



## Pressure sensor pneumatic gauge PS-Light-2

Compact bubble sensor for an exact water level measurement

- Compact, robust measurement system for measurement of water level using the „bubble gauge“ principle
- Maintenance-free – No pump lubricant or moisture absorber needed
- High accuracy (0.05 % FS) and long-term stability through smart sensor drift compensation
- Measuring ranges: 0-10 m (standard), Option: 0-15 m, 0-20 m, 0-30 m, 0-40 m, 0-70 m
- Low energy consumption through optimised pump control
- Wide range of output signals 0-1 V, 0-5 V, 0/4-20 mA, RS 485, SDI-12 for uncomplicated connection to external data collectors or to process control systems (SPS)
- Easy installation on the existing water level stations, protective housing or control cabinets
- Optionally available with integrated data collector, type PS-Light-2 Logger, as well as a modem for remote data-transmission: PS-Light-2 Modem

# Description

The SEBA-pneumatic gauge type PS-Light-2 serves as a robust, economic and reliable measuring system for monitoring water levels in surface waters. The measuring principle is the proportioning or bubbler system, based upon the other well-known SEBA instruments in the PS-series. PS-Light-2 pneumatic gauges have proven reliable in thousands of installations in the last 20 years around the globe.

An integrated, highly efficient mini compressor, bubbles air through the pressure tube into the water at adjustable intervals. The resultant pressure in the tube corresponds exactly to the hydrostatic pressure above the mouthpiece. This tube pressure is then measured by a very accurate pressure sensor in the PS-Light-2. To avoid influences due to obstructions like mud in the pressure tube, the system is blown out automatically before each measurement.

The intermittent operation of the PS-Light-2 allows low energy consumption, and enables operation with batteries or solar panels, without the need for mains power supply. Together with a long running lubricant free compressor and a system that needs no moisture absorbers, the PS-Light-2 can be operated maintenance-free for very long periods of time.

The basic version of the PS-Light-2 is a sensor with optional output. However, it can be equipped with LC-display, data logger or remote data transfer via mobile data. The basic version is delivered in a robust protective housing (IP 65) suitable for wall or desk mounting. SEBA PS-Light-2 can be connected to existing pressure tubes at any time.

# Functional overview

## Individually available as:

- Sensor with analogue or digital output
- Sensor with SEBA datalogger
- Data transmission system with mobile modem

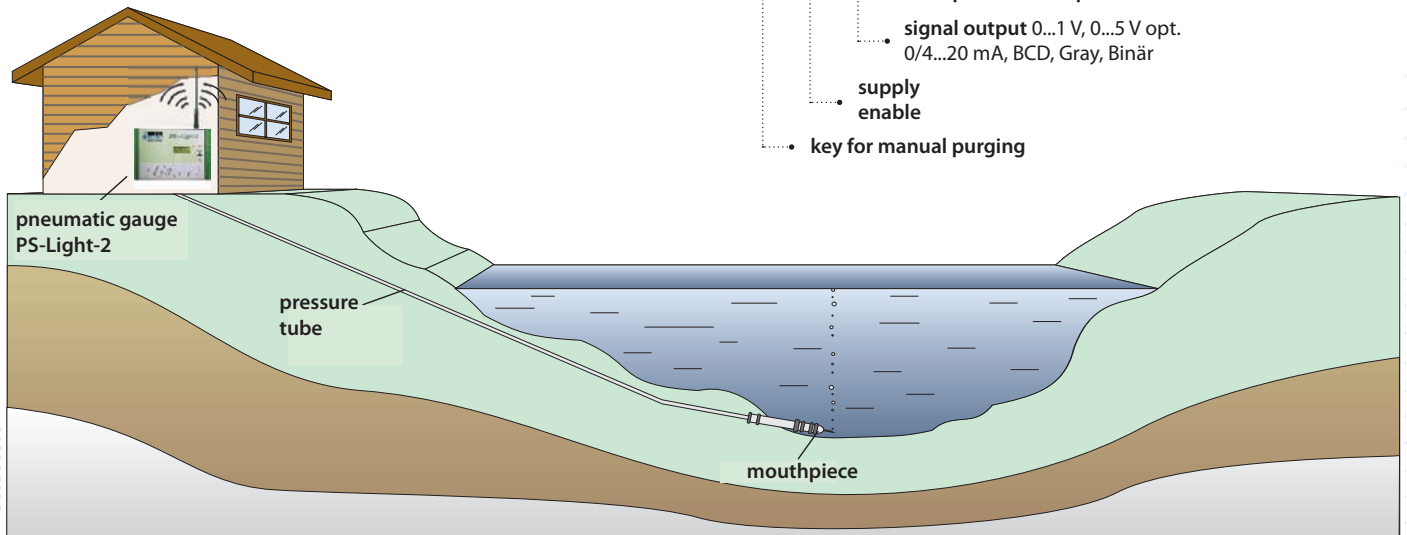
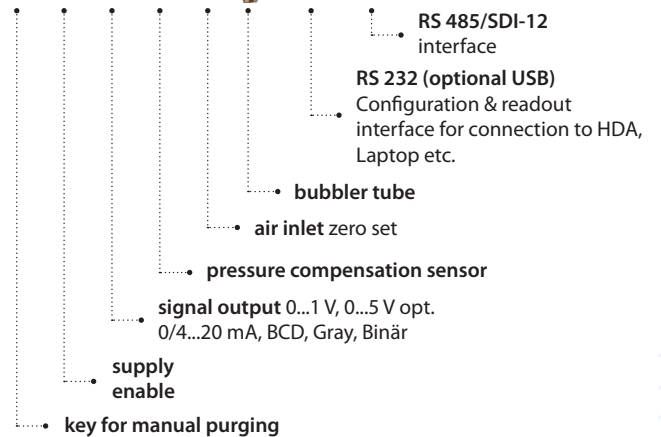
**Option:** mouth piece / orifice



### 1. LC-Display

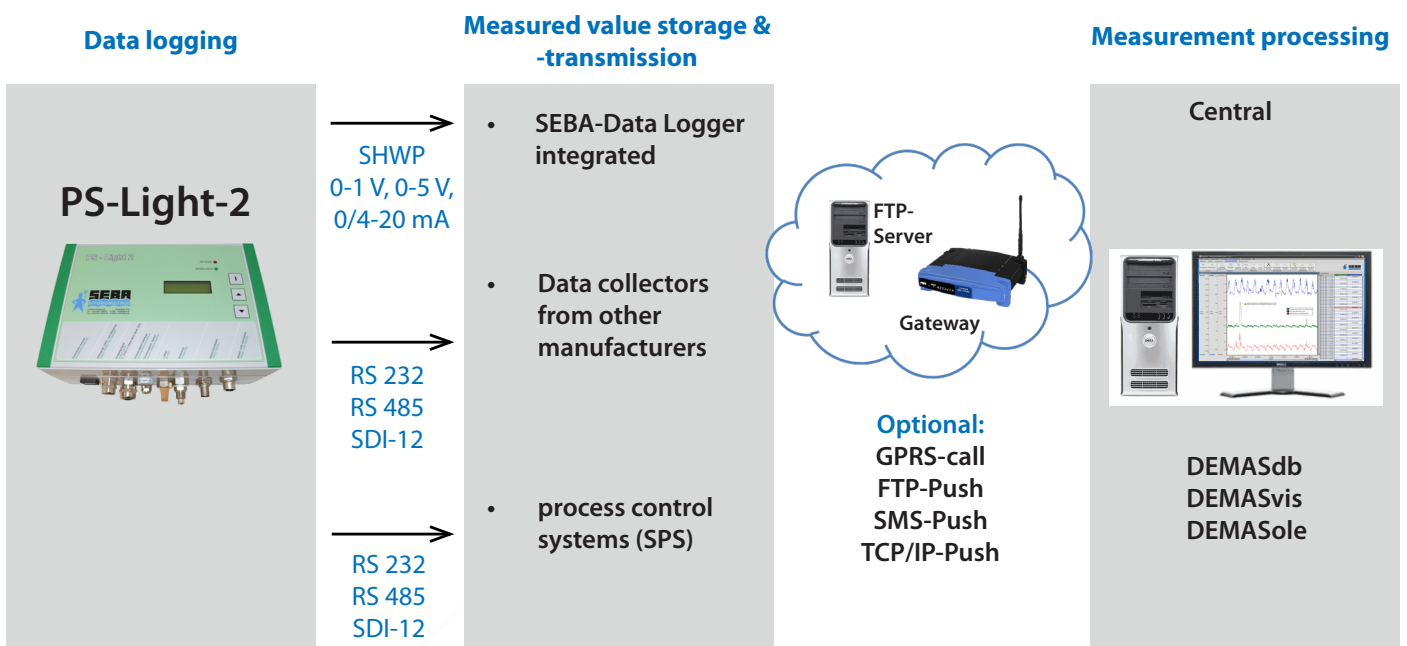
### 2. Output signals: galvanically separated

- RS 485
- SDI-12
- 0/4...20 mA
- 0...1 V, 0...5 V
- BCD-Code, Gray-Code, Binary-code





## Data flow



## PS-Light-2 Variations

### PS-Light-2 Sensor:

- Highly accurate pressure sensor for measuring the water level
- Miniature compressor
- Output: can be chosen
- Plastic Protection Housing

### PS-Light-2 Sensor LCD:

Same as PS-Light-2 Sensor but additionally with:

- LC-Display for digital indication of current water level

### PS-Light-2 Logger:

Same as PS-Light-2 Sensor but additionally with:

- Data Logger with RS 232 interface

### PS-Light-2 Logger LCD:

Same as PS-Light-2 Sensor but additionally with:

- Data Logger with RS 232 interface
- LC-Display for digital indication of current water level

### PS-Light-2 Modem:

Same as PS-Light-2 Sensor but additionally with:

- Data Logger with RS 232 interface
- LC-Display for digital indication of current water level with integrated mobile modem for online and offline operation

### Optional:

- Puck antenna
- Directional Antenna (for mast mounting)
- bubble mouth piece (orifice)
- pressure tube\*

\* Pls specify length of tube when ordering!

# Technical data

|   |                                  |  |
|---|----------------------------------|--|
| <b>Parameters:</b><br>Water level [m], [cm], [mm] | <b>Sensor:</b>                   | Relative pressure sensor   |
|   | <b>Measurement principle:</b>    | Bubble gauge principle (pneumatic)   |
|   | <b>Measuring range:</b>          | 0-10, 0-15, 0-20, 0-30, 0-40, 0-70 m   |
|   | <b>Measuring accuracy:</b>       | ± 0.05 % FS  |
|   | <b>Measuring interval:</b>       | adjustable from 2 minutes upwards  |
| <b>Housing:</b>                                   | <b>Material:</b>                 | Plastic  |
|   | <b>Dimensions:</b>               | 240 x 160 x 94 mm (Standard)   |
|   | <b>Display:</b>                  | 3 lines, 16 characters, backlight (option: type PS-Light-2 Sensor LCD, PS-Light-2)   |
|   | <b>Keyboard:</b>                 | 3 function keys  |
|   | <b>Protection class:</b>         | IP 65  |
|   | <b>Fastening:</b>                | For protection housing, control cabinets, wall mounting, DIN Rail  |
| <b>Communications interface:</b>                  |                                  | RS 232, USB, Bluetooth   |
| <b>Outputs:</b>                                   | <b>Digital:</b>                  | SHWP, MODBUS, SDI-12, RS 485 (two-wire, half duplex, ASCII transmission speed 4800...19200b/s)   |
|   | <b>Analog:</b>                   | 0-1 V, 0-5 V, 0/4-20 mA<br>*) <i>only one of the above outputs can be selected in each case</i>  |
| <b>Power supply:</b>                              |                                  | 10...24 VDC  |
| <b>Operating temperature:</b>                     |                                  | -20 °C ... +60 °C  |
| <b>Option: PS-Light-2 Logger:</b>                 | <b>Controller:</b>               | 32 Bit Flash controller with integrated WatchDog<br>RTC-IC Real-Time Clock   |
|   | <b>Memory capacity:</b>          | 16 MB (= 1,120,000 readings)   |
|   | <b>Save interval:</b>            | from 2 minutes upwards   |
|   | <b>Measurement routines:</b>     | Single value, average value, event clock, Delta mode, pumping test control   |
|   | <b>Inlet:</b>                    | SHWP (RS 485) for connecting digital SEBA probes (option)  |
|   | <b>Communications Interface:</b> | RS 232   |
|   | <b>Operation:</b>                | Interface cable (USB/RS 232), BlueCon 2 (Bluetooth®)   |
| <b>Option: PS-Light-2-Modem</b>                   | <b>3G Supported networks:</b>    | GSM/GPRS/EDGE/UMTS/HSDPA/HSDPA+  |
|   | <b>3G Frequencies:</b>           | 850/900/1700/1900/2100 MHz (Worldwide)   |
|   | <b>4G Supported networks:</b>    | GPRS/EDGE/UMTS/HSDPA/HSDPA+/LTE  |
|   | <b>4G Frequencies:</b>           | 800/900/1800/2100/2600 MHz (Worldwide)   |
|   | <b>GSM:</b>                      | only SMS-alarm and SMS-push; no GSM-retrieval<br>SIM card type: 1.8 V / 3 V SIM card   |
|   | <b>Antenna:</b>                  | Dual-band rod antenna: 900, 1800 MHz; 5 dB angle rod antenna (optional); Puck antenna (optional); Directional antenna (optional)                                       |
|   | <b>Communication:</b>            | <b>Push protocols:</b> either ZRXP/ D channel /csv; <b>Data retrieval protocol:</b> SHWP; <b>SMS data delivery:</b> binary; <b>SMS alarm:</b> SMS to up to 8 receivers |
|   |                                  | Data retrieval protocol: SHWP  |
| <b>Pressure pipe:</b>                             |                                  | Made from polyamide PA 12 with protective sheath.  |
|   | <b>Dimensions:</b>               | Outer Ø: 6 mm / Inner Ø: 4 mm  |
|   | <b>Max. Length:</b>              | 100 m (standard), other length customisation possible.<br>Minimum bending radius 36 mm   |

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

## Contact:

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