

# More process reliability in phase transition

## Inductive Conductivity Meter ILM-4

### Benefits in production and CIP / SIP

ILM-4 with IO-Link and 4...20 mA enables an active, automated and temperature compensated phase separation. This applies both to different media in production processes and to the CIP / SIP return flow of acid / caustic / water.

These media can be drained or returned to the storage tanks in the highest possible grade by means of precise inline conductivity measurement. The multiple use of the cleaning media ensures in addition maximum cost efficiency and environmental protection.

### Benefits in cleaning agents' concentration control

For an optimal and reproducible cleaning result, each cleaning agent must be concentrated to the specified value by re-dosing with concentrate and fresh water. This is ensured by the highly precise measurement of conductivity with the ILM-4.

### Advantages of the ILM-4 sensor

- **Extremely short response time (1.2 s)** for maximum efficiency
- Ready for IoT: **digital IO-Link interface and analog 4...20 mA** data transmission in parallel
- **Precise phase separation** of different media means **less product loss** and cost minimization
- **Optimum multiple use** of the cleaning chemicals due to correct return to the respective tanks
- **Minimization of cleaning time and water consumption:** inline conductivity analysis for active switching after reaching the desired value and not after a passive, fixed time
- **Precise concentration control of the cleaning agents**
- **Reliable product monitoring / quality assurance**
- **Very favorable price-performance ratio**

### Onsite experience / application

- **CIP cleaning for milk trucks: Minimum losses** in cleaning agents and **maximum recyclability** thanks to active, precise switching
- **CIP process in a fully automated dairy:** In combination with the ITM-51 turbidity sensor, almost **all media** in the **production and CIP/SIP processes** can be precisely distinguished and separated.
- **Breweries and beverage producers: Maximum product yield** through precise phase separation



### Technical data at a glance

- **Extremely compact & robust** conductivity sensor
- **Hybrid technology** with **digital + analog** interface (**IO-Link + 4...20 mA**): from simple data transfer to intelligent communication
- **Fast sensor response time: approx. 1.2 s**
- **Modular design:** configurable from the **low-priced basic version** to the **high-end model**
- **Product-contacting sensor head** made of **100 % PEEK** prevents **thermal stress cracking**
- **Measuring range freely selectable:** 1...999 mS/cm
- **High reproducibility** of  $\leq 1 \%$  of measured value
- **Compensated measurement up to 130 °C (266 °F)**, CIP/SIP cleaning up to **150 °C (302 °F) / 60 min.**
- **Smart Replace Design** with **Remote version** for hassle free replacement of all components

Order code										
<b>ILM-4</b>	Inductive conductivity sensor									
<b>ILM-4R</b>	Inductive conductivity sensor - remote version									
	<b>Submersion length of toroid</b>									
	<b>L20</b>	20 mm								
	<b>L50</b>	50 mm								
	<b>Process connection</b>									
	(Ⓐ: 3-A conform, Ⓔ: EHEDG approval (only with CLEANadapt adapter with leakage hole))									
	<b>S01</b>	CLEANadapt G1" Ⓐ Ⓔ	<b>TC1</b>	Tri-Clamp 1½" Ⓐ						
	<b>V25</b>	Varivent type F, DN 25 Ⓐ	<b>TC2</b>	Tri-Clamp 2" Ⓐ						
	<b>V40</b>	Varivent type N, DN 40/50 Ⓐ	<b>T25</b>	Tri-Clamp 2½" Ⓐ						
			<b>TC3</b>	Tri-Clamp 3" Ⓐ						
	<b>Head orientation (not selectable for ILM-4R)</b>									
	<b>H</b>	Horizontal head orientation								
	<b>V</b>	Vertical head orientation								
	<b>Signal module</b>									
	<b>I42</b>	IO-Link and 1x 4...20 mA conductivity								
	<b>I62</b>	IO-Link and 2x 4...20 mA conductivity/temperature selectable								
	<b>I63</b>	IO-Link and 2x 4...20 mA conductivity/temperature selectable, external range switching								
	<b>Electrical connection</b>									
	<b>P</b>	Cable gland M16x1.5								
	<b>D</b>	2x cable gland M16x1.5								
	<b>M</b>	1x M12 connector, 4 pin output/power supply								
	<b>N</b>	2x M12 connector, 4 pin output, 5 pin input/power supply								
	<b>A</b>	2x M12 connector, 4 pin output/power supply, 5 pin output/input								
	<b>C</b>	1x M12 connector, 5 pin analog output and IO-Link								
	<b>R</b>	2x M12 connector, 4 pin analog and switching output, 3 pin IO-Link and input								
	<b>Interface/Display</b>									
	<b>X</b>	Without								
	<b>S</b>	Simple User Interface with small display (not for ILM-4R)								
	<b>L</b>	Large User Interface with big display								
	<b>Enclosure</b>									
	<b>X</b>	Plastic cap without sight glass								
	<b>P</b>	Plastic cap with sight glass								
	<b>M</b>	Stainless steel cap without sight glass								
	<b>W</b>	Stainless steel cap with sight glass								
	<b>Configuration</b>									
	<b>X</b>	Default factory settings								
	<b>S</b>	Special customer settings								
	<b>Remote transmitter interconnect cable (PVC, 8 pin, M12 plug)</b>									
	<b>05P</b>	Length 5 m, plastic coupling								
	<b>10P</b>	Length 10 m, plastic coupling								
	<b>20P</b>	Length 20 m, plastic coupling								
	<b>XXP</b>	Special length, plastic coupling, 30 m max, steps of 1 m								
	<b>05S</b>	Length 5 m, stainless steel coupling								
	<b>10S</b>	Length 10 m, stainless steel coupling								
	<b>20S</b>	Length 20 m, stainless steel coupling								
	<b>XXS</b>	Special length, stainless steel coupling, 30 m max, steps of 1 m								
	<b>000</b>	Without remote cable								
<b>ILM-4 /</b>	<b>L20 /</b>	<b>S01 /</b>	<b>V /</b>	<b>I63 /</b>	<b>D /</b>	<b>S /</b>	<b>P /</b>	<b>X</b>		
<b>ILM-4R /</b>	<b>L20 /</b>	<b>S01 /</b>		<b>I63 /</b>	<b>D /</b>	<b>L /</b>	<b>P /</b>	<b>X /</b>	<b>05P</b>	