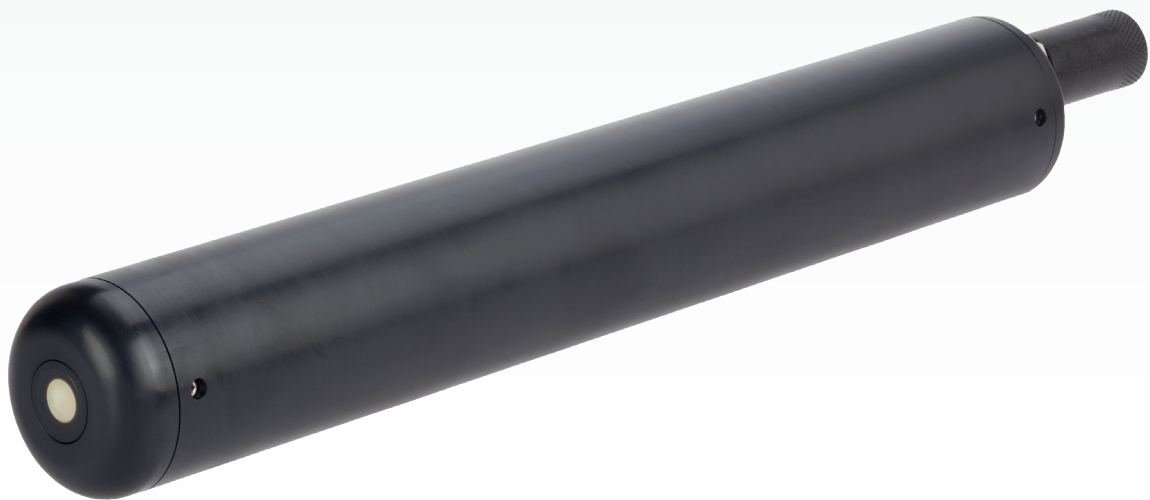


LISST-ABS

SUBMERSIBLE ACOUSTIC BACKSCATTER SENSOR

- **Suspended Sediment Concentration**
 - **Total Suspended Solids**
 - **Fouling Tolerant**
 - **Low-Cost**

The LISST-ABS is a low-cost acoustic backscatter sensor designed specifically for measuring suspended sediment concentration. It is designed for fixed-point measurements and operates at 8 MHz. At this frequency, acoustic has a nearly flat response to particles in the size range 30 μm to $\sim 400 \mu\text{m}$. As a result, the LISST-ABS maintains calibration within $\pm 30 \%$. This compares with optical turbidity sensors that maintains calibration within $\pm 400 \%$ over the same size range.



FEATURES

- Outputs concentration in analog, SDI-12 and RS232 formats on the underwater connector
- Integrates with any datalogger that can provide power and accept analog, SDI-12 or RS232 signals
- Installs on fixed structures, profiling packages and underwater vehicles or tow bodies (minimum 15 cm from solid boundaries)
- Wide range of accessories
- Factory calibrated concentration performed with 75 μm to 90 μm glass beads.

SPECIFICATIONS subject to change without notice

Technical

- Sensing frequency: 8 MHz
- Sample Volume: [$\varnothing \times L$] 10 mm \times 15 mm, located ~55 mm in front of sensor
- Resolution: 0.5 % of reading
- Outputs:
 - 0-4 V analog (logarithmic, 0.5 V/decade covering 100 g/L)
 - SDI-12
 - RS-232
- Range: 1 $\text{mg}\cdot\text{L}^{-1}$ to 30 $\text{g}\cdot\text{L}^{-1}$ (7 μm silt) or < 20 $\text{g}\cdot\text{L}^{-1}$ (200 μm sand) (Note: there is no equivalent to NTU or turbidity units for LISST-ABS.)
- Sample rate 1 Hz (average of 1000 measurements)
- Suspended sediment concentration accuracy: +/-30 % for particles 30 μm to 400 μm

Mechanical and Electrical

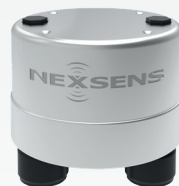
- Dimensions: [$\varnothing \times L$] 5.08 cm \times 33.65 cm (2" \times 13.25")
- Weight (air / water): 0.5 kg (1 lbs) / 0.22 kg (0.5 lbs) - buoyant in water
- Power supply: 9 VDC to 18 VDC
- Current draw: 50 mA max (for s/n 6232 and lower, current is 110 mA max)
- Depth rating: 100 m
- Transducer: 10 mm \varnothing ceramic
- ABS Plastic Housing
- Temperature Range: 0 $^{\circ}\text{C}$ to 30 $^{\circ}\text{C}$ – not recommended for use in water bodies that freeze
- Connector: Subconn MCBH8M (s/n 6233 and lower Impulse MCBH-8-MP)



Submersible X3 battery



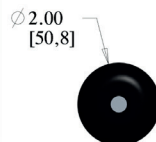
Solar Power Panel



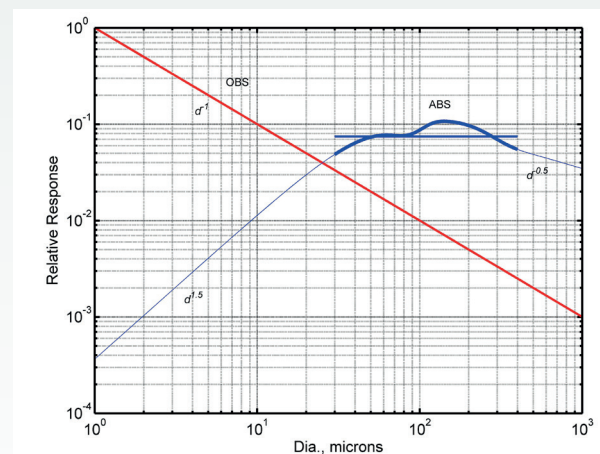
Nexsens X3 logger



Power & Data Cable



\varnothing 2.00 [50,8]



LISST-ABS and turbidity sensor response to particle size variation for constant concentration



LISST-ABS dimensions



LISST-ABS stainless steel frame