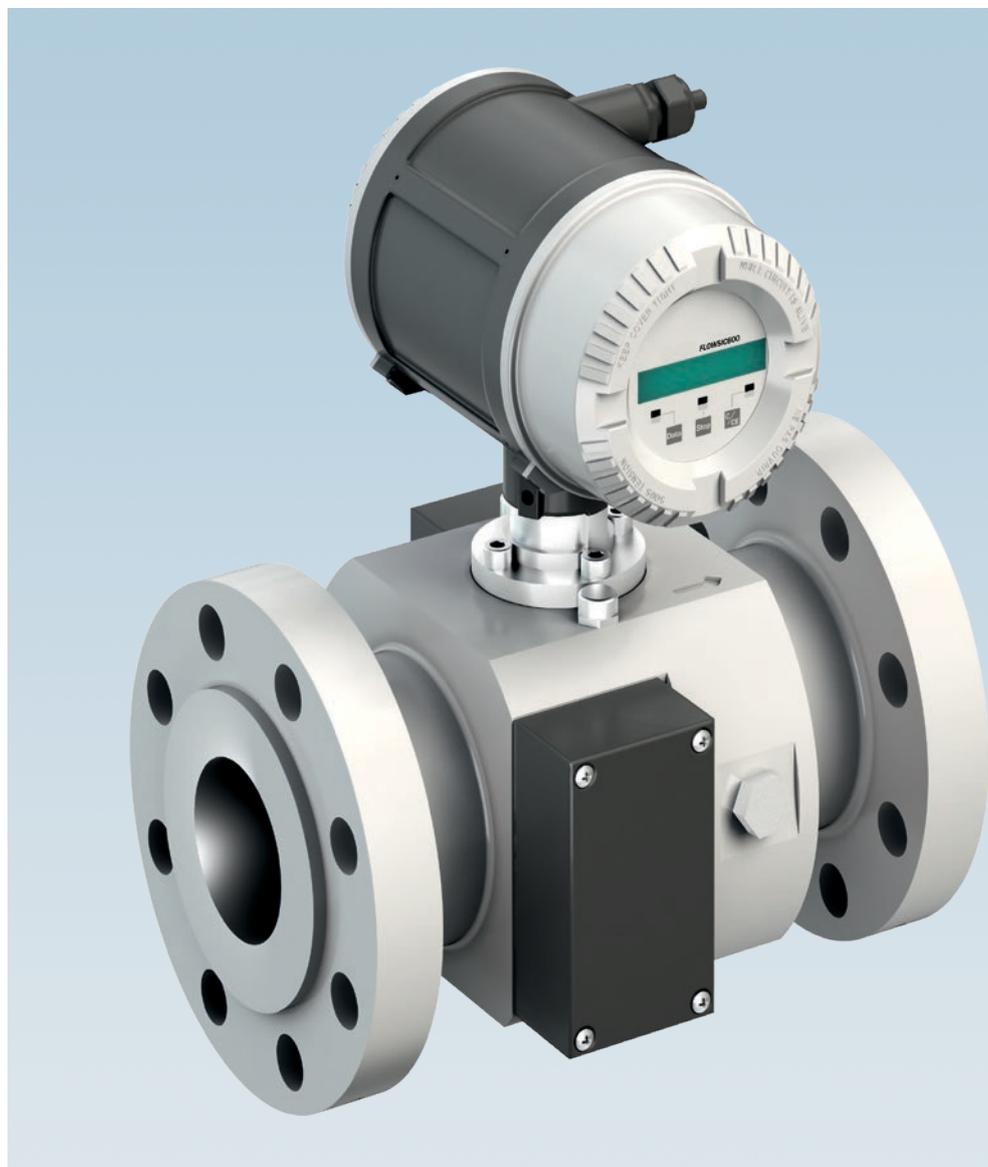


FLOWSIC600 DRU-S

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



FLAWSIC600 DRU-S

Simple and robust



Product description

FLAWSIC600 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 : 1¹, flow ranges can be measured with only one device, for which several orifices were previously required.

¹ 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



Technical data

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

FLWSIC600 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 ^{2,3} | | | | |
| Volume flow (a.c.) | Q_{\min} | Q_t | Q_{\max} | |
| | m ³ /h (ft ³ /h) | m ³ /h (ft ³ /h) | m ³ /h (ft ³ /h) | |
| | 2" | 4 (140) | 20 (700) | 400 (14000) |
| | 3" | 8 (280) | 40 (1400) | 1000 (35000) |
| | 4" | 13 (460) | 65 (2300) | 1600 (56000) |
| Flange type / schedule ¹ | ANSI CL150 RF / Sch 40 ANSI CL600 RF / Sch 80 | | | |
| Repeatability ⁴ | ±0.2% of the measured value | | | |
| Accuracy ^{5,6} | ±2% from Q_t to Q_{\max} | | | |
| Gas temperature ¹ | -40 °C ... 100 °C (-40 °F ... 212 °F) | | | |
| Ambient temperature | -40 °C ... 60 °C (-40 °F ... 140 °F) | | | |
| Operating pressure ¹ | 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 _{max} = 6 kHz (scalable) | | | |
| Interfaces | RS-485 (2x, for configuration data output and diagnostics) | | | |
| BUS protocol | MODBUS ASCII, MODBUS RTU | | | |
| Dimensions | See dimensional drawings | | | |

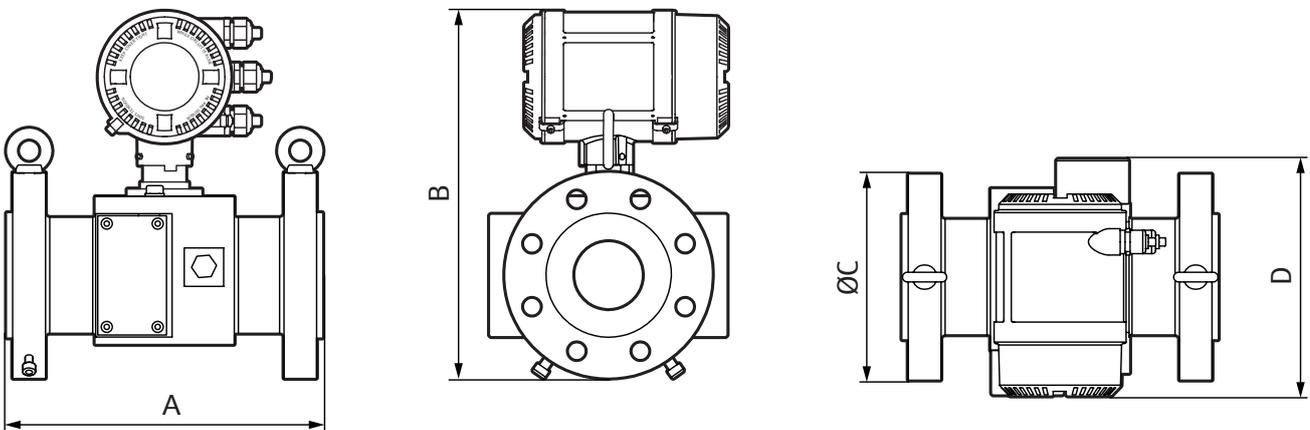
| | | |
|-----------------------|--|--|
| Weight | | |
| ANSI CL150 | 2": 30 kg (66 lbs) 3": 46 kg (101 lbs) 4": 65 kg (143 lbs) | |
| ANSI CL600 | 2": 34 kg (77 lbs) 3": 46 kg (101 lbs) 4": 66 kg (146 lbs) | |
| Electrical connection | | |
| Voltage | 12 V DC ... 28.8 V DC | |
| Power consumption | ≤ 1 W | |
| Footnotes | ¹ Different values on request ² Below Q_{min} increasing uncertainty. ³ Q_{max} can be limited by the working pressure and the damping effects of the gas medium. ⁴ Between Q_i and Q_{max} ⁵ Verified with pipe configurations according to OIML R-137:2012 Annex B (mild). ⁶ 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)

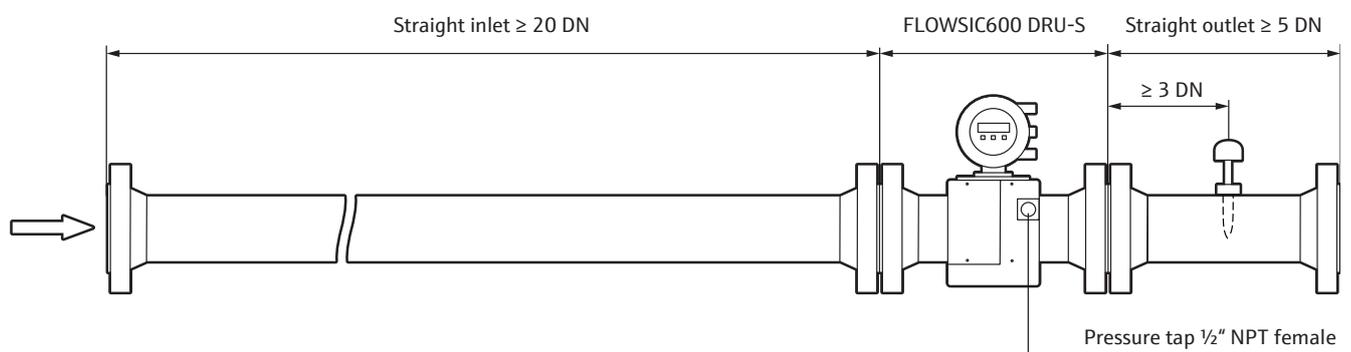
Dimensions for ANSI CL600

| 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) |

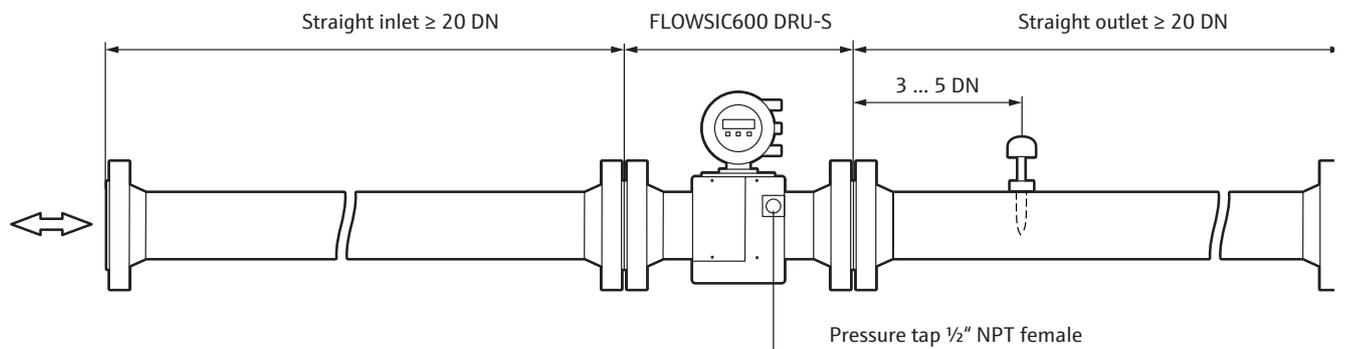
All Dimensions in mm (inch)

Instruction for installation

Unidirectional installation



Bidirectional installation



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