



Gravity Filter Backwash Monitor

See Into Your Backwash
Process Like Never Before



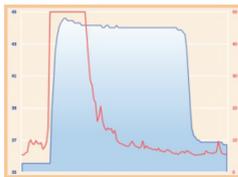
What is FilterSmart?

Until now, operators have had to rely on two surrogate measurements to manage the backwash process: flow rate and time. FilterSmart directly measures the parameters of actual interest: media expansion and turbidity. These two trends together present a clear picture of what's going on during the backwash, allowing operators to "see" into the process like never before. FilterSmart simplifies filter optimization because its 24/7 monitoring takes the place of countless man hours of data collection.

Simple Ways to Use FilterSmart

Ensure Proper Media Expansion

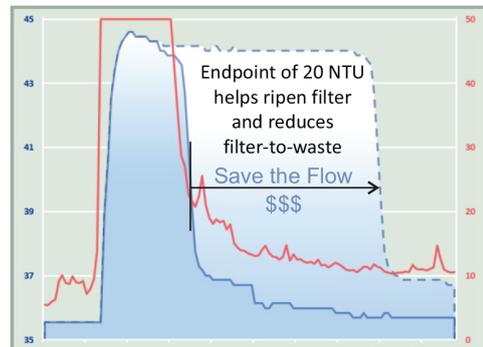
Insufficient expansion leads to short filter runs, mud ball formation, and poor long-term filter health.



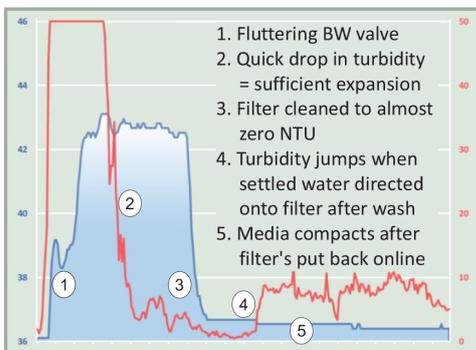
Simply increase backwash flow rate until FilterSmart shows desired expansion - typically 25-30%.*

* Consult manufacturer for filter's specified rate of expansion.

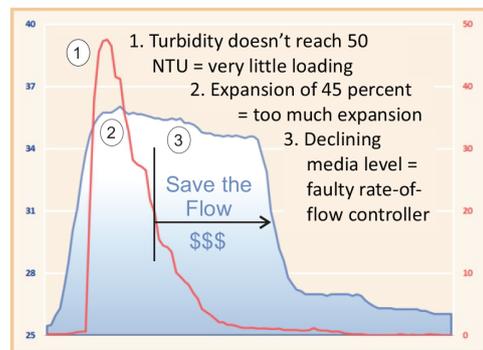
Terminate Wash Using Turbidity



See Critical Backwash Elements



Decrease Backwash Frequency



— Media Level
— Turbidity

Use FilterSmart To:

See How to Optimize Backwash

- Ensure proper media expansion
- Eliminate media loss due to over-expansion
- Easily adjust flow rates for seasonal water temperature changes
- Determine proper air scour duration and flow rate

See How to Save Money and Water

- Easily determine when to terminate the wash by establishing the proper turbidity endpoint
- Reduce wash water volumes and backwash duration
- Help lengthen filter run times
- Shorten filter ripening time
- Easily implement ETSW

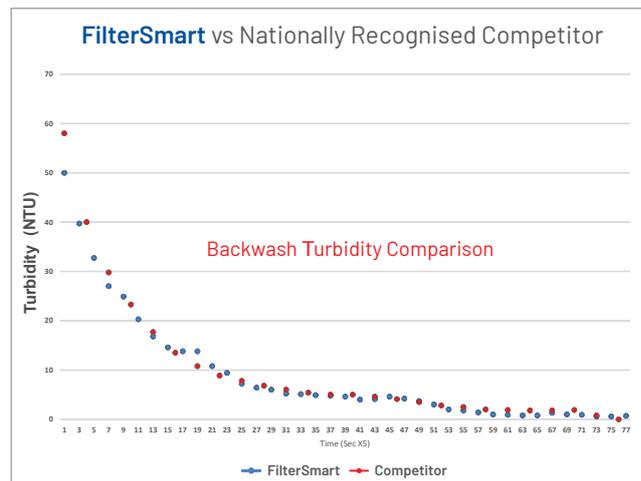
See Hidden Problems

- Eliminate mud ball formation
- Show the presence of leaking, fluttering, or stuck valves and rate-of-flow controllers
- Indicate when pumps aren't performing correctly
- Help determine root cause of unexplained events during failures

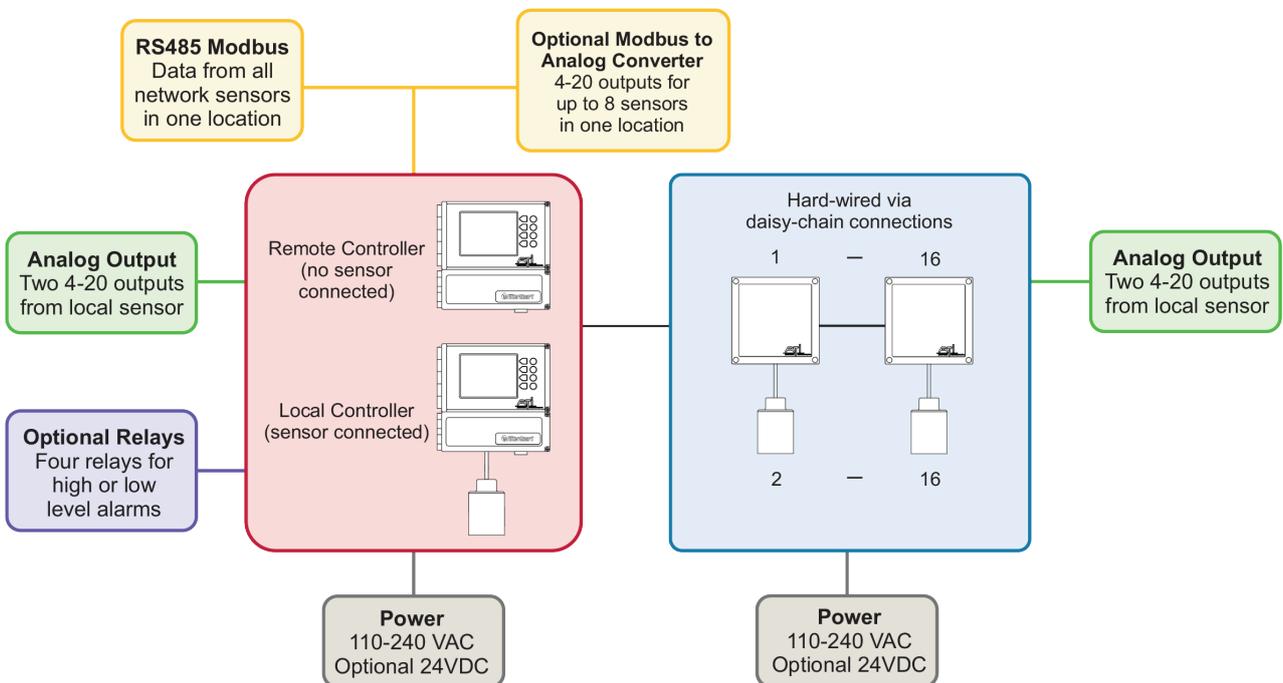
Highly Repeatable Turbidity Trends

Designed specifically for backwash monitoring in a non-compliance area, the turbidity sensor is made from durable components that produce years of highly repeatable trends without the need for field calibration or intervention.

The data at right is from a live, side-by-side comparison conducted by a surface water treatment plant in California. FilterSmart performed just as well as the competitor's backwash turbidity sensor priced 15 times higher! Now that's FilterSmart!



Networking & Available Outputs



Active Graphics Operator User Interface

Backwash Turbidity
0.0 to 50.0 NTU

Engineering Units & Percent Expansion

Sensor Name: Filter 1A Addr 9

NTU 50.0

EXP 20%
6

36
30

Help, I'm dirty!

Media Level & Loss

Modify Settings

Change Display

Change Sensor

Ask today about a 30-day FREE DEMO!

Specifications

Smart Sensors

Media Level and Expansion

Measuring Principle
Underwater Acoustic

Range

1.0 ft. to 20.0 ft. (0.305 m to 6.1 m)

Sensor Measurement Resolution

0.1 Unit of measure

Accuracy

0.2 in at 10.0 ft. (5 mm at 3.05 m)

Power Requirement

15VDC, 3W

Configuration Backup

Settings stored in FLASH memory

Sensor Construction

IP68, ABS and epoxy
Stainless steel and rubber (wiper only)

Turbidity

Measurement Principle

90 degrees scattered light, pulsed LED

Range

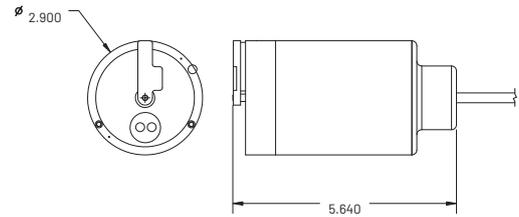
0-50 NTU

Repeatability*

1% @ 50 NTU

Certifications

CE



All dimensions in inches

*Accuracy has been tested under controlled conditions using a Formazin solution and field results of +/- 2% across the measurement range can be expected with an installation on a properly grounded circuit. Since the sensor is installed in an active filter, turbidity readings can be affected by bubbles, poor electrical grounding, localized flow rate at the sensor and heavier suspended solids that may be present dynamically.

Controller

Operational Conditions

-40° to +140°F (-40° to +60° C)

Power Requirements

100 to 240 VAC, 50/60 Hz - 1A

Power: 65 W (fused)

Optional: 24VDC

Display

Graphical backlit monochrome screen

Resolution: 320 x 240 pixels

Viewing Area: 2.6 x 3.45 in (92 x 122 mm)

Reported Measurement Resolution

1.0 (in & cm), 0.1 (ft), 0.01 (m), 0.1 (NTU)

Communications

RS-485 Serial MODBUS RTU

(2) 4-20mA Output

(1) Media Level, Expansion,
or Percent Expansion

(1) Turbidity

Integral RF Module (Optional)

Approvals:

North America - FCC Part 15C,

Industry Canada

Europe - CE RED

Relays (Optional)

Four relays: 10A @ 250 VAC; 10A @ 30VDC, user selectable for high/low fault alarm

Mounting Configurations

Surface and pipe mounting

Enclosure

NEMA 4X, IP65; Polycarbonate

Dimensions

235 x 229 x 115 mm

9.25 x 9.00 x 4.50 in

Weight

Approximately 3 lb (1.36 kg)

depending on configuration

Certifications

CE

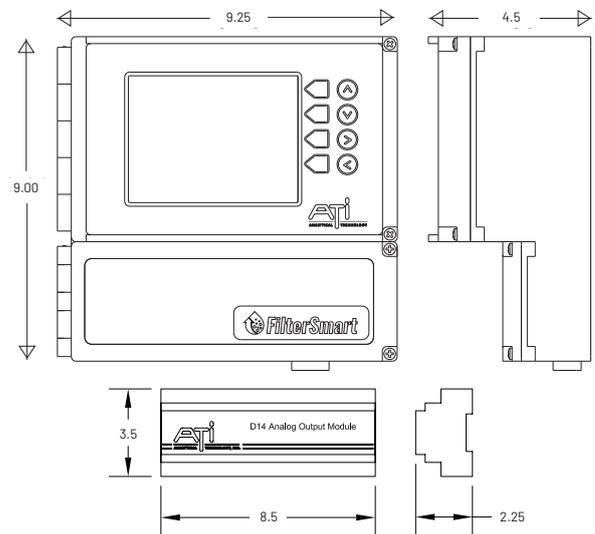
Mobus to Analog Output Converter (optional)

18-30VDC

DIN Rail Mount

Up to 16 isolated analog outputs

(enough for 8 sensors)



Power Supply Unit

Ambient Conditions

Operation: -40° to +140°F (-40° to +60° C)

Power Requirements

100 to 240 VAC, 50/60 Hz - 1A

Power: 20 W - 1.34A

Optional: 24VDC

Communications

RS-485 MODBUS RTU

(2) 4-20mA Output

(1) Media Level, Expansion,
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(1) Turbidity

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Mounting Configurations

Surface and pipe mounting

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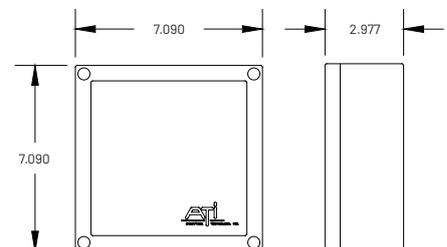
181 x 181 x 61 mm

Weight

Approximately 1.5 lb (0.68 kg)

Certifications

CE



ATi is a leading provider of engineered, analytical sensor monitoring solutions for water and gas applications and data analytics. Our pioneering and industry leading range of Smart Network Monitors, Water Quality Monitors and Gas Detectors provide innovative solutions for the most demanding of applications.

USA: sales@analyticaltechnology.com / +1-800-959-0299 (Toll Free) / +1-610-917-0991 (Voice)

UK: sales@atiuk.com / +44 (0) 1457 873 318

analyticaltechnology.com