

## 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. (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 (resolution 12 bit)	--	0 ... 1 V, freely adjustable (resolution 12 bit)
<b>Power supply:</b>	9 V battery, d.c. connector 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“ -- (Spitzenwertspeicher)	≥1000 measurements / s The min- / max- value memory stored unfiltered pressure peaks ≥1 ms	--	≥1000 measurements / s The min- / max- value memory stored unfiltered pressure peaks ≥1 ms
<b>Averaging function:</b>	--	x	--	x
<b>Battery life:</b>	approx. 500 h	approx. 500 h (slow mode) approx. 120 h (fast = 1000 Hz)	approx. 500 h	approx. 500 h (slow mode) 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), 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 protocol, manual	Device, battery, calibration 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.

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



-500.0 ... +500.0 Pa (±500.0 Pa\*2)

**GMH 3161-002**

Art. no. 600469

Pressure hand-held measuring device with integr. sensor

**GMH 3181-002**

Art. no. 600470

Pressure hand-held measuring device with integr. sensor

**GMH 3161-002-EX**

Art. no. 606685

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



**GMH 3181-002-EX**

Art. no. 609063

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



**Specifications:**

**Measuring range:** -500.0 ... +500.0 Pa (-5.000 ... +5.000 mbar)

**Overload:** max. 250 hPa (mbar)

**Resolution:** 0.1 Pa (0.001 mbar)

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

**Accuracy: (typ. values)**

**Hysteresis and linearity:** 0.3 % FS

**Temperature-influence from 0-50 °C**

0.4 % FS

**Option higher accuracy available:** no

**Pressure connection:** 2



-100 ... +2500 Pa (±2500 Pa\*1)

**GMH 3161-01**

Art. no. 600397

Pressure hand-held measuring device with integr. sensor

**GMH 3181-01**

Art. no. 600411

Pressure hand-held measuring device with integr. sensor

**GMH 3161-01-EX**

Art. no. 607458

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



**GMH 3181-01-EX**

Art. no. 600796

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



-1,00 ... +70,00 mbar (±70,00 mbar\*1)

**GMH 3161-07H**

Art. no. 600405

Pressure hand-held measuring device with integr. sensor

**GMH 3181-07H**

Art. no. 600417

Pressure hand-held measuring device with integr. sensor

**GMH 3161-07H-EX**

Art. no. 610042

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



**GMH 3181-07H-EX**

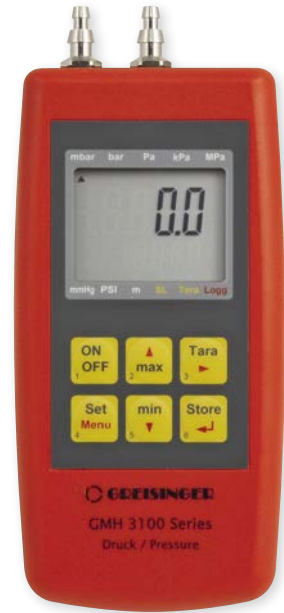
Art. no. 604074

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



**Specifications:**

	... - 01	... - 07H
<b>Measuring range:</b>	-100 ... 2500 Pa (-1.00 ... 25.00 mbar)	-1.00 ... +70.00 mbar
<b>Overload:</b>	max. 100 mbar	max. 1000 mbar
<b>Resolution:</b>	1 Pa (0.01 mbar)	0.01 mbar
<b>Additional pressure units:</b>	bar, kPa, PSI, mmHg, mH <sub>2</sub> O	bar, Pa, kPa, PSI, mmHg, mH <sub>2</sub> O
<b>Accuracy: (typ. values)</b>		
<b>Hysteresis and linearity:</b>	±0.3 % FS	±0.1 % FS
<b>Temperature-influence from 0-50 °C</b>	±0.4 % FS	±0.4 % FS
<b>Option higher accuracy available:</b>	no	already integrated
<b>Pressure connection:</b>	2	



-10,0 ... +350,0 mbar (±350,0 mbar\*1)

**GMH 3161-07**

Art. no. 600400

Pressure hand-held measuring device with integr. sensor

**GMH 3181-07**

Art. no. 600413

Pressure hand-held measuring device with integr. sensor

**GMH 3161-07-EX**

Art. no. 604435

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



**GMH 3181-07-EX**

Art. no. 601386

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



-10,0 ... +420,0 mbar (-7,5 ... +315,0 mmHg)

**GMH 3161-07B**

Art. no. 600402

Pressure hand-held measuring device with integr. sensor

**GMH 3181-07B**

Art. no. 600415

Pressure hand-held measuring device with integr. sensor

**GMH 3161-07B-EX**

Art. no. 609064

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



**GMH 3181-07B-EX**

Art. no. 604724

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



**Specifications:**

	... - 07	... - 07B
<b>Measuring range:</b>	-10.0 ... +350.0 mbar	-10.0 ... +420.0 mbar (-7.5 ... 315.0 mmHg)
<b>Overload:</b>	max. 1 bar	max. 1 bar
<b>Resolution:</b>	0.1 mbar	0.1 mbar (0.1 mmHg)
<b>Additional pressure units:</b>	bar, kPa, MPa, PSI, mmHg, mH <sub>2</sub> O	bar, kPa, MPa, PSI, mH <sub>2</sub> O
<b>Accuracy: (typ. values)</b>		
<b>Hysteresis and linearity:</b>	±0.2 % FS (±0.1 % FS) <sup>3</sup>	±0.1 % FS
<b>Temperature-influence from 0-50 °C</b>	±0.4 % FS	±0.4 % FS
<b>Option higher accuracy available:</b>	yes	already integrated
<b>Pressure connection:</b>	2	

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

**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

**HIGHLIGHTS:**

○ can be operated completely in a vacuum

**FOR ABSOLUTE PRESSURE MEASUREMENT**

**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