

PECA 30E

Analyseur de signaux alternatifs *Signal Analyser for Electrical Networks*

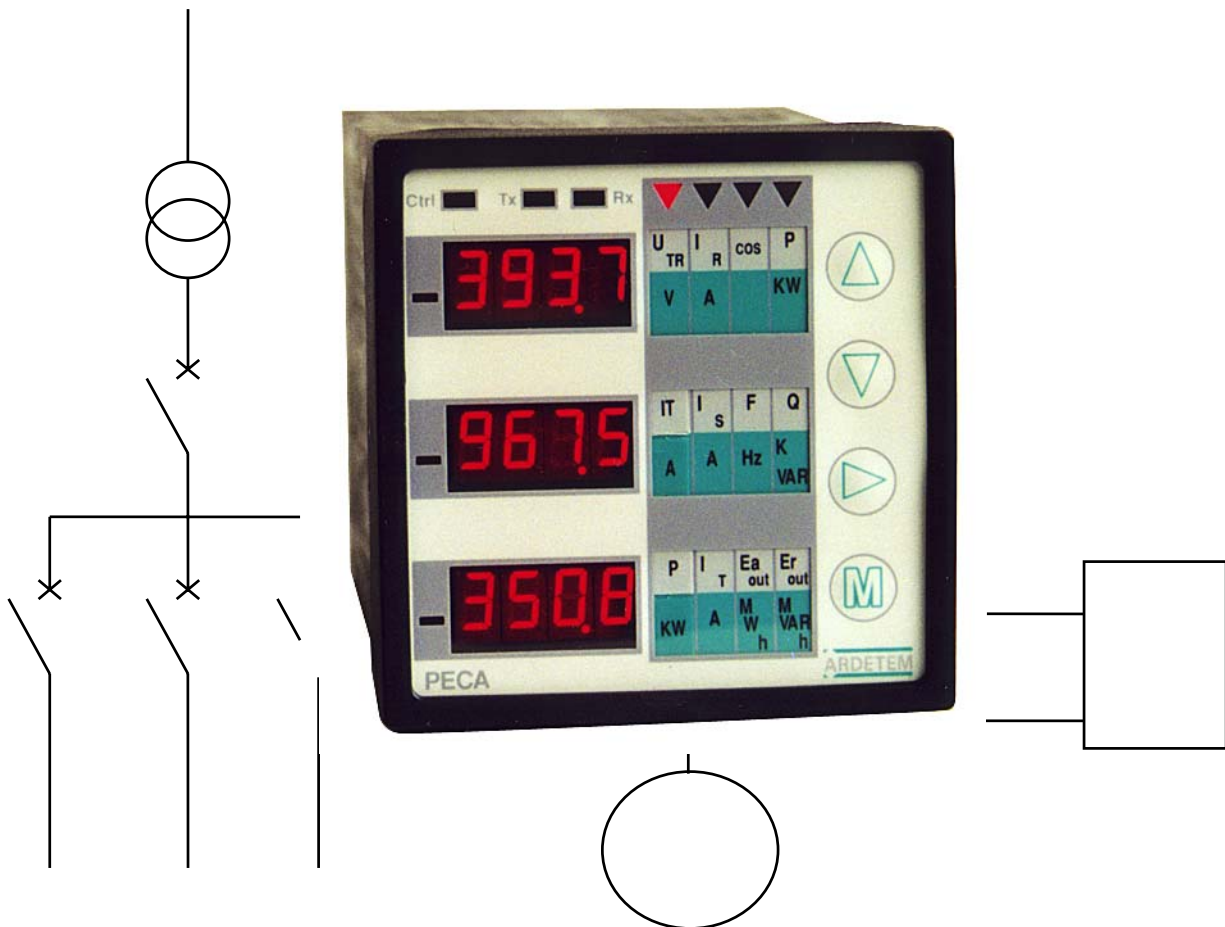
Tout type de réseau : monophasé, triphasé équilibré avec ou sans neutre
All types of network: single phase, 3-phase balanced, unbalanced, with or without neutral

♦ MESURES EFFICACES VRAIES

TRUE RMS

**Tensions, courants, puissances,
énergies, fréquence, cosinus...**

**Voltage, current, power,
energies, frequency, cosine...**



PECA 30E

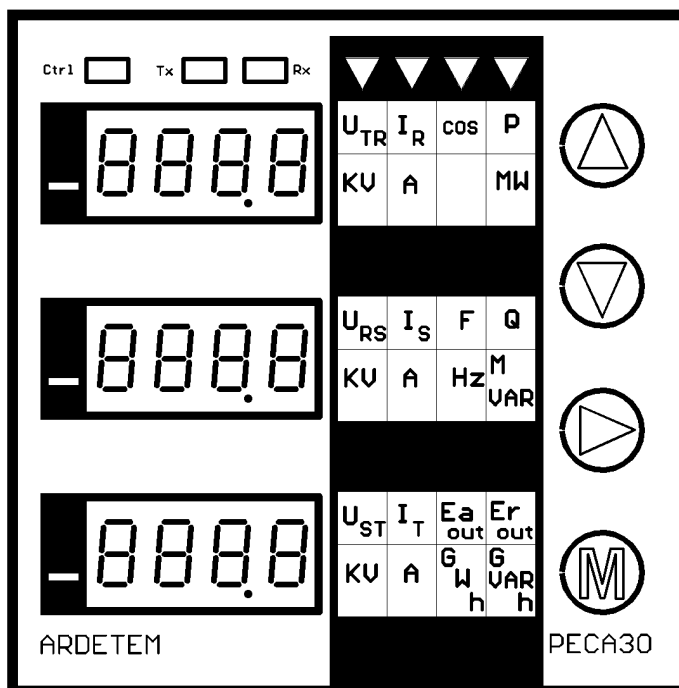
Signal Analyser for Electrical Networks

All types of networks :

Single phase, 3-phase balanced, unbalanced, with or without neutral

- ◆ True RMS
- ◆ Simultaneous display of 3 measured parameters
- ◆ 12 parameters displayed as 4 pages
- ◆ Indication on the front panel of the 12 measured parameters and units
- ◆ Housing 96 x 96 mm

Voltages, currents, powers, energies, frequencies, $\cos \varphi$, etc. ...



PECA 30E

Signal Analyser for Electrical Networks

DESCRIPTION

The ARDETEM PECA 30 analyser is designed to measure, monitor and control all the parameters in an electrical network.

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

- **Digital indication by pages of 3 measured parameters**
- **RS485 and RS422 digital output, protocol Modbus-Jbus**
- **Possible options : relay outputs, analogue outputs, pulse outputs**

The PECA 30 analyser's front panel comprises three 9 mm **extra bright digital indicators**. A scroll system provides a 4 pages display.

Display of **12 parameters** to choose among a list of 44.
The units for all parameters are displayed on the front panel.

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

- 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 4 pages comprising 3 measured parameters each
- High brightness
- 4-quadrant power measurement
- True RMS measure value with an accuracy of 0,5
- Programmable digital filters
- Security codes
- RS 485/422 serial interface, Modbus-Jbus
- Relay, analogue, or pulse outputs as options
- Universal switch mode power supply

PECA 30 / 30E

Technical data

Casing	polycarbonate, black
Format	96 x 96 , DIN 43700 standard
Mounting	panel-mounted - Requires 92 x 92 cut-out
Tightening	by tie rods
Protection	IP 20 for housing - IP 40 frontal protection
Connection	on rear face, 2,5 mm ² capacity (for I) screw in terminals
Indicators	3 x +/- 10 000 count indicators, extra bright digits, 9mm 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 draw	18VA max in ac, 8W 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 M ohms, current inputs: < 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

Number of parameters	44
Accuracy	0,5 for U, I & P ; 1 for energies
Measurement method	rapid & simultaneous sampling of the 3 voltages & the 3 currents digital computation on 32 bits
Display refreshing	twice per second
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 temperatures	0 to +55 °C conform IEC60068-2-1 and IEC60068-2-2
Storage temperatures	-25 to +70 °C conform IEC60068-2-1 and IEC60068-2-2
Operating humidity	40°C and 93% no condensation, 10 days : 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 30E

Options possibility :

The analyser can be fitted with one option board to choose from the following list :

■ 1 or 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

■ 1 or 3 pulse outputs

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

■ 1 or 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

Contact type	:	2 SPST
Contact rating	:	2A - 125V Ac
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

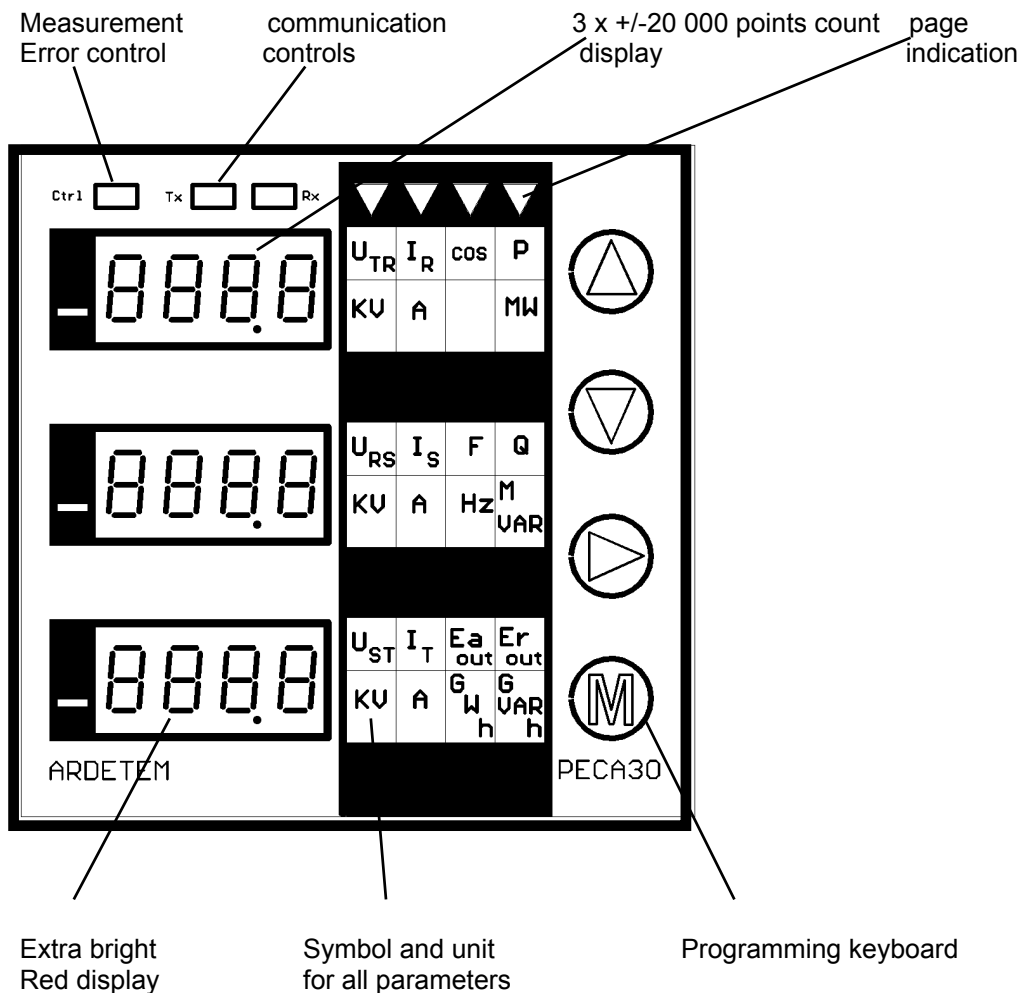
■ 3 analogue outputs and 2 pulse outputs

3 analogue outputs + 2 pulse outputs on the same board

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

PECA 30E

PECA 30 Layout



Programmable parameters

- ◆ RMS mesh and simple voltage
- ◆ RMS line current
- ◆ 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
- ◆ 10 or 15 min peak average current

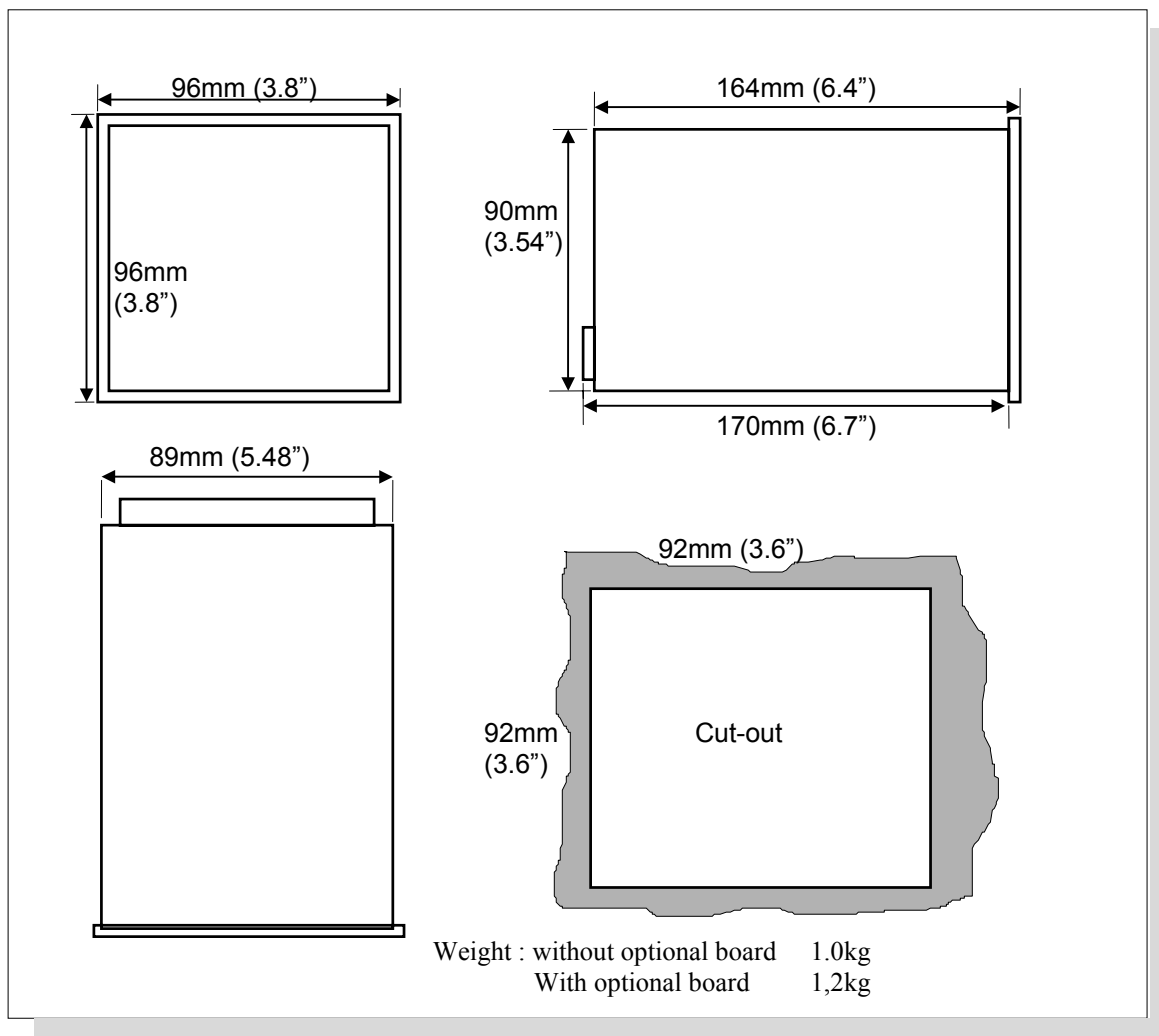
► **MEASURABLE PARAMETERS LIST**

30	30E	Nr	MEASURED PARAMETERS	network nr				
				1	2	3	4	5
X	X	1	UTR (mesh voltage)	X	X	X	X	X
X	X	2	URS (mesh voltage)			X	X	X
X	X	3	UST (mesh voltage)			X	X	X
X	X	4	$U_{mean} = (UTR+URS+UST) / 3$			X	X	X
X	X	5	VR (single voltage phase R)				X	
X	X	6	VS (single voltage phase S)				X	
X	X	7	VT (single voltage phase T)				X	
X	X	8	IR (line current phase R)	X	X	X	X	X
X	X	9	IS (line current phase S)			X	X	X
X	X	10	IT (line current phase T)			X	X	X
X	X	11	$I_{mean} = (IR+IS+IT) / 3$			X	X	X
X	X	12	Leak current In				X	X
X	X	13	IR max (on N minutes*)	X	X	X	X	X
X	X	14	IS max (on N minutes*)			X	X	X
X	X	15	IT max (on N minutes*)			X	X	X
X	X	16	COS total	X	X	X	X	X
X	X	17	Frequency	X	X	X	X	X
X	X	18	Impedance	X	X	X	X	X
X	X	19	Total active power	X	X	X	X	X
X	X	20	Total reactive power	X	X	X	X	X
X	X	21	Total apparent power	X	X	X	X	X
	X	22	Mean active power (on N minutes*)	X	X	X	X	X
	X	23	Mean reactive power (on N minutes*)	X	X	X	X	X
	X	24	Active energy OUT	X	X	X	X	X
	X	25	Active energy IN	X	X	X	X	X
	X	26	Reactive energy OUT	X	X	X	X	X
	X	27	Reactive energy IN	X	X	X	X	X
	X	28	Active energy OUT, meter 2	X	X	X	X	X
	X	29	Active energy IN, meter 2	X	X	X	X	X
	X	30	Reactive energy OUT, meter 2	X	X	X	X	X
	X	31	Reactive energy IN, meter 2	X	X	X	X	X
X	X	32	COS, phase R				X	
X	X	33	COS, phase S				X	
X	X	34	COS, phase T				X	
X	X	35	Active power, phase R				X	
X	X	36	Active power, phase S				X	
X	X	37	Active power, phase T				X	
X	X	38	Reactive power, phase R				X	
X	X	39	Reactive power, phase S				X	
X	X	40	Reactive power, phase T				X	
		41	Analog DC input Nr 1	X	X	X	X	X
		42	Analog DC input Nr 2	X	X	X	X	X
		43	Analog DC input Nr 3	X	X	X	X	X
X	X	44	Running time counter	X	X	X	X	X

* N minutes = average value on the N last minutes (N programmable : 1 up to 60mn)

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Cut-out and dimensions in mm (in inches)



Subject to change

Dealer



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