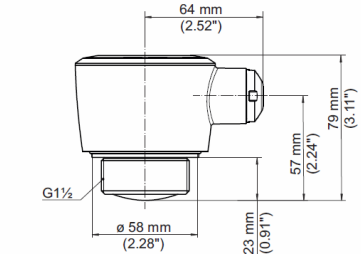
SLR – Radar water level sensor (Rev.3 010120)

Description

SLR are radar level sensors without contact with the surface whose the distance it's measured. The transducer consists of a high frequency microwaves system able to transmit in air a train of pulses and to receive the response eco of them; the delay of this response depends on the distance that divide the sensor from the surface to measure.
Using specific algorithms, the sensor can calculate the distance and give it back as a linearized electrical signal independently from environmental conditions where the sensor works. In fact the microwaves technology is not affected by the air temperature changes and by the wind fluctuations and gusts. The SLR hydrometer requires a low continuous voltage power supply and his current consumption is very small; furthermore the SLR has the function of auto-sleeping that allow to use it in hydro-meteorological stations powered by small photovoltaic panels. The sensor is available in the version 4…20mA analog output with two wires connection (other outputs on request).

Advantages

- ✓ High precision, exceptional long-term stability
- ✓ Integrated protection against overvoltage and polarity reversals
- ✓ Protection Class: IP 68
- ✓ Compact and robust housing
- ✓ Universal mounting bracket for wall or horizontal or vertical pole



Main applications

- ✓ Hydrometry and Hydrogeology
- ✓ Level-meteorology (snow cover height measurement)
- ✓ Measures in surface and marine waters
- ✓ Industrial Measures
- ✓ Aqueducts, Sunken Networks, Reclamation Consortia

Technical data

Model	SLR15-I
Range	0…15m (other ranges on request)
Transducer	W band radar (technology 80 GHz)
Accuracy	≤ 2mm
Response time	≤ 250ms (for step >4m: ≤3s)
Irradiation angle	8°
Output	4…20mA (SDI-12 or ModBus on request)
Power	12…35Vdc
Load resistance	(UB - Umin)/0,022 A Example: @12Vdc: (14,2-12Vdc)/0,022A= 100 Ohm
Working Temperature	-40…+80°C
Materials	Housing and Aerial of the sensor: PVDF
Overall dimensions, weight	Body: ø94 x 79mm, 700g (more details in the picture above)
Certifications	CE

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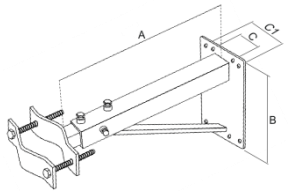
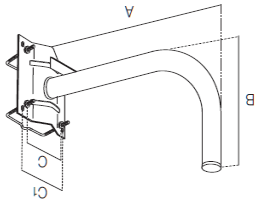
Accessories

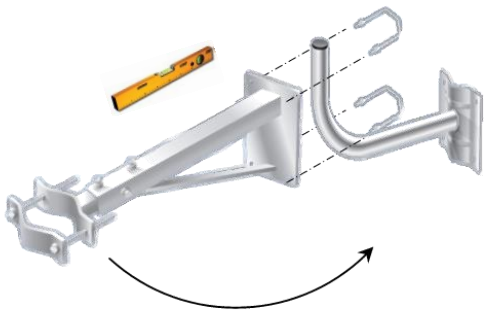
Cable	Shielded for outdoor. Available lengths: 4, 12, 22m (others upon request)

Mounting bracket	**Zinc-coated steel**
SID150 	Cantilever bracket adjustable Lmax = 140cm for radar or ultrasonic hydrometer with plate for wall and collars (U-Bolts) for pole mounting ø40…60mm. **Note**: The bracket is directly applicable on the pole of hydro-meteorological station mod. PFX-55 (see pictures)  
SPL-L 	Adapter for SID150 bracket, suitable for mounting on the bridge. The support can be mounted on poles ø25…76 mm (using the U-bolts supplied) or wall (without U-Bolts) staring the plate with four holes ø10mm (distance C=80 mm) or 4 holes ø12mm (distance C1=95 mm)

DIMENSION:	**Plate (mm)**	**Pipe (mm)**	**A (mm)**	**B (mm)**	**C (mm)**	**C1 (mm)**
• **SID150**	250x150x5	☐50x50	750…1400	250	69; fori ø10	130; fori ø14
• **SPL-L**	160x130x2,5	ø40	320	460	80; fori ø10	95; fori ø12

Installation

Application	Mounting	Procedure
Surface water (rivers, streams, lakes, etc ...)	In the maximum measuring range of sensor	Mount the sensor perfectly horizontal and above the point where the water flow is more significant. The sensor bracket must be fairly protruding to avoid that the measuring conical beam does not strike the slab of the bridge. **Note for installation on the bridge**: fix the hydrometer on the downstream side of the bridge so that any solid debris carried by the floods do not damage the sensor.



Picture 1 – Possible SID150 rotation with SPL-L bracket

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Installation important note

If the bracket SID150 is fastened on pole or wall, check with a spirit level that the square section pipe were parallel to the ground. In this way the pulses beam emitted by the sensor will be perpendicular to the underlying surface to be measured (see Picture 1).

Picture 1 – Example of hydrometric station with radar sensor

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