



# LABDMM<sub>2</sub>

## PROFESSIONAL DIGITAL MANOMETER for PRESSURE and TEMPERATURE measurement



LCD DISPLAY

RECHARGEABLE  
Battery

SOLLECITAZIONI DINAMICHE  
DYNAMIC STRESSES

Stabilità a lungo termine  
Long term high stability

Linearità - Isteresi  
 $\leq \pm 0.05\%$   
Linearity - Hysteresis

Misura della temperatura del fluido  
Measurement of fluid temperature

USB 2.0

Smart

<p><b>ACCREDIA</b> CENTRO ITALIANO DI ACCREDITAMENTO</p> <p>LAT N° 093 <b>Calibration Centre</b> The products are NOT covered by accreditation</p>	<p><b>COMPLETO DI</b> Certificato di Taratura ACCREDIA</p> <p><b>COMPLETE WITH</b> ACCREDIA Calibration Certificate</p>
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ACCREDIA not standard calibration performed on the measuring points 0%, 10 %, 50 % and 100 % for increasing and decreasing pressures, with 2 repeatability cycles for the measuring points 0%, 10 % and 50 % of full scale. This calibration does not permit certification of an expanded uncertainty of less than 0.05 % of full scale. Other more complete ACCREDIA calibrations according to EURAMET cg-17 are available **ON REQUEST**.

**LABDMM2** is a professional digital pressure gauge made according to the most modern technologies to guarantee a high level of reliability, versatility and practicality at the same time. The sturdiness and a high stability over time are guaranteed by a monolithic sensor made entirely of stainless steel capable of working even in the presence of highly dynamic pressures, and by a robust housing made of painted aluminum.

Designed to be used in metrological laboratories, calibration systems, automation in general and process controls where it is necessary to monitor, record and transmit data.

During the production cycle the pressure gauge is calibrated and **ACCREDIA** certified for the PRESSURE measurement to guarantee a measurement uncertainty better than 0.05% in 28 different pressure ranges, **RELATIVE**, **ABSOLUTE** and in **VACUUM**.

With this instrument it is possible to simultaneously measure the **PRESSURE** generated by air, gas, oil, water or any other type of non-corrosive fluid and the **TEMPERATURE** of the fluid that generates the pressure.

The pressure gauge is powered by an internal rechargeable Li-ion battery with up to 50 hours of continuous operation (without backlight). To recharge the battery you can use the USB port with a 5Vdc power supply or by connecting it directly to the PC.

For continuous operation it is possible to keep the manometer powered by the USB port or for industrial applications, it is possible to provide an external supply from 12 to 24 Vdc (option).

In the programming menu accessible from the keyboard it is possible to customize the behavior of the pressure gauge by adjusting various functions such as the **DIGITAL FILTER**, which allows to keep the measurement stable even in the presence of unsteady pressures, resolution, unit of measurement, Auto power off etc ...

Using the keyboard it is possible to set the positive and negative **PEAK** function to record the maximum and minimum pressures detected during the test.

On the display there is an analogue indication with pressure bar always active even within the programming menu.

The **WIRELESS** transmission is planned as an option to create a network of pressure gauges (up to 32) managed by a PC using the **WinWimod** software for mobile or reconfigurable applications without the need for collecting cables.

#### ***Main features:***

- Normalized pressures from **100 mbar** to **3000 bar** ABSOLUTE, RELATIVE and VACUUM.
- TEMPERATURE measurement in ° C or ° F.
- 5-digit LCD display with backlight.
- Resolution, digital filter, conversions in units of measurement.
- Functions of ZERO, PEAK max. and min.
- KEY LOCK function **Ⓚ** to protect the use parameters from unauthorized changes.
- LOOP function in which the measurement of pressure and temperature are alternated on the display.

#### ***OPTIONS:***

- RS232 communication port (as an alternative to USB communication).
- Internal DATA LOGGER with clock and calendar.
- Wireless transmission of pressure and temperature measurement.
- External power supply from 12Vdc to 24Vdc
- Built-in container.

## TECHNICAL DATA

<b>ACCURACY</b> (linearity and hysteresis)	$\leq \pm 0,05$ % F.S. $\leq \pm 0,10$ % F.S. versions 2500 and 3000 bar
<b>ABSOLUTE PRESSURE</b> Zero to the absolute vacuum pressure.	1 – 2.5 – 5 – 10 bar
<b>RELATIVE PRESSURE (R)</b> Zero at atmospheric pressure.	100 – 250 - 500 mbar 1 – 2,5 – 5 – 10 – 20 – 50 – 100 bar 250 - 350 – 500 – 700 bar 1000 – 1500 - 2000 – 2500 – 3000 bar
<b>RELATIVE VACUUM (V)</b> Zero at atmospheric pressure	-1 ... 1 bar    -1 ... 2.5 bar    -1 ... 5 bar -1 ... 10 bar    -1 ... 20bar
<b>PRESSURE UNITS</b>	bar – mbar – psi – Mpa – kPa – kg/cm <sup>2</sup> – mHg mmHg – mmH <sub>2</sub> O – mH <sub>2</sub> O
<b>TEMPERATURE INDICATION</b> a) Resolution b) Accuracy REFERENCE TEMPERATURE OPERATING TEMPERATURE RELATIVE UMIDITY	Unit °C - °F 0.1 °C $\pm 1$ °C 0 ... +50 °C -10 ... +60 °C < 90 % not condensed
<b>TEMPERATURE EFFECT (1 °C)</b> a) on zero b) on sensitivity	$\leq \pm 0,002$ % $\leq \pm 0,002$ %
<b>INTERNAL RESOLUTION</b> <b>CONVERSIONS PER SECONDS</b>	24 bit 10 (100ms)
<b>DISPLAY LCD BACKLIGHT</b> <b>DISPLAY HEIGHT</b>	CUSTOM 7 SEGMENT 13mm
<b>RESOLUTION</b> <b>FUNCTION DIGITAL FILTER</b> <b>FUNCTION ZERO</b> <b>FUNCTION PEAK</b> <b>FUNCTION LOOP</b> <b>FUNCTION LOCK (LOC) Ⓜ</b>	1, 2, 5, 10 from 0 to 5 100 % F.S. Positive / Negative (VACUUM) Switch between pressure and temperature Protection of programming
<b>COMMUNICATION PORT</b> <b>TRANSMISSION TYPE</b> <b>TRANSMISSION IN COUNTINUOUS MODE</b> <b>MAX DISTANCE</b>	USB 2.0 on DEMAND or CONTINUOUS 10 values per second 5 m
<b>POWER SUPPLY (1)</b> Autonomy Battery recharge	1 Li-Ion Battery 3.6V 1800mA/h 50 hours continuous From USB port (5Vdc)

<b>MECHANICAL LIMIT VALUES:</b>	
a) service pressure	100% F.S.
b) limit pressure	150% F.S.
c) breaking pressure	>300% F.S.
d) highly dynamic pressure	75% F.S.
PROCESS COUPLING	1/2" G Male
SEAL RECOMMENDED	USIT A 63-18
TIGHTENING WRENCH	27 mm
TIGHTENING TORQUE	28 Nm
<b>PROTECTION CLASS (EN 60529)</b>	IP40
MATERIAL SENSOR	17-4 PH STAINLESS STEEL
CONTAINER MATERIAL	ALUMINUM



(1) In case of non-use or prolonged storage, we recommend recharging the battery at least once a month to prevent the battery from discharging completely.

### **OPTIONS:** (to be purchased separately)

<b>INTERNAL DATALOGGER</b>	Pressure and Temperature
INTERNAL CLOCK / CALENDAR	YES
MAX NUMBER OF STORING POINTS	130000 (only pressure) 65000 (pressure and temperature)
STORING RATE	settable (from 1s to 24 hours)
MAX DATA LOGGER DURATION (2)	365 days
<b>WIRELESS TRANSMISSION</b>	868 MHz
MAX DISTANCE	40 m in free space
MAX number of manometers in network	32
<b>SERIAL PORT (3)</b>	RS232C
BAUD RATE	Fixed at 9600 baud
TYPE OF TRANSMISSION	On DEMAND or continuous
<b>BUILT-IN VERSION</b>	Case for panel mounting
MATERIAL	Glass-fiber reinforced technopolymer
<b>EXTERNAL POWER SUPPLY</b>	from 12 to 24Vdc
without battery, power supply and usb cable	



(2) For long durations of the data logger it may be necessary to supply the pressure gauge externally or recharge it periodically.

(3) The RS232C communication excludes USB communication. In this case the USB port is used only to recharge the battery.

### Accessories supplied in the STANDARD version:

ACCREDIA certificate.  
 Shock resistant silicone COVER.  
 USB power supply (5VDC @ 700mA)  
 USB cable.  
 CASE for transport.  
 CD containing MANUAL and USB DRIVER.  
 N ° 2 mordant cones only for high pressure gauges from 1000 bar to 3000 bar.



### Accessories supplied in the BUILT-IN version:

ACCREDIA certificate.  
 2 mounting brackets  
 USB power supply (5VDC @ 700mA)  
 USB cable.  
 CD containing MANUAL and USB DRIVER.  
 N ° 2 mordant cones only for high pressure gauges from 1000 bar to 3000 bar.



### Accessories: (to be purchased separately)

EXTERNAL POWER SUPPLY from 220V to 12Vdc.  
 Code: **TALDMM**

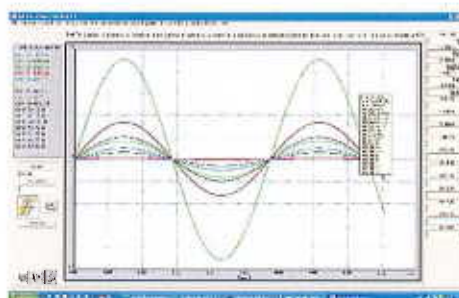


RS232 cable code: **TCAVOSERIALE**

### Quick analyzer

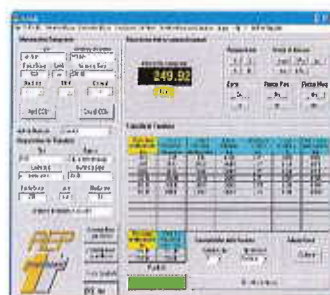
#### Quick analyzer Light

Application software that interface directly to the pressure gauge and support the operator in the various functions of testing, analysis, time monitoring, data storage, data logger management and measurement transfer on Microsoft Excel etc ...



### PressKAL

Software dedicated to the calibration and metrological confirmation of pressure gauges such as pressure gauges, transducers and pressure transmitters and pressure switches.



### ***WIRELESS transmission (option)***

The **LABDMM2** pressure gauge can transmit the measurement of pressure and temperature via radio at regular intervals. The transmission frequency, 868 MHz, makes the communication safe and reliable even in the presence of other transmission systems such as mobile phones, walky talkys, radio microphones, remote controls etc that normally work on other frequencies.

You can create a network of max. 32 radio pressure gauges manageable through the **WinWIMOD** program. In this environment, you can create and store charts, print reports and export measurements in a Microsoft Excel environment.

The PC-side receiver is a USB pen drive module as shown in the figure alongside with an integrated antenna.

You can create your own personalized reception program by requesting the manual which documents the wireless communication protocol with the **LABDMM2** manometer.



MAX Distance in free space : 40m.

### STANDARD Indications

TYPE <sup>(1)</sup>	Full Scale	Display	Resolution	Display	Resolution	Display	Resolution	Display	Resolution
	bar	bar	bar	mbar	mbar	psi	psi	MPa	MPa
RV	0.1	0.1000	0.0001	100.00	0.01	1.450	0.002	0.0100	0.0001
RV	0.25	0.2500	0.0001	250.00	0.05	3.620	0.002	0.0250	0.0001
RV	0.5	0.5000	0.0001	500.00	0.05	7.200	0.002	0.0500	0.0001
ARV	1.0	1.0000	0.0001	1000.0	0.1	14.500	0.002	0.1000	0.0001
ARV	2.5	2.5000	0.0005	2500.0	0.5	36.200	0.005	0.2500	0.0001
ARV	5	5.0000	0.0005	5000.0	0.5	72.500	0.010	0.5000	0.0001
ARV	10	10.0000	0.001	10000	1	145.00	0.02	1.0000	0.0001
RV	20	20.0000	0.002	20000	2	290.00	0.02	20000	0.0002
R	50	50.0000	0.005	50000	5	725.00	0.10	5.0000	0.0005
R	100	100.00	0.01	99900	10	1450.0	0.2	10.000	0.001
R	250	250.00	0.02	99900	20	3620.0	0.5	25.000	0.002
R	350	350.00	0.05	99900	50	5000.0	0.5	35.000	0.005
R	500	500.00	0.05	99900	50	7250.0	0.2	50.000	0.005
R	700	700.00	0.05	99900	50	10000	0.2	70.000	0.005
R	1000	1000.0	0.1	99000	100	14500	2	100.00	0.01
R	1500	1500.0	0.2	99000	200	21700	5	150.00	0.02
R	2000	2000.0	0.2	99000	200	29000	5	200.00	0.02
R	2500	2500.0	0.2	99000	200	36250	5	250.00	0.02
R	3000	3000.0	0.2	99000	200	43500	5	300.00	0.02

<sup>(1)</sup> A = Absolute R = Relative V = Vacuum

### Dimensions (mm) standard version



### Dimensions (mm) built-in version



### Purchasing codes

TLDMM2	CERTIFICATE	FULL SCALE				OPTION
	CERT	0B1	5B	250B	1KB5	S = RS232C
		0B2	10B	350B	2KB	W = Wireless
		0B5	20B	500B	2KB5 <sup>(1)</sup>	
		1B	50B	700B	3KB <sup>(1)</sup>	
		2B5	100B	1KB		

Example: **TLDMM2 CERT 50B S**

<b>TDMMA</b>	ABSOLUTE version <sup>(1)</sup>
<b>TDMMV</b>	Relative VACUUM version

<sup>(1)</sup> ACCREDIA calibration CAN NOT be performed by the LAT Center N ° 093, on request it can be commissioned to other accredited calibration Centers.