PECA 3001

Analyseur de signaux alternatifs
Signal Analyser for Electrical Networks

Tout type de réseau : monophasé, triphasé équilibré avec ou sans neutre
All types of network: single phase, 3-phase balanced, unbalanced, with or without neutral

♦ **MESURES EFFICACES VRAIES**   *TRUE RMS*

**Tensions, courants, puissances,   Voltage, current, power,
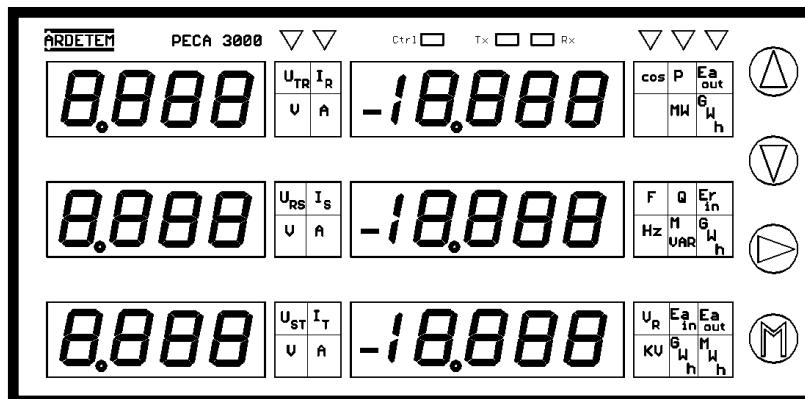énergies, fréquence, cosinus...   energies, frequency, cosinus...**

PECA 3001

Signal Analyser for Electrical Networks

All types of networks :
Single phase, 3-phase balanced, unbalanced, with or without neutral

- ◆ **True RMS**
- ◆ **Simultaneous display of 3 measured parameters**
- ◆ **15 parameters displayed as 5 pages**
- ◆ **Indication on the front panel of the 15 measured parameters and units**
- ◆ **Housing 192 x 96 mm**
- ◆ **Display with 15mm extra bright digit**

voltages, currents, powers, energies, frequency, cos φ, etc. ...

PECA 3001

Signal Analyser for Electrical Networks

DESCRIPTION

The ARDETEM PECA 3001 analyser is designed to measure, monitor and control all the parameters in an electrical network.

The analyser consists of a compact housing for mounting on a panel, which includes the following functions :

■ **Digital indication by pages of 6 measured parameters**
■ **Relay outputs**
■ **Analogue outputs**
■ **Pulse outputs**
■ **RS485 and RS422 digital output, protocol Modbus-Jbus**
■ **Analogue Inputs**
■ **Logic inputs**
■ **Data storage with real timekeeping**
■ **Harmonics analysis**

According to chosen options.

The PECA 3001 analyser's front panel comprises six 15mm **extra bright digital indicators.**
A scroll system provides a 5 pages display.

Display of **15 parameters** to choose among a list of 90.
The units are displayed on the front panel for all parameters.

This equipment can be used on **all types of networks** :

■ Single phase
■ 3-phase balanced, with or without neutral
■ 3-phase unbalanced, with neutral
■ 3-phase unbalanced, without neutral, with or without current leak
■ With or without current measuring transformer, and voltage measuring transformer.

The device is **fully programmable** by means of the front panel keys.
An easy programming, with complete setting display possibility.
A detailed instruction leaflet is provided.

Identification labels corresponding to the standard variables and their respective units are provided, along with blank labels.
Every data programmed by the operator is stored in a non-volatile memory and thus saved in case of auxiliary power supply failure.

ADVANTAGES

■ Compact
■ Multi-purpose, adapts to all types of network
■ Fully programmable display of 5 pages comprising 6 measured parameters each
■ High brightness
■ 4-quadrant power measurement
■ True RMS measure value with an accuracy of 0,5 (0,2 as option)
■ Programmable digital filters
■ Security codes
■ RS 485/422 serial interface, Modbus-Jbus
■ Relay, analogue, pulses outputs in option
■ Analogue inputs, logic inputs in option

■ Universal switch mode power supply

PECA 3001

Technical data

Case	polycarbonate black
Format	96 x 192 , DIN 43700 standard
Mounting	panel-mounted - requires 92 x 186 cut-out
Tightening	by tie rods
Protection	IP 20 for housing - IP 40 frontal protection
Connection	on rear face, 2,5mm^2 capacity (for I) screw in terminals
Indicators	3 x +/- 20 000 count indicators, extra bright digits, 15mm high
	3 x 10 000 count indicators, extra bright digits, 15mm high
Parameters indication	labelled, protected by the front panel
Programming	by means of keys on front panel, detailed instructions provided

Electrical data

Auxiliary power supply

Voltage	version High Voltage : 90 to 270 Vac or 88 to 350 Vdc
	version Low Voltage : 20 to 53 Vac or 20 to 75 Vdc
Power consumption	25VA max in ac, 12W max in dc

Inputs

Voltage	2 programmable ranges Un = 150 or 500 Vac
Current	In = 1 A or 5 A to be specified on order
Measurable inputs	1.5 In ; 1.2 Un
Overloads	continuous : 750 V, 2 In ; during 10s : 1000 V, 10 In
Power consumption	voltage inputs impedance 1 Mohms , current input : < 0,2 VA
Voltage insulation	2 KV , 50 HZ / 1 min
Frequency	50 / 60 Hz, other frequencies on request
Network types	single phase, 3-phase balanced or unbalanced with or without neutral

Measurement

Parameters number	90
Accuracy	0,5 for U, I & P (0,2 on request) 1 for energies (0,5 on request)
Measurement method	rapid & simultaneous sampling of the 3 voltages & the 3 currents
	digital computation on 32 bits
Display refreshing	twice per seconds
Digital filtering	5 programmable integration levels
Energies	stored every 5 min, reading on 8 digits
Cycle time	325ms for a 3-phase unbalanced network
	180ms for a 3-phase balanced network

Test and operating conditions

Operating temperature	0 to +55 °C conform IEC60068-2-1 and IEC60068-2-2
Storage temperature	-25 to +70 °C conform IEC60068-2-1 and IEC60068-2-2
Relative humidity	40°C and 93% without condensation during 10days : IEC60068-2-30
Vibrations	1,5mm or 2g from 10 to 150Hz conform IEC60068-2-6
Reference standards	IEC 61000-4-2 : level 3 or 6KV on contact, 8KV in the air
	IEC 61000-4-3 : level 3 or 10V/m from 80MHz to 1GHz with
	amplitude modulation from 1KHz to 80%
	IEC 61000-4-4 : supply level 4 (4KV),
	inputs/outputs level 4
	IEC 61000-4-6 : 10Veff from 150KHz to 80MHz
	amplitude modulation 1KHz at 80%
Generic standards	immunity: IEC 61000-6-2 rejections : 61000-6-4
	Test standard : EN 55011 class A
	Conform with European Directive 89/336 rev. 92/31 CE marking

PECA 3001

Options possibility :

The PECA3001 is fitted with all the following items :
♦ 1 serial interface RS 485-422 protocol Modbus-Jbus
♦ 1 insulated logic input (or more on request, affectation to be specified on order) (option)
♦ Harmonics analysis (option)
♦ Data storage with real timekeeping option, with software (option)
♦ 3 option boards to choose from the following list : (option)

OPTION BOARDS LIST
■ **3 analogue inputs**

Input signal	:	0/20mA - 4/20mA - 0/10V (to be specified on order)
Input impedance	:	50 ohms for current input - 1 Mohms for voltage input
Resolution	:	10 bits
Scale factor	:	programmable

■ **3 relay outputs**

Type of contact	:	2 SPDT – 1 SPST
Contact rating	:	5A - 250V Ac
Threshold setting	:	0 to 100% of the measurement scale by programming
Switching hysteresis	:	0 to 200% of the threshold by programming
Delay	:	0 to 25s by programming

■ **3 pulse outputs**

Output type	:	on dry contact
Count rate	:	0 to 10 pulses per second
Pulse width	:	50 - 100 - 250 ms by programming

■ **3 analogue outputs**

Galvanic insulation	:	three outputs, insulated from each other up to 500 V
Output signal	:	programmable : -20/20mA -10/10mA -5/5mA 0/5mA 0/10mA 0/20mA 4/20mA
Scale setting	:	0 to 100% of the measurement range by programming
Permissible load	:	up to 600 ohms (20mA)
Board resolution	:	5000 points
Board accuracy	:	<0,1% of -20/20mA full scale value (according to the display)
Residual load	:	+/-2,5mV on a 50 ohms load
Response time	:	30ms

■ **3 analogue outputs and 2 relays**
3 analogue outputs + 2 relays on the same board

Contacts type	:	2 SPST
Contact rating	:	2A - 125VAc
Threshold setting	:	0 to 100% of the measurement range by programming
Switching hysteresis	:	0 to 200% of the threshold by programming
Delay	:	0 to 25s by programming

■ **3 analogue outputs and 2 pulse ouputs**
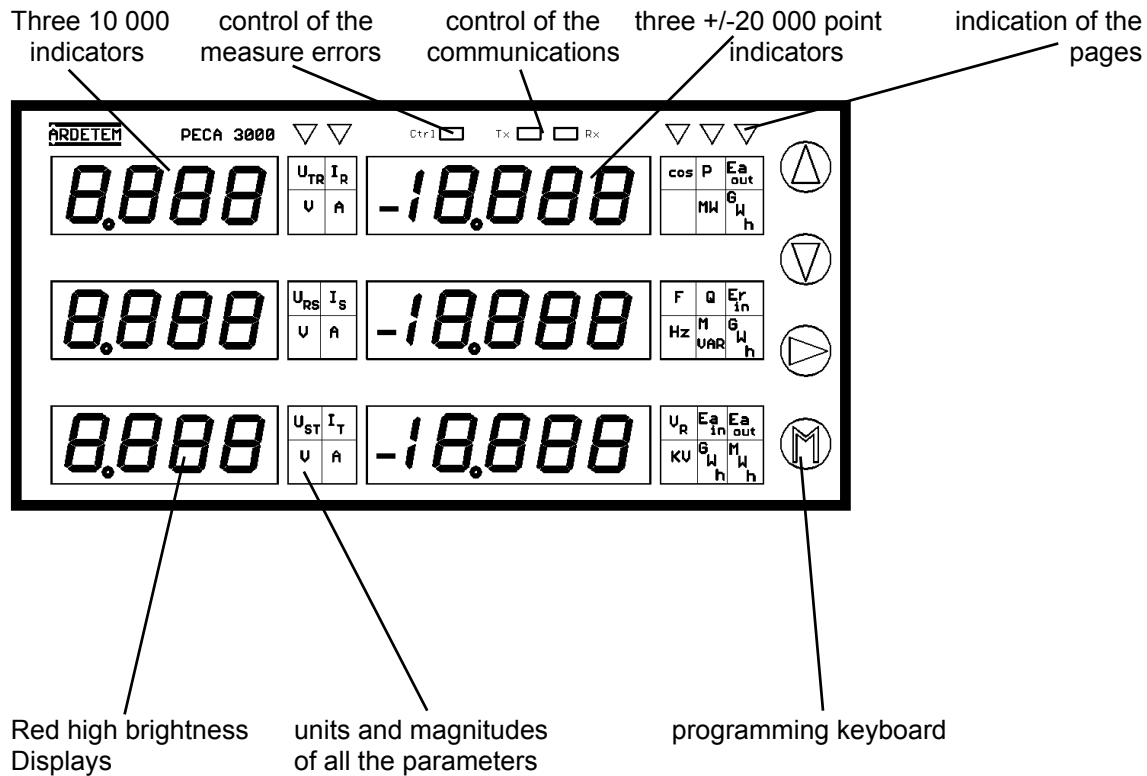3 analogue outputs + 2 pulse outputs on the same board

Outputs type	:	on dry contact
Count rate	:	0 to 10 pulses per second
Pulse width	:	50 - 100 - 250 ms by programming

■ **4 Logic inputs**

Input signal	:	0 / 24 V others on request
Input impedance	:	3,3kΩ / galvanic partition at 500v between the 4 inputs

PECA 3001

PECA 3001 LAYOUT

Three 10 000 indicators   control of the measure errors   control of the communications   three +/-20 000 point indicators   indication of the pages

Red high brightness Displays   units and magnitudes of all the parameters   programming keyboard
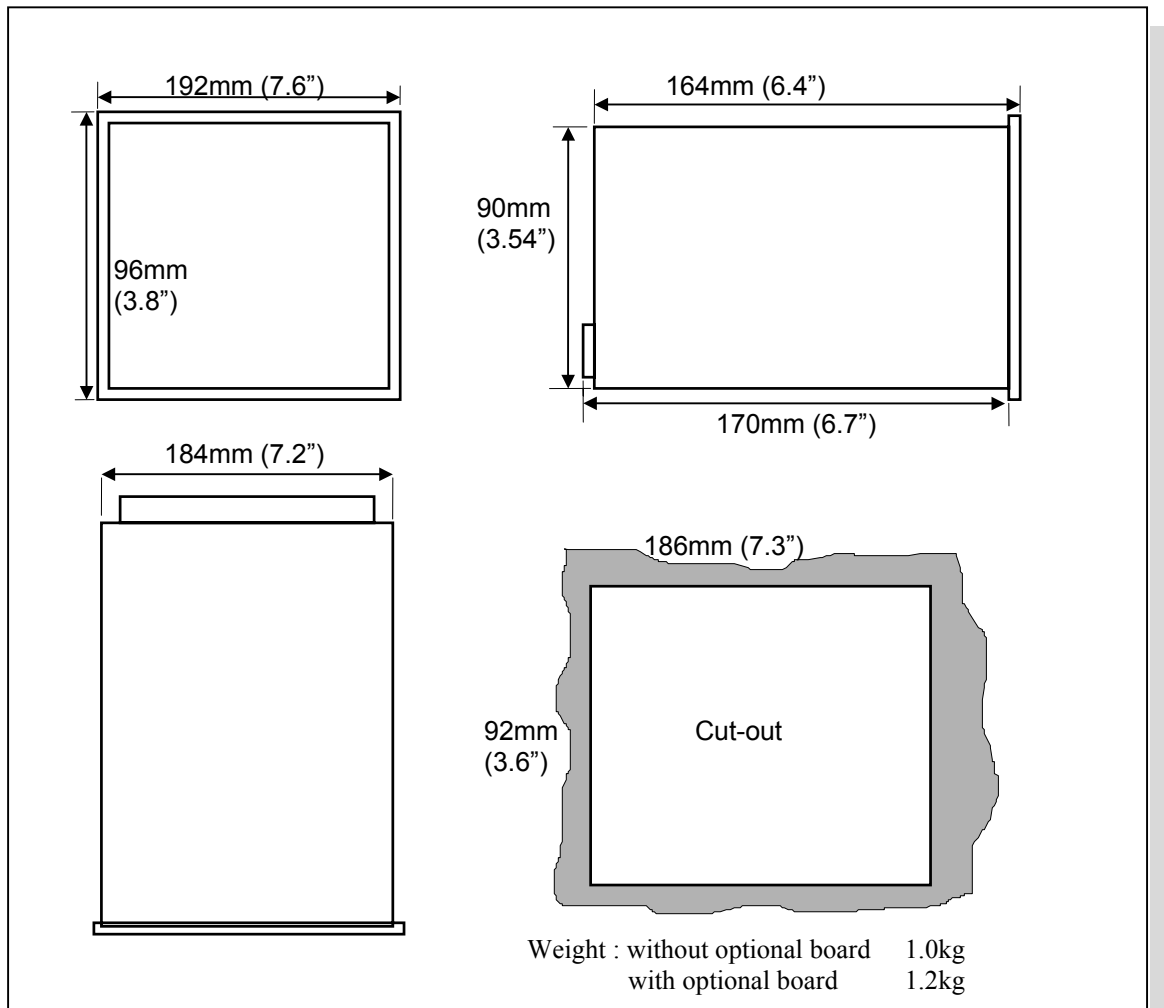
Programmable parameters

- ◆ RMS mesh and simple voltage
- ◆ RMS line currents
- ◆ Neutral leak current
- ◆ Equivalent total power factor (cos)
- ◆ Frequency
- ◆ Impedance
- ◆ Total active power
- ◆ Total reactive power
- ◆ Total apparent power
- ◆ 10 or 15 min average power
- ◆ Active energies IN and OUT, normal tariff or special
- ◆ Reactive energies IN and OUT, normal tariff or special
- ◆ Power factor per phase (cos)
- ◆ Active and reactive power per phase
- ◆ 3 DC inputs
- ◆ 10 or 15 min peak average current
- ◆ Harmonics and THD

PECA 3001

Cut-out and dimensions in mm (in inches)

192mm (7.6")

96mm (3.8")

164mm (6.4")

90mm (3.54")

170mm (6.7")

184mm (7.2")

186mm (7.3")

92mm (3.6")

Cut-out

Weight : without optional board   1.0kg
           with optional board   1.2kg

Subject to change

Dealer

ARDETEM

**ARDETEM, Route de Brindas, P.A. d'Arbora,
69510 Soucieu en Jarrest - France
Tél. 04 72 31 31 30 – Fax. 04 72 31 31 31**
RCS LYON B444 429 476