



# Pneumatic Gauge PS-Sensor

## Constant Flow methode

- Continuous bubbler sensor for fast detection of water level changes
- Automatic pressure range detection for maximum measuring accuracy (0.05 % FS)
- Display with function keys for measured value indication
- Measuring ranges: 0-10 m / 0-17 m / 0-20 m / 0-30 m / 0-35 m / 0-40 m
- Long-term stability due to intelligent sensor drift compensation
- Available with digital (RS 485: SHWP, SDI-12, MODBUS) or analog output (4-20 mA, 0-1 V, 0-5 V)
- Various configuration possibilities, e.g. number of bubbles per minute, measuring cycles, etc.
- Including automatic blow-through, compressor and air reservoir (0.75 l)



# Pressure Sensor Pneumatik Gauge - General

For many decades bubbler systems have been the first choice for highly accurate detection of water level fluctuations in flowing waters, dams, flood retention basins and locks. The flexible pressure transmission line can easily be laid in a protective pipe in the embankment. Even large distances of several hundred metres between the water gauge house and the watercourse can usually be bridged without problems. In contrast to other measuring methods, the measuring principle means that no

complex lightning protection measures are required on the sensor side, as the air continuously flowing into the water body is non-conductive. Deposits such as lime or bio-film on the measuring cell can also be excluded. A further advantage is that the typical, age-related drift of pressure probes is compensated by an automatic, processor-controlled 0-point calibration before each measurement. Thus, even after many years of operation, the bubbler insertion system is just as precise as on the first day.

## Description

### PS sensor:

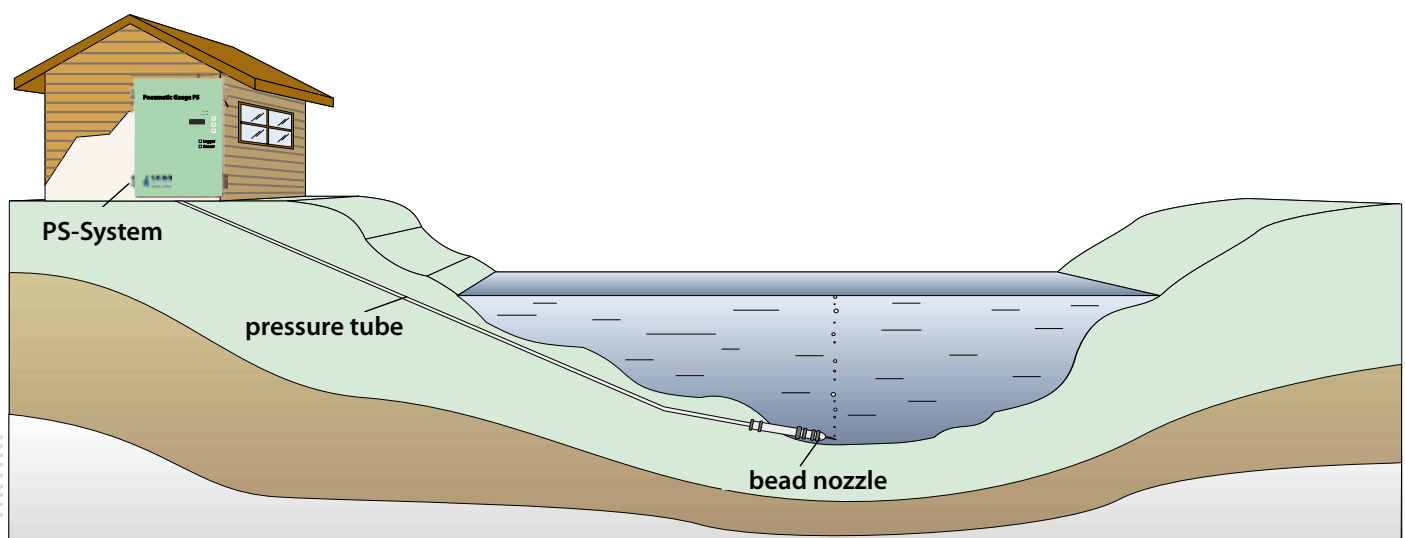
With the SEBA-Pneumatic Level Type PS-Sensor, SEBA-Hydro-metrie continues the successful product series of continuous bubbler systems for water level measurement. The PS-Sensor offers everything a modern, up-to-date measuring system has to offer. Equipped with two pressure sensors and an automatic pressure range detection, the PS sensor also meets the highest demands for measuring accuracy. In addition, the bubbler has further practical features: a compact, robust design with integrated compressor and air reservoir (⇒ small space requi-

rement), an LC display with three function keys, among other things for measured value display (⇒ easy handling), a large selection of digital and analogue output signals for connection to existing (SEBA) data collectors and/or process control systems (⇒ compatibility) as well as other proven functions, such as an automatic blow-through device for flushing out the pressure transmission line. Fast water level changes, e.g. during lock operation, are also no problem for the PS sensor.

## Measuring principle

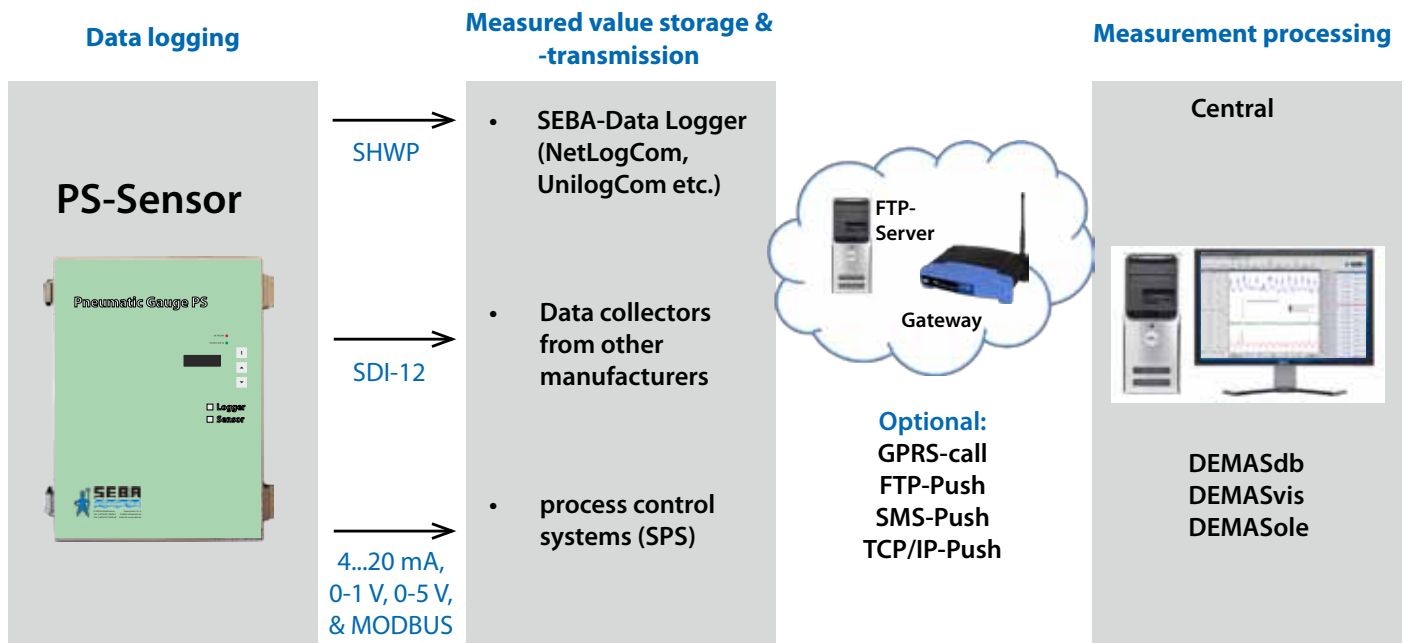
The integrated, maintenance-free compressor pumps air into a pressure reservoir until the operating pressure is reached. Afterwards, air is continuously fed into a pressure transmission line via a control valve, whereby the compressor ensures that the operating pressure is maintained as required. The hydrostatic pressure of the water column above the bead nozzle (see picture) corresponds exactly to the pressure in the pressure transmission

line. An automatic pressure range detection selects one of the two high-precision ceramic measuring cells with the optimum measuring accuracy. After a 0-point calibration, the pressure measuring cell then measures the line pressure. A transducer provided the measurement result either as an analog output signal (e.g. 4-20 mA) or digitally (e.g. SDI-12, MODBUS).

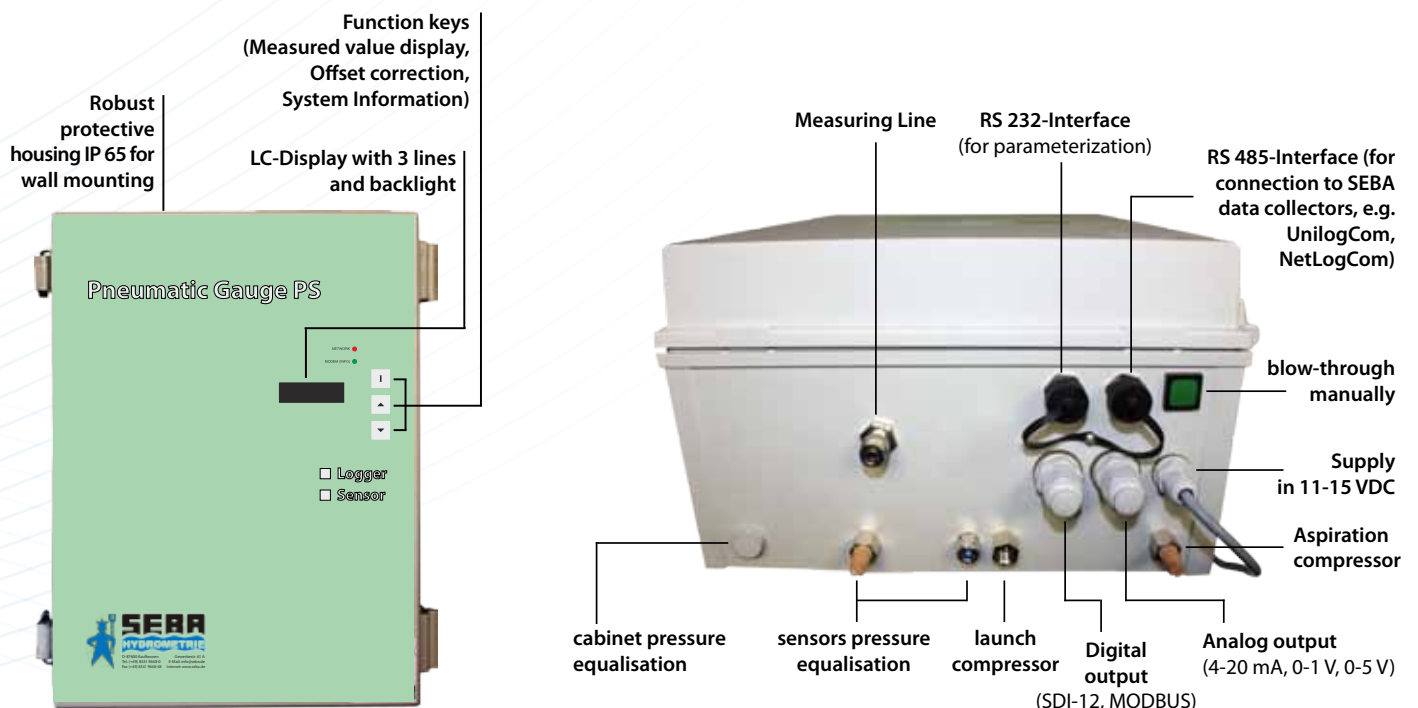




## Data flow



## Functional overview



# Technical data

<b>Parameters:</b>	Water level [m], [cm]
<b>Sensor:</b>	Relative pressure probe, microprocessor compensated (32 Bit)
<b>Measuring principle:</b>	Bubbler principle (pneumatic)
<b>Measuring range:</b>	0 - 10 / 0 - 4 m 0 - 17 / 0 - 4 m 0 - 20 / 0 - 4 m 0 - 30 / 0 - 6 m 0 - 35 / 0 - 6 m 0 - 40 / 0 - 6 m
<b>Accuracy:</b>	+/- 0,05 % FS = 1 cm bei 0-20 m measuring range
<b>Measuring interval:</b>	≥ 1 min
<b>Housing:</b>	
<b>Material:</b>	Synthetic (Polycarbonat)
<b>Dimensions:</b>	430 x 330 x 190 mm (L x B x H)
<b>Display:</b>	3 lines, 16 characters, backlight
<b>Operation:</b>	3 function keys
<b>Protection:</b>	IP 65
<b>Mounting:</b>	Wall mounting
<b>Dosing valve:</b>	Stepless (for adjustment and monitoring of the air volume)
<b>Compressor:</b>	7 bar (101,5 psi)
<b>Air storage:</b>	0.75 litre, stainless steel
<b>Automatic Flushing mechanism:</b>	Adjustable (1/6/12/24 h) to prevent sludge formation / Contamination of the beading out opening
<b>Communication Interface:</b>	RS 232, USB, Bluetooth®
<b>Output:</b>	
<b>Digital:</b>	RS 485: SHWP, SDI-12, MODBUS
<b>Analog:</b>	4...20 mA, 0-1 V, 0-5 V
<b>Power supply:</b>	10...15 VDC
<b>Operating temperature:</b>	-35 °C ... +65 °C
<b>Cable:</b>	2 m signal cable included
<b>Pressure line with protective jacket:</b>	
<b>Dimensions:</b>	Ø i / Ø a / Ø a: 6/8/10 mm (double walled)
<b>Max. Length:</b>	100 m (300 m option)

The right is reserved to change or amend the foregoing technical specification without prior notice

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