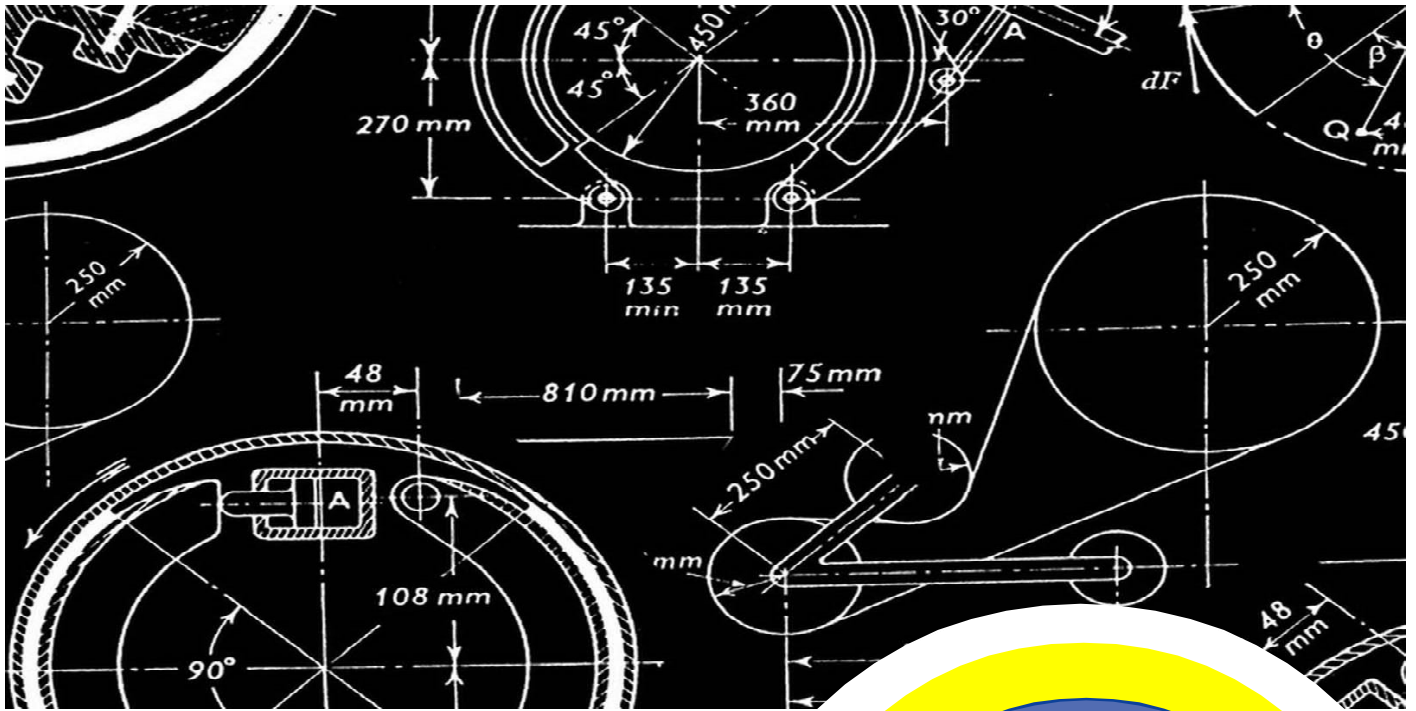


Digital pressure gauge **MME500**

Version 01

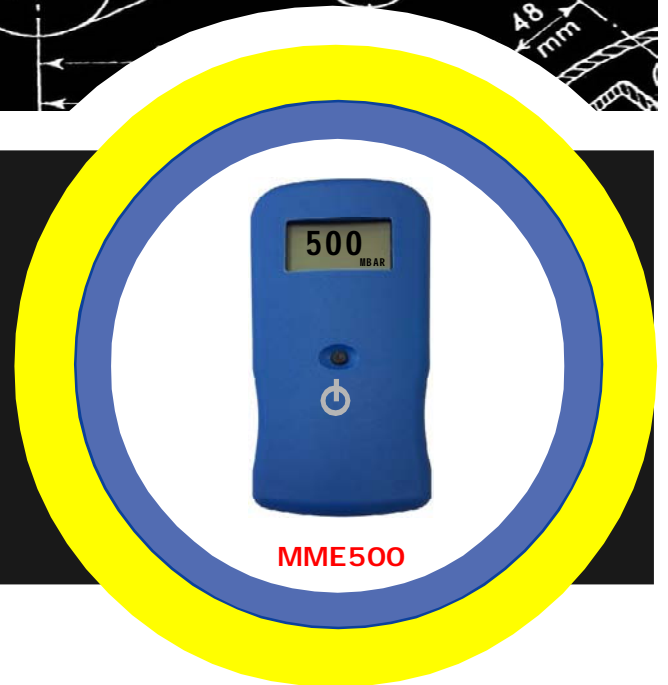


DIFFERENTIAL PRESSURE GAUGE

Tests and Measures

- Measure positive pressures
- Measure negative pressures
- Measuring scale **500 mbar**
- Check the present pressure
- Check the methane gas pressure on the network
- Check the LPG gas pressure
- Check the pressure in the combustion chamber
- Check the efficiency of the paths

UNI 7129



Thank you for choosing the **BEINAT S.r.L.** digital tool, model **MME500**. This manual was designed to help you obtain the best results and efficiency from the product

Important Note



Read these instructions carefully before use and always keep them within hands reach while using the instrument. The illustrations and texts shown on the screens in this manual may differ from those actually displayed



User's Guide & maintenance

The **MME500** pressure gauge is a high-tech product that embodies the innovation and elegance of **BEINAT S.r.l.**
 Its best privilege is to assist the installer in his work both during the installation of new plants and in the testing of existing plants.



Pressure gauge

It is a small portable differential pressure gauge, with easy use. Precision and autonomy make this tool indispensable for testing and controlling heating systems.
 It is calibrated with sophisticated testing machines, so its measurement is very precise. It is calibrated for example for the measurement of:

- Network gas pressure
- Pressure in the combustion chamber
- Fireplaces efficiency

For your safety

To prevent damage to the product or injury to you and third parties, read the following safety warnings carefully before using the equipment.

Store so that anyone using the appliance can consult it in advance.

If you notice smoke escaping or an acrid or unusual odor coming from the instrument, and in case of malfunction, immediately **switch off the device**, and send it to the nearest service center.

Do not attempt to disassemble the appliance.

Contact with internal parts of the detector can cause injury.
 In case of fault, the product must be repaired only by qualified personnel.

Avoid contact with liquid crystals.

In case of breakage of the display, be careful not to injure yourself with the glass fragments and avoid that the liquid crystals come into contact with the skin, eyes or mouth.

To use your digital equipment for a long time and with satisfaction, use it and store it keeping in mind the following precautions.

MAKE SURE the integrity of the product after removing it from the packaging.

Any use other than that for which the detector was designed is to be considered improper, so that **BEINAT S.r.l.** declines all responsibility for any damage caused to people, animals or things.

Do not wet it.

The detector is not waterproof, if immersed in water or exposed to high humidity it can be seriously damaged.

Don't let it fall.

Strong blows against hard surfaces and large vibrations can damage the appliance. Should the appliance break down after being dropped or crushed, consult the Service Center for necessary repairs.

Avoid strong magnetic fields.

This detector should not be used or stored in the presence of radiation or strong magnetic fields, static electricity or magnetic fields produced by equipment such as radio transmitters may interfere during detection.

Avoid sudden changes in temperature.

Sudden changes in temperature can cause condensation and the batteries could supply less current.
 Over (+ 45 ° C c / a) the monitor may turn black, to make it visible again it must be cooled by placing it in the refrigerator for a few minutes.

Cleaning

Never clean the appliance with chemical products. If necessary, wash with a damp cloth.

Technical specifications

Powered by 3 AAA alkaline batteries	4.5 V
Average consumption	8,30 mA Consum
Battery autonomy according to functions	100 hours approx
Battery charge and discharge control	On Display
Pressure: from 0 bar to 500 mbar	
Pressure detection probe	Built-in
Measuring range	+/- 500 mbar
Pressure overload	3 bars.
Resolution	1 mbar
Accuracy	0.4% FS
Old button	Built-in
Numeric alpha LCD display	3 digits
Operating temperature	-10 ° C ÷ + 50 ° C
Auto power off	after 60 minutes
Electromagnetic Compatibility "CE Reference standard	UNI 7129
Dimensions and weight	67 * 135 * 35 mm 70gr

Readings and Measurements

These operations must be carried out in compliance with the methods described in this manual.

Remember measurements taken with **batteries in need of recharge** can give **false measurements**.

Information Note between Pressure and Temperature

Three macroscopic variables are necessary to define the state of static air, each subject to direct measurement.

These variables are **pressure, temperature** and **volume**.

V, pressure **P** and temperature **T** is defined by Boyles Law:

$P \cdot V = n \cdot R \cdot T$. where **n** is the number of moles composing the gas and **R** is a universal constant.

The possible states of a gas with constant pressure and volume are expressed by the Gay-Lussac Law: **with constant pressure the volume of a gas increases as the temperature increases, or vice versa**

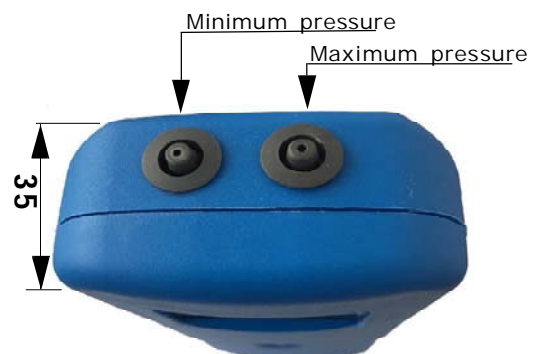
Therefore, if the instrument is connected at variable temperatures, the pressure registered at the start will definitely differ from final pressure.

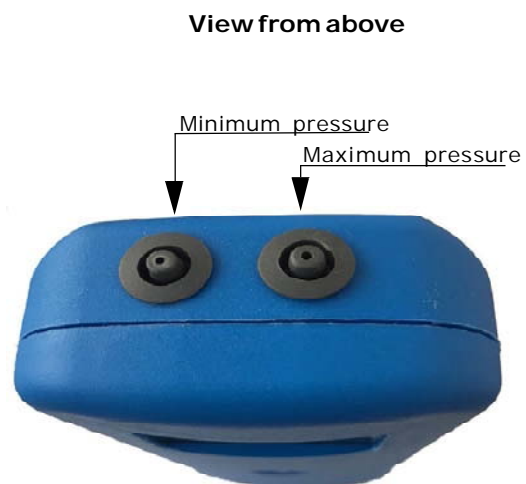
This is normal and is not due to malfunctioning..

For each degree C. of temperature the pressure varies by c / a 10 mmH₂O

Pressures Conversion Table

Unit of measure	Symbol	Pa	hPa	bar	mbar	at	mmH ₂ O
Pascal	mmH ₂ O	1	0,01	0,00001	0,01	0,00001	0,1
Hect Pascal	hPa	100	1	0,001	1	0,0001	10
bar	bar	100.000	1.000	1	1.000	1	10.000
millibar	mbar	0,01	1	0,001	1	0,001	10
Technical atm.	at	100.000	1.000	1	1.000	1	10.000
millimetriH ₂ O	mmH ₂ O	10	0,01	0,0001	0,1	0,0001	1
PSI	PSI	0.000145038	0.0145038	1.45038	0.0145038	1.45038	0.00145038





Button Function

Power button ON/OFF

To switch the instrument on/off, keep the button  pressed for 5 seconds.

View from above

To connect the supplied pneumatic hoses, use the inputs we need:

- 1) **Negative**, to measure a negative pressure.
- 2) **Positive**, to measure positive pressure.
- 3) **Both**, to measure a differentiated pressure



99

mbar

Display reading:
max. 99.9 mbar.
 N.B.The scale exchange
 takes place automatically

500

mbar

Display reading:
max. 500 mbar.
 N.B.The scale exchange
 takes place automatically

Display of the battery charge status
 The battery figure appears on the display.
 When it is **loaded** the figure is all **black**.
Downloading it becomes **white**
Flashing is **empty**. N.B. In this case do not take measurements.

MME-500 GAUGE

- To power the instrument on, keep the button pressed for 5 seconds.

The instrument automatically positions itself on the minimum scale "**from 0 to 99 mbar**"

HOLD function

The power button also serves to store the measured pressure.

Press the button at the end of the measurement before removing the detection tube; The detected value will be stored

Turn on the instrument as described above

2) Insert the tube into the **desired inlet**

3) Connect the instrument, through the small tube, to the source of pressure or depression, which must be measured.

Pressure Control

The **pressure gauge** has two measurement inputs, one of pressure (positive) and one of depression (negative).

1) **To measure the positive pressure**, apply the supplied tube to the "**RIGHT**" input, making sure to leave the "**LEFT**" input free. Minimum Input.

2) **To measure the negative pressure (Depression)**, apply the supplied tube to the "**LEFT**" input, making sure to leave the "**RIGHT**" input Maximum Input open.

3) **To measure the difference of two pressures**, apply the higher pressure to the positive inlet and the other to the negative inlet.

Finita la lettura, sul display apparirà la differenza di pressione che lo strumento misurerà tra un ingresso e l'altro.

SHUTDOWN. Press the OFF button for 5 seconds

WARNINGS !

These operations must be performed in accordance with the manner illustrated in this booklet.

We remind you that measurements made with low batteries can distort measurements

Sostituzione Batterie



Technical data of non-rechargeable AAA Alkaline batteries
 Rated voltage of the 1.5 VDCV battery pack each
Operating time approximately 100 hours with charged batteries
N.B. Do not replace the batteries in the ATEX area

Replacement of discharged batteries
 When the low battery icon appears, proceed as follows.

- 1) Turn off the instrument
- 2) Unscrew the 4 screws located on the back of the instrument.
- 3) Raise the cover
- 4) Remove the batteries
- 5) Insert the new batteries, positioning them in the right direction (+ -)
- 6) Refit the cover and tighten the 4 screws
- 7) Turn on the instrument and continue with your work.

Use
 The batteries must never be exposed to temperatures higher than + 40 ° C
 To ensure optimum durability, use them at room temperature.
 If used both at low and high temperature the duration capacity may decrease.

Problems - Solutions



If the appliance does not switch on.
 Check that the batteries are charged, if not replace them

If the appliance does not detect pressure
 Check that the pneumatic tubes are well inserted and make contact.

In case of further problems, it is necessary to contact directly a specialized and / or authorized technician or **BEINAT S.r.l.**

Calibration certificate on a sample instrument from the ASIT "ACCREDIA



ASIT
INSTRUMENTS S.P.A.

ASIT S.p.A. Strada Industriale 311
00166 Roma
Strada Industriale di Roma, 38/A 00143 Ostia Lido (RM)
Tel. 061 294 42 96, Fax. 061 294 42 07
www.asitstrumenti.it, e-mail: info@asitstrumenti.it

Centro di Taratura LAT N° 150
Calibration Centre
Laboratoire Accredité de
Taraire




LAT N° 150

Pagina 1 di 4
Page 1 of 4

CERTIFICATO DI TARATURA LAT 150 0945/MP/2018
Certificate of Calibration

<p>data di emissione date of issue</p> <p>cliente client</p> <p>contatore counter</p> <p>destinatario receiver</p> <p>richiesta application</p> <p>in data date</p> <p>efficienza efficiency</p> <p>oggetto item</p> <p>costruttore manufacturer</p> <p>modello model</p> <p>numero number</p> <p>data di ricevimento date of receipt</p> <p>data della misura date of measurement</p> <p>regione di riferimento laboratory reference</p>	<p>2018-11-21</p> <p>BEINAT S.R.L. Via Sant'Onofrio, 122/C 10077 S. MAURIZIO CANAVESE (TO)</p> <p>BEINAT S.R.L.</p> <p>000507</p> <p>2018-11-07</p> <p>Manometro digitale BEINAT MMES0 0001</p> <p>2018-11-12</p> <p>2018-11-21</p> <p>MP-2018-28002</p>	<p>Il presente certificato di taratura è emesso in base all'accertamento LAT N° 150 rilasciato in accordo ai decreti attuativi della legge n. 271/1991 che ha istituito il Sistema Nazionale di Taratura (SNT), ACCREDIA, atteso la capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali e internazionali delle unità di misura del Sistema Internazionale delle Unità (SI).</p> <p>Questo certificato non può essere riprodotto in modo parziale, salvo esplicita autorizzazione scritta da parte del Centro.</p> <p><i>This certificate of calibration is issued in compliance with the accreditation LAT N° 150 granted according to decrees connected with Italian law No. 271/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, the metrological competence of the Centre and the traceability of calibration results to the national and international standards of the International System of Units (SI).</i></p> <p><i>This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.</i></p>
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I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni e gli strumenti che garantiscono la correttezza di riferimento del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e non valgono nei momenti e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedure given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They refer only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 o al documento EA 402. Solitamente sono espresse come incertezza estesa moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95%. Normalmente tale fattore è uguale a 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA 402. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor is 2.

Il Responsabile del Centro
Head of the Centre
Calibration

The MME-500 digital manometer with scale from 0 to 500 mbar leaves the factory accompanied by a test and calibration certificate.

This corresponds to the calibration declared by the standard instrument, based on international standards regulations.

N.B. The sample instrument is kept at the production plant.

The assessment of measurement uncertainty is "**category B**"

NOTE!!

The ordinary and extraordinary maintenance of the digital pressure gauge and the **CALIBRATION**, whose natural expiry is **ONE YEAR**, must be performed by authorized personnel, with equipment in accordance with the law.

first CERTIFICATE OF CALIBRATION

Instrument: Digital pressure gauge **MME500**

Version: V. 1.0

Digital pressure gauge +/- 0-500 mbar

PRESSURE

Sample instrument	Serial number	Measurement range	Uncertainty	Resolution
DRUCK DPI 530 - 4bar	0745/99-09	0 ÷ 4 mbar	± 0.1% F.S.	1 mbar (100Pa)

All other technical features are present in the manual attached to the instrument.

The tests described above were carried out with the following references:

Temperature: 20°C ± 2°C
 Atmospheric Pressure: 100 kPa ± 0,1 kPa
 Relative humidity: 50% ± 15%

This certificate is valid for one year and may not be reproduced without our permission, in any case, may not be reproduced in part.



INSURANCE. This device is insured by the SOCIETÀ REALE MUTUA for the PRODUCT'S GENERAL LIABILITY up to a maximum of 1,500,000.00 EURO against damages caused by the device in case of failures in functioning.

WARRANTY. The warranty term is 3 years from manufacturing date, in agreement with the following conditions. The components acknowledged as faulty will be replaced free of charge, excluding the replacement of plastic or aluminium cases, bags, packing, batteries and technical reports.

The device must arrive free of shipment charges to **BEINAT S.r.l.**

Defects caused by unauthorized personnel tampering, incorrect installation and negligence resulting from phenomena outside normal functioning shall be excluded from the warranty.

BEINAT S.r.l. is not liable for possible damage, direct or indirect, to people, animals, or things; from product faults and from its enforced suspension of use.



DISPOSAL OF OLD ELECTRICAL & ELECTRONIC EQUIPMENT.

This symbol on the product or its packaging indicates that this product shall not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment, such as for example:

- sales points, in case you buy a new and similar product
- local collection points (waste collection center, local recycling center, etc....)

By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Attention: in some countries of the European Union, the product is not included in the field of application of the National Law that applies the European Directive 2002/96/EC and therefore these countries have no obligation to carry out a separate collection at the "end of life" of the product.



Pressure gauge **MME500**

Lo styling è della b & b design

Stamp of the Dealer

Purchase Date

Serial Number :

Beinat S.r.l. following the purpose of improving its products, it reserves the right to modify the technical, aesthetic and functional characteristics at any time and without giving any notice.

BEINAT S.r.l.

Via Fatebenefratelli 122/C 10077, S. Maurizio C/se (TO) - ITALY

Tel. 011.921.04.84 - Fax 011.921.14.77

http:// www.beinat.com



Business - info@beinat.com
Help Desk - laboratorio@beinat.com