



**SEBA**  
HYDROMETRIE

# Dipper-PT Data Logger

Reliable water level and temperature measurements

## Key Features:

- Reliable and robust
- Precise and long-term stability
- Slim design
- Easy operation
- Upgradable
- Individually programmable
- Practically maintenance-free



Pump tests



Construction Monitoring



Long-Term Monitoring



Flow Measurement



Well control



# Dipper-PT



SEBA's engineers responsible for research and development are faced with a difficult task, as it is very hard to improve an already perfect product. Long-term experience, know how, and vital feedback from our word-wide customers enables the team always to develop new and brilliant solutions for the Dipper-PT. The Dipper-PT is an multi-functional data logger for the accurate collection of both ground and surface water data. Regardless of the challenges faced, the Dipper-PT always performs to the highest satisfaction.

With options to upgrade, operation terminals, and customised software applications, SEBA Hydrometrie offers the complete range of loggers and sensors necessary for the operation of a modern environmental monitoring network.

## Logger



Dipper-PT

- Ruggedised stainless-steel housing for use in extreme conditions (e.g. monitoring of landfill sites, contaminated land, etc.).
- Slim 22mm Ø, 300mm length for installation in well casings starting at 1"
- Large 4MB loop memory for 280.000 measurement values. (More than enough to be able to turn your attention away from the calendar, even with short measuring intervals.)
- Minimal maintenance required due to low power consumption. Two lithium batteries ensure high operational reliability and have an approximate lifespan of 8-10 years. This reduced maintenance regime saves operational costs and is kind to the environment.



## Sensor technology

capacitive, ceramic  
pressure sensor



In order to supplement the brilliant range of SEBA data loggers and to ensure complete reliability of the measurements, SEBA uses oil-free, ceramic pressure sensors with a measurement range of 0-200 m.

They provide precise and reliable measurements, impress with their excellent long-term stability, and are robust and easy to clean. Air-pressure variations are compensated for immediately using a special measuring cable with an integrated pressure-compensation tube.

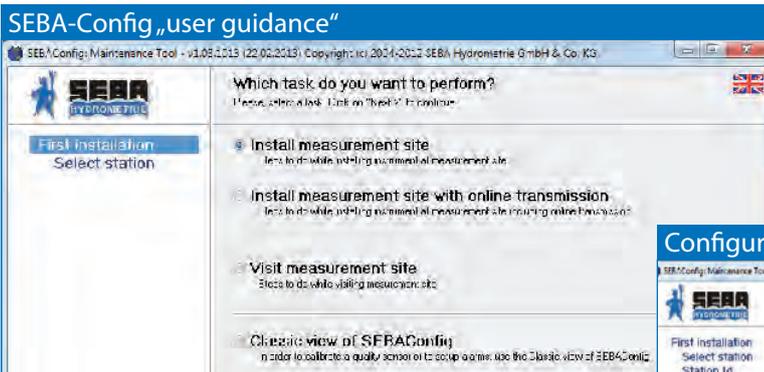
The high-precision temperature sensor integrated into the Dipper-PT as standard leaves nothing to be desired.



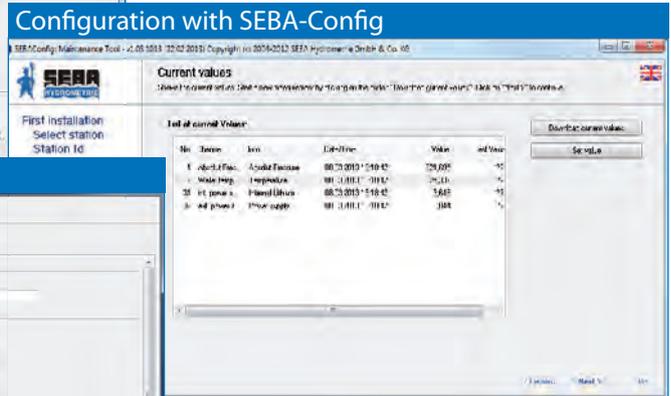
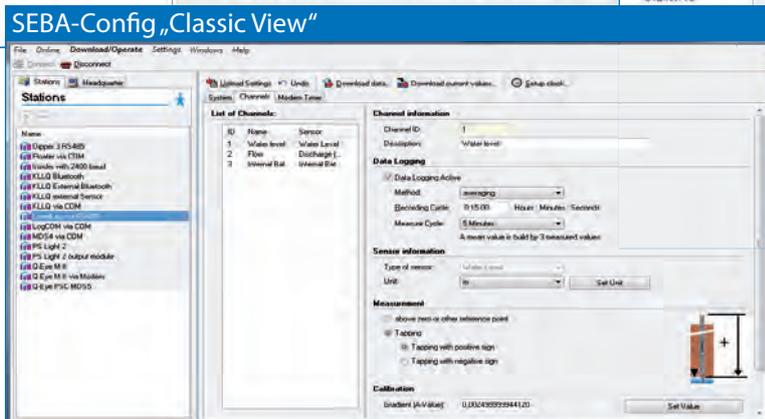
## SEBA-Config

The new "SEBA- Config" software for Windows XP and 7, offers the user a comprehensive, "easy to use tool" for initial installation and subsequent operation. Programming a logger has never been easier: Install the Dipper-PT, launch SEBA-config and off you go!

Of course, the Dipper-PT does more than just collect data. In the corresponding mode, it also provides you with exactly the measured data that you actually need: Quicklog mode for pumping tests, results mode for recording incidents of excess levels or shortfalls, determination of average values in the monitoring of surface-water levels, or simply taking measurements at fixed intervals. Voila!

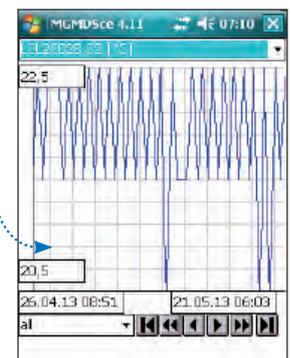
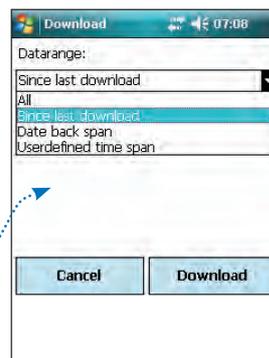
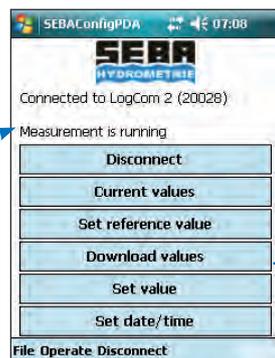
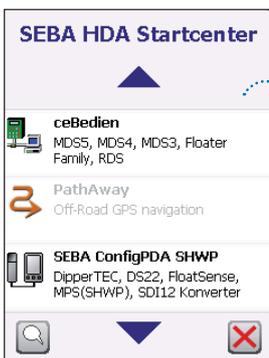


Additionally, with the SEBA-Config software it is possible to insert check values recorded during site visits, so that later back in the office a detailed quality assurance (QA) on the PC is possible.



## SEBA-Config PDA

The users of PDAs, tablet PCs and smartphones can also use SEBA-Config on their devices. With SEBA-Config PDA for Windows Mobile and SEBA-ConfigApp for Android operating systems, programming is clear and simple. With just one click, the retrieved time series are delivered to the user in the form of graphs and/or a list for plausibility checking.



# Connectivity options



SEBA loggers can be downloaded and programmed with any operation terminal of your choice.

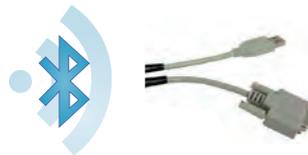
## Operation Terminal

Notebook



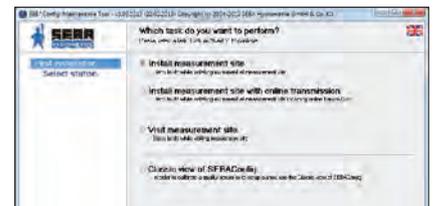
## Mode of Transmission

Interface cable (USB/RS232) /  
Bluetooth



## Operation software

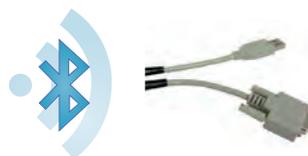
SEBA-Config



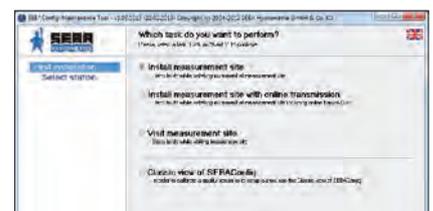
HDA-Pro



Interface cable (USB/RS232) /  
Bluetooth



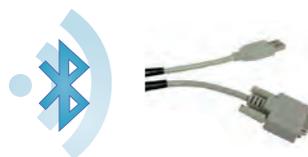
SEBA-Config



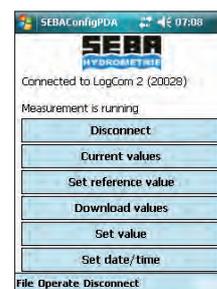
HDA



Interface cable (RS232) /  
Bluetooth



SEBA-Config PDA



Smartphone / Tablet (Android)



Bluetooth



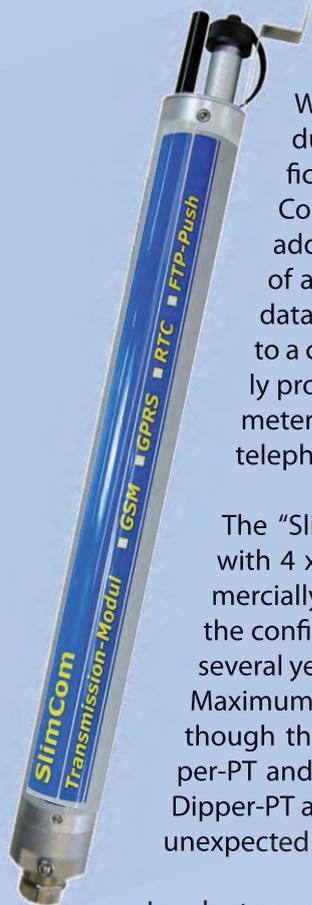
SEBA-ConfigApp



Further technical details please refer to separate leaflet on SEBA-HDA/SEBA-HDA-Pro

Are you already using Dipper-PT, but need current data without having to travel constantly to your measuring sites to download it? Do you want to save on operating costs for maintaining your monitoring network? Do you have underground and/or above-ground measuring sites with a pipe diameter of 1.5" or more? Then we have the solution!

## Dipper-PT with data transmission:



### SlimCom 3G

With the SEBA "SlimCom" data-transmission module, your data comes straight to you in your office. Simply insert a data card, connect the "SlimCom" to the Dipper-PT and program the destination address. Whether in routine operation or in the case of an incident: your SlimCom sends you all relevant data independently via GPRS (or optionally by SMS) to a communication server of your choice. Using freely programmable time slots, you can also adjust parameters remotely or retrieve data conventionally via a telephone modem or GSM/GPRS.

The "SlimCom" data-transmission module is operated with 4 x 1.5 V alkali-manganese C cells; these are commercially available and easy to change. Depending on the configured measurement interval, operating times of several years are possible without a single battery change. Maximum operating reliability is achieved and guaranteed though the independent power supply for both the Dipper-PT and the SlimCom. The self contained design of the Dipper-PT and SlimCom prevents any loss of data, even if an unexpected power issue should occur.

In order to guarantee uninterrupted service the SlimCom automatically sends an SMS to any dedicated mobile phone if a critical lower battery-voltage limit is reached.

Furthermore, not only does the Dipper-PT and SlimCom system detect when alarm conditions have been breached, but it also reacts promptly to them by transmitting data at shorter intervals (dynamic push). This ensures that you have always things under control. Especially when it really matters.



Monitoring well



Subsurface installation

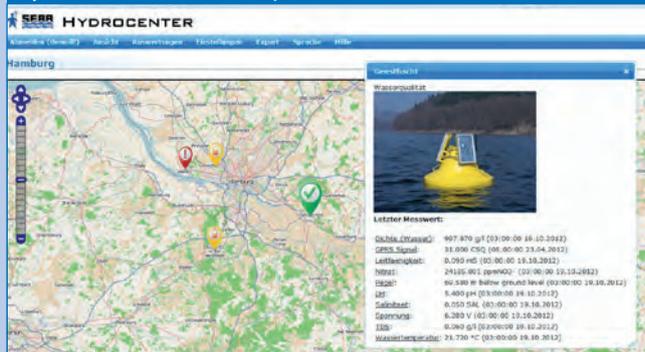




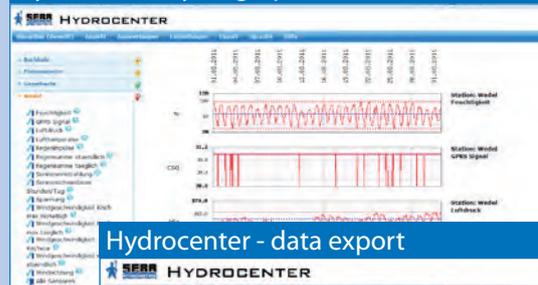
## SEBA-Hydrocenter Pro (Webmodule)

Do you not have a communication server of your own? Would you prefer not to deal with the data management yourself, or are you tired of constantly asking your system administrator for help? With the SEBA-Hydrocenter, we provide you with a password-protected Internet portal, which presents current measurements in a clearly presented format. The only thing you have to do is place the order. We take on the initial setup, creation of your measuring sites, data provision, and server hosting. This gives you the freedom to concentrate on the essentials!

### Hydrocenter - Web Map



### Hydrocenter hydrographs



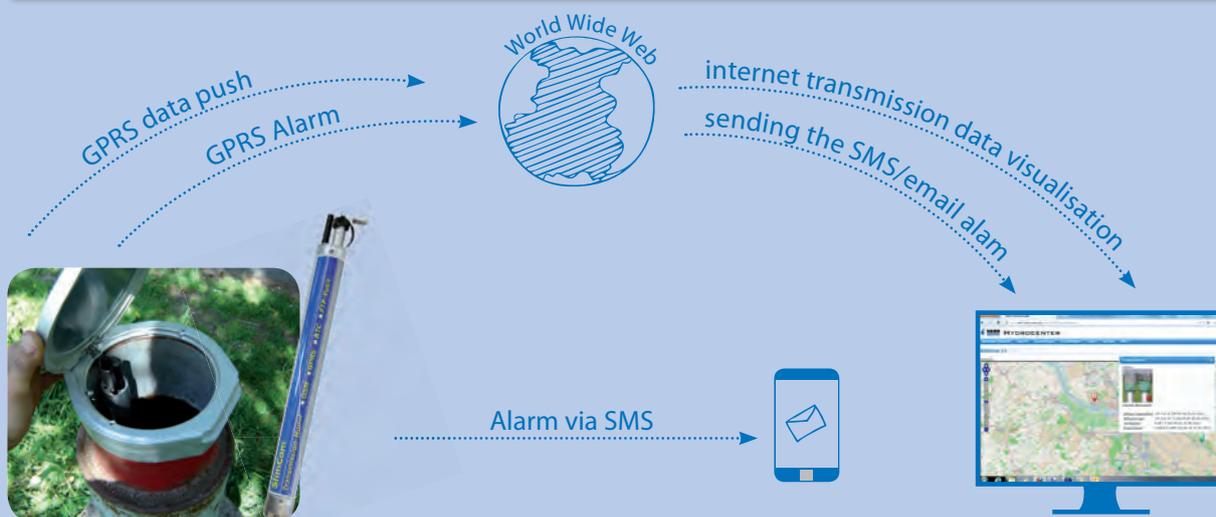
### Hydrocenter - data export



Advantages for the user:

1. At the office, at home, or on the move, your data is always available online.
2. Current measured data is displayed clearly in the form of lists and multiple graphs
3. Incidents (e.g., missing measured values, critical battery voltage) are displayed visually
4. Measured data can be shared with other authorized users (environmental agencies, engineering firms, consortium members, etc.) in a password-protected format.
5. The geographical locations of the measuring sites are marked on OpenStreetMap
6. The time series can be downloaded to a local PC for further processing.

## How the SEBA-Hydrocenter Pro works



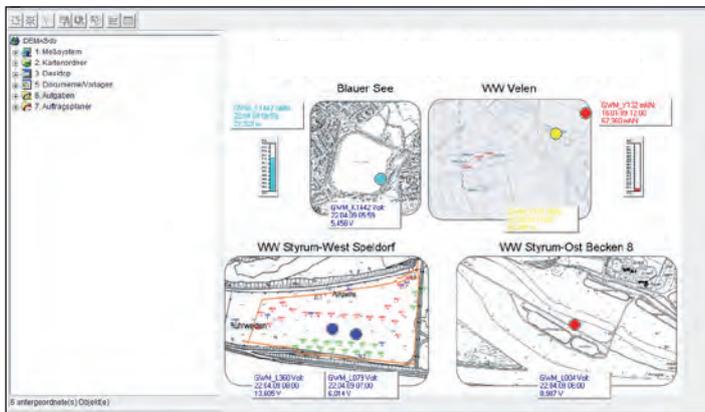
For further technical details see leaflet SEBA-Hydrocenter



## DEMASdb and DEMASvis

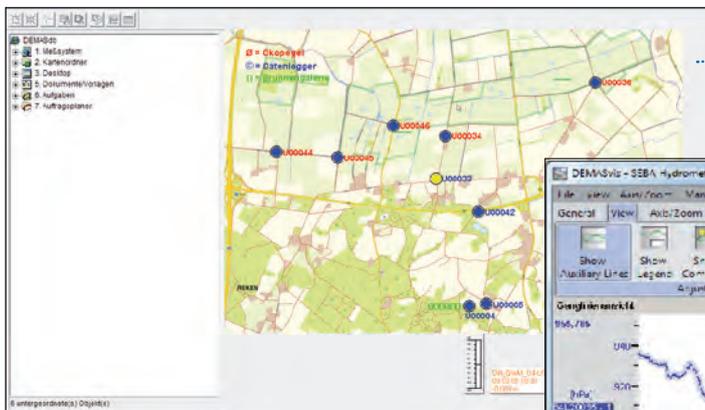
Ultimately, you want to be able to work effectively with the collected data on your own PC. Right? Experience shows that this can be a rather tedious process with the usual spreadsheet programs. With our “DEMASdb” data-management software and “DEMASvis” for visualizing and processing time series, you have everything you need! Your data flows freely and without hindrance from your measuring site to your database archive, with no cumbersome conversion processes — this saves huge amounts of time, money and patience when it comes to data handling.

DEMASdb is a graphical database interface designed especially for the purpose of recording, archiving and managing measured data. DEMASdb is suitable for both large and small monitoring networks. Whether it is online or offline data, DEMASdb channelizes all incoming measured data, stores these in the built-in database, and therefore brings order to the system.

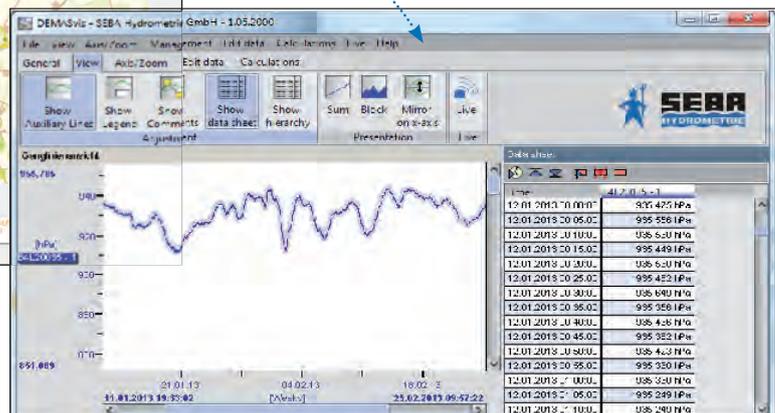


Alternatively, DEMASdb can also be linked to existing SQL databases (e.g., Oracle, Microsoft SQL Server, MySQL). DEMASdb is also multi-user capable: a large number of users can access the data set, and yet the system ensures that all data remains consistent. Configurable user rights can be used to impose restrictions on partially authorized or unauthorized users.

With the DEMASdb’s export function, you can convert your time series into various formats and pass them on to third parties.



DEMASvis



DEMASvis can be supplied both as a single-workstation application and as a module in conjunction with DEMASdb. A simple click on the desired measuring site in the Stations Explorer opens DEMASvis in order to display the collected data in a clear form as a graph or list.

Furthermore, a multitude of editing and calculation functions are available to you, along with extensive correction options (reference correction, drift correction, and more).

Interested?

Download both tools from our download archive at [www.seba-hydrometrie.com](http://www.seba-hydrometrie.com) and give them a try!



# Technical data

## Dipper-PT

- 32 Bit micro processor
- 4 MB Flash storage (= 280.000 measured values)
- Watch-Dog for monitoring of microprocessor activities
- RS 485 serial communication interface with protective cap
- Optional connection via Bluetooth interface \*
- Real-time clock
- Analog input (water level and temperature)
- Power supply with replaceable Lithium batteries sufficient for approx. 8-10 years (at 60 min. intervals)
- Operation temperature range: -25...+70°C

### Storage of measured values:

- Storage in realtime
- 16 bit resolution
- Storage of control values with date/time
- Measuring interval: 30 seconds up to 99 hours, optional from 1 second
- Programming: normal measure, averaging, event control, delta mode \* NEW \*

### Housing:

- Material: Stainless steel, rust-free
- Dimensions: 22 mm Ø, 300 mm length
- Installation device for top pieces of min. 2"
- Option: Installation devices for 2" - 6" pipe diameter

### Pressure sensor for water level measurements

- Robust ceramic pressure sensor providing long-term stability
- Measuring principle: capacitive
- Accuracy:  $\pm 0,05\%$  = 1 cm for 20 m measuring range
- Long term stability:  $\pm 0,1\%$  / year
- Temperature stability:  $\pm 0,01\%$  / K
- Measuring ranges: 2 / 10 / 20 / 40 / 100 / 200 m (more upon request)

### Temperature sensor

- NTC30 with polynomial linearisation
- Measuring range: -5...+50°C  $\pm 0,1^\circ\text{C}$
- Accuracy: 0,3°C (standard), 0,1°C (optional)

**Special cable:** Shielded round cable with integrated pressure-compensation tube (up to max. 1,000 m length) incl. moisture absorber, two-stage, consisting of dryinMeasurg cartridge and Gore-Tex membrane

## SlimCom 3G

### Housing

Aluminium, IP67  
Dimensions:  
Standard: Ø 35 mm, Length 380 mm  
Length incl. antenna 420 mm

### GSM/GPRS Modem (integrated):

- Frequency: 850/900MHz/1800/1900MHz (EGSM, Quadband), GPRS
- HF output max: 2W (850/900 MHz); 1W (1800/1900 MHz)
- SIM card: 1,8V / 3V
- Power consumption: ~ 50mA (receiving) 0 mA (Stand-by) 0.5A (transmitting)
- FTP-Push operation: ZRXP, D-channel, CSV format
- SMS data transmission: in binary format

### Interfaces:

RS 232  
Optional: Bluetooth  
(via additional external module)

### SMS-Alarm:

SMS alarms to max. 8 cell phones  
SMS alarm to FAX device

### Time slots:

freely programmable (number, duration, time)

### Power Consumption:

**Standard:** 4x1,5V alkali-manganese C cells  
**Stand-by:** > 1 year based on 1 query/day  
**Option:** 4x3,6V lithium batteries  
**Stand-by:** > 8 years based on 1 query/week (depending on the quality of the GSM connection)

### Antenna:

screwed on, robust, weather resistant  
with short rod antenna (dual-band) as standard\*)

**Operating temperature:** -25°...+70°C

\*) It is possible to connect external antennas (e.g. subsurface antenna, puck antenna, angle rod antenna, etc.)



SEBA Hydrometrie GmbH & Co. KG  
Gewerbestr. 61a • D-87600 Kaufbeuren  
Phone: +49 (0)8341 / 9648-0  
Fax: +49 (0)8341 / 9648-48  
E-Mail: info@seba.de  
Internet: www.seba.de

represented by: