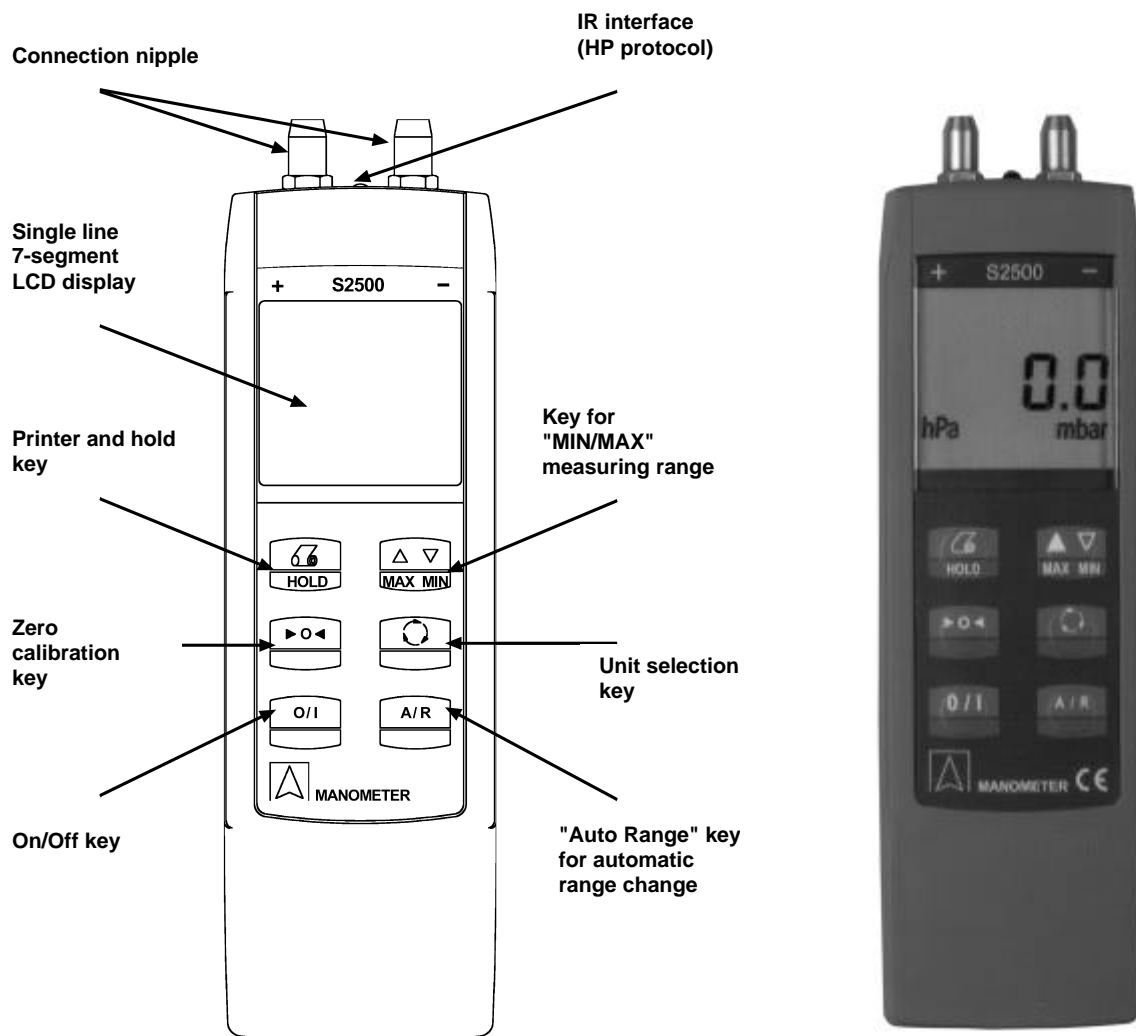


Operating instructions Electronic pressure gauges

DMG S2501TC - 130 mbar
DMG S2510 - 1.000 mbar



Contents

	Page
1. Field of application	2
2. Operating principle	2
3. Technical data	3
4. Service note	3
5. Calibration and servicing	3
6. Batteries	3
7. Initial operation	4
8. Identification of device model	4
9. General procedure when measuring	4
10. Key functions	4
11. Diagram: Assembly instructions for tube adaption	6

1. Field of application

The DMG pressure gauges in the S2500 series can be used universally for standard measurements, differential measurements and absolute pressure measurements. The classic field of application for these pressure gauges is the pressure measurement of gaseous, non-aggressive media. These units are designed for rough daily use but they are not suited for use with corrosive substances or cyclic hydrocarbons (e.g. motor oil, steering fluid, etc.). The following conventional areas of application can be included alongside the possible use for process control and laboratory measurements:

- Setting-up of gas boilers and oil burners (setting nozzle pressure of forced-draught gas burners and gas condensing boilers, gas flow measurements)
- Differential pressure measurement of air duct filters and in air ducts (pressure drop measurement of filters)
- Control of positive and negative pressure (draught) in flue ducts or chimneys

2. Operating principle

The existing physical pressure is converted into a voltage signal by a piezo-resistive transducer (sensor). The device's electronics evaluate this signal and present it – depending on the pressure unit selected – as a reading in the device display. With temperature-compensated versions the influence of temperature fluctuations is furthermore almost completely suppressed so that conceivable changes in temperature fundamentally cannot have any effect on the measuring accuracy of the device.

3. Technical data

Display	reflective 7-segment LCD (without illumination)
Reading presentation	single line (3½-digit)
Dimensions/weight	190 x 60 x 36 mm / approx. 280 g
Housing	reinforced mineral fibre, sky-blue (RAL 5015)
Protective case	plasticised PVC construction, gentian blue (RAL 5010)
Keys	6-fold key pad (RAL 5013/7001/9016)
Operating and storage temperature	0°C to +40°C / -20°C to +50°C
Data output	infrared (HP protocol)
Battery stand-by/status display	up to 300 hrs for alkaline batteries / "Low-Bat" symbol as battery status display for low batteries
Mechanical connections	2 x Ø 8 mm anaconda
Reading accuracy	= 1.0% of reading in nominal range (for temperature-compensated devices: = 0.6%)
Temperature coefficient	= 0.03%/°C of final range reading (for temperature-compensated devices in the range of 0°C to +40°C)

DMG	S 2501TC	S 2510
Range [mbar]		
- nominal	130	1000
- maximum	150	1050
Max. overpressure [bar]	1.0	2.0
Resolution [mbar]	0.01 (to 19.99) 0.1 (from 20.0)	0.1 (to 199.9) 1 (from 200)

4. Service note

When used in heating and sanitary applications the DMG S2500 pressure gauges are fundamentally maintenance-free. After frequent use in rough industrial environments it is recommended to undertake regular inspection of the unit.

5. Calibration and servicing

This device was calibrated in the manufacturer's test laboratory as prescribed in the specification. The calibration and measurement equipment used for this can be traced back – in accordance with the international unit systems (SI) – to valid national reference norms of the German Physical Technical Institute – Physikalisch Technische Bundesanstalt (PTB) – or to other national norms.

Furthermore, it is recommended that a rotational inspection of the device be carried out with appropriate re-calibration if necessary (usually every 24 months).

6. Batteries

The power supply for the DMG S2500 pressure gauges is provided by conventional batteries or re-chargeable storage batteries. Only use external, commercially-available and battery-specific chargers for re-charging storage batteries. Generally the following batteries are approved:



- 2 x 1.5 V alkaline battery (model: MIGNON, IEC LR6, AA)
- 2 x 1.2 V NiMH battery (model: MIGNON, IEC HR6, VH 1101, AA)
- 2 x 1.5 V storage battery (model: MIGNON, IEC HR6, AA)

Warning! Do not put batteries and storage batteries in household refuse; dispose of only at existing collection points. Only use approved batteries and storage batteries. Do not use

different battery types nor new and used batteries together. Do not re-charge non-rechargeable batteries. Do not short-circuit the connection terminals. Keep the device dry.

7. Initial operation

There are usually two alkaline batteries (Mignon model) in the battery compartment on the reverse side of the device when it is delivered. If these are missing a new pair of batteries must be inserted with the correct polarity. If the batteries have been inserted wrongly by mistake a reverse battery protection averts any damage to the device's electronics.

Switch on the pressure gauge with the On/Off key . A short test of all available display segments is followed by a calibration phase which starts automatically. Immediately after that the pressure gauge switches into active measuring mode. At the same time the operating mode *Autorange* (automatic selection of the most sensitive range) is pre-set. Switch off the device with the On/Off key  after the reading is complete.

8. Identification of device model

The identification of the device model can be done in two ways. Either by a code during the calibration phase in which the respective range is displayed as a numerical value in the display alternating with the term "CAL", e.g. "CAL 150.0 hPa (mbar)" for the model S2501 with the (max.) range of 150 hPa (mbar), or by an appropriate label on the reverse side of the device.

The additional identification marked with a cross "TC" (Temperature Compensated) indicates the temperature compensation carried out during the calibration process. This device feature provides an option with regard to the best possible reading accuracy under the effect of temperature influences.

9. General procedure when measuring

After switching on and the end of the automatic calibration phase the pressure gauge independently switches to zero. Afterwards the existing pressure can be measured within the device's measuring range and if necessary printed out on the infrared printer without the need for cables.

Depending on the application and the accessories used readings can be made in the positive or negative overpressure range as well as in the differential pressure and relative pressure range.

10. Key functions

The clear and user-friendly key pad allows an intuitive and thus task-specific operation of the DMG S2500 pressure gauges.



On/Off key

A short segment test is carried out immediately after the device is switched on followed by a calibration phase approximately 20 seconds long which ends with the automatic zero calibration. The executed calibration phase also contains information on the valid range of the device. (See point 8: Identification of device model). The device is now ready to measure. The measuring mode is automatically pre-set to "Auto Range". At the same time the "A/R" symbol is shown in the display.



"Auto Range / Range" key

The pre-set "Auto Range" operating mode presents an optimal measuring range selection and facilitates the automatic switching of the range depending on the pressure values measured at that moment.

This very easy-to-use function usually serves as a relief for the user who does not need to be concerned about a timely and sometimes awkward switching over of the display range if required.

With this key the sensitivity of the range selected can be set manually and in decimal steps depending on the display possibilities with regard to the display resolution.

If the "A/R" symbol is not shown in the display the readings collected can only be displayed within the operating mode selected by hand, that is in the measuring mode desired by the user. *Example S2510: selected unit of measurement "kPa"; measurement sensitivity "0.1 kPa" set by "A/R" key, thus the following display range is valid for pressure readings measured: "0.0 ... 199.9 kPa".*

Generally the least sensitive range always shows the smallest reading resolution.



Unit selection key

With this (unit) selection key it is possible to switch between different physical pressure units.

The pressure units available are generally dependant on the basic configuration of the device. The following physical pressure units can be selected depending on the model and configuration of the device: Pa (only possible with model S2501), hPa or mbar, kPa, bar, mH₂O, mmHg, inH₂O, inHg and PSI.






Zero calibration key

This key is for the manual setting of the zero point calibration within the valid range. Pressing this key starts the suppression or zero calibration of the value shown at the moment. The electronic zero adjustment is shown by a short display of the "ooo" symbol instead of the reading.



Printer and Hold key

The primary function of this key is the holding or aborting of the pressure reading (HOLD function). The secondary function allows the printing of the reading held.

In order to be able to print with the help of an IR printer (Model: Hewlett Packard HP 82240B) the HOLD/PRINT key  must be pressed first followed by the zero calibration key  (the stand-by symbol ? appears in the display). Next the key  has to be pressed again. The current display reading will be printed.

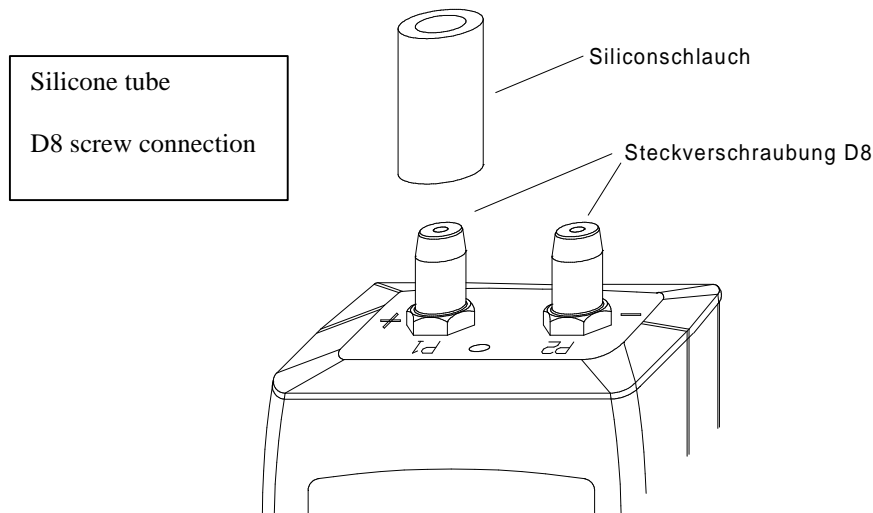


"MIN/MAX" switch key

The switching to minimum and maximum reading collection can be done manually at any time. Depending on the model this special measuring program also allows the successive selection of the physical pressure units. After selecting the desired unit the new reading is displayed automatically and immediately in the device display.

In this special operating mode all pressure changes are measured twice as quickly as in the standard measuring mode so that short-time or temporary pressure fluctuations can be collected in the same way.

11. Diagram: Assembly instructions for tube adaption



We reserve the right to make technical modifications in the interests of progress.