



THE EVOLUTION OF PROTECTION AND MEASURE MCP4



Main characteristics

The MCP4 device has been designed to protect the electrical cabinets and plants, mainly the power factor regulation and filtering plants, by mean of continuous monitoring of line voltage, line current (amplitude and harmonics) and temperature. All measurements and alarms are displayed on the front panel display. Working parameters set-up is accomplished using 4 functional keys or optionally by PC using the dedicated software with connection cable inserted into the serial port.

Easy parameter set-up

The parameters set-up operation is possible in 2 different ways:



MANUAL KEYPAD SET-UP: using the 4 buttons "RESET/PHASE", "+/MAX", "-/MIN", "SCROLL" set-up session starts with visualisation, choice and modification of the parameters. At the end of operations device will exit automatically from the set-up menu.

QUICK SET-UP VIA PC: connecting the MCP4 module through the dedicated cable and RS232 serial port to the Personal Computer and using the software by the easy click of the mouse operator transmits and stores all parameters.

Display values

The measures on the display are:

1. RMS and Max voltage
2. RMS and Max current
3. THDI% and Max THDI%
4. Temperature
5. RMS and Max Harmonic current
6. Frequency

Protections



OVER-VOLTAGE PROTECTION: the value, measured on the each phase, is compared with the set-up value. If the measured value is bigger than the set-up for more than 30 minutes the alarm LED switch on.



OVER-CURRENT PROTECTION: the value, measured on the each phase is compared with 120% of the rated value. If the measured value is bigger than 120% of rated value for more than 3 seconds the alarm switch on.



HIGH THDI% PROTECTION: the value, measured on the each phase, is compared with the set-up value (THDI%_{min}-THDI%_{max}). If the measured value is bigger than the set-up for an adjustable time the alarm switch on



HIGH TEMPERATURE PROTECTION: the measured value is compared with the set-up. If the measured value is bigger than the set-up the alarm switch on.

Easy and user friendly software interface

The ICAR software for the remote control of MCP4 is easy and permits to know at any time the parameters available on display.

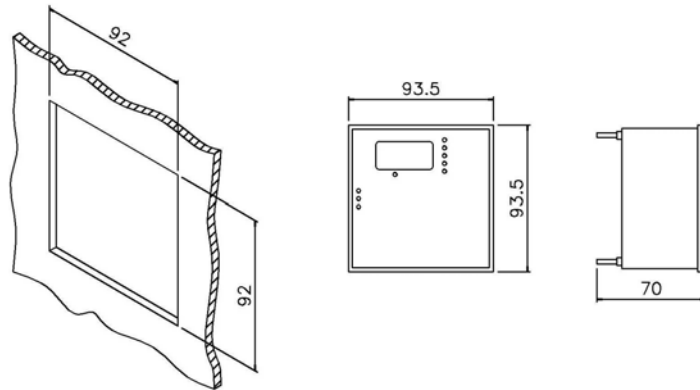
The image displays several screenshots of the MCP4 Link software interface with callouts explaining key features:

- Main Measurement Screen:** Shows real-time data for Voltage (V), Current (A), Current THD (%), Harm. Current (A), Frequency (Hz), and Temperature (°C) across three phases (L1, L2, L3). It also includes checkboxes for Relays, Alarm, and Fan, and a 'Hold' button.
- Communication and Connection Settings:** A 'Setup' screen allows for 'Communication port choice' (Autodetect) and 'Connection ON/OFF' (Off or On).
- Graphic and Language Choice:** A 'Skin' dialog box offers 'Windows Standard' as a theme and 'English' as the language.
- Configuration (Settings) Screen:** A 'Setup' screen for 'THDI%-T start fan- alarm temperature-Type of connection'. It includes a 'Description' field and various adjustable thresholds: High Current THD, Low Current THD, Low-to-High Current Level, Trip Time THD Alarm, Fan Temperature Threshold, Delta Temperature Threshold, and Temperature Offset. A 'Receive / Send' button is also present.

Technical characteristics

Power Supply	115/230/400 Vac (depending on model) ± 10% 50/60 Hz
Consumption	4 VA
Weight	450 g
Voltage input	3 inputs 400 V ± 10% phase to phase, 50/60 Hz
Current input	3 inputs from external CT /5A
Current overload	20 % permanent
Current circuit consumption	< 0.25 VA
Voltage accuracy	±1% f.s.
Current accuracy	±1% f.s.
Current THD accuracy	±1% f.s. for I _{rms} > 10% f.s.; ±5% f.s. for I _{rms} < 10% f.s.
Temperature accuracy	±1 °C
Cooling device relay contacts	5 A 250 V NO
Alarm relays contacts	5 A 250 V NO and NC
Wiring	Removable terminals
RS-232 Communication	Requires specific external adapter
Working temperature	From 0°C to +55°C
Humidity	95% uncondensed
Storage temperature	From -10°C to +70°C

Dimensions and drilling



Schematic diagram

