

## Applications

Surface water  
Water quantity  
Flood monitoring  
Tide monitoring  
Storm water



## Radar Level Sensor

Reliable non-contact water level measurements

**Unmatched accuracy with 80 GHz radar technology and smart features like inclination measurement**

**Robust and reliable design to guarantee long sensor lifetime even in the harshest environments**

**Contactless sensor that is easy-to-install and ideal for critical flood monitoring**

**Extremely low power consumption for deployment at remote locations**

**Simple connection to external dataloggers with industry standard communication protocols (SDI-12 and Modbus)**

**Global support for application-specific installation and maintenance guidance**

**Meets United States Geological Survey (USGS) Office of Surface Water (OSW) requirements for accuracy**

### Reliable and Robust Design for Peace of Mind

Ensure extended sensor lifetime with IP67 housing and a low power, maintenance-free design so you can focus on managing projects without worrying about equipment failure.

### Trust in Your Data for Confident Decision-Making

Achieve unmatched accuracy and long-term stability by reducing the need for verification measurements, resulting in high-quality data for stakeholders that meet standards.

### Operational Efficiency to Optimize Resources

Remotely determine device health with smart sensors and metadata, improving maintenance schedules and minimizing unplanned field visits, thus reducing time in the field.

### Hydrology-Tailored Design for Seamless Integration

Designed by hydrologists for hydrologists, discretely deploy the compact sensor and integrate effortlessly into existing networks, ensuring your historical data record is preserved.

# Technical Specifications

|                            |                                              |                                                                                                                                               |                                |
|----------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| WATER LEVEL                | Measuring range                              | 0 ... 30 m; distance to water                                                                                                                 | 0 ... 99 ft; distance to water |
|                            | Resolution                                   | 0.001 m · 0.1 cm · 1 mm                                                                                                                       | 0.01 ft · 0.1 inch             |
|                            | Accuracy for 0 ... 30 m                      | ±2 mm                                                                                                                                         | 0.007 ft                       |
|                            | Accuracy for average temperature coefficient | < 3 mm/10 K; max. 5 mm                                                                                                                        |                                |
|                            | Units                                        | m · cm · mm                                                                                                                                   | ft · inch                      |
|                            | Beam angle of antenna                        | 8°                                                                                                                                            |                                |
|                            | Transmission frequency                       | 77 ... 81 GHz                                                                                                                                 |                                |
|                            | Type of radar                                | FMCW Radar                                                                                                                                    |                                |
|                            | Frequency band                               | W-band                                                                                                                                        |                                |
|                            | Sampling range                               | OTT RLS 500: 2 Hz, OTT RLS 500 (HF): 2 Hz · 4 Hz · 8 Hz                                                                                       |                                |
| INTERNAL RELATIVE HUMIDITY | Measurement interval                         | 1 ... 60 seconds                                                                                                                              |                                |
|                            | Measuring range                              | 0 ... 100 % rH (non-condensing)                                                                                                               |                                |
|                            | Resolution                                   | 1 % rH                                                                                                                                        |                                |
|                            | Accuracy                                     | typ. ±2 % rH (10 ... 80 % rH)<br>amax. ±3 % rH (0 ... 100 % rH)                                                                               |                                |
| POWER                      | Units                                        | % rH                                                                                                                                          |                                |
|                            | Supply voltage                               | 5.5 ... 28.8 V DC, typ. 12/24 V DC                                                                                                            |                                |
|                            | Power consumption - active                   | < 4 mA                                                                                                                                        |                                |
| COMMUNICATION              | Power consumption - idle                     | < 250 µA                                                                                                                                      |                                |
|                            | Physical Interfaces                          | SDI-12 and RS-485                                                                                                                             |                                |
|                            | RS-485 protocols                             | SDI-12 (V1.4), Modbus RTU                                                                                                                     |                                |
| MEASUREMENT                | Measured values                              | Water level / depth to water                                                                                                                  |                                |
|                            |                                              | Internal relative humidity                                                                                                                    |                                |
|                            |                                              | Sensor orientation                                                                                                                            |                                |
|                            | Value processing                             | Mean value over a time period                                                                                                                 |                                |
|                            |                                              | Minimum value within a time interval                                                                                                          |                                |
|                            |                                              | Maximum value within a time interval                                                                                                          |                                |
|                            |                                              | Median over a time period                                                                                                                     |                                |
|                            |                                              | Standard deviation over a time period                                                                                                         |                                |
| ENVIRONMENTAL              | Derived parameters                           | Hydrological discharge (Q)                                                                                                                    |                                |
|                            | Temperature range, operating                 | -40 ... +70 °C                                                                                                                                | -40 °F (ice-free) ... +158 °F  |
|                            | Temperature range, storage                   | -40 ... +80 °C                                                                                                                                | -40 °F ... +176 °F             |
|                            | Humidity                                     | 0 ... 100 %                                                                                                                                   |                                |
| DIMENSIONS/WEIGHT          | IP rating                                    | IP 67 flooding without damage for 1 week / 1 m water column (bottom housing)                                                                  |                                |
|                            | Dimensions (with mounting)                   | 137 mm x 134.5 mm x 90 mm                                                                                                                     | 5.4 in x 5.3 in x 3.5 in       |
|                            | Weight (without mounting)                    | approx. 0.75 kg                                                                                                                               | approx. 3.1 lbs                |
| MATERIAL                   | Housing                                      | AlMgSi1, ASA (UV-stabilised ABS)                                                                                                              |                                |
|                            | Radom (front plate)                          | TFM PTFE                                                                                                                                      |                                |
|                            | Mounting                                     | 1.4301 (V2A)                                                                                                                                  |                                |
|                            | Cable                                        | PUR                                                                                                                                           |                                |
|                            | Cable connector                              | M9                                                                                                                                            |                                |
| REGULATORY                 | FCC                                          | This device complies with Part 15 of the FCC Rules                                                                                            |                                |
|                            | CE                                           | This device complies with the essential requirement of the EMC Directive 2014/30/EU                                                           |                                |
|                            | IC                                           | This Class B digital device meets all requirements of the Canadian Regulation, ICES-003, Class B Interference -Causing Equipment Regulations. |                                |

Please check website for country availability. All technical specifications are subject to change without notice.