

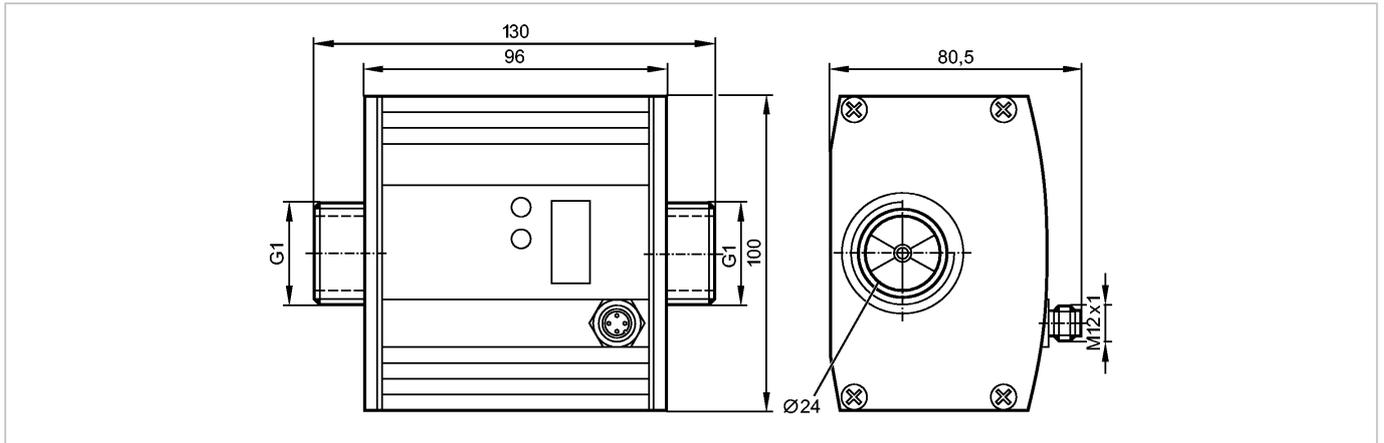


# SU8000

SUR11HGBFRKG/W/US-100-IPF



Flow sensors



## Product characteristics

Ultrasonic flow meter

Quick disconnect

Process connection: G1 flat seal

Function programmable

Totalizer function

2 outputs

OUT1 = flow monitoring (binary), flow rate meter (pulse), preset meter (binary)

OUT2 = flow monitoring or temperature monitoring (analog or binary)

Input for counter reset

Measuring range

0...100 l/min

-10...80 °C

Maximum permissible flow rate

110 l/perc (6.6 m<sup>3</sup>/h)

connection to pipe by means of an adapter

## Application

Application

Liquids of the fluid group 2 according to the Pressure Equipment Directive (PED):  
water, glycol solutions, oils  
(low-viscosity oils with viscosity 7...40 mm<sup>2</sup>/s at 40°C;  
high-viscosity oils with viscosity 30...68 mm<sup>2</sup>/s at 40°C)

Pressure rating

[bar]

16

Medium temperature

[°C]

-10...80

## Electrical data

Electrical design

DC PNP/NPN

Operating voltage

[V]

19...30 DC <sup>1)</sup>

Current consumption

[mA]

100

Insulation resistance

[MΩ]

> 100 (500 V DC)

Protection class

III

Reverse polarity protection

yes

## Outputs

Output function

OUT1: normally open / closed programmable or pulse  
OUT2: normally open / closed programmable or analog (4...20 mA / 0...10 V, scaleable)

Current rating

[mA]

2 x 250



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Voltage drop [V]	< 2
Short-circuit protection	yes (non-latching)
Overload protection	yes
Analog output	4...20 mA; 0...10 V
Max. load [ $\Omega$ ]	500
Min. load [ $\Omega$ ]	2000
Pulse output	flow rate meter

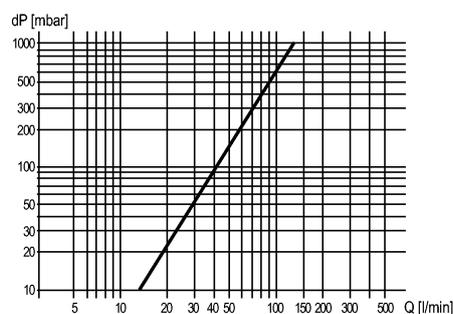
## Measuring / setting range

Flow monitoring		
Measuring range	0.0...100.0 l/min	0.000...6.000 m <sup>3</sup> /h
Display range	0.0...120.0 l/min	0.000...7.200 m <sup>3</sup> /h
Resolution	0.1 l/min	0.005 m <sup>3</sup> /h
Set point, SP	0.2...100.0 l/min	0.010...6.000 m <sup>3</sup> /h
Reset point, rP	0.0...99.8 l/min	0.000...5.990 m <sup>3</sup> /h
Analog start point, ASP	0.0...80.0 l/min	0.000...4.800 m <sup>3</sup> /h
Analog end point, AEP	20.0...100.0 l/min	1.200...6.000 m <sup>3</sup> /h
in steps of	0.1 l/min	0.005 m <sup>3</sup> /h
Volumetric flow quantity monitoring		
Pulse value	0.1 l...1 000 000 m <sup>3</sup>	
Pulse length [s]	0.025...2	
Temperature monitoring		
Measuring range [°C]	-10...80.0	
Resolution [°C]	0.2	
Set point, SP [°C]	-9.8...80.0	
Reset point, rP [°C]	-10.0...79.8	
Analog start point, ASP [°C]	-10.0...62.0	
Analog end point, AEP [°C]	8.0...80.0	
in steps of [°C]	0.2	

## Accuracy / deviations

Flow monitoring	
Accuracy	< $\pm$ (3% MW + 0.2% MEW) *) / < $\pm$ (5% MW + 0.5% MEW) **)
Repeatability	0.2 l/min; 12 l/h; 0.012 m <sup>3</sup> /h

Pressure loss (dP) / flow rate (Q)



Temperature monitoring	
Accuracy [K]	$\pm$ 3 (Q > 1 l/min)

## Reaction times

Power-on delay time [s]	10
Flow monitoring	



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Start-up delay	[s]	0...50
Response time	[s]	< 0.250 (dAP = 0)
Damping, dAP	[s]	0.0...1.0
Temperature monitoring		
Response time	[s]	T09 = 70 (Q > 5 l/min) *

Environment		
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-25...80
Protection		IP 67

Tests / approvals		
Pressure equipment directive		article 3, section 3 - sound engineering practice
EMC		EN 61000-4-2 ESD: 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-5 Surge: 0.5 kV EN 61000-4-6 HF conducted: 10 V
Shock resistance		DIN IEC 68-2-27: 20 g (11 ms)
Vibration resistance		DIN IEC 68-2-6: 5 g (10...2000 Hz)
MTTF	[Years]	185

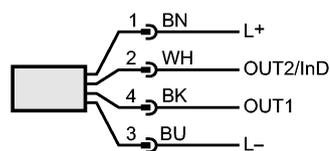
Mechanical data		
Process connection		G1 flat seal
Materials (wetted parts)		stainless steel 316L / 1.4404; Viton; PES; Centellen 200
Housing materials		housing: AlMgSi0.5 anodized; sealing: Viton; connector housing: brass Optalloy-plated; PA 6.6; cover film: polyamide
Weight	[kg]	1.712

Displays / operating elements		
Display		Display unit 6 x LED green (l/min, m <sup>3</sup> /h, l, m <sup>3</sup> , 10 <sup>3</sup> , °C) Switching status 2 x LED yellow Measured values 4-digit alphanumeric display Programming 4-digit alphanumeric display

Electrical connection		
Connection		M12 connector; gold-plated contacts

## Wiring

- OUT1: 3 selection options
- switching output volumetric flow monitoring
  - pulse output volumetric flow
  - switching output preset counter
- OUT2/InD: 5 selection options
- switching output volumetric flow monitoring
  - switching output temperature monitoring
  - analog output volumetric flow
  - analog output temperature
  - input for an external reset signal



Accessories		
Accessories (included)		2 x packing washer (Centellen)
Accessories (optional)		adapter; order no. E40179 (for R <sup>1</sup> / <sub>2</sub> pipe, high-grade stainless steel) order no. E40180 (for R <sup>3</sup> / <sub>4</sub> pipe, high-grade stainless steel); order no. E40152 (for R <sup>1</sup> / <sub>2</sub> pipe, brass) order no. E40153 (for R <sup>3</sup> / <sub>4</sub> pipe, brass)



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## Remarks

Remarks	1) to EN50178, SELV, PELV *) for water **) for glycol solutions (35%) and oils (viscosity: 68 mm <sup>2</sup> /s at 40°C) MW = measured value MEW = final value of the measuring range sealing: only with supplied Centellen seals
Pack quantity	[piece] 1