

MAGNETO-THERMAL PROTECTION DEVICE FOR ELECTRIC LOADS



User's Manual

Device IPC realizes the functionality of magneto-thermic and manual/automatic switch for 6 distinct electrical loads.

Equipped with 2 digital input to receive an external start.

Output relays to supply the electrical loads.

Visualization for overload and short circuit or malfunctioning of the device.

The IPC habitually is used with the device NEX to supply the ventilation bars.

Alma Elettronica S.r.l.

Via dell'Indipendenza, 13
40069 Zola Predosa (BO) - Italy

Tel +39 051 6762544

info@almaelettronica.it

www.almaelettronica.it

Technical Characteristics

Device power supply

- Nominal values 24 ± 380 Vcc and 24 ± 260 Vac with 40 ± 60 Hz frequency
- maximum line voltage: 20 ± 390 Vcc and 20 ± 265 Vac
- Vcc with reversible polarity
- Maximum absorption 5 VA
- Protection against electrical and magnetic noises and line disturbs

Loads power supply

- Nominal 24 ± 250 Vac with 40 ± 60 Hz frequency
- Maximum absorption 2A for channel

Inputs

- 2 digital input for contact free by voltage (Automatic channels enabling input). Each input enables 3 loads

Connections

- Connections with removable clamps for $1,5 \text{ mm}^2$ section wires with 5 mm pitch at 15A/250Vac, and removable clamps for $1,3 \text{ mm}^2$ section wires with 3,5 mm pitch at 8A/130Vac (utilised for digital inputs)

Outputs

- 2 output relays with channel's abnormality signal or channel alarm
- 6 power supplies for loads with magnetothermic control each

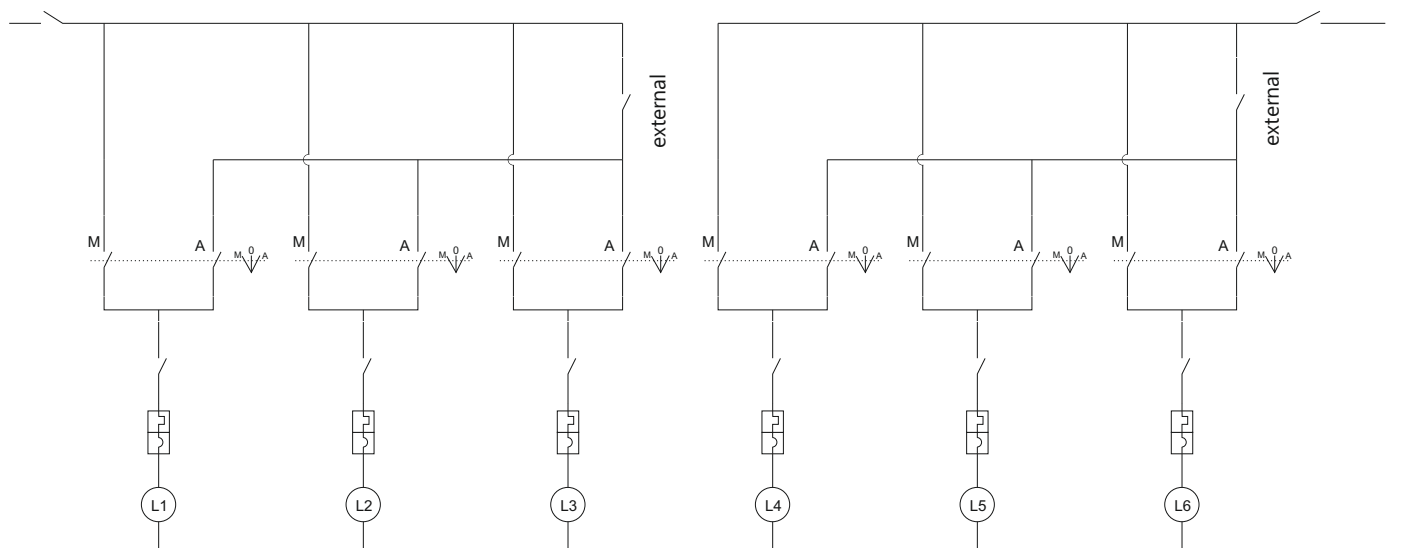
Device dimensions

- Container dimensions: 96 x 96 mm compliance to unification law DIN 43770 and maximum depth 105 mm
- assembling on the front of the electrical panel
- panel cut-out 92 mm x 92 mm
- PPO self-extinguishing container
- Frontal panel in anti-scratch polyester with tactile keyboard and signaling led

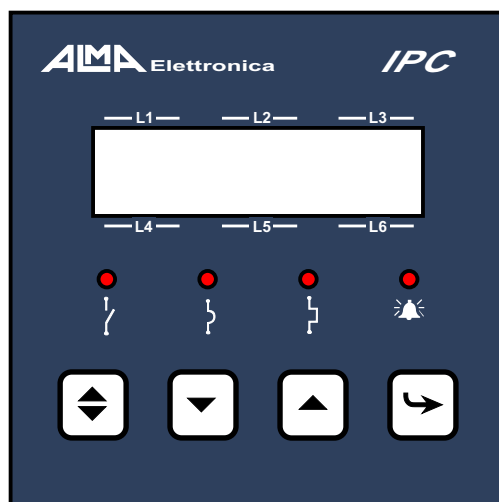
Features

- Visualization on a back lighted LCD display with 2 rows of 16 characters to show the functionality of loads and the eventual current absorption
- Visualization of power supply of loads
- Channel selection for manual/automatic power on or for disablement
- Digital signal acquisition to activate automatic selected loads
- Magnetothermic function for each channel with alarm visualization on display, with led and alarm relays
- Language selection between italian, english, german and french
- Display contrast adjustment
- 3 Leds to visualize digital input condition, short circuit and overload.
- Alarm reset by keyboard
- Working temperature from 5°C to $+60^\circ\text{C}$
- Humidity under 95% without condensation
- Compliance to CE requirements
- User data's memorization for 10 years without power supply
- Self diagnosis of functionality
- Alarm signaling for malfunction or wrong setup of user data

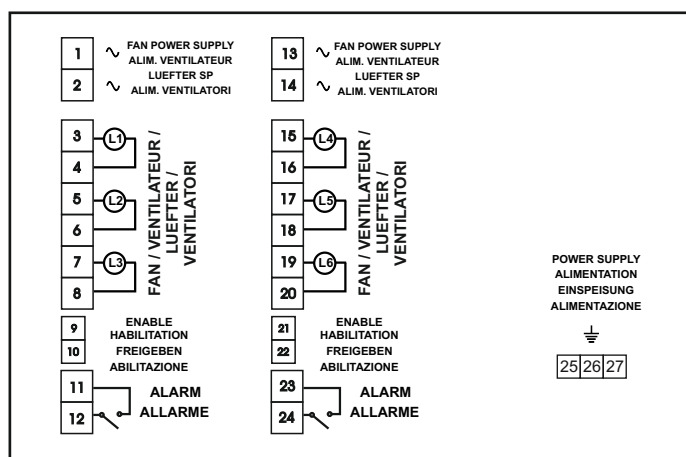
Electric equivalent circuit



Front



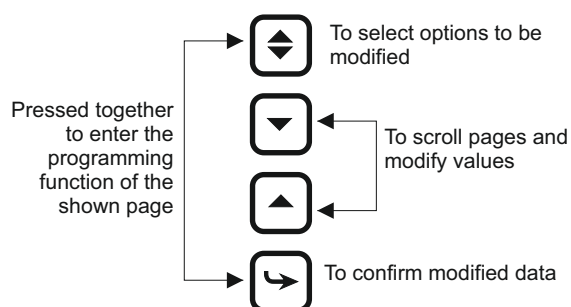
Electrical connections



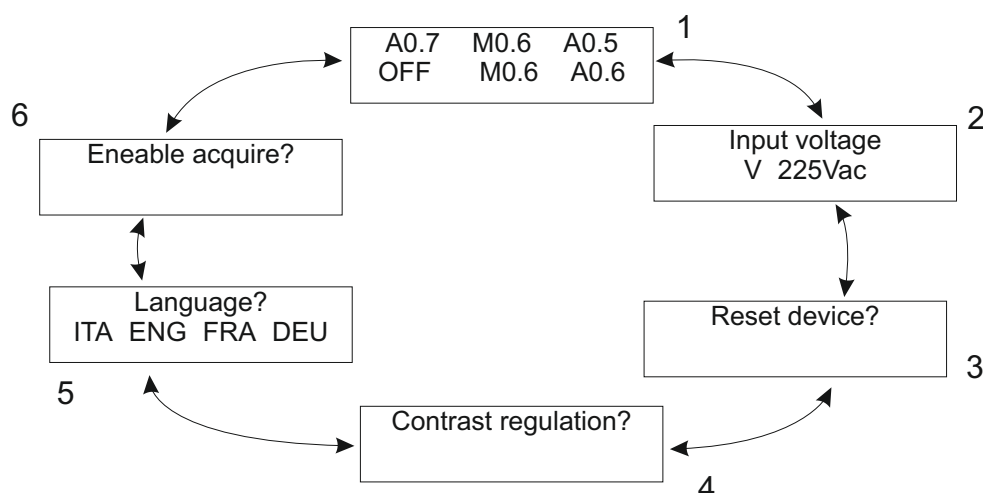
Led

-  input enable status
-  Short circuit alarm
-  Overload alarm
-  General Allarm

Buttons



Display Pages



Pages and programming

Between the pages one moves to us using the keys with the arrows $\blacktriangle$ and $\blacktriangledown$.

Page 1 or MAIN PAGE

This is the page usually shown when no button has been pressed. It shows informations on loads.

- A** is for channel automatically programmed
- M** is for channel manually programmed
- OFF** is for channel programmed as switched off

Near the letter indicating the channel status, its absorption in Ampere is shown if switched on. The symbol $\blacktriangle$ means an overrange on channel consumption. The symbol $\blacktriangledown$ means an underrange on channel consumption.

The symbol $\blacklightning$ means a short circuit on channel.

Entering the programming function in this page using together buttons $\blacklozenge$ and $\hookrightarrow$ you can change the channel status. You select the channel using button $\blacklozenge$ and using buttons with arrows $\blacktriangle$ and $\blacktriangledown$ you select **A**, **M** or **OFF**. With $\hookrightarrow$ button you confirm your choice and exit the programming function, all channel are switched off and restarted compliance to selection made.

Page 2

This is a simple visualization page for the input voltage status

Page 3

In this page you can reset alarms visualized in main page

Page 4

In this page you can adjust the display's contrast. Entering the programming function using together buttons $\blacklozenge$ and $\hookrightarrow$, a page with an increment/decrement bar will be shown. Using buttons with arrows $\blacktriangle$ and $\blacktriangledown$ the contrast will be incremented or decremented. With $\hookrightarrow$ button you confirm your choice and exit the programming function.

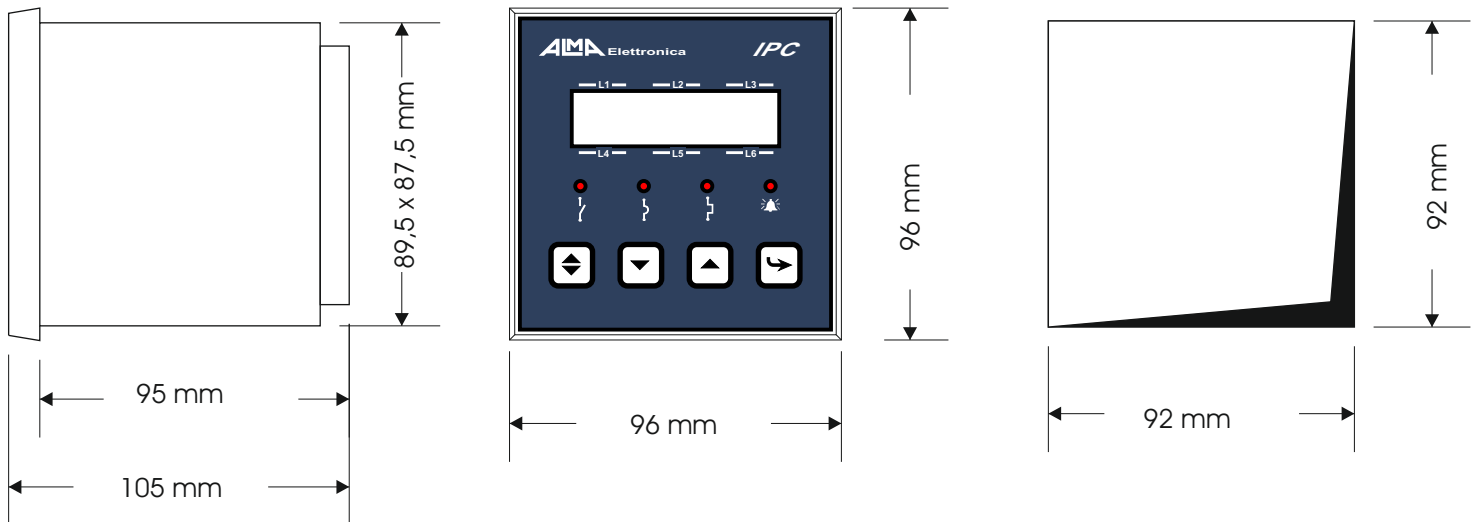
Page 5

In this page you can select the language to be visualized in other pages. Entering the programming function in this page using together buttons $\blacklozenge$ and $\hookrightarrow$, you can select the language using button $\blacklozenge$ and confirm and exit from programming using button $\hookrightarrow$.

Page 6

Entering the programming function in this page using together buttons $\blacklozenge$ and $\hookrightarrow$, you can set the calibration for standard absorption of channels. Channels are activated for a few minutes and the current consumption is acquired. Values are memorized and will be used to control underrange and overrange that will be shown in the main page. You will have underrange if the current absorption is lower than the standard one. You will have overrange if the current absorption is greater than the standard one. During acquisition the flashing message "ATTENTION! Reading channels" will be shown and the digital input is acquired. Turned off channels will not be acquired. After reconditioning a channel in OFF we suggest to acquire that channel. For not acquired channels the standard preset value is 2,0A.

Dimensions and Cut-out



Alma Elettronica S.r.l.
Via dell'Indipendenza, 13
40069 Zola Predosa (BO) - Italy
Tel +39 051 6762544
info@almaelettronica.it
www.almaelettronica.it