Handheld instrument

Display / Controller

Logger / EASYBus

Transmitter

Temperature probe

Alarm / Protection

A series of hand-held measuring devices with integrated sensor

WK

- integrated pressure sensor
- sturdy metal connection pin
- tara function / zero point offset

- **model with Ex - protection available**

Additional features for GMH 3181:

- peak value memory (>1 ms)
- 2 logger functions
- analog output 0 - 1 V
- min-/max- alarm
- integrated horn

WK

DIGITAL-VACUUM- / BAROMETER for measuring of absolute pressure.

GMH 3161-12 (device ready for operation)

GMH 3181-12 (device ready for operation)

0 ... 1300 mbar abs.

Version specific data:	... - 12
Measuring range:	0 ... 1300 mbar absolute
Overload:	max. 4 bar absolute
Resolution:	1 mbar
Pressure units:	mbar, bar, kPa, MPa, PSI, mmHg, m - freely select able
Accuracy: (typ. values)	
hysteresis and linearity	± 0,2 % FS
temperature-influence from 0-50°C	± 0,4 % FS
Option higher accuracy available	yes
Sensor:	integrated piezo-resistive absolute pressure sensor. *Suitable for air and non-corrosive, non-ionising gases and liquids. (Note: sensor is not suitable for water!)*
Pressure connection:	1 metal connection pin, made of brass, nickel plated, pressure tubes 6x1 mm (4 mm inside-Ø) can be connected

For type specific data please refer to page 25

Special function:

SeaLevel-correction:	The barometric air pressure can also be related to sea level "zero". (Correction of air pressure is achieved by entering m above "zero")

General function description:

Tare function: display value and the min./max values memorized can be set to zero.

Hold function: by pressing a button the current meas. value will be memorized.

Min./Max. value memory: memorizing of max. and min. values.

Serial interface: direct connection to RS232 or USB interface of a PC via electrically isolated interface adapter GRS3100, GRS3105 or USB3100.

Power-Off-function: device will be automatically switched of if no operating takes place for the time of the power-off delay. Selectable values: off, 1 ... 120 min.

Peak value memory (peak-detect): In the min-/max-value memory will be detected not filtered pressure peaks ≥10msec or ≥1msec.

Logger operation: Logger start and stop via the keyboard or interface. Comfortable read-out and display software (GSOFT3050) available as additional equipment.

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 (eg. tightness).

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

Min-/Max-alarm: the measuring value is constantly monitored if they remain within the min./max. limits set (deactivateable)
- **Alarm:** 3 different alarm settings
  - "off" - alarm function deactivated
  - "on" - visual alarm via display, interface alarm, alarm sounded via integrated horn.
  - "no.So." - visual alarm via display and interface alarm

- **Controlling function:** with the help of the switching module GAM3000 (optionally) electric equipment can be switched on/off or alarm monitored (p.r.t. page 41)

Options (upcharges)

Higher sensor accuracy
by multi point calibration
Note: not possible for all device types!

Certificate of calibration WPD5
(f. ISO9000 ff.) incl. several calibration points of sensor (stored in device memory), Certificate of calibration: 5 points increase, 5 points decrease.

Certificate of calibration WPD10
(f. ISO9000 ff.) incl. several calibration points of sensor (stored in device memory), Certificate of calibration: 10 points increase, 10 points decrease.

Special design type (upcharges)

Ex-protection (EEx ib IIC T4)
device type with Ex-protection
(please refer to notes at page 20)

Accessories:

GNG 10/3000 plug-in power supply

GKK 3000 case (275 x 229 x 83 mm)
with cut-outs for GMH3xxx

GRS 3100
interface converter, RS232, electrically isolated

USB 3100
interface converter, USB, electrically isolated

GDZ-01 PVC-tube (5bar)
6/4 (6mm outside-Ø, 4mm inside-Ø)

GDZ-08 Double adapter for
6/4 tube to 6/4 tube

GDZ-18 tube clamp for 6/4 tube

GDZ-21 T-piece for 6/4 tubes

for miscellaneous accessories
p.r.t. pages 22 - 23, 39 - 41

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DIGITAL-FINE MANOMETER / MANOMETER for over/under pressure and pressure difference.

WK

GMH 3161-01

GMH 3181-01

-100 ... 2500 Pa (± 2500 Pa *1)

GMH 3161-07H

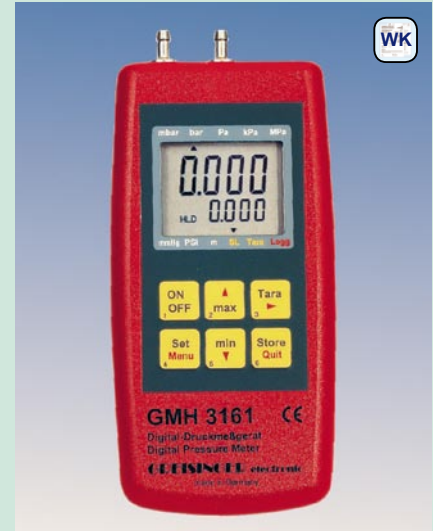-1,00 ... 70,00 mbar (± 70,00 mbar *1)

WK

GMH 3161-07

GMH 3181-07

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

GMH 3161-07B

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

WK

GMH 3161-13

GMH 3181-13

-100 ... 2000 mbar (± 2000 mbar *1)

Option, upcharge:

MB -1...2 BAR

measuring range: -1000 ... 2000 mbar *2

Version specific data:	... - 01	... - 07H	... - 07	... - 07B	... - 13
Measuring range:	-100 ... 2500 Pa (-1,00 .... 25,00 mbar)	-1,00 ... +70,00 mbar	-10,0 ... +350,0 mbar	-10,0 ... +420,0 mbar (-7,5 .... 315,0 mmHg)	-100 ... 2000 mbar (optional: -1000 .... 2000 mbar)
Overload:	max. 100 mbar	max. 1000 mbar	max. 1 bar	max. 1 bar	max. 4 bar
Resolution:	1 Pa (0,01 mbar)	0,01 mbar	0,1 mbar	0,1 mbar (0,1 mmHg)	1 mbar
additional pressure units:	bar, kPa, PSI, mmHg, m	bar, Pa, kPa, PSI, mmHg, m	bar, kPa, MPa, PSI, mmHg, m	bar, kPa, MPa, PSI, m	bar, kPa, MPa, PSI, mmHg, m
Accuracy: (typ. values)					
hysteresis and linearity	± 0,3 % FS	± 0,1 % FS	± 0,2 % FS	± 0,1 % FS	± 0,2 % FS
temperature-influence from 0-50°C	± 0,4 % FS	± 0,4 % FS	± 0,4 % FS	± 0,4 % FS	± 0,4 % FS
Option higher accuracy available	no	already integrated	yes	already integrated	yes
Sensor:	integrated piezo-resistive absolute pressure sensor. *Suitable for air and non-corrosive, non-ionising gases and liquids. (Note: sensor is not suitable for water!)*				
Pressure connection:	2 metal connection pin, made of brass, nickel plated, pressure tubes 6x1 mm (4 mm inside-Ø) can be connected				

*1 measuring range possible by changing the pressure connection ports   *2 without changing the pressure connection ports

Type specific data:	GMH 3161 - ...	GMH 3181 - ...	GMH 3160 - ... - ex	GMH 3180 - ... - ex
Display:	2 x 4½-digit LCD	2 x 4½-digit LCD	2 x 4-digit LCD	2 x 4-digit LCD
Output:	interface	interface or AAG	interface	interface
- serial interface:	X	X	X *(refer to note at page 20)*	X *(refer to note at page 20)*
- analog output:	--	0 - 1V, freely adjustable (resolution 12 bit)	--	--
Power supply:	9V-battery, d.c. connector	9V-battery, d.c. connector	9V-battery	9V-battery
	suitable 9V-battery (type IEC 6F22) in scope of supply, d.c. connector for external 10.5-12V direct voltage supply. (suitable power supply: GNG10/3000)			
Sensor adjustment:	digital offset and scale input	digital offset and scale input	zero point adjustment at keypress	zero point adjustment at keypress
Tare, hold, min/max value:	X	X	X	X
Peak value memory:	--	≥1 ms	--	≥10 ms
Measuring cycle: "slow"	4 measurements / s	4 measurements / s	4 measurements / s	4 measurements / s
"fast" (with filter)	--	≥ 1000 meas. / s	--	≥ 100 meas. / s
"peak-detect"	--	≥ 1000 meas. / s	--	≥ 100 meas. / s
Logger functions:	--	X	--	X
-manually:		99 data sets		99 data sets
-cycle:		10000 data sets (max. 64 recording sequences)		9999 data sets (max. 1 recording sequences)
-adjustable cycle time:		1 ... 3600 seconds		1 ... 3600 seconds
Averaging function:	--	X	--	X
Min-/max-alarm:	--	X	--	X
Real-time clock:	--	X	--	X
Power consumption:	approx. 0.6 mA	approx. 0.6 mA (slow mode) max. 2.5 mA (fast = 1000Hz)	max. 1 mA	max. 1 mA (slow mode) max. 3 mA (fast = 100Hz)
Working condition:	-25 to +50 °C, 0 to +95 %RH (non-condensing)		0 to 50 °C, 0 to 95 %RH (non-condensing)	
Housing dimensions:	142 x 71 x 26 mm (without pressure connection pin - pin approx. 11 mm protruding at front side of device), impact-resistant ABS plastic housing. Front side IP65			
	integrated pop-up clip for table top or suspended use.		--	
Weight:	approx. 165 g	approx. 170 g	approx. 205 g (incl. case)	approx. 210 g (incl. case)