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Flow and Temperature Transmitter LABOPLUS-F

- **Flow transmitter for water and other liquids with integrated temperature measurement**
- **Short response time**
- **Measuring method without moving parts, no wear**
- **Wetted material stainless steel**
- **Analog output (20 mA / 10 V)**
- **Versatile configurable switching output**
- **IO-Link interface**
- **Waterproof all-metal housing (IP65 / IP67)**

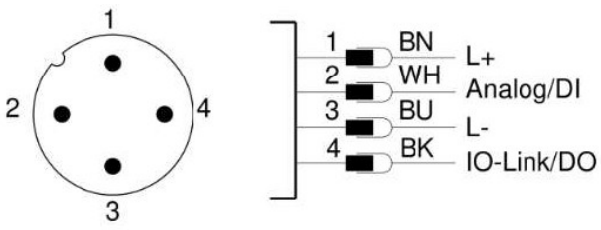
Product description

The flow transmitters of the LABOPLUS-F series are thermal flow sensors. A heated temperature sensor in the tip is kept at a certain temperature. The power dissipation needed for that is depending on the speed of the media around and thus a measure for it. In addition, the media temperature is measured.

The integrated electronics have an analog output and a switching output that alternatively can be used as a frequency output.
In addition, it has an IO-Link interface, which enables digital communication with the sensor for configuration and to read out measured values.
Both outputs can be freely assigned to flow or temperature measurement using IO-Link.

Connection diagram

Connector M12 x 1 pin assignment



Specifications

Measuring principle	calorimetric / thermal	
Measurement media	Liquids Media configurable on the device	
Measuring range	Flow: 2 ... 300 cm/s Temperature: -20 ... +120 °C	
Measurement uncertainty	Flow: ±(7 % measurement + 2 % FS) Temperature: ±2 °C (Flow speed > 2 cm/s)	
Operating pressure	**Connection type**	**PN**
	008, 015	PN100 (PN200 on request)
	013, 018	up to PN100 (depending on T-piece)
	012	up to PN40 (depending on assembly material)
Media temperature	-20 ... +120 °C	
Ambient temperature	-20 ... +70 °C	
Storage temperature	-30 ... +80 °C	
Wetted materials	Stainless steel 1.4571 Fluororubber (O-ring for connection type 013)	
Supply voltage	18 ... 30 V DC	
Current consumption	< 50 mA (SIO mode, unloaded outputs)	
IO-Link specification	IO-Link revision Bit rate Minimum cycle time SIO mode Port class Block parameterization Data storage	V1.1.4 COM2 (38400 bit/s) 20 ms yes A yes yes
Analog output	Current:	4 ... 20 mA 0 ... 20 mA
	Voltage:	0 ... 10 V 2 ... 10 V 0 ... 5 V 1 ... 5 V 0.5 ... 4.5 V
Switching output	transistor output push-pull, parameterizable as NPN o.C. Short-circuit and reverse polarity resistant Iout = 100 mA max per output Configurable on the device as ● Limit switch ● Frequency output ● Pulse output ● Signal output for preset counter	
Electr. connection	M12x1 circular connector, 4-pin	
Protection class	IP65 / IP67	
Conformity	CE	

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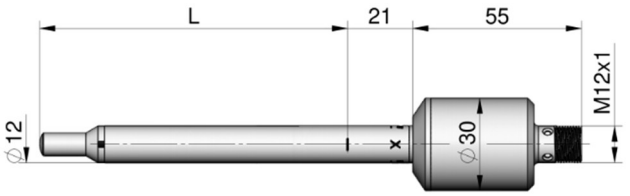
Product information

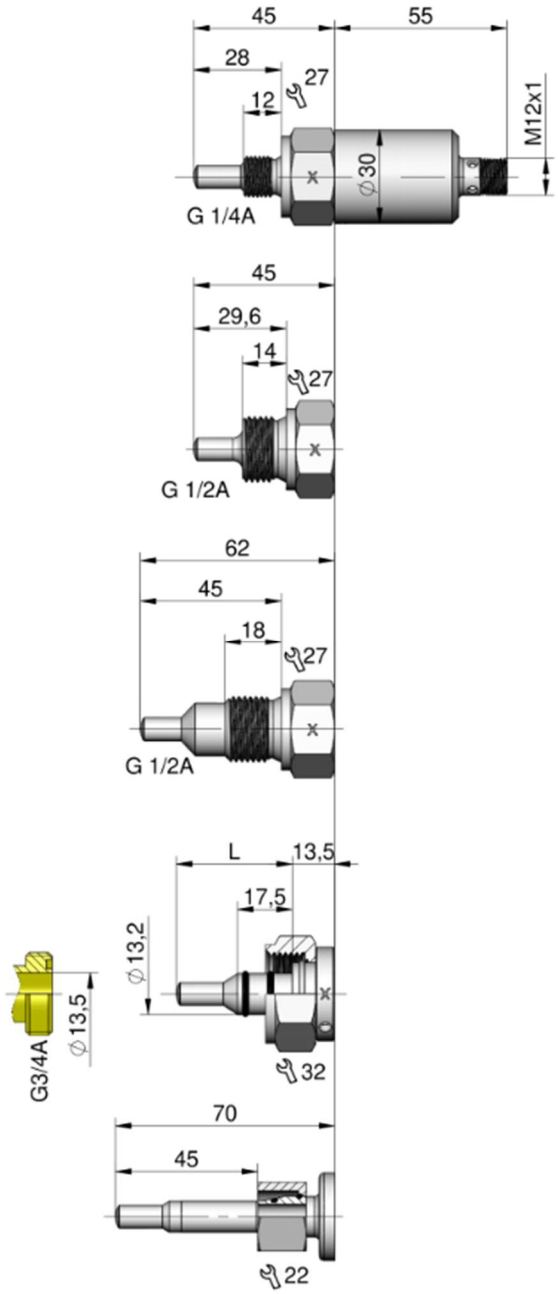
LABOPLUS-F

Dimensions and weights

Push-in sensors



Screw-in sensors



Order code

1.

LABOPLUS-F - [ ]

1.	Sensor	
	012VK100	Push-in sensor Ø 12, L = 100 mm
	012VK150	Push-in sensor Ø 12, L = 150 mm
	012VKxxx	Push-in sensor Ø 12, length = xxx on request
	008HK028	Thread G ¼ A, L = 28.0 mm
	015HK029	Thread G ½ A, L = 29.6 mm
	015HK045	Thread G ½ A, L = 45.0 mm
	013TK031	System fastening Ø 13.2 for T-piece with connection G $^{3}/_{8}$ and G ½
	013TK037	System fastening Ø 13.2 for T-piece with connection G ¾ .. G 2
	018DK045	Sealing cone 24°, M18 x 1.5, L = 45 mm

Accessories

Cable with circular connector M12x1 / 4-pin (not included)