

# DualScat Ex

## In-line turbidimeter in Ex-version



### Applications

- Measuring turbidity in processes
- Filtration monitoring and controlling
- Turbidity in produced water
- Measuring of dispersed oil traces
- Determination of water and solids concentration in Kerosene
- Turbidity of Whisky (cold filtration)

### Industries

- Chemical-/Petrochemical industry
- Oil production
- Aviation fuels
- Spirits

### Advantages

- Single- or dual-angle measurement with one sensor head
- Protection class zone 0, Ex d IIC T3/T4/T5/T6 Ga/Gb
- Measuring span 0 .. 2'000 NTU
- Easy installation using standard in-line housing
- Hygienic design
- Dual-beam measurement for colour compensation and window fouling
- Easy adjustment with calibration unit
- Various housing, window and sealing materials available
- Sensor check function

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## Innovations with tangible benefits



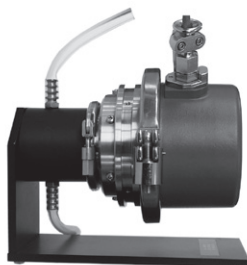
### Turbidity measurement in hazardous areas

A large number of applications for turbidity measurement necessitate an ex-proof version. Examples can be found in monitoring separation processes in the chemical and petrochemical industry as well as in monitoring the filtration of produced water in the oil production. The DualScat Ex offers flexible solutions. A selection of seals, windows and the optional design of the sensor head in Hastelloy allow the assembly of the right system configuration for nearly all applications.



### Reliable measurement

The DualScat Ex makes use of a dual-beam measurement method which has been tried and tested for years. Transmitted light, 90° scattered light and (optional) 25° forward scattered light are measured simultaneously with an energy-saving LED light source. During calculation of the measured values, colour-related absorption in the medium, window fouling and light source fluctuations are automatically compensated.



### Monitored reliability

The DualScat Ex deploys a sensor check function that checks the readings' plausibility at fixed intervals or upon manual initiation.

For subsequent checking of the factory calibration, a calibration unit with a solid reference is available that eliminates the need to handle Formazine.



### Continuous ex-protection

The DualScat Ex is operated either with the SIREL SMD control unit in a safe zone or directly in the Ex area with the SIREL Ex control unit with full range of function.

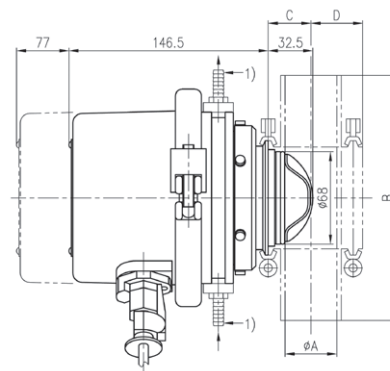
## Technical data

### Sensor:

Measuring principle: 90°/25° scattered light  
Wave length: LED 650 nm  
Measuring span: 0 .. 2000 NTU  
Measuring ranges: 8, freely configurable  
Installation: In-line housing Varivent® or compatible  
Sensor head material: Stainless steel 1.4301/316L, optional Hastelloy C-22  
Windows: Borosilicate glass or sapphire  
Seals: NBR, EPDM, FPM or FFPM  
Housing: Aluminium cast housing (GK-ALSi 13/Silavont 15), 2-component synthetic resin finish  
max. 80 °C / max. 120 °C/1 h  
max. 20 bar  
Sample temperature: -20 .. +50 °C  
Pressure: At 80 °C medium temperature at an ambient temperature of 50 °C.  
Ambient temperature: 20 l/h  
Cooling (optional): 0 .. 100% rel. hum.

Flow rate: IP65  
Ambient humidity: Ex d IIC T3/T4/T5/T6 Ga/Gb  
Protection type: T6 (-20 .. 80 °C medium temperature)  
Ex-proof type: 24 VDC  
Temperature class: (supplied by the control unit)  
Operating voltage: 25 W  
Power input max: ca. 160 mm x Ø 200 mm  
Dimensions: Weight: ca. 6.4 kg

Control unit  
**SIREL SMD / SIREL Ex:**  
Power supply: 85 .. 264 V, 47 .. 63 Hz or 24 VDC  
Power input: 25 W  
Display: LC display with plain text information  
Output: 2 x 0/4 .. 20 mA, max. 600 Ω  
max. 24V with electrical isolation, max. 50V against earth.  
2 x relay contacts  
max. 250 VAC, max. 4A  
Digital in- and outputs, max. 5V  
Dimensions: SIREL SMD: 200 x 157 x 96 mm  
SIREL Ex: 320 x 645 x 203 mm  
Weight: SIREL SMD: approx. 1.5 kg  
SIREL Ex: approx. 25 kg  
Protection type: SIREL SMD: IP65  
SIREL Ex: IP66



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