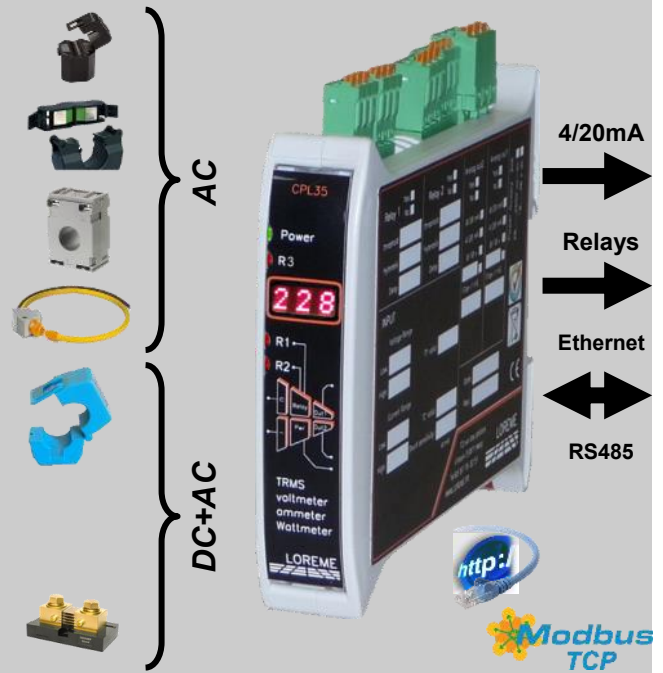


# Transducer for TRMS AC and DC measurement Wattmeter, Voltmeter, Ammeter,....

- **RMS 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.

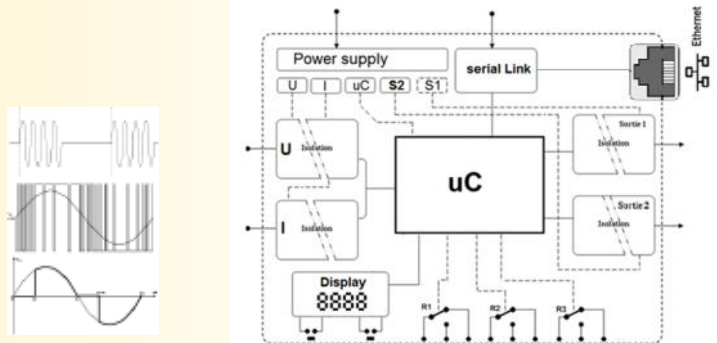
### Configuration:

- 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:



### Associated current sensors



### Version and order code:

[Request a quote](#)

<b>CPL35</b>	1 analog output, 1A / 5A / shunt and voltage inputs
<b>CPL35/R1</b>	+ 1 electromechanical relay /RS1 + 1 static relay
<b>CPL35/R2</b>	+ 2 electromechanical relays /RS2 + 2 static relays
<b>CPL35/R3</b>	+ 3 electromechanical relays /RS3 + 3 static relays
<b>CPL35/S2</b>	2 analog outputs
<b>CPL35/CMTCP</b>	Ethernet Modbus TCP link (no analog outputs)
<b>CPL35/CMTCP-NAV1</b>	Ethernet Modbus TCP link NAVAL GROUP
<b>CPL35/CM</b>	Modbus RS485 (no analog output)
<b>CPL35-Rogo</b>	Input for Rogowski coil (40...70Hz). Type: Rogoflex LT (Up to 2000 Arms)
<b>CPL35-Hall</b>	+ input for Hall effect sensor, supply +/-15V, output 4V
<b>CPL35i</b>	+ 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 250mV / 1A / 5 A +/- 0.3% of F.R  
 on 4 ranges +/- 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: 10<sup>8</sup> operations  
 Shock resistance: 300G (functional)  
 max counting rate : 5 pulses / second

**ANALOG OUTPUT**

TYPE	RANGE	ACCURACY
<b>current</b> S1 and S2:	0 ... 4 ... 20 mA	+/- 20 µA
permissible load:	0.....850 Ohms	
<b>voltage</b> 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

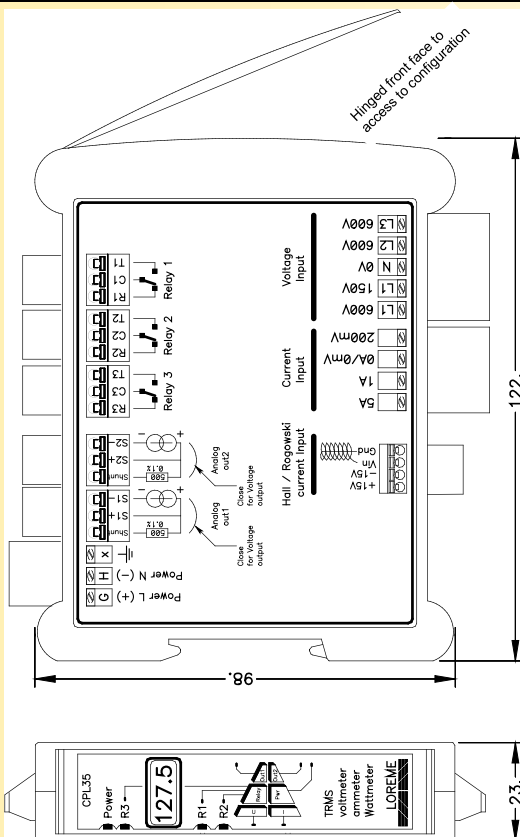
**Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE**

Immunity standard for industrial environments <b>EN 61000-6-2</b>		Emission standard for industrial environments <b>EN 61000-6-4</b>
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	

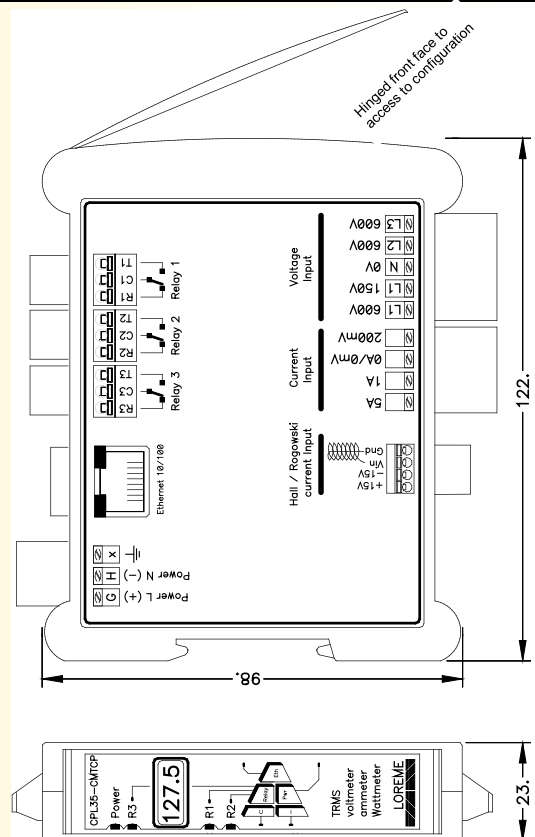


**WIRING AND OUTLINE DIMENSIONS:**

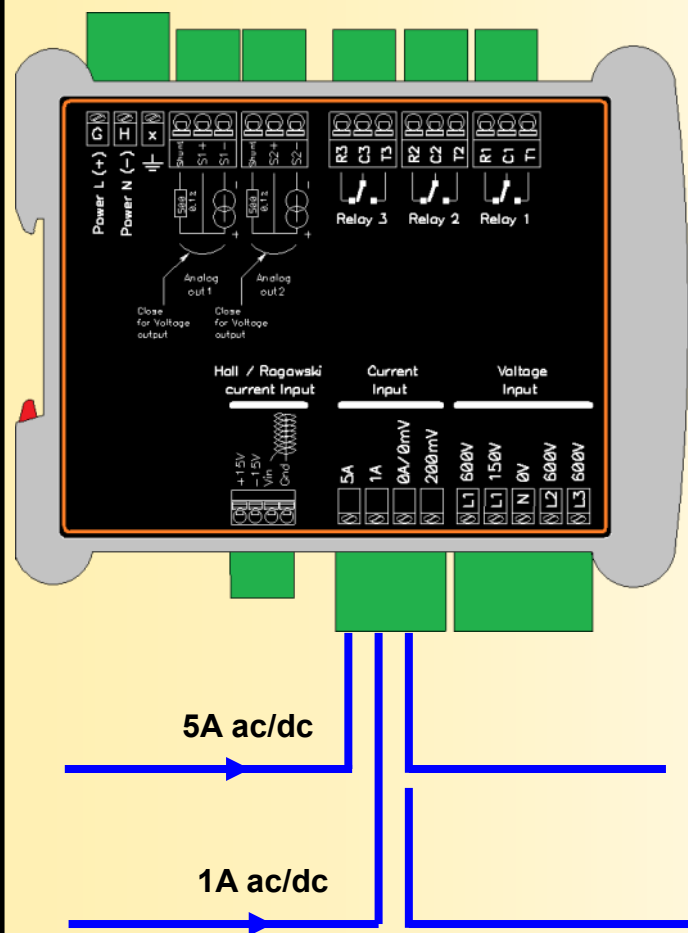
**CPL35: up to 2 analog outputs + 3 relays maxi**



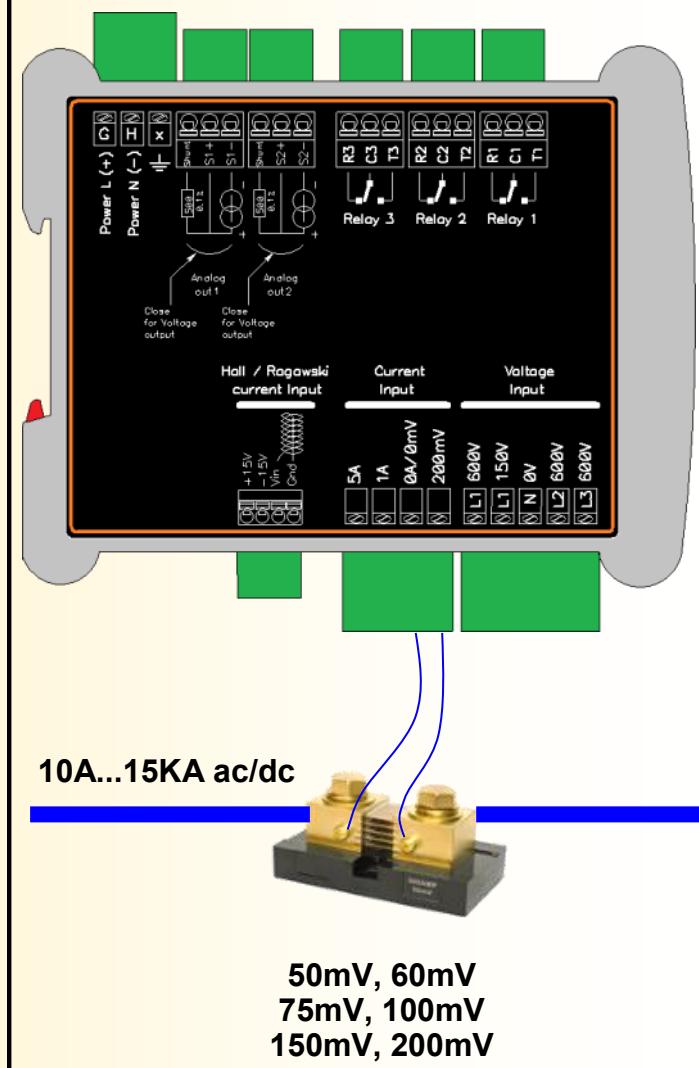
**CPL35/CMTCP: Ethernet link Modbus TCP + 3 relays maxi**



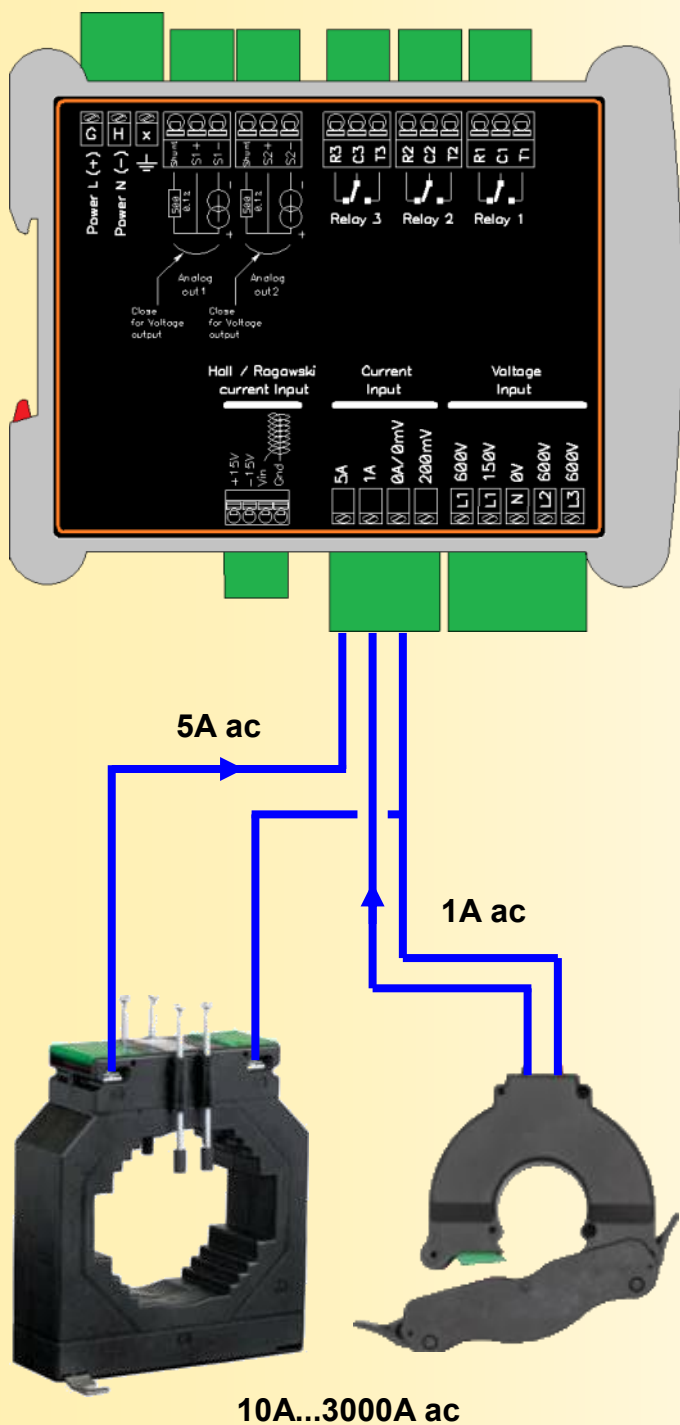
Direct current input  
1A or 5A AC or DC input range



AC or DC current input  
on external shunt



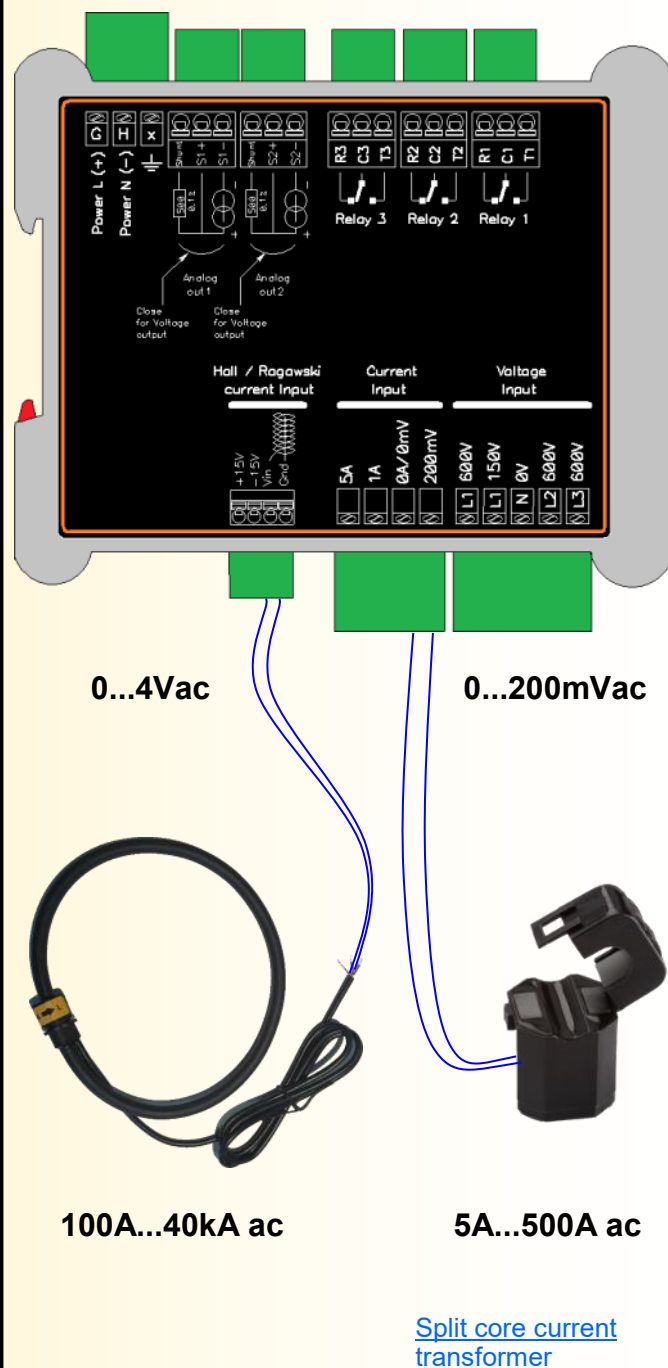
AC Input with current transformers  
1A or 5A range



[Current transformer](#)

[Split core current transformer](#)

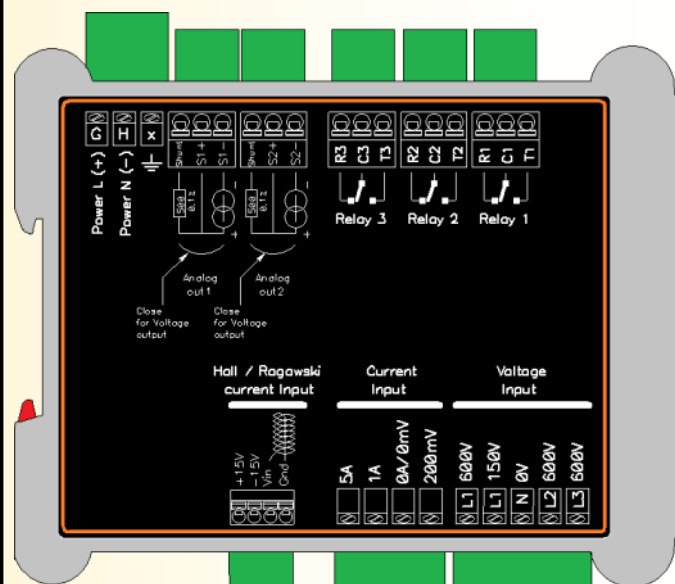
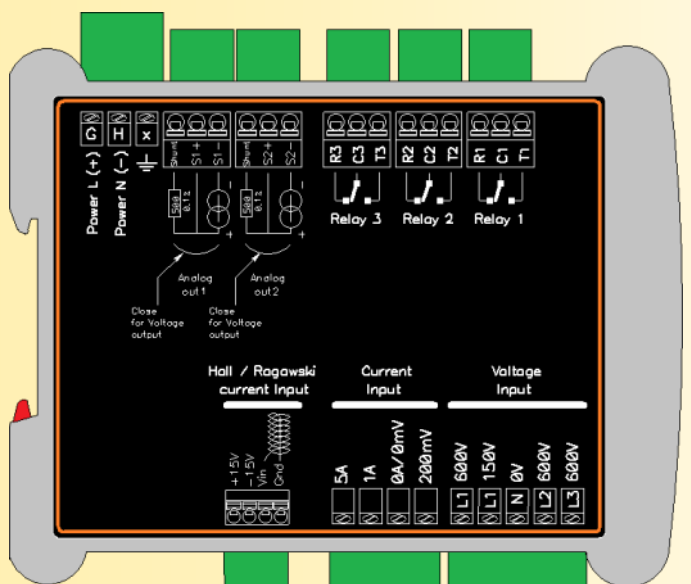
AC Input with Rogowski coil or  
mV output miniature current transformer





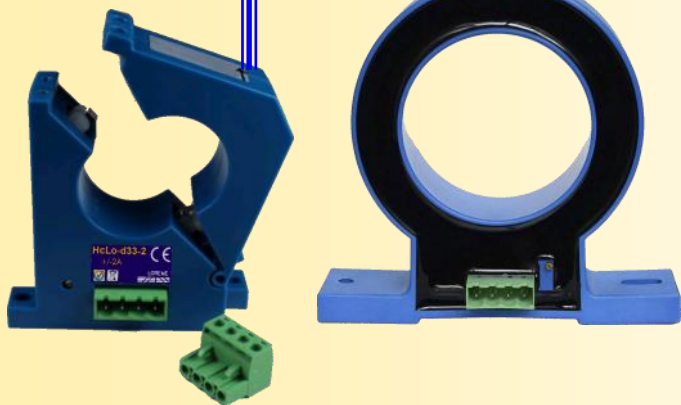
AC or DC input with Hall effect current sensors for leakage current

AC or DC input with Hall effect current sensor for high current



Signal 4V ac/dc and +/-15V sensor power supply

Signal 4V ac/dc and +/-15V sensor power supply



40...2400 mAdc

DC Leakage current sensor

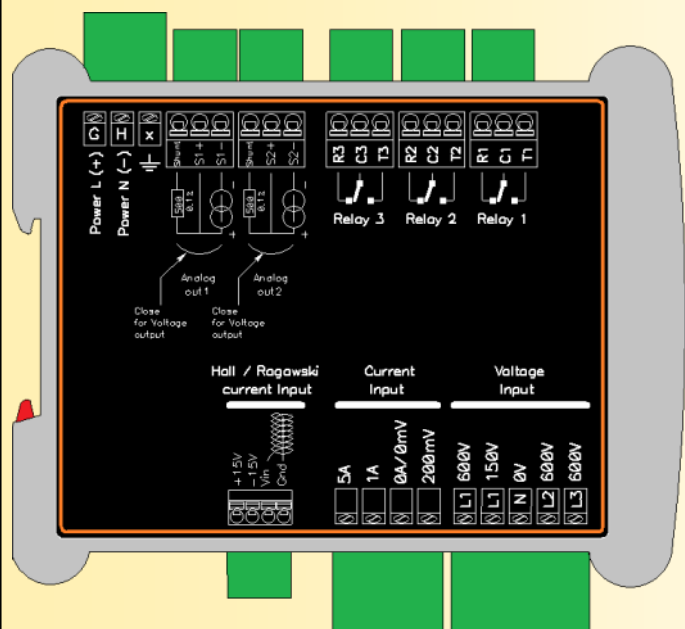
10...100 mA ac/dc

AC and DC leakage current sensor

50...20KA ac/dc

Current sensor for AC and DC currents

Input with core balance current transformer for AC leakage current



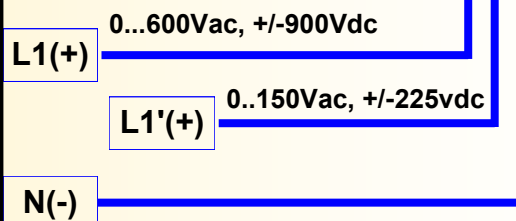
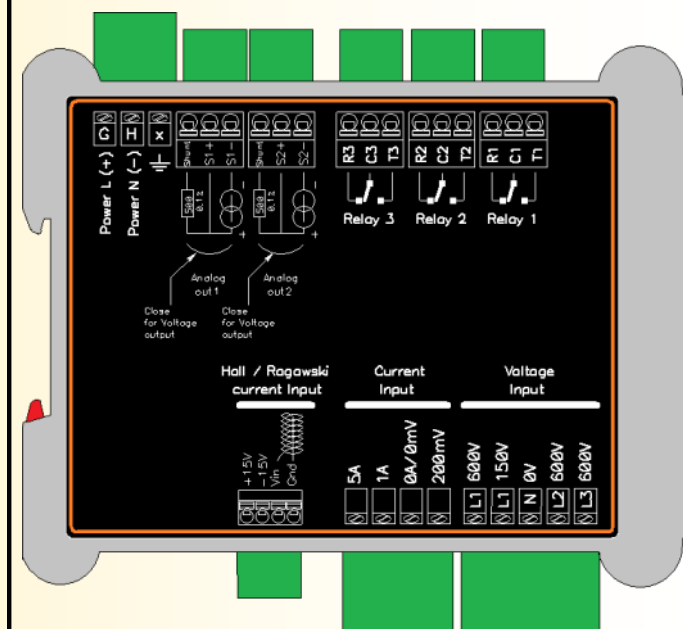
200mVac



30...600 mA ac

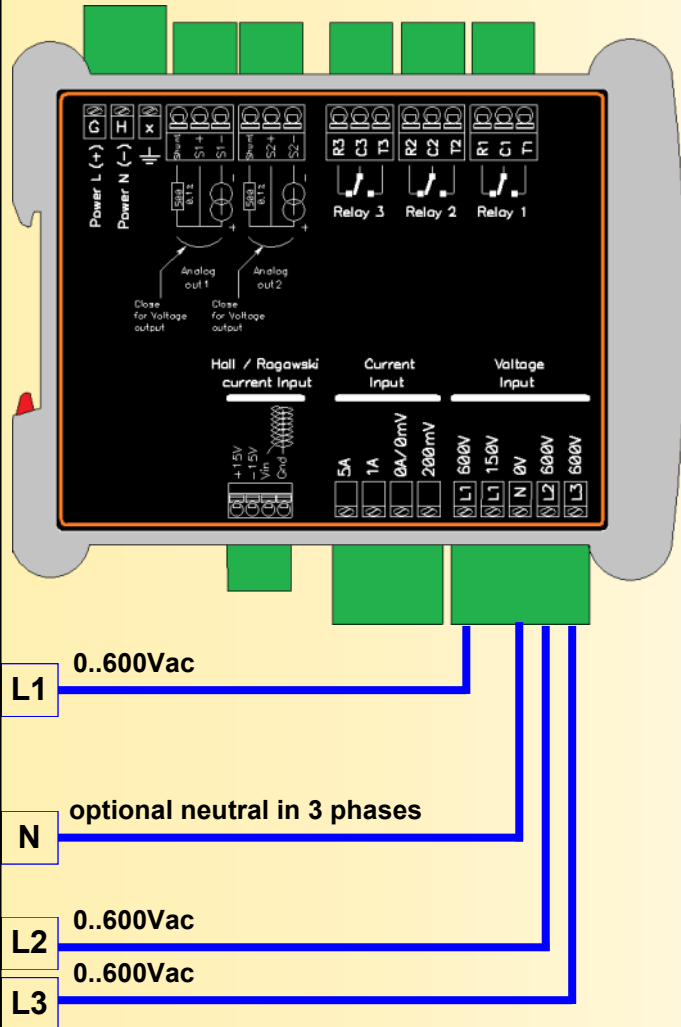
Core balance current transformer

Wiring of voltage inputs for single phase or DC



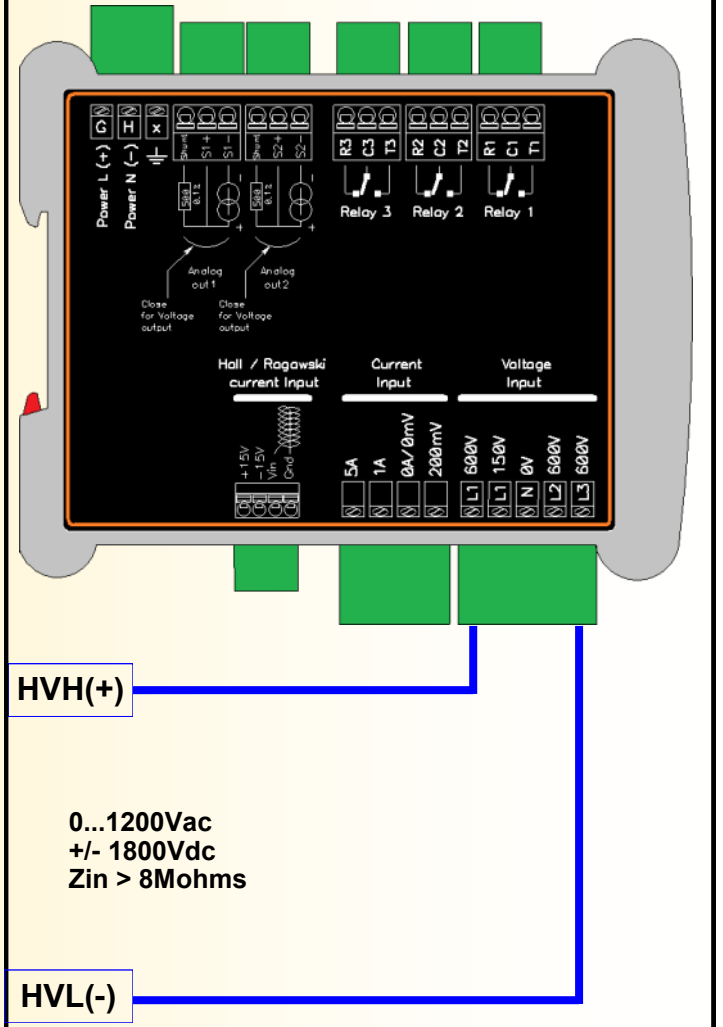
Voltage measurement.  
Direct or alternating,  
single-phase or bi-phases

Wiring of voltage inputs in three-phases



Voltage measurement, Three-phase with or without neutral

Wiring of High voltage inputs DC or AC voltage



High voltage measurement. DC, AC, single phase or bi-phases