# ELECTRICAL NETWORK ANALYZER

## Single or 3-phase balanced/unbalanced 3 or 4 wire networks

# PECA 21

### Type

The **PECA analyzers** are especially designed for the measurement, the control and the display of all the parameters from AC electrical networks: voltage, current, power, energy, frequency, …

Easy programming, accessible on front face or by PC via the software SlimSET.

### Display

Graphical rear-lit LCD screen

Display of the energies on 9 digits with automatic switching to the upper unit.




### Environment

Operating temperature: -10°C to +55°C.

Storage temperature: -25°C to +70°C.

CE marking (89/336 rev.92/31).

### Functions

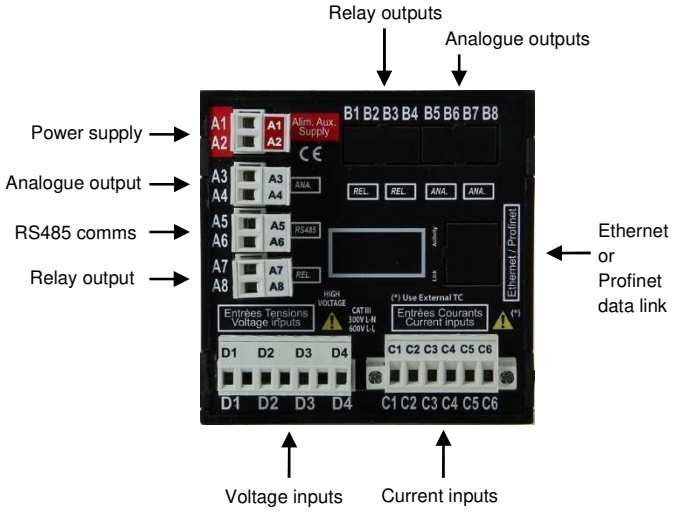
**Measurement in true RMS values TRMS**

- Universal, more than 35 measured parameters
- They accept as input by programming:
  Current: 1A and 5A AC
  Voltage: 100, 190, 440 and 600 V AC
- RS485 Modbus/Jbus output
- **Quick cycle time: 20 ms** (50Hz)
- Universal power supply

### Options

- Ethernet Modbus/TCP output + embarked web server
- Harmonics analysis up to rank 50
- 1 to 3 isolated analogue outputs +/- 20 mA
- 1 to 3 relay outputs, programmable either as alarm output or as energy pulses.
- Profinet output
  2 analogue outputs and 2 relay outputs only.
- Profibus output
  1 analogue output and 2 relay outputs only.

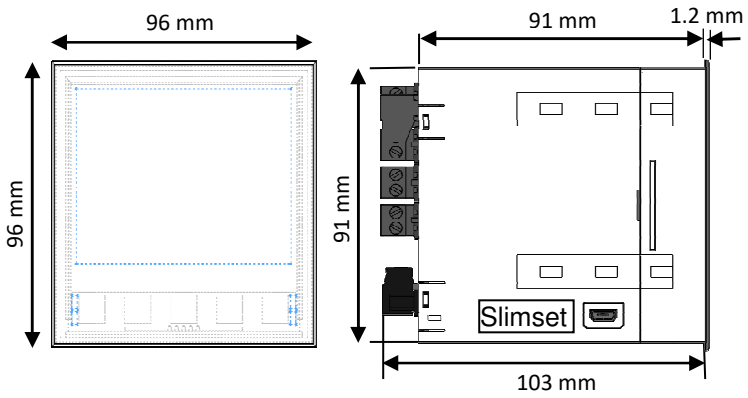
## External features




**Protection**: housing / terminals IP20 – Front face IP65

**Connectors**: removable terminal blocks on the rear face for screwed connectings (2,5mm², flexible or rigid)

## Dimensions




**Housing**: 96 x 96 x 103 mm (with terminals)
Self-extinguishing case of black UL94 V0 ABS

**Mounting**: on panel, cut out 91 x 91 mm

**Tightening**: with 4 screwable pads

**Weight**: 400 g

ARDETEM
69510 SOUCIEU EN JARREST – France – Tél. 33 (0)4 72 31 31 30 – Fax. 33 (0)4 72 31 31 31 - CA IN/66

# Technical features

## ▶Inputs

- **Voltage** — 4 programmable ranges:
  Un = 60V L-N/100V L-L, 110V L-N/190V L-L
  250V L-N/440V L-L, 350V L-N/600V L-L
- **Current** — 2 programmable ranges: 1 and 5 A

*Measurable overrange:* 1.2 In, 1.2 Un

| | |
|---|---|
| *Overloads* | permanent: 750 V, 2 In<br>during 10 s: 1000 V, 10 In |
| *Power consumptions* | voltage input: 1.5 MΩ resistances<br>current input : < 0.2 VA (CT integrated) |
| *Test voltage* | 3 Kv / 50 Hz / 1 min. |
| *Frequency* | 10…50…65 Hz (other frequencies: consult with us) |

## ▶Outputs

- **RS485 output**

| | |
|---|---|
| *Type* | 2-wire with galvanic isolation |
| *Baud rate* | 4800 / 9600 / 19200 bauds |
| *Protocole* | Modbus / Jbus RTU 8 bits parity programmable |
| *Format of the data* | Integer 16 bits (table of the units) or 32 bits dec.point and units fixed |

- **Relay outputs (option R, 2R or 3R) ***

| | |
|---|---|
| *Type of contact* | on pot. free contact (galvanic isolation 3 kV) output 1 make |
| *Rated load* | 5 A – 250 VAC |

- either **SETPOINTS OUTPUT**

Setting of the setpoints and hysteresis : 0 to 100% of the measure range
Time delay : 0 to 999,9 s (programmable)

- or **PULSES OUTPUT**

Count rate : 4 / 2 / 1 pulses per second according to the programmed width
Width of the pulses : 100 / 200 / 400 ms (programmable)

- **Analogue outputs (option A, 2A or 3A) ***

| | |
|---|---|
| *Galvanic isolation* | 1 kV between outputs |
| *Output signal* | programmable from -22 to +22 mA |
| *Scale setting* | 0 to 100% of the measure range (programmable) |
| *Admissible load* | up to 500 Ω (20 mA) |
| *Accuracy of the board* | < 0.1% of the full scale |
| *Max. residual ripple* | < 25 mV (peak to peak) on 500Ω load |
| *Response time* | 60 to 80 ms (input/output) |
| *Thermal drifts* | < 100 ppm / °C |

- **Ethernet output (option F)**

Modbus/TCP data link + embarked web server
Female RJ45 footing

- **Profinet output (option PN)**

Female RJ45 footing
* 2 analogue outputs and 2 relay outputs only for the option Profinet.

- **Profibus output (option PB)**

Male DB9 footing
* 1 analogue output and 2 relay outputs only for the option Profibus.

- **Harmonics analysis (option H)**

Display of the voltage and current harmonics of the 3 phases up to rank 50.
Retransmission possible in Modbus.

## ▶Supply

- **Universal power supply** 20 to 250 VAC / 21.5 to 250 VDC

*Power draw* 11 VA max. in AC, 6 W max. in DC

## ▶Measure

- **35 measurable parameters**

| | |
|---|---|
| *Acccuracy rating* | Voltages, currents: class 0.2 (IEC688-1)<br>Powers: class 0.5 (IEC688-1)<br>Active energy: class 1 (IEC62053-21)<br>Reactive energy: class 1 (IEC62053-23) |
| *Measuring method* | Fast simultaneous sampling of the 3 voltages and the 3 currents.<br>Digital calculation on 32 bits.<br>TRMS measurement of deformed signals up to harmonic 50 |
| *Digital filtering* | Programmable on several levels |
| *Energies* | Saved<br>Display on 9 digits |
| *Cycle time* | 20 ms (for all network types) |

## ▶Connectings

With detailed manual, delivered with the instrument.

# Coding

**Types:**

**PECA 21** 3U, 3V, 3 I, cos φ, cos φ/phase, F, P, Q, S, P/phase, Q/phase, leak current, E active, inductive and capacitive

**Options**

| | | | |
|---|---|---|---|
| **A** | 1 analog output | **H** | harmonics analysis |
| **R** | 1 relay output | **F** | Ethernet output |
| **2A2R** | 2 analog outputs + 2 relays | **PN** | Profinet output |
| **3A3R** | 3 analog outputs + 3 relays | **PB** | Profibus output |

*Order example :*

For a PECA21 with 3 analogue outputs and 3 relay outputs (setpoint or pulses) request the reference: **PECA21 3A3R**

For a PECA21 with Ethernet output, 1 relay output with the option harmonics analysis request the reference: **PECA21 FRH**

*This appliance is dedicated to industrial applications. It must be installed in an electrical cabinet, or equivalent.*

**Your representative**


ARDETEM®

Route de Brindas
Parc d'activités d'Arbora N°2
69510 SOUCIEU EN JARREST
FRANCE

E-mail : info@ardetem.com
www.ardetem-sfere.com

Tél : 33 (0)4 72 31 31 30
Fax : 33 (0)4 72 31 31 31


ARDETEM – CA IN66 - E 09/25 – Any data in this documentation may be modified without prior notice.