

Over 50 years of experience - worldwide service

Groundwater monitoring

low maintenance
innovative
modular
reliable
compact
user friendly

intelligent
low maintenance
innovative
modular
reliable
compact
user friendly

intelligent
low maintenance
innovative
modular
reliable
compact





Groundwater

Dear SEBA customers,

In many countries around the world, groundwater plays a crucial contribution to the water supply for millions of people and livestock, as well through the irrigation of agricultural land for food production. Climate change, rising sea levels, contamination by microplastics, hormones, slurry and wastewater from industry, plus an exponentially growing world population present global water suppliers with an almost unsolvable challenge, which is to provide clean affordable groundwater in sufficient quantity as sustainably as possible.

In order to recognise hydraulic and hydrochemical groundwater changes in time and to be able to initiate appropriate countermeasures, if necessary, the use of reliable (telemetric) measuring technology is indispensable. Groundwater measuring stations, which are located in the flow path of production wells or natural drinking water sources, are of special importance. What is the qualitative and quantitative condition of the groundwater in the aquifer? Where are new groundwater resources in sufficient quantity and quality? How much drinking water can still be extracted in today's increasingly longer dry periods and falling levels of precipitation without running the risk of no longer using the aquifer sustainably? What is the long-term trend in groundwater levels at selected trend monitoring sites?

We have been providing the right answers to these and many other questions for more than fifty years with our innovative, robust and reliable field measurement technology for mobile and stationary water level and water quality measurement. At the same time, our valued customers from water management administrations, municipal water suppliers, universities and engineering consultants 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, you are also at the right place if you are looking for customised solutions. Benefit from our valuable wealth of experience in the field of groundwater hydrometry. We will find a practical solution for you and advise you competently and comprehensively on site.

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:

- Production wells, apron monitoring wells, trend monitoring wells, construction sites, landfills
- Dams and reservoirs (seepage)
- Rivers, canals, lakes, reservoirs, flood retention basins
- Bottom pressure measuring points
- Reservoirs and shafts
- Spring discharge monitoring
- Discharge monitoring
- Heat plume monitoring

SEBA Pressure probe DS(T) 22

- 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 / 1 / 4 / 5 / 20 / 40 / 100 / 200 / 250 / 300 m)
- Digital (RS485: SDI-12, Modbus, SHWP) or analog output (4-20 mA)
- Optional: Integrated temperature sensor (type DST 22)



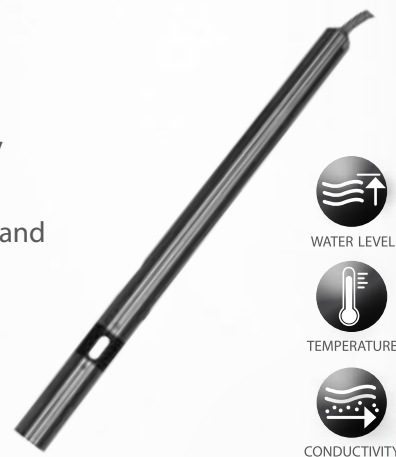
Smart combinable with:

SEBA data logger:

- Unilog
- UnilogCom
- SlimLogCom
- LogCom/FlashCom
- NetLogCom

SEBA Multi-parameter probe MPS-PTEC

- 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, sleek Ø 22 mm, 1.4539 grade stainless-steel housing for extreme conditions
- Output: RS485, Option: MODBUS, SDI-12, 4-20 mA
- Optional with integrated data logger: variant „Dipper-PTEC“



Smart combinable with:

SEBA data logger:

- Unilog
- UnilogCom
- NetLogCom
- SlimLogCom
- LogCom/FlashCom
- Dipper-PTEC (*intern*)

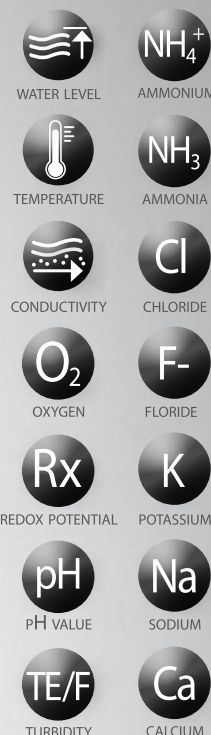
SEBA operating software:

- SEBAConfig (*Windows*)

Data logger (*Third-party products*)
and **control systems** (*PLC*) with
digital input (*SDI-12/Modbus*)

SEBA Multi-parameter probe MPS-D3/D8

- 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
- Output: RS485 (SHWP), Optional: MODBUS, SDI-12, 0/4-20 mA
- Available sensors: Water level, temperature, conductivity, oxygen, redox potential, pH, turbidity, ammonium, ammonia, chloride, fluoride, potassium, sodium and calcium
- Additional electric contact meter function in connection with mobile field laboratory KLL-Q-2
- Optional: Integrated, powerful SEBA data logger (type Qualilog-8) and PowerPack for stationary use



MPS-D3/D8/Qualilog-8



Smart combinable with:

SEBA data logger:

- Unilog
- UnilogCom
- NetLogCom
- LogCom/FlashCom

- SlimLogCom
- Qualilog-8

SEBA electric contact meter:

- SEBA KLL-Q-2

SEBA handset:

- Checker-2

SEBA operating software:

- SEBAConfig (Windows)



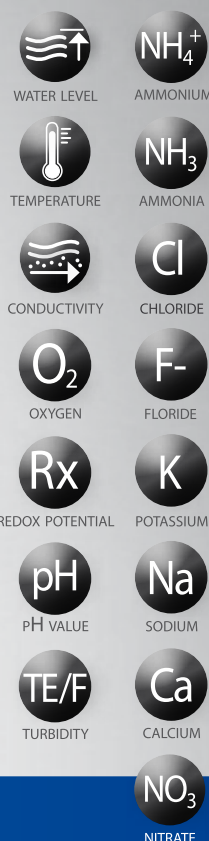
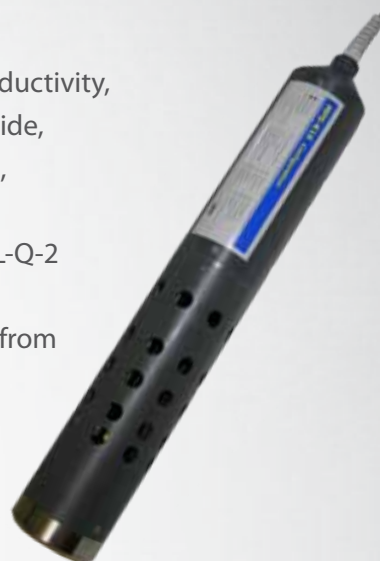
PS-K16 Configuration

- | | | |
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| <ul style="list-style-type: none">• 1x 1/4" BNC Connector (Standard)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional) | <ul style="list-style-type: none">• 1x 1/4" BNC Connector (Standard)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional) | <ul style="list-style-type: none">• 1x 1/4" BNC Connector (Standard)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional)• 1x 1/4" BNC Connector (Optional) |
|--|--|--|

4240

SEBA Multi-parameter probe MPS-K16

- 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, 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
- Optional: integrated, high-performance SEBA data logger Qualilog-16 (for stationary use)



MPS-K16 / Qualilog-16

Smart combinable with:

SEBA data logger:

- Unilog-Light (*external*)
- Unilog (*external*)
- UnilogCom (*external*)
- LogCom/FlashCom (*external*)
- SlimLogCom (*external*)
- Qualilog-16 (*internal*)

SEBA electric contact meter:

- SEBA KLL-Q-2

SEBA handset:

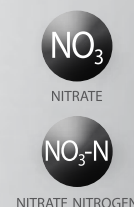
- Checker-2

SEBA operating software:

- SEBAConfig (*Windows*)

SEBA Nitrate probe SPS-NO3

- Robust and virtually maintenance-free single-parameter sensor for measuring nitrate (NO_3^- , $\text{NO}_3\text{-N}$)
- 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



SPS-NO3

Smart combinable with:

SEBA data logger:

- Unilog
- UnilogCom
- NetLogCom

Data logger (*Third-party products*)
and **control systems** (*PLC*) with
digital input (*SDI-12/Modbus*)



DATA LOGGER

Application areas:

- Groundwater and water quality monitoring in production wells and on large construction sites
- Heat plume monitoring, discharge monitoring, monitoring of landfills and contaminated sites in connection with water quality probes (multi-parameter probes, nitrate probes)
- Water level, flow and water quality monitoring in flowing waters, lakes and dams
- Acquisition of meteorological parameters from weather stations

SEBA Data Logger Dipper-PT (Relative Pressure)

- Universally applicable, high-performance 32-bit data logger optimized for water level and temperature monitoring in ground and surface water
- XL ring memory for approx. 1,120,000 measurement data
- Robust and slim design (Ø 22 mm) made of 1.4404 stainless steel (Option: 1.4539 stainless steel), usable for 1" pipe diameter and larger
- Individual measuring routines (single value measurement, averaging, event control, quicklog for pump tests)
- Precise, long-term stable ceramic-capacitive pressure transducer up to max. 300 m measuring range
- NTC30 temperature sensor with 0.3 °C (standard) or 0.1 °C (option) accuracy
- Exchangeable lithium batteries for approx. 8-10 years service life
- Operation with notebook, tablet PC, smartphone or tablet via Bluetooth® (option)
- Expandable with data transmission module SlimCom (4G, LoRaWAN)



WATER LEVEL



TEMPERATURE

SEBA Data Logger Dipper-PTEC

- Powerful 32 bit data logger optimized for water level, temperature and conductivity measurement in ground and surface water
- XL ring memory for approx. 1,120,000 measurement data
- Robust, slim design (Ø 22 mm) made of 1.4539 stainless steel for extreme operating conditions
- Individual measuring routines (single value measurement, averaging, event control, quicklog for pump tests)
- High-quality 4-electrode conductivity measuring cell
- Precise, long-term stable ceramic-capacitive pressure transducer
- NTC30 temperature sensor with 0.1 °C accuracy
- External PowerPack module with exchangeable 1.5 V baby cells
- Operation with notebook, tablet PC, smartphone or tablet via Bluetooth® (option)
- Expandable with data transmission module SlimCom (4G, LoRaWAN)



WATER LEVEL



TEMPERATURE



CONDUCTIVITY

Dipper-PT/PTEC smart combinable with:

Operating devices:

- SEBA HDA-Pro
- SEBA HDA-Tablet

SEBA operating software:

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

SEBA evaluation software:

- DEMASvis

SEBA archiving software:

- DEMASdb

Data transmission:

- SEBA SlimCom (4G, LoRaWAN)



SEBA Data Logger Dipper-APT (Absolute Pressure)

- High-performance 32-bit measuring data logger with absolute pressure sensor for measuring points at risk of flooding as well as for bottom pressure measurements at great depths
- XL ring memory for approx. 1,120,000 measurement data
- Robust and slim design (Ø 22 mm) made of 1.4404 stainless steel;
- Option: 1.4539 stainless steel, can be used for 1" measuring points and larger
- 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 for approx. 8-10 years service life
- Operation with notebook, tablet PC, smartphone or tablet via Bluetooth® (option)
- Air pressure compensation with additional Baro-Dipper and DEMASdb software
- Expandable with data transmission module SlimCom (4G, LoRaWAN)



WATER LEVEL



TEMPERATURE

SEBA Data Logger Baro-Dipper

- Measuring data logger with Baro sensor optimized for precise recording of the atmospheric pressure
- Robust, Ø 22 mm slim stainless steel housing
- XL ring memory for approx. 1,120,000 measurement data
- Exchangeable lithium batteries for approx. 8-10 years service life
- Operation with notebook, tablet PC, smartphone or tablet via Bluetooth® (option)
- Use in conjunction with Dipper-APT for air pressure compensation
- Expandable with data transmission module SlimCom (4G, LoRaWAN)



AIR PRESSURE



Dipper-APT/Baro-Dipper smart combinable with:

Operating devices:

- SEBA HDA-Pro
- SEBA HDA-Tablet

SEBA operating software:

- SEBAConfig (*Windows*)
- SEBAConfigApp (*Android, iOS*)

SEBA evaluation software:

- DEMASvis

SEBA archiving software:

- DEMASdb

Data transmission:

- SEBA SlimCom*
(4G, LoRaWAN)



DATA REMOTE TRANSMISSION

Application areas:

- Monitoring of measuring points that require high data accuracy (e.g. construction site monitoring, discharge monitoring)
- Measuring points of high public interest (e.g. trend measuring points)
- Cost optimisation by reducing the number of monitoring site visits
- Measuring points that are difficult to access (e.g. underground monitoring stations)




Brunnen 3
Wasserwerk Geschendorf
Betreten verboten

Städtwerke Lübeck GmbH Tel.: 0451 / 0888 2554

SEBA Data Logger NetLogCom

- 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

NetLogCom

Smart combinable with:

SEBA sensors:

- DS(T) 22, MPS-D3/8,
- MPS-PTEC, SPS-NO3

Operating device:

- Notebook
- SEBA HDA-Pro

Operating software:

- Configurator

Evaluation software:

- MAWIN (SODA)

SEBA Web Portal:

- SEBA-Hydrocenter

SEBA Data Logger Type UnilogCom

- Wide-ranging applications, high capacity, multi-channel data logger with integrated cellular modem (4G/LTE)
- Large 16 MB ring memory for 1,120,000 measurements
- Compact plastic housing for wall mounting
- LCD with three multi-function buttons to display current measured values and system state (Option: Backlit LCD)
- Transfer Options: mobile data retrieval, FTP Push, TCP push, SMS push, SMS alarm
- Connectivity to digital and analog probes



4G

UnilogCom

Smart combinable with:

SEBA sensors:

- DS(T) 22, MPS-D3/8,
- MPS-PTEC, SPS-NO3

Operating devices:

- SEBA HDA-Pro
- SEBA HDA-Tablet

SEBA operating software:

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

SEBA retrieval software:

- DEMASole

SEBA evaluation software:

- DEMASvis

SEBA archiving software:

- DEMASdb

SEBA Web portal:

- SEBA-Hydrocenter



SEBA Data Logger Type LogCom/FlashCom

- Robust, compact multi-channel data logger with integrated cellular modem (4G/LTE)
- Impact resistant aluminum protective housing with threaded connection, optimized for gauge tubes from 4" diameter
- Optionally with external battery compartment or integrated solar module
- LCD with three multi-function buttons to display current measured values and system state (Option: Backlit LCD)
- Transmission options: Data retrieval via mobile network, FTP push, TCP push, SMS push, SMS alarm, event push
- Connectivity with various sensors, e.g. DS(T) 22, MPS-PTEC/D8/K16 as well as further external sensors



4G

LogCom/FlashCom

Smart combinable with:

SEBA sensors:

- DS(T) 22,
- MPS-D3/8, MPS-PTEC

Operating devices:

- SEBA HDA-Pro
- SEBA HDA-Tablet

SEBA operating software:

- SEBAConfig (*Windows*)
- SEBAConfigApp (*Android, iOS*)

SEBA retrieval software:

- DEMASole

SEBA evaluation software:

- DEMASvis

SEBA archiving software:

- DEMASdb

SEBA Web portal:

- SEBA-Hydrocenter

SEBA Data Logger Type SlimLogCom

- Compact multi-channel data logger with integrated cellular modem (4G/LTE)
- Large 16 MB ring memory for approx. 1,120,000 measurements
- Autonomous power supply with standard C-size or lithium batteries
- Transfer options: Data retrieval via mobile network, FTP push, TCP push, SMS push, SMS alert, event push
- Connectivity with various digital SEBA sensors, e.g. DS(T) 22 pressure sensor, MPS-PTEC / MPS-D8 multi-parameter sensors in combination with various types of antennas including for underground measuring points



4G

SlimLogCom

Smart combinable with:

SEBA sensors:

- DS(T) 22,
- MPS-D3/8, MPS-PTEC

Operating devices:

- SEBA HDA-Pro
- SEBA HDA-Tablet

SEBA operating software:

- SEBAConfig (*Windows*)
- SEBAConfigApp (*Android, iOS*)

SEBA retrieval software:

- DEMASole

SEBA evaluation software:

- DEMASvis

SEBA archiving software:

- DEMASdb

SEBA Web portal:

- SEBA-Hydrocenter



SEBA RDT module Type SlimCom

- Sleek aluminum housing for installation in level tubes from 2" pipe diameter
- Autonomous power supply with standard size C batteries
- Possibility of connecting different types of antennas
- Optionally available with integrated 4G/LTE modem (SlimCom 4G) or LTE-M modem (SlimCom LTE-M)



LTE-M

4G

SlimCom

Smart combinable with:

SEBA data logger:

- Dipper-PT
- Dipper-PTEC

Operating device:

- SEBA HDA-Pro

SEBA operating software:

- SEBA Modem Configurator

SEBA retrieval software:

- DEMASole

SEBA Web portal:

- SEBA-Hydrocenter

SEBA RDT module Type SlimCom IoT LR

- Remote data transmission via LoRaWAN technology
- The option to connect (modular system) SEBA data loggers with sensors for measuring water level, water temperature and conductivity
- Long battery life
- Slim design (installation starts from a pipe diameter of 2")
- Suitable for above and below ground monitoring stations
- Existing SEBA data loggers (Dipper-PT/Dipper-PTEC) can be easily retrofitted
- Highly reliable in operation due to intelligent power supply



LoRa
WAN

SlimCom IoT-LR

Smart combinable with:

SEBA data logger:

- Dipper-PT
- Dipper-PTEC

Operating device:

- SEBA HDA-Pro

SEBA operating software:

- SEBA Modem Configurator

SEBA retrieval software:

- DEMASole

SEBA Web portal:

- SEBA-Hydrocenter



ELECTRIC CONTACT METER

Application areas:

- Monitoring of groundwater measuring points, wells and shafts
- Depth determination in water level pipes, wells, shafts and surface water in connection with a depth gauge or depth-sounding device (TLG)
- Performance of temperature profiles (KLL-T) in ground and surface water
- Water quality monitoring in ground and surface water:
groundwater monitoring wells, landfills, lakes, abandoned wells, dams
- Performance of control/comparison measurements at monitoring sites with data logger and multiparameter probes

SEBA Electric Contact Meter Type KLL-Mini

- Mobile Pocket handset to determine the water level to a depth of 15 m in monitoring wells from Ø 1"
- Optical and acoustic signal upon contact with water
- Extendable functionality (basic button, saltwater probe cap etc.)



Accessories:

- Protective bag
- Basic button
- Probe cap for high or non-conductive liquids
- Salt water probe cap

SEBA Electric Contact Meter Type KLL-Light

- Affordable, portable hand-held device for determining the current water level to a depth of 200 meters
- Optical and acoustic signal on contact with water
- LED battery status indicator
- Robust support frame with a polycarbonate handle



Accessories:

- Carrier case
- Sounding pipe suspension
- Loading weight: 450 g/800 g

SEBA Electric Contact Meter Type KLL

- Portable hand-held device for determining the current water level up to 500 meters depth
- Optical and acoustic signal (option) on contact with water
- Available on hand drum or with a robust aluminum support frame
- Extensible scope of functionality (basic sensing device, sampling, electric drive, etc.)

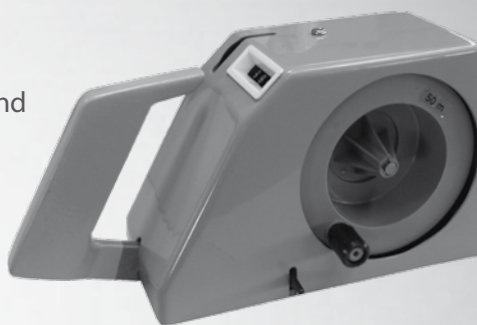


Accessories:

- Carrier case
- Acoustic signal
- Salt water probe cap
- Probe cap for high or non-conductive liquids
- Loading weight: 450 g/800 g
- Electric drive
- Mechanical sampler

SEBA TLG - Depth-sounding device

- Portable hand-held device for determining the water level and for depth sounding up to 200 m
- Fine mechanical, fully automatic measurement procedures
- Mechanical counter to display the groundwater level in m and cm
- Light weight and compact design



TLG

Accessories:

- Carrier case

SEBA Electric Contact Meter Type KLL-T

- Portable hand-held device for determining the current water level and the water temperature in water depths up to 500 m and sounding pipes from Ø 1"
- Membrane keypad with backlit LCD to display temperature
- Optical and acoustic signal on contact with water
- Robust aluminum support frame



KLL-T

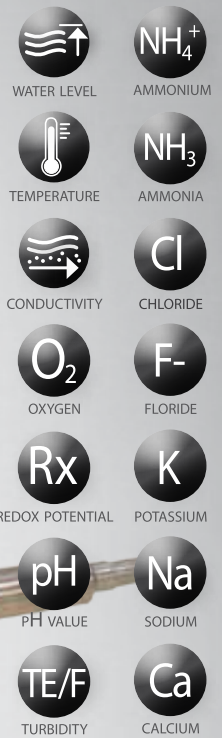
Accessories:

- Protective bag



SEBA Electric Contact Meter Type KLL-Q-2

- Mobile field laboratory with electric cable contact gauge for measuring the water level, temperature and other water quality parameters (e.g. oxygen, pH, conductivity, redox potential, turbidity) in groundwater and surface waters
- SEBA Plug-in System for coupling with SEBA multi-parameter sondes of the MPS-D3/D8/K16
- Printed tubular cable with cm/dm/m-scaling, available from 30 m to max. 400 m in length
- 3-line backlit LCD display
- Integrated logger for manual and/or automatic storage of measured values (optional)



KLL-Q-2

Smart combinable with:

SEBA sensors:

- MPS-D3/8
- MPS-K16

Operating device:

- SEBA HDA-Pro

SEBA operating software:

- SEBAConfig (Windows)

SEBA evaluation software:

- DEMASvis

SEBA archiving software:

- DEMASdb

The Original SEBA Cap

- Anti-vandalism top piece of groundwater monitoring wells from 1.5"- 6" pipe diameter
- Special cast of aluminum alloy for high corrosion and weather resistance
- Available in two closure variants (normal/safety lock)
- Sealing insert for flood-prone ground water measuring points (optional)



Accessories:

- Specialist key for regular lock
- Specialist key for safety lock

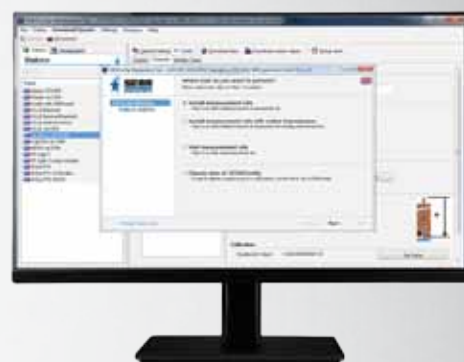
SEBA Cap



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)



SEBAConfig



- **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 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.

Operating software SEBAConfigApp (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



ANDROID



IOS

SEBA ConfigApp

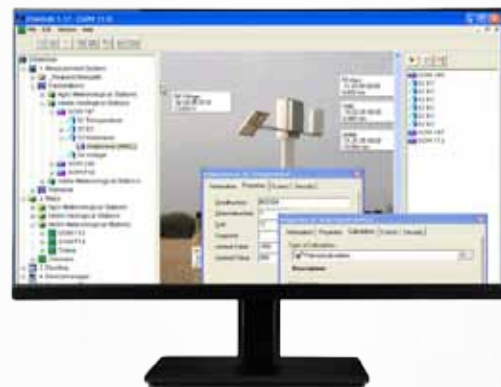


- **Available immediately:** Download the latest SEBAConfigAPP free of charge from the Google PlayStore, install it on your smartphone or tablet and off you go.
- **Clear and user-friendly:** Plug in BlueCon 2, establish a connection, and the most important settings are visible at a glance on the user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

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)



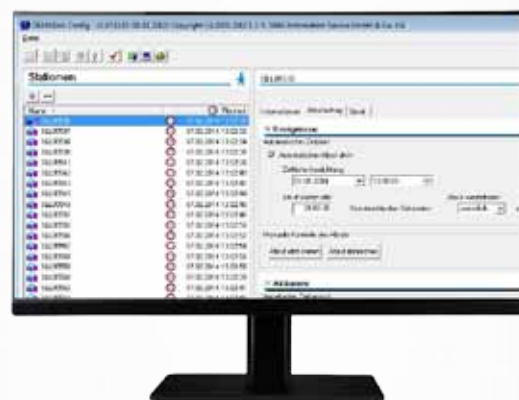
DEMASvis is a comfortable, windows-based software for visualisation and analysis of time series. The simultaneous display of graphs and lists guarantees optimum clarity. Numerous features (including zoom, hydrograph correction, input of control values, block diagrams) and calculation features facilitate 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 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 for 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

- 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



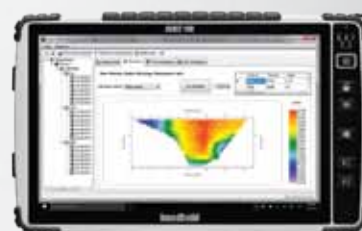
HDA-Tablet



- **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.

SEBA HDA-Pro

- 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)



HDA-Pro



- **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" wide-screen 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.



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
- Test runs and turnkey handover



Provision of time series in the cloud

- Setup and hosting of groundwater 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

Data centre(logger, PLC)		High Performance Data Logger	Univeral Data Logger	
Type		NetLogCom	UnilogCom	Unilog
4G modem integrated		●	●	
Measuring principle/ Parameter	Sensors Water level			
Pressure/temperature	DS(T) 22	●	●	●
Air pressure	Baro	●	●	●
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					
UnilogLight	LogCom	SlimLogCom	Dipper-(A)PT	Baro-Dipper	Dipper-PTEC	Qualilog
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