

## D-FL 220 Volume Flow Measuring System

Continuous, contactless volume flow measurement  
in dry and humid gases

- QAL1 certified in accordance with EN 15267, compliant with US EPA 40 CFR 60 PS6
- Automatic control functions
- Reliable, even under demanding operating conditions



## FEATURES

- Continuous measurement of velocity and volume flow
- Contactless measurement
- Corrosion resistant ultrasonic transducers
- Measurement over the entire duct diameter
- Automatic control functions

## TECHNICAL DATA

<b>Measuring principle</b>	Ultrasonic transit time difference method, in-situ, continuous measurement, double-sided installation, contactless measurement
<b>Measuring variable</b>	<ul style="list-style-type: none"> <li>• Volume flow (operation)</li> <li>• Volume flow (standardized)</li> <li>• Velocity</li> <li>• Temperature</li> </ul>
<b>Measuring range</b>	Velocity: 0 ... 40 m/s Volume flow: 0 ... 5,000,000 m <sup>3</sup> /h
<b>Certified measuring range</b>	0 ... 30 m/s
<b>Certificates</b>	QAL1, MCERTS
<b>Conformities</b>	IED 2010/75/EU, EN 15267-1, EN 15267-2, EN 15267-3, EN 14181, EN 16911-2, US EPA 40 CFR 60 PS6, 13., 17., 27., 30. BImSchV, TA Luft
<b>Interfaces*</b>	<ul style="list-style-type: none"> <li>• Analog output: 1x 4 ... 20 mA, maximum 400 Ω, potential-free</li> <li>• Digital output: 2x NC/NO, maximum 60 VDC, 30 VAC, 0.5 A</li> <li>• Modbus RS 485 RTU</li> <li>• USB</li> </ul>
<b>Nominal voltage</b>	24 V <sub>DC</sub>
<b>Ambient conditions</b>	<ul style="list-style-type: none"> <li>• Installation location: Indoor or outdoor installation**</li> <li>• Temperature: -40 ... +70 °C (measuring device) -40 ... +60 °C (certified)</li> </ul>
<b>Operating conditions</b>	In duct: <ul style="list-style-type: none"> <li>• Temperature: Maximum 300 °C</li> <li>• Relative humidity: 0 ... 100 %, condensation permissible</li> <li>• Relative pressure: -50 ... +20 hPa</li> </ul>

## BENEFITS

- Certified for official emission monitoring
- Precise measurement of gas velocity and volume flow
- Suitable for measurement in humid and aggressive gases
- Long life time and high availability even under extreme plant conditions
- Low maintenance

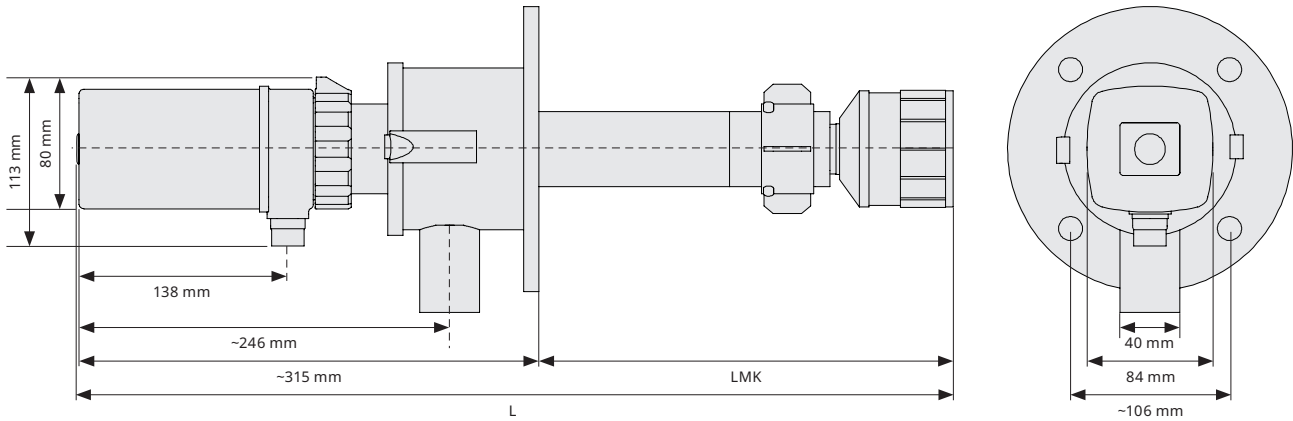
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>• Inner duct diameter: 0.5 ... 14 m, depending on the operating conditions in the duct</li> <li>• Wall thickness: Maximum 0.8 m</li> </ul>
<b>Control functions</b>	Automatic zero point and reference point measurement
<b>Degree of protection</b>	IP65 in accordance with DIN EN 60 529
<b>Connections</b>	<ul style="list-style-type: none"> <li>• Process: Flange, DN80 PN6</li> <li>• Device: M23 DURAG Standard</li> <li>• Purge air connection: Ø 40mm</li> </ul>
<b>Explosion protection</b>	N/A
<b>Operation and display</b>	<ul style="list-style-type: none"> <li>• Status LED</li> <li>• D-ESI 100 software ***</li> <li>• or D-ISC 100 operating unit</li> </ul>
<b>Material</b>	<ul style="list-style-type: none"> <li>• Housing: Polyamide / B1 (UL 94 V0)</li> <li>• Transducer: PA, PBT, FRP</li> <li>• Process parts: Stainless steel V4A</li> </ul>
<b>System components</b>	<ul style="list-style-type: none"> <li>• 2 D-FL 220 measuring devices configured as A (master) and B (slave)</li> <li>• D-BL purge air unit</li> <li>• D-TB 100 Terminal Box</li> <li>• D-ESI 100 software ***</li> <li>• or D-ISC 100 operating unit</li> </ul>

\* Additional interfaces with D-ISC 100 operating unit

\*\* A weather protection cover is required for outdoor installation

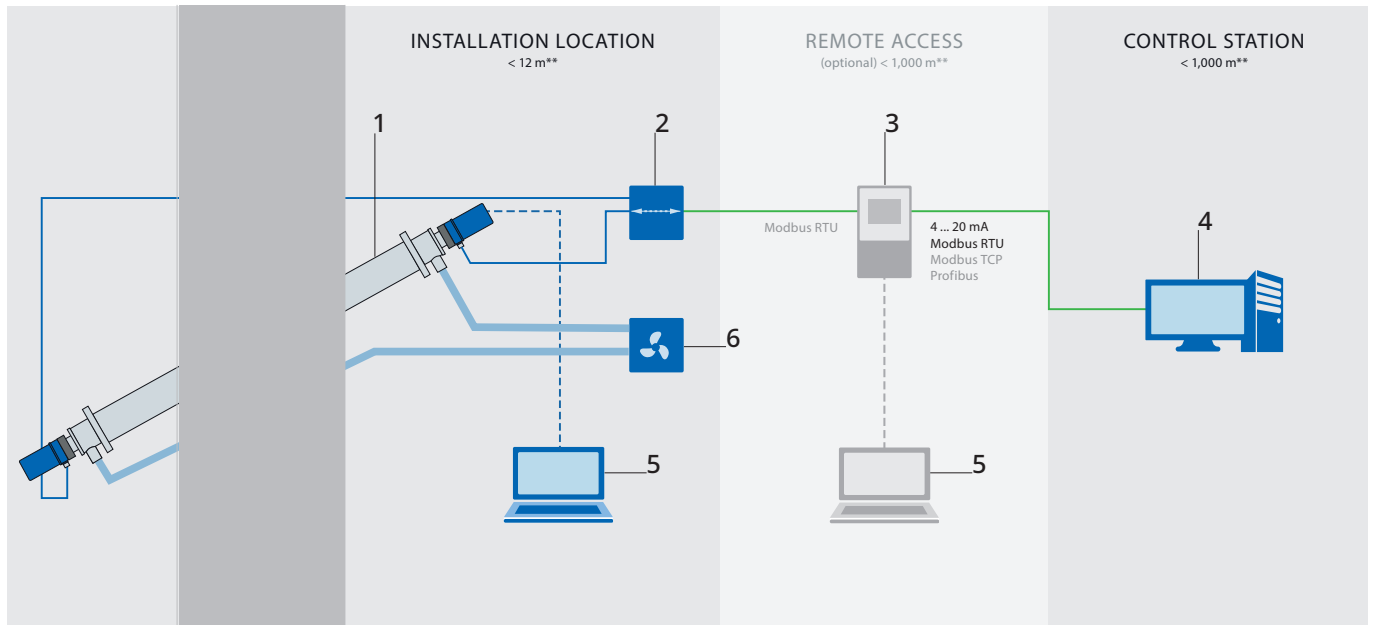
\*\*\* Enables remote access via web interface, requires PC with Windows operating system

D-FL 220 | DIMENSIONS AND WEIGHT OF DIFFERENT PRODUCT VARIANTS



Product variants	L=Total length	LMK=Immersion depth	Weight
D-FL 220 MK2-L0410-LMK0100	410 mm	100 mm	2.88 kg
D-FL 220 MK2-L0610-LMK0300	610 mm	300 mm	3.58 kg
D-FL 220 MK2-L0810-LMK0500	810 mm	500 mm	4.28 kg
D-FL 220 MK2-L1010-LMK0700	1,010 mm	700 mm	4.98 kg
D-FL 220 MK2-L1210-LMK0900	1,210 mm	900 mm	5.68 kg
D-FL 220 MK2-L1410-LMK1100	1,410 mm	1,100 mm	6.38 kg

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



- 1 Volume flow measuring device
- 2 Terminal Box
- 3 Operating unit
- 4 Emission evaluation system
- 5 PC with Windows operating system and software
- 6 Purge air unit

\* All system components shown are available on request  
 \*\* Maximum permissible cable and hose length (different for sensor head B: 25 m)

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