TMS 561
TURBIDITY MEASURING SYSTEM

WALLACE & TIERNAN® ANALYZERS/CONTROLLERS

The compact TMS 561 measuring system meets all requirements that are demanded of measuring and control instruments in water treatment processes. The powerful and compact electronic system with integral flow-through fitting ensures precise measurements. The on-line measurement of turbidity is specifically required for monitoring of potable water. For an effective functioning of the disinfection level, the limit value of 0.2 NTU has to be kept when using surface waters.

Features

- Choice of infrared or white light measurement
- Isolated signal inputs and outputs
- Flow rate monitoring
- User-adjustable limit contact
- RS 485 interface

Example of application

- Monitoring of potable water acc. to the German Potable Water Act

Turbidity measurement is an analytical method that provides an overview of the amount of particulate matter in a fluid. This measurement is particularly useful for the continuous monitoring of the performance of water treatment plants. Undissolved substances such as inorganic or organic particles, colloids or gas bubbles cause fluid turbidity. If light strikes such particles, the beam of light is reflected or refracted, and a small amount of the light is scattered in the fluid. The intensity of the light scattered is determined by the amount and the properties (size, shape, colour) of these particles. Measurement of the turbidity is based on the evaluation of the intensity of the scattered light. The measurement value depends on the wavelength of the light used and the geometry of the measuring instruments (angle of measurement).

Benefits

- High accuracy, maximum reproducibility, short response time
- Low maintenance and long service period due to automatic ultrasonic cleaning
- User-friendly luminescent display

In order to establish an international standard of turbidity, these parameters are defined in the DIN EN ISO 7027. According to this standard, infrared light of 860 nm wavelength is measured at an angle of 90 °. For turbidity measurements in clear water with a low turbidity level white light having a wavelength of 550 nm can also be used according to DIN. This produces a high intensity of scattered light and in this case is preferable. Measurements based on different wavelengths must not be compared.

Design and functin

The turbidity measuring system TMS 561 is specifically designed for continuous measurement and monitoring of potable and process water. It is a compact measuring system and can be easily integrated in existing treatment processes.

The integral sensor operates on the proven flow-through principle. A sample of the fluid to be analysed is passed over the flow-through sensor through the turbidity meter body. A beam of light is passed through the sample and measured by two sensors arranged at an angle of 90 °. The signal of the resulting scattered light is analysed by the electronic circuit. The TMS 561 is available as 550 nm or 860 nm versions.

A special feature is the integral, automatic ultrasonic cleaning. The instrument proves to be particularly easy to maintain and has long service periods providing stable measurements.

For data transfer with superimposed systems the TMS 561 is equipped with an RS 485 interface as a standard.

TECHNICAL DATA

Selectable units:
NTU (Nephelometric Turbidity Units)
FNU (Formazin Nephelometric Units)

Measuring range:
0 – 100 NTU, max. resolution 0.0001 NTU

Accuracy:
0 – 40 NTU, 2 % of reading or ± 0.02 NTU (whichever is greater) 40 – 100 NTU, 5 % of reading

Response time:
Adjustable from 5 up to 500 seconds

Temperature range of sample water: 1 – 50 °C

Sample pressure: 1 – 4 bar

Back pressure: max. 0.7 bar

Sample flow: 500 ml/min. – 1 l/min

Analogue output: 4 – 20 mA, 600 Ohm, isolated

or interface: RS 485 interface

Alarms:
Two programmable alarms, 120 – 250 V AC
Relay with alternating contact (NO/NC)

Digital input:
Function selectable in menu (e.g. for sample flow monitoring), isolated up to 500 V with respect to earth

Power supply:
90 – 250 V AC, 47 – 63 Hz, 80 VA 24 V DC according EN 61131-2

Ambient temperature:
1 – 50 °C max. 95 % RH (non-condensed)

Measuring principle:
Complying with DIN EN ISO 7027 (April 2000), 90 ° scattered light process, wave length 860 nm (IR)or measurement at very low turbidity levels: Wavelength 550 nm (white light)

Dimensions (W x H x D): 200 x 400 x 200 mm

Weight (including packing): 2.5 kg

EVOQUA WATER TECHNOLOGIES

Auf der Weide 10, 89312 Günzburg, Germany
+49 (8221) 904-0 **www.evoqua.com**

Wallace & Tiernan® Products worldwide

Australia	Canada	China	France	Germany	Singapore	UK	USA
+61 3 8720 6597	+1 905 944 2800	+86 10 57076305	+33 1 41 15 92 20	+49 8221 9040	+65 6830 7165	+44 1732 771777	+1 856 507 9000
info.au@evoqua.com	canadainfo@evoqua.com	sales.cn@evoqua.com	wtfra@evoqua.com	wtger@evoqua.com	sales.sg@evoqua.com	info.uk@evoqua.com	wt.us@evoqua.com