Data Logger MDS Dipper-TEC

Water Level, Temperature, Electrical Conductivity incl. salinity

Monitoring System for:

- Groundwater observation wells, geohydraulic (aquifer) tests, water drainage control at construction sites and surface water
- Robust housing made of anti-corrosive steel
- High data security due to flash-memory
- Watch-Dog-Function for high operation security
- Nearly Maintenance Free: battery lifetime approx. 8 years,
- Suitable for 2" casing and above

MDS Dipper-TEC

4" Monitoring Well

Observation of Wells

Data Retrieval via SEBA-HDA

Data Evaluation with SEBA-Software

We are certified
ISO 9001:2000
Certificate No. 01110505
Quality is our standard

Description

The new SEBA Data Logger type MDS Dipper-TEC is the consistant further development of the well proven MDS Dipper Series for the continuous monitoring of ground- and surface water, with special focus to operation and data security.

An integrated watch-dog-function in the MDS-Dipper-TEC continuously supervises the microprocessor activities and therefore can guarantee a high operation security.
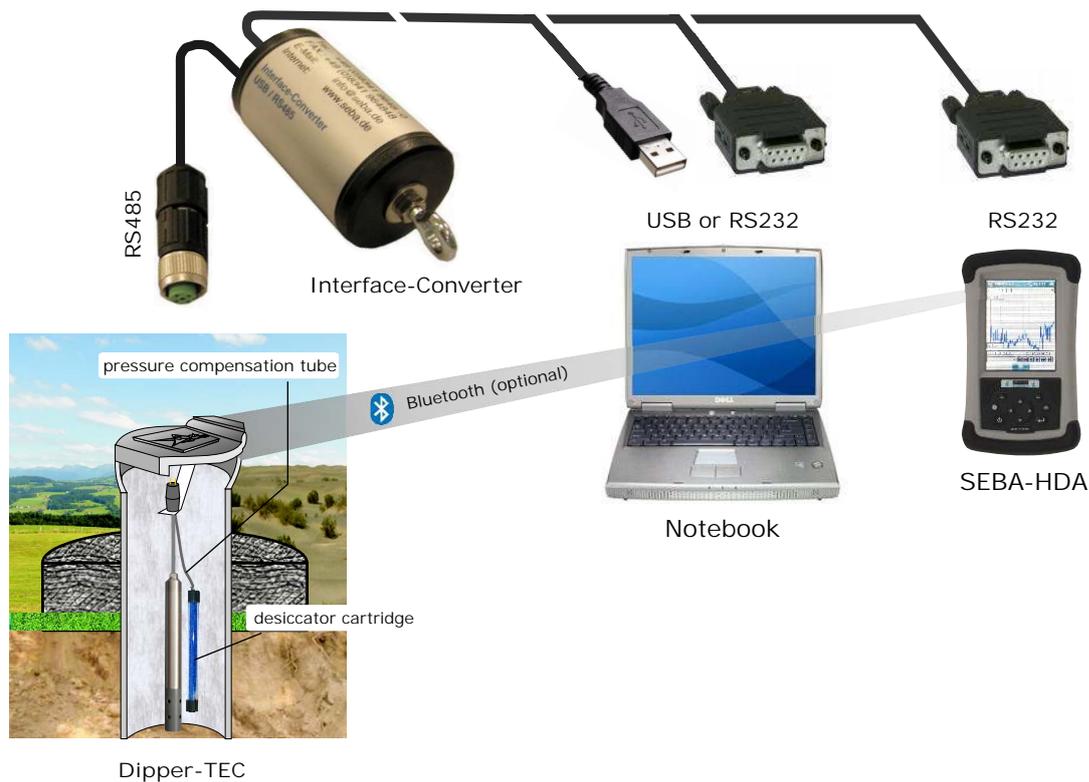
The MDS Dipper-TEC is equipped with a Flash-memory (Flash-RAM). The recorded monitoring data is stored in the memory of the Dipper-TEC where the data is always recallable even in the unlikely event of a power supply failure.

Additional important characteristics of the MDS Dipper-TEC:

- robust housing of anti-corrosive steel with high chemical resistance for the installation in well casings starting from 2" in diameter
- exchangeable lithium batteries for >8 years operation (depending on the adjusted measuring interval)
- high accurate, robust ceramic pressure measuring cell for different measuring ranges (i.e. 1 bar, 2 bar, etc.)
- diameter independent fixing device, suitable for all standard top pieces

The new MDS Dipper-TEC sets new standards in regards to operation and data-security, as well as functionality!

Data Transfer to PC

RS485

Interface-Converter

USB or RS232

RS232

pressure compensation tube

Bluetooth (optional)

desiccator cartridge

Dipper-TEC

Notebook

SEBA-HDA

Water Level Sensor

Temperature Sensor

Conductivity Sensor
incl. salinity

Integrated robust, high accuracy pressure and temperature transducer with excellent long-term stability as well as conductivity sensor with 4 electrode technique.

Operation with HDA or Notebook

Robust HDA for the rough field operation as alternative to a notebook. Vibration, impact, dust and water resistant housing according to IP67 for operation between -30°C up to +60°C.

Long durability up to 30 hours.

Simple operation resp. input of parameters (i.e. of control values) via TFT-colour-LCD-touchscreen or pin.
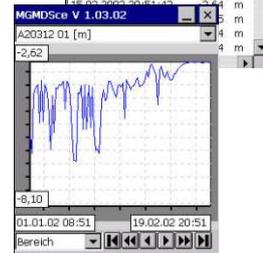
Included in the delivery:

- Operation software SEBAConfig for simple programming, adjustment and operation of SEBA Data Loggers (e.g Dipper-3), as well as for transmission of the stored measuring values to PC.

- Evaluation software MGMDS/MLMDS CE for plausibility check of stored measuring data in form of curves and lists.
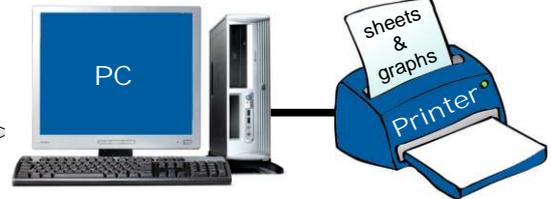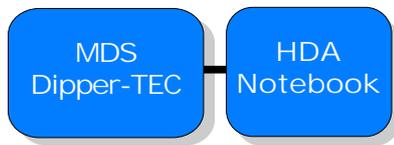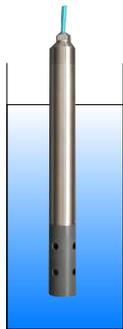

HDA with
SEBAConfig

MLMDS CE
for easy presentation
in data sheets

MGMDS CE
for presentation
in form of curves

MDS
Dipper-TEC — HDA Notebook — PC — Printer — sheets & graphs

Of course, your data logger can directly be connected to a PC (e.g. Notebook) or to a data transmission modem, thanks to its serial interface.

Evaluation with PC

For the data evaluation, pre-programmed routines are available for the client - which guarantee an easy operation.

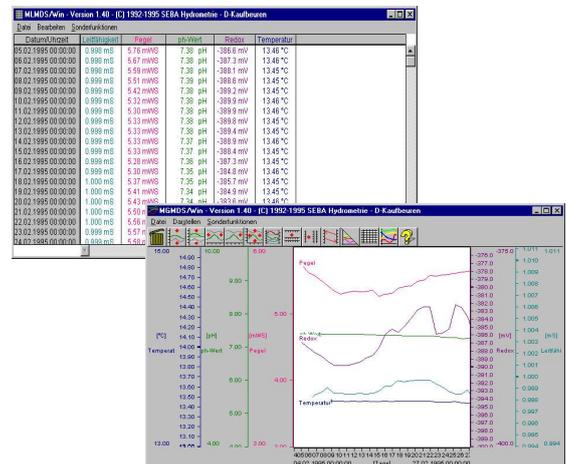## Evaluation (Software MGMDS / MLMDS)

Lists
- single measured values with date and time
- daily middle- and extreme values
- conversion of measured values with mathematical functions

Graphic
- parameter lines with zoom and fade-cross functions
- hard-copy routines
- multi parameter graphs
- plot-routines

Read out- and Configuration Software SEBAConfig
- configuration of data logger
- output in ASCII-format for the use with standard software for graphic and table-calculations
- special routine for data transmission to UNIX systems

Data Logger (MDS Dipper-TEC)

- SMD-technique with auto-testing routine
- 16 Bit microprocessor
- 1 MB Flash-memory for approx. 80,000 values
- Watch-Dog function for the control of micro-processor activities
- serial communication interface RS 485
- real-time clock
- power supply with exchangeable lithium battery sufficient for > 8 years (with 60 min. measuring interval)
- operation temperature: -20°…+70°C

Storage of recorded data:
- Storage of recorded data in real-time
- 16 bit resolution
- optimized memory usage through binary data-structure with date and time
- observation function (timestamp, control value)
- storage of control values
- measuring interval: 1 min. to 45 days

Housing:
- pressure-watertight metal housing (V4a steel)
- supply- and adaption unit with integrated desiccator and pressure compensation tube
- material: anti-corrosive steel V4a
- dimensions: Ø 40mm, 480mm length
- installation device in top pieces (for diameter of 2″ and above)

Pressure Sensor for water level measurement

- robust ceramic-pressure sensor with excellent long-term stability
- accuarcy: $< \pm 0.1\%$ = <1cm with 10m measuring range
- long-term stability: $\pm 0.1\%$ / years
- measuring range: 10 / 20 / 30 / 40m etc. resp. on request

Special cable

screened round cable with integrated compensation tube

Temperature Sensor

- NTC30-temperature sensor element with polynomial lineraization
- measuring range: -5…+50°C
- accuarcy: $\pm$ 0.1°C

Conductivity Sensor (incl. Salinity)

- 4-electrode measuring cell
- measuring range: 0..200µS/cm or 0..2mS/cm or 0..20mS/cm or 0..200mS/cm
- accuracy: $\pm 0.5\%$
- operation temp.:   0..50°C
- pressure range: 0..50 bar

SEBA-HDA

Processor/
memory: Intel PXA 255 X-Scale CPU 200-800 MHz
                        64 MB SDRAM, 64 MB NAND Flash
Display: QVGA, 240x320 pixel, colour TFT
                        with touchscreen and front light
Operating
temperature: -30 °C up to +60 °C
Humidity
resisistance: MIL-STD 810F method 507.4
Drop: 26 drops from 1.2 m on concrete
Protection class: IP 67
Size: Length: 165mm, Width: 95mm, Height: 45mm
Weight: 490 g incl. battery

Battery: 3,800mAh NiMH-battery
                        for 12–30 hours operation
Operating system: Windows Mobile
Connections: 1 x USB-B Slave (12 Mbps),
                        1 x RS232 (115 Kbps)
                        1 x Charging, 2 x CF-slot type II
Keyboard: 10 keys, softkeyboard for input of
                        alpha-numerical characters

Included in delivery:
- Battery charger
- Software SEBAConfig CE
- MGMDS/MLMDS CE for presentation of tables and graphs

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

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