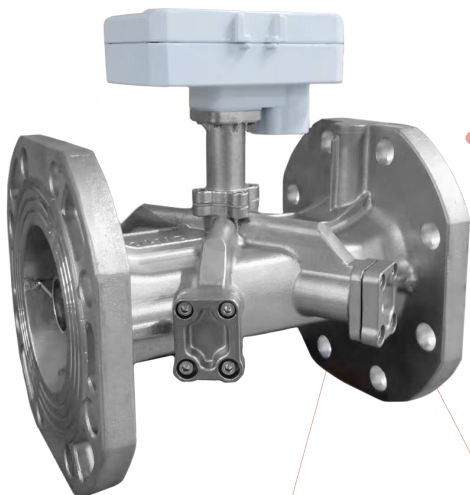


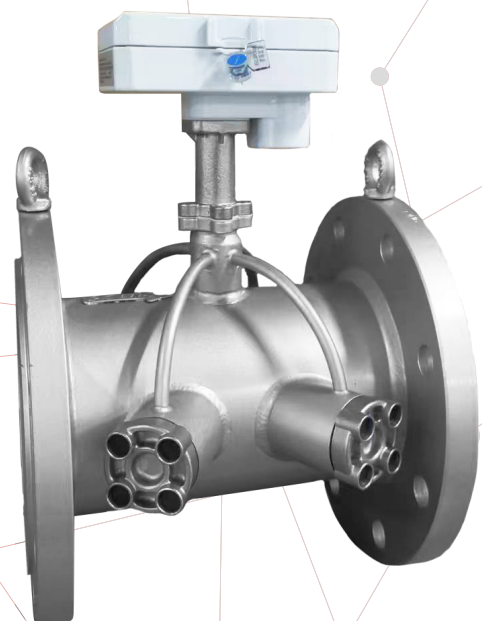
Engelmann **Flow Sensor**

# FlowStar U

Ultrasonic flow sensor



**DN 50 – DN 100**



**DN 125 – DN 300**



Precise flow measurement with double channel ultrasonic measuring

High quality with stainless steel body & flange for DN 50 to DN 100

Measuring components in aluminum housing

# Overview

## FLOWSTAR U



The **FlowStar U** impresses with its flexible usability and high temperature range. With a temperature range of 1 – 130 °C, the flow sensor fulfills all requirements. This makes it an ideal solution for a wide range of applications and demanding environments. From DN 50 to DN 300, it is the ideal extension to the compact meters **SensoStar U**.

The **FlowStar U** flow sensor records the flow rate using high-precision ultrasonic measurement technology, guaranteeing you reliable and accurate volume measurement that meets the highest demands. In combination with the **SensoStar C** calculator and the temperature sensors, the thermal energy can be calculated precisely and efficiently. This enables comprehensive and exact energy control and billing.



### Features

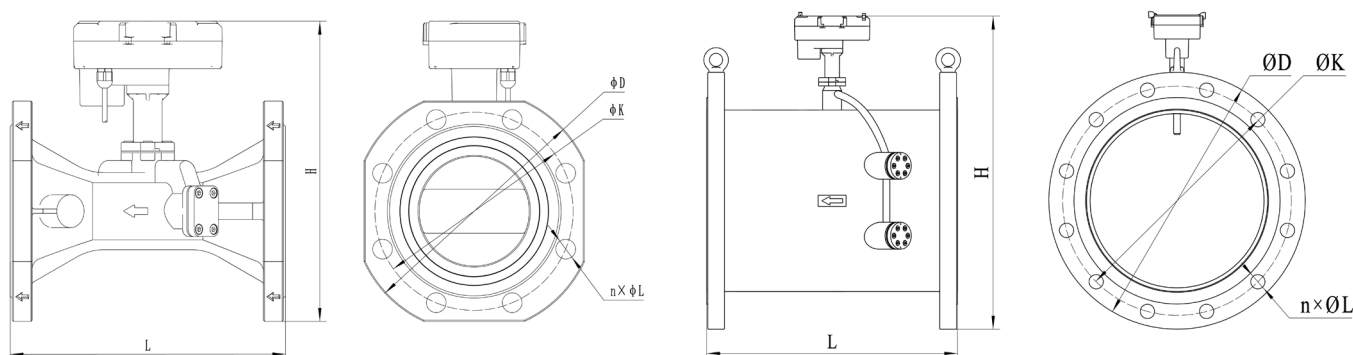
- Sizes: DN 50 to DN 300
- Meters from Qp 15 to Qp 600
- Horizontal / vertical / overhead installation
- Pressure classes PN16/PN25
- Connection cable with 10 m length
- Battery life of up to 12 years

### General

<b>Measuring method</b>	ultrasonic; double channel	
<b>Accuracy class (MID)</b>	class 2	
<b>Mechanical class (MID)</b>	M2 – EN1434	
<b>Electromagnetic class (MID)</b>	E2 – EN1434	
<b>Protection class</b>	IP68	
<b>Medium</b>	water	
<b>Calming section</b>	U3D0	
<b>Approvals</b>	DE-18-MI004-PTB018; CE	
<b>Mounting position</b>	any position	
<b>Installation</b>	backflow / forward flow; consider configuration of the calculator	
<b>Lifetime</b>	years	up to 12
<b>Battery supply</b>	V	3.6
<b>Temperature measurement range medium</b>	°C	1 – 130 (150 within 2000 hours)
<b>Storage and transport temperature range</b>	°C	-25 – 55
<b>Ambient temperature in the field</b>	°C	5 – 55
<b>Maximum height of installation point</b>	m	2000 above mean sea level

### Pulse output according to EN 1434-2

<b>Class</b>		open collector (OC)
<b>Cable length</b>	m	10
<b>Min. pulse length</b>	ms	50
<b>Volume pulse maximum input voltage</b>	V	12 DC
<b>Volume pulse maximum input current</b>	mA	10



### Flow values

Nominal diameter	mm	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
<b>Nominal flow Qp</b>	m <sup>3</sup> /h	15	25	40	60	100	150	250	400	600
<b>Low flow threshold value</b>	m <sup>3</sup> /h	0.01	0.02	0.03	0.05	0.08	0.1	0.2	0.3	0.4
<b>Minimum flow Qi</b>	m <sup>3</sup> /h	0.15	0.25	0.4	0.6	1	1.5	2.5	4	6
<b>Maximum flow Qs</b>	m <sup>3</sup> /h	30	50	80	120	200	300	500	800	1200
<b>Pulse value</b>	l/pulse	25	25	100	100	100	250	250	1000	1000

### Max. operation pressure PN16

Nominal diameter	mm	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
<b>Length (L)</b>	mm	200/270	200/300	225/300	250	350	350	350	400	450
<b>Diameter (D)</b>	mm	165	185	200	220	250	285	340	405	460
<b>Height (H)</b>	mm	221	232	253	273	360	390	450	510	565
<b>Hole circle (K)</b>	mm	125	145	160	180	210	240	295	355	410
<b>Number screw x diameter</b>	mm	4x18	4x18	8x18	8x18	8x22	8x22	12x22	12x26	12x26

### Max. operation pressure PN25

Nominal diameter	mm	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
<b>Length (L)</b>	mm	200/270	200/300	225/300	360	500	350	350	400	450
<b>Diameter (D)</b>	mm	165	185	200	235	270	300	360	425	485
<b>Height (H)</b>	mm	221	232	253	282	370	400	450	520	575
<b>Hole circle (K)</b>	mm	125	145	160	190	220	250	310	370	430
<b>Number screw x diameter</b>	mm	4x18	4x18	8x18	8x22	8x26	8x26	12x26	12x30	12x30