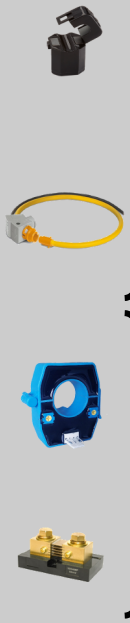
Hardened TRMS converter for AC and DC signals
Wattmeter, Voltmeter, Ammeter,….

CPL36

LOREME

- ***RMS measure AC + DC hardened version:***
  Single-phase or balanced three-phase 0...440 Hz
  with or without neutral
  PWM, wave train,
  Phase angle variation,
  high level harmonics signals
- ***multi-sensor for current measurement:***
  Shunt, Rogowski coil,
  Hall effect sensor
- ***Programmable:***
  Voltmeter, ammeter, wattmeter, varmeter,
  power factor, Cos phi, frequency meter
- ***4 digits measure display***
  U, I, Cos, P, Q, Hz
- ***2 isolated analog outputs and 2 relay outputs***
- ***Wide range universal ac/dc power supply***



AC

DC+AC

The CPL36 is a hardened converter for measuring, monitoring and retransmission of electrical parameters. Implementation is fast by simple configuration of ratio transformer or shunt sensitivity. The various output options allow a wide range of application.

Measurement:
- DC or AC network, single-phase or three-phase with neutral
  (configurable PT and CT ratio or shunt sensitivity),
- 600V voltage input range,
- 3 current input ranges: 250mV (external shunt)
- current by Hall effect sensor (+/-4V nominal input, +/-10V peak)
- active power (P), reactive power (Q), apparent power (S),
- cos φ (power factor) , frequency 1Hz…..440 Hz,
- configurable integration time from 10 ms to 60 seconds for the measurement in slow waves train applications.

Front face:
- 4 digit alphanumeric LED matrix display for the measurement
- 2 red LEDs for relay status indication
- 2 push buttons for:
  * The fully configuration of device
  * Selection of displayed value (U, I, Cos, P, Q, S, Hz)
  * Setting of alarm thresholds, ...

Relays (/R option): Up to 2 configurable relays:
- In alarm with monitoring measure : U, I, Cos, P, Q, S, Hz,
- Threshold, direction, hysteresis and delay individually adjustable on each relay (on & off delay),

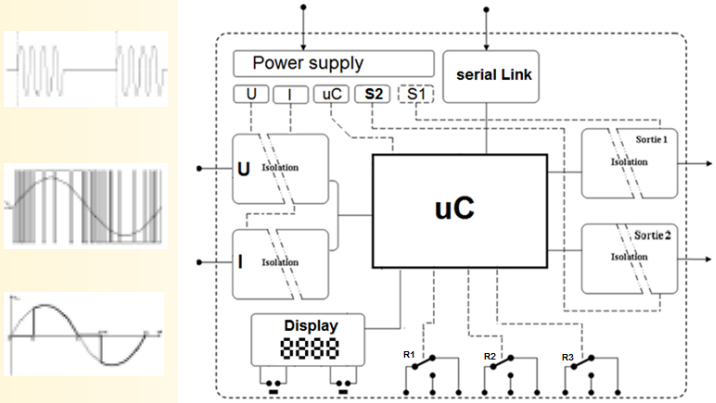
HOLD function (alarm memorization with RESET by front face)

Analog output (/S option):
- up to 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),
  + /-10V output with coupling the two outputs,
  Response time (filter), limitation set … for each outputs.

Configuration:
The CPL36 can be configured via the front face or via the RS232 link. (USB cable -> 3.5 jack available separately)
- Firmware update is possible via this USB-serial link.

Feature:
- 23 mm width case, DIN rail mounting (symmetrical),
- protection rating: IP20,
- pluggable terminals block,
- Hinged front face (buttons and serial access),
- conformal coating,

Synoptic:



Associated current sensors

shunt	current transformer	Hall effect sensor	Rogowski coil

Version and order code:

Request a quote

CPL36-Hall 1 analog output, shunt and voltage inputs
Input for split core Hall effect sensor. Type: HcO

CPL36-Hall/R1 + 1 relay
CPL36-Hall/R2 + 2 relays
CPL36-Hall/S2 2 analog outputs

CPL36-Rogo Input for Rogowski coil.
Type: Rogoflex LT (Up to 2000 Arms)

INPUT

TYPE	RANGE	ACCURACY
ac voltage	600Vac	+/- 0.3% full range
dc voltage	900Vdc	+/- 0.3% full range
Input impedance	2Mohms	
Overload	3 x full range during 3 s	
Measure Threshold	0.5% of full range	
Power consumption	0.12 W	
TRMS ac+dc current	250mV +/- 0.3% full range +/- 10Vmax for Hall effect sensor (+/-15V sensor supply)	
Overload	6 x I_N during 3 s	
Measure Threshold	0.5% of full range	
Frequency	1Hz….440 Hz	+/- 0.2 %

Other input ranges on request.
Note: use transformer for higher range in AC.

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%

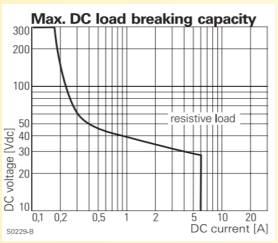
(conditions: Freq 45/65 Hz, power factor> 0.7, peak factor 1.4; input range U / I 10 to 90%)
measures / response time:
sampling integrator programmable from 10ms to 60s.

RELAYS

Changeover contact
AC switching power:
6Aac, 250Vac / 440Vac / 1500VA

DC switching power:
(see adjacent graph)---------->

Open contact isolation: 1000Vac



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 shunt 0.1%)	
or 1 bipolar output	-10V … +10V (2 outputs coupling)	

POWER SUPPLY

Universal: (2 not polarized versions: 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 and power station EN 61000-6-2 / EN 61000-6-5		Emission standard for industrial environments EN 61000-6-4	
EN 61000-4-2 ESD	*EN 61000-4-8 AC MF*	*EN 55011*	CE
EN 61000-4-3 RF	*EN 61000-4-9 pulse MF*		
EN 61000-4-4 EFT	*EN 61000-4-11 AC dips*	*group 1*	
EN 61000-4-5 CWG	*EN 61000-4-12 ring wave*	*class A*	
EN 61000-4-6 RF	*EN 61000-4-29 DC dips*		

WIRING AND OUTLINE DIMENSIONS: