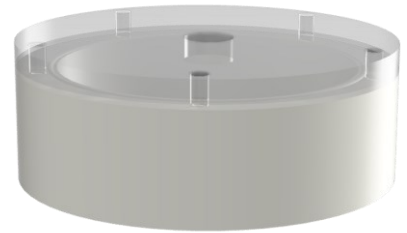


Senspuck SLM10

Senspuck is a LoRaWAN level meter sensor. It is designed to operate autonomously for 10 years in outdoor environments. It is suitable for wide variety of applications where reliable and case specific solution is needed. It enables multi-object detection and ignores cover glass smudges and dirt.



Key features

- Level meter
- Motion detection
- NFC configuration
- Multi-object detection
- Application calibrated

Applications

- Water tanks
- Water under bridges
- Drainage pipes
- Waste bins
- Silos



Technical specification

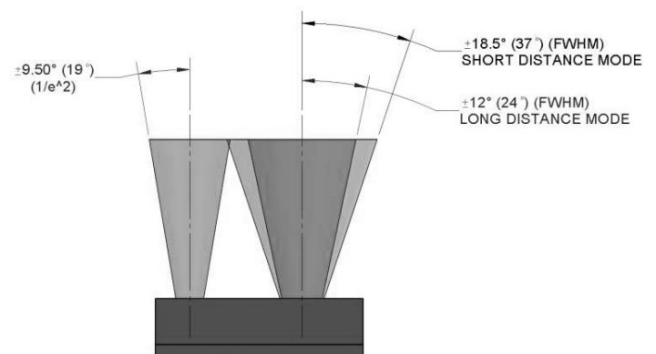
Enclosure	
Weight	100g w/ batteries / 140 g with batteries
Dimensions	80mm x 30mm
Materials	UV stable plastic, BOM, Plexi
IP rating	IP68
Operating conditions	
Temperature	-40°C to +85°C
Humidity	0 to 100% RH
Power supply	
Battery type	1 x 3.6V AA Lithium
Expected operation	<10 years (depending on sampling, signal, environment)
Configuration	
Sending interval	Configuration via NFC and downlink
Data upload interval	Configuration via NFC and downlink
NFC configuration	Native Android App

Connectivity	
Wireless Technology	LoRaWAN® 1.0.3
Wireless Security	LoRaWAN® End-to-End encryption (AES-CTR), Data Integrity Protection (AES-CMAC)
LoRaWAN Device Type	Class A/C (configurable) End-device
Supported regions	US902 –928, EU863 –870, AS923, AU915 –928
Link Budget	137 dB (SF7) to 151 dB (SF12)
RF Transmit Power	14dB / 20 dB (Region specific)

Sensors

Level		
Type	Time-of-Flight (ToF) – optical technology	
Range	20mm to 2500mm	
Measurement aperture	>90mm	
Medium	Water, solids, spilled goods	
Transition short to long distance mode	200mm	
Accuracy	Object distance \geq 200mm	$\pm 5 \%$
	100mm < object distance < 200mm	± 10 mm
	20mm < object distance < 100mm	± 15 mm

Sensor measures time of reflected pulsed light. On-board algorithms compensate multi-path reflections. Sensor has integrated system to generate histograms with multi-pulses. Histograms are used to accurately identify contaminants and enable multiple object detection. Sensor can be calibrated for specific application to ensure high-quality measurements.



Senspuck has short and a long-distance mode.

Temperature	
Range	-40°C to +85°C
Accuracy	$\pm 1^\circ\text{C}$

Acceleration	
Range	± 2 g to ± 16 g
Accuracy	± 40 mg