



# FLOWSIC600 DRU-S

SIMPLE AND ROBUST UPSTREAM GAS FLOW MEASUREMENT

Gas flow meter

**SICK**  
Sensor Intelligence.

## Product description

FLWSIC600 DRU-S is the compact and innovative ultrasonic gas flow meter for gas production. FLWSIC600 DRU-S extends the successful product family FLWSIC600 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. FLWSIC600 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

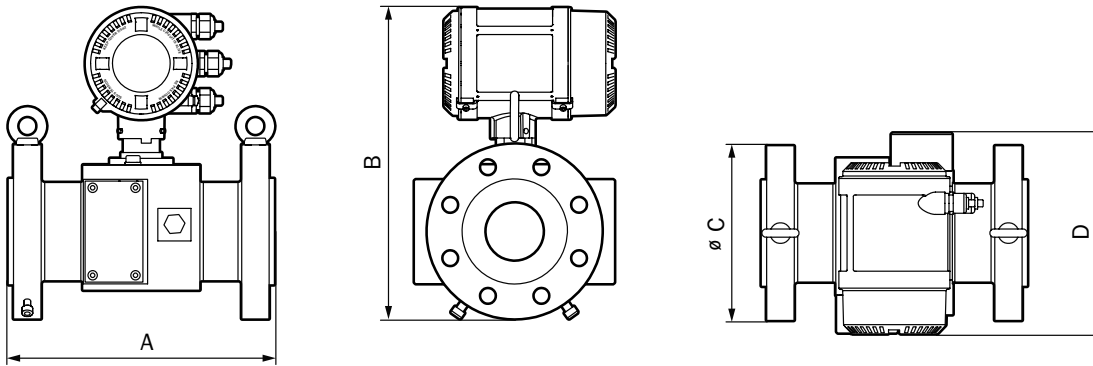
- Natural gas measurement in gas production
- Wellhead measurement
- Gas lift applications
- Gas flow measurement before and behind production separators
- Replacement of orifice meters
- Unconventional gas production

## 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><br>Volume flow (a.c.) |  | $Q_{min}$  | $Q_t$             | $Q_{max}$ |
|   |  |  | m <sup>3</sup> /h |           |
|   | 2"   | 4  | 20                | 400       |
|   | 3"   | 8  | 40                | 1000      |
|   | 4"   | 13   | 65                | 1600      |
| <b>Repeatability<sup>3</sup></b>                            | ±0.2% of the measured value  |  |                   |           |
| <b>Accuracy<sup>4</sup></b>                                 | ±2% from $Q_t$ to $Q_{max}$ (±4% from $Q_{min}$ to $Q_t$ )   |  |                   |           |
| <b>Gas temperature</b>                                      | -40 °C ... 100 °C  |  |                   |           |
| <b>Ambient temperature</b>                                  | -40 °C ... 60 °C   |  |                   |           |
| <b>Operating pressure</b>                                   | 0 bar(g) ... 102 bar(g) at 37 °C<br>0 bar(g) ... 93 bar(g) at 100 °C   |  |                   |           |
| <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<br>0.1% ... 0.5% LVF decreased accuracy (up to 5%)<br>0.5% ... 1.5% LVF decreased accuracy (up to 10%)<br>> 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<br>Ultrasonic transducer, intrinsically safe                                  |                   |           |
|   | ATEX   | II 1/2 (1) G Ex ia/ db eb ia [ia Ga] IIA T4 ...T1 Ga/Gb<br>Ultrasonic transducer, intrinsically safe           |                   |           |
|   | NEC/CEC  | Class I, Division 1, Group D T4<br>Class I, Division 2, Group D T4<br>Ultrasonic transducer intrinsically safe |                   |           |
| <b>Protection class</b>                                     | IP66 / IP67  |  |                   |           |
| <b>Digital outputs</b>                                      | 2 DO and 1 FO:<br>30 V, 10 mA<br>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": 34 kg<br>3": 46 kg<br>4": 66 kg  |  |                   |           |
| <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.<br><sup>2</sup> $Q_{max}$ can be limited by the working pressure and the damping effects of the gas medium.<br><sup>3</sup> Between $Q_t$ and $Q_{max}$<br><sup>4</sup> Verified with pipe configurations according to OIML R-137:2012 Annex B (mild) |  |                   |           |

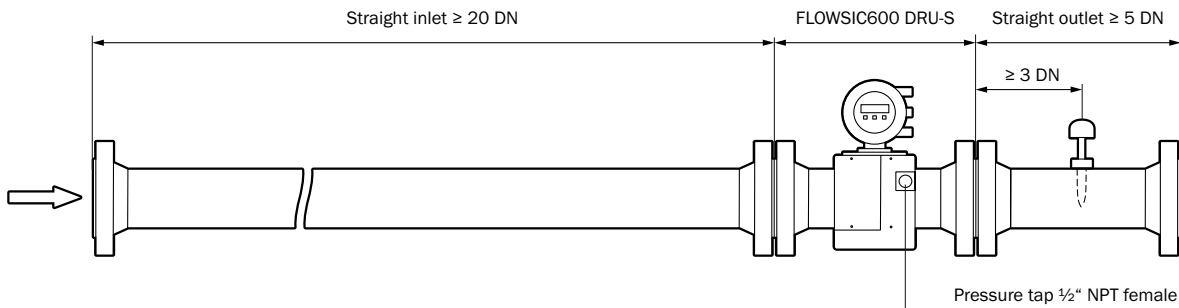
Dimensional drawings (dimensions in cm)



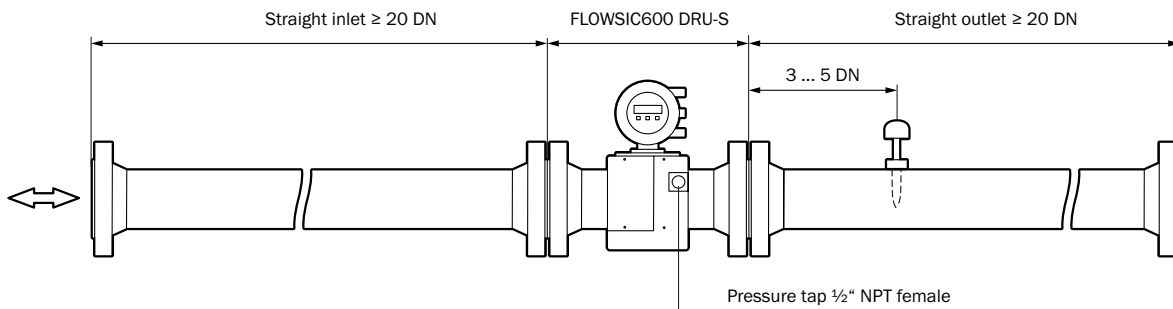
| Nominal pipe size | Dimensions |      |      |      |
|-------------------|------------|------|------|------|
|                   | A          | B    | C    | D    |
| 2"                | 25         | 33.5 | 16.5 | 23   |
| 3"                | 32         | 37.5 | 21   | 24   |
| 4"                | 30         | 39   | 27   | 27.5 |

Instruction for installation

Unidirectional installation



Bidirectional installation







# WORKING WITH SICK IN A DIGITAL WORLD

Making your digital business environment comfortable

## Find a suitable solution in next to no time

- Online product catalog
- Application Solver
- Online configurators and selectors

## My SICK is your personal self-service portal

- Open around the clock
- Clear product information
- Company-specific price conditions
- Convenience during the ordering process
- Document overview
- Availability and delivery times

### Register now:

→ [www.sick.com/myBenefits](http://www.sick.com/myBenefits)

## Even more value

- Digital Customer Trainings → [www.sick.com/c/g300887](http://www.sick.com/c/g300887)
- Digital Service Catalog → [cloud.sick.com](http://cloud.sick.com)
- SICK AppPool → [apppool.cloud.sick.com](http://apppool.cloud.sick.com)



# SERVICES FOR MACHINES AND PLANTS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.



**Consulting and design**  
Safe and professional



**Product and system support**  
Reliable, fast, and on-site



**Verification and optimization**  
Safe and regularly inspected



**Upgrade and retrofits**  
Easy, safe, and economical



**Training and education**  
Practical, focused, and professional

## 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.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**That is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

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