



Data Logger MDS Dipper-3 MDS Dipper-T3

Water level and temperature measurement in groundwater

Special Features

- Measuring system for the observation of groundwater measuring sites, pumping tests, construction areas, Surface water levels
- Made of stainless steel
- High data security due to additional flash-memory
- Watch-dog-function for high operation security
- Maintenance-free, battery life time >10 years, exchangeable battery
- Installation in tubes from 1" diameter
- Optional connection via Bluetooth

Data Logger



MDS Dipper-3(T3)



Application in the field



Data readout with SEBA-HDA



Observation of wells



Evaluation Software



Description

The new SEBA Data Logger type MDS Dipper-3(T3) is the consequential further development of the well proven MDS Dipper for continuous registration in ground- and surface water, with special focus to the operation and data security:

A watch-dog-function, integrated in the MDS-Dipper-T3 supervises continuously the microprocessor activities and so it provides a high operation security. Undefined system conditions are recognized immediately and eliminated by the Watch-dog-function.

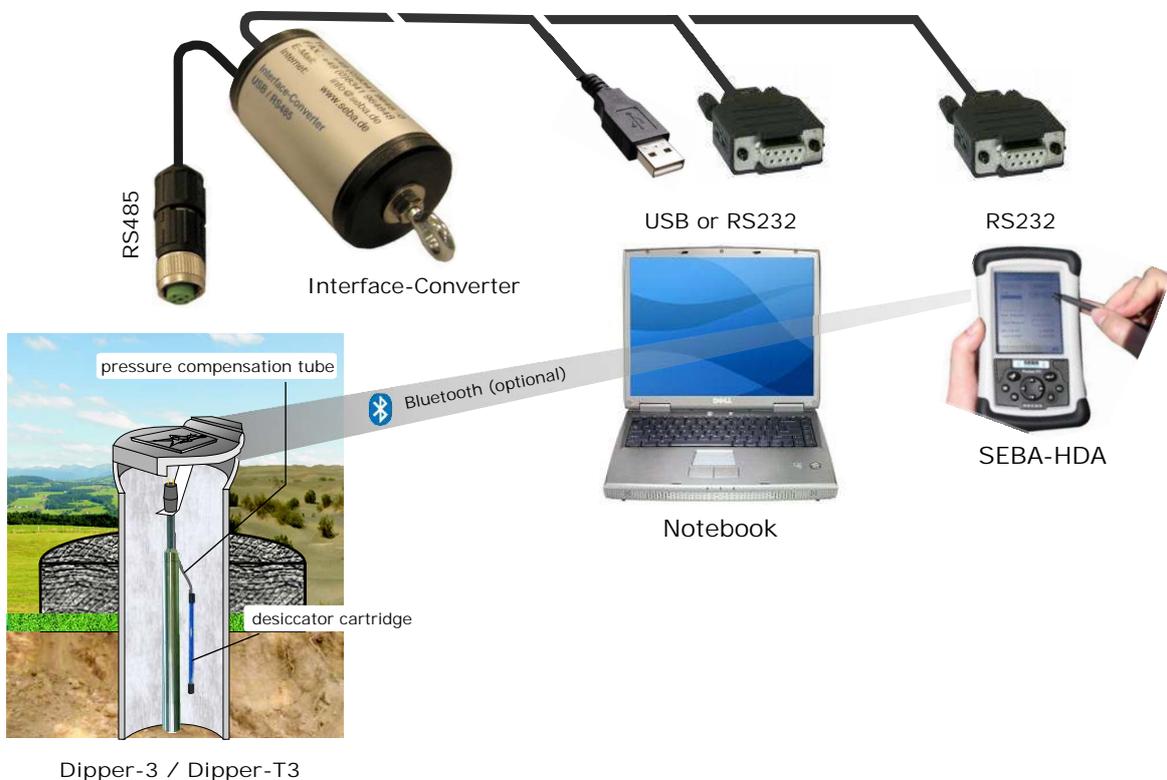
The MDS Dipper-3(T3) is equipped with a Flash-memory (Flash-RAM). The acquired measuring data are stored in a ring memory organisation. Due to the described double data storage, you have access to the complete measured data in the archive data backup, even in case of breakdown of the power supply!

Further important characteristics of the MDS Dipper-3(T3)

- robust housing of anti-corrosive steel with high chemical resistance for installation in tubes from 1" diameter
- exchangeable lithium batteries for >10 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.) and temperature sensor for 0...25°C or 0...50°C
- with diameter independent fixing device, suitable for all standard top pieces

So the new MDS Dipper-T3 sets standards in regards to operation security, data security and functionality!

Data transfer to PC



water level sensor

water temperature sensor

Integrated robust, high accuracy pressure and temperature transducer with excellent long-term stability.

Operation with handterminal HDA or notebook PC

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:

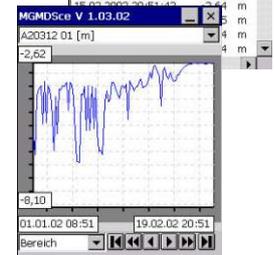
- Operation software WBedien CE for simple programming, adjustment and operation of SEBA Data Loggers (i.e. MDS-Dipper), as well as for transmission of the stored measuring values to PC.
- Evaluation software MGDMS/MLMDS CE for plausibility check of stored measuring data in form of curves and lists.



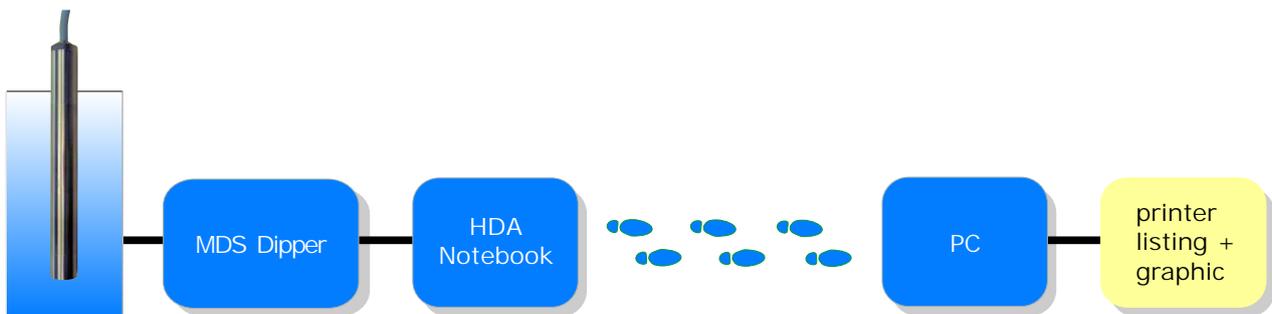
HDA with WBedien CE

MLMDS CE for presentation of lists

Datum Uhrzeit	Wert	Ein.
19.02.2002 20:51:42	-2,63	m
19.02.2002 08:51:42	-2,65	m
18.02.2002 20:51:42	-2,64	m
18.02.2002 08:51:42	-2,64	m
17.02.2002 20:51:42	-2,65	m
17.02.2002 08:51:42	-2,66	m
16.02.2002 20:51:42	-2,63	m
16.02.2002 08:51:42	-2,64	m
15.02.2002 20:51:42	-2,64	m
15.02.2002 08:51:42	-2,65	m
14.02.2002 20:51:42	-2,64	m
14.02.2002 08:51:42	-2,65	m
13.02.2002 20:51:42	-2,64	m
13.02.2002 08:51:42	-2,65	m
12.02.2002 20:51:42	-2,64	m
12.02.2002 08:51:42	-2,65	m
11.02.2002 20:51:42	-2,64	m
11.02.2002 08:51:42	-2,65	m
10.02.2002 20:51:42	-2,64	m
10.02.2002 08:51:42	-2,65	m
09.02.2002 20:51:42	-2,64	m
09.02.2002 08:51:42	-2,65	m
08.02.2002 20:51:42	-2,64	m
08.02.2002 08:51:42	-2,65	m
07.02.2002 20:51:42	-2,64	m
07.02.2002 08:51:42	-2,65	m
06.02.2002 20:51:42	-2,64	m
06.02.2002 08:51:42	-2,65	m
05.02.2002 20:51:42	-2,64	m
05.02.2002 08:51:42	-2,65	m
04.02.2002 20:51:42	-2,64	m
04.02.2002 08:51:42	-2,65	m
03.02.2002 20:51:42	-2,64	m
03.02.2002 08:51:42	-2,65	m
02.02.2002 20:51:42	-2,64	m
02.02.2002 08:51:42	-2,65	m
01.02.2002 20:51:42	-2,64	m
01.02.2002 08:51:42	-2,65	m



MGDMS CE for presentation of graphs



Of course, the data logger MDS Dipper-T3 can be connected directly to a PC (i.e. Notebook) or to a data transmission modem, due to serial interface.

Evaluation of measured values with PC

For the evaluation of data, programmed routines are available - and so easy operation is guaranteed.

Evaluation (Software MGDMS / MLMDS)

Listing

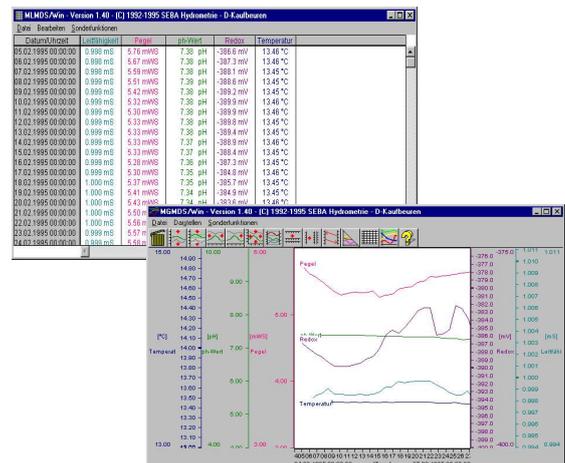
- single measured values with date and time
- daily middle- and extreme values
- conversion of measured values with mathematical functions

Graphic

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

Read-out and configuration Software WBedien

- configuration of data logger
- change to ASCII-format for use with standard software for graphic and table-calculations
- special routine for data transmission to UNIX systems



Technical details

Data Logger MDS Dipper-3(T3)

- SMD technique with auto-testing routine
- 16 bit microprocessor
- 1 MB Flash-archive memory for approx. 480.000 measured values
- watch-dog for control of the microprocessor activities
- serial communication interface RS 485
- optional connection via Bluetooth 
- real-time clock
- analog input: water level and temperature
- power supply with exchangeable lithium battery, sufficient for approx. 10 years (with 60 minutes interval)
- operating temperature: -20...+70°C

Storage of measured values:

Storage of measuring values in real-time

- 16 bit resolution
- binary data-structure with date and time (every fragment of memory can be reconstructed)

- observation function (timestamp, control value)
- storage of control values
- measuring interval: 1 minute up to 45 days

Housing:

- water pressure-tight housing of anti-corrosive steel
- supply- and adaption unit with integrated desiccator and pressure compensation tube
- material: stainless steel
- dimensions: 22 mm dia., 270 mm length
- installation device in top pieces (for diameter of 1" and bigger)

Pressure Sensor for water level measurement

- robust pressure sensor with excellent long-term stability
- accuracy: $\pm 0,05\%$ = 1 cm at 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 etc. resp. on request

Temperature Sensor (NTC30 sensor element polynomic linearised)

- measuring ranges: -5...+50°C $\pm 0,1^\circ\text{C}$
- system length: up to max. 1000 m
- special cable: special cable: screened round cable with pressure compensation tube fix mounted or pluggable (prolongable)



SEBA-HDA

Size: Length: 165 mm, Width: 95 mm, Height: 45 mm

Weight: 490 g including battery

Protection class: IP 67

Drop: 26 fall from 1,2 m on concrete

Operating temperature: -30 °C till +60 °C

Humidity resistance: MIL-STD 810F method 507.4

Processor/memory: Intel PXA 255 X-Scale CPU
RECON200 - 200 MHz, 64 MB SDRAM, 64 MB NAND

Flash

Display: 1/4 VGA, 240 x 320 Pixel, colour TFT display
with touch-screen and front light

Battery: 3.800 mAh NiMH-battery for 12-30 hours operating

Operating system: Windows Mobile 2003

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, onscreen qwerty softkeyboard

Included in delivery:

- battery-charger
- software SEBAConfig CE
- MGMS/MLMDS CE
for presentation of lists and graphs

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



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