (increment-decrement).

**Viewing**



## Main menu

The following table lists the available sub-menus:

MENU	DESCRIPTION
<b>ACTION</b>	Tripping delay time, fault current to earth setting, automatic or manual reset, positive safety on TRIP relay, hysteresis setting, warning and alarm advance set-point
<b>SER COM</b>	Communication ports parameters
<b>UTILITY</b>	Language, display, access code enabling
<b>RESET</b>	All setup parameters are reset to factory default values

ACTION – CURRENT	Default	Range
I $\Delta$	300mA	30mA - 50mA - 75mA - 100mA 200mA - 300mA - 400mA - 500mA 600mA - 700mA - 800mA - 900mA 1A - 2A - 3A - 4A - 5A - 6A - 7A - 8A 9A - 10A - 15A - 20A - 25A - 30A
Alarm	90%	25 ÷ 90%
Hysteresis	5%	0 ÷ 25%
<p>I<math>\Delta</math> – Constant selection for fault current to earth.  <b>Alarm</b> – Trip pre-alarm. Upon reaching % of the set I<math>\Delta</math>n rate, yellow display flashing lights up.  <b>Hysteresis</b> – Percentage of the alarm current. Under this value the relay come back to the rest (after one reset).</p>		

ACTION – TIME	Default	Range
Time	20ms	20ms - 100ms - 200ms - 300ms - 400ms - 500m - 750ms 1s - 2s - 3s - 4s - 5s - 10s
<p><b>Time</b> – Constant selection for tripping delay time.</p>		

ACTION – RELAY	Default	Range
Failsafe	OFF	OFF - ON
<p><b>Failsafe</b> – OFF = positive failsafe deactivated. Output relay normally de-energized.  ON = positive failsafe activated. In this condition the output relay energized.</p>		

ACTION – RESET	Default	Range
Reset mode	MANUAL	AUTO - MANUAL
<p><b>Reset mode</b> – AUTO = automatic reset.  MANUAL = manual reset through RESET key on the front.</p>		

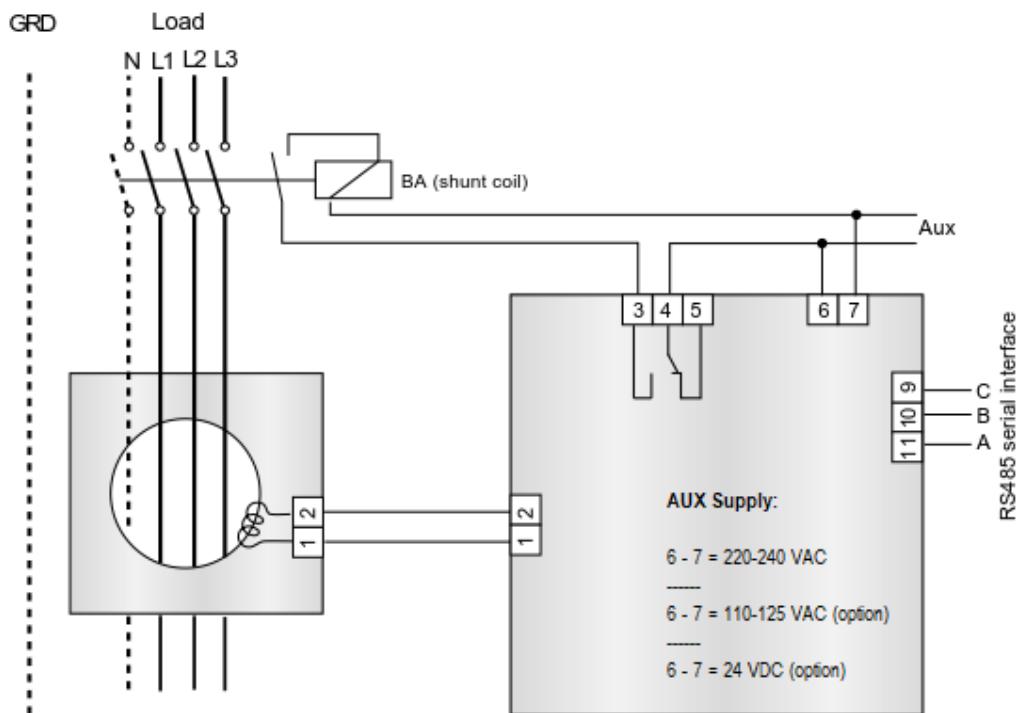
ACTION – FILTER	Default	Range
Filter	NO	NO - YES
<p><b>Filter</b> – NO = no filter applied.  YES = filter applied.</p>		

SER COM	Default	Range
Address	01	01 - 247
Baud rate	38400 bps	4800 - 9600 - 19200 38400 - 57600 - 115200
Parity	no parity	no parity - odd - even
Stop bit	1	1 - 2
<p><b>Address</b> – Serial address (node number) for the communication protocol.  <b>Baud rate</b> – Serial communication speed.  <b>Parity</b> – Data format (8 bit, no parity - 8 bit, odd - 8 bit, even)  <b>Bit stop</b> – Number of stop bits.</p>		

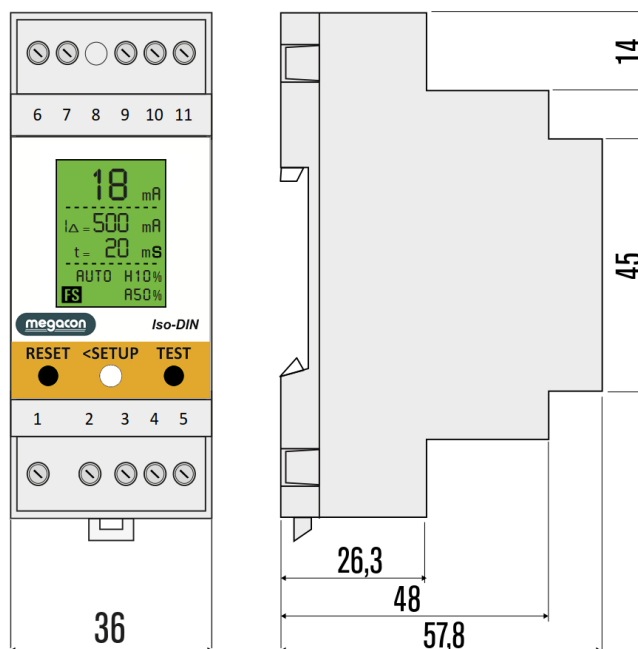
UTILITY	Default	Range
Language	Swedish	Swedish – English – Italiano Francais – Espanol – Deutch
T. LCD on	ON	ON / 15s – 1 h
T. exit	1m	NO / 15s – 1 h
Password	0	0 - 9999
<b>T. LCD on</b> – Turn-on time of the display after the last press of a key; with ON it remains always on. <b>T. exit</b> – Permanence time in the Setup after the last press of a key. <b>Password</b> – Value to be specified to access at setup parameter.		

RESET	Default	Range
Setup	NO	NO - YES
<b>Setup</b> – All setup parameters are set to factory default value.		

**Wiring diagrams**



**Mechanical dimensions (mm)**



## Technical characteristics

Control circuit	
Toroidal transformer	External
Tripping set-point ( $I\Delta$ )	0,03÷30A
Alarm set-point	50÷90%
Tripping time (t)	0,02÷10s
Resetting	Automatic or manual by pushbutton on front
Auxiliary supply	
Rated voltage	230 VAC ±20% 115 VAC ±20% (option) 24 VDC ±5% (option)
Frequency	50 - 60Hz
Power consumption	2VA max
Output	
Relay status	Normally de-energized (Fail Safe OFF)
Configuration contacts	1 changeover contact SPDT (NO, C, NC)
Maximum load user outputs	5A – 250 VAC
Insulation	
Insulation test	2,5kV for 1 minute
RS485 serial interface	
Serial node address	01-247
Baud-rate	Programmable 4800÷115200 bps
Data format	8 bit, no parity 8 bit, odd 8 bit, even
Stop bits	1-2
Protocol	Modbus RTU
Ambient operating conditions	
Operating temperature	-10÷60°C
Storage temperature	-20÷80°C
Relative humidity	≤ 90%
Housing	
Version	2 DIN modules
Degree of protection	IP40 on front IP20 housing and terminals
Weight	200g
Certifications and compliance	
Reference standards	IEC/EN 61010, IEC/EN 61000-6-2 IEC/EN 61000-6-3, IEC/TR 60755 CEI EN 60947-2 Annex M

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