

SLR – Radar water level sensor (Rev.4 090426)



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 divides 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 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 allows 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).

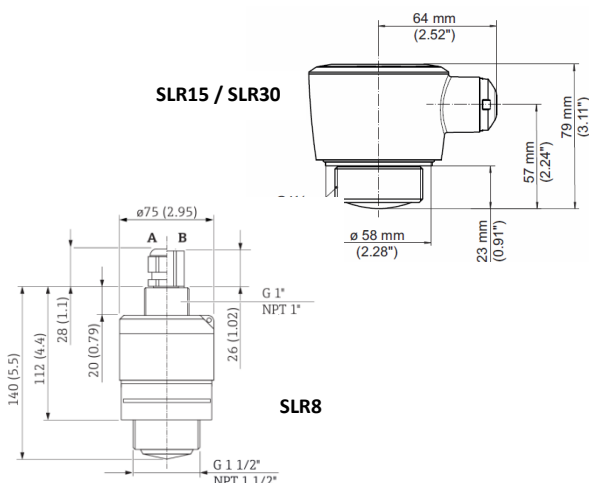
Advantages

- ✓ 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 position

Main applications

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

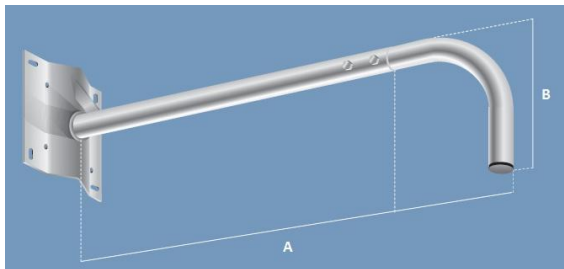
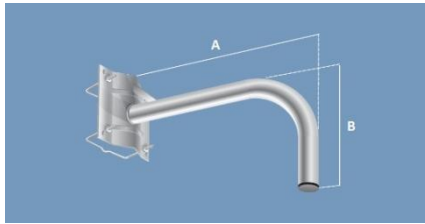
Technical data



Model	SLR8-I	SLR15-I	SLR30-I
Range	0...8m	0...15m	0...30m
Transducer	K band (26GHz)	W band (80GHz)	
Accuracy	≤ 2mm		
Response time	20s	≤3s	
Irradiation angle	30°	8°	
Output	4...20mA (SDI-12 o 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		
Certifications	CE		

Accessories

Cable	Shielded for outdoor. Available lengths: 4, 12, 22m (others upon request)
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Mounting bracket	Zinc-coated steel
SID120 	Cantilever adjustable bracket Lmax = 120cm for radar or ultrasonic hydrometer with plate for wall and collars (U-Bolts) for pole mounting $\varnothing 25 \dots 70 \text{mm}$. Note: The bracket is directly applicable on the pole of hydro-meteorological station mod. PFX-55 (see picture below) 
SID75 	Cantilever bracket Lmax = 75cm for radar or ultrasonic hydrometer with plate for wall and collars (U-Bolts) for pole mounting $\varnothing 25 \dots 70 \text{mm}$. Note: The bracket is directly applicable on the pole of hydro-meteorological station mod. PFX-55 (see picture below) 

Bracket dimensions

Cod.	Pipe (mm)	A (mm)	B (mm)	Plate (mm)	Holes (mm) x pole U-bolts ($\varnothing 25 \dots 70 \text{mm}$)	Buttonholes (mm)
SID120	$\varnothing 45 \text{e} - 40 \text{i}$	750...1200	250	200x150x4	4 x $\varnothing 10$	4 x 12x18 (wheelbase 90x145)
SID75	$\varnothing 40$	750	460	200x150x4	4 x $\varnothing 10$	4 x 12x18 (interasse 90x145)

Installation

Application	Mounting	Procedure
Surface water (rivers, streams, lakes, etc ...)	In the maximum measuring range of sensors	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 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.

Important Application Note

When mounting the SID120 or SID150 bracket on a pole or wall, use a **spirit level** to ensure the arm is parallel to the ground. This ensures that the pulse beam emitted by the sensor is perpendicular to the underlying surface being measured.



Picture 1 – Installation example of a hydrometric station with radar sensor

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