

# TRMS AC, DC, AC+DC digital multimeters

Category IV for safety,  
versatility for use in the field



	C.A 5271	C.A 5273	C.A 5275	C.A 5277
<b>Display</b>	6,000 counts	2 x 6,000 counts with backlighting		
<b>Bargraph</b>	61 + 2 elements	61 + 2 elements, dual mode (full scale/central zero)		
<b>Acquisition</b>	TRMS AC /DC		TRMS AC / DC / AC+DC	
<b>Measurement range</b>	5 measurements / second			
<b>Autorange / Deactivatable</b>	Yes / No		Yes / Yes	
<b>Automatic AC /DC detection</b>	Yes		No	
<b>V<sub>DC</sub></b>	Ranges	600 mV / 6V / 60V / 600 V / 1,000 V		60 mV / 600 mV / 6 V / 60 V / 600 V / 1,000 V
	Typical accuracy	0.2 % + 2 cts		0.09 % + 2 cts
	Resolution	0.1 mV to 1 V		0.01 mV to 1 V
<b>V<sub>AC</sub></b>	Ranges	600 mV / 6 V / 60 V / 600 V / 1,000 V		60 mV / 600 mV / 6V / 60 V / 600 V / 1,000 V
	Resolution	0.1 mV to 1 V		0.01 mV to 1 V
	Bandwidth	40 Hz to 3 kHz		40 Hz to 10 kHz
<b>V<sub>Low AC</sub></b> (low impedance + low-pass filter)	Ranges	600 mV / 6V / 60V / 600V / 1,000 V		
	Resolution	0.1 mV to 1 V		
<b>V<sub>AC + DC</sub></b>	Ranges	60 mV / 600 mV / 6V / 60 V / 600 V / 1,000 V		
	Resolution	0.01 mV to 1 V		
<b>A<sub>DC</sub></b>	Ranges	6 A / 10 A (20 A / 30 s)		6,000 $\mu$ A / 60mA / 600 mA / 6 A / 10 A (20 A / 30 s)
	Resolution	0.001 A to 0.01 A		1 $\mu$ A to 0.01 A
<b>A<sub>AC</sub></b>	Ranges	6 A / 10 A		6,000 $\mu$ A / 60 mA / 600 mA / 6 A / 10 A (20 A / 30 s)
	Resolution	0.001 A to 0.01 A		1 $\mu$ A to 0.01 A
	Ranges			6,000 $\mu$ A / 60 mA / 600 mA / 6 A / 10 A (20 A / 30 s)
<b>A<sub>AC + DC</sub></b>	Resolution			1 $\mu$ A to 0.01 A
	Ranges	600 $\Omega$ / 6,000 $\Omega$ / 60 k $\Omega$ / 600 k $\Omega$ / 6 M $\Omega$ / 60 M $\Omega$		
<b>Resistance</b>	Resolution	0.1 $\Omega$ to 0.1 M $\Omega$		
<b>Audible continuity</b>		Yes		
<b>Test diode</b>		Yes		
<b>Hz</b>	Ranges	600 Hz / 6 kHz / 50 kHz		
	Resolution	0.1 Hz to 10 Hz		
<b>Capacity</b>	Ranges	6 nF / 60 nF / 600 nF / 6 $\mu$ F / 60 $\mu$ F / 600 $\mu$ F / 6 mF / 60 mF		
	Resolution	0.001 nF (1pF) to 10 $\mu$ F		
<b>T°</b>	Ranges	-59.6 °C to +1,200 °C -4 °F to +2,192 °F		-59.6 °C to +1,200 °C -4 °F to +2,192 °F
	Resolution	0.1° to 1 °		0.1° to 1 °
<b>Hold</b>		Hold		
<b>Min / MAX (100 ms)</b>		No	Yes	
<b>Peak+ / Peak- (1 ms)</b>		No	Yes	
<b>Differential measurement (X) / Relative (DX/X%)</b>		No	Yes	
<b>Automatic power-off</b>		Yes (deactivatable)		
<b>Power supply</b>		1 x 9 V		
<b>Dimensions / Weight</b>		90 x 190 x 45 / 400 g		

## State at delivery

**C.A 5270** multimeter delivered with a set of banana leads, a set of test probes, a 9 V battery and a CD containing the operating manual and the start-up guide.

**C.A 5271** standard state at delivery

**C.A 5273** with additional K thermocouple temperature sensor

**C.A 5275** with additional bag and Multifix adapter

**C.A 5277** with additional K thermocouple temperature sensor, bag and Multifix adapter

## To order

<b>C.A 5271</b> TRMS AC/DC multimeter	P01196771
<b>C.A 5273</b> TRMS AC/DC multimeter	P01196773
<b>C.A 5275</b> TRMS AC+DC multimeter	P01196775
<b>C.A 5277</b> TRMS AC+DC multimeter	P01196777

# Universal Testing and Measurement

## Digital multimeters

The MX 57Ex is certified ATEX & IECEx and can be used in both explosive and non-explosive environments.



The MX HD range of IP 67 multimeters fulfils the requirements for difficult environments. They are totally protected against:

- dust
- the effects of temporary immersion



	MX 22	MX 24B	MX 44HD	MX 58HD	MX 59HD	MX 57Ex
<b>Reference</b>	<b>MX0022-Z</b>	<b>MX0024-G</b>	<b>MX0044HD</b>	<b>MX0058HD</b>	<b>MX0059HD</b>	<b>MX0057CX</b>
<b>Display</b>	4,000 counts	5,000 counts	4,000 counts	5,000 / 50,000 counts	50,000 counts	50,000 counts
<b>Bargraph</b>	Yes			Analogue, 34 segments, 20 meas./s		
<b>Type of measurement</b>	AVG	TRMS	AVG	TRMS AC & AC+DC		
<b>DC voltage</b>	600 V	1,000 V	1,000 V	5 calibres from 500 mV to 600 V		
<b>AC voltage</b>	600 V	750 V	750 V	5 calibres from 500 mV to 600 V		
<b>Bandwidth</b>	500 Hz	1 kHz	1 kHz	50 kHz	100 kHz	50 kHz
<b>AC/DC current</b>	400 $\mu$ A, 4-40-400 mA, 4 A, 10 A	500 mA/10 A	40 mA/10 A	5 mA, 50 mA 500 mA, 20 A (30s)	500 $\mu$ A, 5 mA, 50 mA and 500 mA 20 A (30s)	
<b>Frequency</b>	4 MHz	500 kHz	–	Range from 0.62 Hz to 500 kHz		
<b>other measurements</b>						
<b>Resistance</b>	40 M $\Omega$	50 M $\Omega$	6 ranges from 400 $\Omega$ to 40 M $\Omega$	6 ranges from 500 $\Omega$ to 50 M $\Omega$		
<b>Audible continuity</b>	< 40 $\Omega$	10 to 20 $\Omega$	20 to 40 $\Omega$	Detection threshold from 10 $\Omega$ to 20 $\Omega$ - resp. time 1 ms		
<b>Diode test</b>	0 à 4 V	0 to 2 V	0 to 3 V	from 0 to 2 V		
<b>Capacitance</b>	–	50 nF to 50 mF	4 nF to 40 $\mu$ F	7 ranges from 50 nF to 50 mF		
<b>Temperature</b>	–	–	–	–	-200 $^{\circ}$ C to +800 $^{\circ}$ C / Pt100 and Pt1000 probes	
<b>Other measurements</b>	Min / Max	Min / Max		Duty cycle	Duty cycle – dB function	Duty cycle – dB function and U2/R resistive power Pulse width – timer Event counting
<b>Protection rating</b>	IP 40			IP 67		
<b>Safety</b>	CAT III 600 V		CAT III 600 V	IEC 61010-1 CAT IV 600 V		ATEX 94/9/CE directive, EN/IEC 60079-0-EN: IEC 60079-11, EN/IEC 61241-11-EN/IEC 61241-0, EN/IEC 61010-1-600 V CAT III, CE inspection certificate type LCIE 02 ATEX 6005X & additional clauses 01, 02, 03, 04
<b>Dimensions</b>	170 x 80 x 35 mm		189 x 82 x 40 mm	230 x 155 x 65 mm		189 x 82 x 40 mm
<b>Weight</b>	300 g		400 g	500 g		400 g
<b>State at delivery</b>	Elastomer sheath, set of 2 safety leads, 9 V battery (installed), verification certificate and operating manual		Set of safety test-probe leads, protective sheath, 2 x 1.5 batteries, 2 fuses installed and operating manual	Set of PVC safety test-probe leads, protective sheath, 9 V battery, 2 fuses installed and operating manual	Set of silicone safety test-probe leads, protective sheath, 9 V battery, 2 fuses installed and operating manual	Carrying case, set of safety test-probe leads, 1 spare intrinsic-safety fuse, operating manual



## Digital multimeters MTX Mobile range



	MTX 3283	MTX 3282	MTX 3281
<i>Multimeters in the MTX Mobile family: Direct one-handed access to the functions thanks to the electronic measurement switch • Large orientable graphic LCD screen • Dedicated "A" or "V" measurement terminals allowing automatic selection of the corresponding function, in mode AC +DC with automatic range by default • Optical RS232 and USB ports, BlueTooth port</i>			
<b>See below</b>			
Reference			
Display resolution	1 or 4 simultaneous displays of 100,000 counts each		
Analogue display	Fast bargraph associated with the graph or the digital measurements		
Graph of measurements over time	automatic display of the measurements from the last 60 s		
Backlighting / Auto power-off	backlighting time adjustable from 10 s to permanent / Activatable by the user		
TRMS measurements	AC & AC+DC for voltages and currents		
Basic accuracy for DC voltage	0.02 % +8 D	0.03 % +8 D	0.1 % +8 D
Bandwidth	200 kHz	100 kHz	50 kHz
AutoPeak for crest factor	detection and automatic management of the crest factor of the signals measured		
<b>Measurements available</b>			
AC & DC voltage ranges	ranges from 100.000 mV to 1,000.00 V		
Basic accuracy for AC voltage	0.3 % +40 D	0.3 % +40 D	0.7 % +40 D
AC & DC current	ranges from 1,000.00 mA to 20.000 A		
Basic accuracy for DC / AC current	0.08 % +8 D / 0.3 % +30 D		0.08 % +8 D / 1 % +30 D
Single A terminal / simultaneous U & I	automatic ranges on single A terminal, 1 fuse / using 3 leads		
Resistance / Continuity test	Ranges from 1000.00 Ω to 50.000 MΩ / 5 ms fast continuity test		
Frequency / Period / Duty cycle	0.6200 Hz to 2.000 MHz / yes / yes		
Pulse width / Metering	100 μs to 12.5 s / 99,999		no / no
Capacitance / Diode test	ranges from 10.00 nF to 10.00 mF / from 0 to 2.6000 V		
Temperature Pt100/1000 / J/K TC	yes / yes		no / yes
dBm / Resistive power	yes / yes	no / no	
U & I peak / Crest factor	periodic or single peaks lasting 250 ms min. / calculation of signal crest factor		
<b>Measurement processing</b>			
Display hold	Manual (Hold) Or Automatic On Stable Measurement (AutoHold)		
Min / Max / Avg monitoring	calendar date and time		relative date and time
Relative measurements	absolute deviation, deviation in % and reference / display of frequency and deviation in dB		
Measurements of physical quantities	"Favourite measurement" key , scaling and physical unit		
Measurement storage	6,500 measurements + graph		4 x 150 measurements + graph
Time/date-stamping	calendar date and time		relative date and time
SPEC function	display of the instrument's tolerances for each type of measurement		
Interfaces (depending on model)	insulated optical RS232 / insulated optical USB / wireless BlueTooth (100 m without obstructions)		
<b>Measurement processing</b>			
EMC / Safety	emission and immunity as per EN61326-1 / IEC61010 Cat. IV-600 V, Cat. III-1,000 V		
V/A selection / Input alarm	automatic according to lead position / buzzer and visual alarm for A		
Orientable protected display	use on benchtop or worn on belt (hands-free) / protection during transport		
Electronic switch	no more mechanical failures / all-round safety management		
Protected battery/fuse access	separate compartments with mandatory disconnection of leads		
"Closed-case" software calibration	optimization of adjustments (optional SX-MTX328x calibration software)		

## State at delivery

**MTX3281B:** MTX 3281 delivered with 1 set of banana leads Ø 4 mm, 3 x LR6 batteries, HRC fuse, 10 x 38 mm 1,000 V-T11A-20 kA, and an abbreviated operating manual in 5 languages

**MTX3282B:** MTX 3282 delivered with 1 set of banana leads Ø 4 mm, 3 x AA NiMH rechargeable batteries with mains adapter/charger, HRC fuse, 10 x 38 mm 1,000 V-T11A-20 kA, and an abbreviated operating manual in 5 languages

**MTX3283B:** MTX 3283 delivered with 1 set of banana leads Ø 4 mm, 3 x AA NiMH rechargeable batteries, HRC fuse, 10 x 38 mm 1,000 V-T11A-20 kA, and an abbreviated operating manual in 5 languages.

## References

**MTX3281B-COM:** MTX3281B + USB cable and SX-DMM software  
**MTX3282B-COM:** MTX3282B + USB cable and SX-DMM software  
**MTX3283B-COM:** MTX3283B + USB cable and SX-DMM software

**MTX3281B-BT:** MTX3281B + Bluetooth and SX-DMM software  
**MTX3282B-BT:** MTX3282B + Bluetooth and SX-DMM software  
**MTX3283B-BT:** MTX3283B + Bluetooth and SX-DMM software

**MTX3281B-P:** Delivered in hard case with HX0052 "hands-free" kit and 1 MN09 current clamp, 1 set of 2 crocodile clips, 1 set of 2 hook wire-grips, 1 CD-Rom containing the operating manuals in 5 languages

**MTX3282B-P:** Delivered in hard case with HX0052 "hands-free" kit and 1 K-thermocouple probe adapter, 1 USB cable and SX-DMM acquisition software, 1 set of 2 crocodile clips, 1 set of 2 hook wire-grips, 1 CD-Rom containing the operating manuals in 5 languages

**MTX3283B-P:** Delivered in hard case with HX0052 "hands-free" kit and 1 banana lead with clamp for SMD components (HX0064), 1 USB cable and SX-DMM acquisition software, 1 set of 2 crocodile clips, 1 set of 2 hook wire-grips, 1 CD-Rom containing the operating manuals in 5 languages