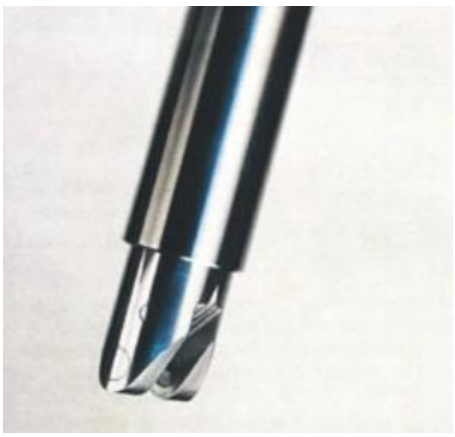
Optical Suspended Solids Sensor with Ash Measurement for Open Vessels & Channels

Product Description



The Ashcon AC300 sensor measures the suspended solids of process streams containing filler/ash and fibres. The sensor has a high-energy nIR diode light source with polarised optics, daylight filter and multiple measurement channels. The light depolarising effect from fibre and the scattering effect from the ash is modelled to provide a measurement of the fibre proportion and ash proportion. The sensor is factory pre-calibrated on a custom material mix to simplify on-site calibration. The sensor automatically compensates for temperature changes as well as any component drift with a reference correction. The measurement head is fixed to a shaft that is clamped onto a mounting assembly.

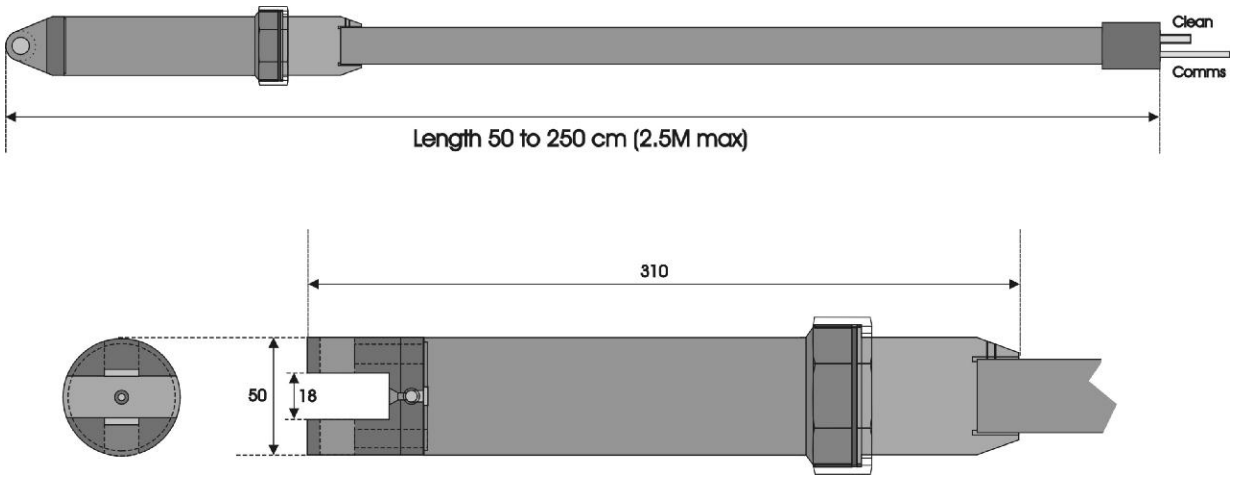
A clamp mounting assembly allows the AC300 to be easily removed for inspection when mounted in a vessel. For open channels such as drains, the clamp should allow the rod sensor to pivot and avoid fouling. The head design prevents dirt build-up and includes automated cleaning. A combination of an air purge and a water flush is used to keep the measurement head clear of debris and to clean the optics. The shaft length is set for the application requirements and can be shortened on-site.
Flow characteristics at the sensor should be turbulent to ensure good mixing but excessive flow velocities should be avoided.
The Sensor Interface Unit (SIU) allows mill lab. to sensor calibration values to be entered. The SIU also provides; on screen trending, data-logging and the automated cleaning cycle for the measurement.

AshCon Typical Applications

Collection Sump applications of the AC300 sensor normally measure suspended solids / consistency up to 2%Cs. (20g/Ltr). At solids above 10g/Ltr the fibre/ash proportion measurement has a lower definition. The mounting bracket normally provides a fixed clamping for the sensor shaft, often these sumps are deeper than 2 metres and can require an extended shaft length. Normally the maximum length is 2.5 Metres. The sump should have good mixing in order to achieve a repeatable measurement.

Channel applications for the AC300 sensor normally are for drains or flumes with a typical solids range up to 10g/Ltr (10,000 mg/Ltr or ppm). For these drain/flume suspended solids applications the sensor uses a single factory calibration that can be customised on-site. The mounting bracket for the sensor shaft provides a pivot to enable the sensor to move and allow objects to pass without fouling the sensor. The automated cleaning cycle keeps the optics clean but the sensor must be fully immersed to ensure a good measurement. Typical installations include; effluent aeration basins or clarifiers, collection tanks, flumes and drains. For influent management applications mill drain solids can be tracked with sensors positioned through the process and linked to drain collection sumps prior to transfer to effluent treatment. Tracking drain losses / influent loads allows; the treatment plant to correctly respond to changing loads, monitor losses and maintain environmental limits.

Product Drawing



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Technical Specification

Measurement:	Optical transmission of near infra-red polarised light.	Material :	Wetted parts 316 St.Steel
Optical Gap:	18mm.	Weight:	5 to 8 Kgs (length)
nIR source:	GaAs Diode, typically 880nm wavelength	Connection:	5 core plug (IP65)
Range:	0 – 2%Cs. (20g/L) Total Solids 0 – 10g/L Solids / Filler proportion	Cable:	5 Metres (std.) upto 15 Mtrs
Accuracy:	Within 3% of range (lab. to sensor 2sigma)	Protection:	IP65 (NEMA 4X)
Pressure:	Open Vessel / Channel	Mount:	Quick disconnect clamp
Temperature:	0 – 70 deg. C (max.)		

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