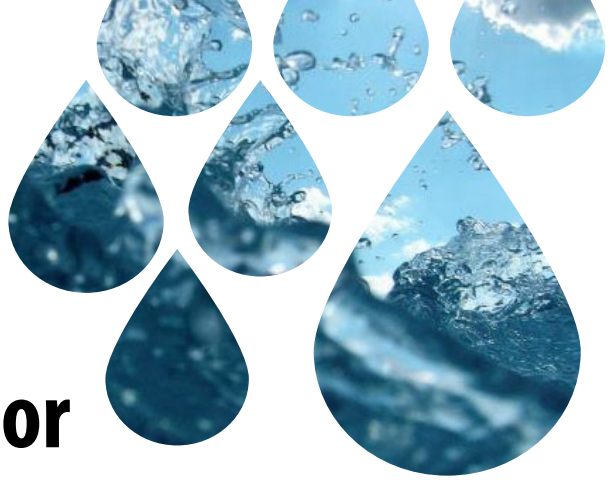
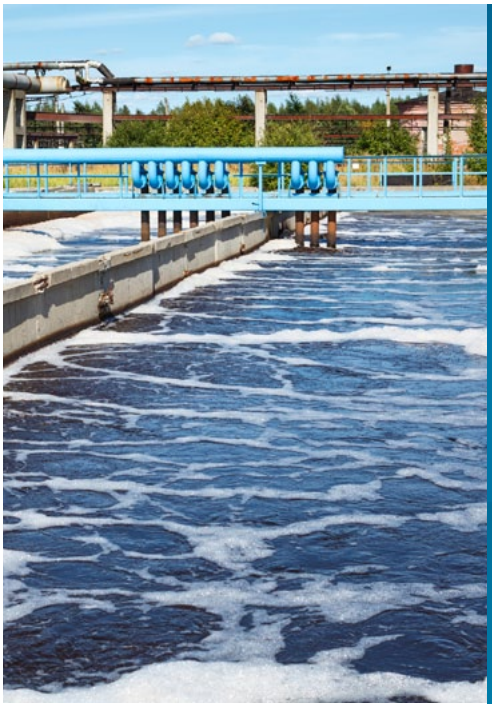
Call **800.959.0299** to speak with a sales representative
or visit us on the web at **www.analyticaltechnology.com**



SuspendedSolids**Monitor**

Model Q46/88



Suspended Solids Sensor

Monitoring suspended solids in wastewater and industrial process water can be useful for either process control or for alarming of unusual conditions. In biological treatment systems, monitoring suspended solids in the aeration tank can assist operators in maintaining optimum MLSS (Mixed Liquor Suspended Solids) concentration. In industrial clarifiers, suspended solids monitoring can warn of upset conditions that might result in the discharge of solids that exceed plant permits.

ATI's Model Q46/88 Suspended Solids Monitor provides real time monitoring of suspended solids in a variety of water and wastewater applications. A submersible sensor immersed in process tanks or effluent channel senses particulates in the water using an optical backscatter technique that allows measurement over a wide range. Results are displayed on the Q46 electronic unit mounted near the sensor with a variety of outputs provided as standard.

ATI
ANALYTICAL TECHNOLOGY, INC.

SENSOR OPERATION

Suspended solids sensors are optical devices operating in the infrared region. Unlike turbidity sensors that use 90 degree scatter to optimize sensitivity, suspended solids sensors use "backscatter" to allow solids measurements at much higher levels. Operation with infrared light insures very long sensor life and minimizes the effects of changing sample color.

Sensors are designed to withstand the rigorous conditions of wastewater and industrial process streams and to last for years of service with nothing more than occasional cleaning of the sensing surface. There are no protruding surfaces near the sensing element to avoid accumulation of fibrous materials. The sensor is simply pipe mounted using mounting adapters available from ATI.

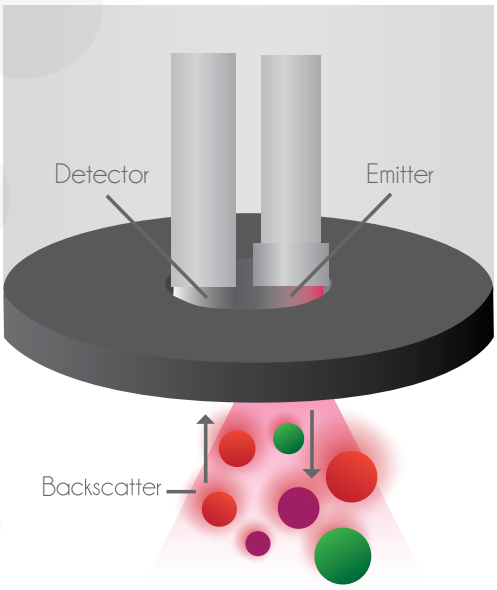
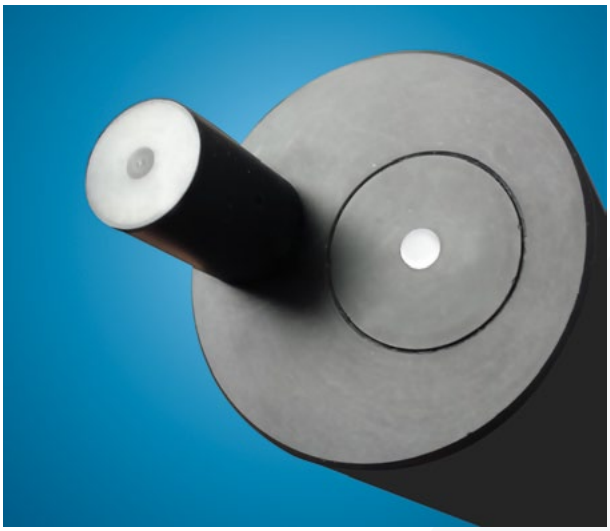


Diagram Cross-Section



Suspended Solids Sensor

FEATURES

AC or DC Power Options. Power options include universal 100-240 VAC +/- 10%, or 12-24 VDC.

Extra Outputs. Expansion board to add a third 4-20 mA analog output or to add three additional non-isolated low power relays.

Flexibility. Wide range capability, with selectable ranges of 0-2.000, 0-20.00, and 0-200.0 NTU provide maximum application flexibility.

Analog Output Options. Two isolated 4-20 mA outputs are standard, with an option for a third output if required. Default setting provides analog outputs for turbidity and temperature.

PID Output. Standard PID control function assignable to one analog output.

Digital Communications. Communication options for Profibus-DP, Modbus-RTU, or Ethernet-IP.

Relay Contacts. Three SPDT relays are standard, with relay functions programmable for alarm, control, or trouble indication. Three additional low power relays available as an option.

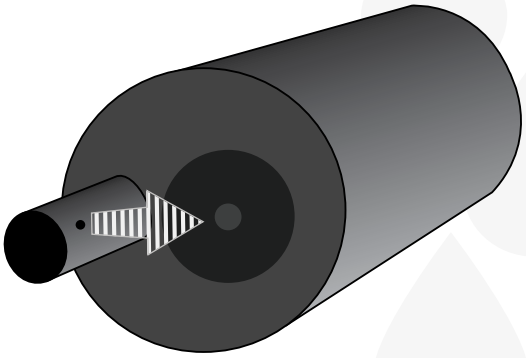
Flexible Mounting. NEMA 4X (IP-66) enclosure is suitable for wall, pipe, or panel mounting.

Clear Display. Back-lit large LCD display provides clear visibility in any lighting condition. A scrolling second line on the display provides additional information and programming prompts.

Sensor Diagnostics. System automatically checks for sensor fouling, "dry cell", and light source intensity.

SENSOR CLEANING OPTION

Optical sensors used for monitoring biologically active systems such as aeration tanks or aerobic digestors will require periodic cleaning to maintain the integrity of the measurement. Biological slime deposited on the optical surface will degrade the ability to transmit IR light into the sample. The frequency of cleaning varies widely depending on the turbulence in the process. Course bubble diffusion systems tend to scour the sensor while fine bubble diffusion systems result in more rapid sensor fouling.

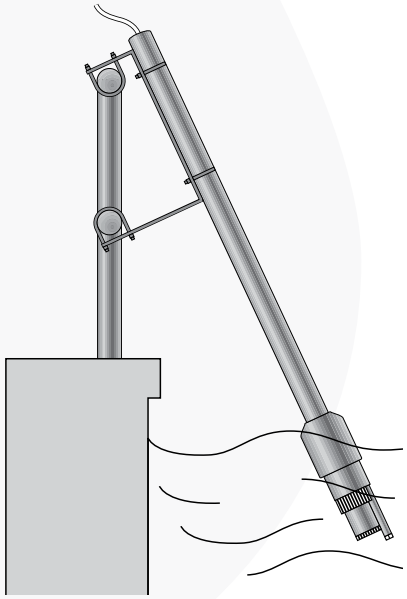


Cleaning can be done manually by simply wiping the sensor as needed, but ATI also offers an automatic air-blast cleaning system as an option. The "Q-Blast" air cleaning system is controlled by the Q46/88 Suspended Solids Monitor and provides a compact air compressor system that periodicaly applies pulses of compressed air across the optical surface to remove accumulated biofouling. This system greatly reduces the requirement for manual maintenance, with cleaning frequency programmed to occur as often as necessary.

Q-Blast

Trust the *Original*

Air-Blast System.



INSTALLATION

Suspended Solids sensors are generally pipe mounted using 1" PVC pipe. A special 1" FNPT adapter screws to the back of the sensor and can be purchased separately or as part of a complete mounting assembly. Q46/88 Monitors may be either wall or pipe mounted and are weatherproof for outdoor use. In addition, the Q46 electronics can be separated from the sensor by up to 100 feet using a junction box and the electronic monitor may be panel mounted using an optional panel mount bracket kit.

Q46/88 **SPECIFICATIONS**

ELECTRONIC MONITOR

Display Range	0-100.0 / 0-1000 mg/l, 0-10.00 g/l
Accuracy	2.0% of selected range
Repeatability	1.0% of selected range
Non-Linearity	2% of selected range
Temperature Drift	0.01% of span/°C
Power	100-240 VAC, +/- 10%, 50/60 Hz 12-24 VDC, 500 mA max.
Analog Outputs	Two isolated 4-20 mA, 500 Ω load max. (3rd output optional)
Relays	Three SPDT, 6A @250 VAC, 5A @24 VDC (3 additional SPST non-isolated, 1A @30 VDC optional)
Display	4-digit, 0.75" numeric LCD with 12-digital second line, LED back light.
Enclosure	NEMA 4X Polycarbonate V-0 Flammability
Operating Conditions	-20 to 60°C (-4 to 140°F)
Weight	6 lbs. (2.7 kg) with sensor, flowcell and accessories
Digital Output	Profibus DP, Modbus RTU or Ethernet IP
Mounting	Wall mounting kit standard, Panel mount bracket and pipe u-bolts available
Size	5.6"W x 4.9"H x 6.4"D

SENSOR

Sensor Type	Optical Backscatter
Materials	PVC
Measurement Angel	180° Backscatter
Response Time	95% in 60 seconds
Temperature Limit	0-50°C
Sensor Cable	4-conductor sensor cable, 30 ft standard, 350 ft max
Pressure Limit	100 PSIG max.
Temperature Element	Integral to Sensor

ORDERING INFORMATION

Model Q46/88 A-B-C Suspended Solids

Suffix A - Power
1 - 100-240 VAC, +/-10%, 50/60 Hz
2 - 12- 24 VDC, (requires 300 mA)
3 - 100-240 V +/- 10%, 50/60 Hz with Q-Blast Auto-Clean Assembly
4 - 12-24V VDC with Q-Blast Auto-Clean Assembly (requires 1.0 A)

Suffix B - Optional Output
1 - None
2 - One additional 4-20 mA output
3 - Three additional low power relays (SPST, 0.5 A max.)
(Required when options A3 or A4 is selected.)

Suffix C - Digital Output
1 - None
2 - Profibus-DP
3 - Modbus-RTU
4 - Ethernet-IP

ACCESSORIES

00-1637 Q-Blast system plate assembly with power junction box
07-0100 Universal Junction Box, NEMA 4X
31-0001 5 conductor sensor interconnect cable (max. 1000 ft.)
00-0624 Mounting bracket kit for sensor
00-0043 Pipe adapter for sensor
05-0094 Panel Mount Bracket Kit
47-0005 2" U-bolt, 304SS
00-0930 Auto-Clean Monitor Mounting Bracket

NOTES:

1 - Pipe mount requires two 2" U-bolts (47-0005)

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