



LMIT 09

Conductivity/Temperature Transmitter

Process security, monitoring and documentation

- ▲ ONE unit for CIP applications, concentration monitoring and make-up
- ▲ Inductive, maintenance-free measurement principle
- ▲ Hygienically designed measuring cell body in one cast
- ▲ USB port for easy software updating and simple addition of product concentration graphs

ECOLAB®
Everywhere It Matters.

LMIT 09 - process security due to innovative measuring technology

In order to fulfill the increasing process security and quality management requirements, measuring equipment must be highly reliable. Optimum quality of end products can only be achieved by perfect process control which requires an appropriate measuring technique.

The quality of a fluid is basically determined by measurement of its specific conductivity. Examples of this quality determination method are:

- ▲ Phase separation during CIP applications
- ▲ Concentration monitoring for detergent and disinfectant solutions
- ▲ Monitoring of water quality
- ▲ Quality control for liquid products
- ▲ Process control by online measuring
- ▲ Contamination monitoring of food

Operating without electrodes, the inductive conductivity/temperature transmitter LMIT 09 offers fully developed technical features:

- ▲ Established technology based on more than forty years of practical experience
- ▲ Measurement value logging covering five decades of measurement ranges from 0-200 $\mu\text{S}/\text{cm}$ to 0-2 S/cm with an accuracy of $\pm 1 \mu\text{S}/\text{cm}$ at inductive conductivity measurement
- ▲ Stored concentration and temperature graphs
- ▲ Concentration values as weight percentages or conductivity values with temperature measurement results
- ▲ Concentration measurement with product name
- ▲ Easy multilingual menu-driven operation

Application range of conductivity measuring

	Dairy industry	<ul style="list-style-type: none"> ▲ CIP facilities <ul style="list-style-type: none"> ■ Concentration control ■ Phase separation ▲ Bottle washing facilities <ul style="list-style-type: none"> ■ Concentration control ■ Rinse zone monitoring 	<ul style="list-style-type: none"> ▲ Salt bath concentration measurement ▲ Cooling water monitoring
	Brewing and beverage industry	<ul style="list-style-type: none"> ▲ CIP facilities <ul style="list-style-type: none"> ■ Concentration control ■ Phase separation ▲ Bottle washing facilities <ul style="list-style-type: none"> ■ Concentration control ■ Rinse zone monitoring 	<ul style="list-style-type: none"> ▲ Keg/barrel and container cleaning facilities <ul style="list-style-type: none"> ■ Concentration control ▲ Spring water monitoring ▲ Cooling water monitoring
	Meat and fish processing	<ul style="list-style-type: none"> ▲ CIP facilities <ul style="list-style-type: none"> ■ Concentration control ■ Phase separation 	<ul style="list-style-type: none"> ▲ Box/crate washing facilities <ul style="list-style-type: none"> ■ Concentration control
	Bio-technology, pharmaceutical and cosmetics industry	<ul style="list-style-type: none"> ▲ CIP facilities <ul style="list-style-type: none"> ■ Concentration control ■ Phase separation ■ Final rinse 	
	Industrial technology	<ul style="list-style-type: none"> ▲ Surface treatment <ul style="list-style-type: none"> ■ Galvanic industry ■ Steel industry ■ Parts washers 	<ul style="list-style-type: none"> ▲ Print board production ▲ Water treatment

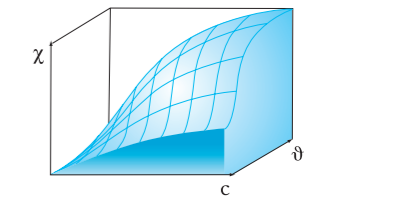
Detailed product data of the cleaning agents/disinfectants and standard basic/acid products is stored and thus allows a direct report of the product concentrations on the display. At the same time, nonlinearities in the product curves and of the temperature dependencies are automatically compensated.

The LMIT 09 conductivity/temperature transmitter not only stores the concentration graphs and temperature compensation factors of the common detergents and disinfectants but also allows programming of corresponding data for other conductive products.

Perfection due to inductive measurement and intelligent technology

For an exact determination of substance concentrations, e.g. for detergents and disinfectants, it is essential to take the actual temperature into account. It is measured by means of the Pt100 temperature sensor which shows optimal flow characteristics and a short response time ($T_{90} < 5 \text{ s}$).

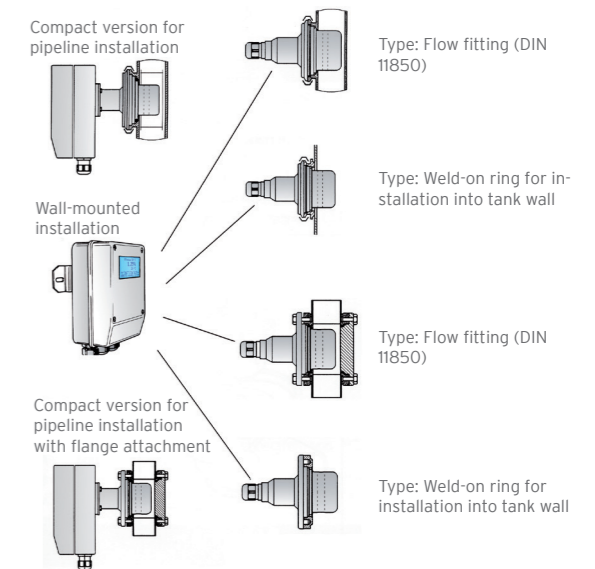
All captured data are corrected with respect to the stored stereoscopic concentration graphs and temperature compensation factors. This results in an accurate and quick determination of the temperature and concentration of the conductive fluids.



Stereoscopic concentration graphs

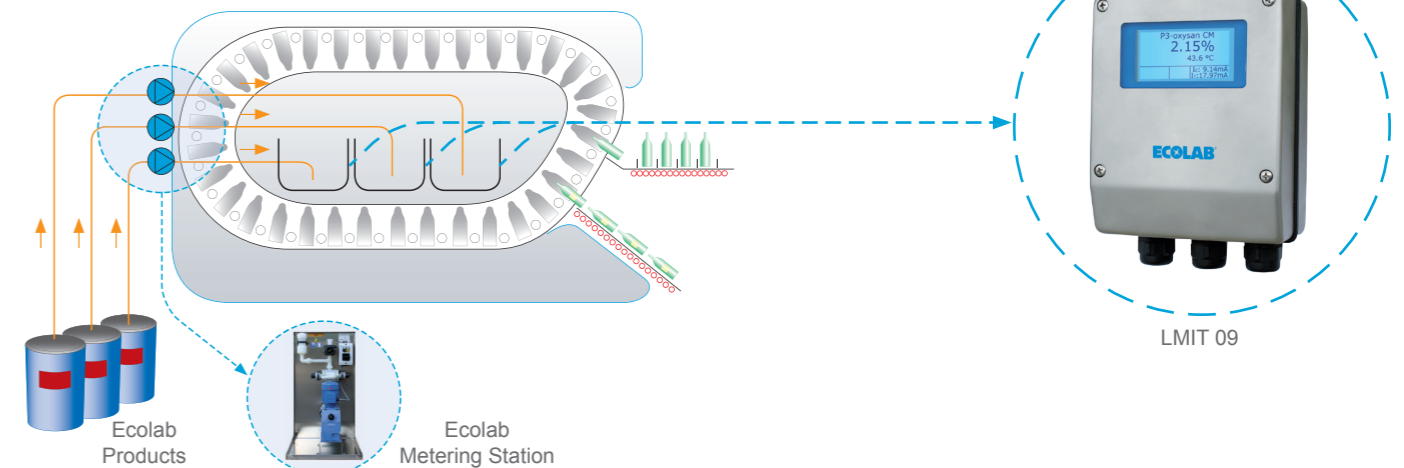
LMIT 09 versions:

- ▲ Standard version for CIP applications, concentration monitoring and make-up
- ▲ PROFIBUS version for connection to SPS control with corresponding communications processor
- ▲ Pharma version with optimized sensor system for the inductive conductivity measuring in the lowest μS measuring range with an accuracy of $\pm 1 \mu\text{S}/\text{cm}$ and hygienic design with EHDEG certificate
- ▲ Choice of clamping or flange installation
- ▲ Compact version or wall-mounted version
- ▲ Program of accessories

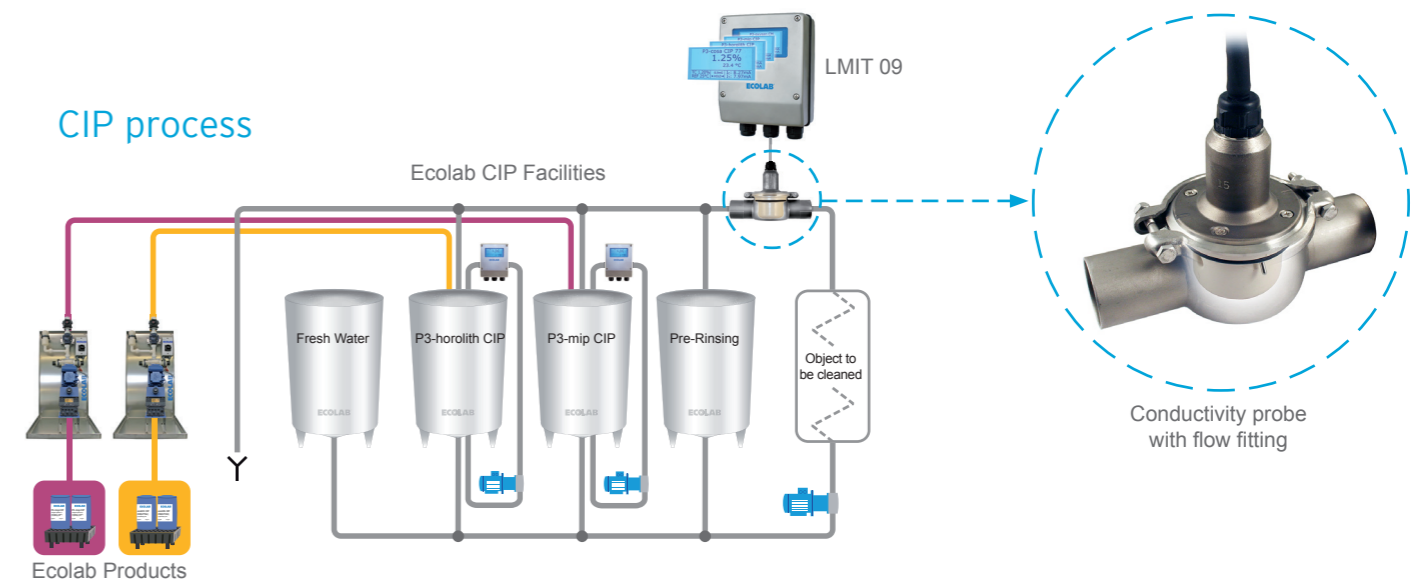


Application examples:

Bottle washing



CIP process



Advantages of the LMIT 09:

- ▲ Accurate measurement of conductivity and temperature values with short response time, efficient process control
- ▲ Pharma version with enhanced hygienic design, with an accuracy of $\pm 1 \mu\text{S/cm}$, even when applying e.g. demineralised water
- ▲ Pressure-resistant, temperature and chemical resistant measuring cell in one cast, unique sustainable features in case of temperature shock and long-term stress
- ▲ Improved hygienic design of the measuring cell, made of monolithically injection-moulded PEEK approved by FDA/BGA and EHDEG-certified, acceptable for use in the food industry
- ▲ Concentration make-up and CIP version in ONE unit, with inductive measurement, cost-saving, reduces the number of variants, maintenance-free and reliable
- ▲ More internal memory capacity with more integrated Ecolab product data, precise and easy adjustment or product selection with product concentration display in %
- ▲ USB port for software updating and the addition of product concentration data as well as documentation of setting values



Recommended applications:

Application	Configuration	LMIT 09			Measuring range [mS/cm]				
		Standard	Pharma	PROFIBUS	0 to 0,2	to 2	to 20	to 200	to 2000
Detergents / disinfectants									
Concentration monitoring:									
▪ Bottle washing		●		●					
▪ CIP		●	●	●					
▪ Cleaning of crates		●		●					
▪ KEG cleaning		●		●					
Phase separation:									
▪ CIP		●	●	●					
Food & Beverage production									
Product phase separation		●	●	●					
Product monitoring:		●		●					
▪ Beer		●		●					
▪ Milk		●		●					
▪ Fruit juices		●		●					
▪ Soft drinks		●		●					
▪ Mineral water		●		●					
Pharma production									
Concentration monitoring:									
▪ CIP		●	●	●					
▪ Product monitoring		●	●	●					
Phase separation:									
▪ CIP		●	●	●					
▪ Final rinse		●	●	●					
▪ Demineralised water			●	●					
Water treatment									
Spring water monitoring		●							
Service water monitoring		●							
Cleaning of cooling water		●							
Feed water monitoring		●							
Waste water monitoring		●							
Dregs recovery		●							