

Elcomem24 Pulse Counter User Manual

Description and Wiring Diagram



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General Description

Elcomem24 Pulse Counter is a data logger able to collect and store pulses from 24 inputs. The software outfitted allows each input pulse count to be individually reset.

Connection Typologies

The Elcomem24 family includes two types of connections: RS-485 and Ethernet TCP/IP

Both typologies are simultaneously active. A ModBus protocol is used and can be directly asked for to info@elcotronic.it.

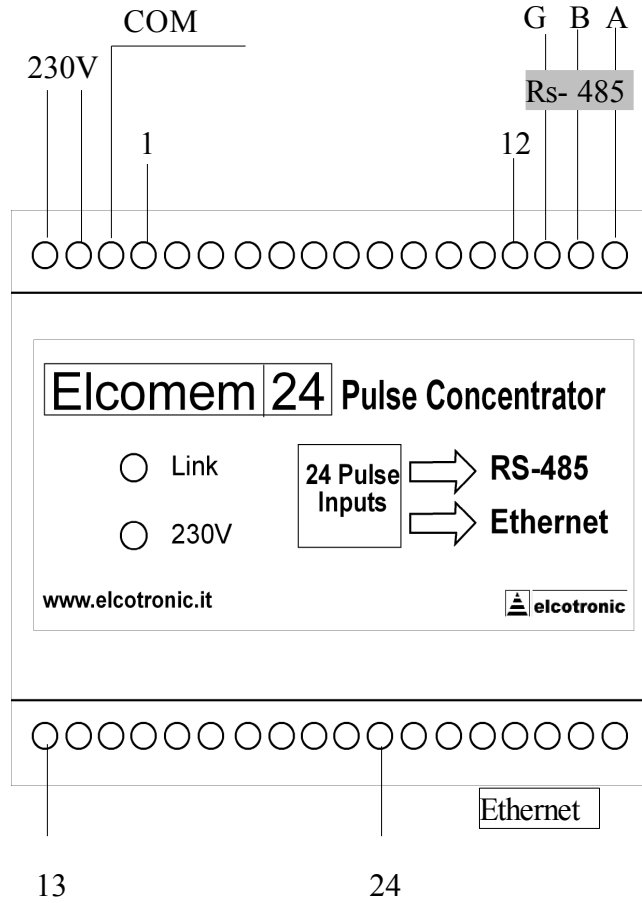
The 485 interface is electrically insulated from both supply mains and internal circuits, but not from the common wire of the pulse inputs. Up to 31 Elcomem24 units can be connected on the same line calling internal addresses with different names. Connection speed is set to 9600 bps.

The Ethernet connector is a standard RJ-45, 8-wire type. The instrument can be directly connected to a PC by means of a market-available RJ-45 “twisted” cable. An RJ-45 “straight” cable is used to connect the instrument to a HUB SWITCH. This cable can be easily found on the market, as well.

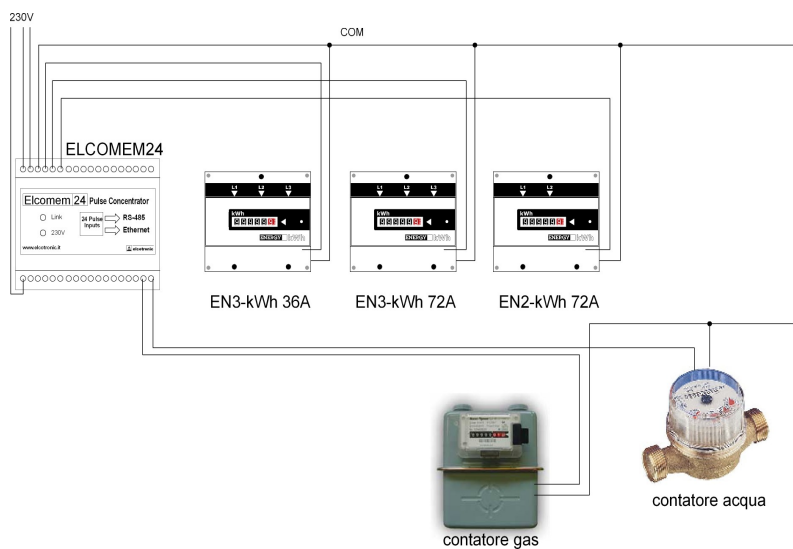
BOTH CONNECTIONS ARE OF A “SLAVE” TYPE, I.E. THEY CAN BE CONNECTED ONLY TO A PC OR A PLC.

Wiring Diagram

Terminal Board Diagram



Example of connection to an Energy 3 Kwh meter



As a general rule, the instrument can be connected to whichever device is provided with a pulse output. The common wires from the various devices are gathered together and connected to COM terminal. Use inputs 1 to 24 to connect the different utilities.

Should you choose between an NPN and a PNP instrument, use the NPN type.

Polarized-output instruments can be used as well, in which case COM terminal is positioned on the “-” sign while input is positioned on the “+” sign.

Outfitted Software

A specially dedicated software - called Elcomem24Setup – is supplied to set the instrument according to the customer's requirements (to change address, IP, etc..). This software does not display data nor produces graphs.

Elcomem24Setup Software Screen Page

The screenshot displays the 'Modifica impostazioni interne per Elcomem24' window. It is divided into two main sections: 'Sezione comunicazione' and 'Impostazioni'.

Sezione comunicazione:

- TimeOut:** A text input field containing '1000' followed by '[ms]'.
- Connessione seriale:** A radio button is selected. Below it, 'Porta Seriale' is a dropdown menu showing 'COM1'.
- Connessione ethernet:** A radio button is unselected. Below it, 'Indirizzo IP' is a text input field containing '192.168.1.9', and 'Porta' is a text input field containing '2424'.

Impostazioni:

- A light blue header bar contains 'Indirizzo' with a text input field containing '255' and a 'Test' button.
- Below are three buttons: 'Modifica indirizzo', 'Nuovo Indirizzo IP', and 'Nuova NetMask', each followed by an empty text input field.

Elcomem F1 F2 F3 F4:

- 'Imposta l'ora corrente' button.
- 'Leggi l'orario sul dispositivo' button.
- A large 'Reset' button at the bottom.

Communication Section

This section is used to set the instrument connection parameters.

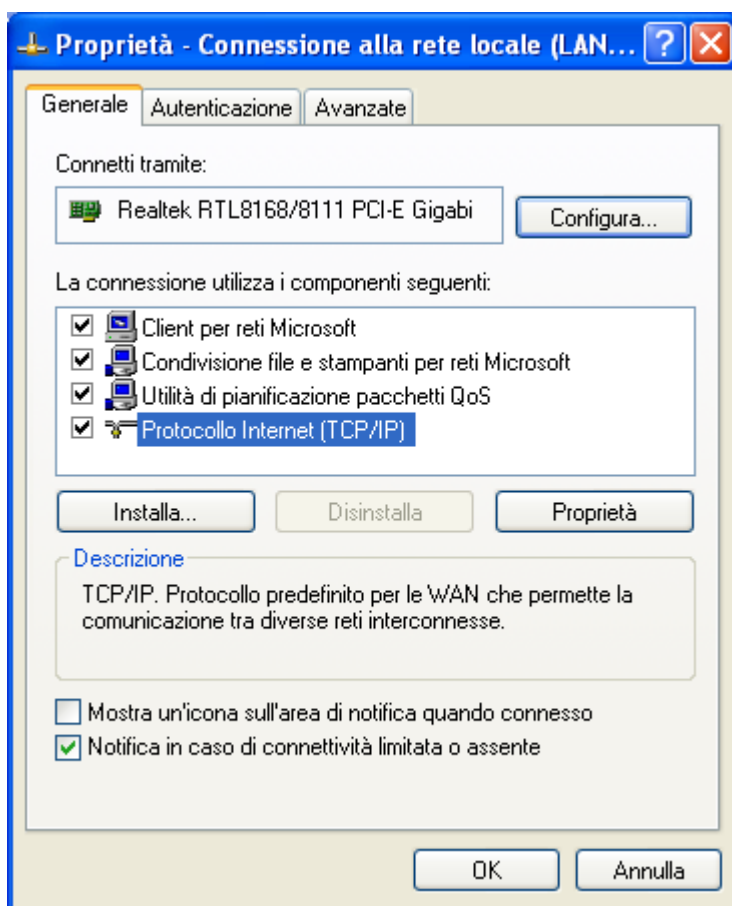
If the instrument is connected via **RS-485**, select “Connessione Seriale” (serial connection) and choose which port the RS-232/RS-485 converter is connected to. Connection speed is 9600 bps.

If an **Ethernet** connection is used, enter the device address in relevant IP window. Factory data is as follows: IP address **192.168.1.9**, port **2424**, subnet mask **255.255.255.0**. Factory settings can be modified upon the order.

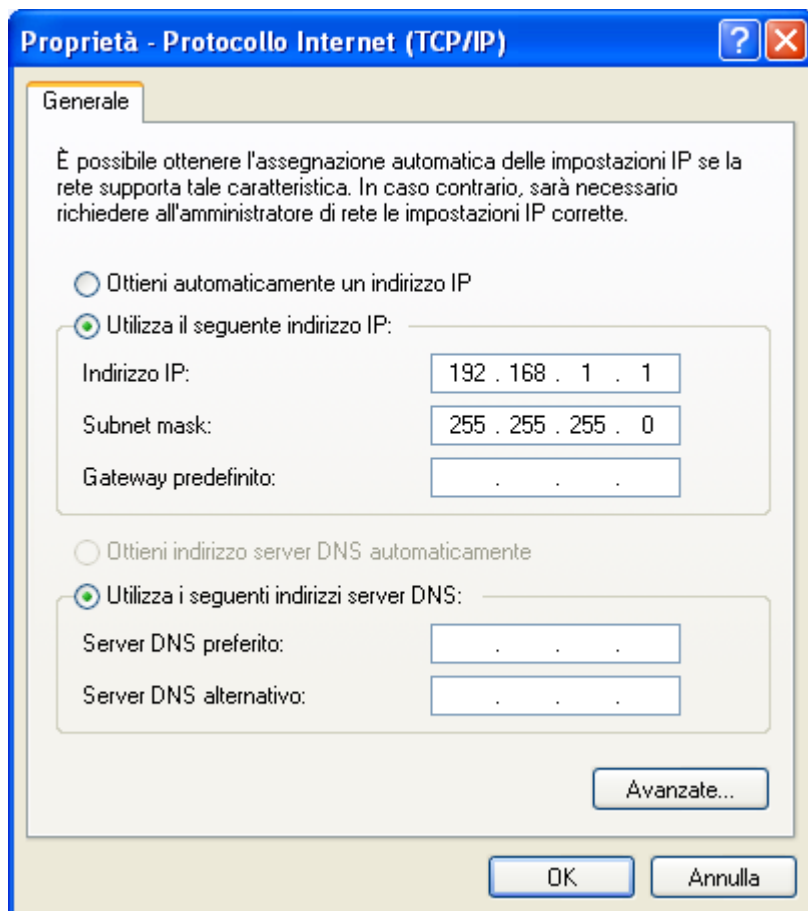
If this address is not supported by your local network, Elcomem24 must be connected directly to your PC by means of an “inverted” cable (easily available in any computer shop); properly set your computer by entering a compatible address and sub net mask, for instance IP 192.168.1.1 and sub net mask 255.255.255.0.

To do this, **proceed as follows**:

1. click on the icon “Network Resources” using the right-hand button
2. choose “Properties”
3. click on “connection to your local network” using the right-hand button
4. choose “Properties”



5. double click on “Internet Protocol (TCP/IP)”
6. Select “Use the following IP address”
7. Enter IP address 192.168.1.1 and sub net mask: 255.255.255.0



8. press OK

9. press OK

Now you can use Elcomem24Setup to modify set data. Once this operation is completed, set your computer to the pre-existing parameters as they were before modifying them.

- **Time Out:** Time required before Elcomem24 replies. It may be necessary to prolong this time, when the unit is located very far.

Setup Section

Once all communication parameters have been completed, enter the device ID which is normally reported on the device itself.

- **Test Push-button:** this push-button is used to test Elcomem24 for proper connection.
- **Adress Change Button:** this push-button is used to modify the device ID by entering a number between 1 and 254 where required.
- **IP Address Change Button:** this push-button is used to modify the device IP by entering where required, four numbers separated by a full stop, without leaving any space, e.g.: 192.168.0.30
- **New NetMask Button:** this push-button is used to modify the device subnet mask by entering, where required, four numbers separated by a full-stop without leaving any space,

e.g. 255.255.0.0.

Whichever button has been pressed, the background will turn green if the command has been successfully performed or red if it has not.

Elcomem24 Section

This section deals with Elcomem24 F1 F2 F3 F4 model.

Specifications

Power Supply

Input Voltage	230 +- 10%
Power Absorbed	10W
Recommended Fuse	100 mA Fast

Inputs

Input Number	24
Minimum Pulse Length	20 ms
Max contact resistance	10 ohm

485 Section

Pin Number	3
Speed	9600
Line closing resistance	120 ohm

Ethernet Section

Pin Number	8
Speed	10Mbit
Plug	Standard RJ-45

Storage Memory

Memory	4 billions of pulses each input before Rollover.
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Version 2.0