



## Radar Sensor Type SEBAPuls 8/15/30/35/120

for contact free measuring of surface water level

- Radar sensors for non-contact level measurement in flowing waters, lakes, reservoirs and retention basins
- Measurement ranges and accuracy:  
0-8 m ( $\pm 5$  mm), 0-15 m ( $\pm 2$  mm), 0-30 m ( $\pm 2$  mm), 0-35 m ( $\pm 2$  mm), 0-120 m ( $\pm 1$  mm)
- Protection class IP 66 / IP 68
- With adjustable mounting bracket (100 mm, 300 mm or customized) for mounting on bridges, outriggers, piers and walkways
- Optionally with RS 485 (SDI-12, Modbus) or 4-20 mA output



## Radar Sensor Type SEBAPuls 8/15/30/35/120

### Measuring principle:

The devices emit a continuous radar signal through their planar shaped antennas. The emitted signal is reflected by the medium and received as an echo by the antenna.

The frequency difference between the emitted and received signal is proportional to the distance and depends on the water level. The determined water level is converted into a respective output signal and output as measured value.

### 80 GHz technology:

The 80 GHz technology used enables a unique focusing of the radar beam and a wide dynamic range of the radar sensors. The greater the dynamic range of a radar sensor, the wider its application spectrum and the higher its measurement reliability.

### Advantages:

Non-contact radar technology is characterized by extremely high measurement accuracy. The measurement is influenced neither by fluctuating product features nor by changing conditions such as temperature, pressure or dust generation.



## Technical data

Type:	SEBAPuls 8:	SEBAPuls 15:	SEBAPuls 30:	SEBAPuls 35:	SEBAPuls 120:
<b>Measuring range:</b>	0 - 8 m	0 - 15 m	0 - 30 m	0 - 35 m	0 - 120 m
<b>Accuracy:</b>	± 5 mm	± 2 mm	± 2 mm	± 2 mm	± 1 mm
<b>Material:</b>	plastic	plastic	plastic	stainless steel/plastic	aluminum/plastic
<b>Protection class:</b>	IP 66 / IP 68	IP 66 / IP 68	IP 66 / IP 68	IP 66 / IP 68	IP 68
<b>Dimensions:</b>	ø 68 mm, Length: 109 mm	ø 68 mm, Length: 109 mm	ø 76 mm, Length: 130 mm	124 mm x 90 mm x 132 mm (LxHxW)	Ø 115 mm, Length: 254 mm
<b>Output:</b>	4...20 mA or SDI-12	4...20 mA or SDI-12 Optional: Modbus	4...20 mA or SDI-12 Optional: Modbus	RS485 (SHWP) Optional: Modbus	4...20 mA or SDI-12 Optional: Modbus
<b>Operating conditions:</b>	-40 ... +60 °C 0-100% RH	-40 ... +80 °C 0-100% RH	-40 ... +80 °C 0-100% RH	-40 ... +70 °C 0-100% RH	-40 °C ... +80 °C 0-100% RH

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

### Contact:

SEBA Hydrometrie GmbH & Co. KG • Gewerbestraße 61 A • 87600 Kaufbeuren • Germany  
 Telefon: +49 (0) 8341 96 48 - 0 • E-Mail: info@seba.de • Web: www.seba.de



## Pressure probe DS(T) 22

Reliable water level and temperature measurements

- Capacitive, ceramic, relative-pressure sensor for precise water level measurement in ground and surface water
- Robust and slim design (22 mm diameter) made of stainless steel 1.4404 (standard), 1.4539 (optional)
- High measuring accuracy (0.05 % FS) and long-term stability (0.1 %/year)
- Wide availability of measuring ranges (0-2 m / 0-4 m / 0-5 m / 0-10 m / 0-20 m / 0-30 m / 0-40 m / 0-50 m / 0-70 m / 0-100 m / 0-200 m / 0-250 m / 0-300 m)
- digital (RS 485: SDI-12, Modbus, SHWP) or analog output (4-20 mA)
- Optional: Integrated temperature sensor (type DST 22)



## Pressure probe DS(T) 22

### Robust, accurate and long-term stability:

The DS (T) 22 fulfills the requirements of a modern pressure sensor. The pressure membrane is easy to clean and highly resistant. The capacitive measuring principle ensures a high accuracy (0.05 %) and long-term stability (0.1 %/year)

### Uncomplicated:

The DS (T) 22 can be connected to all standard data loggers and controllers (PLCs). Either analog (4-20 mA) or digital output signals (RS 485: SHWP, Modbus, SDI-12) can be ordered.

### Saltwater-resistant:

For special applications, e.g. in coastal areas, brackish water or landfills, the DS (T) 22 is also available in high-grade stainless steel 1.4539 form.

### Last, but not least:

In addition to the measurement of the water level, upon request, water temperature can also be recorded with a high degree of accuracy:  $\pm 0,2$  °C.



## Technical data

<b>Parameters:</b>	Water level [cm], [m]		<b>Measuring accuracy analog:</b>	$\pm 0.1$ % FS
<b>Sensor:</b>	Relative pressure probe		<b>Long-term stability:</b>	$\pm 0.1$ %/year
<b>Measurement principle:</b>	Capacitive with ceramic measuring cell		<b>Parameters:</b>	Water temperature [°C], (optional)
<b>Measuring range:</b>	0-2 m / 0-4 m / 0-5 m / 0-10 m / 0-20 m / 0-30 m / 0-40 m / 0-50 m / 0-70 m / 0-100 m / 0-200 m / 0-250 m / 0-300 m water column		<b>Sensor:</b>	PT1000 Sensor
<b>Measuring accuracy digital:</b>	$\pm 0.05$ % FS		<b>Measurement principle:</b>	resistiv
<b>Housing:</b>	<b>Material:</b>	V4A standard 1.4404 stainless steel ,or high grade 1.4539 stainless steel (optional)		
	<b>Dimensions:</b>	Ø 22 mm x 182 mm		
	<b>Protection class:</b>	IP 68		
<b>Outputs:</b>	<b>Digital:</b>	RS 485: SHWP, Modbus, SDI-12		
	<b>Analogue:</b>	0-1 V, 4-20 mA		
<b>Power supply:</b>	<b>Digital:</b>	6 ... 30 VDC		
	<b>Analogue:</b>	<b>DS-22:</b> 4-20 mA: 7 ... 30 VDC, 0-1 V: 9 ... 30 VDC <b>DST-22:</b> 4-20 mA: 7 ... 30 VDC, 0-1 V: 9 ... 30 VDC		
<b>Connection:</b>	Either with plug or open cable ends			
<b>Operating temperature:</b>	-5 °C to +60 °C (non-freezing)			
<b>Cable:</b>	Reinforced measuring cable with a pressure compensation line			

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## LevelSense Encoder

for rivers, channels and groundwater applications

- Reliable and robust shaft encoder
- Outputs: RS 485, SHWP, SDI-12, 0/4...20 mA, 0-1 V, 0-5 V
- Integrated LC-Display (option)
- Cost effective modernisation of existing water level monitoring stations
- Internal battery supply for buffer in case of power failure
- Continuous registration of water level fluctuations in ground- and surface waters
- With integrated data logger (option)
- Including mounting bracket for easy installation



## Description

The SEBA LevelSense is a system for acquisition of water level deviations in ground- and surface waters. Through its easy handling and the convincing cost-performance ratio it is outstandingly useful for economic updating of existing measuring sites. When it is used as a stand-alone instrument, it works totally slip-free with the approved ball-chain and floater/counterweight system.

As type UnilogLight-ENC<sup>®</sup>, the shaft encoder is also available as a cost effective complete systems with integrated data logger.

**The handling is simple:** All adjustments inside the LevelSense can be done with a notebook or operation terminal (e.g. HDA). For type LevelSense with display, the desired measuring

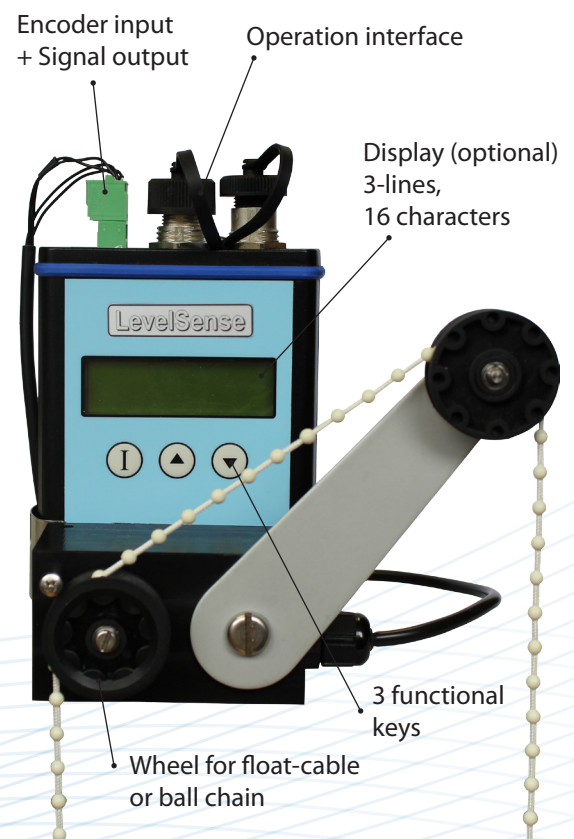
value can be set by the level observer by turning of the floater wheel. The instrument can either be powered externally or internally. With external power supply, a built-in 9 V monobloc battery is used as a buffer and provides additional safety in case of a power breakdown.

**The system is available in different versions:**

- 1) shaft encoder (= LevelSense)
- 2) shaft encoder & display (= LevelSense)
- 3) shaft encoder & display & logger (= UnilogLight-ENC)

## Technical Data

<b>Encoder:</b>	with ball chain or 0,8 mm float cable
<b>Measuring range:</b>	up to 30 m with ball chain up to 100 m with float cable
<b>Resolution:</b>	0.0025 m
<b>Accuracy:</b>	0.0025 m (depending of float size)
<b>Power supply</b>	9 V block battery 6LR61 alkaline manganese
<b>Internal:</b>	9 V block battery 6AM6 Lithium (option)
<b>External:</b>	10..16 VDC (typ. 12 VDC)
<b>Flash-Controller:</b>	3 R2C 32 Bit with integrated Watchdog
<b>D/A Converter:</b>	14 Bit
<b>Inputs:</b>	up/down-counter, phase-counter, impuls (rain) 2 contact inputs (control, recording)
<b>Outputs:</b>	1 analog output for norm signals analog U/I, SDI-12, Modbus, RS 485
<b>Keys:</b>	3 functional keys
<b>Display:</b>	3-lines each 16 characters, 3.65 mm
<b>Interfaces:</b>	RS 232 (operation interface)
<b>Operation Cond.:</b>	-40 °C ... 70 °C / 0-100% RH
<b>Housing Material:</b>	Aluminium
<b>Protection Class:</b>	IP 65
<b>Weight:</b>	approx. 0.25 kg
<b>Dimensions:</b>	143 x 85 x 38 mm (LxWxH)



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