



DECAL2

High accuracy mobile wireless depth gauge

✓ **DECAL2-RX**

869.500 MHz license free telemetry
visualise up to two DECAL2-TX
Internal Li-ion battery
Internal Wi-Fi AP

✓ **DECAL2-TX**

Absolute 0.1% sensor
Atmospheric pressure sensor
Internal Li-ion battery
Corrosion free reel



The DECAL2 products are designed to perform portable high accuracy depth measurements. The DECAL2-TX reel uses a high quality submersible absolute pressure sensor that is compensated by a built in atmospheric pressure sensor. The values are transmitted to the flexible DECAL2-RX that calculates the actual depth values. Together these two products form a unique and powerful measurement solution.

The DECAL2-TX uses a 0.1% stainless steel absolute submersible sensor that is highly corrosion resistant. The sensor is calibrated using a BFSL algorithm that is applied to the raw sensor values giving accurate and repeatable readings. The DECAL2-TX uses a 10 second FIR filter to stabilize the measurements while still being responsive to depth changes.

All measurements together with battery information is transmitted using a license free ISM radio at 869.500 MHZ. Over the air, we are using an addressed protocol that allows for the usage of multiple DECAL2-TX units with one DECAL2-RX unit.

The DECAL2-RX calculated the actual depth. This depth is regarded as a water column and is calculated using the below formula. In this formula, the pressure of the water column is measured by the DECAL2-TX. The water density and the gravitational acceleration must be configured in the DECAL2-RX.

$$\text{Pressure} = \text{water density} * \text{gravity} * \text{water column}$$

Both devices have an internal battery that is easily accessible through the battery hatch. The current and the voltage of both are monitored. On a fully charged battery the DECAL2-TX gives you about 100hours of continuous operation.

The DECAL2-RX incorporates a webfront that is accessible over its ethernet port or its built in WiFi access point. The webfront is mobile ready and will scale appropriately for smartphone, tabled or PC usage.

The DECAL2-RX allows for the interfacing to other products. It can output his measurements in real-time over ethernet, WiFi or its serial port. Tendo is out-of-the -box able to interface to the DECAL2-RX and offer an even more rich visualisation option.

Pressure sensor

- Pressure range depending on order
- Cable length depending on order
- 0.1% FS BFSL
- 2ppm/°C voltage reference
- 0.1% voltage reference initial accuracy

Atmospheric pressure sensor

- Pressure range 50 - 110 kPa
- Absolute pressure accuracy +/-0.4kPa

Data filter

- 10 second FIR low pass filter

Telemetry

- 14 dBm RF power
- 869.500 MHZ
- GFSK modulation

Battery (DECAL2-TX & DECAL2-RX)

- 14.4V 3.4Ah Lithium Ion smart battery

Connectors DECAL2-RX

- 1 x RJ45 (10/100 Mbps ETHERNET)
- 1 x 9P D-SUB (serial port)
- 1 x M12 3P (power)
- 1 x TNC female (RF ISM)
- 1 x TNC female (WiFi)

Connectors DECAL2-TX

- 1 x TNC female (RF ISM)
- 1 x M12 3P (charger)

Power supply

- DECAL2-RX : 10-30 VDC
- DECAL2-TX : Dedicated charger only

Operational temperature

- DECAL2-RX : -20°C +50°C
- DECAL2-TX : -20°C +60°C

Mechanical

- DECAL2-RX : 171.6 x 231.00 x 54.60
- DECAL2-TX : 310.0 x 367.00 x 229.00