

# Flow measurement systems with LABOPLUS Seamless IIoT integration through IO-Link technology



LABOPLUS - THE NEW TRANSMITTER FOR  
FLOW MEASUREMENT TECHNOLOGY

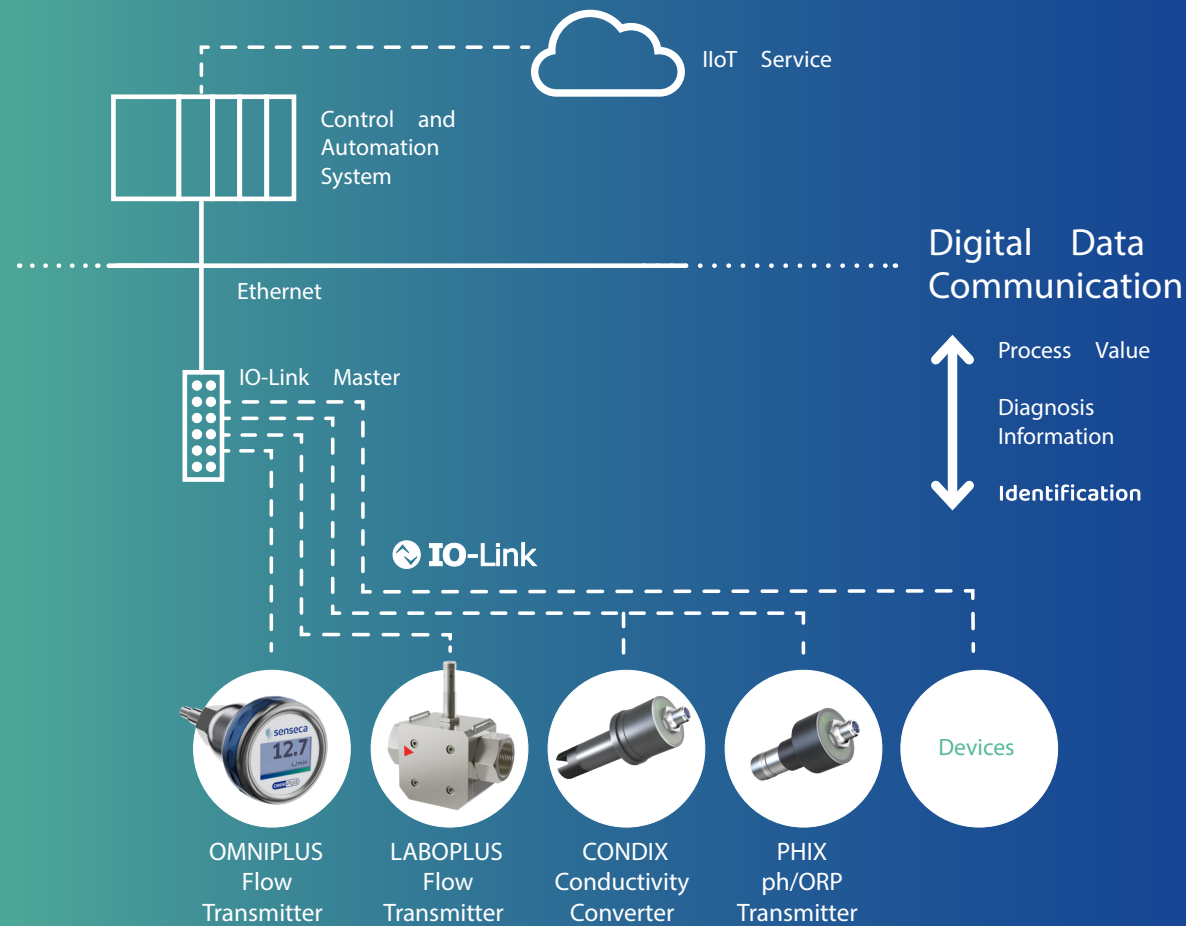


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## LABOPLUS: Convenience and efficiency with IO-Link technology

The LABOPLUS device family integrates proven measurement technology with digital IO-Link communication, enhancing user-friendliness and reliability in industrial automation. Bidirectional communication allows for the readout of measurement and diagnostic data, as well as easy device configuration without affecting the cabling. Consequently, LABOPLUS devices provide extensive options for optimized process control and predictive maintenance within an Industry 4.0 framework. Users also benefit from an analog output, configurable either as a current (e.g. 4-20 mA) or voltage output (e.g. 0-10 V), and a switching output for limit value monitoring or use as a frequency output.

Key benefits of the LABOPLUS device family:

- **Data Availability:**  
Real-time monitoring facilitates optimized process control and surveillance.
- **Simple Integration:**  
Standardized M12 plug connectors and IO-Link technology simplify system integration.



- **Cost Efficiency:**  
Reduced cabling and commissioning effort and minimized storage costs.
- **Future-proof:**  
Effortless integration with both analog and digital systems.
- **Robust Construction:**  
Premium materials ensure long-lasting durability and reliability.

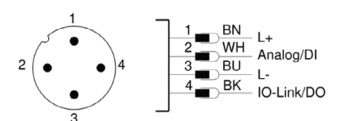
The LABOPLUS series, featuring models such as LABOPLUS-RRI, LABOPLUS-RRH, LABOPLUS-RT, LABOPLUS-VHZ, and LABOPLUS-VHSX, provides the perfect device for every application – harness the benefits of LABOPLUS sensors for efficient process control in your industrial application.



## LABOPLUS product portfolio Functional and powerful

Type	LABOPLUS-RRI	LABOPLUS-RRH	LABOPLUS-RT
			
<b>Application</b>	- Flow monitoring in cooling and coolant lubrication applications - Dosing applications	Flow monitoring in cooling and coolant lubrication applications with increased pressure resistance requirements	Flow monitoring in cooling and coolant lubrication applications, requiring enhanced pressure resistance and precision
<b>Measuring principle</b>	Paddle wheel (metal tipped, without magnets)	Magnetic paddle wheel	Turbine with no magnets in the flow chamber
<b>Pressure resistance</b>	PN16	PN100	PN250
<b>Medium temperature</b>	0...+60 °C	0...+70 °C	-20...+85 °C
<b>Materials (media-contact)</b>	Plastic (PPS, PVDF, and other materials)	Metal (CW614N/1.4305 etc.)	AISI 316 stainless steel
<b>Measuring range</b>	0.1...100 l/min (H <sub>2</sub> O)	0.1...100 l/min (H <sub>2</sub> O)	1.8...1133 l/min
<b>Medium</b>	Water or other low-viscosity liquids	Water or other low-viscosity liquids	Water or other low-viscosity liquids

Type	LABOPLUS-VHZ	LABOPLUS-VHSX
		
<b>Application</b>	- Flow measurement and monitoring in hydraulic applications - Position measurements on hydraulic cylinders	- Flow measurement and monitoring in hydraulic applications - Lubrication monitoring in rolling and plain bearings
<b>Principle</b>	Gearwheel volumeter	Screw volumeter
<b>Pressure resistance</b>	up to PN 240	PN350
<b>Medium temperature</b>	-10...+80 °C	-20...+85 °C
<b>Materials (media-contact)</b>	Stainless steel/aluminium	Steel/aluminium
<b>Measuring range</b>	0.02...150 l/min	1.4...1.500 l/min
<b>Medium</b>	Oils, emulsions, or other non-aggressive lubricating fluids with optimal viscosity independence	Oils, emulsions, or other non-aggressive lubricating fluids with optimal viscosity independence



### IO-Link specification

- IO-Link Revision V1.1.3
- Bit rate COM2 (38400 bit/s)
- Minimum cycle time 20 ms
- SIO mode
- Port class A
- Block parameterisation
- Data storage

## LABOPLUS-RRI/RRH

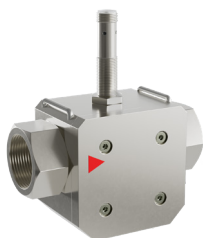
High reliability with a proven paddle wheel principle and modern electronics

Senseca paddle-wheel sensors have been a market standard for decades, offering straightforward and dependable measurement. Their advanced process connection technology helps reduce installation and maintenance costs, while high-quality materials ensure outstanding reliability.



### LABOPLUS-RRI

- Plastic housing (PPS or PVDF)
- Pressure resistance up to PN16
- Inductive impeller speed detection
- No magnets within the flow chamber



### LABOPLUS-RRH

- Metal housing (brass or stainless steel)
- Pressure resistance PN100
- Hall sensors detect magnets in the paddle wheel

## LABOPLUS-RT

Precise and even predictive measurements with the turbine flow meter

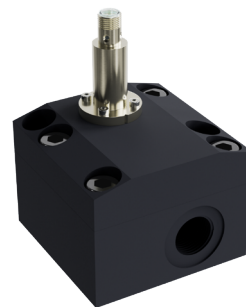


Due to their high accuracy and low pressure loss, turbine flow meters are well-suited for measuring the flow of water, non-aggressive liquids, and other low-viscosity media. The LABOPLUS-RT turbine meter's precise measurements enable predictive maintenance by identifying deviations early, thereby ensuring reliable system availability.

## LABOPLUS-VHZ

Taking the gear volumeter to the digital level

For years, VHZ sensors have delivered reliable measurements in industrial environments using the volumetric principle. A pair of gears mounted on stainless steel shafts rotates in proportion to the flow rate. Depending on the device, the bearings are made of iglidur® X or stainless steel, and the gear wheels are also stainless steel. The movement of the gears is detected by a sensor through the sealed housing wall. This measurement principle, along with the ability to measure both viscous and aqueous self-lubricating fluids, ensures dependable performance across a broad range of applications.



## LABOPLUS-VHSX

Reducing costs with the reliable screw volumeter

Crucial for cost-intensive applications, such as the lubrication of very large bearings, is the precise flow measurement of the oils used for both efficiency and safety. Screw volumeters, like those in the VHSX series, consistently provide accurate measurements using the volumetric operating principle and are nearly independent of viscosity. The LABOPLUS-VHSX is versatile, accommodating a wide range of viscous media, and aids machine builders and system operators in monitoring flow rates, including in hydraulic systems with pressures up to 350 bar.



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