



The SAM-T probe is used for optical solid matter content measurement in turbid water, suspensions and industrial quality control for up to 12 g solid matter per litre. In addition the probe can be used for separation zone detection in sedimentation processes. The probe features reliable concentration measurement using the light absorption method based on the Lambert-Beer law with four-beam pulsed light for compensation of sensor soiling and ageing of optical components. The four-beam pulsed light method is based on two light sources and two photo receivers. Long-life LED's are used as monochromatic light sources. To eliminate interferences from extraneous light sources, the LED's are pulsed at a rate of several kHz. The LED's on the probe send a directed light beam to the photo receivers. The intensity of the beam is attenuated by the solid matter particles in the medium. The photo receivers measure the absorption signal and convert it into an analogue voltage. For the calibration of solids content measurement, such as sludge, refer to the concentration determined by a reference method (dry substance).

Installing the probe in pipelines or close to a wall can lead to back-scattering and therefore to signal increase. The SAM-T probe is recommended for low and medium concentrations. Measurements are performed using infrared light (880 nm), and are therefore virtually unaffected by outside light. The output signal of the probe compensated for temperature, soiling and outside light influences is a non-linear analogue voltage in the range 0 ... 10 V.

For application of the solids content probe in conjunction with a Multi Parameter Instrumentation a separate power supply N 15/20 is necessary (watertight enclosure IP 65; 230 V AC). The output signal from the probe is connected with an input of the Multi Parameter Controller. The controller makes signal linear and realizes calibration, display and output of the measured solid content concentration in g/l.

Dimensions: mm

Specifications

Materials	probe window epoxy resin, probe body stainless steel 1.4571 (SS 316)
Dimensions	diameter 38 mm, length 146 mm, screw-mounted cap R 1"
Optical components	light absorption method with four-beam pulsed light method, infrared light, wavelength 880 nm (absorption maximum)
Applications	river water, boiler water, wastewater, raw water, suspensions
Measuring range	0 ... 12 g solid matter/l, dependent on sludge type
Temperature range	0 ... 50 °C
Pressure	max. 6 bars
Power	± 15 V DC, max. 150 mA (with power supply N 15/20: 230 V AC or special version 110 V AC)
Electrical connection	fixed cable 13 m (for immersion probe) with watertight plug IP 68
Factory calibration	sensor test certificate with calibration data based on SiO ₂
Installation	channel or basin installation (immersion probe) <ul style="list-style-type: none">• with probe support and probe extension pipe (stainless steel; 0.5...2.5 m; angular 45 ° tube)• integrated in multi parameter immersion housing installation in a vessel (insertion probe) <ul style="list-style-type: none">• ball-valve built-in assembly (mounting and dismantling of probe without process interruption; material stainless steel; welding bush necessary; ball-valve 40 mm inside diameter; pressure max. 1 bar)