



# FLOWSIC600 DRU-S

SIMPLE AND ROBUST UPSTREAM GAS FLOW MEASUREMENT

Gas flow meter

**SICK**  
Sensor Intelligence.

## Product description

FLAWSIC600 DRU-S is the compact and innovative ultrasonic gas flow meter for gas production. FLAWSIC600 DRU-S extends the successful product family FLAWSIC600 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. Its special wet gas robust sensor design ensures continuous measurement even with permanently higher liquid loading. FLAWSIC600 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.

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

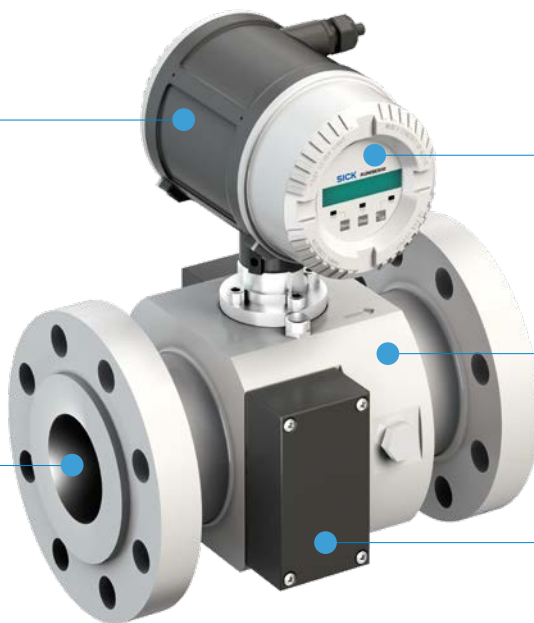
High measuring span

Remote commissioning and diagnostics

2% accuracy

No pressure drop

Wet-gas robust



## At a glance

- Ultrasonic sensors made of titanium
- High measuring span
- No pressure loss - installation without flow conditioner
- Suitable for wet gas applications
- Small meter footprint
- Possibility for remote monitoring thanks to digital interfaces
- Simple commissioning via the SICK operating software

## Your benefit

- 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

## Fields of application

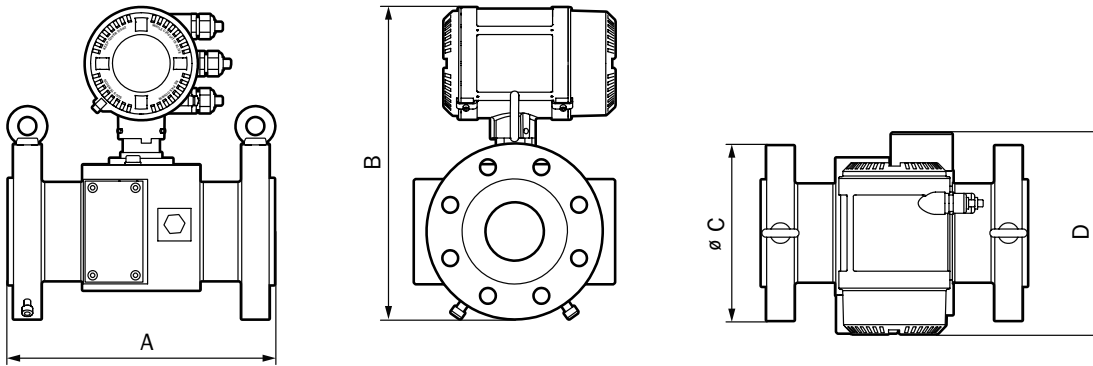
- Natural gas measurement in gas production
- Wellhead measurement
- Gas lift applications
- Gas flow measurement before and behind production separators
- Replacement of orifice meters
- Unconventional gas production

## Detailed technical data

The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.

<b>Measured values</b>	Volume flow rate a. c., Volume a. c., Gas velocity, Sound velocity			
<b>Measurement principle</b>	Ultrasonic transit time difference measurement			
<b>Number of measurement paths</b>	2			
<b>Measuring medium</b>	Natural gas			
<b>Nominal pipe size / Flange</b>	2" / 3" / 4" Schedule 80, Cl.600 RF			
<b>Measuring ranges<sup>1,2</sup></b> Volume flow (a.c.)		$Q_{min}$	$Q_t$	$Q_{max}$
			ft <sup>3</sup> /h	
	2"	140	700	14000
	3"	280	1400	35000
	4"	460	2300	56000
<b>Repeatability<sup>3</sup></b>	±0.2% of the measured value			
<b>Accuracy<sup>4,5</sup></b>	±2% from $Q_t$ to $Q_{max}$			
<b>Gas temperature</b>	-40 °F ... 212 °F			
<b>Ambient temperature</b>	-40 °F ... 140 °F			
<b>Operating pressure</b>	0 psi(g) ... 1480 psi(g) at 100 °F 0 psi(g) ... 1350 psi(g) at 212 °F			
<b>Min. piping requirements</b>	20D straight inlet and 5D outlet			
<b>Wetness of the gas (LVF limits)</b>	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		
<b>Ex-approvals</b>	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		
<b>Protection class</b>	IP66 / IP67			
<b>Digital outputs</b>	2 DO and 1 FO: 30 V, 10 mA			
	Passive, galvanically isolated, Open Collector, fmax = 6 kHz (scalable)			
<b>Interfaces</b>	RS-485 (2x, for configuration data output and diagnostics)			
<b>BUS protocol</b>	MODBUS ASCII, MODBUS RTU			
<b>Dimensions</b>	See dimensional drawings			
<b>Weight</b>	2": 77 lbs			
	3": 101 lbs			
	4": 146 lbs			
<b>Electrical connection</b>	Voltage	12 V DC ... 28.8 V DC		
	Power consumption	≤ 1 W		
<b>Footnotes</b>	<sup>1</sup> Below $Q_{min}$ increasing uncertainty.			
	<sup>2</sup> $Q_{max}$ can be limited by the working pressure and the damping effects of the gas medium.			
	<sup>3</sup> Between $Q_t$ and $Q_{max}$			
	<sup>4</sup> Verified with pipe configurations according to OIML R-137:2012 Annex B (mild).			
	<sup>5</sup> Detailed technical characteristics available in Operating instruction.			

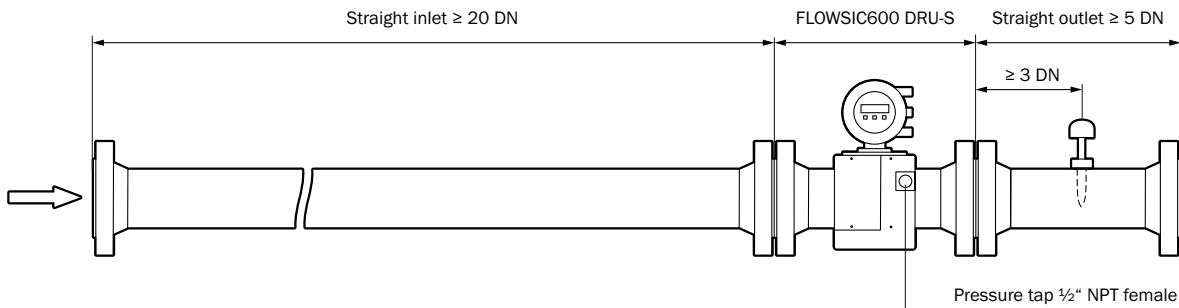
Dimensional drawings (dimensions in inch)



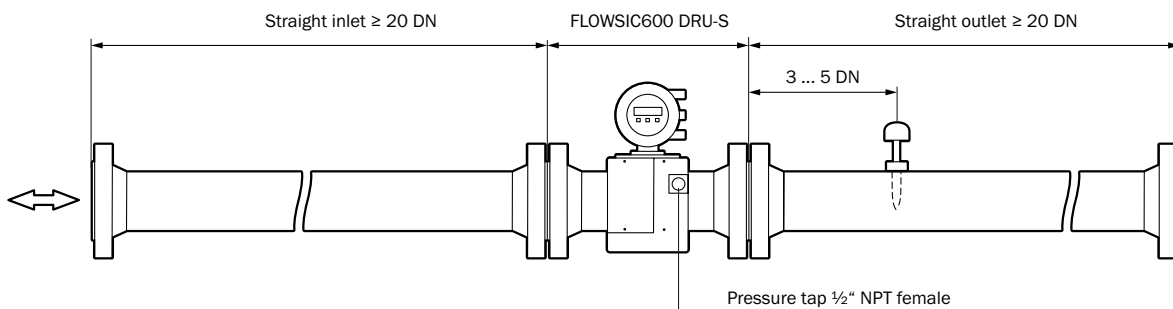
Nominal pipe size	Dimensions			
	A	B	C	D
2"	9.84	13.2	6.5	8.99
3"	12.6	14.74	8.25	9.5
4"	11.81	15.3	10.75	10.79

Instruction for installation

Unidirectional installation



Bidirectional installation







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## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,400 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

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Detailed addresses and further locations → [www.sick.com](http://www.sick.com)