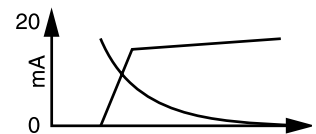


# Model 870-872 Turbidity/ Suspended Solids Analyzers




- For use with the Model OUS 41 Turbidity and Suspended Solids Sensor
- Available in panel mount (870) or NEMA 4X/ IP65 rated field mount housing (872)
- Turbidity measurement displayed in FNU, PPM, g/l, % or % suspended solids
- Logically arranged menu structure
- Large, two-line display simultaneously indicates measured value and temperature
- Intuitive calibration procedure
- Programmable automatic sensor wipe feature
- Continuous sensor diagnostics
- Choose up to 4 contacts for use as:
  - Limit contacts
  - P(ID) controller
  - Timed outputs for simple cleaning
  - Chemical cleaning processes
- Optional 2nd current output for temperature
- HART® communication

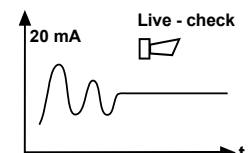
**To Achieve High Resolution In Specific Measurement Ranges, The Current Output Can Be Defined To Accommodate Bilinear Or Quasi-logarithmic Curves, Etc**



**Alarm Contacts and Error Current Output Can Be Independently Configured Based On Application**

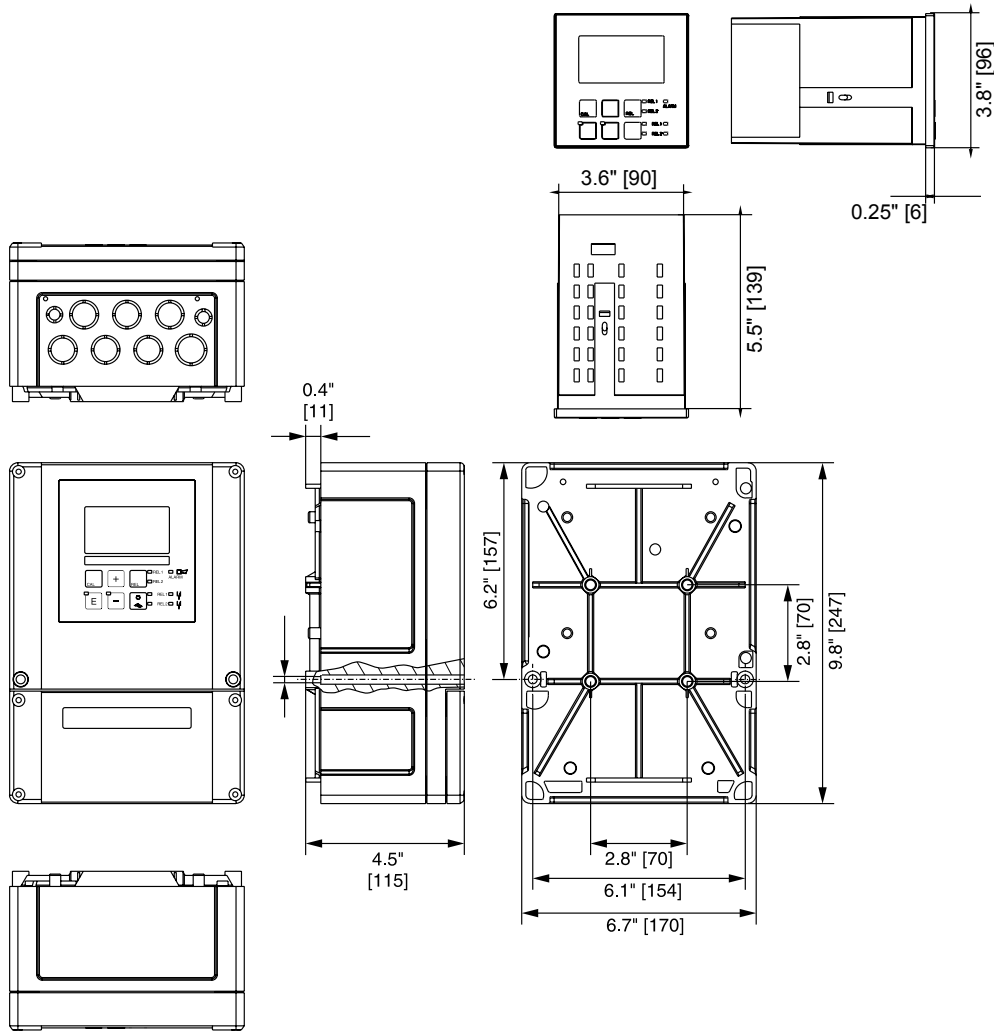
		2,4 / 22 mA
E 057	yes	no
E 080	no	yes
---	yes	no

**“Live Check” Feature Ensures System Is Continuously Active And Monitoring The Process**



Input	Measured parameters	Turbidity, suspended solids, temperature
Digital Inputs 1 And 2	Voltage	10 ... 50 V
	Current consumption	max. 10 mA
Temperature Measurement	Temperature sensor	NTC, 30 kΩ at 25°C
	Measuring range	-5 to 70°C (23 to 158°F)
	Temperature offset range	±5°C
Suspended Solids Measurement With OUS 41	Display and measuring range	0.00 ... 9999 FNU, 0.00 ... 9999 ppm, 0.0 ... 300.0 g/l, 0.0 ... 200.0%
	Turbidity offset range	±99.99 FNU, ±99.99 ppm, ± 99.9 g/l, ±99.9%
Signal Input For Turbidity / Suspended Solids / Temperature	Sensor interface	digital
	Max. length of cable to sensor	200 m
Signal Output For Turbidity / Suspended Solids	Current range	0 / 4 ... 20 mA, galvanically separated; error current 2.4 / 22 mA
	Load	max. 500Ω
	Max. resolution	700 digitis / mA
	Output range	adjustable, min. Δ 0.1 FNU, Δ 1 ppm, Δ 1 g/l, Δ 0.1%
	Isolation voltage	max. 350 V <sub>ms</sub> / 500 V DC
	Oversvoltage (lightning) protection	according to EN 61000—4-5: 1995
Temperature Signal Output (Optional)	Current range	0 / 4 ... 20 mA, galvanically separated
	Load	max. 500Ω
	Output range	adjustable, Δ 10 ... Δ 100% of upper range value
	Isolation voltage	max. 350 V <sub>ms</sub> / 500 V DC
	Oversvoltage (lightning) protection	according to EN 61000—4-5: 1995
Auxiliary Voltage Output	Output voltage	15 V ± 0.6V
	Output current	max. 30 mA
Contact Outputs (Potential- free Changeover Contacts)	Switching current with resistive load (cos φ = 1)	max. 2 A
	Switching current with inductive load (cos φ = 0.4)	max. 2A
	Switching voltage	max. 250 V AC, 30 V DC
	Switching power with resistive load (cos φ = 1)	max. 1250 VA AC, 150 W DC
	Switching power with inductive load (cos φ = 0.4)	max. 500 VA AC, 90 W DC
Limit Contactor	Limit adjustment range	0 ... 20 mg/l or 0 ... 200% SAT
	Pickup / dropout delay	0 ... 7200 s
Controller	Function (adjustable)	Pulse length / pulse frequency controller
	Controller response	PID
	Proportional band	Kp: 0.10 ... 10.00
	Period for pulse length controller	0.5 ... 999.9 s
	Frequency for pulse frequency controller	60 ... 180 min <sup>-1</sup>

Alarm	Function (switchable)	latching / momentary contact; normally closed/open
	Alarm threshold adjustment range	O <sub>2</sub> / temperature: complete measuring range
	Alarm delay	2 ... 2000 s
	Monitoring time for lower limit violation	0 ... 2000 min
	Monitoring time for upper limit violation	0 ... 2000 min
Temperature Measurement	Resolution	0.1°C (0.18°F)
	Deviation of indication	max. 1.0% of measurement range
	Measurement deviation, temperature signal output	max. 1.25% of current output range
Ambient conditions	Ambient temperature (nominal operating conditions)	-10 to 55°C (14 to 131°F)
	Ambient temperature (limit operating conditions)	-20 to 60°C (-4 to 140°F)
	Storage and transport temperature	-25 to 65 °C (-13 to 149°F)
	Relative humidity (nominal operating conditions)	10 ... 95%, non-condensing
	Protection class of panel-mounted unit	IP54 (front), IP 30 (housing)
	Protection class of field housing	IP65, NEMA 4X
	Electromagnetic compatibility	Interference emission and immunity To EN 61326-2:1998
Physical Data/Design	Dimensions of panel-mounted unit (H × W × D)	96 × 96 × 145 mm (3.8 x 3.8 x 5.7 inch)
	Mounting depth	approx. 165 mm (6.5 inch)
	Dimensions of field housing (H × W × D)	247 × 170 × 115 mm (9.7 x 6.7 x 4.5 inch)
	Weight of panel-mounted unit	max. 0.7 kg (1.5 lbs)
	Weight with field housing	max. 2.3 kg (5.1 lbs)
	Display	LCD, two lines, five and nine digits, with status indicators
Materials	Housing of panel-mounted unit	polycarbonate
	Front membrane	Polyester, UV-resistant
	Field housing	ABS, Polycarbonate
Power requirements	Supply voltage	100 / 115 / 230 V AC + 10 / - 15%, 48 ... 62 Hz 24 V AC/DC +20 / - 15%
	Power consumption	Max. 7.5 VA
	Fuse protection	Fine-wire fuse, medium time-lag. 250 V / 3.15 A
Suspended solids measurement with OUS 41 sensor	Resolution	0.001 FNU, 0.01 ppm, 0.1 g/l, 0.1%
	Deviation of indication	±2% of meas. value (min. 0.02 FNU)
	Reproducibility	±1% of meas. value (min. 0.01 FNU)
	Measurement deviation, turbidity signal output	1% of current output range (min. 0.02 FNU)



**Dimensions Diagram**

87				
	<b>Analyzer Type</b>			
	0-	1/4 DIN Panel Mount (Model 870)		
	2-	NEMA 4X/IP65 Field Mount (Model 872)		
	<b>Program Level</b>			
	TS	Turbidity Measurement with Extended Features		
	<b>Power Supply</b>			
	2	230Vac		
	3	115Vac		
	7	24Vac/dc		
	<b>Measurement Output</b>			
	0	Turbidity		
	1	Turbidity with Temperature		
	5	Turbidity with HART		
	6	Turbidity with Temperature and HART		
	<b>Relay Output</b>			
	10	2 Relays (Limit/PID/Timer)		
	15	4 Relays (Limit/PID/ Cleaning)		
	16	4 Relays (Limit/PID/Timer)		

**Order Code**

Part No.	Accessories
50086842	Post Mounting Kit for Field Analyzer
OYY-101A	Weather Protection Cover

Wedgewood Technology  
 300 Industrial Road  
 San Carlos, CA 94070-2601  
 Phone (650) 593-1598  
 Fax (650) 593-0235  
 Toll Free 1-800-241-8404  
[www.wedgewoodtech.com](http://www.wedgewoodtech.com)

# Model OUS41 Turbidity/ Suspended Solids Sensor



## Optical sensor for turbidity and suspended solids content measurement for installation in open pipes and vessels

- Measuring range from 0.01 to 9999 FNU/NTU, 0.0 to 300 g/l, 0.0 to 9999 ppm
- Scratch-proof sapphire windows
- Compact, shock-proof design
- Sensors are factory calibrated with formazine standard and silicon dioxide (SiO<sub>2</sub>)
- “Plug and play” operation minimizes start-up time
- 3-Point calibration and 1-point adjustment
- Store up to 7 different calibration data records
- Nephelometric 90° scattered light method with 880 nm NIR measuring frequency according to ISO 7027 / EN 27027
- Optional integrated wiper for mechanical cleaning
- Inclined sensor surface inclined design uses flow stream for self-cleaning / bubble rejection
- Operates with Model 870/872 turbidity analyzer as part of a complete measurement loop
- “Smart” sensor includes a built-in microprocessor
- Remote set-up capability makes it portable between different analyzers
- For use in a variety of applications such as monitoring plant effluent streams

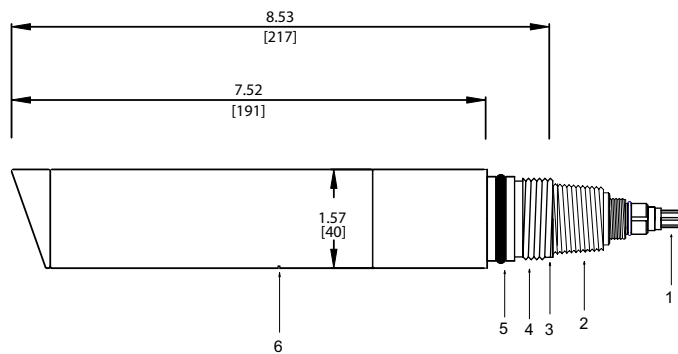


OUS41 shown  
with optional  
window wiper  
system



Measuring principle	Nephelometric 90° NIR scattered light
Measuring ranges	Measuring range from 0.01 to 9999 FNU/NTU, 0.0 to 300 g/l, 0.0 to 9999 ppm (depending on sample type)
Wavelength	880 nm
Optical reference compensation	By reference photodiodes
Factory calibration	Formazine standard and SiO <sub>2</sub>
Temperature / pressure	6 bar (88 psig) at 25 °C ( 77 °F ) 1 bar (14 psig) at 50 °C ( 122 °F )
Max. cable length	200 m
Temperature sensor	NTC Thermistor
Nominal operating range	-5 to 50 °C (23 - 122 °F )
Storage temperature range	-20 to 60 °C (-4 to 140 °F)
Ingress protection	IP 68
Sensor body	POM (Polyoxymethylene)
Optical windows	Sapphire

**Specifications**



1. NEMA 6 waterproof connector
2. NPT 3/4" process mounting threads
3. Orientation markings
4. G 1" process mounting threads
5. O-ring Seal
6. POM Body

**Dimensions Diagram**

<b>OUS41</b>	
	<b>Sensor Options</b>
<b>A</b>	No wiper
<b>W</b>	With wiper
	<b>Cable Length</b>
<b>2</b>	7 meters
<b>4</b>	15 meters

**Order Code**

Part No.	Accessories
<b>Replacement Kit</b>	
50089252	Wiper, 3 pc.
<b>Installation Housings</b>	
*OYA611	Immersion
OUA451	Retractable
OUA120, OUA250	Flow-through
* Not effective near wall - must use fixed pipe on wall with holder (OYY105)	

**Accessories**

Wedgewood Analytical, Inc.  
4123 East La Palma Avenue, Suite 200  
Anaheim, CA 92807  
Toll Free: 1-800-835-5474  
Direct: 1-714-577-5600  
Fax: 1-714-577-5688  
www.WedgewoodAnalytical.com

# Model OOA250 Model OUA250 Flow Through Housings



OOA250 housing for  
OOS31 dissolved  
oxygen sensor



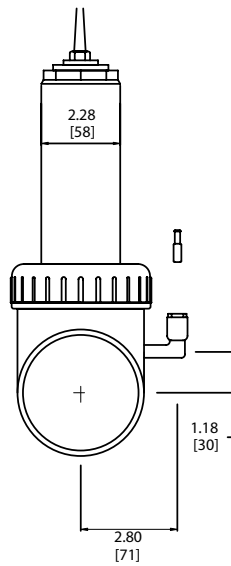
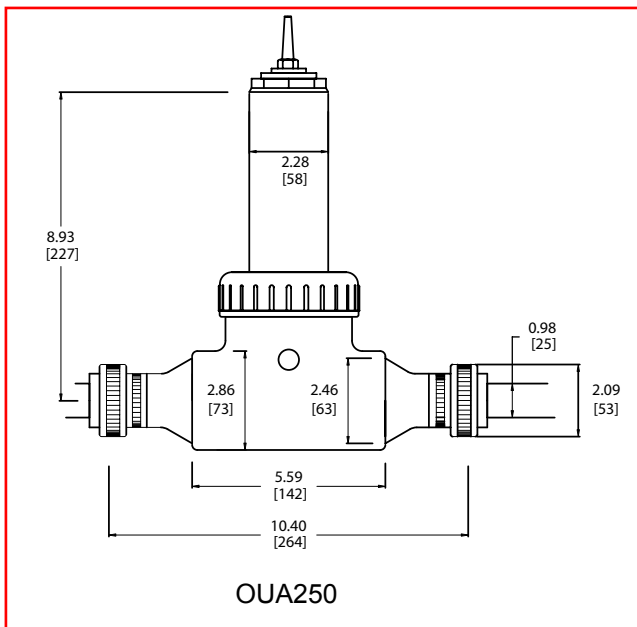
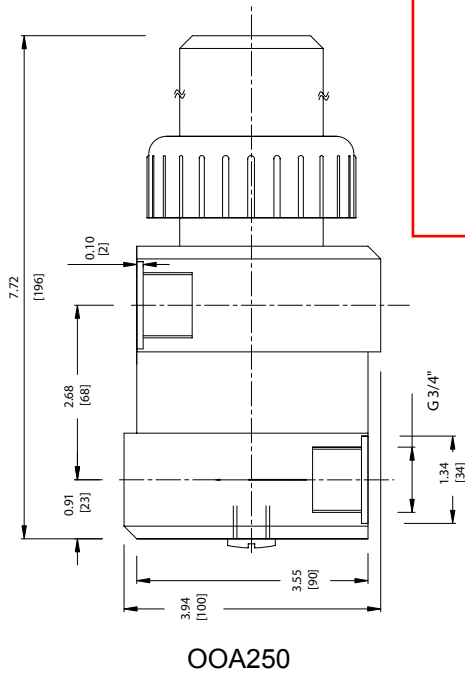
OUA250 housing  
for OUS41 turbidity/  
suspended solids  
sensor

## For installing dissolved oxygen and turbidity/suspended solids sensors in process pipes and sample lines

- Easily installs into process or side stream
- Self cleaning internal housing design resists deposit build-up
- Rugged PVC construction
- Additional port allows spray head connection for automatic sensor cleaning

OOA250	Specifications
Materials of construction	PVC; O-ring made of EPDM
Temperature	25 °C at 6 bar (77 °F at 88 psig) 50 °C at 3 bar (122 °F at 44 psig) 60 °C at 1 bar (140 °F at 14.7 psig)
Process connection	G <sup>3</sup> / <sub>4</sub> female threads, with adapters
Recommended minimum flow	100 l/h (26 GPH) with standard responding sensors 500 l/h (130 GPH) with fast responding sensors
Recommended maximum flow	1000 l/h (260 GPH)
Max. operating temperature	50 °C (122 °F)
Equipment mounting positions	1 oxygen sensor 1 spray head OUR 3

OUA250	Specifications
Materials of construction	PVC; O-ring made of EPDM
Temperature	25 °C at 6 bar (77 °F at 88 psig) 50 °C at 3 bar (122 °F at 44 psig) 60 °C at 1 bar (140 °F at 14.7 psig)
Process connection	G <sup>3</sup> / <sub>4</sub> female threads, with adapters for 3/4" PVC socket weld
Recommended minimum flow	100 l/h (26 GPH) with standard responding sensors 500 l/h (130 GPH) with fast responding sensors
Recommended maximum flow	1000 l/h (260 GPH)
Max. operating temperature	50 °C (122 °F)
Equipment mounting positions	1 oxygen sensor 1 spray head OUR3



Dimensions Diagram

OOA250	
<b>A</b>	<b>Material and Style</b> PVC flowcell for OOS31 sensor

Order Code

**Accessories for OOA250**

**Cleaning System**

OUR3-1 Spray head, PVC/PVDF with EPDM seal

**Mounting**

50065132 Clamp for plate and wall installation

OUA250	
<b>A</b>	<b>Connection</b> Installation with DN25 screw connection

Order Code

**Accessories for OUA250**

63002207 3/4" PVC socket weld adapter kit

**Cleaning System**

OUR3-1 Spray head, PVC/PVDF with EPDM seal