

Electric measurement unit : wattmeter, Tree phase energy meter

CPL105

LOREME

• Three-phase or single phase network

Measure U, I, Cos, P, Q, W

• Ethernet Modbus TCP or SNMP link

Embedded web server

6 Modbus TCP connections

Possibility to connect device with internal Bus on DIN rail

• RS485 Modbus RTU link

• 3 output relays

• Display : LCD 2 lines of 16 characters

• Can be use as 3 isolated single phase meters



The CPL105 is primarily designed to measure power and energy in power management applications (management of buildings and workshops, ...), the Ethernet link allows measures supervision while ensuring easy and fast integration into existing networks. The internal bus allows multiple modules focused on Ethernet.

Applications:

- Diagnostic, management and energy optimization.
- Monitoring and analysis of electrical networks.

Measures and display:

- Alternative voltages and currents : (3U, 3V, 3I)
- Active power per phase and total: (3P, ΣP)
- Reactive power per phase and total : (3Q, ΣQ)
- Cos phi "power factor" : (3PF, ΣPF)
- Active and reactive consumed (memorized) ΣW
- Current or voltage imbalance: $\Delta \Sigma U$ en % and $\Delta \Sigma I$ en %

Current measure inputs: (depend of version)

- 3 current inputs (1A or 5A) for external CT.
- 3 500mV inputs for remote low level split core CT, (measuring up to 140 Arms, wire length up to 30 meters)

Voltage measure inputs:

- 3 phases + neutral (max voltage between phase 500 Vrms)

Relays output : (option)

- 3 relays (250V 1A) alarm or energy metering.

Realization :

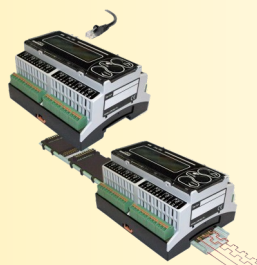
- DIN standard modular housing (6 modules approx. 105mm)
- connection on screw or spring terminal block (max section 2.5 mm²)
- protection rating (housing / terminals): ip20
- Conformal coating.

Front face :

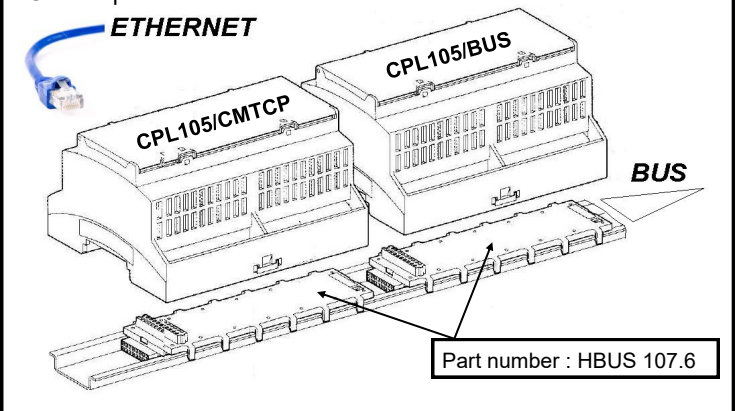
- LCD display with 2 lines of 16 characters (back-lighted) for the measurements display ("display" button).
- Three push buttons to configure the product: Ratio of current transformers, Reset or prepositioning of the energy meter, IP address, mask

Communication:

- Ethernet 10/100 base-T, RJ45
- Modbus TCP, SNMP
- with the possibility of bus link directly onto the DIN rail (Modbus TCP).
- Embedded Web Server for visualization of measures
- Modbus RTU on RS485 (connection on screw terminal)



BUS composition on the DIN rail.



Version and order code:

- CPL105 - 1A : current input for 1A CT.
- CPL105 - 5A : current input for 5A CT.
- CPL105 - Tio : input low level opening CT (500mV).

OPTION :

- /R3 : 3 output relays. (alarm or energy metering)
- /iso : The 3 voltage inputs are isolated from each other. (allows measurement on separate networks)
- Auto : self power from the measured network.

Communication :

- CPL105xxxx/CMTCP : Ethernet MODBUS TCP link
- CPL105xxxx/BUS : Slave version on internal Bus (Modbus TCP)
- CPL105xxxx/SNMP : Ethernet link SNMP protocol
- CPL105xxxx/CM : RS485 MODBUS 9600/19200 bps link (no BUS on the DIN rail in MODBUS or SNMP)

MEASURES INPUTS

TYPE	RANGE
Voltage	0...265Vac (phase / neutral)
Input impedance	> 100 kohms (phase / neutral)
Power consumption	< 0.5 Watt
Current	0...1...5...10A (depends on model)
Input impedance	< 0.05 ohms
Power consumption	< 1 Watt
Overload	25A > 10 seconds
Measurement rate	continuously
Frequency	45 to 65 Hz

METROLOGY

TYPE	RANGE	CONDITIONS
Current	+/- 0.5 %	from 20 to 105% of the I caliber
Voltage	+/- 0.5 %	from 80 à 120% of the U caliber
Cos phi	+/- 0.5%	for power factor > 0.75
Active power	+/- 0.5 %	for the following conditions (u,i cos)
Reactive power	+/- 0.5 %	for the following conditions (u,i cos)
Energy	+/- 0.5%	for the following conditions (u,i cos)

(the precisions are given in percentage of full scales)

Measuring conditions:

frequency : 45...65 Hz, cos phi > 0.75 ; peak factor < 1.5, harmonic 10 max, ambient temperature from 15 to 30°C

Note: non-compliance with the above conditions (caliber underutilization, harmonic distortion, saturated climate conditions, ...) leads to a downgrade of the metrological performances.

COMMUNICATION

Ethernet link 10 /100 Base-T, RJ45 connector
Protocol : Modbus TCP: Port 502 or SNMP, HTTP: Port 80

POWER

80...265Vac-dc ; 2.5VA standard
20...80Vac-dc ; 2.5VA on request

RELAY

Switching power 250Vac / 1A

ENVIRONMENT

Operating temperature -20 to 60 °C
Storage temperature -20 to 85 °C
Relative humidity 85 % not condensed
Weight 300 g
Protection rating IP 20
Dielectric strength 2500 Vrms continuous
Inputs / Power / Communication / Relay

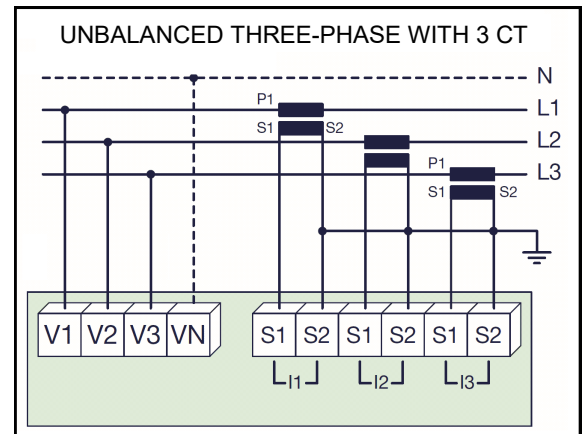
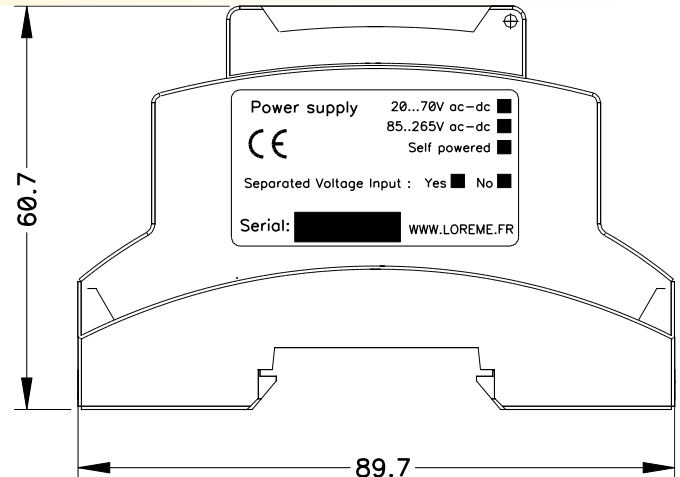
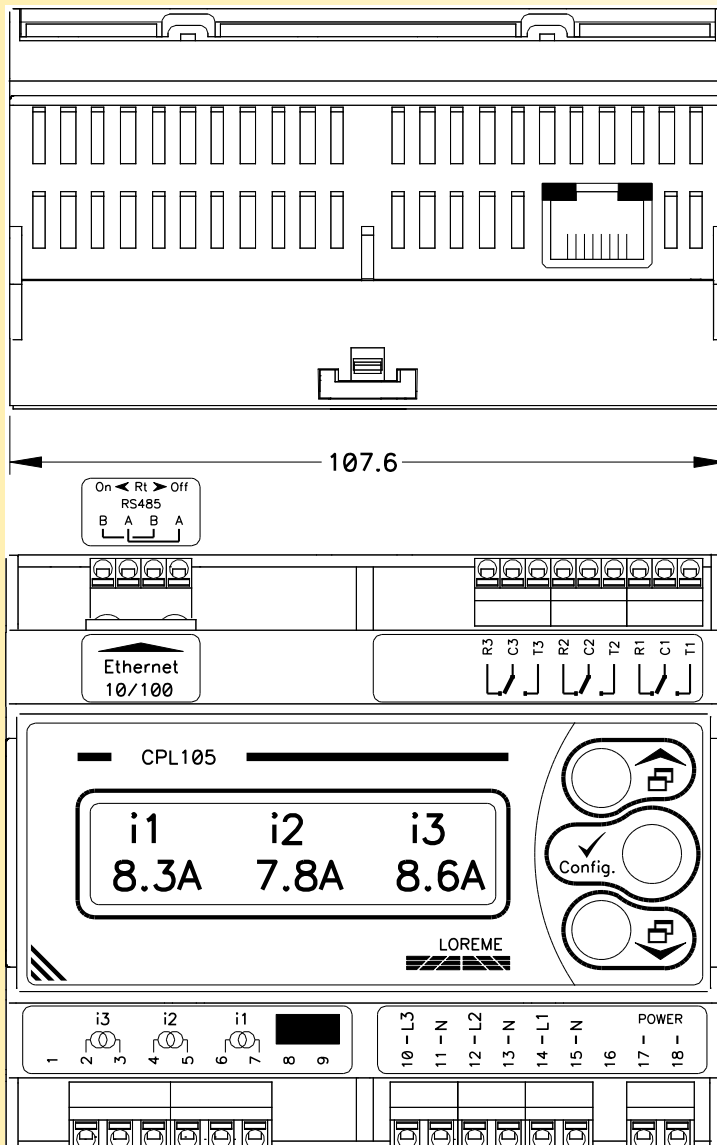
Electromagnetic compatibility 2004/108/CE / Low Voltage Directive 2006/95/EC

Immunity standard for industrial environments
EN 61000-6-2Emission standard for industrial environments
EN 61000-6-4

EN 61000-4-2 ESD	EN 61000-4-8 AC MF
EN 61000-4-3 RF	EN 61000-4-9 pulse MF
EN 61000-4-4 EFT	EN 61000-4-11 AC dips
EN 61000-4-5 CWG	EN 61000-4-12 ring wave
EN 61000-4-6 RF	EN 61000-4-29 DC dips

EN 55011
group 1
class A

WIRING AND OUTLINE DIMENSIONS:



CPL105/iso

10 - L3	11 - N3	12 - L2	13 - N2	14 - L1	15 - N1	16	17 - POWER	18 -
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