World Class

Universal power clamps

standard IEC 61010 Cat.I 600 V

Whether you have a single-phase or three-phase network, nothing will be hidden from you any more!

- Types of measurement: AC and AC+DC TRMS voltage, AC and AC+DC TRMS current, single- and three-phase power, Energy, Frequency
- Three-phases input in a single unit
- Measurement of the power factor and determination of the compensation capacitors
- Analogue retransmission of the measurements via adapters
- Data capture and subsequent processing on PC (adapter and software available as options)
- Dual display to read off the results more quickly

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Universal power clamps - MX 2040 and MX 240

Signal characterisation

When configured in Surveillance (SURV) mode, the clamp can almost characterise the signals. It can thus detect peaks of a minimum width of 1 m.sec (in V and A), optimising the range choice, according to the form of the signal.
In addition to this, the Minima, Maxima or Average can be measured (in A, V, kVA, kW, kVAR and Ω). The latter is a sliding calculation over 16 values.

Better and quicker measurement

These clamps have been designed to facilitate and optimise measurement: HOLD mode freezes the display and improves reading statements; AUTO OFF mode puts the clamp onto standby and increases its autonomy; AUTO/MANUAL mode allows the user to opt for automatic or manual change in range. Finally the CAL button offsets the zero when measuring current.

Three-phase measurement

For balanced three-phase networks, the clamp automatically detects the presence of the three phases and gives the result immediately. For unbalanced three-phase networks, measurement has to be taken on each of the phases in succession.
In all cases, the direction of rotation is indicated which avoids any difficulties with reversed connections.

Measurement of the power factor

By determining the phase shift between voltage and current, the clamp can automatically calculate the compensation capacity needed to restore the power factor to a value specified by the user.
If the value obtained is not standard, it is possible to modify it: the clamp will then calculate the influence of this modification on the power factor. This measurement is available in both single and three-phase.

High contrast display

The display is split into two parts and enables results to be read off rapidly; the top zone is reserved for the function selected by the rotating switch and the bottom zone gives the result of secondary functions (Peak, Min. Max. etc.)

The display is wide, easy to read and all the necessary information can be taken in at a glance.

Hard-wearing and robust, the HA1339 case is used to store the clamp with leads, touch-pins and other accessories. Ideal for tests out on site or in the factory.

Measurement of kWh

Thanks to its internal clock and power measurement capacity, the clamp can total up measurements from the time of entering into a function and then calculate the energy in kWh.

Safety mains supply

Every detail of the clamp and adapters has been thought out: an option can be added to connect them to an IEC 61010 Cat. III mains supply. Measurement sessions without any autonomy constraints are then possible. Three models are available according to the country of use: Europe, the United Kingdom and the United States.

ADP1

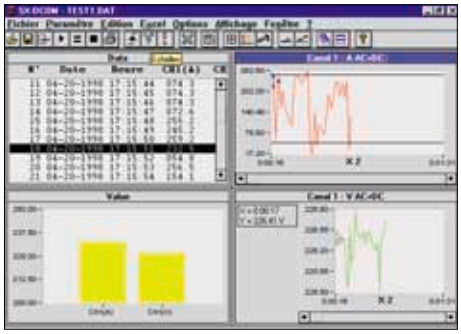
ADP2

ADP3

The adapters for the MX 2040 and MX 240 clamps replace the lide of the battery compartiment. In this way, the careful design and electric safety of the clamp is retained.

A veritable acquisition station.

The ADP 3 option transforms the clamp into a veritable acquisition station. In fact, the performance of the latter is enhanced by a 512 measurement memory which has a programmable rate of memorisation (Datalog mode), the digital transmission of displayed measurements by means of an RS 232 link and a graphic and digital data processing programme (SX-DCOM).
This programme can manage up to four clamps simultaneously which is particularly advantageous for three-phase measurement. Furthermore, it enables the clamp to be configured or adjusted by remote control using a PC.



Analog output of signals

The MX 2040 and MX 240 clamps have ADP 1 and ADP 2 adapters and an analog output which is the image of the values measured. There are two output modes, with different update rates: instantaneous mode (INST.) and Display (DISP.) modes.

CHARACTERISTICS - ANALOG OUTPUT	ADP 1	ADP 2
Sensitivity - Current		
INST mode	0.25 to 25 mV/A	0.25 to 25 mV/A
DISP mode	0.5 to 50 mV/A	0.5 to 50 mV/A
Sensitivity - Voltage		
INST mode	-	1.333 to 2.5 mV/V
DISP mode	-	1.333 to 2.5 mV/V
Sensitivity - Power		
INST mode	-	-
DISP mode	-	0.75 to 750 mV/k*
Sensitivity - Resistance		
INST mode	-	-
DISP mode	-	0.75 to 7.5 mV/Ω
Max. output current	1 mA	1 mA
Full scale	1.5 V (0.75 V for INST current)	1.5 V (0.75 V in INST current)
Output resistance	< 10 Ω	< 10 Ω
Sampling		
INST mode	61 µsecs	61 µsecs
DISP mode	500 msecs	500 msecs
Output protection	20 V max	20 V max
Power supply	By clamp or mains supply (Option)	By clamp or mains supply (Option)

*kVA, kW or kVAR, according to the type of measurement chosen

SX-DCOM software minimum configuration

- PC or compatible computer with 80386 or higher and 25 MHz minimum clock speed (80486 33 MHz recommended)
- VGA resolution or higher
- Mathematical coprocessor
- Min. 4 MB RAM (8 MB recommended)
- 2.5 MB hard disk capacity free
- Microsoft Windows 3.1 or later
- MS-DOS version 3.1 or later.

GENERAL CHARACTERISTICS	MX 2040	MX 240
Jaw opening	55 mm 22x64 bars	55 mm 7x52 bars
Dual display (up to 3000 counts)	yes	yes
Size of digits	11.5 and 7 mm	11.5 and 7 mm
Measurement rate	2 per sec	2 per sec
Detection of rapid peaks	1 msec	1 msec
Digital adjustment	yes	yes
Power supply: 9 V battery	8LF22	6LF22
Automatic cut-out	After 3 mins	After 3 mins
Autonomy (alkaline battery)	40 hrs	40 hrs
IEC 61010 safety	Cat.IV 600 V	Cat. IV 600 V
Temperature for use	-10 to 55°C	-10 to 55°C
Storage temperature	-20 to 75°C	-20 to 75°C
Relative humidity <80%	yes	yes
Dimensions	285 x 90 x 50 mm	270 x 90 x 50 mm
Weight, with battery	610 g	550 g
Warranty	1 year	1 year

TECHNICAL CHARACTERISTICS	MX 2040	MX 240
• AC, AC+DC Current		
Ranges	200 - 2000 A	20 - 200 A
Resolution	0.1 to 1 A	0.01 to 0.1 A
Basic accuracy	1%R + 8D	1%R + 8D
Min. current measurable	1 A	0.1 A
• DC Current		
Ranges	300 - 2000 A	30 - 300 A
Resolution	0.1 to 1 A	0.01 to 0.1 A
Basic accuracy	1%R + 8D	1%R + 8D
• DC, AC, AC+DC (TRMS) Voltage		
Ranges	600 - 1000 VDC 400 - 750 VAC	600 - 1000 VDC 400 - 750 VAC
Resolution	0.1 to 1 V	0.1 to 1 V
Basic accuracy	0.5%R + 8D	0.5%R + 8D
Input impedance	970 kΩ	970 kΩ
• Power (active, reactive, apparent)		
Ranges*	20k - 200k - 2000k	2k - 20k - 200 k
Resolution	0.01 to 1 k	0.001 to 0,1 k
Basic accuracy	1.5%R + 16D	1.5%R + 16D
• Active energy		
Ranges	20 - 200 - 2000 kWh	20 - 200 - 2000 kWh
Resolution	10 Wh	1 Wh
Basic accuracy	1.5%R + 10D	1.5%R + 10D
• Power factor (cos φ)		
Ranges**	0 to 1	0 to 1
Basic accuracy	0.01 + 2° (50/60 Hz) 0.01 + 3° at 400 Hz	0.01 + 2° (50/60 Hz) 3° at 400 Hz
• Frequency		
Ranges	20 Hz - 200 Hz - 2 kHz	20 Hz - 200 Hz - 2 kHz
Resolution	0.01 Hz to 1 Hz	0.01 Hz to 1 Hz
Basic accuracy	0.3%R + 1D	0.3%R + 1D
• Resistances		
Ranges	200 Ω - 2000 Ω	200 Ω - 2000 Ω
Resolution	0.1 to 1 Ω	0.1 to 1 Ω
Accuracy	1.0%R + 5D	1.0%R + 5D
Test current	0.5 mA. approx.	0.5 mA approx.
Max. voltage with open circuit	80 V	80 V
• Continuity		
Detection threshold	< 30 Ω	< 30 Ω
Response time	10 msecs	10 msecs

* For Active power: Watts (W)
Reactive power: reactive Volts-Amps (Var)
Apparent power: Volts-Amps (VA)

**For V> 60 V, and I> 3 A (MX 240) or I > 30 A (MX 2040) phase shift of voltage and current signals and zero reset.

Accessories and ordering information

Accessories included

Each model comes with 3 measurement leads, 3 touch-pins, 3 alligator clamps, 2 batteries, a verification certificate and a user's manual.

Accessories on option

HA1268B	ADP1: analog output - current
HA1260B	ADP2: analog output for all measurements taken
HA1261B	ADP3: RS 232 interface and SX-DCOM software
AA2850	Mains supply: Europe
AA2851:	Mains supply: UK
AA2852:	Mains supply USA

To order

MX0240A	MX 240 power clamp
MX2040A	MX 2040 power clamp
MX0240AM	MX 240 in a case with main supply and ADP 1
MX2040AM	MX 2040 in a case with main supply and ADP 1

Characteristics subject to modifications according to technological developments.

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