Turbidity

TURBIDITY SENSOR
NTU with HydroACT Series

DESCRIPTION

The Chemtrac **Turbidity Sensor** incorporates an infrared LED for a nephelometric (90 degree) light scatter measurement of turbidity (NTU/FTU). The sensor, which only requires a one point calibration, can be setup to measure either 0.01 to 100 NTU, or 0.1 to 1,000 NTU. A flush option is also available to help keep the optics clean in higher turbidity applications. Chemtrac's Turbidity Sensor is built to last with a stainless probe body and sapphire optics. And there are no moving parts, wiper arms, or seals that ever need replacing.

FEATURES

- Autoclean solid state optical sensor - no moving parts
- Single point calibration - no 'zero' required
- Stable and reliable - excellent process control
- 'Maintenance free' with up to 1 year between calibration
- From 0.01-1000 NTU (0.01-2000 mg/l, application dependent)
- Up to 145 psi
- Extremely low total cost of ownership

SIMPLE CALIBRATION

Whether calibrating to a standard or grab sample, calibration is made simple with easy to follow menu prompts and only needing to calibrate one point.

RELIABLE AUTO CLEANING

Auto cleaning the sensor is accomplished with water flow jet-flushing, ensuring accuracy is maintained without the need for mechanical wiper arm maintenance.

HYDROACT ANALYZER - RELIABLE, SCALABLE SOLUTIONS

The HydroACT family of analyzers/controllers offers state of the art features allowing users to specify virtually any configuration of measurements and system features they require. It is simple to mix and match one or more NTU sensor with additional measurements like Streaming Current, Particle Counter, Dissolved Oxygen, pH, Chlorine, Chlorine Dioxide, Ozone, UV254 Organics, Conductivity and others. There are also a wide selection of analyzer features to choose from such as process control options, analog & digital I/O, digital communications, remote access (web server with email alerts), data logging, and others. By paying for only what is needed, HydroACT analyzers offer water treatment professionals a more affordable solution.

GENERAL SPECIFICATIONS

ANALYZER

	HA2	HA4	HA8
Power	100-240 VAC / 0.25 A or 12 VDC / 0.8 A (standard) or 24 VDC (optional)		
Display	4.3", 480x272, 8 bit, grayscale	4.3", 480x272, 24 bit, color	
Sensor Inputs	Up to 2	Up to 4	Up to 8
Sensor Options	TSS/NTU, Free Cl, Total Cl, Cl Dioxide, Chlorite, Ozone, pH with Temperature Ozone, ORP, SCM, UV254 organics, DO, Conductivity, Particle Counter		
External Input (optional)	4-20 mA, 4-20 mA loop-powered, +/- 2000 mV for pH / ORP / ISEs		
Analog Outputs (optional)	Up to 2	Up to 4	Up to 8
	Menu configurable outputs: 4-20 mA (Note: unused sensor inputs can be used as outputs)		
Relays (optional)	Up to 4	Up to 8	Up to 16
	SPST, electromechanical, 380 VAC, 6 A max		
Digital Inputs (optional)	Up to 4	Up to 8	Up to 16
Alarms & Thresholds	2 user-configurable alarms & thresholds with deadband and delay for each parameter and control output		
Control Loops (optional)	Up to 2	Up to 4	Up to 8
Control Types (optional)	High / Low Threshold	PID (with start delay and SP ramping options), feed forward (NTU/UV), flow pacing, high/low threshold, timer	
Communication (optional)	Modbus ASCII/RTU (RS485), Modbus TCP (Ethernet), PROFIBUS DP		
Data & Event Logging	1,000 event / status records stored in internal memory	1 million records stored internally storage expandable with MicroSD card	
Modem (optional)	None	GSM / GPRS / 3G intergrated modem	
Remote Access (optional)	None	Internet browser access, alerts and reports via email (requires ethernet or modem card)	
Enclosure	ABS flame retardant, NEMA 4X / IP65		
Dimensions & Weight	HA2 & HA4: 9 in (230 mm) x 12.2 in (309 mm) x 4.1 in (103 mm); 4.4 lbs (2 kg) HA8: 18 in (460 mm) x 12.2 in (309 mm) x 4.1 in (103 mm); 4.4 lbs (2 kg)		

HA2 / HA4
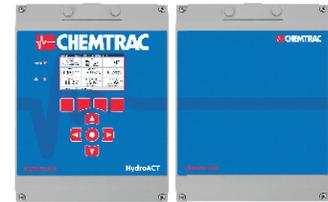
HA8

TURBIDITY & SUSPENDED SOLIDS SENSOR*

Range:	Selectable within 0.01-1000 NTU, 0.01-2000 mg/L (application dependent)
Typical Ranges:	0.01-20 NTU, 0.01-100 NTU, 0.01-1000 NTU
Linearity:	$r^2 > 0.99$
Response Times:	$T^{90} > 10s$ (adjustable based on averaging)
Accuracy:	< 1% of measured value or 0.01 NTU (whichever is greater)
Repeatability:	< 0.3% of measured value or 0.005 NTU (whichever is the greater) (Ref: ISO 15839)
Unit of Detection:	0.01 NTU (0-10 NTU, Ref: ISO 15839)
Temperature:	-20 to 85+°C
Pressure:	0-145 psi
Averaging:	10s - 10min
Lamp Source:	IR LED, 860nm
Cleaning Cycles:	User settable cleaning cycle time and cleaning time
Cleaning:	Autoclean water jet
Enclosure Rating:	IP65
Sensor Environmental Protection:	IP68
Display:	Value and alarms and graphs at the same time, controller dependent
Resolution:	0.001 NTU (0-2), 0.01 NTU (2-10), 0.1 NTU (10-100), 1 NTU (>100)
Calibration:	One point (zero not required)
Diameter:	1.5" (38mm)
Length:	11" (278mm)

*Sensor not EPA approved

Turbidity Sensor

Flow Chamber

Cal Chamber