



SEBA
HYDROMETRIE

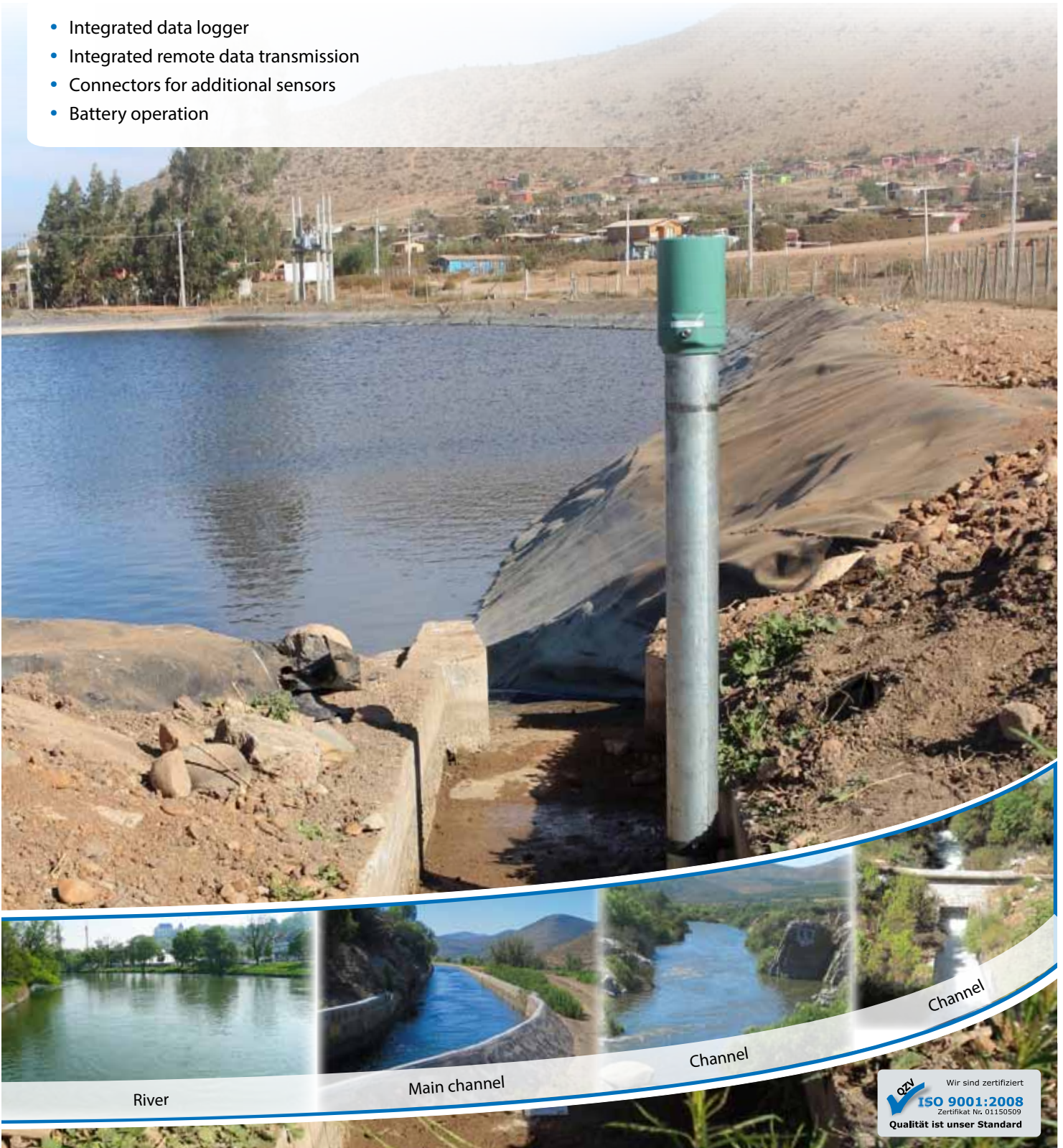
LogCom-Q

UniLogCom-Q

Q-Modul

Flow module for stationary and mobile operation

- Integrated data logger
- Integrated remote data transmission
- Connectors for additional sensors
- Battery operation



River



Main channel



Channel



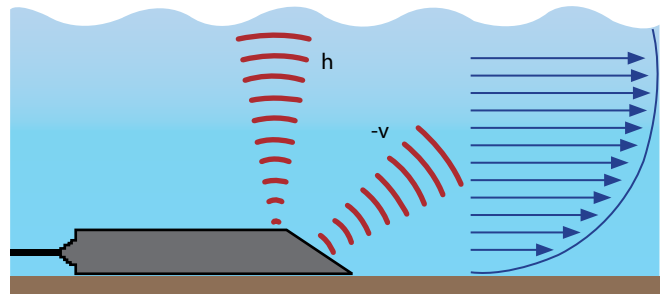
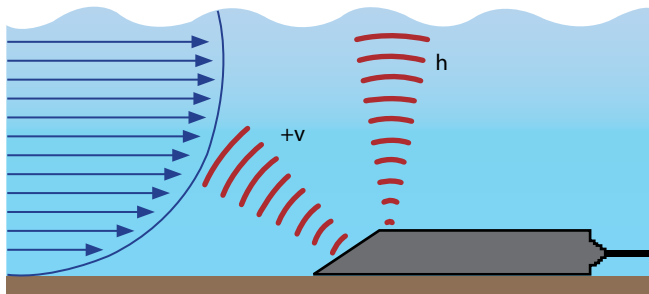
Channel



System Description

The flow rate is measured in up to 18 layers by an ultrasonic flow velocity sensor using the pulse Doppler method. An average flow velocity in the detection area of the sound beam is then calculated from these values. The total flow at the measurement cross-section is determined from the average flow velocity, the water level and the channel profile

information. This measurement method is suitable for free flowing water and backed up water. The data for water level, average flow velocity and calculated flow rate are stored locally in a battery-operated data logger and transmitted via GSM/GPRS to a central station.



Measurement against (left) and with flow direction (right).

The intelligent SEBA cap

The Q-module is an integral part of the data logger LogCom-Q in the intelligent SEBA cap. By means of this measuring system the parameters being watched are measured, saved and transmitted. The intelligent SEBA cap is a sophisticated and compact data transmission system for an economic control of surface water monitoring stations.

The following characteristics distinguish the SEBA cap:

- **Compact Construction**

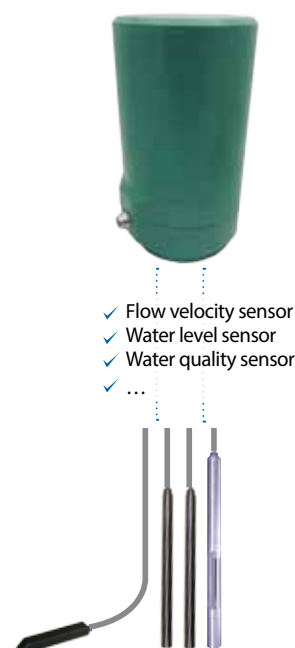
Logger, GSM/GPRS modem, antenna and LC-display are located in the upper hinged housing cover: in comparison to conventional remote transmission systems the measurement location is freely accessible. The intelligent cap can easily be mounted onto 4" threaded casings. An installation on 2", 3", 4.5", 5" and 6" well casings is also possible by means of additionally supplied adapters.

- **Energy Management**

A sophisticated energy management (time-slot procedure) allows a long battery life which also leads to low maintenance costs. The pluggable battery compartment (LogCom) is installed inside the well casing and can be removed without any tools due to the pluggable connections, making a battery change extremely easy. With the optional additional solar cap, battery changes are completely unnecessary.

- **Automatic data transmission and SMS-Alarm**

With the comfortable data retrieval software (DEMASole) the measured data can be collected from the LogCom-Q in individually programmable time slots. Independently, alarm limits can be defined (e.g. water level, battery capacity ...), SMS alarms can be sent up to eight different mobile phone numbers as well as by e-mail (GPRS) or via a provider to a fax machine. Alternatively, data transmission is possible by push-operation to an FTP-server. Data can also be sent via binary SMS if necessary.



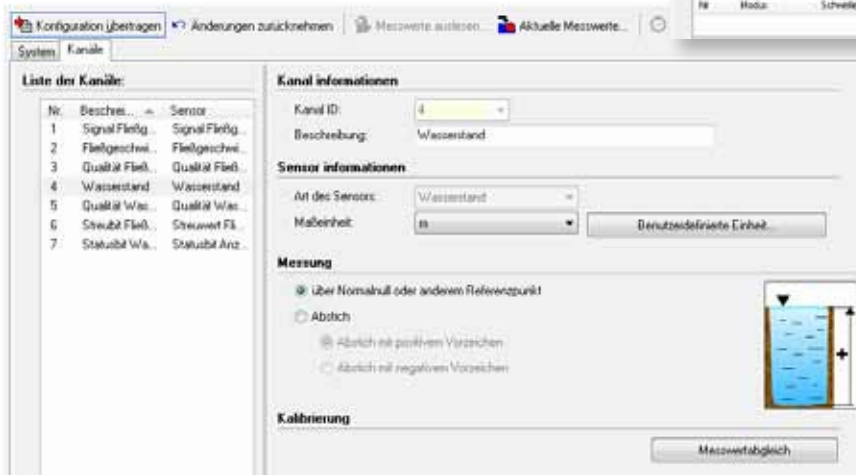


The Q-module can also be used as an external module with other sensors and data loggers (e.g UniLogCom).

Operation with SEBA-Config

The operating software SEBA-ConfigPC offers various additional functions to simplify the operation and the configuration. The profile configuration is conducted by the following steps:

- Definition of the input channels with scaling in the basic SI unit used for calculation
- Definition of profile with the profile shapes: rectangle, trapezo, V-profile, round profile, egg-profile and mouth-profile
- Calibration: The calibration factors can either be specified explicitly, or automatically calculated by simply entering the current reference value.



Technical Data

Data logger LogCom-Q

Electronics:

- Consumption (in power down mode): < 80 μ A
- Peak current (modem transmitting): max. 500 mA
- Serial flash memory with 4 MB (approx. 280000 values)
- Flash controller 16 bit with integrated watch-dog
- RTC (battery-backed)
- Logical channels: up to 32 channels
- A/D converter 16 Bit

Operation and Display:

- 3 lines, each 16 characters, 3,65 mm (for indication of current measuring value, time, date, status)
- Keypad with 3 function keys (easy operation)

Inputs:

- Connection for the combination sensor
- Further available inputs:
 - RS485 sensor interface (SHWP), e.g. for additional pressure probe DS22, or up/down counter
 - Phase counter
 - Impulse (rain) or 2 contact inputs (control, protocol) or 2 analogue (bi/unipolar) for standard signals (e.g. 0-1 V, 4-20 mA etc.) or 1 SDI-12

GSM/GPRS modem (integrated):

- Frequency: 850 / 900 MHz / 1800 / 1900 MHz (EGSM, Quadband), GPRS
- HF output max.: 2 W (850/900 MHz); 1 W (1800/1900 MHz)
- SIM-card: 1,8 V / 3 V
- Electric current: 50 mA / 9 VDC (reception) 0.5 A (transmission)
- FTP-Push operation: in ZRXP or D-channel format (csv)
- SMS-transmission: in binary format

Interfaces:

RS232 option: Bluetooth (additional external module)

SMS-Alarm:

SMS-alarms to max. 8 mobile phones
SMS-alarm to facsimile instrument

Time-Slots:

Freely adjustable

Power supply:

6 x 1,5 V Alkali-Manganese batteries. If the V-module is connected to an external data logger, the system can be operated with an external power supply, solar panel or a suitable storage battery.

Operation time:

> 2 years 1 call/day (depending on the quality of the GSM connection and the measuring rate e.g. every 15 minutes)

Dimensions:

Ø 168 mm, Height 265 mm

Antenna:

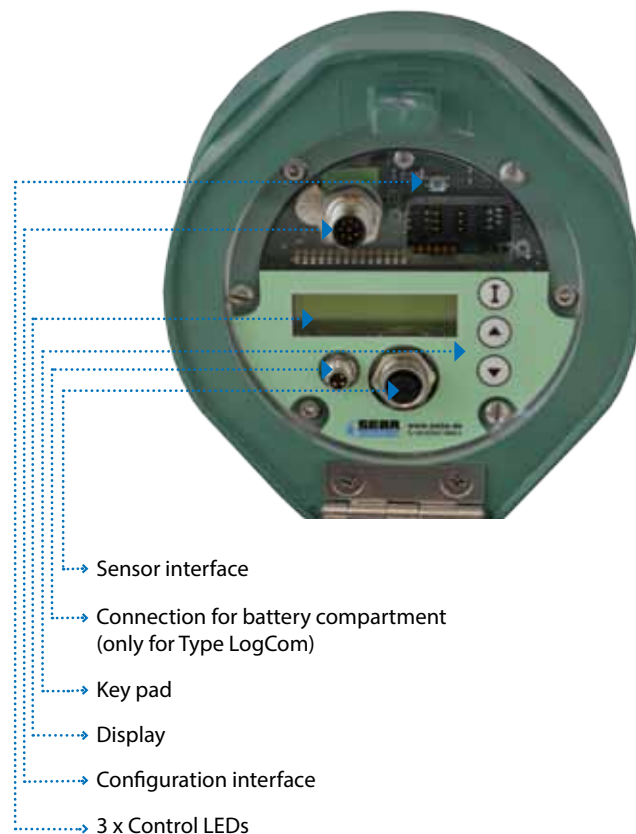
Integrated in the top of the protection housing. Robust, impact resistant and weatherproof.

Housing:

Aluminium, IP67

Operation temperature:

-20 °C ... + 70 °C



Waterlevel measurement

Sensor type:	Ultrasonic sensor
Measuring range:	0,04 - 1,30 m
Accuracy:	± 1,2 % of measured value
Operation temperature:	0 °C to 60 °C
Pressure sensor DS22 optional:	see leaflet hydrological sensors

Velocity measurement

Method:	Ultrasonic-pulse Doppler
Sensor type:	Double - 1,04 MHz Piezocrystal
Minimum waterlevel:	> 4 cm
Measuring range:	-5,2 m/s to 5,2 m/s (with backflow detection)
Zero point stability:	< 0,005 m/s
Accuracy:	± 2 % of measured value
Operation temperature:	0 °C to 60 °C
Particle concentration:	> 50 ppm
Cable length:	10 m (other lengths available upon request)
Dimensions:	L x B x H = 110 x 25 x 15 mm



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