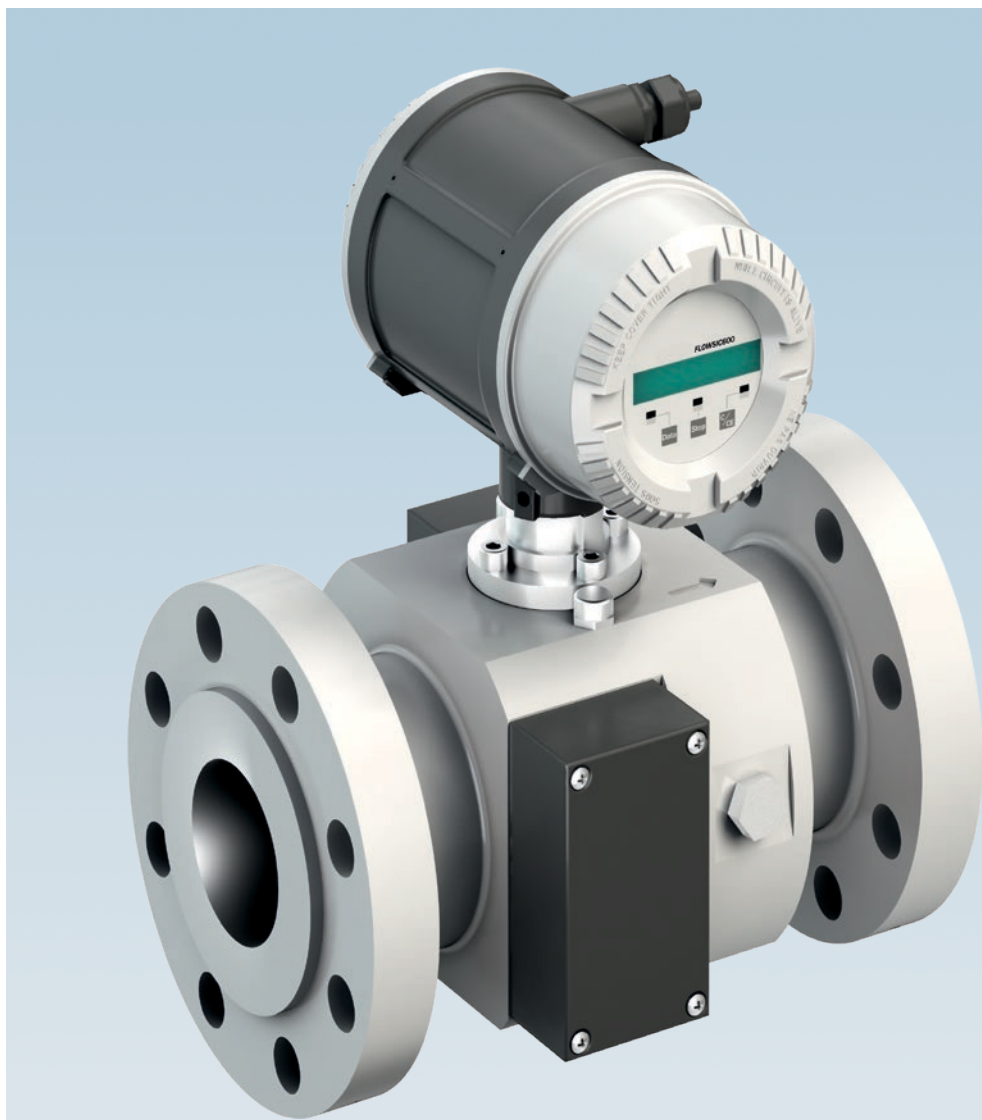


## FLOWSIC600 DRU-S

### Simple and robust upstream gas flow measurement

#### Simple and robust

- Easy remote commissioning away from harsh and challenging environmental conditions
- Low initial investment - accurate measurement without expensive flow calibration
- Optimum availability - almost wear-free operation and the possibility of remote maintenance
- Highly reliable - continuous measurement even under challenging process conditions
- Long service life - wet gas robust ultrasonic sensors made of titanium



# FLOWSIC600 DRU-S

## Simple and robust



### Product description

FLOWSIC600 DRU-S is the compact and innovative ultrasonic gas flowmeter for gas production. FLOWSIC600 DRU-S extends the successful product family FLOWSIC600 DRU. The gas meter is especially developed for wellhead and gas lift applications. With a measuring span of up to 150 : 1<sup>1</sup>, flow ranges can be measured with only one device, for which several orifices were previously required.

<sup>1</sup> Below  $Q_{min}$  increasing uncertainty.

### At a glance

- Ultrasonic sensors made of titanium
- High measuring span
- No pressure loss - installation without flow conditioner
- Suitable for wet gas applications

### Your benefits

- Easy remote commissioning away from harsh and challenging environmental conditions
- Low initial investment - accurate measurement (2% accuracy) without expensive flow calibration

### Fields of application

- Natural gas measurement in gas production
- Wellhead measurement
- Gas lift applications

Its special wet gas robust sensor design ensures continuous measurement even with permanently higher liquid loading. FLOWSIC600 DRU-S enables remote monitoring of measurement and diagnostic data. Thus, the process can be monitored in real time and the maintenance effort can be reduced. Service inspections can be planned according to demand. We think that's intelligent.

- Small meter footprint
- Possibility for remote monitoring thanks to digital interfaces
- Simple commissioning via our operating software

- Optimum availability - almost wear-free operation and the possibility of remote maintenance
- Highly reliable - continuous measurement even under challenging process conditions
- Long service life - wet gas robust ultrasonic sensors made of titanium

- Gas flow measurement before and behind production separators
- Replacement of orifice meters
- Unconventional gas production



### More Information online

For more information, enter the link or scan the QR code to get direct access to technical data, operating instructions, software, application examples, and much more.

[www.endress.com/flowsic600dru-s](http://www.endress.com/flowsic600dru-s)



# Technical data

The exact device specifications and product performance data may vary and are dependent on the respective application and customer specifications.

## FLOWSIC600 DRU-S

Measured values	Volume flow rate a. c., Volume a. c., Gas velocity, Sound velocity		
Measurement principle	Ultrasonic transit time difference measurement		
Number of measurement paths	2		
Measuring medium	Natural gas		
Nominal pipe size	2" ... 4"		
Measuring ranges <sup>2,3</sup>			
Volume flow (a.c.)	$Q_{\min}$	$Q_t$	$Q_{\max}$
	m <sup>3</sup> /h (ft <sup>3</sup> /h)	m <sup>3</sup> /h (ft <sup>3</sup> /h)	m <sup>3</sup> /h (ft <sup>3</sup> /h)
	2"	4 (140)	20 (700)
	3"	8 (280)	40 (1400)
	4"	13 (460)	65 (2300)
Flange type / schedule <sup>1</sup>	ANSI CL150 RF / Sch 40 ANSI CL600 RF / Sch 80		
Repeatability <sup>4</sup>	±0.2% of the measured value		
Accuracy <sup>5,6</sup>	±2% from $Q_t$ to $Q_{\max}$		
Gas temperature <sup>1</sup>	-40 °C ... 100 °C (-40 °F ... 212 °F)		
Ambient temperature	-40 °C ... 60 °C (-40 °F ... 140 °F)		
Operating pressure <sup>1</sup>	0 bar(g) ... 16 bar(g) (0 psi(g) ... 1480 psi(g)) for ANSI CL150 0 bar(g) ... 100 bar(g) (0 psi(g) ... 1350 psi(g)) for ANSI CL600		
Min. piping requirements	20D straight inlet and 5D outlet		
Wetness of the gas (LVF limits)			
up to 0.1% LVF	No influence on measurement accuracy		
0.1% ... 0.5% LVF	Decreased accuracy (up to 5%)		
0.5% ... 1.5% LVF	Decreased accuracy (up to 10%)		
> 10% LVF	Average level when temporary signal loss is to be expected		
Ex-approvals			
IECEX	Gb/Ga Ex db eb ib [ia Ga] IIA T4 Ultrasonic transducer, intrinsically safe		
ATEX	II 1/2 (1) G Ex ia/ db eb ia [ia Ga] IIA T4 ... T1 Ga/Gb Ultrasonic transducer, intrinsically safe Class I, Division 1, Group D T4		
NEC/CEC	Class I, Division 2, Group D T4 Ultrasonic transducer intrinsically safe		
Protection class	IP66 / IP67		
Digital outputs	2 DO and 1 FO: 30 V, 10 mA; passive, galvanically isolated, Open Collector, f <sub>max</sub> = 6 kHz (scalable)		
Interfaces	RS-485 (2x, for configuration data output and diagnostics)		
BUS protocol	MODBUS ASCII, MODBUS RTU		
Dimensions	See dimensional drawings		

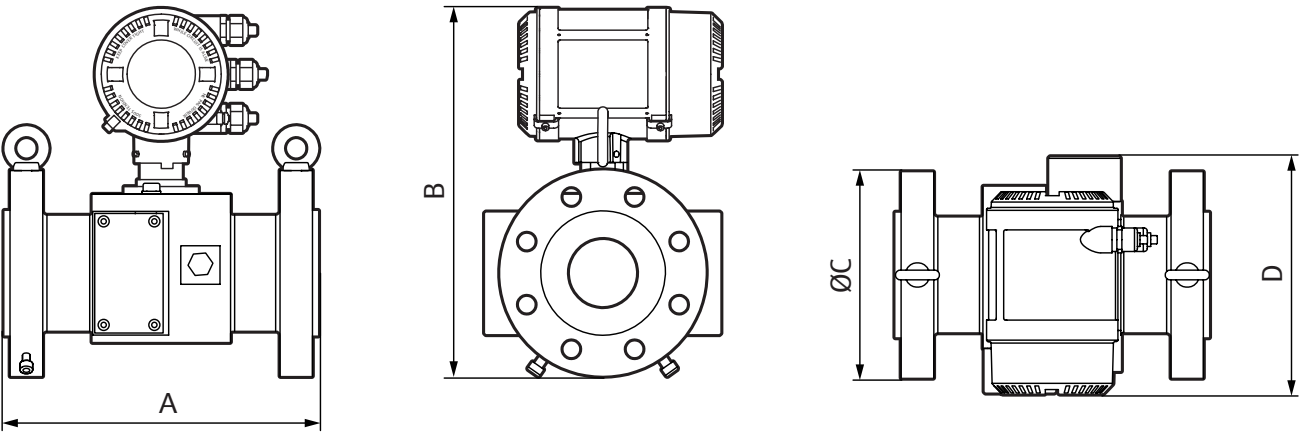
Weight		
ANSI CL150	2":	30 kg (66 lbs)
	3":	46 kg(101 lbs)
	4":	65 kg (143 lbs)
ANSI CL600	2":	34 kg (77 lbs)
	3":	46 kg(101 lbs)
	4":	66 kg (146 lbs)
Electrical connection		
Voltage		12 V DC ... 28.8 V DC
Power consumption		≤ 1 W
Footnotes		<sup>1</sup> Different values on request <sup>2</sup> Below Q <sub>min</sub> increasing uncertainty. <sup>3</sup> Q <sub>max</sub> can be limited by the working pressure and the damping effects of the gas medium. <sup>4</sup> Between Q <sub>i</sub> and Q <sub>max</sub> <sup>5</sup> Verified with pipe configurations according to OIML R-137:2012 Annex B (mild). <sup>6</sup> Detailed technical characteristics available in Operating instruction.

# Ordering information

Our regional sales organization will help you to select the optimum device configuration.

# Dimensional drawings

Sender/receiver unit (dimensions in mm (inch))



Dimensions for ANSI CL150				
Nominal pipe size	Dimensions			
	A	B	C	D
2"	250 (9.8)	327 (12.8)	152.4 (6)	228 (8.9)
3"	320 (12.6)	365 (14.3)	190.5 (7.5)	241 (9.5)
4"	300 (11.8)	377 (14.8)	228.6 (9)	274 (10.8)
All Dimensions in mm (inch)				

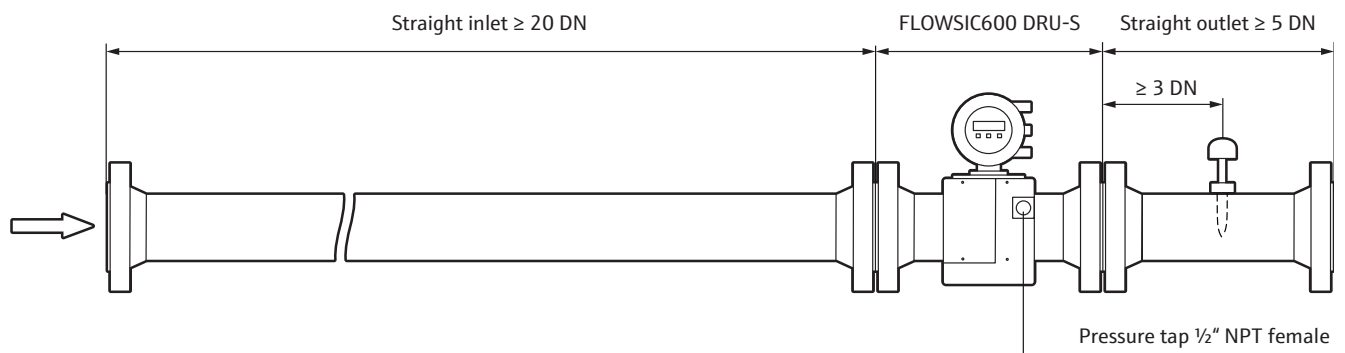
### Dimensions for ANSI CL600

Nominal pipe size	Dimensions			
	A	B	C	D
2"	250 (9.8)	335 (13.2)	165 (6.5)	230 (9)
3"	320 (12.6)	375 (14.7)	210 (8.2)	240 (9.5)
4"	300 (11.8)	390 (15.3)	270 (10.7)	275 (10.8)

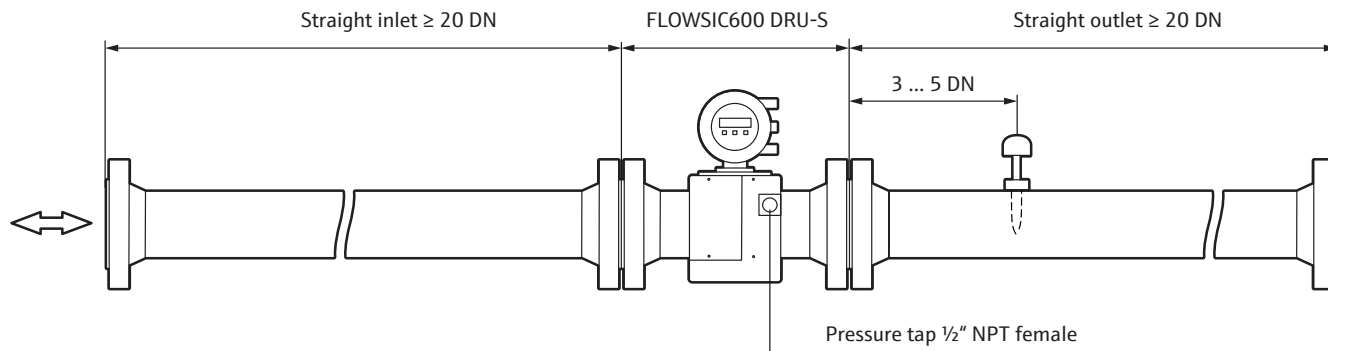
All Dimensions in mm (inch)

## Instruction for installation

### Unidirectional installation



### Bidirectional installation



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