

# TurBiScat 2 Ex

Turbidimeter with Flange Connection



## Applications

- Turbidity measurement in phase separation processes
- Turbidity in oil industry
- Measurement of dispersed oil traces
- Water and particle determination in paraffin

## Advantages

- Two-angle measurement with one measuring head
- Optional colour measurement at 430 nm
- Integrated measured value display and communication modules
- Simple operation through WLAN-capable devices
- Protection class Zone 1, Ex db IIC T3/T4/T5/T6 Ga/Gb
- Complies with Namur NE61
- Measuring range 0 ... 4'000 NTU

- Sealless design

- Easy installation on standard in-line enclosures
- Hygienic design
- Dual beam measurement to compensate for colour and window contamination
- Simple adjustment with calibration unit
- Sensor check function

## Industries

- Chemistry
- Petrochemistry
- Aircraft fuels

## Innovations with tangible benefits



### Convincing Design

Combination of Hastelloy® and sapphire in a compact, sealless design with LED technology:

- Simple installation
- Allows operation in practically all process applications.
- Minimal maintenance and servicing work



### Highest Precision, Large Measuring Span

Highest quality components and precise workmanship result in a high measuring span. An optional integrated colour measurement is available:

- One sensor type for numerous applications
- Precise measurement of lowest up to very high turbidity values
- Colour measurement in the same sensor



### Integrated Operation and Communication

- Display for measured values and status
- Visualisation of measurement data over the last 7 days
- Proximity sensor for operation
- Configuration via WLAN and integrated web server
- Various communication modules



### Monitored Reliability

Formazin is used in the factory to calibrate the TurBiScat 2 Ex after assembly.

For QC purpose and possible recalibration, a secondary solid reference standard is available.

- Precise verification and recalibration without the use of Formazin

The integrated sensor check periodically checks the function of the light receivers and amplifiers:

- Ensures reliable measurement

### Main technical details

Measuring principle:	90° / 25° scattered light (optional colour measurement)
Conformities:	CE, ATEX, IECEx
Wavelength turbidity:	LED 650 nm
Wavelength colour (optional):	LED 430 nm
Measuring span turbidity:	0 ... 4'000 NTU
Resolution:	0.001 NTU
Measuring span colour:	0 ... 200 E/m
Sample temperature:	-20 ... +180 °C, depending on the medium and ambient temperature, optional cooling is required.
Ambient temperature:	-20 ... +60 °C
Protection degree:	IP66

Full details and technical data:



# TurBiScat 2 Ex (FLAGE)

## Technical data

### Sensor

Measuring principle:

90° / 25° scattered light at 650 nm (optional colour measurement at 430 nm)

Conformities:

CE, ATEX, IECEx

Temperature class:

Ex-protection type/  
Ex db IIC T3/T4/T5/T6 Ga/  
Gb, temperature class depending on medium temperature:

Medium temperature	Temperature class
-20 ... +80 °C	T6
-20 ... +95 °C	T5
-20 ... +130 °C	T4
-20 ... +180 °C	T3

Wavelength turbidity:

LED 650 nm

Wavelength colour (optional):

LED 430 nm

Measuring span turbidity:

0 ... 4'000 NTU

Measuring ranges:

8, freely programmable

Resolution:

0.001 NTU

Measuring span colour:

0 ... 200 E/m

Installation:

In-line housing

Material sensor head:

Hastelloy® C-22

Material housing:

Stainless Steel 1.4462/  
1.4404/Borosilicate glass

Windows:

Sapphire

Sample temperature:

-20 ... +180 °C, depending on the medium and

ambient temperature, optional cooling is required.

Max. pressure:

2 MPa (20 bar)

Ambient temperature:

-20 ... +60 °C

Ambient humidity:

0 ... 100 % rel. humidity

Operation voltage:

24 VDC ± 10 %

Protection degree:

IP66

### Operation

Display:

Colour graphic

Operation:

Proximity sensor or mobile device directly

WLAN module:

WLAN according to IEEE 802.11 b/g/n

Standard Interface (IO):

6 configurable inputs and outputs

- Max. 2 digital inputs: 5 ... 28 VDC

- Max. 4 digital outputs: High-Side Switch max. 20 mA

- Max. 4 current outputs: 0/4 ... 20 mA, max. 700 Ω

Modbus RTU

Power over Ethernet:

Ethernet LAN connection with Power over Ethernet (PoE)

- Ethernet according to

10/100BaseT

- POE according to 802.3af, class 0

Profibus DP-V1 Slave

EG\_Profibus:

EG\_Profinet:

Profinet IO Device, Conformance Class B

External control unit:

Optional (without ex-protection)

