

MULTIS L72

GB Operating instructions



GB

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PRELIMINARY OPERATIONS

For the safety of personnel and equipment, it is essential that you read these instructions carefully before use and familiarise yourself fully with their contents.

When you receive the package, check that:

- the packaging is in good condition,
- the product has not been damaged during transit,
- the reference number of the device conforms to your order,
- the package contains the product as well as the operating instructions.

GENERAL INFORMATION

The Multis L72 is a digital LV three-phase measuring device. It displays instant average or maximum values for voltages and currents.

It is supplied in a flush-type switch body enclosure 72 x 72 x 83 with a display consisting of 3 lines of 4 LED displays, so that the 3 phases can be viewed simultaneously.

In addition to these values, for monitoring generator set or transformer feeders, as well as the previous values, it can display frequency, max. values and hour run metering. This product can be configured (winding

ratio and integration period of the max. I) by programming.

It is compatible with all electrical networks (single-phase, two-phase, three-phase, three-phase + neutral).

The device is self-powered or can run on an external power source depending on the wiring chosen.

TYPE	Multis L72
"M" instant	U + V + I + Io + F + h
Measurement "AVG" average	Umoy, Vmoy, Imoy
"MAX" maximum	Umax, Imax, Iomax
Product reference	192 J 8100

PRESENTATION

The Multis L72 multi-indicator comprises a 3 x 4-digit and 3 display, programming and reset keys as well as signalling LEDs.

- ① LED display
- ② Display LEDs
- ③ Display and programming keypad



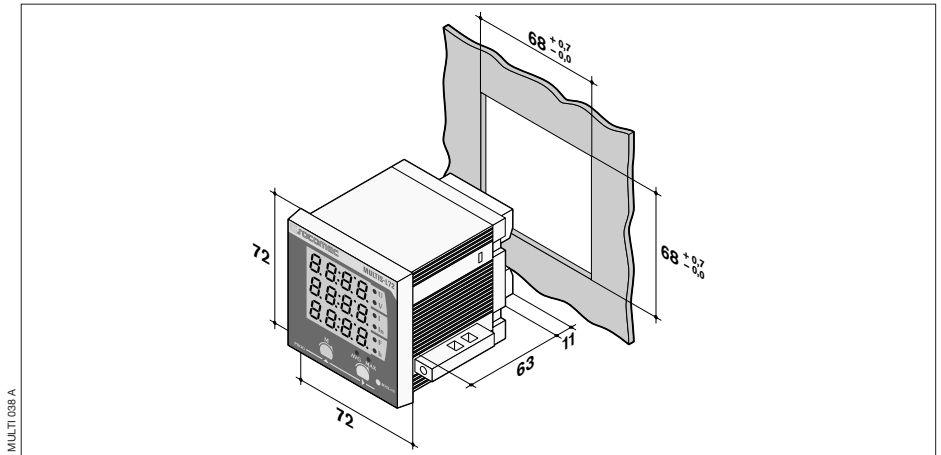
INSTALLATION

MECHANICAL ENVIRONMENT

Recommendations:

- avoid proximity with systems that generate electromagnetic disturbances,
- avoid vibrations including accelerations of more than 1 G for frequencies of less than 60 Hz.

To install the device correctly, it is necessary to respect the cut-out plan below.



CLIMATIC ENVIRONMENT

To guarantee optimum operation, it is recommended that this device be used within a temperature range of -10 °C to +50 °C with maximum

relative humidity between 20 and 95% inclusive. The device can operate at temperatures as low as -15°C

SAFETY INSTRUCTIONS

To avoid damage to the device and to guarantee its correct operation, please, ensure before connecting it, that the following points are respected:

- the indications on the enclosure,
- the frequency of the network: 50 or 60 Hz,

- maximum current of 6 A,
- voltage of 230 V AC or 400 V AC $\pm 20\%$,
- **do not earth the point of common coupling of the current inputs.**

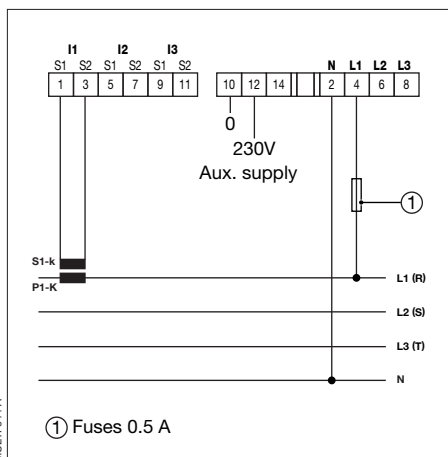
CONNECTIONS TO THE NETWORK

NB:

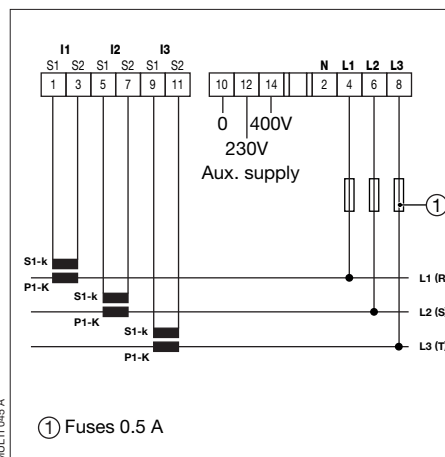
The maximum tightening torque for each screw is 0.4 Nm.

⚠ Do not connect the CT secondary to the earth

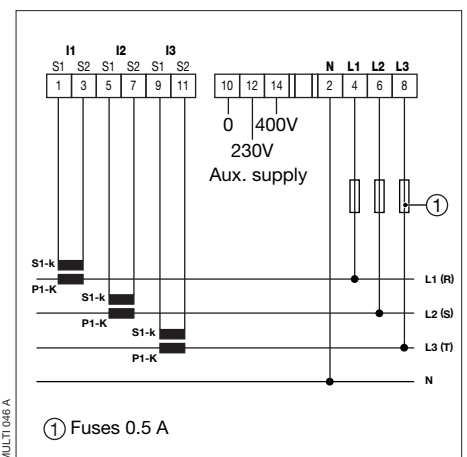
Single phase network



3-wire three-phase network






4-wire three-phase network




PROGRAMMING

1 ENTER PROGRAMMING MODE

KEY	INSTRUCTIONS	MESSAGE
 and 	Press on both keys at the same time for 3 seconds.	

NB: it is necessary to enter a secret code 100 to be able to programme this device, proceeding as follows:

The  key is used to increment a digit or scroll a list of choices.

The  key is used to change digit or validate and change menu.

2 codes are set:

Installer code:

Allows access to the electrical configuration of the Multis L72 (network, CT, integration time).

By default, it is set at "100"

It is possible to modify it after the "administrator code" is entered.

Administrator code:

The administrator code is set at and equal to "312".

This code allows access to the modification of the "installer code" (no access to the electrical configurations).

On the 1st and 2nd lines "cod" and "mod" are displayed respectively.



The 3rd line being used for the modification of the "installer code" (312 being of course forbidden as it is used as the "administrator code").

After entering the installer code:

2 PROGRAMMING OF THE TYPE OF NETWORK (nEt)

1st display: "nEt" (Network)

3rd display: type of network

	for the choice of network
	to validate the network chosen

1L = single phase (phase to neutral connection)

2L = two phase (phase to phase connection)



3L = three phase (3 phase connection)

4L = three phase (3 phase + neutral connection)

3 PROGRAMMING OF THE CT RATIO (Ct)

1st display: "Ct" (Current transformer)

3rd display: CT primary

	to choose the value of the primary of the CTs.
	to validate the primary chosen

The CT rating values are standardised:
5, 10, 15, 20, 25, 30, 40, 50, 60, 75,
80, 100, 125, 150, 160, 200, 250,
300, 400, 500, 600, 750, 800, 1000,
1200, 1250, 1500, 1600, 2000, 2500,
3000, 4000, 5000, 6000, 7500, 8000.

PROGRAMMING (continued)

4 PROGRAMMING THE INTEGRATION TIME FOR THE MAXIMUM CURRENTS

1st display: "It" (Integration time)
3rd display: value of the integration time

- ▲ to choose the value of the integration time
- ▶ to validate the value chosen

The integration time values are pre-programmed:
5, 8, 10, 15, 30, 60, 120.

5 TO EXIT PROGRAMMING MODE

- ▲ to make your choice
- ▶ to validate your choice

Ce menu permet de quitter la configuration avec ou sans sauvegarde.

Choice:

- ① { QUIT (1st display)
NO (3rd display) Return to the 1st menu "Programming of the type of network"
- ② { QUIT (1st display)
SAVE (3rd display) Saves the configuration programmed and quits configuration mode.
- ③ { QUIT (1st display)
NO (2nd display)
SAVE (3rd display) Quits configuration mode without saving.

OPERATION

DISPLAY

LED display:

- ① 3-line, 4-digit, 7-segment display.
- ② Measured values indicator LED.
- ③ LEDs indicating type of value: average value AVG, maximum value MAX



KEYS

The device has 3 keys:

- **Key ③** : successive pressing on this key, "M", allows the selection of the instant values measured.

Thanks to sampling, the Multis L72 displays TRMS values up to number ≥ 15 .

The values displayed are refreshed every 500 ms.

The choice of measurement is indicated by LEDs ②.

- **Key ④** : allows the selection of the type of values required :

- In average mode (key AVG), U I F or V I F are displayed simultaneously. These values are instant averages of the 3 phases.

- **MAX** : value max of U, I or In (led ③). The Max values (key Max), are the maximum measurements over an integrated period (5 to 120') for currents, and the maximum instant value for voltages (L-L, L-N or single-phase).

- **Key ⑤** (max = 0) to reset the Max values after pressing for at least 3 seconds. Resetting to zero can be done whilst the max. value in question is displayed.

TECHNICAL CHARACTERISTICS

ENCLOSURE

Connection using tunnel terminals

Rigid wires up to 2.5 mm² / Flexible wires up to 2.5 mm²

Weight: 250 gr

Dimensions: Flush-type: l x h x p = 72 x 72 x 83

DISPLAY

3 lines, 4 digits, 7 segments / refreshment 0.5 sec.

Size of digits: 10 x 6 mm

Display unit / range of measurement:

- TRMS measurement up to harmonics number ≥ 15
- Current (according to CT):

0.1 A:	3-digit display for values < 100 A
0.5 A:	4-digit display for values < 1000 A
5 A:	4-digit display for values < 10 000 A
- Voltage: 1 V
- Hour metering: 0.1 h (incrementation if $U_{12} > 35$ V) 999 999.9
- Frequency: 0,1 Hz / measured on phase 1 40.0 at 80.0 Hz

Protection index (front panel): IP54

INPUTS

CURRENT

From a current transformer with:

- Configurable primary: 5 to 8000 A
- Secondary: 5 A

Measurement range: secondary from 0.1 to 6 A

Consumption: at $I_n \leq 0.5$ VA

Inputs: non-insulated

Overload: permanent at 1,2 I_n / (3h) at 2 I_n / (1') at 5 I_n / (1'') at 10 I_n

VOLTAGE

Measurement range: 35 V at 480 V (L-L)

Consumption: ≤ 0.5 VA

AUXILIARY SUPPLY

Terminals 10 and 12: 230 VAC ± 20 %

Terminals 10 and 14: 400 VAC ± 20 %

Possibility of self-supply by external wiring between U aux and the voltage inputs

Consumption: ≤ 2.5 VA

ACCURACY

- Accuracy index:
- Voltage, current 0,5 % ± 1 digit from 45 to 65 Hz
 - Frequency $\pm 0,2$ Hz for the frequency

OPERATING CONDITIONS

Operating temperature: -15 to +50 °C

Storage temperature: -20 to +70 °C

Relative humidity: 95 %

STANDARDS

Category of measurement III

Relating to CE marking: IEC 61000-4-2 electrostatic discharge (Air 8kv, contact 4 kv)
 IEC 61000-4-3 electromagnetic radiation (10v/m)
 IEC 61000-4-4/5/6/8/11
 EN 50081-1
 EN 50081-2

Relating to operating conditions: IEC 68-2-11/30

Subject to technical modifications and availability

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