Electricity Meters

CM-9930

2000 A AC/DC clamp meter

This clamp meter is a versatile instrument with a modern design and modern technology. It has a rugged enclosure with ingress protection against breaking and fire and the handle is also protected which prevents the user from touching the clamp or the internal lead (it offers maximum security to the user). All measurement ranges have overload protection.

- 4 digit LCD (15 mm), 5000 maximum (frequency range)
- Measurements up to 2000 A AC/DC
- 60 mm clamp opening
- Data Hold, valor efectivo real
- Continuity check
- ISO calibration certificate (optional)

Technical specifications

DCV	400 mV / 4 / 40 / 400 / 1000 V ±1.0 % + 2 dgt. – 0.1 mV
Overload protection	DC 1000 V
ACV	400 mV / 4 / 40 / 400 / 1000 V ±1.2 % + 5 dgt. – 0.1 mV
Overload protection	AC 1000 V
DCA (direct)	400 µA / 4 / 40 / 400 mA; ±1.2 % + 5 dgt.
(with clamp)	400 / 2000 A; ±2.0 % + 8 dgt.
Overload protection	DC 500 mA direct; DC 1000 V clamp
ACA (direct)	400 µA / 4 / 40 / 400 mA; ±1.2 % + 5 dgt.
(with clamp)	400 / 2000 A; ±2.0 % + 8 dgt.
Overload protection	AC 500 mA direct; AC 1000 V clamp
Ohms	400 Ω / 4 / 40 / 400 kΩ / 4 / 40 MΩ ±1 % + 5 dgt. up to 400 kΩ, or ±3.5 % + 5 dgt. – 0,1 Ω
Overload protection	AC/DC 400 V
Frequency	5 / 50 / 500 Hz / 5 / 50 100 kHz ±1 % + 5 dgt. – 0.001 Hz
Overload protection	AC/DC 1000 V
Capacitance	50 / 500 nF / 5 / 50 µF; ±3 % + 5 dgt.
Effective current value	yes
Audible alarm / diodes	yes / yes
Power	9 V battery
Dimensions	255 x 73 x 38 mm
Weight	380 g
Approvals	IEC-1010-1, CAT III 1000 V

Contents

CM-9930, test leads, battery and user's manual

Model No.	Description
CM-9930	2000 A AC/DC digital clamp meter

Optional accessories

CAL-MZ	ISO certificate

PCE-EI-3000

Flexible clamp meter for leads up to 170 mm in diameter and 3000 A

This special digital clamp meter has a flexible AC current probe for big lead cables with a diameter up to 170 mm, something that you could not measure up to now with a normal digital clamp meter. Its special flexible probe allows it to be used in areas with difficult access in which it's impossible to use a typical clamp. It measures net frequencies, currents up to 3000 A AC and voltages up to 600 V AC like real effective value.

- True RMS
- 3000 A AC direct current / 600 V AC Voltage
- 4+4 digit LCD
- Auto-ranging
- Frequency indicator
- Fast Peak function (30 µs)
- MAX / MIN functions
- Auto shut-off
- Cable length from probe to instrument: maximum 170 mm
- ISO calibration certificate (optional)

Technical specifications

ACA Trms	300 A / 0,1 A 1000 A / 0,1 A 3000 A / 1 A; ±1 % of measurement range
ACV Trms	4.0 to 600 V / 0.1V; ±0.5 % ±5 digit
Frequency	45 to 65 Hz / 0.1 Hz; ±0.2 Hz
Cable lenght dimensions	maximum 170 mm
Minimum bending diameter	minimum 35 mm
Cable probe diameter	14 mm
Display	4+4 digit LCD
Operating conditions	-10 to +85 °C
Power	2 AA batteries (1.5 V)
Dimensions	130 x 80 x 43 mm
Weight	430 g

Contents

PCE-EI-3000 flexible clamp meter, batteries and user's manual

Model No.	Description
PCE-EI-3000	3000 A AC digital clamp meter

Optional accessories

CAL-MZ	ISO certificate

PCE-UT232

3 Phase Power Clamp / Meter / Analyzer with Computer Interface (USB) and Software

The product is tri-phasic three lines and tri-phasic four lines. This high effective tool is the best choice for machine analyzing technicians and electricians in a wide field of industrial applications. The clamp can store the measured data (upto 99) and can be transferred to a PC or Portable later on. There are many special functions such as auto measure, large LCD display etc.

- Measures active / apparent / reactice power, power factor, phase angle, active energy
- Self calibration function
- Max / Min data capture / data hold display
- Store / recall saved data
- ISO calibration certificate as option

Technical specifications

ACV TRMS	20 / 100 / 300 / 600 V; ±1.2 % + 5 dgt.
ACV TRMS	40 / 100 / 400 / 1000 A; ±2.0 % +5 dgt.
Active power (P)	0.01 kW to 600 kW; ±3.0 % +5 dgt.
Apparent power (S)	0.01 kVA to 600 kVA; ±3.0 % +5 dgt.
Reactive power (Q)	0.01 kWAr to 600 kVAr; ±4.0 % +5 dgt.
True energy	1 to 9999 kWh; ±3.0 % +2 dgt.
Power factor (PF)	0.3 to 1.00; ±0.02 + 2 dgt.
Phase angle	0 to 360°; ±1.0°
Frequency	20 to 500 Hz
Temperature	-50 to +1300 °C
Memory	99 values
Display	4 digit LCD with analog bargraph
Power	4 batteries (1.5 V)
Dimensions	112 x 39 x 303 mm
Weight	600 g

Contents

PCE-UT232 power analyser, 4 x test leads, 4 x alligator clips, USB cable, software, batteries, carrying case and user's manual

Model No.	Description
PCE-UT232	Power analyser

Optional accessories

CAL-MZ	ISO certificate

Electricity Meters

PCE-PA6000

Power meter with RS-232 interface

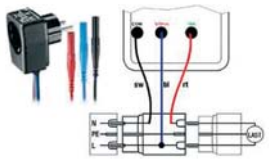
PCE-PA6000 power meter is designed for bench use and measures power, power factor, current, alternating voltage and current, current and continuous voltage, resistance and frequency. This device has an RS-232 interface, and with software you will be able to transfer data to a PC to check and manipulate readings more comfortably.

- Auto-ranging
- Direct power measurement through a probe or power clamp
- Data Hold / High / Low alarm functions
- Powered by adaptor or batteries
- RS-232 interface
- ISO calibration certificate (optional)

Technical specifications

Volts measurement (AC)	1 W to 6 kW;
True power value	1 W;
Direct measurement	±1.5 % + 1 dgt.
Volts measurement (AC)	1 W to 999,9 kW;
with external clamp	1 W;
adapter	±1.5 % + 1 dgt.
VA measurement	0.01 VA to 9.999 kVA;
	0.01 VA;
	±1.5 % +1 dgt.
Power factor (cos φ)	0.00 to 1.00; 0.01; ±1.5 % + 2 dgt.
KWh counter	0.001 Wh to 9999 kWh;
	0.001 Wh;
	±1 % + 1 dgt.
ACV / DCV	0.1 V to 600 V; 0.1 / 1V; ±1 % +1 dgt.
ACAeff/rms	direct max 10 A; 10 mA, probe
DCAeff/rms	max. 1000 A; 1 A
	±1 % + 1 dgt.
ACA with clamp	up to 2000 A (depending on clamp)
Frequency	10.0 ... 999 Hz; 0.1 Hz; 1 % + 1 dgt.
Ohm	1 Ω ... 19.99 kΩ; 1 / 10 Ω; ±1 % +1 dgt.
Power	6 AA batteries (1.5 V)
	or adaptor
Dimensions	280 x 210 x 90 mm
Weight	1100 g

PCE-PA-ADP
power adaptor
(optional)



Contents

PCE-PA6000 power meter, control cable, software, RS-232 interface and user's manual

Model No.	Description
PCE-PA6000	Power meter

Optional accessories

PCE-PA-ADP	Power adaptor
NET-300	Adaptor
RS232-USB	RS-232 to USB adaptor
CAL-2535	ISO cetificate

PCE-360

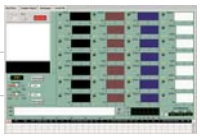
3-Phase power analyser (in real time) with data logger, PC interface and software

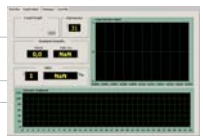
The PCE-360 power analyser is ideal for measuring power in one or three phases. Its large display shows up to 10 values. You can attach, at the same time, up to 4 current sensing clamps. The manual option allows you to store 99 readings directly. In data storage mode you can record up to 20,000 values, making the 3-phase power analyser ideal for long-term analysis. You can transfer the measurements to a PC for later analysis (includes software and USB cable).

- Real time control, record and assess one or three systems
- Current and power measurements
- Power factor and phase angle
- Active, apparent and reactive power
- Harmonics measurements
- Connectors for 4 current sensing clamps
- 512K Data logger (20,000 readings)
- Memory to record up to 99 measurements
- RS-232 interface, cable for PC and software included
- LCD can dispaly 10 readings
- ISO certificate (optional)

Technical specifications

Power measurement	Range:	0 to 999.9 Veff / TRUE RMS three inputs with the same "N" reference point
	Resolution:	0.1 V
	Accuracy:	±0.3 % of reading + 10 D for >80V powers
	Frequency:	50 Hz (not for FU use)
Current measurement	Range:	phase 1 – 3 (0 to 1000 A) / TRUE RMS range "N" (0 to 250 A) / TRUE RMS
	Resolution:	0.1 A
	Accuracy:	±0.5 % of reading + 15 D ±1 %
Active power (P)	Range:	0 to 999.9 KW
	Accuracy:	±1 % of reading + 20 D
Apparent power (S)	Range:	0 to 999.9 KVA
	Accuracy:	±1 % of reading + 10 D
Reactive power (Q)	Range:	0 to 999,9 KVAR
	Accuracy:	±1 % of reading + 20 D
Energy (true, apparent and reactive work)	Ranges:	0.0 to 9999 MWh / 0.0 to 9999 Mvarh / 0.0 to 9999 MVAh
	Resolution:	0,1 KWh / 0.1 Kvarh / 0.1 KVAh
	Accuracy:	±1 % of reading + 20 D
Power factor (PF)	Range:	0.000 to 1.000
	Accuracy:	±1 dgt
Phase angle		-0 to 90 °
Frequency measurement	Range:	40 to 100 Hz / U1 power
	Accuracy:	±1 % of reading + 2 D
Memory	data logger:	max. 20,000 readings (512 k), in and out time adjustable
	manual memory:	99 readings
Measurement interval		5 s, 30 s, 1 min, 2 min (adjustable)
Data transfer / Interface		RS-232 interface with optic insulator
Software / USB cable		in English, included
Display		multi-function display
Frequency range		42 to 63 Hz
Power		8 batteries (1.5 V) or 12 V / 300 mA adapter
Enclosure		ABS plastic
Dimensions		235 x 116 x 54 mm
Weight		730 g
Approvals		CAT III/600 V; DIN VDE 0411/ EN 61010 / IEC 61010; class II; IP 30; degree 2





Contents

PCE-360 3-phase power analyser, 4 test leads with alligator clips, 4 current clamp transducers, 4 safe measurement cables, 8 batteries, adaptor, carrying case, RS-232 cable for PC, software and user's manual (For U.K. customers: incl. U.K. AC Mains Power Adaptor)

Model No.	Description
PCE-360	3-Phases power analyser

Optional accessories

RS232-USB	RS-232 to USB adaptor
CAL-PCE-360	ISO certificate

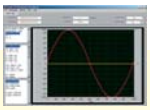
PCE-830

Power and harmonics analyser with 3 phases as well as an energy meter (real time) and harmonics analyser with memory, PC port and software

The PCE-830 energy and harmonics analyser is used to measure one of three phases of electrical magnitudes for alternative current. Also, to detect the magnitudes of “normal” measurements like voltage, current, frequency, power, energy and also indicates, according to standard EN50160, harmonic, inter-harmonic and asymmetrical values. Interference in power such as interruptions, shortages, temporary surges (from 16 µs) are detected with their corresponding values. The LCD, that has good contrast, a points matrix and backlight, shows up to 35 simultaneous parameters. It can incorporate up to 3 current clamps at the same time. In data registration mode, it can save up to 17,470 readings (3 phases / 4 conductors), or more simple, up to 52,400 readings (1 phase / 2 conductors), divided between 85 inspections. All of this makes the PCE-830 energy and harmonics analyser ideal for measurements over extended periods of time. The readings obtained can be transferred to a computer and be analysed with the corresponding software. Included with the analyzer are all the things required to measure and analyse the readings, including the software and data cable. Although the analyzer comes calibrated at the factory, and optional laboratory calibration certificate which meets ISO standards, can be ordered (with the first order for annual recalibrations).

- Analysis of power networks of 3 phases/4 conductors, 3 phases/3 conductors, 1 phase/2 conductors or 1 phase/3 conductors
- Measurement of active energy (W, KW, MW, GW)
- Potency factor (PF), phase angle (Φ)
- Measurement of current of 0.1 mA to 3000 A, permitting, for example, an analysis of the needs of reserve energy in a factory
- The conditions CT (1 to 600) and PT (1 to 3000) programmable
- Average power (AD en W, KW, MW)
- Indication of wave forms, performance parameters and harmonic distortion
- Maximum potency (MD en W, KW, MW) with programmable time periods
- Indication on the display up to a 50 form of harmonic wave
- Analysis of absolute distortion (%THD-F)
- Detects up to 28 transistors (time and cycles) with a programmable threshold (%)
- Factor of 3 phases of energy or asymmetrical current (d0%, d2%)
- Programmable time intervals and integrated calendar to record data
- Measurement of Real Effective Value (V 123 and I 123)
- Measurement of apparent and reactive energy (KVA, KVAR)
- Measurement of energy and work (Wh, KWh, KVARh, PFh)
- Large LCD that shows up to 35 parameters simultaneously (3P4W [=3 phases/4 conductors])
- Indication of superimposed current wave forms and voltage
- 512 KB of memory with programmable intervals for readings (measurement intervals of 2 to 3000 seconds, 17,470 readings using a system of 3 phases / 4 conductors)
- Analysis of harmonic distortion up to 99 types of waves lengths
- Indication of the wave form with maximum value (1024 readings/period)
- Diagram of grafic equilibrium with parameters of a 3 phase system
- Relation of 3 phases of energy or asymmetrical current (VUR)
- USB port, optically insulated
- ISO calibration certificate (optional)






Set 1:
Range: up to 100 A
Dia. electrial conductor: max. 30 mm

Set 2:
Range: up to 1000 A
Dia. electrial conductor: max. 55 mm

Set 3:
Range: up to 3000 A
Dia. electrial conductor: max. 170 mm

Technical specifications			**Set 1 (incl. PCE-6801)**	**Set 2 (incl. PCE-6802)**	**Set 3 (incl. PCE-3007)**
Watts AC (50 or 60 Hz, PF 0,5 up to 1,0)	Range / accuracy		5,0 to 999,9 W / ±1 % 1,000 to 9,999 kW / ±1 % 10,00 to 99,99 kW / ±1 % 100,0 to 999.9 kW / ±1 % 1000 to 9999 kW / ±1 %	5,0 to 999,9 W / ±1 % 1,000 to 9,999 kW / ±1 % 10,00 to 99,99 kW / ±1 % 100,0 to 999.9 kW / ±1 % 1000 to 9999 kW / ±1 % 0,000 to 9,999 MW / ±1 %	5,0 to 999,9 W / ±1 % 1,000 to 9,999 kW / ±1 % 10,00 to 99,99 kW / ±1 % 100,0 to 999.9 kW / ±1 % 1000 to 9999 kW / ±1 %
Current AC	Range / accuracy		0,040 to 1,000 A / ±0,5 % 0,40 to 10,00 A / ±0,5 % 4,0 to 100,0 A / ±0,5 %	0,400 to 10,000 A / ±0,5 % 4,00 to 100,00 A / ±0,5 % 40,0 to 1000,0 A / ±0,5 %	0,0 to 300,0 A / ±1 % 300,0 to 999,9 A / ±1 % 1000 to 3000 A / ±1 %
Voltage AC	Range / accuracy	(measurement between phase and neutral) (measurement between two phases)	20,0 to 500,0 V /±0,5 % 20,0 to 600,0 V / ±0,5 %	20,0 to 500,0 V /±0,5 % 20,0 to 600,0 V /±0,5 %	20,0 to 500,0 V /±0,5 % 20,0 to 600,0 V /±0,5 %
Power factor			0,00 to 1,00 / ±0,04	0,00 to 1,00 / ±0,04	0,000 to 1,000 / ±0,04
Gap angle			-180,0° to +180,0° / ±1°	-180,0° to +180,0° / ±1°	0 to 180,0° / ±1°
General specifications					
Maximum measurement of AC current and voltage			50 + 60 Hz / ±5 %		
Measurement of peak value of AC current and voltage			1,00 to 99,99 / ±5 %		
Frequency range			45 to 65 Hz / ±0,1 Hz		
Memory			512 kB (memory is not volatile) up to 52,420 readings carrying out a 1 phase/2 conductor measurement		
Interface			USB (optically isolated)		
Display			grapfic LCD with backlight		
Power			8 AA batteries 1.5 V		
Dimensions / Weight			257 x 155 x 57 mm / 1160 g		
Operating conditions			-10 to +50 °C / max. 85 % r.h.		
Approvals			IEC 61010, 600 V / CAT III		

Contents

PCE-830 energy and harmonics analyser, 3 amp clamps (according to the model ordered), 4 insulated terminals, 4 safe test lines, 8 batteries, mains adaptor, case, USB cable, software and user’s manual (For U.K. customers: incl. U.K. AC Mains Power Adaptor)

Model No.	**Description**
PCE-830-1	Energy analyser Set 1 (incl. PCE-6801)
PCE-830-2	Energy analyser Set 2 (incl. PCE-6802)
PCE-830-3	Energy analyser Set 3 (incl. PCE-3007)

Optional accessories	
PCE-6801	Set of clamps 1 (for replacement or extension)
PCE-6802	Set of clamps 2 (for replacement or extension)
PCE-3007	Set of clamps 3 (for replacement or extension)
CAL-PCE-830	ISO certificate