

D-FL 100 Volume flow measuring system

System for continuous volume flow measurement in dry gases

- QAL1 certified in accordance with EN 15267
- Reliable, even under extreme operating conditions



FEATURES

- Continuous measurement of velocity and volume flow
- Double-sided installation for measurement over the entire duct diameter or single-sided installation
- Robust and resistant probe material for use in aggressive gases or at high temperatures (optional)
- Probe individually adapted to the application

TECHNICAL DATA

Measuring principle	Differential pressure measuring principle, in-situ measurement, continuous measurement, single-sided or double-sided installation
Measuring variable	<ul style="list-style-type: none"> • Volume flow (operation) • Volume flow (standardized) • Velocity • Differential pressure • Absolute pressure • Temperature
Measuring range	Velocity: 3 ... 50 m/s Volume flow: 0 ... 3,000,000 m ³ /h
Certified measuring range	0 ... 30 m/s
Certificates	QAL1, MCERTS
Conformities	IED 2010/75/EU, EN 15267-1, EN 15267-2, EN 15267-3, EN 14181, EN 16911-2, 13th/ 17th/ 27th/ 30th BImSchV, TA Luft
Interfaces*	<ul style="list-style-type: none"> • Analog output: 1x 4 ... 20 mA, maximum 400 Ω, potential-free • Digital output: 2x NC/NO, maximum 60 V_{DC}, 30 VAC, 0.5 A • Modbus RS 485 RTU • USB
Operating voltage	24 V _{DC}
Ambient conditions	<ul style="list-style-type: none"> • Installation location: Indoor or outdoor installation** • Temperature: -20 ... +50 °C (certified) -40 ... + 60 °C (optional) • Humidity: 30 ... 60% relative humidity, non-condensing
Operating conditions	In duct: <ul style="list-style-type: none"> • Temperature: 850 °C, higher available on request • Relative humidity: 0 ... 95%, non-condensing • Relative pressure: -50 ... +50 hPa • Dust concentration: Maximum 30/100/150 mg/m³, depending on probe version

BENEFITS

- Certified for official emission monitoring
- Precise measurement of velocity and volume flow even under demanding operating conditions
- Simple and space-saving single-sided installation (optional)
- Suitable for use in potentially explosive atmospheres (optional)
- Suitable for use in hot gases

Dimensions	<ul style="list-style-type: none"> • Inner duct diameter: 0.4 ... 9 m • Wall thickness: Maximum 0.3/0.8/1.3 m, depending on probe version
Check functions	Manual zero point and reference point measurement
Degree of protection	<ul style="list-style-type: none"> • Evaluation unit: IP65 (version in housing) IP20 (version as top-hat rail module) in accordance with EN 60 529 • Differential pressure sensor: IP67 in accordance with EN 60 529
Connections	<ul style="list-style-type: none"> • Process: Flange • Probe profile: DN40 PN6 /ASME 2 1/2"-150RF • Probe profile: DN65 PN6 /ASME 3"-150RF • Probe profile: DN100 PN6/ASME 4"-150RF, others available on request
Explosion protection	ATEX (optionally available): II 2 GD Ex d IIC T5 Gb Ex tb T100°C Db
Operation and display	<ul style="list-style-type: none"> • Status LED • D-ESI 100 software*** • Or D-ISC 100 operating unit
Material	Housing: Polycarbonate Fire class: B1 (UL 94 V0)
System components	<ul style="list-style-type: none"> • D-FL 100 dynamic pressure probe • D-FL 100 differential pressure sensor • Absolute pressure sensor • Temperature sensor • D-FL 100-20 evaluation unit • D-ISC 100 operating unit (optional) • D-ESI 100 software*** • Accessories

Materials	Application area
Stainless steel	Standard material for temperatures up to 450 °C
Hastelloy	For corrosive flue gases (high SO ₂ content) up to 600 °C
Inconel 600	For flue gas temperatures between 450 °C and 850 °C
Inconel 602A	For high-temperature applications, on request

* Additional interfaces with D-ISC 100 operating unit

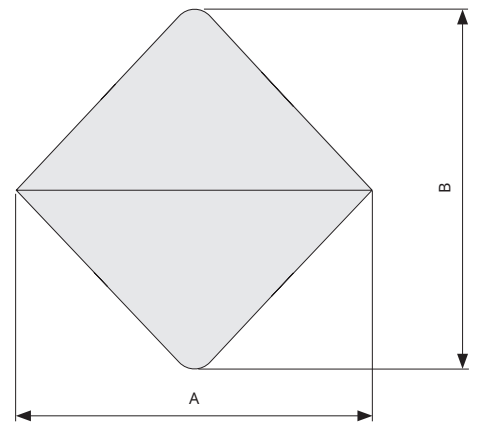
** A weather protection cover is required for outdoor installation

*** Enables remote access via web interface, requires PC with Windows operating system

D-FL 100 | PROBE PROFILES, FEATURES AND DIMENSIONS

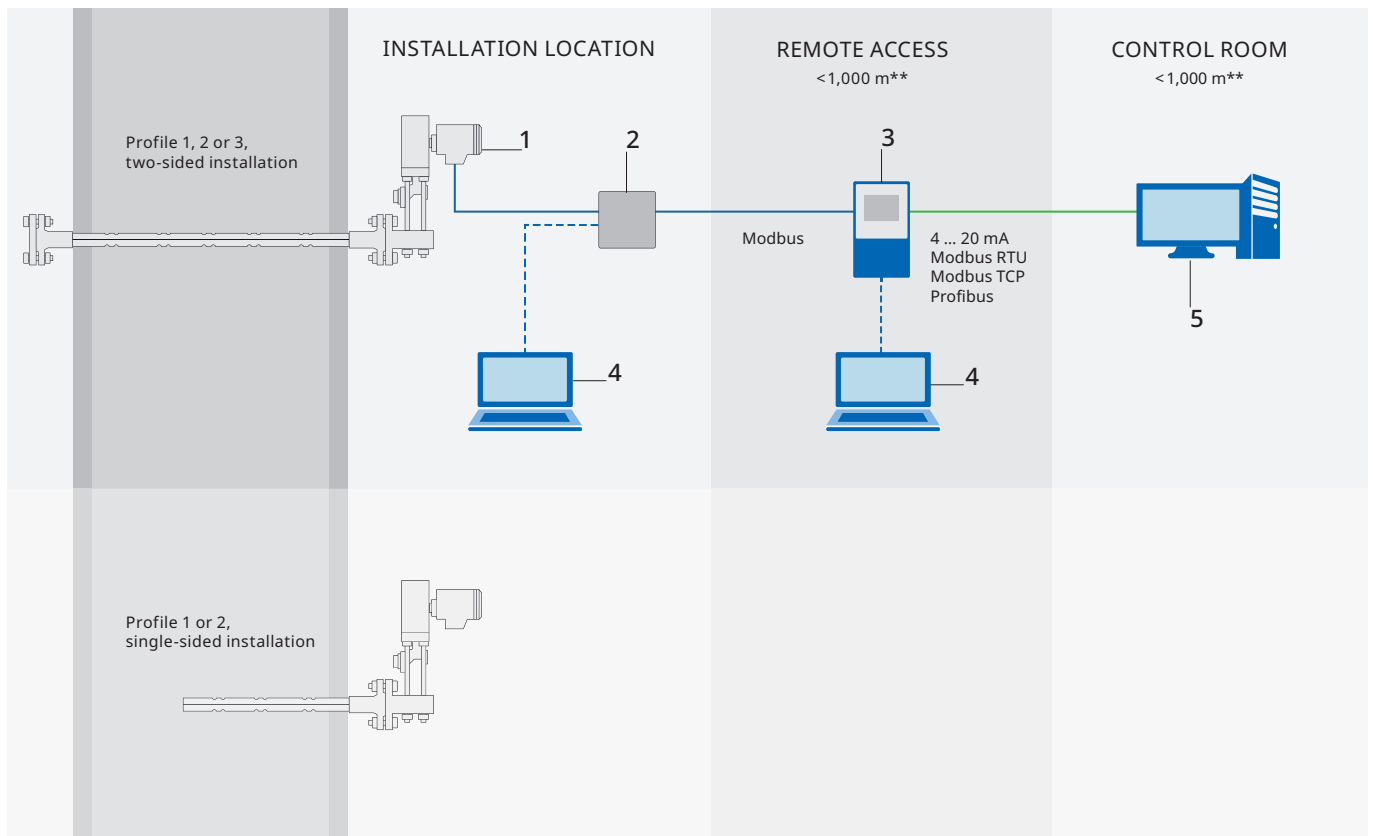
Features	Profile 1	Profile 2	Profile 3
Single-sided installation, maximum probe length	1.5 m	2 m	-
Two-sided installation, maximum probe length	0.4 ... 2 m	2 ... 4 m	4 ... 8 m
Measuring point diameter	5 mm	10 mm	12 mm
Dust concentration	<30 mg/m ³	<100 mg/m ³	<150 mg/m ³

Dimensions	Profile 1	Profile 2	Profile 3
A	22 mm	50 mm	90 mm
B	23.9 mm	53.4 mm	100 mm



Probe profile dimensions

EXAMPLES OF SYSTEM CONFIGURATIONS* | STANDARD + OPTIONAL WITH REMOTE ACCESS



- | | |
|--------------------------------|---|
| 1 Volume flow measuring system | 4 PC with Windows operating system and software |
| 2 D-FL 100-20 | 5 Emission evaluation system |
| 3 Operating unit | |

* All system components shown are available on request
 ** Maximum permitted cable length

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