

Powertek

PA 120 and PA 110

TRMS three- and single phase digital wattmeters



**For measurements on-site or in a laboratory,
a new concept: the digital power meter!**

- DC or AC TRMS networks: balanced single-phase (PA 110) or three-phase (PA 120)
- Voltage, current, active/reactive/apparent powers and power factor measurements
- High degree of sensitivity
- Simple and quick implementation with direct access keys
- Numerous automatic functions: current range switching, HOLD, filtering, starting current, etc.
- Excellent readability: 3 quantities displayed simultaneously with a digit height of 14 mm
- Digital transmissions protected by infrared communication interface
- Mains power supply (optional)

PA 120 and PA 110: TRMS three- and single phase digital wattmeters

More than a wattmeter, a power meter!

Given their wide measuring range and their sensitivity, the PA 120 and PA 110 are intended for both general teaching and vocational training; examples of which are installers and company maintenance departments. To be more precise, their ability to measure RMS values in AC + DC (or TRMS) enables them to carry out measurements in the 4 quadrants on signals which are disturbed and polluted by harmonics. For these applications the PA 120 and PA 110 go well beyond the functions generally available on traditional wattmeters. That is why we should be talking about a new breed of instrument: the power meter!

The only difference between the two models is that the PA 120 measures powers using the three-phase three balanced wire system, whereas the PA 110 is reserved for single-phase networks.

Easy implementation

Although they offer elaborate functions, the PA 120 and PA 110 are very simple to implement. Each of the five (PX 110) or six (PA 120) keys corresponds to a single clearly identifiable function. The latter is then accessible via a single press of the key. Finally, the automatic change of range means that the user avoids having to carry out any adjustments. The instrument can be powered by batteries or the mains power supply.

User comfort and sturdiness

Their casing reinforced with an elastomer mould gives these instruments an excellent withstanding capability and a sturdiness which is second to none.

In the event of it being used on a table, a stand allows the instrument to be propped up at an angle of 30°, thus making it easier to read the results. This stand is retracted into its housing on the back of the casing when measurements are carried out on site.

Tottering contacts as the past, the connect performed merely by a simple placed on the panel c instrum

Owing to their stand, the PA 120 and PA 110 are as much at ease on a table as in your hand.

Starting current

There are loads, such as engines, some heating resistors or lighting systems which, when started up, cause a considerable rush of current. Although they last only a short time, these currents can trigger the safety devices or even damage an installation. To counter this, the PA 120 and PA 110 are provided with the INRUSH function, which consists in measuring the maximum value of the samples over a half-period (with this value being maintained until a new and higher value is measured).

Smoothing function

The SMOOTH function is very useful from the moment the measurement in question is an unstable one. It filters the measurements with a time constant of approximately 3 seconds. Display stability then goes from 5 counts to 2 counts.

Exceptional readability

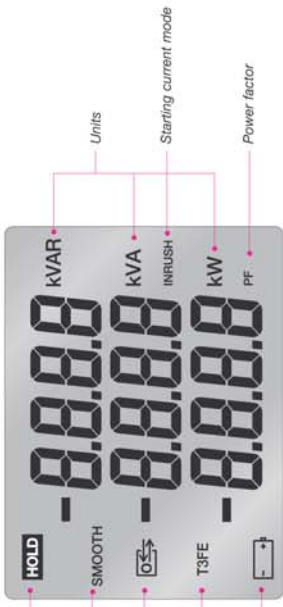
In addition to a particularly large digit size (14 mm), the readout unit of the PA 120 and PA 110 has a display capacity of 9,999 counts (4 digits) on three lines. The user thus simultaneously displays three values. Two different tables then suffice to display all the quantities measured by the instruments.

This digital display is supplemented by different symbols which, at any moment, indicate the operating mode used, the units of each quantity or the state of the battery.

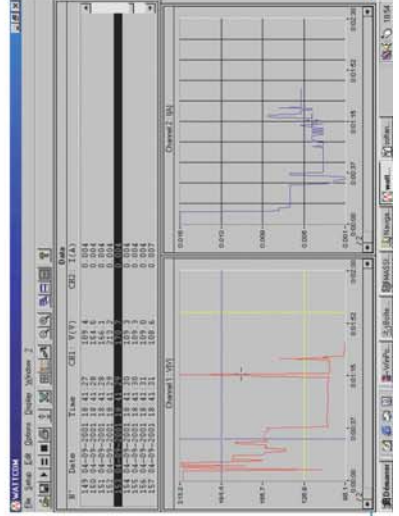
Protected digital link and software

The PA 120 and PA 110 have an infrared digital link, thus making it easier to put the connection into place. Moreover, this transmission mode guarantees the user improved safety; besides, the PA 120 and PA 110 comply with the IEC 61010-1 standard (Category III - 600 V - Pollution level 2).

A processing software package then enables different quantities to be displayed on the screen of a PC, screen print-outs to be obtained, and even measurement files to be transferred to a spreadsheet and stored.



With the 73 x 54.3 mm LCD display, the user knows what the situation is at a glance. The battery rundown indicator light warns him when the period of autonomy is down to one hour.



Multilingual data acquisition and processing software package.

Accessories and information required for ordering

Accessories included

Basically, each wattmeter is delivered with 2 voltage cables (1 red, 1 black), two 20 A current cables, 2 test probes (1 red, 1 black), 6 batteries, a verification certificate and an operating manual.

Accessories available as optional extras

- HX00011 Wattmeter switch
- HX00012 Multiratio AC transformer (10, 15 and 30 A)
- HX00013 Data acquisition and processing software package* for PA 120 and PA 110 wattmeter
- HX00021 Mains power supply

* Includes the software package on CD and the RS 232 optical lead.

To order

- PA0120 DC/AC three-phase three balanced wire digital wattmeter
- PA0110 DC/AC single-phase digital wattmeter



PA 120 and PA 110: TRMS three- and single phase digital wattmeters

TECHNICAL CHARACTERISTICS	PA 120	PA 110
Network type	single-phase and three-phase 3 balanced wire (T3FE)	Single-phase
Number of counts	3 lines of 4 digits (14 mm)	3 lines of 4 digits (14 mm)
Bandwidth	DC to 1 kHz	DC to 1 kHz
Active power		
Range	10 W to 1 kW – 1 kW to 6 kW	10 W to 1 kW – 1 kW to 6 kW
Resolution	0.1 W – 1 W	0.1 W – 1 W
Basic AC / DC accuracy	1.5% R ± 2 digits / 2.5% R ± 5 digits	1.5% R ± 2 digits / 2.5% R ± 5 digits
Apparent/reactive power*		
Range	10 to 1 k – 1k to 6 k	10 to 1 k – 1k to 6 k
Resolution / Basic accuracy VA	1.5% R ± 2 digits / 1% R ± 2 digits	1.5% R ± 2 digits / 1% R ± 2 digits
Resolution / Basic accuracy VAR	2% R ± 2 digits	2% R ± 2 digits
Power factor		
Range	1.00	1.00
Resolution	0.01 / 3% R ± 2 digits	0.01 / 3% R ± 2 digits
Voltage		
Range	0.5 to 600 V RMS	0.5 to 600 V RMS
Resolution	100 mV	100 mV
Basic AC/DC accuracy	0.5% R ± 2 digits / 1% R ± 3 digits	0.5% R ± 2 digits / 1% R ± 3 digits
Input impedance	1 MΩ	1 MΩ
Current		
Range	10 mA to 2 A - 2 A to 10 A RMS	10 mA to 2 A - 2 A to 10 A RMS
Resolution	1 mA – 10 mA	1 mA – 10 mA
Basic AC/DC accuracy	0.7% R ± 5 digits / 1.5% R ± 5 digits	0.7% R ± 5 digits / 1.5% R ± 5 digits
Starting current		
Range	5 A – 65 A (peak)	5 A – 65 A (peak)
Resolution / Accuracy	100 mA / 10% R ± 2 digits	100 mA / 10% R ± 2 digits

*Apparent power = VA – reactive power = VAR – In three-phase, the measurement is only exact for sinusoidal signals.

GENERAL CHARACTERISTICS	PA 120	PA 110
Interfaces and software	yes	yes
Operating temperature	0 to 50°C	0 to 50°C
Storage temperature	-40 to 70°C	-40 to 70°C
Power supply	6 batteries of 1.5 V (LR6) / mains	6 batteries of 1.5 V (LR6) / mains
Autonomy	40 hours	40 hours
Dimensions (depth x length x height)	60 x 108 x 211 mm	60 x 108 x 211 mm
Weight	835 g	835 g
IEC 61010 safety standard	600 V, Cat. III, pollution level 2	600 V, Cat. III, pollution level 2
Guarantee	1 year	1 year

For UK & European sales, support, service and deliveries:
 Powertek UK 19 Cornwallis Road Bilton, Rugby CV22 7HL United Kingdom
 New Tel: 01788 519911 Fax: 0870 0940135
 Int'l Tel: +44 1788 519911 Int'l Fax: +44 870 0940135
 Email: info@powertekuk.com Website: www.powertekuk.com

For USA sales, support, service and deliveries
 Powertek US Inc. 7 3rd Street Holbrook, NY 11741 USA
 Tel: +1 631 615 6279 Fax: +1 973-273-5893
 Email: info@Powertekus.com Website: www.powertekus.com