

## HAND-HELD MEASURING DEVICES WITH INTEGRATED SENSOR



## HIGHLIGHTS:

- Integrated pressure sensor
- Sturdy metal connection pin
- Tare function / zero point offset
- Model with protection available

## ADDITIONAL FUNCTIONS GMH 3181-...:



| Type specific data:          | GMH 3161 - ...   | GMH 3181 - ...  | GMH 3161 - ... -EX                             | GMH 3181 - ... -EX  |
|------------------------------|--|---|--|---|
| <b>Display:</b>              | 2 x 4½-digit LCD   | 2 x 4½-digit LCD  | 2 x 4½-digit LCD                               | 2 x 4½-digit LCD  |
| <b>Sensor:</b>               | Piezoresistive differential pressure sensor internally built into the instrument. Suitable for air and non-aggressive gases.<br>(Note: Not suited for water!)  |   |  |   |
| <b>Pressure connection:</b>  | 2 pressure port for universal 6 x 1 mm (4 mm hose inside diameter) or 8 x 1 mm (6 mm hose inside diameter) plastic tubing  |   |  |   |
| <b>Output:</b>               | interface  | interface or AAG  | interface*                                     | interface or AAG*   |
| <b>Serial interface:</b>     | x  | x   | x  | x   |
| <b>Analog output:</b>        | --   | 0 ... 1 V, freely adjustable<br>(resolution 12 bit)   | --   | 0 ... 1 V, freely adjustable<br>(resolution 12 bit)   |
| <b>Power supply:</b>         | 9 V battery, d.c. connector<br>suitable 9V-battery, d.c. connector for external 10.5 ... 12 V direct voltage supply. (suitable power supply: GNG10/3000)   |   |  |   |
| <b>Sensor adjustment:</b>    | digital offset and scale input   |   |  |   |
| <b>Peak value memory:</b>    | --   | ≥1 ms   | --   | ≥1 ms   |
| <b>Measuring cycle:</b>      | „slow“ 4 measurements / s  | 4 measurements / s  | 4 measurements / s                             | 4 measurements / s  |
|                              | „fast“ (with filter) --  | ≥1000 measurements / s  | --   | ≥1000 measurements / s  |
|                              | „peak-detect“ --<br>(Spitzenwertspeicher)  | ≥1000 measurements / s<br>The min- / max- value memory<br>stored unfiltered pressure peaks<br>≥1 ms | --   | ≥1000 measurements / s<br>The min- / max- value memory<br>stored unfiltered pressure peaks<br>≥1 ms |
| <b>Averaging function:</b>   | --   | x   | --   | x   |
| <b>Battery life:</b>         | approx. 500 h  | approx. 500 h (slow mode)<br>approx. 120 h (fast = 1000 Hz)   | approx. 500 h                                  | approx. 500 h (slow mode)<br>approx. 120 h (fast = 1000 Hz)   |
| <b>Operating conditions:</b> | -25 ... +50 °C, 0 ... +95 % RH (non-condensing)  |   | -10 ... +50 °C, 0 ... 95 % RH (non-condensing) |   |
| <b>Housing:</b>              | 142 x 71 x 26 mm (H x W x D) (without pressure connection pin - pin approx. 16 mm protruding at front side of device),<br>Impact-resistant ABS plastic housing, membrane keyboard, transparent panel, integrated pop-up clip |   |  |   |
| <b>Weight:</b>               | approx. 165 g  | approx. 170 g   | approx. 205 g (incl. leather case)             | approx. 210 g (incl. leather case)  |
| <b>Scope of supply:</b>      | Device, battery, calibration<br>protocol, manual   | Device, battery, calibration<br>protocol, manual  | Device, battery, manual                        | Device, battery, manual   |

\* Please refer to note to Ex-design types (p. 84)

## Additional functions:

**Serial interface:** direct connection to RS232 or USB interface of a PC via electrically isolated interface adapter GRS 3100, GRS 3105 or USB 3100 N.

## GMH 3181:

**Low power logger mode:** (only in measuring cycle „slow“) Only one measurement carried out at the end of the respective logger cycle. The battery life is considerably prolonged. For long-term recordings (e.g. leaktest).

**Averaging function:** integrates the meas. values during a selectable period of time and then calculates the average display value.

**Controlling function:** with the help of the switching module GAM3000 (optionally) electric equipment can be switched on/off or alarm monitored (see accessories)

## Logger functions:

- manual: 99 data sets

- cyclic: 10000 data sets (max. 64 recording sequences),  
adjustable cycle time: 1 ... 3600 s

## Note to the pressure unit selection: (information for all GMH31xx):

The choice of a specific pressure unit is possible, if its whole measuring range is displayable within the display of the device and the sensor is supporting these resolution.

**MANOMETER FOR OVER/UNDER PRESSURE AND PRESSURE DIFFERENCE**



-100 ... +2000 mbar (±2000 mbar\*1)

**GMH 3161-13**

Art. no. 600409

Pressure hand-held measuring device with integr. sensor

**GMH 3181-13**

Art. no. 600421

Pressure hand-held measuring device with integr. sensor

**GMH 3161-13-EX**

Art. no. 600647

Pressure hand-held measuring device with integr. sensor, Ex-protection (Ex II 2 G Ex ib IIC T4 Gb)



**GMH 3181-13-EX**

Art. no. 602263

Pressure hand-held measuring device with integr. sensor, Ex-protection (Ex II 2 G Ex ib IIC T4 Gb)



**Specifications:**

**Measuring range:** -100 ... 2000 mbar (optional: -1000 ... 2000 mbar)

**Overload:** max. 4 bar

**Resolution:** 1 mbar

**Additional pressure units:** bar, kPa, MPa, PSI, mmHg, mH<sub>2</sub>O

**Accuracy: (typ. values)**

**Hysteresis and linearity:** ±0.2 % FS; (±0.1 % FS)\*3

**Temperature-influence from 0 ... 50 °C:** ±0.4 % FS

**Option higher accuracy available:** yes

**Pressure connection:** 2

**Variants: Measuring range -1000 ... +2000 mbar \*2**

**GMH 3161-13-00-MB**

Art. no. 600527

Pressure hand-held measuring device with integr. sensor,

**GMH 3161-13-EX-MB**

Art. no. 607243

Pressure hand-held measuring device with integr. sensor

**GMH 3181-13-00-MB**

Art. no. 600529

Pressure hand-held measuring device with integr. sensor

**GMH 3181-13-MB-00-EX**

Art. no. 432507

Pressure hand-held measuring device with integr. sensor

For type specific data please refer to page 90.

\*1 measuring range possible by changing the pressure connection ports

\*2 without changing the pressure connection ports

\*3 Option higher accuracy

**VAKUUM- OR BAROMETER**



0 ... 1300 mbar abs.

**GMH 3161-12**

Art. no. 600407

Pressure hand-held measuring device with integr. sensor

**GMH 3181-12**

Art. no. 600419

Pressure hand-held measuring device with integr. sensor

**GMH 3161-12-EX**

Art. no. 610043

Pressure hand-held measuring device with integr. sensor, Ex-protection (Ex II 2 G Ex ib IIC T4 Gb)



**GMH 3181-12-EX**

Art. no. 610044

Pressure hand-held measuring device with integr. sensor, Ex-protection (Ex II 2 G Ex ib IIC T4 Gb)



**Specifications:**

**Measuring range:** 0 ... 1300 mbar abs.

**Overload:** max. 4 bar abs.

**Resolution:** 1 mbar

**Pressure units** mbar, bar, kPa, MPa, PSI, mmHg, mH<sub>2</sub>O

**Accuracy: (typ. values)**

**Hysteresis and linearity:** ±0.2 % FS; (±0.1 % FS)\*3

**Temperature-influence from 0 ... 50 °C:** ± 0.4 % FS

**Option higher accuracy available:** yes

**Druckanschlüsse:** 1

**Special function:**

**SeaLevel-Correction:**

The barometric air pressure can also be displayed relative to sea level 'zero'. (The air pressure correction takes place with entry of the height above 'zero' in metres)

For type specific data please refer to page 90.

\*3 Option higher accuracy

FOR ABSOLUTE PRESSURE MEASUREMENT

For type specific data please refer to page 90.

\*1 measuring range possible by changing the pressure connection ports

\*2 without changing the pressure connection ports

\*3 Option higher accuracy

**COMPLETE SOLUTIONS**



**GMH 3161-07-WPD5**

Art. no. 602684

Complete Solution incl. certificate of calibration ISO-WPD5 (5 points ascending / descending) and case GKK 3000.

**GMH 3161-12-WPD5**

Art. no. 602685

Complete Solution incl. certificate of calibration ISO-WPD5 (5 points ascending / descending) and case GKK 3000.

**GMH 3161-13-WPD5**

Art. no. 602686

Complete Solution incl. certificate of calibration ISO-WPD5 (5 points ascending / descending) and case GKK 3000.

**ACCESSORIES**

**Options:**

**Higher sensor accuracy**

by multi point calibration

Note: not possible for all device types!

**ISO-WPD5**

Art. no. 602514

ISO certificates: 5 points increase, 5 points decrease

**ISO-WPD10**

Art. no. 602565

ISO Certificate of calibration: 10 points increase, 10 points decrease.

**Accessories and spare parts:**

**GNG 10/3000**

Art. no. 600273

Plug in power supply for devices of the series GMH 3XXX

**GRS 3100**

Art. no. 601097

Interface Converter GMH3xxx <=>PC, RS232

**USB 3100 N**

Art. no. 601092

Interface Converter GMH3xxx <=>PC, USB

**GDZ-01**

Art. no. 601541

PVC-tube (5 bar) 6/4 (6 mm outside-Ø, 4 mm inside-Ø)

**GDZ-08**

Art. no. 601555

Double adapter for 6/4 tube to 6/4 tube

**GDZ-18**

Art. no. 601576

tube clamp for 6/4 tube

**GDZ-21**

Art. no. 601582

T-piece for 6/4 tubes

**GKK 3000**

Art. no. 601048

Device case soft lining for 1x GMH 3000 (275 x 229 x 83 mm)

for miscellaneous accessories p.r.t. page 86

HANDHELD INSTRUMENTS

SOFTWARE

ACCESSORIES

ALARM / PROTECTION, LEVEL