

Transducer for AC and DC measurement CPL35



- **measure AC + DC: 0...440Hz**
Single-phase, bi-phase, balanced three-phase
with or without neutral
PWM, wave train, phase angle variation,
high level harmonics signals
- **wide variety of sensor for current measurement:**
Shunt, transformer, Rogowski coil,
Hall effect sensor or direct input 1A and 5A
- **Programmable:**
Voltmeter, ammeter, wattmeter, varmeter,
power factor, Cos phi, frequency meter
AC or DC energy counter
- **4 digits measure display:** U, I, Cos, P, Q, Hz
- **Outputs :** 2 analog outputs, 3 relays outputs,
Ethernet link Modbus-TCP and SNMP
- **Wide range ac/dc power supply**



The CPL35 is a converter for measuring, monitoring and retransmission of electrical parameters. Implementation is fast by simple setting of transformer ratio or shunt sensitivity. The various output options allow a wide range of application : measurement, protection, control.

Measurement:

- DC or AC network, single-phase, bi-phase, balanced three-phase (configurable PT, CT ratio or shunt sensitivity),
- Up to 1200V for AC input, and +/- 1800V for DC input
- 3 current input ranges: 250mV (external shunt), 1A or 5A internal shunt
- current by Hall effect sensor (+/-4V nominal input, +/-10V peak)
- Signed active power (P) : consumed / generated
- Reactive power (Q), apparent power (S), active energy
- cos ϕ (power factor) , frequency 1Hz.....440 Hz,
- configurable integration time from 10 ms to 60 seconds for the measurement in waves train applications.

Front face:

- 4 digit alphanumeric LED matrix display for the measurement
- 3 red LEDs for relay status indication
- 2 push buttons for:
The full configuration of device
Selection of displayed value (U, I, Cos, P, Q, S, Hz, kWhrs)
Setting of alarm thresholds, reset of energy counter,

Relays (/R option): Up to 3 configurable relays:

- In alarm on monitoring measure (U, I, Cos, P, Q, S, Hz)
- Threshold, direction, (and window alarms) hysteresis and delay individually adjustable on each relay (activation and deactivation delays), HOLD function (alarm memorization with RESET by front face)
- with the integrator option, the relay can be used to have pulse output for energy counter (configurable pulse weight).

Analog output (/S option):

- 1 or 2 isolated analog outputs, fully configurable:
type and measure range to monitor: U, I, Cos, P, Q, S, Hz,
type and output range (0 ... 10Volt, 0 ... 4 ... 20mA),
bipolar output (+/-10V) with coupling of the two outputs,
Response time (filter), limitation... setting for each outputs.

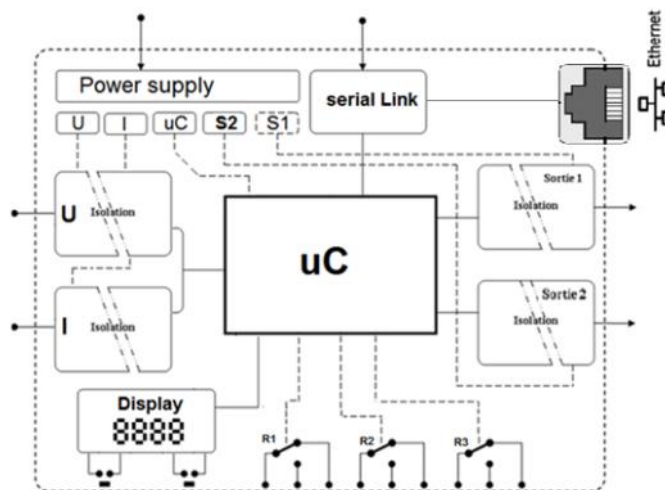
Configuration:

The CPL35 can be configured via the front face or via the RS232 link.
(USB -> 3.5mm jack cable available separately)
- Firmware update is possible via this USB-serial link.

Feature:

- DIN rail mounting (symmetrical), pluggable terminals blocks,
- protection rating: IP20, conformal coating,
- Hinged front face (buttons and serial access),

Synoptic:



Version and order code:

CPL35	1 analog output, 1A / 5A / shunt and voltage inputs		
CPL35/R1	+ 1 electromechanical relay	/RS1	+ 1 static relay
CPL35/R2	+ 2 electromechanical relays	/RS2	+ 2 static relays
CPL35/R3	+ 3 electromechanical relays	/RS3	+ 3 static relays
CPL35/S2	2 analog outputs		
CPL35/CMTCP	Ethernet Modbus TCP link (no analog outputs)		
CPL35/CMTCP-NAV1	Ethernet Modbus TCP link NAVAL GROUP		
CPL35/CM	Modbus RS485 (no analog output)		
CPL35-Rogo	Input for Rogowski coil (40...70Hz). Type: Rogoflex LT (Up to 2000 Arms)		
CPL35-Hall	+ input for Hall effect sensor, supply +/-15V, output 4V		
CPL35i	+ integrator option for Ac and Dc energy counting (in standard for the CMTCP model)		

Note : All options can be combined (except communication and analog outputs).

INPUT

ac Voltage on 2 ranges	150Vac / 600 Vac	+/- 0.3%
dc voltage on 2 ranges	+/- 225Vdc / +/-900Vdc	+/- 0.3%
High voltage	+/-1200Vac / +/-1800Vdc	+/- 0.5%
Input impedance	500Kohms - 4Mohms - 8Mohms	
Overload	3 x full range during 3 s	
Measure Threshold	0.5% of Full Range	
Power consumption	0.12 W	
TRMS ac+dc current on 4 ranges	250mV / 1A / 5 A	+/- 0.3% of F.R
	+/- 4V for Hall effect sensor (+/-15V 50mA sensor supply)	
Input impedance	0.05 ohms: 5A / 0.25 ohms: 1A	
Overload	6 x IN during 3 s	
Measure Threshold	0.5% of F.R	
Power consumption	1.25 W	
Frequency	1Hz...440 Hz	+/- 0.2 %
Other input ranges on request.		
Note: use transformer for higher range.		

METROLOGY

(the accuracies are given in percentage of full scales)

Active or dc power	+ / - 0.5%
Reactive power	+ / - 1% (in % of apparent power)
Cos phi	+ / - 0.5%
(conditions: Freq 45/65 Hz, power factor > 0.7; peak factor 1.4; input U/I 10 to 90%)	
- measures / response time:	
sampling integrator programmable from 10ms to 60s.	

COMMUNICATION

Ethernet (RJ45) 10 / 100 Base T HTTP / Modbus-TCP / SNMP
- Embedded web server measures display

RELAYS

Changeover contact, switching power:
dc: 220VDC, 0.24A, 60W ; 125VDC, 0.24A, 30W ; 30VDC, 2A, 60W
ac: 250VAC, 0.25A, 62.5VA ; 125VAC, 0.5A, 62.5VA
Dielectric strength 3 kV coil/contacts
Mechanical life: 10⁸ operations
Shock resistance: 300G (functional)
max counting rate : 5 pulses / second

ANALOG OUTPUT

TYPE	RANGE	ACCURACY
current S1 and S2:	0 ... 4 ... 20 mA	+/- 20 µA
permissible load:	0.....850 Ohms	
voltage S2 and S2:	0 ... 10 V	+/- 10 mV
output impedance:	500 Ohms (internal 0.1% shunt)	
or 1 bipolar output	-10V ... +10V (coupling of 2 outputs)	

POWER SUPPLY

Universal: (2 versions: not polarized standard or low voltage)
standard: 21Vdc, 55Vac....to.....265Vac/dc, 3VA
low voltage: 12Vdc....to.....30Vdc, 3VA

ENVIRONMENT

Operating temperature	-20 / 60 °C (75°C peak)
Storage temperature	-40 / 85 °C
Drift (% of full scale)	< 0.03 % / °C
Humidity	85 % not condensed
Weight	~ 250 g
Protection rating	IP20
Shock IEC 60068-2-27 (operating)	15 G / 11 ms
Bump IEC 60068-2-29 (transportation)	40 G / 6 ms
Vibration IEC 60068-2-6 (operating)	1 G / 10 - 150 Hz
Vibration CEI 60068-2-6 (transportation)	2 G / 10 - 150 Hz
Dielectric strength (Inputs/Power-Outputs-Relays)	2500 Vrms
MTBF (MIL HDBK 217F)	> 3 000 000 Hrs @ 25°C
Life time	> 200 000 Hrs @ 30°C

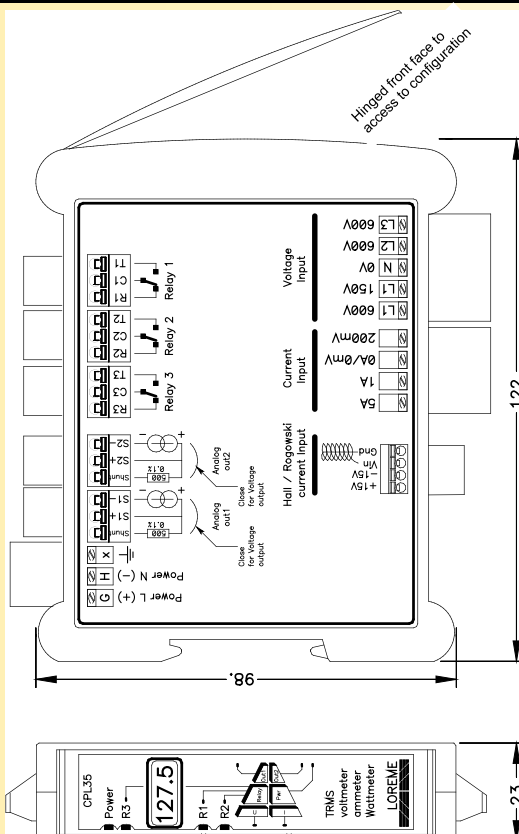
Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

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
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	group 1 class A
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	



WIRING AND OUTLINE DIMENSIONS:

CPL35: up to 2 analog outputs + 3 relays maxi



CPL35/CMTCP: Ethernet link Modbus TCP + 3 relays maxi

