

# TurBiScat Ex PM 40

Turbiditymeter



## Applications

- Filtration monitoring and control
- Turbidity in whisky (cold filtration)

## 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
- Measuring range 0 ... 4'000 NTU / 0 ... 1000 EBC
- 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

- Beverage (Spirits as whisky, cognac, ...)
- For other industries see TurBiScat Ex PM 40 with flange connection

## 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 Ex PM 40 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 / 0 ... 1000 EBC
Resolution:	0.001 NTU / 0.001 EBC
Measuring span colour:	0 ... 200 E/m / 0 ... 50 EBC
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:



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## Technical data

### Sensor

Measuring principle:

90° / 25° scattered light at  
650 nm (optional colour  
measurement at 430 nm)  
CE, ATEX, IECEx

Conformities:

Ex-protection type/

Temperature class:

Ex db IIC T3/T4/T5/T6 Ga/  
Gb, temperature class  
depending on med

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 / 0 ... 1000 EBC

Resolution:

0.001 NTU / 0.001 EBC

Measuring span colour:

0 ... 200 E/m / 0 ... 50 EBC

Installation:

In-line housing VARINLINE®  
or compatible

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)

VARINLINE housing:

observe specifications

Ambient temperature:

-20 ... +60 °C

Ambient humidity:

0 ... 100 % rel. humidity

Operating 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

EG\_Profibus:

Profibus DP-V1 Slave

EG\_Profinet:

Profinet IO Device, Conformance Class B

External control unit:

Optional (without ex-protection)

