

**■ SERIAL MULTIFUNCTIONAL INTERFACE EMI-1**



Serial multifunctional interface for using as serial converter and/or serial amplifier with following characteristics:

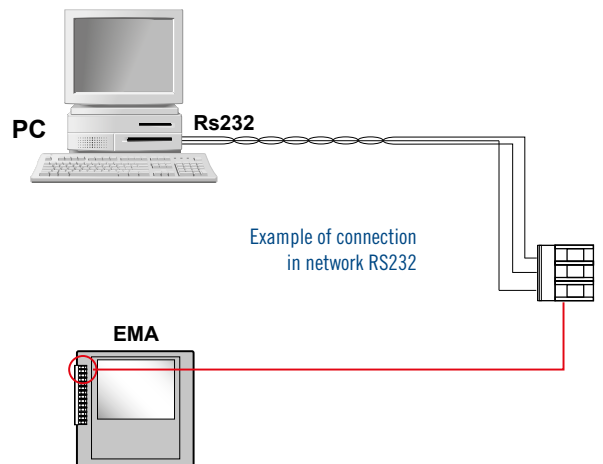
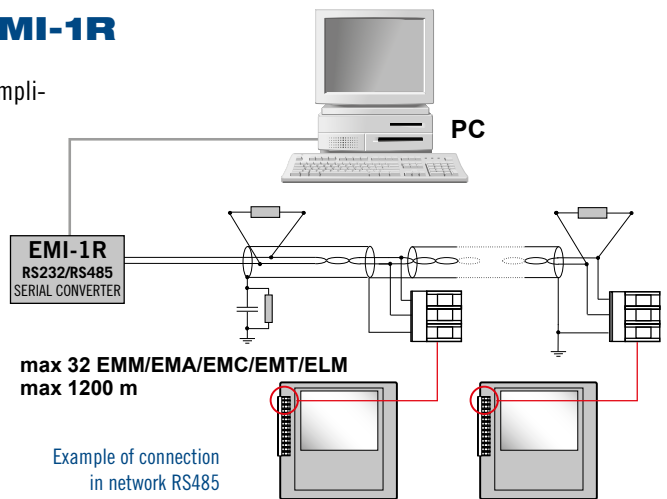


- lab top format, dimensions 140x35x110 mm
- auxiliary supply 115-230 Vac 50-60 Hz
- 1 serial port Rs232 connector Db9
- 2 serial ports Rs485

- connection in network up to 64 units
- selectable communication speed
- frontal led for network signalling
- frontal led for status signalling

**■ SERIAL MULTIFUNCTIONAL INTERFACE EMI-1R**

Serial multifunctional interface for using as serial converter and/or serial amplifier with following characteristics:



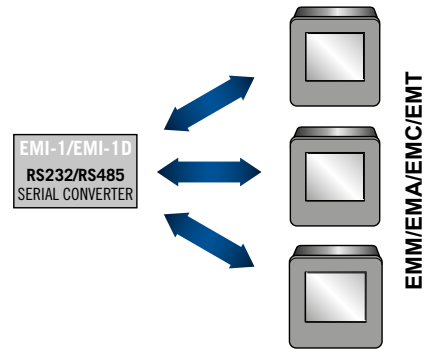
- DIN rail mounting of 6 modules of 17,5 mm
- auxiliary supply 115-230 Vac 50-60 Hz
- 1 serial port Rs232 connector 9 PIN
- 2 serial ports Rs 485
- connection in network up to 64 units
- selectable communication speed by micro-switches
- frontal led for network signalling
- frontal led for status signalling

**MULTIFUNCTION INTERFACE EMI-3-GSM**



GSM modem setted for data transferring, SMS and fax by GSM network with characteristics described below:

- DIN rail mounting of 4 modules of 17,5 mm
- auxiliary supply = 8-38 Vac/cc
- external or internal antenna
- dual band EGSM900 and GSM 1800
- serial input RS232 connector 9 PIN
- socket for SIM card
- frontal led for status signalling

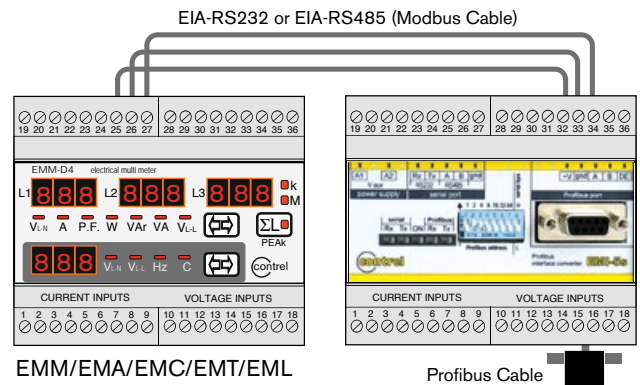


**INTERFACE EMI-5S PROFIBUS**

Multifunctional serial interface for conversion from MODBUS-RTU in PROFIBUS-DP protocol with following characteristics:



- DIN rail mounting of 6 modules of 17,5 mm
- Auxiliary supply 80÷240 Vac/dc oppure 20÷60 Vac/dc
- 1 serial input RS232 or RS485 MODBUS-RTU
- 1 output PROFIBUS-DP, 9 PIN connector
- micro-switches for setting (address, baud rate and so on)
- frontal led of status signalling
- baud rate max 3 Mbps





**SERIAL / ANALOG INTERFACE Z3AO**

Serial/analog interface that allow to have (trought serial output RS485 Modbus-RTU) 3 analog outputs 0/4-20mA to associate any measured parameters, with the following features:



- Execution for DIN rail mounting-1 module of 17,5mm
- auxiliary supply 10-40Vdc 12-28Vac
- 1 serial port RS485 Modbus-RTU
- 3 analog outputs 0/4-20mA (definition 12 bit – 500 ohm max load)
- led for indication of auxiliary presence ,error, reception and data transmission
- possibility of expansion modules in order to get more analog outputs

**MULTIFUNCTION INDICATOR DISPLAY**

Indicator with OLED display and serial interface RS485 Modbus-RTU that allows the remote visualizations of electrical parameters derived from instruments series EMM/EMC/ELM/EMT/EMA, with the following features:



- Flush mounting execution DIN 96x48mm
- Auxiliary supply 80÷265Vac or 10÷40Vdc 19÷28Vac
- 1 serial port RS485 Modbus-RTU master baud rate 1200÷115200 bps
- 1 serial port RS485 Modbus-RTU slave baud rate 1200÷115200 bps
- OLED brightness display 2,7” 128x64 pixel
- 3 navigation menu buttons
- up to 20 measure (max 3 for page)
- set of language, brightness, contrast, communication parameters, offset, scale, measure unit
- data measure storage

## MULTIFUNCTION INTERFACE EMI-10L ETHERNET

Multifunction serial interface for conversion of RS485 or RS232 communication port in ethernet bus with TCP/IP protocol using ethernet network with applications and equipment with RS485 or RS232 serial communication ports with following characteristics:



- DIN rail mounting of 3 modules of 17,5 mm
- Auxiliary supply 115-230 Vac 50-60 Hz o 24 ac/dc
- 2 serial input RS485
- 1 RJ45 output for connection ethernet network
- frontal led for status signalling

### USE AND APPLICATIONS EMI-10L

**a.** EMI-10L converter is a bridge between MODBUS/TCP/IP and MODBUS/ASCII/RTU. The serial port is connected to MODBUS/ ASCII MODBUS/RTU devices or a network of devices, while Ethernet port is connected to SERVER/PC or PLC. The commands are sent from the Server in ethernet line to EMI-10L converter and the slave device receives them after they have been converted.

**b.** Serial-Over IP: RS232 port may not be on the PC, but serial interface continue to be widespread in many sectors like such as security, automation and IT. EMI-10L converter offer the solution serial-over IP wich combine the simplicity of serial communication with networking TCP/IP protocol.

There are two basic way to use EMI-10L Serial-overIP described below:

#### 1. Virtual Serial Ports

The virtual Serial Port Driver for windows allows to enter to ethernet port of the dispositive like a real COM port of Yo'ur Pc.

#### 2. Direct TCP link

EMI-10L device support the standard protocol TCP/IP. The communication is by opening a socket and data exchange with serial port of devices is properly. EMI-10L devices may be used in a different mode as follows:

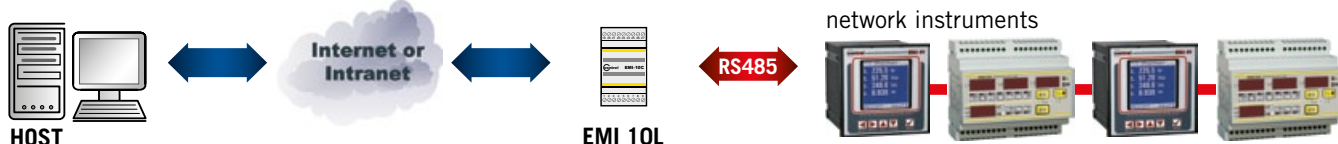
*EMI-10L devices may be used in a different mode as follows:*

### 1 - EXAMPLE CONFIGURATION

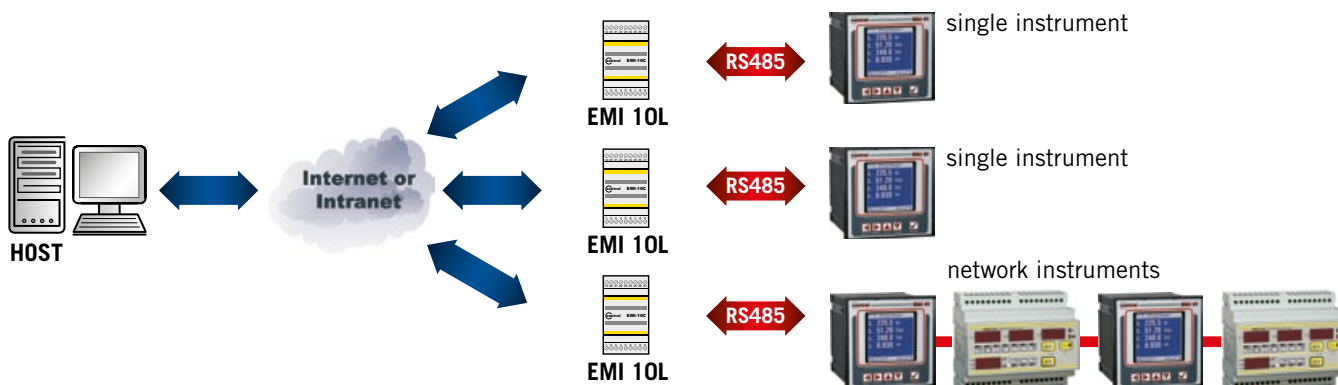
Managing a single instrument



Managing a network of instruments connected to the same Modbus network



### 2 - EXAMPLE CONFIGURATION



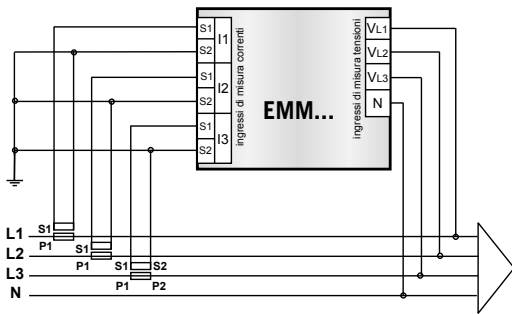
### CONCENTRATOR FOR PULSE ACQUISITION EML-16

Concentrator for acquisition of proportional pulses, with electrical energy absorbed, equipped of a serial output RS485 Modbus-RTU in order to interface with NRG type software used for managing analysers, multimeters or counters

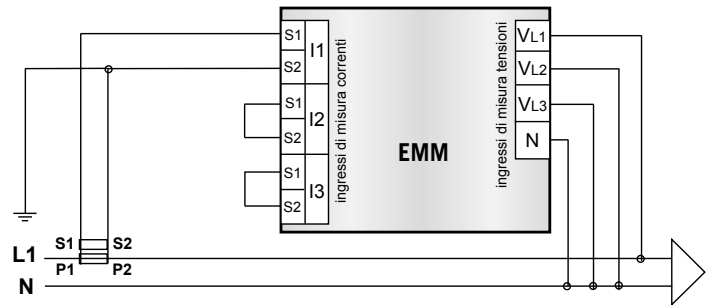


- DIN rail mounting 6 modules
- Auxiliary supply 24 Vac/cc
- 16 digital inputs for pulses
- 1 serial output Rs485 for connection with PC
- LCD digital display 4 lines x 16 digits for visualising counters and inputs status
- 1 ethernet output MODBUS-TCP
- WiFi conection

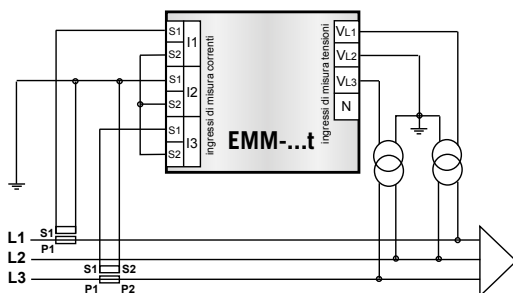
### TYPICAL WIRING DIAGRAMS EMM-4... EMM-D4... EMC... EMT...



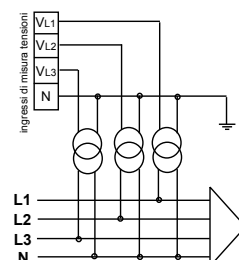
THREE-PHASE NETWORK 4 WIRES



SINGLE-PHASE NETWORK



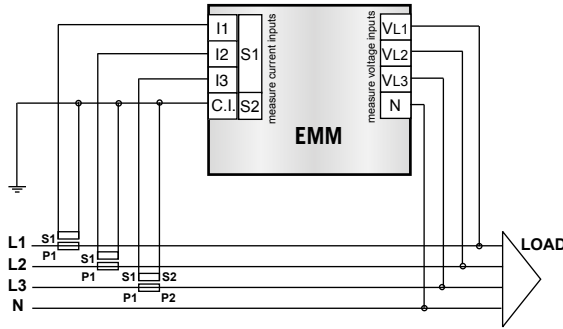
THREE-PHASE NETWORK 3 WIRES WITH 2 V.T. AND 2 C.T. (ONLY FOR EMM-...T)



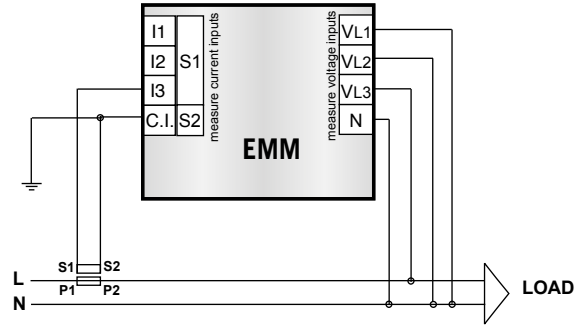
VOLTAGE WIRING WITH 3 V.T. (ONLY FOR EMM-...T)



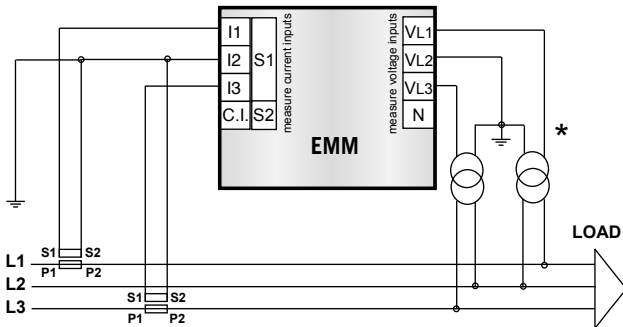
**TYPICAL WIRING DIAGRAMS EMM-R... EMM-μ...**



THREE-PHASE NETWORK 4 WIRES

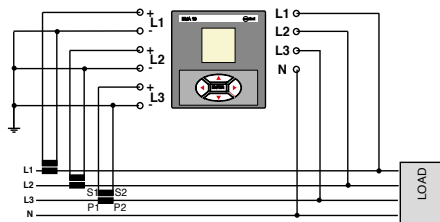


SINGLE-PHASE NETWORK

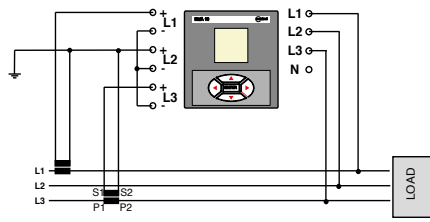


THREE-PHASE NETWORK 3 WIRES WITH 2 V.T. AND 2 C.T. (ONLY FOR EMM-....T)

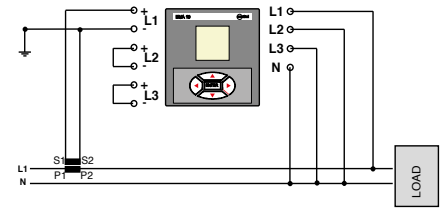
**TYPICAL WIRING DIAGRAMS EMA**



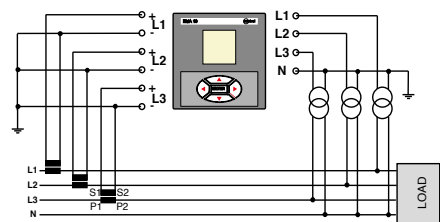
THREE-PHASE NETWORK 4 WIRES



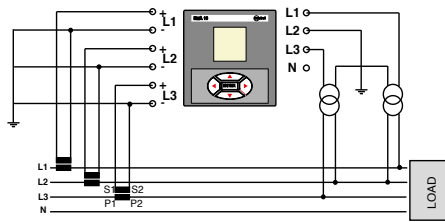
THREE-PHASE NETWORK 3 WIRES WITH 2 C.T.



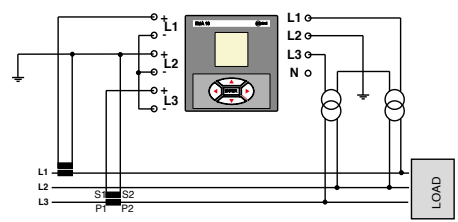
SINGLE-PHASE NETWORK



THREE-PHASE NETWORK 4 WIRES WITH 3 V.T. AND 3 C.T.



THREE-PHASE NETWORK 4 WIRES WITH 2 V.T. AND 3 C.T.



THREE-PHASE NETWORK 3 WIRES WITH 2 V.T. AND 2 C.T.

**Attention:** for detailed information about connection's diagram, see manual for use and installation of specific product.