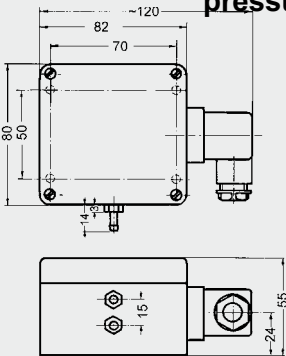


Pressure measuring transducer for absolute pressure, over/under pressure and pressure difference



picture shows relative pres. GMUD

GMUD standard pressure range

GMUD fine pressure range (0 to 1 ... 25 mbar)

Application: for air, non-corrosive, non oxidising and non-reducing gases and liquids. Not suitable for water! Suitable for controlling, measuring and monitoring on the climatic/ventilation, environmental and medical technology sector. For use in water an air cushion or hydrophobic filter is required - please contact us.

Types of pressure: ABSOLUTE PRESSURE (vacuum used as reference) for measuring over pressure over absolute zero (sensor displaying barometric air pressure when coming into contact with atmospheric pressure). RELATIVE PRESSURE (reference atmosphere or ambient pressure) for over/under pressure measurements and pressure difference measurements. (Sensor displaying zero when coming into contact with atmospheric or ambient pressure).

Specification:

Sensor element: piezoresistive pressure sensor with integrated temperature compensation 0 to 70°C

Measuring ranges: (standard)

Absolute pressure: 0 to 1100 mbar (e.g. barometric air pressure)
0 to 2 bar
0 to 7 bar
Relative pressure: 0 to 70 mbar
0 to 2 bar
0 to 10 bar

OPTION: any intermediate values upon request

Overload and bursting pressure:

Meas. range:	70 mbar	1100 mbar	2 bar	7 bar / 10 bar
Overload:	1,3 bar	2 bar	4 bar	10,34 bar

Typ. accuracies:

±0.2% FS (hysteresis and linearity), ±0.4% FS (temperature effect 0 - 50°C)
at meas. range ≤ 25mbar: ±0.6% FS (temperature effect 0 to 50°C)
OPTION: double accuracy for meas. range >25 mbar - against upcharge

Output signal: 4 - 20 mA (0-10V against upcharge)

Auxiliary energy: Vs = 12 ... 30 V DC (at 0-10V: Vs = 18 ... 30 V DC)

Permissible impedance (at 4-20mA): $RA [\Omega] = (Vs [V] - 12V) / 0.02A$

Permissible load (at 0-10V): $RL [\Omega] > 3000\Omega$

Operating temperature: 0 ... +70 °C

Storage temperature: -45 ... +70 °C

Pressure connection: 1 (at abs.) bzw. 2 (at rel.) metal connection pieces (nickel plated) for plastic tube 6 x 4 mm (4 mm inner diameter)

Mounting position: any position (small ranges up to 10 mbar depending on position)

Housing: ABS (IP65)

Fixing: by means of fixing holes for wall mounting (accessible after cover has been removed)

Mounting distance: 70 x 50 mm (H x W)

Fixing screws: max. shaft Ø 4 mm

Electric connection: elbow-type plug conforming to EN 175301-803/A (IP65); max. wire cross section: 1.5 mm², wire/cable Ø: 4.5mm to max. 7mm

Prices options:

AV010: option output signal 0-10V upcharge:

MB...: option any measuring range upcharge:
(please state desired measuring range - no upcharge at fine pressure ranges)

LACK: option "encapsulated PC board" upcharge:
(for outdoor application)

DSG: option double sensor accuracy
(not possible for high-precision range!)

VO: option on-site display upcharge:
(for output signal 4-20mA, auxiliary energy Uv = 17 ... 30 V DC)

For suitable tubes, accessories p.r.t. page 42 and 43

pressure measuring transducer 4...20 mA or 0...10 V



GMDP standard pressure range

GMDP fine pressure range (0 to 1 ... 25 mbar)

Application: for air, non-corrosive, non oxidising and non-reducing gases and liquids. Not suitable for water! Suitable for controlling, measuring and monitoring on the climatic/ventilation, environmental and medical technology sector.

Types of pressure: ABSOLUTE PRESSURE (vacuum used as reference) for measuring over pressure over absolute zero (sensor displaying barometric air pressure when coming into contact with atmospheric pressure). RELATIVE PRESSURE (reference atmosphere or ambient pressure) for over/under pressure measurements and pressure difference measurements. (Sensor displaying zero when coming into contact with atmospheric or ambient pressure).

Specification:

Sensor element: piezoresistive pressure sensor with integrated temperature compensation 0 to 70°C

Measuring ranges: (standard)

Absolute pressure: 0 to 1100 mbar
0 to 2 bar
0 to 7 bar
Relative pressure: 0 to 70 mbar
0 to 2 bar
0 to 10 bar

OPTION: any intermediate values (under pressure also possible) against upcharge available upon request: e.g. ±1bar, 0 bis 350mbar, 0 to 10mbar, etc.

Overload and bursting pressure:

Meas. range:	70 mbar	1100 mbar	2 bar	7 bar / 10 bar
Overload:	1,3 bar	2 bar	4 bar	10,34 bar

Sensor accuracy (typ. values):

±0.2% FS (hyst. and linearity), ±0.4% FS (temperature effect from 0 to 50°C)
at meas. range ≤ 25mbar: ±0.6% FS (temperature effect 0 to 50°C)
OPTION: double accuracy for meas. range >25 mbar - against upcharge

Output signal: 4 - 20 mA (0-10V against upcharge)

Auxiliary energy: Vs = 12 ... 30 V DC (at 0-10V: Vs = 18 ... 30 V DC)

Permissible impedance (at 4-20mA): $RA [\Omega] = (Vs [V] - 12V) / 0.02A$

Permissible load (at 0-10V): $RL [\Omega] > 3000\Omega$

Operating temperature: 0 ... +70 °C

Storage temperature: -45 ... +70 °C

Relative humidity: 0 ... 80 % r.h. (non-condensing)

Pressure connection: 2 plastic connection pieces for plastic tube 6 x 4 mm (4 mm inner diameter)

Mounting position: any position (small ranges up to 10 mbar depending on position)

Design-type: electronic PC board cpl. with sensor, 56 x 70 x 33 mm (BxHxT)

Mounting: 4 holes, 3.5 mm Ø each

Mounting distance: 43,5 x 58 mm (W x H)

Electric connection: screw-type/plug-in terminal

Order code:

GMDP 0...1100 mbar abs. / DSG:

GMDP, 4-20mA = 0...1100 mbar abs., double sensor accuracy

GMDP -1.. 10 bar rel. / AV010, LACK:

GMDP, 0-10V = -1 to 10 bar rel., encapsulated PC board

Prices options:

AV010: option output signal 0-10V upcharge:

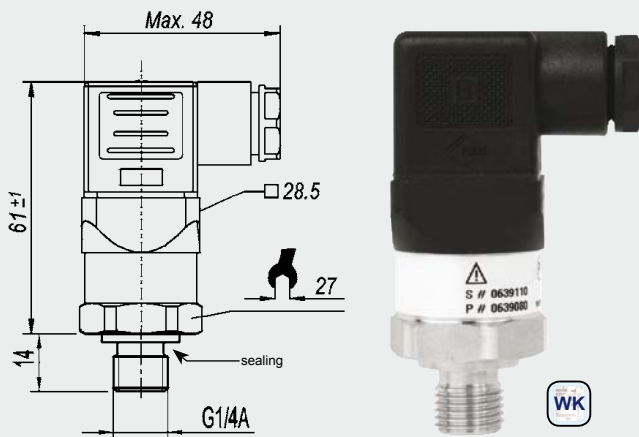
MB...: option any measuring range upcharge:
(please state desired measuring range - no upcharge at fine pressure ranges)

LACK: option "encapsulated PC board" upcharge:

DSG: option double sensor accuracy
(not possible for high-precision range!)

For suitable tubes, accessories p.r.t. page 42 and 43

Pressure transmitter



A-10

(relative pressure, zero output at atmospheric pressure)

Option: Absolute Pressure

(0...1bar abs. to 0...25bar abs.)

Option: Under Pressure

(-1,0 ... +1,5 bar, -1,0 ... +3,0 bar, -1,0 ... +9,0 bar)

General application: Suitable for all applications in machine and systems engineering, automotive technology as well as cooling and air conditioning technology.

Specification:

Measuring range (MR), Overload limit (OL), Burst pressure (BD):

MR: 1, 1.6, 2.5, 4, 6, 10, 16, 25, 40, 60, 100, 160, 250, 400, 600

OL: 2 3.2 5 8 12 20 32 50 80 120 200 320 500 800 1200

BD: 5 10 10 17 34 34 100 100 400 550 800 1000 1200 1700 2400

Output signal: 4-20mA, 2-wire, $RA [\Omega] \leq (U_v [V] - 8V) / 0.02 A$
0-10V, 3-wire, $RA \geq 10 k\Omega$
(other output signals upon request)

Auxiliary energy: 8...30VDC (for output 4-20 mA)

14...30VDC (for output 0-10V)

Accuracy: * $\leq 1,0 \% FS$ (optional: $\leq 0,5 \% FS$)

(* including non-linearity, hysteresis, zero point and scale error. Corresponds to error of measurement per IEC 61298-2. Sensor adjusted in vertical mounting position with lower pressure connection)

Non-Linearity: $\leq 0,5 \% FS$ (optional: $\leq 0,25 \% FS$)

Zero Offset: $\leq 0,5 \% FS$ (typ.), $\leq 0,8 \% FS$ (max.),
(optional: $\leq 0,15 \% FS$ (typ.), $\leq 0,4 \% FS$ (max.))

Hysteresis: $\leq 0,16 \% FS$

Repeatability: $\leq 0,1 \% FS$

Long-term drift: $\leq 0,1 \% FS$ (according to IEC 61298-3)

Response time: $T_{90} \leq 4 ms$

Perm. temperature of meas. media: 0 ... +80 °C (optional: -30 ... +85 °C)

Ambient temperature: 0 ... +80 °C (optional: -20 ... +80 °C)

Storage temperature: -20 ... +80 °C

Temperature compensated area: 0 ... +80 °C

Temperature error in comp. area: $\leq 1,0 \% FS$ (typ.), $\leq 2,5 \% FS$ (typ.)

Material: Parts coming into contact with pres. media

- Pressure connection: 316 L

- Pressure sensor: 316 L (as of 10bar rel. 13-8 PH)

Housing: 316 L

Pressure connection: G 1/4 A, DIN 3852-E with NBR sealing

Protection rating: IP65 resp. IP67 with cable

Electric connection: elbow-type plug acc. to EN 175301-803/A or connection cable, cable length 2m

Electric protections: reverse voltage and short-circuit protection

Weight: approx. 150 g

Options, Accessories:

Higher sensor accuracy (class 0,5)

Extended temperature range

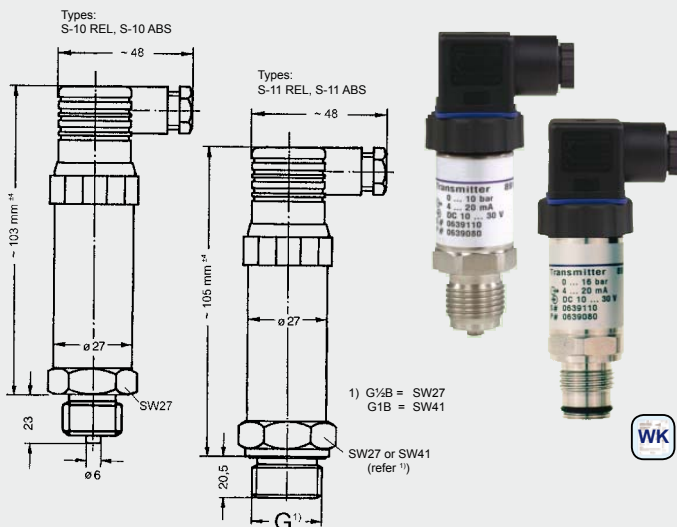
Output signal 0-10 V

Fixed connecting cable, 2 m with bend protection (instead of elbow-type plug, IP67)

GWA1214 V4A thread adapter G 1/2"

with internal thread G 3/4" and external thread G 3/2"

Pressure measuring transducer for over/under and absolute pressure



S-10 REL

(Standard, zero output at ambient pressure)

S-11 REL

(Flush, zero output at ambient pressure)

S-10 ABS

(Standard, absolute, zero output at vacuum)

S-11 ABS

(Flush, absolute, zero output at vacuum)

Description: piezoresistive pressure sensor with temperature compensation. Completely welded and stainless steel design, filled food safe (up to 16 bar), thin film strain (above 25 bar).

Specification:

Meas. ranges: in bar (other values upon request)

S-10 REL and S-11REL: 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5, 4, 6, 10, 16, 25, 40, 60, 100, 160, 250, 400, 600, 1000

S-10 ABS and S-11ABS: 0.25, 0.4, 0.6, 1, 1.6, 2.5, 4, 6, 10, 16

Measuring range (MB), Overload limit (ÜL):

MB (bar): 0.1, 0.16, 0.25, 0.4, 0.6, 1, 1.6, 2.5, 4, 6, 10, 16, 25 ... 600, 1000

ÜL (bar): 1 1.5 2 2 4 5 10 10 17 35 35 80 2x MB 1500

Output signal: 4-20 mA (0-10 V - refer to options; others upon request)

Permissible impedance: $RA [\Omega] = (U_v [V] - 10 V) / 0.02 A$ (for output 4-20 mA)
 $RA [\Omega] > 10 k\Omega$ (for output 0-10V)

Auxiliary energy: 10...30 V DC (14...30 V DC for output 0-10V)

Accuracy:

deviation from parameter (% of span): $\leq 0,5$ (setting of cut-off point)

$\leq 0,25$ (setting of tolerance band, BFSL)

Repeatability (% of span): $\leq 0,05$

Stability / year (% of span): $\leq 0,2$ (at reference conditions)

Hysteresis (% of span): $\leq 0,1$

Permissible temperature of media: -30 ... +100 °C (refer to options)

Operating temperature ambient: -20...+80 °C

Compensated temperature range: 0...+80 °C

Temperature coefficient: $\leq 0.02\% FS / K$ (or $< 0.04 \% FS$ for MB < 0.25 bar)

Filling: KN77, food safe

Housing: stainless steel 1.4435 (IP65)

Pressure connection: (other upon request)

Type S-10... : G 1/2 B

Type S-11... : G 1 B (up to 1.6 bar), G 1/2 B (from 2.5 to 600 bar)

Mounting position: any

Electric connection: standard via elbow-type plug EN 175301-803/A

Electric protections: reverse voltage protection, over voltage and short-circuit protection.

Options:

Special measuring range

upcharge:

-40...+125 °C (media temperature)

upcharge:

-20...+150 °C (media temperature, S-11 only)

upcharge:

Output signal 0-10V (other upon request)

upcharge:

Ex-protection

upon request