



701H4AxA0 and 701G4AxA0

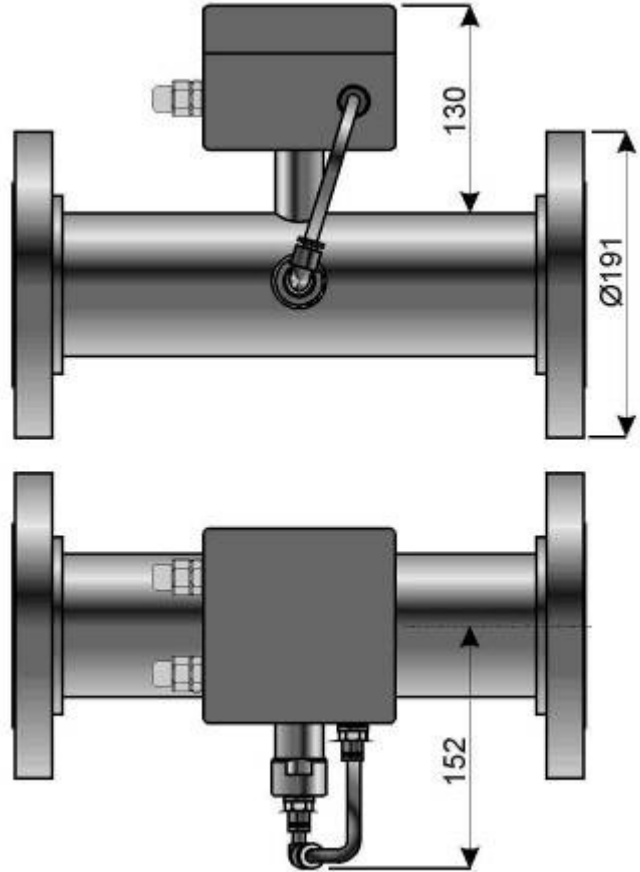
Turbidity measuring cell for direct installation in closed pipelines

Group of cells for the measure of Turbidity designed for direct installation in closed pipelines of various diameters through two flanged connections, ANSI 150. Measuring system is nephelometric, 90 degrees side scattering. Probe body is made of Stainless Steel, AISI 316 L.

Typical applications are in drinking water plants, wastewater treatment plants, petrolchemical industry, pharmaceutical industry.

Advantages

- Sturdy execution, SS AISI 316L
- IP 66 protection degree
- Measuring range 0 to 1000 NTU
- Very good linearity
- Optical system power supply from electronic unit
- Two flanged process connections ANSI 150
- Designed for direct installations in closed pipelines
- Available in the version c/w for chemical cleaning of the optical system
- No maintenance requirements



Operating principle and realization

Measuring system has an optical group that concentrates the light emitted by the light source into the liquid in measure; the light beam is scattered by the solids suspended in this liquid; the photo receiver measures the light scattered at a 90° angle from the light source.

Nephelometric cells Mod.701H and 701G are powered by a highly stabilized source so that emitted light is perfectly constant even with power mains variations of $\pm 15\%$.

The light source is a semiconductor with high light intensity and a peak of emission at 594 nm. The light source is designed to remain constant for years.

The light receiver is CdS type, encapsulated in a steel housing sealed under vacuum; it is sensitive to wavelengths in the range 580 – 600 nm.

Mod. 701H and 701G cells are made of a stainless steel AISI 316L body, 3" diameter (other diameters upon request) and 358 mm length and has two ANSI 150 flanges on both sides (other upon request).

Light source and light receiver are included into two different optical groups and separated from the liquid to be measured by a glass, properly shaped and fitted on the cell internal wall.

The cell Mod.701G includes the chemical cleaning system able to keep optical system surfaces clean using the proper detergent; the cleaning sequence is directly driven by the uP electronic unit. Power supply to the cell is given by electronic unit.

Junction box is IP66 and is certified for hazardous area installation, EEx e II T6.

The cell is available in different executions with improved measuring ranges, temperature and pressure characteristics.

The cable for connection to the electronic unit is supplied with the cell, std length 5 m, max length 10 m.

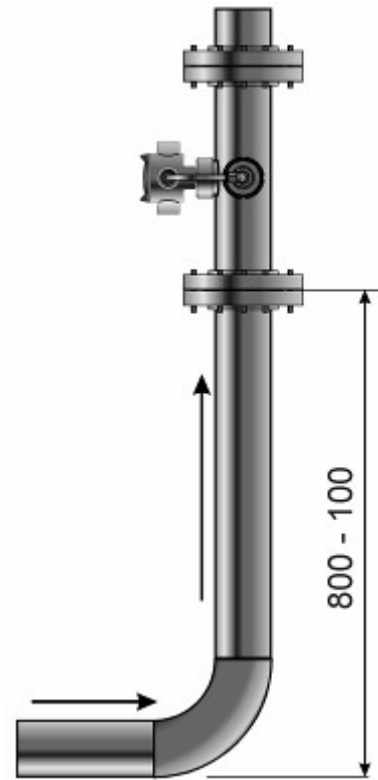
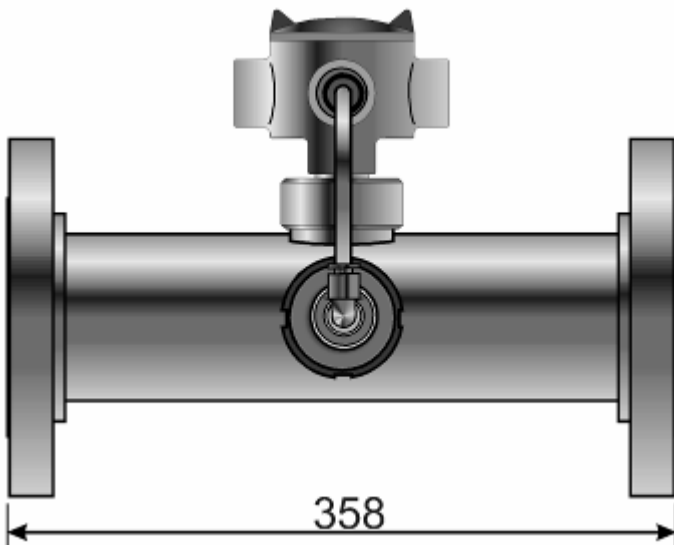
This cell is available with the options indicated in the Order Code Breakdown.

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Installation, Maintenance and Calibration

Install Mod.701H and 701G cells in the pipeline, in a vertical position, with sample flowing upwards in order to assure the cell is always full of liquid. Install the cell at a distance of 800 – 1000 mm from an elbow in order to have a good mixed sample. The turbidity measuring chain is factory calibrated and doesn't need any calibration at start up. The calibration can be verified as follows: to check the zero point clean perfectly the cell, then let a turbidity free water (or liquid) flow inside the cell; fresh distilled water can be used for calibrations of instruments with low measuring ranges (e.g. up to 20 NTU). Check the slope with a formazine solution with a proper turbidity value prepared from the standard 4000 NTU formazine solution.

701H and 701G cells has low maintenance requirements: it is just suggested to perform periodical cleaning of the light receiver. Mod.701G includes the automatic chemical cleaning system; the cleaning sequence is directly driven by the μ P electronic unit.



Technical Specifications

Light receiver:	Cadmium Sulphide (CdS), in steel housing sealed under vacuum
Light source:	Alln GaP semiconductor, with high emission intensity
Measuring system:	Nephelometric, single beam
Measuring range:	0÷100 / 200 / 500 / 1000 NTU specify at order
Receiver power source:	50 mV/pp (from electronic unit)
Light emitter power source:	1,9 Vdc (from electronic unit)
Cable for the connection to electronic unit:	supplied with the cell, 5 m standard length, max.10 m
Max distance from cell to instrument:	10 m
Process connections:	flanged, ANSI 150 or other as described in the order code breakdown
Mounting:	into the pipe, in vertical position, sample flowing upwards
Max. operating temperature:	5 to 100 °C
Storage temperature limits:	-30 to+60 °C
Max. operating pressure:	3 bar
Body material:	Stainless Steel , AISI 316 L
Protection degree:	IP55
Dimensions:	see figure
Weight:	11 kg 3" version

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Order code breakdown

	701	x	x	x	x	x	x
Turbidity measuring cell	701						
Type of cell							
SS AISI 316 cell for direct installation in pipeline (T-Ex)		H					
AISI 316 cell for install. in pipe c/w chemical cleaning syst.(T-Ex-AP-CH)		G					
Special execution		Z					
Construction material							
Stainless steel AISI 316			2				
Special execution			9				
Fixed Code					A		
Flange dimensions							
Reserved						0	
ANSI 150 3"						1	
ANSI 150 4"						2	
ANSI 150 5"						3	
ANSI 150 6"						4	
Special execution						9	
Fixed Code							A
Fixed Code							
							0

Optional accessories

Standard formazine suspension, 4000 NTU

Standard formazine suspension for turbidity calibration, 1000 ml bottle.....Mod.T/701-C

Sensor assembly..... Mod.701/SI-4960

Complete optical group for emitter assemblyMod.701/T-Ex-001

Complete optical group for receiver assemblyMod.701/T-Ex-002

Receiver cylinder assemblyMod.701/T-Ex-003

Emitter cylinder assemblyMod.701/T-Ex-004

Wirings

