



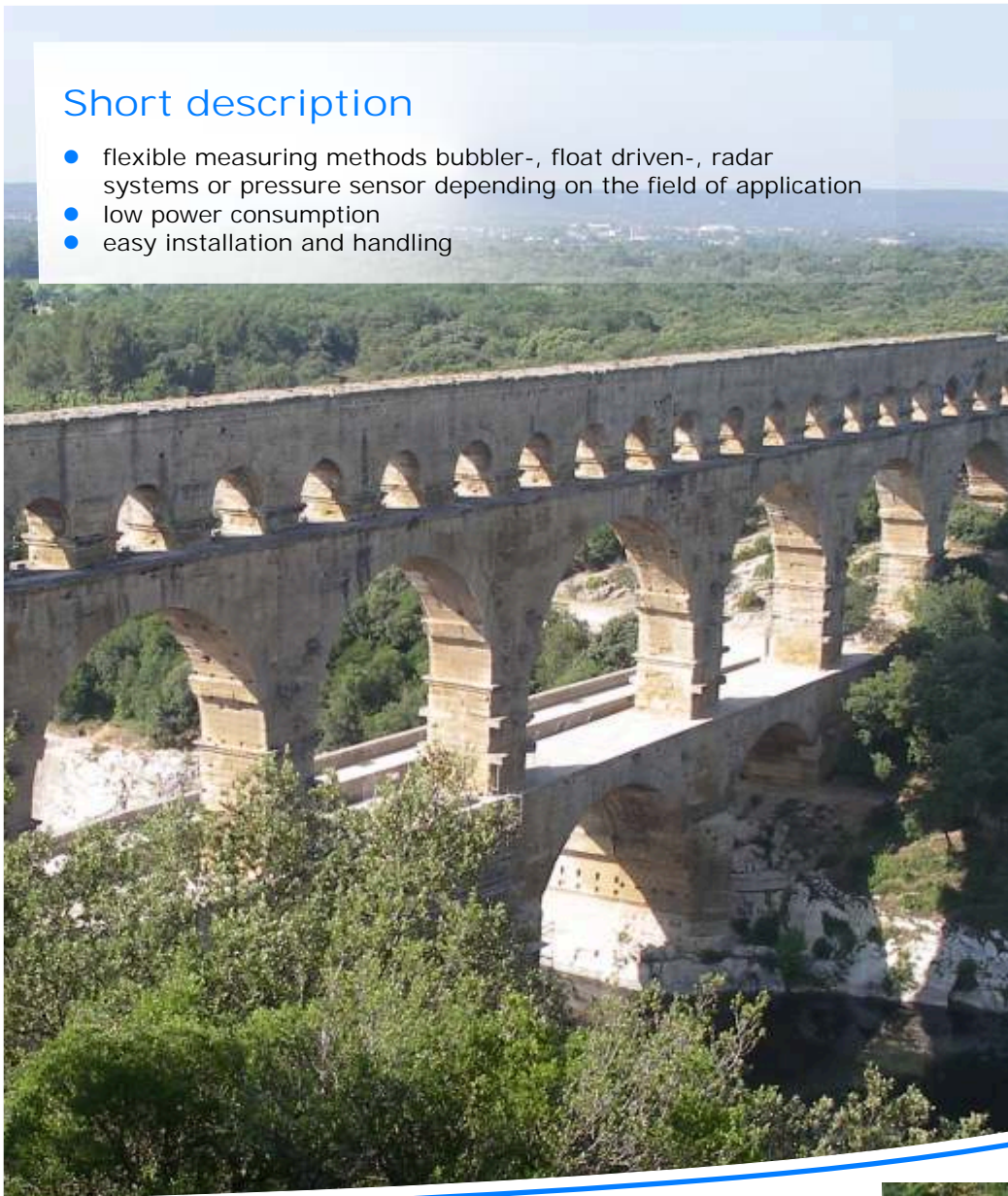
## Hydrological Sensors

water level - temperature

for every measuring site the adequate solution

### Short description

- flexible measuring methods bubbler-, float driven-, radar systems or pressure sensor depending on the field of application
- low power consumption
- easy installation and handling



PS-Light II-Sensor



Radar sensors  
SEBAPULS 20/30



Surfloat Sensor

Pressure sensor DS-22  
Pressure and temperature  
sensor DST-22



water level measurement



water level with  
radar sensor



PS-Light-station



radar bracket



water level measurement  
with pressure sensor

## Hydrological Sensors

Measuring systems from SEBA HYDROMETRIE have been successfully applied for decades all over the world. Systemintegration also means the employment of hydrological measuring sensors. High demands on quality, precision, reliability and longevity are made to the components and sensors. SEBA measuring instruments pass through extensive test series and basic investigations. In this connection each single sensor and later the complete instrument-configuration is tested on function, accuracy and characteristics.

While ensuring the required product quality, the newly gained knowledge contributes to the development of new measuring instruments and components. Both the requirements of the measuring tasks of our users and the experience of our engineers create solutions, which are practical-orientated in every respect. In order to review the SEBA-quality management from an independent side, we arranged an investigation according to DIN EN ISO 9001: 2000 and we have been certified since 1995.

All modern and sophisticated evaluation processes offer infinite transparency for the physical conditions surrounding us. In fact, they are only as accurate as the instrument which records the measuring values in field conditions. SEBA HYDROMETRIE accepts the challenge and produces systems, which meet the evaluation possibilities. International collaboration with science and research guarantees a continuous development within the technical possibilities. Specialists all over the world rely on installations and products made by SEBA HYDROMETRIE.

## Pressure sensor type DS-22

For water level measurement for groundwater, surface water, water tanks or water reservoirs etc. Wasserreservoir, usw.

### Technical data

output:	0 to approx. 1V	0/4 to 20 mA	RS485 interface (SHWP protocol)
ranges:	0 to 1,25 m	0 to 1,25 m	0 to 1,25 m
	0 to 2,50 m	0 to 2,50 m	0 to 2,50 m
	0 to 5,00 m	0 to 5,00 m	0 to 5,00 m
	0 to 10 m	0 to 10 m	0 to 10 m
	0 to 20 m	0 to 20 m	0 to 20 m
	other ranges on request	other ranges on request	other ranges on request
accuracy:	± 0,1% (at 25°C)	± 0,1% (at 25°C)	± 0,1% (at 25°C)
operation			
temperature:	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C
power supply:	7 - 30V DC stabilized	7 - 30V DC stabilized	9 - 16V DC stabilized
material:	stainless steel	stainless steel	stainless steel
dimensions:	Ø 22 mm	Ø 22 mm	Ø 22 mm
	length 182 mm	length 182 mm	length 182 mm
cable:	multicore transmission cable, screened with pressure compensation for the atmospheric pressure		



## Pressure / temperature sensor type DST-22

Combined water level and temperature sensor for the acquisition of both parameters with one sensor. Signals are transferred via one single cable only.

### Technical data:

output:	2 channels 0-1V, 0/4-20mA, RS485 with SHWP protocol
water level:	see DS-22
measuring range:	0°C to 25°C or on request
temperature:	accuracy ± 0,1°C (span 0°C to 25°C)



## Surfloat-Sensor

The SEBA-Encoder type Surfloat Sensor is a rugged, float-driven encoder for recording water-levels. As a stand-alone instrument for desk-mounting, the Surfloat-Sensor can be operated with float & counter weight and also with the reliable beaded float cable (free of slip and slide effects). Furthermore the Surfloat-Sensor is perfectly adaptable to all conventional float operated water level recorders (e.g. SEBA Delta, XI Horizontal gauge, etc.).

The standard Surfloat-Sensor is equipped with an LC-display and an RS232 interface. It is an option to install a parallel interface (BCD, Gray code, Binary code). The handling is easy: if the LC display is activated and if the float-wheel is turned simultaneously the desired measuring value can be adjusted by the observer. The instrument can be operated with both external and internal power supply. In case of external power supply, the built-in lithium cell serves as back up and emergency supply.

### Technical Data:

Dimensions	40 x 55 x 160 (mm, l x w x h)
Accuracy:	1 cm
External power supply:	5VDC to 25VDC (with integrated Lithium cell for buffering)
Display range:	-9999m to 99999m (decimal point position configurable)
Power consumption:	Ø 0,5mA
Display:	5 digits, 7 segments
Serial interface:	RS232, protocol: ASCII
Operating temperature:	-20°C to +70°C
Parallel output (optional):	data output: via configurable connector data formats: standard/inverted BCD, 4 digits, standard/inverted Binary, 16 bit and standard/inverted Gray, 16 bit
Analogue output:	0/4..20mA

No drift, free of temperature influences



Surfloat-Sensor

## Pressure sensor pneumatic gauge type PS-Light-2

The SEBA pneumatic gauge type "PS-Light" is a robust, reliable and economic measuring system for monitoring water level in surface waters. The measuring principle is based on a version of the bubbler system, well-known and proven by the other SEBA instruments of the PS-series.

At adjustable intervals an integrated, highly efficient mini compressor bubbles air through the pressure tube into the water. The pressure generated in the tube corresponds exactly to the hydrostatic pressure above the mouthpiece. This tube pressure is measured by a high-precision pressure sensor inside the PS-Light.

### Technical data:

accuracy:	<0,1% of the measuring range (<1cm at 10m measuring range)
measuring ranges:	0 to 10m, 0 to 15m, 0 to 20m, 0 to 40m, 0 to 70m
operating temperature:	-20°C to +50°C
output:	optionally 1 from 7, 0..1V, 0..5V, RS232, 0/4 to 20mA, BCD-Code, Binär-Code, Gray-Code
measuring interval:	1, 2, 5, 15, 30, 60, 120 or 180 minute(s), by an internal activation in the PS-Light resp. free programmable (from one minute) in combination with SEBA data loggers

#### PS-Light -2-Sensor

consisting of:

- high-precision pressure sensor for water level measurement
- mini compressor
- output: analogue and digital
- plastic protection box

#### PS-Light-2-Sensor-LCD

consisting of:

- PS-Light sensor
- LC display for digital indication of the current measuring data

#### PS-Light-2 (- Logger)

consisting of:

- PS-Light sensor
- Data logger with an RS232 interface for on- and offline operation

#### PS-Light-2 (- Logger)-LCD:

consisting of:

- PS-Light
- LC Display for digital indication of the current measuring data



PS-Light-2 with GSM modem and antenna

All PS-Light systems can be upgraded with GSM or telephone modem.

# Radar sensor types SEBAPULS 20 and SEBAPULS 30

The SEBA radar sensor types SEBAPULS are high-precision instruments for a contact free level measurement in surface waters.

## Key advantages

- insensitive to mud, drift wood, weedage, aggressive media (sewage, brackish water etc.)
- requires only very little civil works (i.e. installation at bridge jibs);
- no cross-section constriction of measurement (hydraulic is not disturbed)
- the measuring accuracy is influenced neither by air humidity (fog) nor by air temperature fluctuations within the measuring range
- low power demand
- short measuring interval
- no dead area
- small mounting distance (approx. 20 to 30cm)



The basic version of the measuring equipment consists of is a sensor with an analogue output (4...20mA). According to a modular concept the SEBAPULS can be equipped with an additional measuring value storage (i.e. SEBA Data logger MDS-Dipper) and a remote transmission (via GSM network, fixed network etc.).

## Technical data

### Measuring principle - Pulse radar (26GHz-technology)

In the so called pulse principle a short microwave impulse is emitted. Then the sensor rests for a short time. During this time the radar receives the echoic signals reflected by the water, then the signals are transmitted to the integrated evaluation system. The runtime of the impulses matches the distance to the actual water level.

### Box

Dimensions SEBAPULS 30: Ø 116mm, length 392mm

Dimensions SEBAPULS 20: Ø 115mm, length 245mm, with bracket 283mm

Material: plastic box, IP66, horn antenna made of stainless steel 1.4435

Weight: approx. 2kg

### Registration of measuring values

SEBAPULS 20:

Accuracy: ± 5mm

Measuring range: 0 to 20m

Operating temperature (all types): -40°C to 80°C

Output (all types): 4 to 20mA or 0,4 to 2V

SEBAPULS 30:

Accuracy: ± 3mm

Measuring range: 0 to 30m

SEBAPULS 70:

Accuracy: ± 15mm

Measuring range: 0 to 70m



### Transmission of measuring values to PC

Offline: with SEBA-Data logger (i.e. MDS-5)

Online: analogue with 4 to 20mA, digitally with GSM or telephone modem

### Power supply

battery 12V (with DCC15, 12V to 24V converter)

solar panel incl. charger and buffer accumulator

mains adapter 220V/12V to 24V

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



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