



RLS 500

Applications

- Surface water
- Water quantity
- Flood monitoring
- Tide monitoring
- Storm water



Smart 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 500:1 Hz, OTT RLS 500 (HF): 1 Hz · 2 Hz · 4 Hz · 8 Hz		
INTERNAL RELATIVE HUMIDITY	Measuring range	0 ... 100 % rH (non-condensing)		
	Resolution	1 % rH		
	Accuracy	typ. ±2 % rH (10 ... 80 % rH) amax. ±3 % rH (0 ... 100 % rH)		
	Units	% rH		
POWER	Supply voltage	5.5 ... 28.8 V DC, typ. 12/24 V DC		
	Power consumption - active	< 4 mA		
	Power consumption - idle	< 250 µA		
COMMUNICATION	Physical Interfaces	SDI-12 and RS-485		
	RS-485 protocols	SDI-12 (V1.4), Modbus RTU		
MEASUREMENT	Measured values	Water level / distance 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	
	Derived parameters		Hydrological discharge (Q)	
	ENVIRONMENTAL	Temperature range, operating	-40 °C ... +70 °C	-40 °F (ice-free) ... +158 °F
Temperature range, storage		-40 °C ... +80 °C	-40 °F ... +176 °F	
Humidity		0 ... 100 %		
	IP rating	IP 67 flooding without damage for 1 week / 1 m water column (bottom housing)		
DIMENSIONS/WEIGHT	Dimensions (without swivel mount)	134.5 mm x 114.5 mm x 85 mm	5.3 in x 4.5 in x 3.3 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.