

WATER-PROOF HANDHELD DEVICE FOR PRESSURE MEASUREMENT WITH EXTERNAL CHANGEABLE PROBES



WATER-PROOF DEVICE AND
PLUG-IN CONNECTIONS



GMH 5130 / 50



GMH 5155

HIGHLIGHTS:

- Peak value detection (1000 measurements / s)
- Large double display with background illumination
- Calibrated and fully interchangeable pressure probes
- incl. calibration protocol

ADDITIONAL FUNCTIONS GMH 5150 AND 5155:



ADDITIONAL FUNCTIONS GMH 5155:

- 2 GMSD/MSD-probes connectable.
- Difference measurement of two probes

SUITABLE PRESSURE PROBES
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GMH 5130

Art. no. 600027

Waterproof handheld device for pressure measurement with 1 sensor connection, without sensor

GMH 5150

Art. no. 600031

Waterproof handheld device for pressure measurement with 1 sensor connection, analog output and data logger, without sensor

GMH 5155

Art. no. 600033

Waterproof handheld device for pressure measurement with 2 sensor connections, analog output and data logger, without sensors

General:

This handheld instrument is a valuable tool for demanding pressure measurements. Extremely robust plug connections, the silicone protection cover, backlight and a water-proof design allow its usage in harsh industrial and field environments.

Application:

- Industry and craft, HVAC: heating, ventilation, air-conditioning
- Leakage test / pressure test
- Chimney draft measurement: under pressure, leakage test at buildings (i.e. 4 Pascal test)
- Measurements of gas and oil firings
- Automobile trade, hydraulic analysis (peak pressure)

Specifications:	GMH 5130
Sensor connections:	1
Suitable probes:	GMSD / MSD sensors, available ranges (resolutions) from -1.999 ... 2.500 mbar (0.001 mbar) to 0 ... 1000 bar (1 bar)
Display range max.:	-19999 ... +19999 digit
Display unit: *	depends on measuring range selection and sensor: mbar, bar, Pa, kPa, MPa, mmHg, inHg, PSI, mH ₂ O
Measuring frequency:	4 measurements / s or 1000 measurements / s with peak value memory
Average filter:	adjustable: 1 ... 120 s
Accuracy:	±0.1 % FS ±1 digit
Connections	
Sensor:	1 x 7-pole bayonet connector
Output / external supply:	4-pole bayonet connector for serial interface, supply (with accessories: USB adapter USB 5100)
Display:	4 ½ digit 7-segment, illuminated (white)
Operating conditions:	-25 ... +50 °C, 0 ... 95 % RH (non-condensing)
Storage temperature:	-25 ... +70 °C
Power supply:	2 x AAA-battery, battery life 500 h (without illumination, 4 measurings / s)
Housing:	impact resistant ABS housing with pop-up clip
Protection class:	IP65 / IP67
Dimensions:	160 x 86 x 37 mm (H x W x D) incl. silicone protection cover (red)
Weight:	approx. 250 g incl. battery and protection cover
Scope of supply:	Device, battery, calibration protocol, manual

Specifications:	GMH 5150 and GMH 5155
Sensor connections:	1, GMH 5155: 2
Suitable probes:	GMSD / MSD sensors, available ranges (resolutions) from -1.999 ... 2.500 mbar (0.001 mbar) to 0 ... 1000 bar (1 bar)
Display range max.:	-19999 ... +19999 digit
Display unit:	depends on measuring range selection and sensor: mbar, bar, Pa, kPa, MPa, mmHg, inHg, PSI, mH ₂ O, user
Measuring frequency:	4 measurements / s or 1000 measurements / s with peak value memory
Average filter:	adjustable: 1 ... 120 s
Accuracy:	±0.1 % FS ±1 digit
Connections	
Sensor:	1 x 7-pole bayonet connector GMH 5155 only: 2 x 7-pole bayonet connector
Output / external supply:	4-pole bayonet connector for serial interface, supply (with accessories: USB adapter USB 5100)
Analog output:	0 ... 1 V, freely adjustable, connection with 4-pole bayonet connector, resolution 12 bit
Display:	4 ½ digit 7-segment, illuminated (white)
Operating conditions:	-25 ... +50 °C, 0 ... 95 % RH (non-condensing)
Storage temperature:	-25 ... +70 °C
Power supply:	2 x AAA-battery, battery life 500 h (without illumination, 4 measurings / s)
Housing:	impact resistant ABS housing with pop-up clip
Protection class:	IP65 / IP67
Dimensions:	160 x 86 x 37 mm (H x W x D) incl. silicone protection cover (red)
Weight:	approx. 250 g incl. battery and protection cover
Scope of supply:	Device, battery, calibration protocol, manual

Additional functions:

Additional Display for Battery: Bar graph display

Background Illumination: duration adjustable (off, 5 s ... 2 min.)

Adjustment: offset / slope adjustable in menu

User-defined displayed unit: (user, GMH 5150/55)
conversion to any unit with help of linear factor

Leakage test function (GMH 5150/55):
leak rate display, leak rate alarm (/s, /min, /h)

Air velocity / flow volume (GMH 5150/55):
Pitot tube measurement (accessories)

peak-detect (Peak value memory):
The min- / max- value memory stored unfiltered pressure peaks ≥ 1 ms

Logger function:
with measuring point input, adjustable cycle time: 1 s ... 1 h, recording time: 416 days at intervall 1 h, data logger: cyclic: 10.000 data sets (GMH 5150), 8.000 data sets (GMH 5155); manual: 1.000 data sets (with measuring point input, 40 adjustable measuring point texts or measuring point numbers)

* = **Note to the pressure unit selection:**

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.

PLASTIC PRESSURE SENSORS WITH TUBE CONNECTION



FOR AIR AND NON
AGGRESSIVE GASES

General:

for use with
GMH 31xx, GDU5B: Type GMSD ... -K31,
GMH 51xx: Type: GMSD ... -K51

Application:

air and non aggressive gases
Plastic pressure sensors are not suitable for water / liquids.

SENSORS FOR MEASURING PRESSURE DIFFERENCE GMSD...

for differential pressure measuring (both pressures are connected) as well as for relative pressure measuring (pressure / vacuum, one terminal is left open)

	GMSD 2.5 MR ..	GMSD 25 MR ..	GMSD 350 MR ..	GMSD 2 BR ..	GMSD 10 BR ..
Measuring range:	-1.999 ... +2.500 mbar	-19.99 ... +25.00 mbar	-199.9 ... +350.0 mbar	-1000 ... +2000 mbar	-1.00 ... +10.00 bar
Overload:	max. 200 mbar	max. 300 mbar	max. 1 bar	max. 4 bar	max. 10.34 bar
Resolution:	0.001 mbar (0.1 Pa)	0.01 mbar (1 Pa)	0.1 mbar	1 mbar	10 mbar
Accuracy (typ.)					
Hysteresis / linearity:	±0.2 % FS	±0.2 % FS	±0.2 % FS	±0.2 % FS	±0.2 % FS
Temperature influence (from 0 ... 50 °C):	±1.0 % FS	±0.5 % FS	±0.4 % FS	±0.4 % FS	±0.4 % FS
OPTION higher probe accuracy:			±0.1 % / ±0.2 % FS	±0.1 % / ±0.2 % FS	±0.1 % / ±0.2 % FS
GMSD ... - K31					
Art. no.	601039	601148	601154	601170	601183
GMSD ... - K51					
Art. no.	601038	601149	601157	601171	601184

ABSOLUTE PRESSURE SENSORS GMSD...

for absolute pressure measuring (one terminal is without functionality)

	GMSD 1.3 BA ..	GMSD 2 BA ..	GMSD 7 BA ..
Measuring range:	0 ... 1300 mbar abs.	0 ... 2000 mbar abs.	0.00 ... 7.00 bar abs.
Overload:	max. 4 bar abs.	max. 4 bar abs.	max. 10.34 bar abs.
Resolution:	1 mbar	1 mbar	10 mbar
Accuracy (typ.)			
Hysteresis / linearity:	±0.2 % FS	±0.2 % FS	±0.2 % FS
Temperature influence (from 0 ... 50 °C):	±0.4 % FS	±0.4 % FS	±0.4 % FS
OPTION higher probe accuracy:	±0.1 % FS (hysteresis, linearity); ±0.2 % FS (temperature influence 0 ... 50 °C)		
GMSD ... - K31			
Art. no.	601192	601196	601200
GMSD ... - K51			
Art. no.	601193	601197	601201

Specifications:

Sensor:	piezoresistive pressure sensor
Pressure connection:	2 connection pins for tubes 6 x 1 mm (6 mm inside-Ø and 4 mm outside-Ø)
Electronics:	PC board with amplifier and data memory for sensor data (measuring range / calibration etc.) integrated in sensor housing
Working temperature:	0 ... +50 °C
Relative humidity:	0 ... +95 % RH (non-condensing)
Storage temperature:	-25 ... +70 °C
Housing:	ABS plastic with suspension eye, dimensions do not incl. connection pin: 68 x 32.5 x 15 mm (H x W x D), dimensions with connection pin: 68 x 32.5 x 27.5 mm.
Weight:	approx. 75 g (...K51: approx. 82 g)

Device connection

GMSD ... - K31:	1.2 m PVC connection cable, screened with integral 6-pin
GMSD ... - Ex:	Mini-DIN-plug, lockable
GMSD ... - K51:	1 m PVC connection cable, screened with 7-pin bayonet plug

Scope of supply: Device, calibration protocol, manual

Options:**Ex-protection****Higher probe accuracy**

by multi point calibration
Additional individual linearisation points are stored in sensor memory. (not possible for GMSD 2,5 MR and GMSD 25 MR!)

ISO-WPD5

Art. no. 602514

ISO certificates: 5 points ascending, 5 points descending

STAINLESS STEEL PRESSURE SENSORS G $\frac{1}{2}$ INCH

FOR AIR, AGGRESSIVE GASES
AND LIQUIDS

FOLLOW-ON TYPE FÜR GMSD-
STAINLESS-STEEL-SENSORS

MSD...

exchangeable handheld instruments pressure sensors st. steel G $\frac{1}{2}$ B
Connection cable MSD-K31 or MSD-K51 has to be ordered separately (accessories)

General:

for use with GMH31xx, GMH 51xx and GDUSB 1000

Application:

Air, aggressive gases, aggressive liquids / water, etc.

Abs. pressure	Measuring range	Overload	Resolution
MSD 1 BAE Art. no. 600583	0 ... 1000 mbar abs.	max. 5 bar abs.	1 mbar
MSD 2.5 BAE Art. no. 600585	0 ... 2500 mbar abs.	max. 10 bar abs.	1 mbar
MSD 4 BAE Art. no. 600587	0 ... 4000 mbar abs.	max. 17 bar abs.	1 mbar
MSD 6 BAE Art. no. 600592	0 ... 6000 mbar abs.	max. 35 bar abs.	1 mbar
MSD 10 BAE Art. no. 600594	0 ... 10,00 bar abs.	max. 35 bar abs.	10 mbar
MSD 16 BAE Art. no. 600596	0 ... 16.00 bar abs.	max. 80 bar abs.	10 mbar
MSD 25 BAE Art. no. 600598	0 ... 25.00 bar abs.	max. 50 bar abs.	10 mbar
Rel. pressure	Measuring range	Overload	Resolution
MSD 100 MRE Art. no. 600600	0.0 ... 100.0 mbar rel.	max. 1 bar rel.	0.1 mbar
MSD 250 MRE Art. no. 600604	0.0 ... 250.0 mbar rel.	max. 2 bar rel.	0.1 mbar
MSD 400 MRE Art. no. 600606	0.0 ... 400.0 mbar rel.	max. 2 bar rel.	0.1 mbar
MSD -1/1.5 BRE Art. no. 600608	-1000 ... +1500 mbar rel.	max. 10 bar rel.	1 mbar
MSD -1/3 BRE Art. no. 600610	-1000 ... +3000 mbar rel.	max. 17 bar rel.	1 mbar
MSD 1 BRE Art. no. 600612	0 ... 1000 mbar rel.	max. 5 bar rel.	1 mbar
MSD 2,5 BRE Art. no. 600614	0 ... 2500 mbar rel.	max. 10 bar rel.	1 mbar
MSD 4 BRE Art. no. 600616	0 ... 4000 mbar rel.	max. 17 bar rel.	1 mbar
MSD 6 BRE Art. no. 600618	0 ... 6000 mbar rel.	max. 35 bar rel.	1 mbar
MSD 10 BRE Art. no. 600620	0.00 ... 10.00 bar rel.	max. 35 bar rel.	10 mbar
MSD 25 BRE Art. no. 600622	0.00 ... 25.00 bar rel.	max. 50 bar rel.	10 mbar
MSD 40 BRE Art. no. 600624	0.00 ... 40.00 bar rel.	max. 80 bar rel.	10 mbar
MSD 60 BRE Art. no. 600627	0.00 ... 60.00 bar rel.	max. 120 bar rel.	10 mbar
MSD 100 BRE Art. no. 600629	0.0 ... 100.0 bar rel.	max. 200 bar rel.	0.1 bar
MSD 160 BRE Art. no. 600631	0.0 ... 160.0 bar rel.	max. 320 bar rel.	0.1 bar
MSD 250 BRE Art. no. 600639	0.0 ... 250.0 bar rel.	max. 500 bar rel.	0.1 bar
MSD 400 BRE Art. no. 600633	0.0 ... 400.0 bar rel.	max. 800 bar rel.	0.1 bar
MSD 600 BRE Art. no. 600635	0.0 ... 600.0 bar rel.	max. 1200 bar rel.	0.1 bar
MSD 1000 BRE Art. no. 600637	0 ... 1000 bar rel.	max. 1500 bar rel.	1 bar

MSD 25 MRE**MSD -20/60 MRE**

not suited for aggressive media, water, etc., no Ex design and no option „higher accuracy“ available

Rel. pressure	Measuring range	Overload	Resolution
MSD 25 MRE Art. no. 606904	0.00 ... 25.00 mbar	max. 500 mbar	0.01 mbar
MSD -20/60 MRE Art. no. 606765	-20.00 ... +60.00 mbar	max. 500 mbar	0.01 mbar

Specifications:

Sensor:	stainless steel pressure sensor (parts coming into contact with media). Suitable for aggressive media, water, etc.. (does not apply to MSD 25 MRE and MSD -20/60 MRE)
Accuracy: (typ. values)	±0.2 % FS (hysteresis and linearity) ±0.02 % FS / K (TC for zero or slope)
Electronics:	PC board with amplifier and data memory for sensor data (meas. range, etc.) integrated in sensor housing, sealed sensor electronic
Reaction time:	1 ms
Medium temperature:	-25 ... +100 °C (compensated range: 0 ... 80 °C); -25 ... +80 °C at MSD 25 MRE and MSD -20/60 MRE
Working temperature:	-20 ... +80 °C
Storage temperature:	-40 ... +80 °C
Pressure connection:	connection thread G1/2B (other on request)
Cable connection:	M16 built-in plug
Housing:	CrNi-steel or elgiloy (parts coming into contact with media) length: 88.5 mm, Ø 27 mm, approx. 220 g
Protection rating:	IP 67 (Sensor)
Scope of supply:	pressure sensor, calibration protocol, manual; Note: Connection cable has to be ordered separately.

Options:

Higher probe accuracy
by multi point calibration. Additional individual linearisation points are stored in sensor memory. (not available for MSD 25 MRE and MSD -20 / 60 MRE)

ISO-WPDS

Art. no. 602514

ISO certificates: 5 points ascending, 5 points descending

Accessories:**MSD-K31**

Art. no. 600657

Connecting cable for MSD sensor to GMH 31xx and GDUSB 1000
1.2 m PVC connection cable, screened with integral 6-pin Mini-DIN-plug and M16-socket (IP 54)

MSD-K51

Art. no. 603809

Connecting cable for MSD sensor to GMH 51xx
1 m PVC connection cable, screened with 7-pin bayonet plug cable and plug connection water proof acc. to IP 67 and M16-socket

MSD-K31-xx

Longer connection cable (as MSD-K31); Length 2 ... 10 m please specify

MSD-K51-xx

Longer connection cable (as MSD-K51); Length 2 ... 10 m please specify

Ex-Protection:

MSD ... - ex
Stainless steel pressure sensor (without cable) with Ex-protection

MSD-K31-Ex

Art. no. 600871

Connecting cable for MSD-Ex sensor to GMH 31xx-ex
Connection to GMH 31xx, 1 m connection cable, screened with integral 6-pin Mini-DIN-plug and M12-socket