

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 (PX 110) or three-phase (PX 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)

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

More than a wattmeter, a power meter!

Given their wide measuring range and their sensitivity, the PX 120 and PX 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 PX 120 and 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 PX 120 measures powers using the three-phase three balanced wire system, whereas the PX 110 is reserved for single-phase networks.

Easy implementation

Although they offer elaborate functions, the PX 120 and PX 110 are very simple to implement. Each of the five (PX 110) or six (PX 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 handholding 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 at the past, the connect performed merely by netised optical head w simply placed on the panel c instrur.

Owing to their stand, the PX 120 and PX 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 PX 120 and PX 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.

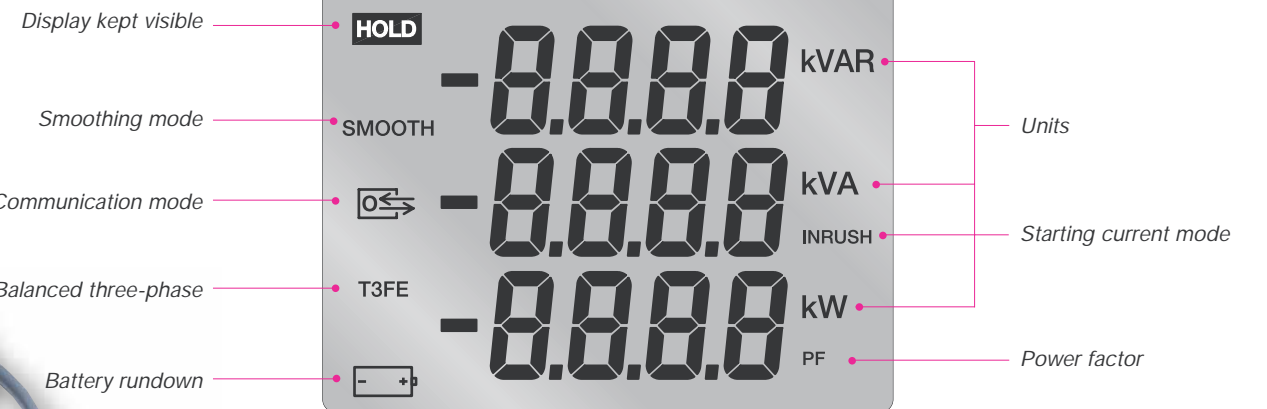
Exceptional readability

In addition to a particularly large digit size (14 mm), the readout unit of the PX 120 and PX 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

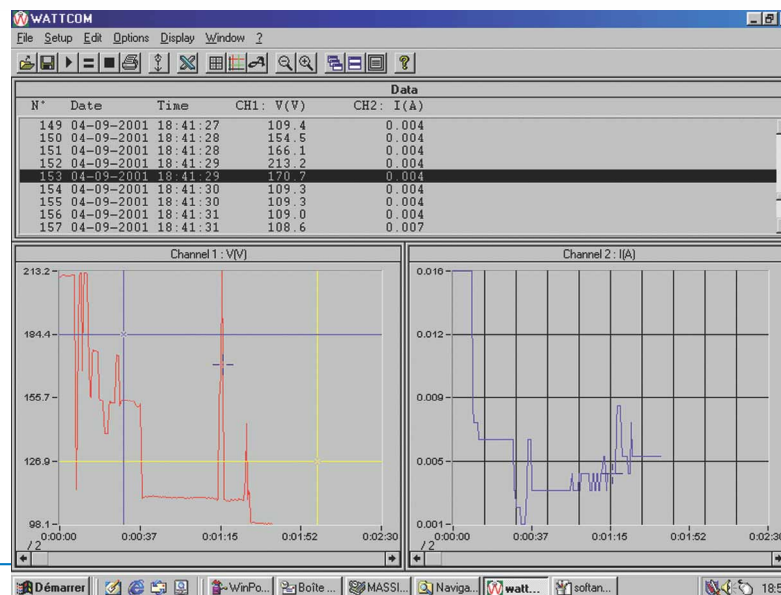
The PX 120 and 110 have an infrared digital link, thus making it easier to put the connection into place. Moreover, this transmission mode guarantees the user improved safety; besides, the PX 120 and 110 comply with the IEC 61010-1 standard (Category III - 600 V - Pollution level 2). A processing software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

- HX0011 Wattmeter switch
- HX0012 Multiratio AC transformer (10, 15 and 30 A)
- HX0013 Data acquisition and processing software package* for PX 120 and PX 110 wattmeter
- HX0021 Mains power supply

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

To order

- PX0120 DC/AC three-phase three balanced wire digital wattmeter
- PX0110 DC/AC single-phase digital wattmeter

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

| TECHNICAL CHARACTERISTICS | PX 120 | PX 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 | PX 120 | PX 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 |

Characteristics subject to modifications according to technological developments.

metrix
Instruments by Chauvin Arnoux

For assistance and ordering

