

## Typ STS 06

modular @ analyse

### Turbidimeter

#### Basic Features

- ▶ Hygienic turbidity measurement for the food and beverage industry
- ▶ Large measuring range with factory calibration 0...6AU
- ▶ Measurements in absorption / AU or turbidity units (AU, EBC, FAU, TEF, mg/l %, NTU\*) or customised units (freely adjustable with up to 30 points)
- ▶ Simple recalibration option using reference filter for OPL 5mm
- ▶ Compact design with integrated electronics and backlit display for easy parameterisation
- ▶ IO-Link
- ▶ Integrated digital and analogue output
- ▶ LED light source, LED service life > 100.000 Hours
- ▶ Resistant sapphire windows CIP/SIP-suitable
- ▶ Hygienic design, polymer-free sealing system
- ▶ Process monitoring and documentation



#### Optical path length (OPL)



#### Technical features

- ▶ 180° Transmitted light turbidity measurement \*
- ▶ Measuring range depending on the optical path length (OPL) up to 0...6AU, 0...6600 EBC, 0...26400 FAU, 0...26400 NTU\*\*
- ▶ Light source LED
- ▶ Wavelength 880 nm (NIR)
- ▶ Material Stainless steel 1.4435 (316L)
- ▶ Surface quality electropolished <math><0.37 \mu\text{m Ra}</math>
- ▶ Window sapphire
- ▶ Supply voltage 18...30 VDC
- ▶ Output signal 4...20mA; IO-Link
- ▶ Switching output PNP 24 V, Normally closed Normally open contact,
- ▶ Cable connection M12 plug, 5-pin
- ▶ Process connection G1/2" elastomer-free hygienic sealing system
- ▶ Ambient temperature -20...70°C
- ▶ Process temperature 0...90 °C, 141 °C Max. for 2 hours. (SIP - Cycle)
- ▶ Process pressure 16 bar max. (230 psig) at 60 °C
- ▶ Response time <math><200\text{ms}</math>

#### Preferred areas of application are:

STS 06 is a turbidimeter for inline measurement of the optical density of liquids in order to monitor continuous process results or to reliably determine changes.

Particularly suitable for:

- Separator control
- Phase separation with quick product change
- Filter monitoring
- Concentration measurements
- Yeast dosage
- Yeast management
- Milk reception
- Monitoring lorry tank cleaning station
- Monitoring the contamination of cleaning media, e.g. in the CIP return line
- Flushing milk applications: Wastewater management, Product return
- Reduction of wastewater costs
- Quality monitoring
- and much more.

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### Technical data

Supply voltage: 18...30 VDC  
 Power consumption: ca. 80 mA (bei 30 VDC und, Analogue output = 22,5 mA)  
 Power consumption: max. 2,4 W  
 Analogue output: 4-20 mA  
 Current limitation: min. 3,5 mA  
 max. 22,5 mA, adjustable  
 Tightening torque: 10 - 20 Nm  
 Accuracy of  $\pm 1\%$  of the measured value  
 Lowest resolution 1 EBC / 4 FAU

Burden:  $\leq (U_b - 4V) / 20mA$  ( $\leq 700 \text{ Ohm}@U_b=18V$ ,  $\leq 1000 \text{ Ohm}@U_b=24V$ ,  $\leq 1300 \text{ Ohm}@U_b=30V$ )  
 Interface: IO-Link (COM2, 38,4 kBaud)  
 Switching output: Semiconductor switching, PNP-switching (no/nc)  
 Switching capacity: max. 150mA, thermally protected against overload,  
 Cable connection: M12 plug 5-pole  
 Protection class: IP 69K  
 Reproducibility of  $\leq 1\%$  of the final value

### Measuring ranges

The following dependencies exist in relation to formazin:

1FNU = 1FAU = 1 NTU = 0,25 EBC = 2,05 mg/l

**The maximum measuring range depends on the optical path length:**

0...6 AU, 0...6600 EBC / 0...26400 FAU / 0...26400 TEF

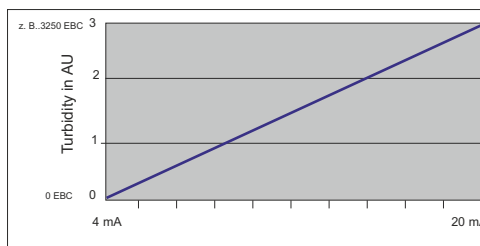
0...26400 NTU \*\* / 0...54120 mg/l

Measuring principle 180°C Transmitted light turbidity measurement\*

Recommended for measurements > 10EBC/40FAU

Lowest resolution 1EBC/4FAU

### Typical clouding



### max. measuring range

Unit	Optical path length		
	5 mm	10 mm	20 mm
AU	0...6	0...6	0...6
FAU	26.400	13.200	6.600
EBC	0...6600	0...3300	0...1650

### Parameterisation+ Documentation

The settings are made either using the integrated display or the PC parameterisation or via IO-link.

Both the optional SMW-PA-M12 PC-USB interface and the ST-M12-mini USB programming adapter are required for parameterisation using a PC.



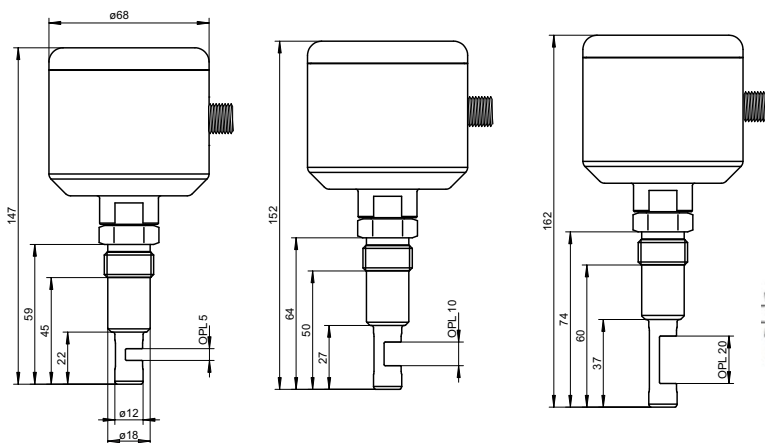
#### SMW-PA-M12

PC-USB interface incl. software for readout and parameterisation

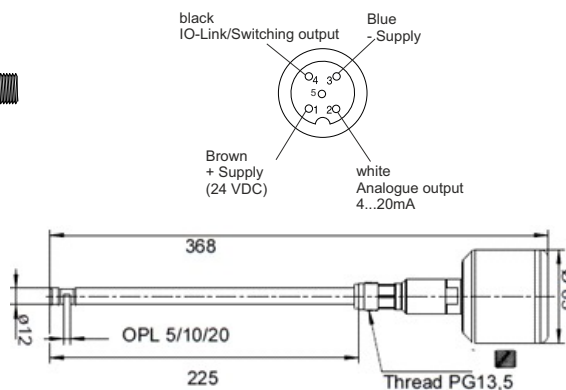
#### SMW-PA-M12

PC-USB interface incl. software for readout and parameterisation

### Dimensioned drawing



### Pin assignment



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\* DIN/EN27027(ISO7027)

\*\* Neophelometric Turbidity Unit; Messphysik mit 90° Streulichtmessung, Kalibrierwert bezieht sich auf Formazin. Bei anderen Medien kann daher das Messergebnis abweichen.

# Turbidimeter

## Order code

<b>STS06-</b> "HygienicConnect" (metallic sealing) Standard				
<b>STS06-R</b> Probe 225mm PG13,5 for retractable fitting				
<b>Optical Pathlength</b>				
Optical path length 5 mm (OPL) / max. Measur. Range 0...6600	005			
Optical path length 10 mm (OPL) / max. Measur. Range 0...3300	010			
Optical path length 20 mm (OPL) / max. Measur. Range 0...1650	020			
<b>Measuring range configuration</b>				
Preset measuring range 0...3300 EBC / or 1650 EBC (depending on OPL)		1		
Special design on request		K		
<b>Interface / parameterisation</b>				
4...20 mA / M12 5-pole			A	
Special design on request			K	
<b>Display / Control unit</b>				
with integrated display				1
Without display				0
Special design on request				X

### Examples of modular process connections



See process connection technology data sheet

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### Accessories for OPL 5mm : Reference filter set for recalibration with traceability verification

