



NIEUWKOOP

USER MANUAL



TU5300

TURBIDITY FLOW CELL



TO MEASURE  TO KNOW



1 PRODUCT OVERVIEW

The flow cells TU5300/TU910 and TU920 are designed for turbidity and oxygen probes. The probes that can be used are the following:

TU5000/TU810	Turbidity probe, diameter 40 mm. ISO 7027 Method.
TU820	Turbidity probe, diameter 40 mm. USEPA 1801.1 Method.
TU8525	Turbidity probe, 4-20 mA "current loop" - RS485 - Modbus. ISO 7027 Method
TU8525.5	
TU8555	Turbidity and suspended solids probe, 4-20 mA "current loop" - RS485 -
TU8555.5	Modbus
TU 8225	Turbidity probe, 4-20 mA - RS485 - Modbus. USEPA 1801.1 Method
OD 8525	Optical dissolved oxygen probe, 4-20 mA "current loop" - RS485 - Modbus

The TU5300/TU 910 cell, suitable for low turbidity value, is equipped with a needle valve for the regulation of flow in the cell and to maintain pressure in the liquid in it.

The TU 920 cell, suitable for the high turbidity value, is equipped with fittings for larger pipes to facilitate the passage of the liquid. This cell is not equipped with the needle valve.

These cells are supplied complete with:

- locking collar and adapter for the probe;
- support for wall mounting;
- inlet/outlet tube (only TU/5300TU910).

The terminal part is provided with a removable cap for cleaning and for optional selfcleaning devices/accessories.



2 SPECIFICATIONS

	TU5300/TU 910	TU 920
Sample flow	0.2 ÷ 0.5 l/min	0.2 ÷ 0.5 l/min
Temperature	0 ÷ 50 °C	0 ÷ 50 °C
Sample temperature	0 ÷ 50 °C	0 ÷ 50 °C
Sample pressure	max 6 bar at 20 °C	max 6 bar at 20 °C
Body	PVC	PVC
Seals	NBR	NBR
Shutter	POM	Not available
Retention ring	Locking ring 2 1/4"	Locking ring 2 1/4"
Fittings	1/8" for 4x6 mm tube	1/8" for 6x8 mm tube
Tube	Polythene 4x6 mm, l= 5m	Not provided
Flow regulation	Needle valve	Not available



3 INSTALLATION

3.1 PROBE PREPARATION

Install the included adapter on the probe's body. It consists of a ring of PVC with an internal O-ring to be fixed by pressure on the top of the probe.

Check the O-ring presence.

Insert the probe inside the flowcell and screw the locking ring by hand.

3.2 MEASURING CELL

- 1 Fix the cell holder to the wall with the mounting clip.
- 2 Install the cell horizontally with the fluid outlet fitting upward.

This installation is required to allow the liquid to completely fill the measuring cell.



In case of liquid samples in pressure is necessary to adjust the output stream with the needle valve installed on the cell (TU 910) or with an external valve (TU 920).

In this way the liquid pressure within the cell is maintained avoiding the gases, dissolved in the liquid separating due to the reduction of pressure, create tiny air bubbles able to alter the value of the measurement (in particular turbidity value in the range 0 to 4 NTU).

3.3 SAMPLING LINE

Take the liquid sample from the process using preferably a black tube to prevent the formation of algae inside (supplied by TU5300/TU910).

Minimize the distance from the sampling point to the measuring cell. The response time of the sample turbidity change increases in proportion to the distance.

If the sample is taken from a pipe in the process, it is recommended to provide it from the center of the tube.

Sampling from the bottom could lead sediments to the measuring cell, sampling from the top of the tube could lead air bubbles to the cell. In both cases it would result in corruption of the measurement.

Send the flow of the liquid sample in the measuring cell, wait for its complete filling and stabilization of the measurement.

In cases of low turbidity values the stabilization can last for an hour to obtain the perfect cleanliness of the hydraulic circuit and the elimination of air bubbles.

Regulate the flow of the desired value with the cell's needle valve (TU5300/TU910) or an external valve (TU 920), making sure the flow is not interrupted.

The flow in the cell must be between 0.2 and 0.5 l/min approximately.

The greater the flow, the higher the response speed of the system.



The needle valve of the cell TU 910 regulates the flow in the measuring cell while keeping it pressurized.

Do not completely open the needle valve to avoid liquid leak.

Any operation on the cell or on the probe has to be done after removing the inlet pressure.



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