SEBA HYDROMETRIE

Over 50 years of experience - worldwide service

Surface water monitoring

Surface water

Dear SEBA customers,

that our climate is changing can no longer be dismissed. We sense that something is changing around us, and at a pace that even scientists would not have thought possible. The measurement results of the climate stations speak a clear language. Average temperatures in Germany, Europe, the Arctic and other parts of the world are rising continuously, with sometimes drastic consequences for people and nature.

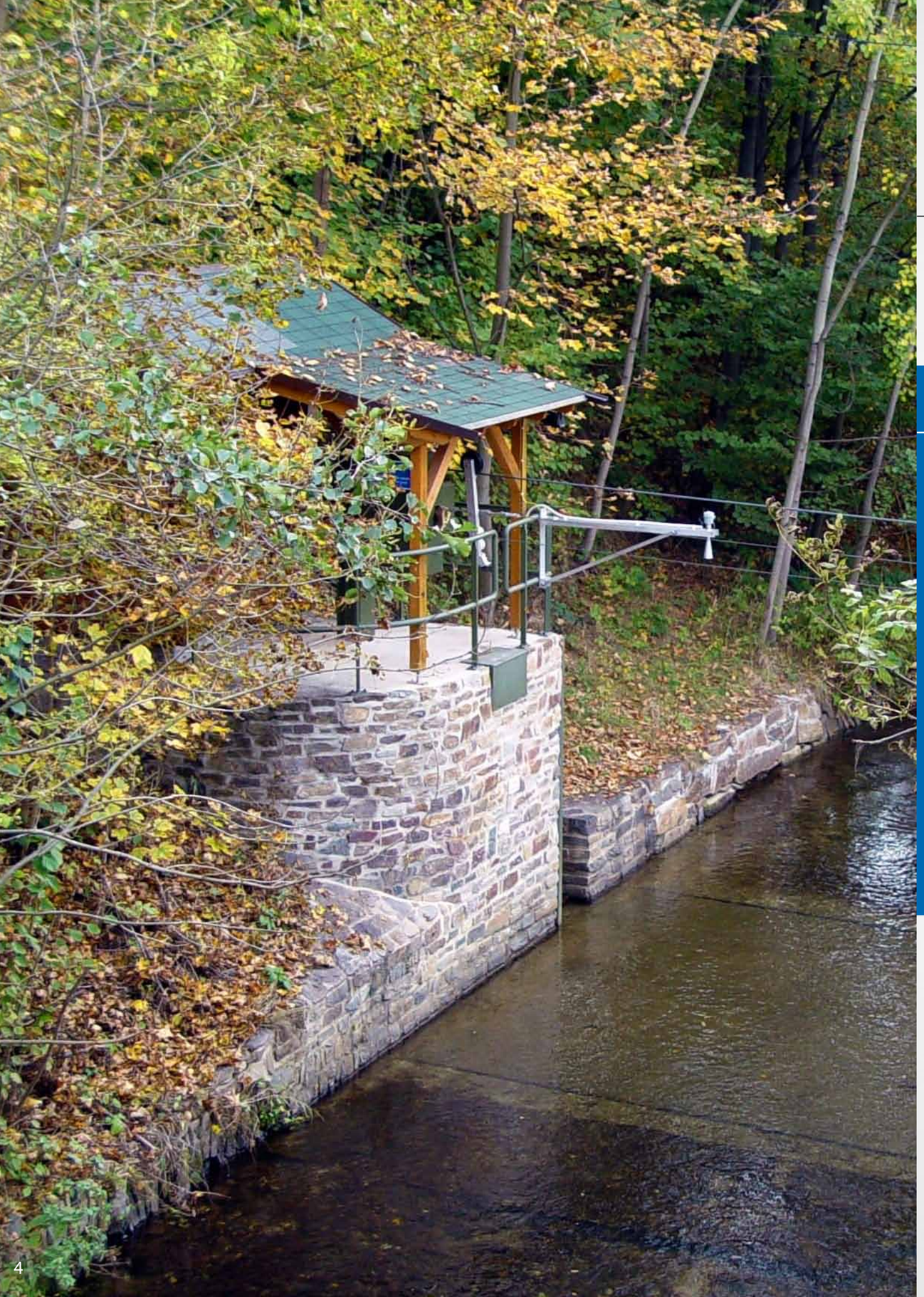
Flash floods and heavy rainfall events are becoming more frequent in our latitudes and are causing great damage. People and animals are in danger when small streams turn into raging rivers with powers that cause destruction within minutes. Continuous rains with floods and dry periods alternate more and more frequently and force the federal government, states and municipalities, water suppliers and farmers to take action. Dams must be raised, retention basins and polders built, and rivers renaturalised. Reliable flood forecasts and timely flood warnings are essential for the population.

The widespread use of measurement technology for quantitative monitoring of flowing waters provides the necessary information for hydraulic engineers, flood information services and disaster control.

For more than 50 years, SEBA Hydrometrie has been committed to developing, manufacturing and deploying innovative, robust and reliable field measurement technology for water level measurement in natural water bodies, canals, dams and retention ponds around the world. In doing so, our valued customers from water management authorities, cities and municipalities, universities and consultancies are also our most important sources of ideas. Ideas become solutions, which in turn are developed into marketable standard products. Many of these proven standard products can be found on the following pages. However, we are also the right partner for you if you are looking for customised solutions, benefiting from our valuable experience in the field of surface water hydrometry. We will find a practical solution for you and advise you competently and comprehensively, both on site and in the field.

As always, we would like to express our special thanks to our loyal SEBA customers and close partners for such productive cooperation during the past years. Your success is also our success!

Your SEBA Hydrometrie



SENSORS

Application areas:

Monitoring of:

- Stream and Rivers
- Dams
- Flood retention ponds
- Stormwater retention basins
- Irrigation canals
- Spring discharges
- Discharges (e.g. from industry and agriculture)

For flow calculation in conjunction with:

- Camera-based optical methods (SEBA DischargeKeeper)
- Radar-Doppler probes for flow velocity measurement (SEBA v-Radar/Q-Radar)
- Cableway systems, Venturi flumes and measuring weirs (W/Q relationship)

For the control of:

- Locks
- Polders
- Storm and flood water retention basins

SEBA Pressure probe DS(T) 22

Universally applicable sensor, ideal for measuring points with self-sufficient energy supply (solar, battery)

- High-precision, capacitive relative pressure probe with integrated water temperature sensor (Type DST 22)
- 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 /1 /4 /5 /20 /40 /100 /200/250 /300 m)
- Digital (RS485: SDI-12, Modbus, SHWP) or analog output (4-20 mA)

WATER LEVEL

TEMPERATURE

Low energy consumption, cost-effective, easy-to-clean and resistant ceramic pressure membrane, robust stainless steel housing optionally in 1.4404 or 1.4539 (e.g. for use in brackish water), wide range of available measuring ranges to ensure maximum measuring accuracy and resolution

SEBA Pneumatic system PS-Light-2-Sensor

Proven, compact single-bubble system ideal for use as a back-up sensor as well as for measuring points with a large catchment area

- Compact, robust measurement system for measurement of water level using the „bubble gauge“ principle
- 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, RS485 (SHWP), SDI-12 for straightforward connection to external data collectors or to process control systems (SPS)
- Easy installation in the existing monitoring station, protective housing or control cabinets
- Optionally available with integrated data logger, as well as a GSM modem for remote data-transmission

WATER LEVEL

- High measuring accuracy, drift-free, no lightning protection required, practically maintenance-free, vandalism- and theft-proof accommodation in gauging station or protective housing
- Optionally with digital RS485 output (SHWP, SDI-12) or analog output signal (4-20 mA, 0-1 V, 0-5 V)
- Optionally available with integrated data logger (type PS-Light-2) and additional 4G mobile modem (for remote data transmission (type PS-Light 4G)
- Cost-effective, drift-free over the entire operating life

Pneumatic Gauge PS-Sensor

High-end bubble system for highest demands on measuring accuracy and performance, optimized for dam and sluice monitoring as well as for measuring points with a monitoring range range of up to 40 m

- Continuous bubbler sensor for fast detection of water level changes
- Automatic pressure range detection and selection for maximum measurement accuracy (0.05 % FS) and resolution
- Display with function keys for measured value indication
- Measuring ranges: 0-10/17/20/30/35/40 m
- Long-term stability due to intelligent sensor drift compensation
- Available with digital (RS485: 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 function, compressor and air reservoir (0.75 l)

WATER LEVEL

Drift-free over the entire operating time, high measuring accuracy, available measuring ranges up to 0-40 m, no lightning protection required, practically maintenance-free, vandalism- and theft-proof storage in gauging station or protective housing.

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

Maintenance-free and flood-proof, ideal for mounting on bridge structures and masts with cantilevers

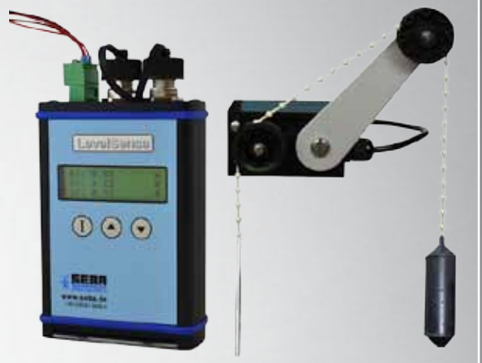
- Non-contact level measurement in flowing waters, lakes, reservoirs and retention ponds
- Measurement ranges and accuracy: 0-8 m (± 5 mm), 0-15 m (± 2 mm), 0-30 m (± 2 mm), 0-35 m (± 2 mm), 0-120 m (± 5 mm)
- Protection class IP 66 / IP 68
- With adjustable mounting bracket (100 mm, 300 mm or customised)
- 80 GHz RadarPulse Technology

WATER LEVEL

Non-contact measuring method, no cross-section narrowing, high measuring accuracy even with large measuring range fluctuations, available measuring ranges up to 0-120 m.

LevelSense shaft encoder

Proven, mechanical float-counterweight measuring principle, ideal for monitoring stations with stilling well



- User-friendly shaft encoder for precise detection of water level fluctuations with a float and counterweight
- Measuring range: 0-15 m with a ball chain or 0-100 m with stainless steel cable
- Measuring accuracy: 2.5 mm (depending on the size of the float)
- 3-line display of the current measured values
- Output signals: RS485 (SHWP), SDI-12, MODBUS, 0/4-20 mA
- Internal 9 V back-up battery
- Optionally available with integrated data logger (type Unilog-Light ENC) and additional external cellular modem for remote data transmission (type ModCom)

WATER LEVEL

- High measuring accuracy, slip-free due to the use of a ball chain, no lightning protection required, can be connected to all common data loggers with analog or digital input

Surfloat-Sensor-4

Low-cost float counterweight measuring principle for connection to SEBA data loggers

- Low-cost alternative angle encoders for precise detection of water level fluctuations with float and counterweight
- Measuring range: 0-15 m with a ball chain or 0-100 m with stainless steel cable
- Measuring accuracy: 2.5 mm (depending on the size of the float)
- Adaptable to mechanical registration level of the type SEBA Delta and XI level

Smart combinable with:

SEBA data logger: Unilog-Light, Unilog, UnilogCom

SEBA Multi-parameter probe MPS-PTEC

Multi-parameter probe for recording water level, temperature and conductivity

WATER LEVEL
TEMPERATURE
CONDUCTIVITY

- Multi-parameter sensor for measuring pressure, temperature and conductivity
- High-quality 4-electrode conductivity measuring cell
- Ceramic-capacitive pressure sensor with high measuring accuracy (0.05 % FS) and long-term stability (0.1 %/year)
- Robust, slim Ø 22 mm, 1.4539 grade stainless-steel housing for extreme conditions
- Standard with digital RS485 output (Modbus, SDI-12, SHWP), optionally also available with analog 4-20 mA output
- Optional with integrated data logger: variant "Dipper-PTEC"

+

- Slim, robust housing made of 1.4539 stainless steel
- Conductivity measurement with automatic measuring range switching to achieve maximum accuracy and resolution, easy-to-clean, resistant ceramic pressure cell
- Available from 0-2 m to 0-300 m measuring range

SEBA Multi-parameter probe MPS-K16

Multi-parameter probe: for recording up to 16 different parameters

WATER LEVEL
AMMONIUM
TEMPERATURE
AMMONIA
CONDUCTIVITY
CHLORIDE
OXYGEN
FLORIDE
REDOX POTENTIAL
POTASSIUM
pH VALUE
SODIUM
TURBIDITY
CALCIUM
NITRATE

- Robust multi-parameter sensor made of plastic (PVC-U) for mounting up to twelve sensors (water level, temperature, conductivity, pH, redox potential, oxygen, turbidity, ammonia, nitrate, chloride, ammonium, sodium, calcium, fluoride, potassium, chlorophyll or cyanobacteria or rhodamine WT)
- Additional electric contact gauge function combined with KLL-Q-2 mobile field laboratory
- Optimised design (Ø 89 mm, 572 mm length), usable starting from a 4"-diameter pipe
- Output: RS485 (SHWP), Option: MODBUS, SDI-12, 0/4-20 mA
- Option: with integrated battery-powered SEBA data logger (type Qualilog-16) and PowerPack for measuring points without external power supply

+

- Corrosion resistant plastic housing
- Simultaneous measurement of up to 16 water quality parameters
- Can be used in gauge pipes from Ø 4" upwards
- Modular system enables customised adaptation to the respective measuring task
- Easy replacement of used sensors in the field

SEBA Multi-parameter probe MPS-D3/D8

Multi-parameter probe: for recording between 3 and 8 different parameters

WATER LEVEL
AMMONIUM
TEMPERATURE
AMMONIA
CONDUCTIVITY
CHLORIDE
OXYGEN
FLORIDE
REDOX POTENTIAL
POTASSIUM
pH VALUE
SODIUM
TURBIDITY
CALCIUM

- Robust, pluggable multi-parameter sensor of 1.4404 stainless steel, accommodating up to three (MPS-D3) or eight (MPS-D8) sensors
- Slim design (40 mm diameter, 400 mm length), can be used with 1.5" and larger pipe diameters
- Optionally with digital RS485 output (MODBUS, SDI-12, SHWP) or analogue output signal (4-20 mA, 0-1 V)
- Available sensors: water level, temperature, conductivity, oxygen, redox potential, pH, turbidity, ammonium, ammonia, chloride, floride, potassium, sodium and calcium
- Additional electric contact meter function in connection with mobile field laboratory KLL-Q-2
- Option: with integrated battery-powered SEBA data logger (type Qualilog-8) and PowerPack for measuring points without external power supply

+

- Robust design made of stainless steel for use in gauge pipes with a diameter of 2" or more
- Simultaneous measurement of up to 3/8 water quality parameters
- Modular system enables customised adaptation to the respective measuring task
- Easy replacement of used sensors in the field

SEBA Nitrate probe SPS-NO3

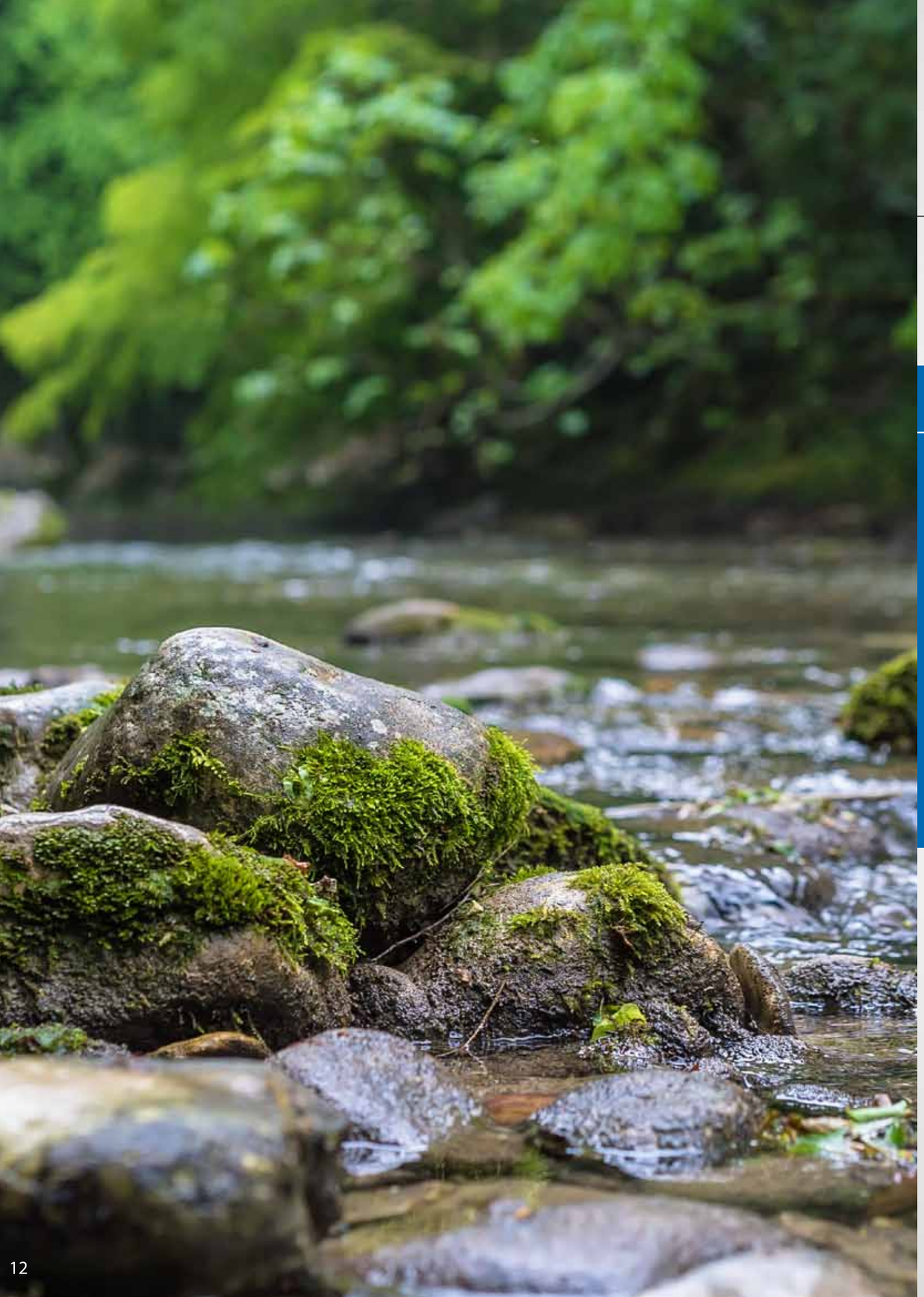
Maintenance-free single-parameter probe for measuring the nitrate content (NO_3)

NITRATE
NITRATE NITROGEN

- Robust and maintenance-free single-parameter sensor for measuring nitrate (NO_3^-, NO_3-N)
- Slim design (Ø 48.3 mm) for observation wells with minimum 3" diameter
- High measuring accuracy, drift-free
- Available in different measuring ranges up to max. 0-266 mg/L NO_3^-
- Made of 1.4571 stainless steel
- Output: RS485 (SHWP, Modbus RTU) to connect with SEBA data loggers

+

- Maintenance-free nitrate measurement
- Variable measuring ranges to achieve maximum measuring accuracy and resolution
- Wiper control (option) for automatic cleaning of the sensor optics



DATA LOGGER

Application areas:

Measured value storage and transmission via mobile network (3G/4G) and/or fixed network (DSL) of:

- Quantitative parameters (water level, flow velocity, flow, water temperature and battery voltage)
- Qualitative parameters (turbidity, oxygen content, pH, conductivity, nitrate, etc.)
- Meteorological parameters (air temperature, air pressure, humidity, wind speed and precipitation etc.)
- Any sensors with analog and digital output

For monitoring of:

- Stream and Rivers
- Irrigation canals
- Lakes
- Spring discharges
- Dams
- Sluices
- Power plants (heat plume monitoring)
- Industry and agriculture (discharge monitoring)

HIGH-PERFORMANCE DATA LOGGER

SEBA high-performance data logger for highest demands

The SEBA high-performance data logger NetLogCom has been developed and tailored to meet the stringent requirements of water navigation and water management administrations, according to Annex E of the gauging regulations. The logger has an ethernet connection, an integrated 4G modem and a voice announcement as standard. The logger can be expanded according to the modular principle with the help of external bus clamps (WAGO); A communication interface (option) also enables connection to an S7 controller (Siemens).

Operating devices:
- SEBA-HDA-Pro (Windows)
- Notebook (Windows)

WINDOWS

Operating software:
- Configurator

Evaluation software:
- MAWIN (SODA)

SEBA Web Portal:
- SEBA-Hydrocenter

SEBA Data Logger NetLogCom

A total of 100 configurable analog and digital input channels

- High-Performance data logger with a total of 100 configurable analogue and digital input channels
- 2 GB SD Flashcard for approximately 50 million measurements
- Compact, aesthetic plastic casing for wall mounting
- Large 320 x 240 (3,5“) TFT-Color-Display with membrane keypad for easy configuration and operation of the NetLogCom
- Display of time series in graphical form (hydrograph, table)
- Measurement and error reporting system including speaker.
- Integrated 4G/LTE Modem
- Voice-Over IP (VoIP)
- Voice messaging and push operation via different networks
- Interface: Ethernet (TCP-IP), 2 x RS232, 2 x RS485, SDI-12, USB-M, USB-S
- IP-Communications: FTP, SFTP, HTTP, HTTPS
- Both network adapters can be used simultaneously (routing)

4G

LAN

- All-in-one data logger equipped with all common communication protocols and formats for modern measurement data management
- Possibility to connect different (SEBA) sensors with digital and/or analogue outputs
- Additional connection of IP cameras (Bullet, PTZ) for transmission of current images
- Input option of different channel profile types for flow calculation (e.g. in connection with SEBA v-Radar or Teledyne RDI ChannelMaster)
- Customisable alarm management in case of a threshold breach via voice announcement, SMS, FAX, e-mail to up to 32 different alarm destinations
- Bidirectional data exchange with Siemens S7 process control system (option)

UNIVERSAL DATA LOGGER

SEBA low-power data logger optionally with and without remote data transmission, equipped with LC display, set up for the connection of digital and/or analog sensors

SEBA universal data loggers are characterised by very low energy consumption and can easily be operated self-sufficiently using rechargeable batteries or solar cells. Digital and analog interfaces allow the connection of any probes with analog or digital output. Due to their robust and compact design, SEBA universal data loggers provide reliable measurement data even under the most adverse climatic conditions; cellular modems are either already integrated in the logger housing as standard or can be easily extended with an external RDT module (ModCom).

Operating devices:

- SEBA-HDA-Pro (Windows)
- SEBA-HDA-Tablet (Android)
- Notebook (Windows)
- iPad/iPhone (iOS)
- Smartphone/Tablet (Android)

ANDROID IOS WINDOWS

Operating software:

- SEBAConfigPC (Windows)
- SEBAConfigApp (Android, iOS)

SEBA evaluation software:

- DEMASvis

SEBA data management software:

- DEMASdb

SEBA-WebPortal:

- SEBA-Hydrocenter

SEBA Data Logger Type UnilogCom

Compact, low-priced multi-channel data logger with integrated 4G modem
e.g. for level monitoring in connection with SEBA pressure probe type DS 22

- Powerful 32-bit data logger with 16 MB ring memory for approx. 1,120,000 measured values
- Compact, space-saving plastic housing for wall mounting
- LC display with three multi-function keys for displaying current measured values and system status
- Transmission options: retrieval via mobile data, FTP push, TCP push, SMS push, SMS alarm, event push
- Possibility to connect different types of antennas
- Easy installation in the monitoring station on a mounting plate or in a protective housing

4G

- Low energy consumption, self-sufficient measuring operation with solar panels or exchangeable battery possible
- Management of up to 32 logical channels
- Optimised for connection of digital SEBA probes (e.g. pressure probe DS(T) 22, Surfloat-Sensor-4, multi-parameter probe MPS-PTEC, rain sensor)

SEBA Data Logger Type Unilog

Universally applicable multi-channel data logger with a multitude of connection options for various analogue and digital sensors, e.g. for water level and water quality monitoring

- Powerful 32-bit data logger with 16 MB ring memory for approx. 1,120,000 measured values
- Robust plastic housing for wall mounting
- LC display with three multifunction keys for displaying current measured values and system status
- Configurable analogue and digital input channels for connecting up to 32 sensors
- Option: Mini-USB for easy data transfer to USB stick
- Possibility to connect an external mobile modem (type ModCom)

Mod Com

4G

- Low energy consumption, self-sufficient measuring operation with solar panels or exchangeable battery possible
- Management of up to 32 logical channels
- Possibility of connecting a maximum of 8 analogue sensors (0-1 V/0-5 V/0/4-20 mA) as well as further digital transducers (SDI-12, ModBus, SHWP)

SEBA Data Logger Type Unilog-Light

Low-cost, robust data logger in pocket format

- Powerful 32-bit data logger with 16 MB ring memory for approx. 1,120,000 measured values
- Compact housing with LC display and three multifunction keys
- Variant-specific connection option for analogue and digital sensors:
  - o Level measurement with float/counterweight: Unilog-Light-ENC
  - o Level measurement with SEBA pressure probe DS 22: Unilog-Light SHWP
  - o Level measurement with radar sensor SEBAPuls: Unilog-Light SDI-12
  - o Water quality measurement with SEBA-MPS-D8/K16: Unilog-Light SHWP
  - o Various measurement tasks with analogue probes: Unilog-Light-Analog
- Possibility to connect an external mobile modem (type ModCom)

4G

Mod Com

- Excellent price/performance ratio
- Customised logger variant available depending on measuring task and sensor type
- Management of up to 32 logical channels

Data centre(logger, PLC)		High Performance Data Logger	Univeral Data Logger			Compact Data Logger							PLC/external products		
Type		**NetLogCom**	**UnilogCom**	**Unilog**	**UnilogLight**	**LogCom**	**SlimLogCom**	**PS-Light-2**	**UnilogLight ENC**	**Dipper-PT**	**Dipper-PTEC**	**Qualilog**	**Modbus**	**4-20 mA**	**SDI-12**
4G modem integrated		●	●			●	●	(●)							
Measuring principle/ Parameter	**Sensors Water level**														
Pressure/temperature	DS(T) 22	●	●	●	●	●	●			●			●	●	●
Float/ Counterweight	LevelSense	●	●	●										●	●
	Surfloat sensor	●	●	●					●						
Radar	SEBAPuls	●	●	●	●								●	●	●
Bubble system	PS-Light-2 sensor	●	●	●	●			●					●	●	●
	PS system	●	●	●	●								●	●	●
Parameter	**Sensors Water quality**														
Water level ***Temperature*** ***Conductivity***	MPS-PTEC	●	●	●	●	●	●		●				●	●	●
Water level ***Temperature*** ***Conductivity*** ***Dissolved substances*** ***Salinity*** ***Water density*** ***Oxygen content*** ***Oxygen saturation*** ***pH value*** ***Redox potential*** ***Ammonia*** ***Nitrate*** ***Chloride*** ***Ammonium*** ***Sodium*** ***Calcium*** ***Fluoride*** ***Potassium*** ***Chlorophyll a*** ***Cyanobacteria*** ***Rhodamine WT*** ***Turbidity*** ***Suspended solids (TSS)***	MPS-D8 / MPS-K16	●	●	●	●	●	●			●			●		●
Nitrate	SPS-NO3	●	●	●	●	●							●		
Transmission path	**External RDT modules**														
4G/LTE-M	ModCom			●	●				●						
	SlimCom									●	●				
LoRaWAN	SlimCom IoT-LR									●	●				

COMPACT DATA LOGGER

Cost-effective, battery-powered SEBA data logger inclusive sensor for measuring water level and/or water quality optionally with remote data transmission via cellular modem (4G)

SEBA compact data loggers are the specialists among the data loggers and have been optimised according to the measuring task.They are characterised by their compact and rugged design, are cost-effective comprise a sensor and data storage. Depending on the device type, data transmission modules are already integrated or can later be fitted as optional. The loggers operate reliable for many years, some of them are operated completely self-sufficiently with batteries, and are virtually maintenance-free.

Operating devices:

- SEBA-HDA-Pro (Windows)
- SEBA-HDA-Tablet (Android)
- Notebook (Windows)
- iPad/iPhone (iOS)
- Smartphone/Tablet (Android)

ANDROID IOS WINDOWS

Operating software:

- SEBAConfigPC (Windows)
- SEBAConfigApp (Android, iOS)

SEBA evaluation software:

- DEMASvis

SEBA data management software:

- DEMASdb

SEBA-WebPortal:

- SEBA-Hydrocenter

PS-Light-2

SEBA pneumatic level PS-Light-2

Compact single-bubble system with integrated data logger and 4G cellular modem (option), ideal for use as a maintenance-free and cost-effective back up system

- Powerful 32-bit data logger with 16 MB ring memory for approx. 1,120,000 measured values
- Highly accurate (0.05 % FS) and long-term stable due to intelligent sensor drift compensation
- Measuring ranges: 0-10 m (standard), option: 0-20, 0-40 m
- Low energy consumption due to optimised pump control
- Possibility of additional connection to external data loggers or PLC via RS485 interface (SDI-12, SHWP) or analogue output signal (0-1 V, 0-5 V, 0/4-20 mA)
- LC display with three multifunction keys for displaying current measured values and system status
- Option: integrated 4G modem (transmission options: retrieval via mobile data, FTP push, TCP push, SMS push, SMS alarm, event push)
- Easy installation in the gauge house (wall mounting) or in a protective housing

4G

WATER LEVEL

- Robust, reliable and highly accurate over the entire operating time
- Maintenance-free
- No lightning protection required on the sensor side

Unilog-Light ENC

SEBA data logger type Unilog-Light ENC

Battery-operated angle encoder with integrated data logger and LC display for for monitoring stations with stilling well

- Powerful 32-bit data logger with 16 MB ring memory for approx. 1,120,000 measured values
- Measuring range: 0-15 m with ball chain or 0-100 m with stainless steel cable
- Measuring accuracy: 2.5 mm (depending on float size)
- LC display with three multifunction keys for displaying current measured values and system status
- Internal 9 V buffer battery
- Possibility to connect external GSM/GPRS modem type ModCom

Mod Com

4G

WATER LEVEL

- Precise and drift-free
- User-friendly with LC display and multifunction keys
- Autonomous measuring operation with 9 V battery (alternatively with external 230 V/12 V mains supply)

LogCom / FlashCom

SEBA data logger type LogCom/FlashCom

Robust, battery-operated multi-channel data logger (type LogCom) with integrated cellular modem alternatively with solar power supply (type FlashCom), optimised for mounting on gauge pipes from Ø 4". Ideal for self-sufficient long-term monitoring, e.g. of water quality at rivers and dams.

- Powerful 32-bit multi-channel data logger with 16 MB ring memory for approx. 1,120,000 measured values
- Integrated 4G modem (transmission options: retrieval via mobile data, FTP push, TCP push, SMS push. SMS alarm, event push)
- Impact-resistant aluminium protective housing with threaded connection
- Optionally with external battery compartment or integrated solar module (Type FlashCom)
- LC display with three multifunction keys for displaying current measured values and system status (option: backlit LC display)
- Connection of DS(T) 22, MPS-PTEC/D8/K16 and other external sensors possible

4G

TEMPERATURE

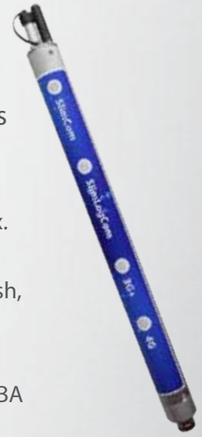
WATER LEVEL

- Low energy consumption due to intelligent power management,
- Simple, tool-free battery replacement
- Event control in case of threshold level breach (automatic measuring cycle adjustment, SMS alarm, shortening of transmission interval)
- Easy mounting on 4" to 6" pipes with pipe thread

SlimLogCom

SEBA data logger type SlimLogCom

Battery-operated multi-channel data logger with integrated cellular modem for mounting in gauge pipes from Ø 2".
Ideal for monitoring water levels/filling levels in flood retention ponds as well as in small flowing waters or lakes



- Powerful 32-bit multi-channel data logger with 16 MB ring memory for approx. 1,120,000 measured values
- Integrated 4G modem (transmission options: retrieval via mobile data, FTP push, TCP push, SMS push, SMS alarm, event push)
- Self-sufficient power supply with exchangeable size (baby) c-batteries
- Connection possibility of digital SEBA probes, e.g. pressure probe DS(T) 22, SEBA multi-parameter probe type MPS-PTEC

4G

TEMPERATURE

WATER LEVEL

- Slim design, mounting in gauge tubes with a diameter of 2" or more
- Low energy consumption due to intelligent power management
- Easy battery change without tools
- Event control in case of threshold level breach (automatic measuring cycle adjustment, SMS alarm, shortening of transmission interval)

SEBA data logger type Dipper-APT

Maintenance-free, battery-operated compact logger with integrated absolute pressure sensor, ideal for measuring points which are regularly flooded over long periods of time.

WATER LEVEL

TEMPERATURE

- Powerful 32-bit data logger with large 16 MB ring memory for approx. 1,120,000 measurements
- Robust, slim design (Ø 22 mm) made of 1.4404 stainless steel (option: 1.4539)
- Individual measuring routines (single value measurement, averaging, event control, flow calculation via W/Q relationship)
- Precise, long-term stable ceramic-capacitive absolute pressure sensor for measuring ranges up to max. 20 bar,
- NTC30 temperature sensor with 0.3 °C (standard) or 0.1 °C (option) accuracy
- Exchangeable lithium batteries
- Air pressure compensation with additional Baro-Dipper and software DEMASdb

- Compact mini data logger for gauge pipes from 1“ upwards
- Maintenance-free, self-sufficient measuring operation for approx. 8-10 years service life
- Completely flood-proof (IP68)
- Variable use (cable length for suspending the sensor can be easily assembled on site)

SEBA data logger type Baro-Dipper

Air pressure sensor with integrated SEBA data logger for determining atmospheric pressure

AIR PRESSURE

- Powerful 32-bit data logger with large 16 MB ring memory for approx. 1,120,000 measurements
- Robust, Ø 22 mm slim stainless steel housing
- Exchangeable lithium batteries
- Use in conjunction with Dipper-APT for air pressure compensation

- Compact design for gauge pipes from 1“ upwards
- Maintenance-free and self-sufficient measuring operation for approx. 3-4 years service life

SEBA data logger type Dipper-PT

Proven, practically maintenance-free measuring system for monitoring water level and temperature, modular expansion option with remote data transmission module SlimCom 4G or SlimCom IoT-LR (LoRaWAN), ideal for monitoring small flowing waters or lakes

WATER LEVEL

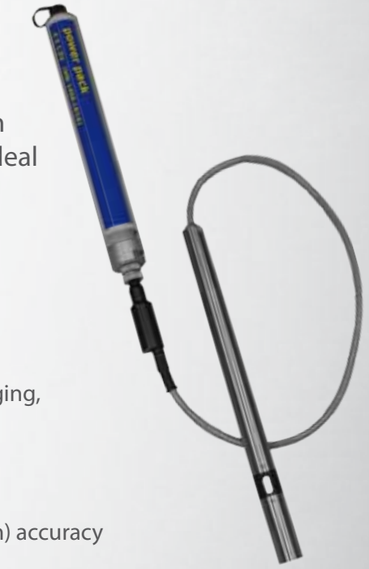
TEMPERATURE

- Powerful 32-bit data logger with large 16 MB ring memory for approx. 1,120,000 measurements
- Robust, slim design (Ø 22 mm) made of 1.4404 stainless steel (option: 1.4539)
- Individual measuring routines (single value measurement, averaging, event control, flow calculation via W/Q relationship)
- Precise, long-term stable, ceramic-capacitive relative pressure transducers for measuring ranges up to max. 30 bar
- NTC30 temperature sensor with 0.3 °C (standard) or 0.1 °C (option) accuracy
- Replaceable lithium batteries

- Compact mini data logger for level pipes from 2“ upwards
- Practically maintenance-free, self-sufficient measuring operation for ≥ 8 years service life
- Modularly expandable with RDT module SlimCom 4G/SlimCom IoT-LR

SEBA data logger type Dipper-PTEC

Compact data logger for monitoring water level, temperature and conductivity, modular expandability with RDT module SlimCom 4G or SlimCom IoT-LR (LoRaWAN), ideal for monitoring flowing waters or lakes



WATER LEVEL

TEMPERATURE

CONDUCTIVITY

- Powerful 32-bit data logger with large 16 MB ring memory for approx. 1,120,000 measurements
- Robust, slim design (Ø 22 mm) made of 1.4404 stainless steel (option: 1.4539)
- Individual measuring routines (single value measurement, averaging, event control, flow calculation via W/Q relationship)
- Precise, long-term stable, ceramic-capacitive relative pressure transducers for measuring ranges up to max. 30 bar,
- NTC30 temperature sensor with 0.3 °C (standard) or 0.1 °C (option) accuracy
- Replaceable lithium batteries

- Compact mini data logger for level pipes from 2“ with plug-in PowerPack module
- High-precision conductivity measurement with automatic measuring range switching for maximum resolution
- Easy battery change without tools
- Modular expandable with RDT module SlimCom 4G/SlimCom IoT-LR

DATA REMOTE TRANSMISSION

Application areas:

- Measuring points which require a hight degree of data transmission (e.g. construction site monitoring, discharge monitoring)
- Measuring points of high public interest (e.g. public flood warning levels)
- Cost optimisation through reduction of site visits
- Measuring points that are difficult to access (e.g. underfloor measuring points, remote measuring points)

SEBA RDT module Type SlimCom

Battery-operated, plug-in cellular modem for direct connection to SEBA data loggers Dipper-PT and Dipper-PTEC

- Integrated 4G cellular modem
- Slim aluminium housing for mounting in gauge tubes with a diameter of 2“ or more
- Self-sufficient power supply with commercially available size (baby) c-cell batteries or lithium batteries
- Transmission options: retrieval via mobile data, FTP push, TCP push, SMS push, SMS alarm, event push
- Possibility of connecting different types of antennas, e.g. for underfloor measuring points

+

- Control soundings also possible with 2“ level pipes without dismantling the measuring technology
- Optimised SEBA RDT level pipe closures from 2“ to 6“ with convenient suspension device
- SMS alarm in case of a threshold breach
- High operational safety due to separate power supply for RDT module and measuring system
- Easy, plug-in retrofitting to existing offline systems (Dipper-PT, Dipper-PTEC)
- Tool-free battery replacement (bayonet lock)

SEBA RDT module Type SlimCom IoT-LR

Battery-operated, pluggable LoRaWAN module for direct connection to SEBA data loggers Dipper-PT and Dipper-PTEC

- Remote data transmission via LoRaWAN technology
- Slim aluminium housing for mounting in pipes with a diameter of 2“ or more
- Self-sufficient power supply with commercially available (baby) c-cell batteries or lithium batteries

+

- Control soundings also possible in 2“ water level pipes without removing the measuring equipment
- Optimised SEBA RDT closures with attached LoRaWAN antenna from 2“ to 6“ with convenient suspension device
- High operational safety due to separate power supply of RDT module and measuring system
- Battery life of ≥ 8 years when using lithium batteries
- Easy, plug-in retrofitting to existing offline systems (Dipper-PT, Dipper-PTEC)
- Tool-free battery replacement (bayonet lock)

SEBA RDT module Type ModCom

External cellular modem with 4G standard for connection to SEBA measurement data loggers type Unilog and Unilog-Light

- Compact and robust design, designed for use in all climatic zones
- SMA interface for connection of different antenna types
- Transmission options: retrieval via mobile data, FTP push, TCP push, SMS push, SMS alert, event push

+

- Easy, plug-in retrofitting to existing offline systems (Unilog, Unilog-Light)
- Robust and reliable even at extreme climatic conditions
- Compact, space-saving design

OPERATING SOFTWARE

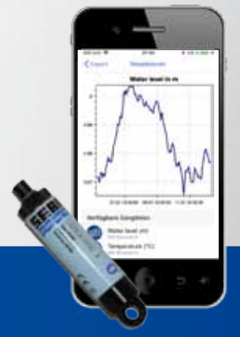
Operating software SEBAConfig (Windows)

- Operating software (Windows) for programming, calibration and data read-out of SEBA loggers and for the calibration of SEBA-pressure and multi-parameter sensors
- Data visualisation of read-out time series in graphic form (hydrographs with DEMASvis)

- **Quick start for beginners:** Whether it is an initial or routine operation: SEBAConfig takes you by the hand and leads you step by step through the possible options.
- **One tool for all tasks:** With SEBAConfig, all routine tasks for maintaining the measuring operation are settled with SEBA loggers and sensors. In addition to configuration, calibration and data reading, a remote access to online stations via GPRS or modem is also possible. Read-out time series are also displayed by DEMASvis in graphical and tabular form.
- **Configurable:** In Station Explorer, users can easily set up any measuring points, loggers or sensor types to establish an immediate connection.

SEBAConfig

Operating software SEBAConfigApp (Android, iOS)



ANDROID

IOS

- Operating software (Android, iOS) for programming, adjustment and data read-out of SEBA loggers in conjunction with SEBA BlueCon 2
- Data visualisation of time-series in hydrograph form

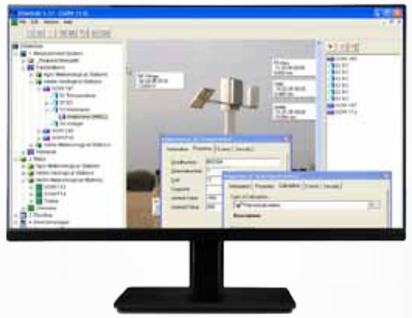
- **Available immediately:** Download the latest SEBAConfigAPP free of charge from the Google PlayStore, install it on your smartphone or tablet and off you go.
- **Clear and user-friendly:** Plug in BlueCon 2, establish a connection, and the most important settings are visible at a glance on the user interface. The shortcuts are arranged in a process-oriented manner, so that the user can perform all routine tasks very effectively, point by point.

SEBA ConfigApp

DATA MANAGEMENT SOFTWARE

SEBA data management software DEMASdb

- Data management software (Windows) to manage and archive large amounts of data
- Paradox database (default), Oracle, MySQL, SAP (option)
- Automatically import of (logger) time series
- Automatic calculations based on mathematical formulas or tables
- Export of time series in different file formats (e.g. ASCII, csv, txt, ZRXP)
- Graphical and tabular time series visualisation DEMASvis
- Available as single and multi-workstation version
- User Management to protect against unauthorised access



DEMASdb is a graphical database interface that was specifically designed for the collection, storage and management of measurement data. The application is suitable for both large and small monitoring networks. DEMASdb channels and imports, the incoming measurement data manually or automatically, importing them to the Paradox database and thus keeping everything in order. Alternatively, DEMASdb can also be connected to the existing SQL databases (e.g. Oracle, MySQL). DEMASdb facilitates also a multi-user function, so that multiple users can simultaneously access the data. Thus, it is always ensured that all data remains consistent. Configurable user rights (option) regulates access by different user groups. The export function of DEMASdb allows for the time series to be converted to different file formats and then to be passed on to third parties. With the evaluation software DEMASvis contained in DEMASdb the archived time series can be displayed in the clear form of charts and tables by clicking on the Measurement Station Explorer.

EVALUATION SOFTWARE

SEBA evaluation software DEMASvis

- Evaluation software (Windows) for graphical or tabular display of the measured values is available as a single workstation version (stand-alone) or as a part of software DEMASdb and SEBAConfig
- Modern user interface with graphical operating concept (Ribbons)
- Hydrographs with zoom and crosslines function
- Calculation functions (e.g. averaging, extreme value calculation, summation etc.)
- Hydrograph correction over control values, sensor drift compensation and interpolation
- Live mode for KLL-Q-2-users, for visualising current data, for example in connection with HDA-Pro
- Export of data in different formats (e.g. csv-/.txt-File and ASCII-Format)

DEMASvis is a comfortable, windows-based software for visualisation and analysis of time series. The simultaneous display of graphs and lists guarantees optimum clarity. Numerous features (including zoom, hydrograph correction, input of control values, block diagrams) and calculation features facilitate and simplify working both with measurement data from SEBA loggers as well as from other sources or storage media. With the practical „Live Mode", the users of SEBA's Electric Contact Meter Type KLL-Q-2 has the ability to automatically send the current readings via data push, to visualise both in tabular and graphical form and save them with DEMASvis, for example, on the ruggedised HDA-Pro.
DEMASvis is available as an independently running program with a single workstation license. However, the evaluation software also constitutes an integral part of DEMASdb (data capture management evaluation software) and with limited functionality as a visualisation program in SEBAConfig.

RETRIEVAL SOFTWARE

SEBA retrieval software DEMASole

- Convenient software (Windows) for automatic retrieval data from remote data transmission stations
- Automatic conversion and deployment of the read-out measurement data in any destination directory for further processing with the software DEMASdb or forwarding to the existing process control systems (PCS)
- Automatic logging (log book) of all activities for analytical purposes

The task of the DEMASole software is primarily to retrieve data from online stations automatically at fixed, predefined times. Critical time shifts, e.g. the transition from summer to winter time, are automatically adjusted by DEMASole. Upon request, DEMASole converts the read-out data files into a specific or suitable output format and stores them in a freely definable destination directory. From there, the data from external programs (e.g. DEMASdb) or process control systems can be received and processed.

WEB PORTAL

SEBA Web Portal SEBA-Hydrocenter

- Web portal for the password-protected provision of time series on the internet
- Data visualisation in the form of hydrographs and tables
- Data download of any time series in ASCII- & .csv format
- Individual configuration (monitoring stations, sensors, calculating sensors etc.) according to customer specifications
- No annual licence fees (Hydrocenter)
- Status indicator (traffic light function) of the remote data transmission stations in the monitoring Station Explorer (Hydrocenter-Pro)
- Positioning of the monitoring stations via GPS coordinates on an open-street map (Hydrocenter-Pro)

- **Log in and get started:** With the intuitively designed, simple user interface of the SEBA-Hydrocenter, the user will quickly and easily be able to navigate it.
- **Always available:** Whether in the office, at home or on the road, current and past time-series can be visualised in SEBA-Hydrocenter in the form of hydrographs and they may be downloaded using the Download Manager for data processing at any time.
- **Sharing is caring:** Other authorised groups or project staff can independently access specific measurement data and download them. The work of the team or project leader is thus considerably facilitated, since the often time-consuming data distribution is thereby eliminated.
- **Last but not least:** With Hydrocenter-Pro, subject to a small monthly payment, the users have even more useful features at their disposal, such as „Open Street Map“ or a status display of the remote data transmission stations in the form of a traffic light indication.

OPERATING DEVICES

SEBA HDA-Tablet

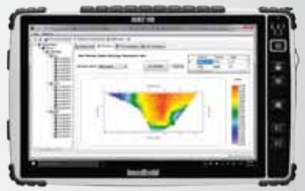
ANDROID

- Designed for use in the field, dust and water-resistant tablet (Android)
- Protective cover providing shock-absorbing fall protection of up to 1.5 m
- High-contrast 8“ display, 13 megapixel camera

- **Robust, shockproof, handy:** The new HDA-Tablet with an Android operating system represents the latest generation of mobile devices that have been specially designed for outdoor use. Since it is equipped with a stylus, operation with gloves in adverse winter conditions poses no problem. Owing to the long battery life and the protective cover, the HDA-Tablet is ideal for use in rough environments. For prolonged fieldwork operation use, a spare battery is available as an option.
- **Smart:** With the user-friendly operating software ConfigAPP, SEBA data loggers can be easily and comfortably configured and read wirelessly via Bluetooth®. The time-series can be visualised in graphics form (hydrograph). To do this, the user only needs BlueCon 2, a small, portable, battery-powered drive, which is plugged into the RS232 or RS485 interface of each data logger. Available updates of the ConfigAPP can be easily downloaded from the Google Play Store.

HDA-Tablet

SEBA HDA-Pro



WINDOWS

- Robust 10.1“ tablet PC with Windows 10 Operating System
- Protection class IP65
- 1 x RS232 interface, 2 x USB, VGA, LAN, MicroSD Slot, Loudspeaker
- Integrated GPS, 5 megapixel camera, Bluetooth®, WWAN (Optional)

- **Robust, shockproof, handy:** The HDA-Pro with a 10.1“ display is a multi-function tablet PC for use in rough environments and therefore it is a multi-purpose device.
- **Powerful and innovative:** The HDA-Pro scores with its fast Intel Quad-core processor and large 10.1“ widescreen LED (1366x768 pixels) with ambient light sensor that automatically adjusts the backlighting to the surrounding light conditions.
- **Smart:** The HDA-Pro is the ideal assistant for numerous measuring tasks. Parameterisation and adjustment of data loggers and data read-out via USB / Bluetooth® with SEBA operating software ConfigPC. Implementation of ADCP measurements with software WinRiver II or HydroProfiler, current meter measurements with Software Q4, data visualisation and evaluation with DEMASvis and much more.

HDA-Pro

Service

The SEBA all-round service for your SEBA measurement technology:
Reliable, professional and tailored precisely to your needs and requirements

Installation and commissioning
- Professional installation and commissioning
- Software installation and setup
- Commissioning and turnkey handover

Provision of time series in the cloud
- Setup and hosting of monitoring wells (online/offline) in the SEBA-Hydrocenter or on SEBA's FTP server for secure data handling and downloads

Support of measurement projects
- Provision of SEBA data loggers (e.g. for pump tests) from our rental pool
- Installation and parameterisation of the measurement technology according to customer specifications
- Support of the measurement technology on site
- Data readout and dismantling at the end of the project
- Data evaluation with DEMASvis in the form of hydrographs and tables

Implementation of training courses for measurement technology and software
- In-house directly at your location, on-site at the monitoring station or as your company event with us in Bavaria

From maintenance to the SEBA carefree package
- Services tailored to your needs - from basic to all-inclusive
- System check, battery replacement, adjustment and calibration
- Remote monitoring and plausibility checks
- Troubleshooting via remote maintenance
- Troubleshooting at the measuring point
- Provision of time series in the SEBA-Hydrocenter
- Customised offers according to your requirements

Telephone support
- Commissioning of online stations with remote parameterisation
- Support during initial setup and commissioning of measurement technology and software
- Support with troubleshooting and error correction

Contact: **SEBA Hydrometrie GmbH & Co. KG**

Gewerbestr. 61a
D-87600 Kaufbeuren

Tel.: +49 (0)8341 / 9648-0
Fax: +49 (0)8341 / 9648-48

Mail: info@seba.de
Web: www.seba.de

Represented by:

Imprint:
Publisher: *SEBA Hydrometrie GmbH & Co. KG • Managing Director: Rudolf Düster*
Gewerbestraße 61 A • 87600 Kaufbeuren - Germany • Telefon: +49 (0) 8341 96 48 - 0 • Mail: info@seba.de • Web: www.seba.de
Editing, typesetting and design: *SEBA Hydrometrie GmbH & Co. KG*
Images/Graphics: *SEBA Hydrometrie GmbH & Co. KG*