

# 2,000 to 5,000-count digital multimeters



## From the learning stage to professional life, tools for all generations

Depending on the model:

- TRMS (AC+DC) measurements for precise and accurate results
- A bandwidth up to 100 kHz
- An innovative design with a compact and sturdy casing
- An excellent degree of readability for the results: a wide screen, a tendency display (bar graph), backlighting, etc.
- Numerous functions: MIN./MAX., AVG., MEM. and/or AUTO. MEM., etc.
- A unique way of accessing the batteries and fuses with improved safety mechanisms
- A optical serial link for reading and processing data on the computer with a user-friendly and high-performance software package
- An elastomer protective sheath along with numerous other accessories

# MX 26 - MX 24B - MX 23 - MX 22 - MX 21: 2,000 to 5,000-count digital multimeters

## Design and sturdiness

In addition to their harmonious line, MX Concept multimeters are particularly well balanced and fit naturally into one's hand.

Moreover, protected in their elastomer sheath, they are able to withstand even the most severe conditions of usage. Besides, the primary method for putting the instrument away consists in inserting it back into its sheath, thereby perfectly protecting the screen and keys.

## Simplicity at all levels

A rotary switch and real keys suffice to offer you all the necessary functions (MIN., MAX., AVG., measurement storage, etc.).

The indications marked on the keys are specially explicit so that the user might intuitively master the instrument's functionalities.

## The result in the twinkling of an eye

All MX Concept multimeters have a large display; in this way, the unit and the conditions of measurement (batteries too low, AC or AC+DC measurement, change of automatic range, etc.) can be specified.

On the MX 26, 24B and 23, a bar graph of 34 segments instantaneously indicates the tendency of the measurement, and backlighting makes reading the result easier when the instrument is used in a poorly lit environment.



## Measurement storage

All the instruments in the MX Concept range have the MEM function. A short press on this key blocks the display, and a second short press brings the user back to the normal display.

The MX 26, 24B and 23 are, moreover, equipped with an AUTO MEM function, enabling the last value measured other than zero and stable to be automatically maintained for at least 1 s. after the measuring circuit has been opened. This is particularly advantageous when the measurement points are difficult to access, forcing the user to fix his attention on the test probes.

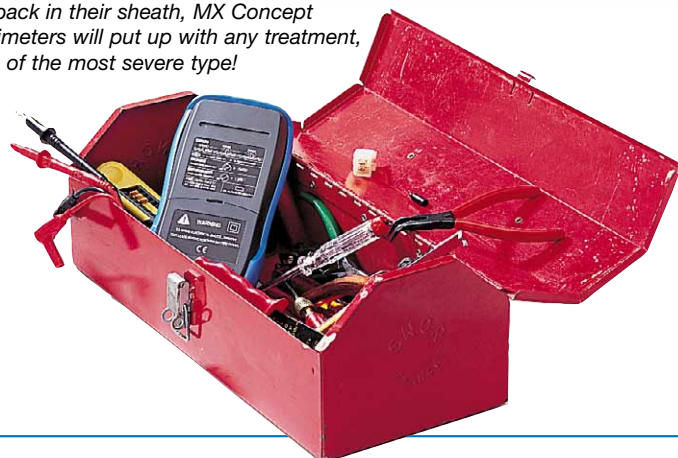
## Changing the battery and fuses, no longer any need to rack your brains!

What can be more tedious than looking for a screwdriver to change the battery or fuses? The MX Concept casing enables you to perform this operation quickly and easily using any utensil: coin, pen, etc.

*Particularly easy to access, the battery and fuses can be changed without any risk, since it is impossible to open a MX casing without having disconnected the leads beforehand.*



*Put back in their sheath, MX Concept multimeters will put up with any treatment, even of the most severe type!*



### Increased safety

Everything is safe! To begin with, the instrument automatically switches itself off after 30 minutes of it not being used (disengageable in the case of the MX 26 and 24B), which guarantees a longer life for your battery. Then, an automatic detection mechanism indicates the presence of a voltage greater than 24 V or a current greater than 10 A (MX 26, 24B and 23). Lastly, the battery and fuses can only be accessed if the measuring leads are disconnected.

### Direct display of currents

Although it has no current input, the MX 21 offers an original function which allows the measurements to be read in amps. To do this, simply use the MN 89 ammeter clamp and put the rotary switch into the clamp position. The instrument then automatically manages the transformation coefficient and directly displays the value of the AC currents.



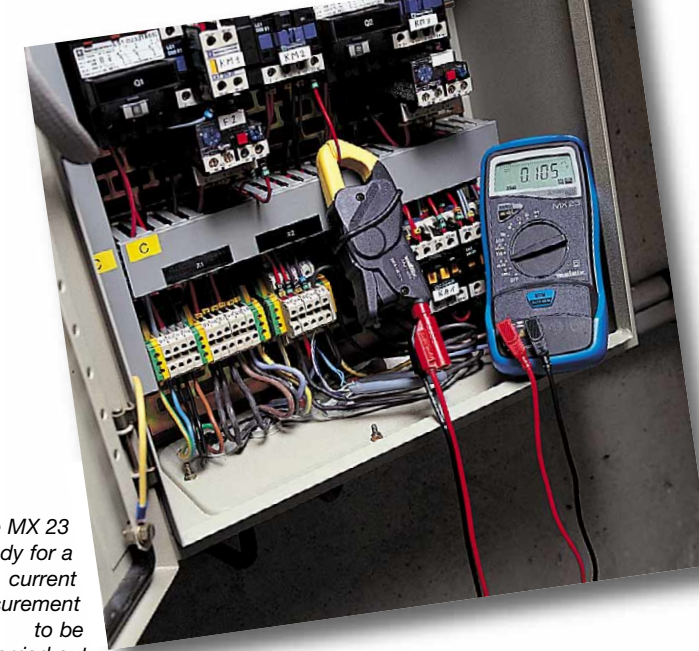
### µA measurements

With a resolution of up to 0.1 µA, the MX 22 enables very weak currents to be measured, whether they be alternative or direct. This point is highly advantageous when it comes to electronics applications.

### Dedicated functions

In order to simplify their use, some models (MX 26, MX 24B and MX 23) have dedicated functions. Thus, when the rotary switch is positioned on ADP, these multimeters offer a 500 mVDC or AC+DC range intended for use with additional accessories: temperature probe, tachometric probe, etc. Moreover, their V low Z (low impedance) function avoids the phantom voltages we sometimes come across in electricity having to be measured.

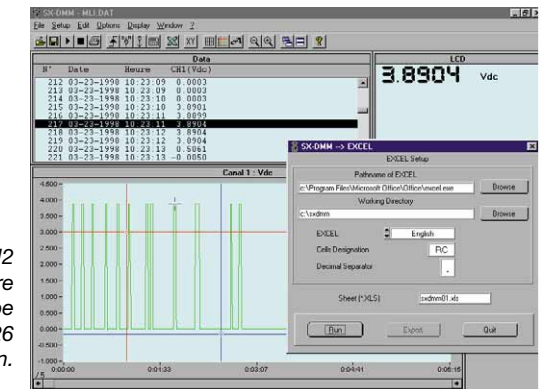
With the AE0190, you have a real bag in which you will be able to put away all the tools you use on a daily basis.



The MX 23 ready for a current measurement to be carried out

### Communication and software

Thanks to its infrared digital output, the MX 26 can be connected directly to a computer without any risk. Data acquisition is continuous. The user can record the data, represent it in the form of a graph and export it, at leisure, to an Excel® type spreadsheet (SX-DMM2 software). He can also calibrate the instrument without opening it and edit a list mentioning all the corrections which have been made to the instrument.



The SX-DMM2 multilingual software package can easily be used with the MX 26 for data acquisition.



The connector for the MX 26's optical digital interface plugs directly into the instrument without any other manipulation.

Current clamps	Current	Output (V or A)	O/I ratio	Connection*	Band width	Clamp Ø (mm)
K1	0.1 mA to 4.5 AAC/DC	VAC	1 mV/mA	L	500 Hz	3.9
MN 73	10 mA to 240 AAC	VAC	1 mV/mA	L	10 kHz	20
MN 89	0.5 to 240 AAC	VDC	10 mV/A	L	10 kHz	20
C 173	1 mA to 1200 AAC	VAC	1 mV/mA, 1 mV/A, 10 mV/A, 100 mV/A	L	3 kHz	52
PAC 11	0.5 to 400 AAC 0.5 to 600 ADC	VAC	10 mV/A 1 mV/A	L	10 kHz	30 or 2 x 24
PAC 20	0.5 to 1000 AAC 0.5 to 1400 ADC	VAC	1 mV/A	L	5 kHz	42 or 2 x 25

\* L = lead

TECHNICAL CHARACTERISTICS	MX 26	MX 24B	MX 23	MX 22	MX 21
<b>• DC voltages</b>					
Ranges	0.5 - 5 - 50 - 500 1,000 V	0.5 - 5 - 50 - 500 1,000 V	0.5 - 5 - 50 - 500 1000 V	40 - 400 mV 4 - 40 - 400 - 600 V	20 - 200 mV 2 - 20 - 200 - 600 V
Resolution	0.1 mV to 1 V	0.1 mV to 1 V	0.1 mV to 1 V	0.01 mV to 1 V	0.01 mV to 1 V
Basic accuracy*	0.3% rdg + 2 digits	0.3% rdg + 2 digits	0.3% rdg + 2 digits	0.3% rdg + 2 digits	1% rdg + 4 digits
Input impedance	10 M $\Omega$ (11 M $\Omega$ / 5V)	10 M $\Omega$ (11 M $\Omega$ /5V)	10 M $\Omega$ (11 M $\Omega$ /5V)	1.5 M $\Omega$ (40 mV) 40 M $\Omega$ (400 mV) 8 M $\Omega$	5 M $\Omega$
Protection	$\pm$ 1,100 V <sub>PEAK</sub> 775 V <sub>RMS</sub>	$\pm$ 1,100 V <sub>PEAK</sub> (600 V <sub>RMS</sub> /0.5 V)	$\pm$ 1,100 V <sub>PEAK</sub> (600 V <sub>RMS</sub> /0.5 V)	600 V <sub>RMS</sub>	600 V <sub>RMS</sub>
<b>• AC voltages</b>					
Peak factor	6	3	3	-	-
Ranges	0.5 - 5 - 50 500 - 750 V	0.5 - 5 - 50 500 - 750 V	0.5 - 5 - 50 500 - 750 V	40 - 400 mV 4 - 400 - 600 V	200 mV 2 - 20 - 200 - 600 V
Resolution	0.1 mV to 1 V	0.1 mV to 1 V	0.1 mV to 1 V	0.1 mV to 1 V 40 Hz to 500 Hz	0.1 mV to 1 V 40 Hz to 500 Hz
Bandwidth	40 Hz to 100 kHz	40 Hz to 1 kHz	40 Hz to 1 kHz	(100 Hz for 40 mV)	(100 Hz for 200 mV)
Basic accuracy*	1% rdg + 3 digits	1.5% rdg + 2 digits	1.5% rdg + 2 digits	1% rdg + 4 digits	1.5% rdg + 8 digits
Input impedance	10 M $\Omega$ (11 M $\Omega$ /5V)	10 M $\Omega$ (11 M $\Omega$ /5V)	10 M $\Omega$ (11 M $\Omega$ /5V)	1.5 M $\Omega$ (40 mV) 40 M $\Omega$ (400 mV) 8 M $\Omega$	3 M $\Omega$ (200 mV) 5 M $\Omega$
Protection	$\pm$ 1,100 V <sub>PEAK</sub> 775 V <sub>rms</sub>	$\pm$ 1,100 V <sub>PEAK</sub> (600 V <sub>rms</sub> /0.5 V)	$\pm$ 1,100 V <sub>PEAK</sub> (600 V <sub>rms</sub> /0.5 V)	600 V <sub>RMS</sub>	600 V <sub>RMS</sub>
<b>• AC voltages (low Z)</b>					
Ranges	5 - 50 - 500 - 750 V	5 - 50 - 500 - 600 V	5 - 50 - 500 - 600 V	-	-
Resolution	1 mV to 1 V	1 mV to 1 V	1 mV to 1 V	-	-
Basic accuracy*	1% rdg + 3 digits	1% rdg + 2 digits	1% rdg + 2 digits	-	-
Input impedance	500 k $\Omega$	500 k $\Omega$	500 k $\Omega$	-	-
Protection	$\pm$ 1,100 V <sub>PEAK</sub> 775 V <sub>RMS</sub>	600 V <sub>RMS</sub>	600 V <sub>RMS</sub>	-	-
<b>• DC currents</b>					
Range	500 mA/10 A	500 mA/10 A	-	400 $\mu$ A, 4 - 40 - 400 mA, 4 - 10 A	-
Resolution	100 $\mu$ A/10 mA	100 $\mu$ A/10 mA	-	0.1 $\mu$ A to 10 mA	-
Basic accuracy*	0.3% rdg + 2 digits / 1% rdg + 2 digits	0.3% rdg + 2 digits / 1% rdg + 5 digits	-	1% rdg + 3 digits	-
Protection	600 V <sub>RMS</sub> – HBP fuse	600 V <sub>RMS</sub> – HBP fuse	-	600 V <sub>RMS</sub> – HBP fuse	-
<b>• AC currents</b>					
Peak factor	6	3	-	-	-
Range	500 mA/10 A (AC+DC)	500 mA /10 A (AC+DC)	-	400 $\mu$ A, 4 - 40 - 400 mA, 4 - 10 A	200 A (with MN 89 clamp)
Resolution	100 $\mu$ A/10 mA	100 $\mu$ A/10 mA	-	0.1 $\mu$ A to 10 mA	0.1 A
Bandwidth	40 Hz to 30 kHz / 40 Hz to 10 kHz	40 Hz to 1 kHz	-	40 Hz to 500 Hz	40 Hz to 500 Hz
Basic accuracy*	1.5% rdg + 2 digits / 2.5 % rdg + 2 digits	1.5% rdg + 2 digits / 2.5 % rdg + 5 digits	-	1.2% rdg + 5 digits	1% rdg + 4 digits (2% with the MN 89 clamp)
Protection	600 V <sub>RMS</sub> – HBP fuse	600 V <sub>RMS</sub> – HBP fuse	-	600 V <sub>RMS</sub> – HBP fuse	600 V <sub>RMS</sub>
<b>• Resistances</b>					
Ranges	500 $\Omega$ , 5 - 50 - 500 k $\Omega$ , 5 - 50 M $\Omega$	500 $\Omega$ , 5 - 50 - 500 k $\Omega$ , 5 - 50 M $\Omega$	500 $\Omega$ , 5 - 50 - 500 k $\Omega$ , 5 - 50 M $\Omega$	400 $\Omega$ , 4 - 40 - 400 k $\Omega$ , 4 - 40 M $\Omega$	200 $\Omega$ , 2 - 20 - 200 k $\Omega$ , 2 - 20 M $\Omega$
Resolution	100 m $\Omega$ to 10 k $\Omega$	100 m $\Omega$ to 10 k $\Omega$	100 m $\Omega$ to 10 k $\Omega$	100 m $\Omega$ to 10 k $\Omega$	100 m $\Omega$ to 10 k $\Omega$
Basic accuracy*	0.3% rdg + 3 digits	0.3% rdg + 3 digits	0.3% rdg + 3 digits	0.5% rdg + 4 digits	1% rdg + 4 digits
Protection	600 V <sub>RMS</sub>	600 V <sub>RMS</sub>	600 V <sub>RMS</sub>	600 V <sub>RMS</sub>	600 V <sub>RMS</sub>
<b>• Continuity</b>					
Detection threshold	10 to 15 $\Omega$	10 to 20 $\Omega$	10 to 20 $\Omega$	< 40 $\Omega$ •))	750 $\Omega$ •))
<b>• Diode test</b>					
Diode voltage	0 to 1.999 V	0 to 1.999 V	0 to 1.999 V	0 to 4 V	0 to 3 V
<b>• Capacity</b>					
Ranges	50 - 500 nF, 5 - 50 500 $\mu$ F, 5 - 50 mF	50 - 500 nF, 5 - 50 500 $\mu$ F, 5 - 50 mF	50 - 500 nF, 5 - 50 500 $\mu$ F, 5 - 50 mF	-	-
Basic accuracy*	1% rdg + 2 digits	1% rdg + 2 digits	1% rdg + 2 digits	-	-
<b>• Frequency</b>					
Ranges	5 - 50 - 500 Hz, 5 - 50 - 500 kHz**	5 - 50 - 500 Hz, 5 - 50 - 500 kHz**	5 - 50 - 500 Hz, 5 - 50 - 500 kHz**	4 - 40 - 400 kHz, 4 - 40 MHz**	-
Basic accuracy*	0.03% rdg + 1 digits	0.03% rdg + 1 digits	0.03% rdg + 1 digits	0.1% rdg + 3 digits	-

\* Accuracy of the best range

\*\* Measurement on 50,000 counts

GENERAL CHARACTERISTICS	MX 26	MX 24B	MX 23	MX 22	MX 21
Nature of the measurements	TRMS AC or AC+DC	TRMS AC or AC+DC	TRMS AC or AC+DC	AC	AC
Display	5,000 counts	5,000 counts	5,000 counts	4,000 counts	2,000 counts
MIN.-MAX.	Yes	Yes	-	Yes	-
MEM. or AUTO-MEM.	AUTO-MEM.	AUTO-MEM.	AUTO-MEM.	MEM.	MEM.
Bar graph	Yes	Yes	Yes	-	-
Backlighting	Yes	Yes	-	-	-
Serial link and software	Yes	-	-	-	-
IEC 61010-1 safety	Cat.III, 600 V	Cat.III, 600 V	Cat.III, 600 V	Cat.III, 600 V	Cat.III, 600 V
Operating temperature	-10 to 55°C	-10 to 55°C	-10 to 55°C	0 to 50°C	0 to 50°C
Power supply	9 V battery	9 V battery	9 V battery	9 V battery	9 V battery
Autonomy	500 hrs	500 hrs	500 hrs	200 hrs	300 hrs
Dimensions (height x length x depth)	170 x 80 x 35	170 x 80 x 35	170 x 80 x 35	170 x 80 x 35	170 x 80 x 35
Weight	300 g	300 g	300 g	300 g	300 g
Guarantee	3 years	3 years	3 years	1 year	1 year

## Accessories and information for ordering

### Accessories included

Each model is delivered with an elastomer sheath, a set of 2 safety leads, one 9 V battery (installed), a verification certificate and an operating manual.

### Accessories available as optional extras

<b>SX-DMMK2</b>	Communication kit for MX 26*
<b>HT0203</b>	THT 3 kVAC/DC voltage probe
<b>HT0212</b>	THT 30 kVDC voltage probe
<b>HK0210N</b>	-25 to 350°C general usage temperature probe
<b>HA1237</b>	Tachometric probe, 100 r.p.m. to 60,000 r.p.m.
<b>AE0190</b>	Shoulder bag for carrying the instrument from place to place (185 x 270 x 60 mm)
<b>HX0009</b>	Small and flat portable case
<b>HX0018</b>	Protective sheath (110 x 240 x 50 mm)

\*Includes 1 HX2002 serial link lead and 1 SX-DMM2 software package

### To order:

<b>MX0021-Z</b>	MX 21 2,000-count digital multimeter
<b>MX0021-W</b>	MX 21 2,000-count digital multimeter and MN 89 clamp
<b>MX0022-Z</b>	MX 22 4,000-count digital multimeter
<b>MX0023-G</b>	MX 23 5,000-count digital multimeter
<b>MX0024BG</b>	MX 24B 5,000-count digital multimeter
<b>MX0026-G</b>	MX 26 5,000-count digital multimeter with a digital link
<b>MX0021-L</b>	MX 21 in small case
<b>MX0021-T</b>	MX 21 and MN89 clamp in small case
<b>MX0022-L</b>	MX 22 in small case
<b>MX0023-L</b>	MX 23 in small case
<b>MX0024BL</b>	MX 24B in small case
<b>MX0026-T</b>	MX 26 with communication kit in small case



The MX 26, 24B and 23 are delivered with a multifunctional sheath, whereas the MX 22 and 21 are delivered with a "sock-shaped" sheath.



All MX Concept multimeters can also be purchased in a small and flat portable case.

**metrix**  
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Characteristics subject to modifications according to technological developments.

For assistance and ordering