

# MTX 3297Ex

**TRMS digital multimeter  
with intrinsic safety**

**For permanent use  
in Ex Zones**



1000 V  
CAT III  
600 V  
CAT IV

TRMS  
AC+DC

IP67

*Measure up*





# MTX 3297Ex, the ideal digital multimeter for your electrical measurement work in explosive Ex zones.

In mines

In the presence of gas

In the presence of explosive dust



Approved and certified for the highest levels of risk.  
An exceptional multimeter which meets  
the strictest requirements.



## The MTX 3297Ex

is certified as  and   
for the following zones:



IIC (gas) **0**, 1 and 2



IIIC (dust) **20**, 21 and 22



Mines **M1**

for **permanent** use in the oil, chemicals, agri-food, cosmetics and pharmaceutical industries, as well as cement production and mining.

**Ex certification** has been adopted by the countries in the European Union and several other European countries.

**IEC Ex certification**, developed by the **International Electrotechnical Commission (IEC)**, aims to harmonize and simplify the certification of equipment for hazardous zones worldwide.



# MTX 3297Ex

## Unrivalled ergonomics and rugged design

Isolated optical communication

Single terminal with automatic switch to current measurement when the connector is inserted into the A terminal

Terminal strip with reminder and connection check on the display

Detection and indication of a hazardous voltage present on the instrument's terminals

Large backlit screen with double display

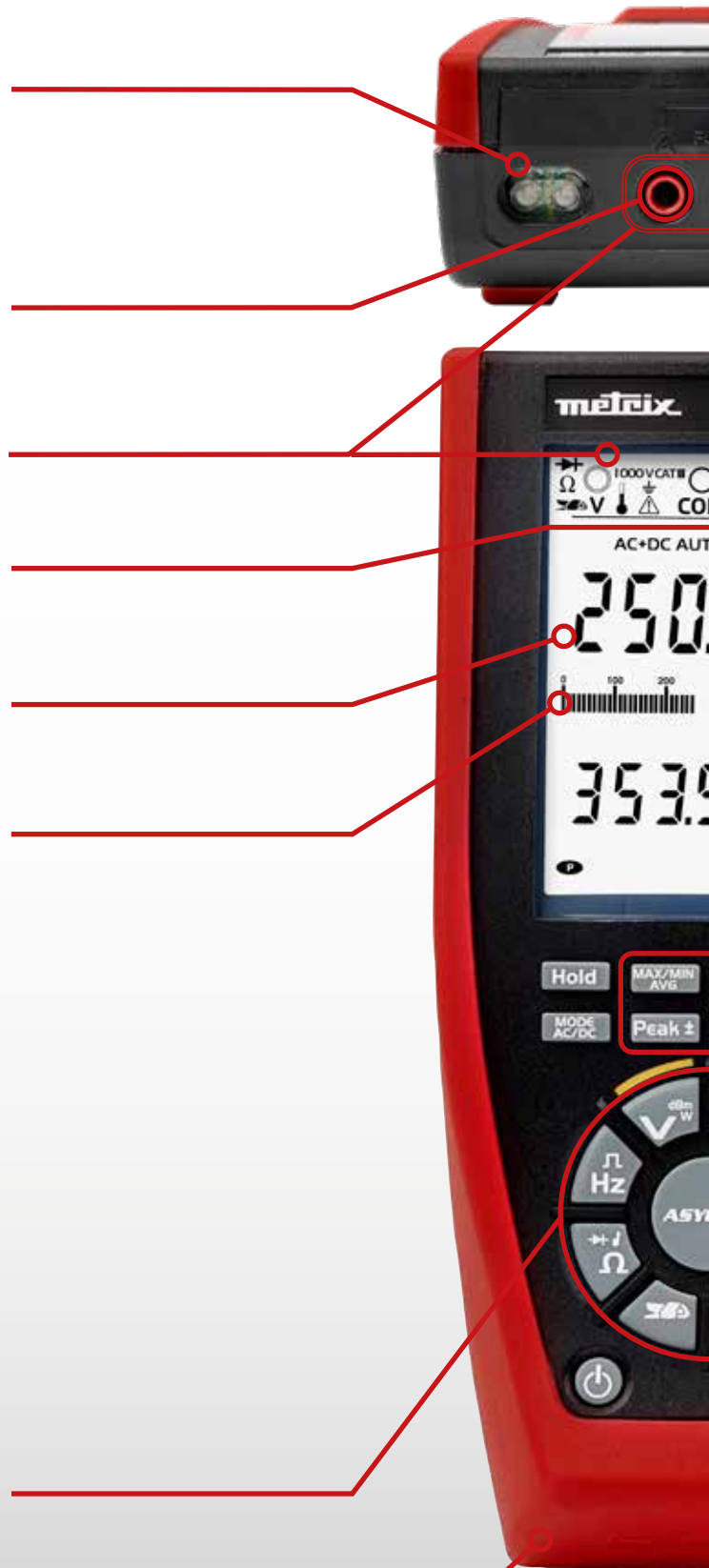
Bargraph with central zero mode

Electronic function switch with backlit keys

1 main measurement / 1 key

- Voltage
- Current
- Resistance (continuity, semiconductor junction)
- Capacitance
- Frequency (duty cycle/pulse width)
- Temperature
- AC/DC current measurement using a clamp with I/O ratio selection

A moulded casing for excellent handling and protection against shocks and falls





## Very high industrial performance

Outside explosive zones, the **MTX 3297Ex** is a high-performance industrial multimeter compliant with the **IEC 61010-2-033 standard** for work on **1000 V CAT III / 600 V CAT IV** electrical installations.

### High performance for reliable, accurate measurements whatever the type, shape and amplitude of the signal

- TRMS AC+DC acquisition
- 60,000-count resolution
- 100 MHz bandwidth
- 1  $\mu$ V resolution for voltage, 0.01  $\mu$ A resolution for current

### Functions to help with analysis and troubleshooting

- **Min, MAX, Peak+ and Peak-** functions
- **$\Delta X$**  differential and  **$\Delta X / X$**  relative functions
- Low-pass filter for measurement on PWM signals
- **$V_{LowZ}$  low-impedance** DC voltage in the presence of disturbance voltages



When used with the SX-DMM software for PC, the isolated optical communication allows real-time processing of the data, remote control of the MTX 3297Ex, upgrading and maintenance.

## Designed and manufactured in France

# MTX 3297Ex

## Efficiency and productivity in all circumstances

Whatever your industrial activity, the **MTX 3297Ex** multimeter fulfils all your requirements for electrical measurement, while remaining **simple to use** and comfortable to handle.

This multimeter guarantees **excellent measurement reliability, electrical safety** in your work and higher productivity in your activity.



Electricity generation  
(coal-fired power plants, gas-fired plants,  
hydroelectric plants, etc.)



Process industries  
(chemicals, pharmaceuticals, cosmetics, etc.)



Processing industries  
(wood, metals, etc.)



Arms industry and ordnance devices  
(explosives, gunpowder, etc.)



Agri-food industries  
(flour, cereals, etc.)



Industrial paint shops  
(automotive, rail, etc.)



# MTX 3297Ex

## All-round versatility

**Simplify** your work and **boost your efficiency** thanks to the **versatility** of the **MTX 3297Ex**, offering accuracy, reliability and multifunctionality to fulfil all your expectations in terms of industrial maintenance and electrical diagnostics.



### INDUSTRIAL MAINTENANCE AND TROUBLESHOOTING

Measurement quality and performance for troubleshooting faults on motors, PLCs and other equipment

- TRMS AC+DC acquisition
- 60,000-count display
- Resolution from 1  $\mu$ V for voltage and 0.01  $\mu$ A for current

Functions to help with analysis and diagnostics

- Min, MAX, Peak+ and Peak- functions
- $\Delta X$  differential and  $\Delta X / X$  relative functions

Measurement, verification and adjustment of the parameters, their constants and the way they change.

- Low-pass filter for measurement on PWM signals
- $V_{LowZ}$  low-impedance DC voltage in the presence of disturbance voltages



### ELECTRICAL MAINTENANCE

All the features and functions of a conventional multimeter

- Voltage, current and resistance measurements
- Audible continuity, diode test, etc.
- Capacitance and temperature
- TRMS AC+DC acquisition

**IP67**

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The multimeter's performance features and specifications remain the same thanks to its IP67\* liquid and dust-proofing.

\*Out of operation

# TECHNICAL SPECIFICATIONS

## DC, AC and AC+DC voltages

V DC	Measurement range	0.001 mV to 1000.0 V DC
	Uncertainty	0.05 % + 25 cts
V AC, V AC+DC	Measurement range	0.001 mV to 1000.0 V AC or AC+DC
	AC, AC+DC uncertainty / Bandwidth	0.05 % + 25 cts. 0.05% + 40 cts / 100 kHz
V <sub>LowZ</sub>	Measurement range	0.01 mV to 1000.0 V
	Uncertainty / Bandwidth	0.05 % + 25 cts / 300 Hz
Qualified measurement range in Ex zones		0.001 mV to 65.00 V

## DC, AC & AC+DC currents (protection by fuse)

A DC	Measurement range	0.01 $\mu$ A to 10.00 A DC (max. 20 A/30 s)
	Uncertainty	0.8 % + 20 cts
A AC, A AC+DC	Measurement range	0.01 $\mu$ A to 10.00 A AC or AC+DC (max. 20 A/30 s)
	Uncertainty / Bandwidth	1.0 % + 25 cts / 20 kHz
Qualified measurement range in Ex zones		0.01 $\mu$ A to 5.00 A
with external sensor (clamp)	up to 6,000 A depending on sensor, transformation ratio 1, 10, 100, 1,000 mV/A	

## Frequency

Hz	Measurement range	10.00 Hz to 200.0 kHz (for V), 20.00 kHz (for A)
	Uncertainty	0.1 % + 1 ct

## Resistance & Continuity, Diode

$\Omega$	Measurement range	0.00 $\Omega$ to 60.000 M $\Omega$
	Uncertainty	0.1 % + 20 cts
Continuity	Audible signal < 30 $\pm$ 5 $\Omega$ / < 5 V, I < 1.1 mA	
Diode test	3.000 V, 1 % + 30 cts / U < 5 V, I < 1.1 mA	

## Capacitance

nF/ $\mu$ F/mF	Measurement range	0.100 nF to 60.000 mF
	Accuracy/resolution	1 % + 10 cts

## Temperature Pt100/Pt1000

$^{\circ}$ C/ $^{\circ}$ F	Measurement range	-200.0 $^{\circ}$ C to +800.0 $^{\circ}$ C
	Uncertainty	0.1 % $\pm$ 1.5 $^{\circ}$ C

## Other measurements

Main measurement	Conductance
Secondary measurements	Duty cycle, pulse width, resistive power ( $U^2/R$ ), dBm

## Functions

MAX/Min/AVG, Peak+/Peak-	100 ms on all the main measurements except Peak (1 ms)
$\Delta$ REL, $\Delta$ REL/R	Differential value, relative value
PWM filter	4th-order 300 Hz low-pass filter

## General specifications

Display	Double 60,000-count LCD screen with 3-level backlighting
Power supply	4 x AA/FR6 Li-FeS2 Ex-qualified batteries / Battery life 350 h
Compliance outside Ex zones	IEC 6010-2-033 1000V CAT III/600V CAT IV, EN 61326-1 Class B
Ingress protection / Environment	IP 67* / Storage -20 $^{\circ}$ C to +70 $^{\circ}$ C, Use -10 $^{\circ}$ C to +55 $^{\circ}$ C
Mechanical specifications	Dimensions (L x W x H) : 196 x 90 x 471 mm – Weight: 715g
Warranty	3 years