RLS

Applications

Surface Water Level
Stream Gauging
Flood warning
Hydropower
Storm Water
Lake & Reservoir
Tide Monitoring
Tsunami Warning

Radar Level Sensor

Efficient radar technology for non-contact water level measurement

Non-contact, easy-to-install sensor – ideal for flood measurements
Extremely low power consumption – can be easily used at remote locations
Influence of waves are compensated mathematically – no requirement for the use of structures
Standard interfaces for communication with data loggers and other peripheral devices (SDI-12, RS-485, 4 - 20 mA signal input)
Flat antenna means that insect and spider infestation is not a problem
Compact and solid design – long sensor life with minimal maintenance

Non-Contact Water Level Measurement

The OTT RLS is a radar level sensor for non-contact water level measurement at surface water locations. The sensor uses impulse radar technology to determine the water level. This energy-efficient, non-contact measurement method means the OTT RLS operates with no effect from temperature gradients, water pollution or sediment load and ensures exact measurements.

Flexible Usage

Its extremely low energy consumption, the large power supply range and standardized interfaces make the OTT RLS very flexible for different applications. The OTT RLS is mounted directly above the water surface to be measured, e.g. on bridges or auxiliary constructions. Its solid, relatively light and waterproof housing is easy to install. There is no requirement for complex construction, such as stilling wells or float shafts, as the OTT RLS determines the water level measurements in a measurement cycle that compensates for wave or other rapid water level movements.

For Outdoor Use

The OTT RLS is specifically designed for use in open air locations. The flat antenna construction, its minimal energy consumption and its compact, water-proof housing offer the user a system that is optimized for sites that have no requirement for mains power supply.

Technical Specifications

	Feature	Value
WATER LEVEL MEASUREMENT	Measuring range	0.4 ... 35 m
	Accuracy (SDI-12)	0.4 ... 2.0 m: ±10 mm
		2.0 ... 30 m: ±3 mm
		30 ... 35 m: ±10 mm
	Average temperature coefficient (range: –20 ... +60 °C)	0.01 % full scale/10 K
	Accuracy (4 ... 20 mA)	±0.1 % full scale
	Average temperature coefficient	10 ppm full scale/°C (at 20 °C)
	Measuring time	2...20 seconds; factory setting: 20 seconds
	Beam angle of antenna (width of beam)	12°
	Transmit frequency	25.3 GHz
ELECTRICAL DATA	Power supply	5.4 ... 28 V DC, typically 12 / 24 V DC
	Power Consumption (at 12 V) active	<15 mA
	Power Consumption (at 12 V) sleep	<0.05 mA
	Interfaces	4 ... 20 mA; SDI-12; RS-485, two-wire (SDI-12 protocol)
DIMENSIONS AND WEIGHT	L x W x H	222 mm x 152 mm x 190 mm
	Weight (including mounting)	approx. 2.1 kg
ENVIRONMENTAL CONDITIONS	Operating temperature	–40 ... +60 °C
	Storage temperature	–40 ... +85 °C
	Relative humidity	0 ... 100 %
MATERIALS	Housing	ASA (UV-stabilized ABS)
	Radom (front plate)	TFM PTFE
	Mounting	1,4301 (V2A)
ROTATION RANGE OF SWIVEL MOUNT	Lateral axis	±90 °
	Longitudinal axis	±15 °
CABLE GLAND SEALING RANGE	With inlet (min. Ø ... max. Ø)	4.0 ... 7.0 mm
	Without inlet (min. Ø ... max. Ø)	7.0 ... 11.0 mm
CONNECTION CAPACITY OF SCREW TERMINAL STRIP	Solid conductor	0.25 ... 2.5 mm2 (AWG 24 to 12)
	Wire with end sleeve and plastic collar	0.25 ... 1.5 mm2
	Type of protection	With horizontal mounting IP67 (submersion depth max. 1 m; submersion duration max. 48 h)
EMV LIMITS AND RADIO APPROVALS	Safety of equipment of low voltage device: EN 62368-1	2014 + AC:2015
		Radio approval for low power radio devices*; Europe RED ETSI EN 302 729
	FCC Version	Radio approval for low power radio devices*; USA FCC 47 CFR Part 15
		* Short Range Device (SRD)

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