

Reduce product loss with the modular, front flush turbidity sensor ITM-51

Relative turbidity meter ITM-51

Benefits in the production process

ITM-51 enables active automated phase separation instead of passive time or volume control. That saves time and cost in the transition of milk / water resp. of beer / yeast, on the base of inline analysis of the turbidity and active switching of the process.

- **Minimization of resource loss and thus loss of value**
- The filling of tanks with **wrong medium is avoided**
- **Less cost for waste water treatment**
- **Less need for additional laboratory analyses**
- **Best possible concentration** and constantly high quality of the product such as milk / cream resp. beer / wort
- **Efficient separator control** in breweries for uniform quality of infiltered beer

Benefits in the CIP-SIP-Process

Active automated and temperature-independent phase separation in the return of product / acid / caustic / water

- Reliable **control of the degree of pollution** of the agents
- Optimal **multiple use** of the cleaning agents
- **Cost minimizing** due to less waste disposal
- **Reduction of the cleaning process time** and thus also of the water consumption: active switching after reaching the desired degree of purity by inline turbidity analysis, and not after passive, fixed timing

Practical experience / Applications

- Reduction of product loss from 5% to 3%, and 15% cost reduction due to less waste water treatment
- Less laboratory analyses necessary, thus less personnel / time requirement and faster reaction to deviations
- 3.000 l less water consumption in each CIP process
- ITM-51 prevents reliably the contamination of a glycol cooler with milk products, a fact which before repeatedly disturbed the cooling process and caused a complete cleaning
- 80% more consistency in the quality of the end product due to more precise separation of cream, mild and low-fat milk
- Constant turbidity level for Craft Beer without filtering thanks to precise separator control in a brewery



Technical specification at a glance

- **Compact front flush turbidity sensor** with backscatter principle, in modular set-up
- **Flex-Hybrid-Technology** with digital + analog interface (IO-Link + 4...20 mA)
- **Increased application range** (Process temperature up to 130°C, pressure -1...20 bar)
- Independent to reflections at **small diameters or electro-polished surfaces**
- **No color dependency** (wave length 860 nm)
- High **reproducibility**: ≤ 1% of full scale
- **Selectable measuring range** (%TU, NTU, EBC)
- **Extended sensitivity**: 200...300.000 NTU equivalent
- **Remote version with Smart Replace Design**: Easy replacement of each component just by connecting

Modular Sensor platform with IO-Link and 4...20 mA

The **Flex-Hybrid Technology** with **IO-Link and 4...20 mA** combines the best of both worlds: Data from the sensor can be transmitted digitally, analogously or in parallel. The bidirectional communication enables status control and preventive maintenance at any time to avoid production downtimes. Installation and commissioning are time- and cost-saving thanks to plug-and-play technology, and sensor replacement is easier than ever before thanks to "Smart Replace Design" with automatic detection, configuration and parameterization.

Order code	
ITM-51	relative turbidity meter
ITM-51R	relative turbidity meter, remote version, remote cable must be ordered separately
Process connection (Ⓐ: 3-A approval, Ⓔ: EHEDG approval)	
S0L	CLEANadapt G1/2", extended sensor stem
S01	CLEANadapt G1/2"
TC1	Tri-Clamp 1½" Ⓐ Ⓔ
TC2	Tri-Clamp 2" Ⓐ Ⓔ
T25	Tri-Clamp 2½" Ⓐ Ⓔ
TC3	Tri-Clamp 3" Ⓐ Ⓔ
TL1	Tri-Clamp 1½", extended sensor stem Ⓐ Ⓔ
TL2	Tri-Clamp 2", extended sensor stem Ⓐ Ⓔ
TL5	Tri-Clamp 2½", extended sensor stem Ⓐ Ⓔ
TL3	Tri-Clamp 3", extended sensor stem Ⓐ Ⓔ
V25	Varivent type F, DN 25 Ⓔ
V40	Varivent type N, DN 40/50 Ⓔ
Enclosure orientation (not selectable for ITM-51R)	
H	horizontal
V	vertical
Signal module	
I42	IO-Link and 1x 4...20 mA turbidity
I52	IO-Link and 1x 4...20 mA turbidity, 1x switching out
I53	IO-Link and 1x 4...20 mA turbidity, 1x switching out, external range switching
Electrical connection	
P	cable gland M16x1.5
D	2x cable gland M16x1.5
M	1x M12 connector, 4 pin output/power supply
N	2x M12 connector, 4 pin output, 5 pin input/power supply
A	2x M12 connector, 4 pin output/power supply, 5 pin output/input
C	1x M12 connector, 5 pin analog output and IO-Link
R	2x M12 connector, 4 pin analog and switching output, 3 pin IO-Link and input
Interface/Display	
X	without Interface
S	Simple User Interface with small display
L	Large User Interface with display
Enclosure	
X	opaque plastic cap
P	clear plastic cap
M	without control window
W	with control window
Configuration	
X	factory setting
S	special customer setting
ITM-51 /	S01 / V / I53 / D / L / P / X
ITM-51R /	S01 / I42 / D / L / P / X