Wattmeter, energy counter for three-phases unbalanced network, electrical measure transmitter — *CPL101*

- ***Three phase unbalanced network***

  with or without neutral, frequency range: 40 to 400Hz.

- ***Programmable:***

  function : voltmeter, ammeter, frequency meter,

  wattmeter, varmeter, power factor

- ***Up to 3 isolated analog outputs***

  0...4...20mA , 0...10V , +/- 20mA , +/-10V

- ***1 relay output***

  threshold relay or energy counter

- ***CPL101/C:*** *RS485 link, Modbus option*

- ***CPL101T:*** *Fast version (response time: 100ms)*

The CPL101 is a programmable transmitter designed for electrical network measurement. It cover the whole network wiring configuration met in industrial environment. It's various outputs types, allow to use it as analyser, converter, energy counter or in monitoring or protection.

DESCRIPTION:

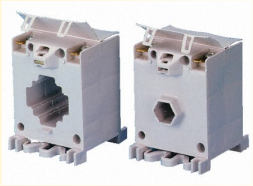
Applications:
- Analysis, measure, control, command, regulation, protection... of electrical network.

Measures:
- alternative current and voltage (RMS) (input range defined at order : 500V, 125V, 5A, 1A)
- consumed and generated active power,
- inductive and capacitive reactive power,
- apparent power,
- power factor (cos φ) inductive - capacitive,
- frequency, 45 to 65 Hz,
- consumed and generated active energy, inductive and capacitive reactive energy, summation, saving,
- configurable current and voltage transformation ratio,
- network type definition on 4 quadrants, consumed, generated, inductive, capacitive.

Outputs:
The device embedded in standard :
- 1 configurable relay:
  in alarm with selection of measure to monitor, direction, threshold and hysteresis of alarm.
  in energy metering with selection of counter and pulse weight.
- 2 symmetric analog outputs:
  measure type (U, I, Hz, cos, P,Q,S) and measure range, output type (Volt, mA) and output range, response time (filter), limitation, ...

Options *(not cumulative)*:
- communication link, RS485 Modbus RTU
- third isolated analog output (the third analog output is not bipolar. Only 0...4...20mA)

Current transformer on request



http://www.loreme.fr/aff_produits.asp?rubid=118&langue=gb

Feature:
- Universal power supply on 2 voltage scale,
- plastic box, DIN rail (symmetrical) or wall mounting,
- connection with screw terminal,
- galvanic isolation inputs / outputs / power supply / relay,
- saving of configuration parameters and energy counter, holding safety > 10 years,
- protection rating (enclosure / terminal blocks) : IP20,
- conformal coating.

Configuration:
The CPL101 is configured via the RS232 link, in terminal mode. (USB - DB9 cable provide separately)

Version and order code: Request a quote

CPL101: 1 relay, 2 analog outputs.

CPL101/C: + Modbus RS485 link.

CPL101T: Fast version (100 ms). 2 analog outputs

CPL101T/S3: Fast version (100 ms) + 3 analog outputs

90 days accuracy (20 °C +/- 2 °C) *DATA SHEET CAN BE DOWNLOADED ON* WWW.LOREME.FR **TECHNICAL SPECIFICATIONS**

INPUT

TYPE	RANGE	ACCURACY
Voltage	500 Vac	+/- 1.5 V
(or on request)		
Voltage	125 Vac	+/- 0.37 V
Input impedance	2 / 0.6 MOhms	
Overload	3 x UN during 3 s	
Measure threshold	2 to 110 % of input range	
power draw	0.125 / 0.026 W	
Current	5 Aac	+/- 15 mA
(or on request)		
Current	1 Aac	+/- 3 mA
Input impedance	0.05 / 0.25 Ohms	
Overload	6 x IN during 3 s	
Measure threshold	2 to 110 % of input range	
power draw	1.25 / 0.25 W	
Frequency	45 to 65 Hz	+/- 0.25 %

METROLOGY

(the accuracy are given in percentage of full input range)

Active power:	+/- 0.6 %
Reactive power:	+/- 1 % (in % of apparent Power)
COS phi:	+/- 0.6 %
Active energy:	+/- 0.6 %
Reactive energy:	+/- 1 %

(conditions: freq. 45 / 65 Hz, cos phi > 0.7, peak factor 1.4, input range U/I 10 to 90 %)

Sampling rate:	3 to 10 per second / network type
Response time:	100 to 300 ms / network type

OUTPUT

TYPE	RANGE	ACCURACY
Current	-20 ... 0 ... 20 mA	+/- 10 µA
Load on S1	610 Ohms	
Load on S2	610 Ohms	
Voltage	-10 ... 0 ... 10 V	+/- 5 mV
External shunt	500 Ohms	

(S3 option don't allows negative outputs signals)

POWER SUPPLY

(to define at order)
20 to 70 Vac / Vdc, 3 VA
80 to 265 Vac / Vdc, 3 VA

RELAYS

Type	1 changeover contact
Switching power	1A / 250 V
energy counting pulse	maxi 5 per second
pulse width	100 ms

RS485

Protocol	Modbus RTU
Baudrate	600 to 38400 bauds
Data format	32 bits floating IEEE, 32 bits integer

ENVIRONMENT

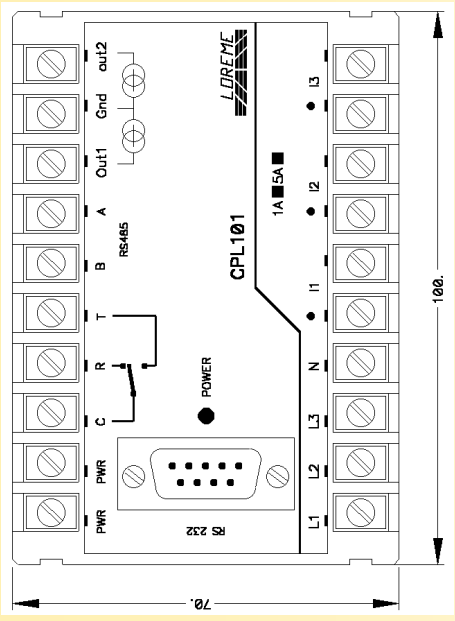
Operating temperature	-10 to 60 °C
Storage temperature	-20 to 85 °C
Thermal drift	< 0.01 % / °C (% of full scale)
Humidity	85 % (not condensed)
Outline dimension	100 x 70 x 113mm
Connection	screw terminal, 4 mm² section
Weight	580 g
Protection rating	IP20
Dielectric strength	1500 Vrms continuous Power supply / Outputs / Contacts 2000 Vrms continuous Inputs/Pwr supply/Outputs/Contacts

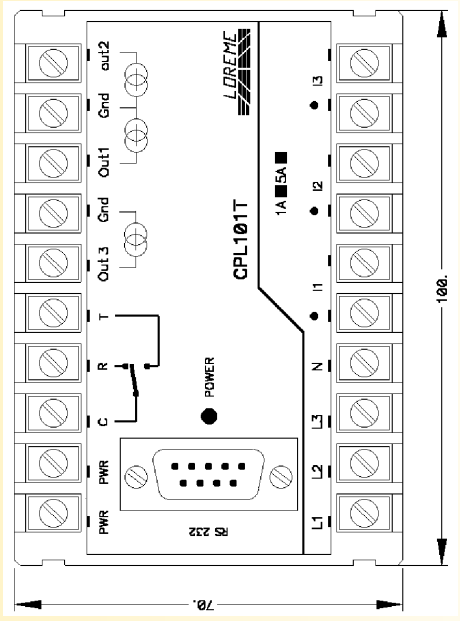
Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

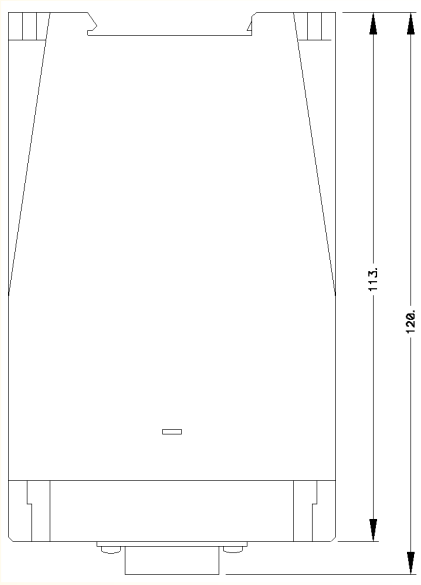
Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	*EN 61000-4-8 AC MF*	*EN 55011* *group 1* *class A*
EN 61000-4-3 RF	*EN 61000-4-9 pulse MF*	
EN 61000-4-4 EFT	*EN 61000-4-11 AC dips*	
EN 61000-4-5 CWG	*EN 61000-4-12 ring wave*	
EN 61000-4-6 RF	*EN 61000-4-29 DC dips*	

CE

WIRING AND OUTLINE DIMENSIONS:







In order to secure their technical features, we recommend a spacing of at least 5 mm between each devices.

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