# Flow Sensor
with IO-Link

FXFF004
Part Number

- **A single sensor for flow and temperature**
- **FDA compliant**
- **Measurement independent of flow direction and in-stillation position**
- **Ready for Industry 4.0 with IO-Link 1.1**

weFlux² flow sensors simultaneously measure flow velocity and the temperature of aqueous liquids regardless of position and flow direction. The advantage: The number of measuring points and the diversity of sensor variants are cut in half, ensuring the greatest possible flexibility when installing in closed piping systems. Either 2 switching outputs or 1 switching output and 1 analog output are available depending on application requirements. The outputs can be configured as desired via IO-Link in order to flexibly adapt the sensors to the respective application.
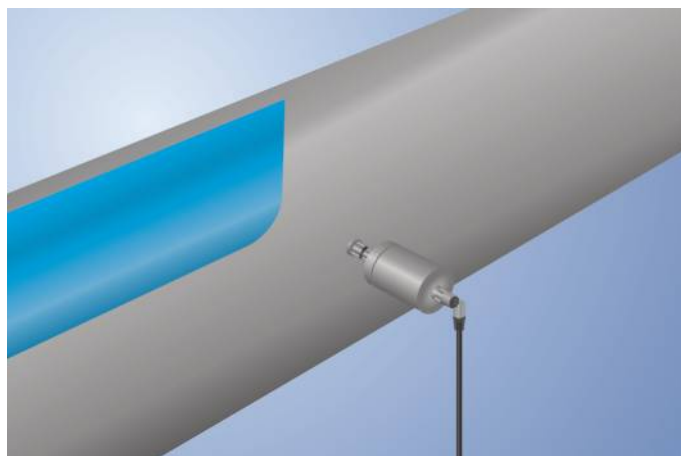
Technical Data

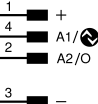| Sensor-specific data	
Measuring Range	10...400 cm/s
Temperature of the medium, flow measurement	0...125 °C**
Temperature of the medium, temperature measurement	-25...150 °C
Setting Range	10...400 cm/s
Medium	Water
Measuring error (total)	≤ 2 %
MTTFd (EN ISO 13849-1)	1210,41 a
Response time in case of temperature jump	10 s
Environmental conditions	
Ambient temperature	-25...80 °C
Storage temperature	-25...80 °C
Pressure Resistance	100 bar
EMC	DIN EN 61326-1
Shock resistance per DIN IEC 68-2-27	30 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	5 g (10...2000 Hz)
Electrical Data	
Supply Voltage	12...32 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Number of Switching Outputs	2
Number of analog outputs	1
Analog Output	4...20 mA
Signal source	Flow
Response Time	1...5 s
Switching Output/Switching Current	± 100 mA
Switching Output Voltage Drop	< 2 V
Load Current Voltage Output	≤ 20 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Interface	IO-Link V1.1
Mechanical Data	
Setting Method	IO-Link
Housing Material	1.4404
Material in contact with media	1.4404
Degree of Protection	IP68/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	Sealing cone M18 × 1,5
Process Connection Length (PCL)	132 mm
Probe Length (PL)	100 mm
Analog output flow	●
IO-Link	●
PNP NO	●
Connection Diagram No.	139
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	900 901

* Certified by wenglor
** The sensors were calibrated and specified for the medium water. Technically, the sensors are suitable for a medium temperature of up to -25 °C. To achieve a temperature below 0 °C, a different medium must be added to the water. This leads to a different measurement result, which is why an application below 0 °C must be tested individually for the mixture used.

Complementary Products

IO-Link Master
Software

Fluid Sensors

All dimensions in mm (1 mm = 0.03937 Inch)

Drawing labels: ⌀ 27, M12 x 1, t2, 60, 9, 15, SW 22, M18 x 1.5, PL, PL, ⌀ 6

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PNP / NPN / PUSH-PULL
NO/NC
4...20mA
0...10V

1 — +
4 — A1/⊘
2 — A2/O
3 — −

Legend						
+	Supply Voltage +	nc	Not connected	EN$_{BRS422}$	Encoder B/B̄ (TTL)
–	Supply Voltage 0 V	U	Test Input	EN$_A$	Encoder A
~	Supply Voltage (AC Voltage)	Ū	Test Input inverted	EN$_B$	Encoder B
A	Switching Output (NO)	W	Trigger Input	A$_{MIN}$	Digital output MIN
Ā	Switching Output (NC)	W–	Ground for the Trigger Input	A$_{MAX}$	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	A$_{OK}$	Digital output OK
V̄	Contamination/Error Output (NC)	O–	Ground for the Analog Output	SY In	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	A$_{MV}$	Valve Output	O$_{LT}$	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY–	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	⏚	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
⊘	IO-Link	Rx+/–	Ethernet Receive Path	GN	Green
PoE	ower over Ethernet	Tx+/–	Ethernet Send Path	BU	Blue
IN	Safety Input	B$_{us}$	Interfaces-Bus A(+)/B(–)	VT	Violet
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BI_D+/–	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
EN$_{0\ RS422}$	Encoder 0-pulse 0/0̄ (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	EN$_{A RS422}$	Encoder A/Ā (TTL)		

 c UL us LISTED PROC. CONT. EQ E365080   UKCA   CE   RoHS