

## Type STS 13

**modular @ analyse**

### Turbidity Measuring Unit

#### Basic Features

- ▶ Safe phase separation
- ▶ Faster product changes
- ▶ Reduced wastewater costs
- ▶ Filter monitoring
- ▶ Color-independent concentration measurement
- ▶ Extended measuring range
- ▶ Calibration ex works 0...6AU
- ▶ Can be recalibrated by means of absorption filter
- ▶ Measurements in absorbance /AU or turbidity units (EBC, FAU, TEF, mg/l) or customer-specific units (freely adjustable)
- ▶ Additional customer-specific calibration with up to 6 points
- ▶ Compact design with integrated electronics and display for parameterization
- ▶ Resistant sapphire lens  
CIP/SIP-compatible
- ▶ Hygienic design, polymer-free sealing-system
- ▶ Color graphic display
- ▶ LED light source LED life > 100.000 hours
- ▶ Integrated digital and analog output
- ▶ Simple parameterization

#### Technical Features

- ▶ 180° Transmitted light turbidity measurement\*
- ▶ Measuring range depends on the optical path length (OPL) up to 0 ... 6AU, 0 ... 6600 EBC, 0 ... 26400 FAU
- ▶ 3 different path lengths with different calibration options
- ▶ Light source LED
- ▶ Wavelength 880 nm
- ▶ Optical pathlength 5, 10, und 20 mm
- ▶ Material stainless steel 1.4435 (316L)
- ▶ Surface quality electropolished <0,37 µm Ra
- ▶ Sapphire optic
- ▶ Supply voltage 12...30 VDC
- ▶ Output current 4...20mA
- ▶ Output PNP 24 V, NC / NO parameterizable / max. 150 mA
- ▶ Electrical connection M12 plug 5 - pole
- ▶ Process connection G1/2" elastomer-free sealing system
- ▶ Ambient temperature -20...70°C
- ▶ Process temperature 0...90 °C, 141 °C maximum for 2 hours (SIP - cycle)
- ▶ Process pressure max. 16 bar (230 psig) at 60 °C



#### Optical path length (OPL)



#### Favoured Fields of applications are:

STS 13 is a sensor used to monitor the optical density of liquids in order to monitor process results or view changes safely.

Especially suitable for separator control, phase separation, filter monitoring and concentration measurements.

#### ATTENTION!

At lower deviation of dew points water condensation is possible, that can destroy the sensor. At stress with change of temperatures, e. G. a cold water jet on the hot sensor, it can come to absorption of fluids in to the sensor. (Requirements cf. DIN EN 60068-2-14)  
At applications with dew point, temperature shock or thermal shock stresses we recommend to put in the enclosed silikagel-bag into the connecting head.  
The tightness classification after IP68 does not mean that these parts are suitable for applications with lower deviation of dew point or temperature shock. (DIN 60068-2-14)

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### Technical facts

Supply voltage:	12...30 VDC	Burden: $\leq (U_b - 4V)/20mA$ (max. 400 ohms at 12V, 1000 ohms at 24V, 1300 ohms at 30V)
Current consumption:	approx. 80 mA (bei 30 VDC a d, analog output = 22,5 mA)	Switching output: Semiconductor switching, PNP sw.
Power consumption:	max. 2,4 W	Switching capacity: max. 150mA, thermally protected against overload
Analog output:	4-20 mA	Protection class: IP69K
Current limit:	min. 3,5 mA max. 22,5 mA, adjustable	
Tightening torque:	10 - 20 Nm	

### Measuring range

In relation to Formazin, there are the following dependencies:

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

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

**Version "B"**

OPL 5mm 0...3,5 AU, 0...7OD, 0...15400 FAU, 0...15400 TEF, 0...3850 EBC, 0...31570 mg/l

**Version „C“**

OPL 5mm 0...6 AU, 0...12OD, 0...26400 FAU, 0...26400 TEF, 0...6600 EBC, 0...54120 mg/l

Measuring principle:

Recommended for measurements > 10EBC/40FAU

Smallest resolution 1EBC/4FAU

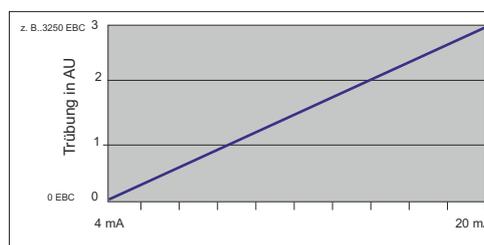
max. measuring range version B:

Unit	Optical path length		
	5 mm	10 mm	20 mm
AU	0...3,5	0...3,5	0...3,5
OD	0...7	0...3,5	0...1,75
EBC	0...3850	0...1920	0...960

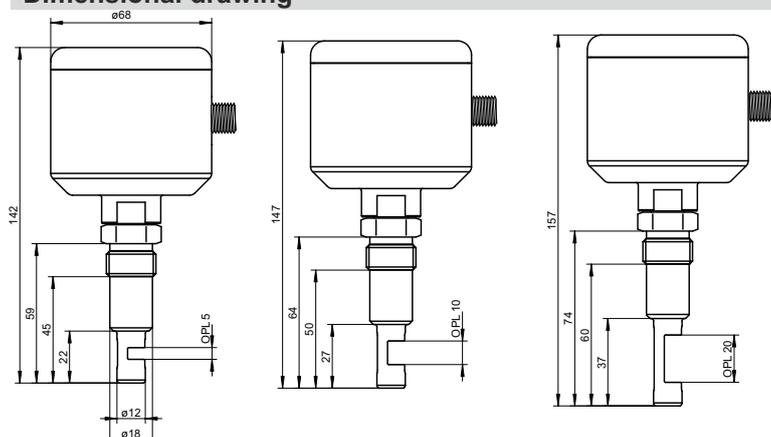
max. measuring range version C:

Unit	Optical path length		
	5 mm	10 mm	20 mm
AU	0...6	0...6	0...6
OD	0...12	0...6	0...3
EBC	0...6600	0...3300	0...1650

### Typical turbidities



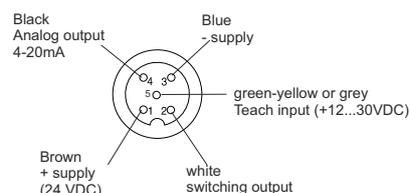
### Dimensional drawing



### Parameterization

The parameters are set via the touch display

### Pin assignment



## Order code

**STS13-**  
 "HygienicConnect" (metallic sealing)  
 Standard

**STS13-E-**  
 "HEC" (elastomer sealing)

Optical path length				
Optical path length 5 mm (OPL)	005			
Optical path length 10 mm (OPL)	010			
Optical path length 20 mm (OPL)	020			
Configuration measuring range				
Measuring range max. 0...3,5 AU / 0...3850 EBC / 0...7 OD (depending on OPL)		B		
Measuring range max. 0...6 AU / 0...6600 EBC / 0...12 OD (depending on OPL)		C		
Special design on request		K		
Interface / parameterization				
4...20 mA / M12 5-polig			A	
Special design on request			K	
Display / control unit				
with integrated display				1
without display				0
Special design on request				X