



Groundwater Monitoring
OTT ecoLog 800 – cost-effective complete system for water level and conductivity measurements incorporating datalogger and GSM/GPRS modem

OTT ecoLog 800

Consistent data in groundwater monitoring

The OTT ecoLog 800 is a compact system for monitoring water level, temperature, and conductivity. In addition to the measurement sensorics, the system includes everything that is required for data storage and remote transfer. Several communication protocols provide high degree of flexibility. Sophisticated design, high-quality components, long battery life, and the option of carrying out remote diagnostics ensure consistent data and require minimum effort.

The technology used to measure the water level has proven itself in many applications worldwide. In addition to the ceramic pressure cell and the precise temperature sensor, the probe includes a 4-electrode conductivity cell incorporating graphite electrodes. It is mechanically robust and resistant to contamination, measuring errors caused by polarization effects are virtually eliminated.

The easily accessible infrared interface of the communication unit facilitates handling the configuration and data check in the field. Also, changing the battery, dryer unit, and SIM card is easily and quickly done at the measuring location which helps to reduce the system downtime to a minimum.

Quantitative
Hydrology



OTT ecoLog 800 – less expense, higher precision



Features and Benefits

- Water level, temperature, conductivity, salinity, and TDS (Total Dissolved Solids) outputs
- 4MB data memory for accommodating approx. 500,000 values
- Built-in remote transmission using Push operation – eliminates reading the memory on site
- Flexible transmission options (SMS, HTTP, FTP, e-mail), alarms in case limits are exceeded
- Status information and warning messages (SMS/e-mail) for remote diagnostics
- Completely installed into observation well (from 2" on) or wellhead shaft and therefore well protected
- Quick installation using adapter plates or suspension brackets
- Various antenna options allow the system to be installed according to requirements, also underfloor
- Easily accessible infrared (IrDA) interface – no plug-in contacts that might be bent
- Intuitive operating program featuring online help for setup and data output on site
- Battery, dryer unit, or SIM card may easily be changed on site without using tools



High-quality components for long service life and high data availability

- Robust, precise ceramic capacitive pressure cell providing long-term stability – no deformation as is common for cells using metallic membranes
- 4-electrode conductivity measuring cell – rugged and accurate
- Probe body made of salt water resistant, non-corroding stainless steel
- Moulded, Kevlar-reinforced cable incorporating pressure compensation capillary – highest degree of protection against water ingress
- Approx. 10 years of (lithium) battery service life – long service intervals and consistent data



Applications

- Long-term groundwater monitoring, also appropriate for surface waters
- Control measurements in areas of potential pollution

Technical data

Output parameters

Water level/pressure, temperature, specific conductivity, salinity, TDS

Water level measurement (pressure)

- Measuring range: 0 ... 4 m, 0 ... 10 m, 0 ... 20 m, 0 ... 40 m, 0 ... 100 m water column
- Resolution: 0.001 m/0.1 cm/0.01 ft/ 0.1 inch/0.0001 bar/0.001 psi
- Accuracy: ± 0.05 % FS
- Long-term stability: ± 0.1 % / year FS
- Units: m, ft, inch, bar, psi, Pascal

Temperature measurement

- Measuring range: -25 °C ... $+70$ °C
- Resolution: 0.01 °C
- Accuracy: ± 0.1 °C
- Units: °C, °F

Conductivity measurement

- Measuring range 0 ... 2000 μ S/cm:
- Resolution: 1 μ S/cm
 - Accuracy: ± 1 μ S/cm or $\pm 0.5\%$ of measured value (whichever is higher)
 - Units: μ S/cm, mS/cm
- Measuring range 0.1 ... 100 mS/cm:
- Resolution: 0.01 mS/cm.
 - Accuracy: ± 0.01 mS/cm or $\pm 1.5\%$ of measured value (whichever is higher)
 - Unit: mS/cm

Power supply

- 2 x 1.5 V alkaline C cell
- or 1x 3.6 V/13 Ah lithium type
- or 1x 3.6 V/26 Ah lithium type

Battery life

- Hourly measurement, one transmission/day
- Lithium battery (26 Ah): >10 years
 - Alkaline batteries: >1 year

Modem

GSM Standard 850/900MHz/
1800/1900MHz,
GSM (quad band), GPRS

Antenna

Built-in; robust and weather-proof, external antenna optionally available (SMA-m)

Communication interface

Infrared (IrDA)

Measured value memory

4MB, approx. 500,000 measured values

Sampling/storage interval

5 seconds ... 24 hours

Operating temperature

-30 °C ... $+85$ °C

Storage temperature

-40 °C ... $+85$ °C

Installation

- In observation wells from 2" on; (multi-purpose suspension bracket available as an accessory)
- With suspension brackets for OTT top caps: 3", 4", 6"

Dimensions L x Ø

- Probe: 317 mm x 22 mm
- Communication unit: 520 mm x 50 mm

System length

(Cable length incl. communication unit and pressure probe)
2.0 ... 200 m $\pm 1\%$ ± 5 cm

Weight

- Probe: Approx. 0.43 kg
- Communication unit (incl. batteries): Approx. 0.92 kg

Housing material

- Probe: Stainless steel (DIN 1.4539, 904 L)
- Communication unit: Aluminum, PA-GF

Type of protection

- Probe: IP68
- Communication unit: IP67

EMC limits

Acc. to EC 204/108/EC,
ETSI EN 301 486-1/-7, EN 61326-1