



Compact measurement setup for online measurement of salinity

Datasheet

Compact online salinity measurement

Salination of rivers, groundwater and inland waters is a growing problem in many countries. The 'online salinity measurement' described here provides a very economical way to quickly detect salt intrusion and to monitor the salt concentration over time.

The whole setup merely consists of two components: a data logger and a sensor, connected by a cable. These can be mounted on, for example, a pole. The pole can be placed in a pond, stream or similar. Mounting on a weir, a pumping station or any other structure is also very easy.

The data logger is equipped with an internal modem and antenna. The acquired measurement data is directly transferred over the cellular network to your or our server. This way you have direct online access to your data. The logger also contains an integrated solar panel and a rechargeable battery, making a connection to mains power

unnecessary. This greatly simplifies the installation work!

Features:

- Can easily be placed by a single person.
- Measures conductivity and temperature of the water.
- Measures the salinity (derived from conductivity and temperature).
- Uses 4-electrode measurement. This is suitable down to very low salinity values.
- Uses the state-of-the-art LTE-M IoT network. This is very reliable and has good performance. (GPRS version is also available).
- Data is directly available online.
- Completely integrated solution with just two components and a cable. No separate antenna, solar panel or battery needed.

Sensor:

- Several cable lengths. Cables with connector.
- Digital sensor with internal calibration.

Conductivity

- Measurement range (4 scales): 200, 2000 $\mu\text{S}/\text{cm}$, 20, 200 mS/cm .
- Measurement uncertainty: $\pm 1\%$ of full scale.
- Measurement principle: 4 electrodes.

Temperature

- Measurement range: 0-50°C.
- Measurement uncertainty: $\pm 0,5$ °C.

Datalogger:

- Measurement interval configurable from 1 minute to 1 day.
- Solar panel, battery, modem and antenna all inside.
- Uses the 4G LTE-M IoT cellular network.
- Reliable and secure communication (encryption).
- Supports various internet communication protocols.
- 8 GB SD card for data storage.
- Connector for connection to the sensor.

Alternatives:

- Version without solar panel (external power required).
- Connection for external antenna (instead of internal antenna).
- GPRS (2.5 G) instead of LTE-M.

Pole mounting(optional parts):

- Pole with screw thread $\varnothing 40$ mm, various lengths.
- Bracket for the data logger.
- Bracket for the sensor.
- Protecting tube for the sensor with belonging brackets.

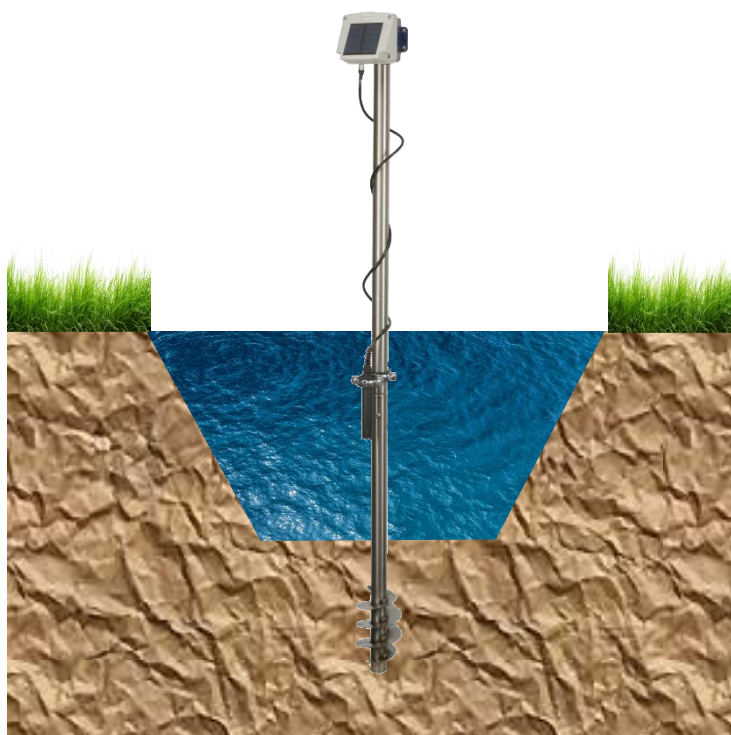
Note: all brackets for pole diameter 40-60 mm.



Conductivity and temperature sensor



OMC-044 data logger



Measurement setup on a pole with screw thread (protecting tube not shown)

Installation on existing structures

The logger can simply be mounted on a wall or in a cabinet. If mains power is available, a version without solar panel can be selected. This will require a 12 V supply. Optionally an external antenna can be connected as well.

The mounting of the sensor depends on the local situation.

Online measurement data

The data logger can transfer its data to an arbitrary server, using various secure protocols. This allows you to receive the data directly, without intervening third parties, in your own ICT environment. For more details, please have a look at the OMC-044 data logger on our website.

As an alternative, Observator can also host a webpage for you. You will only have to login to the website to see all your data. You can view charts, tables and reports. You can also receive alarm messages by mail, whenever a threshold is crossed. For more information, please have a look at OMC-Data-Online on our website.

Possible extensions

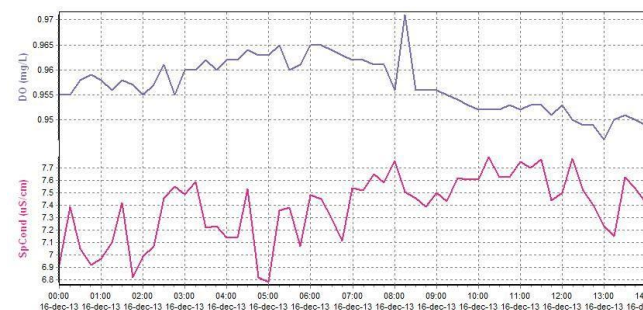
Next to the conductivity and temperature sensor, it is possible to add a second sensor for, for example, pressure (water level), dissolved oxygen (DO) or pH.

Alternative system

In addition to the economically very attractive system described here, we also offer a low-maintenance version, called 'Low-maintenance online salinity measurement'. You can find the brochure on our website.



Example of a weir



Online measurement data (OMC-Data-Online)



Possible extension (example): pH sensor



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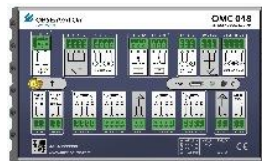
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WATER QUALITY SENSORS



HANDHELDS WATER QUALITY



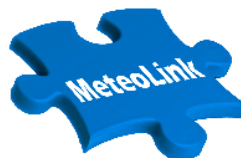
DATA LOGGERS



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