

Features

- In-situ measuring method
- Measurement possible below dew point and for high dust concentrations
- Continuous measurement of normal volume flow and gas velocity
- Automatic zero point and reference point control
- Direct connection for temperature and pressure correction
- Parameter input via keyboard or PC
- Continuous temperature measuring.



D-FL 200

Description

Measuring system for ultrasonic measuring of velocity and volume flow, especially for wet and aggressive smoke emissions (waste incineration).

Measuring Method

The ultrasonic flowmeter D-FL 200 works on the acoustic pulse differential method. The used ultrasonic transducers can work either in transmit-mode or in receive-mode.

The measuring heads with the sensors are mounted on the duct in a way that a vectorial component of the gas-flow coincides with the direction of the sound.

The transducers continuously transmit and receive impulses.

The gas flow affects on the transit-time.

The time upstream is reduced and the time downstream is prolonged.

The mathematical description of these two transit-times includes two unknown variables: “gas velocity” and “speed of the ultrasound”.

These two unknown variables can be resolved out of the system of equations.

The resulting velocity can be multiplied by the cross-section of the duct to obtain the volume flow.

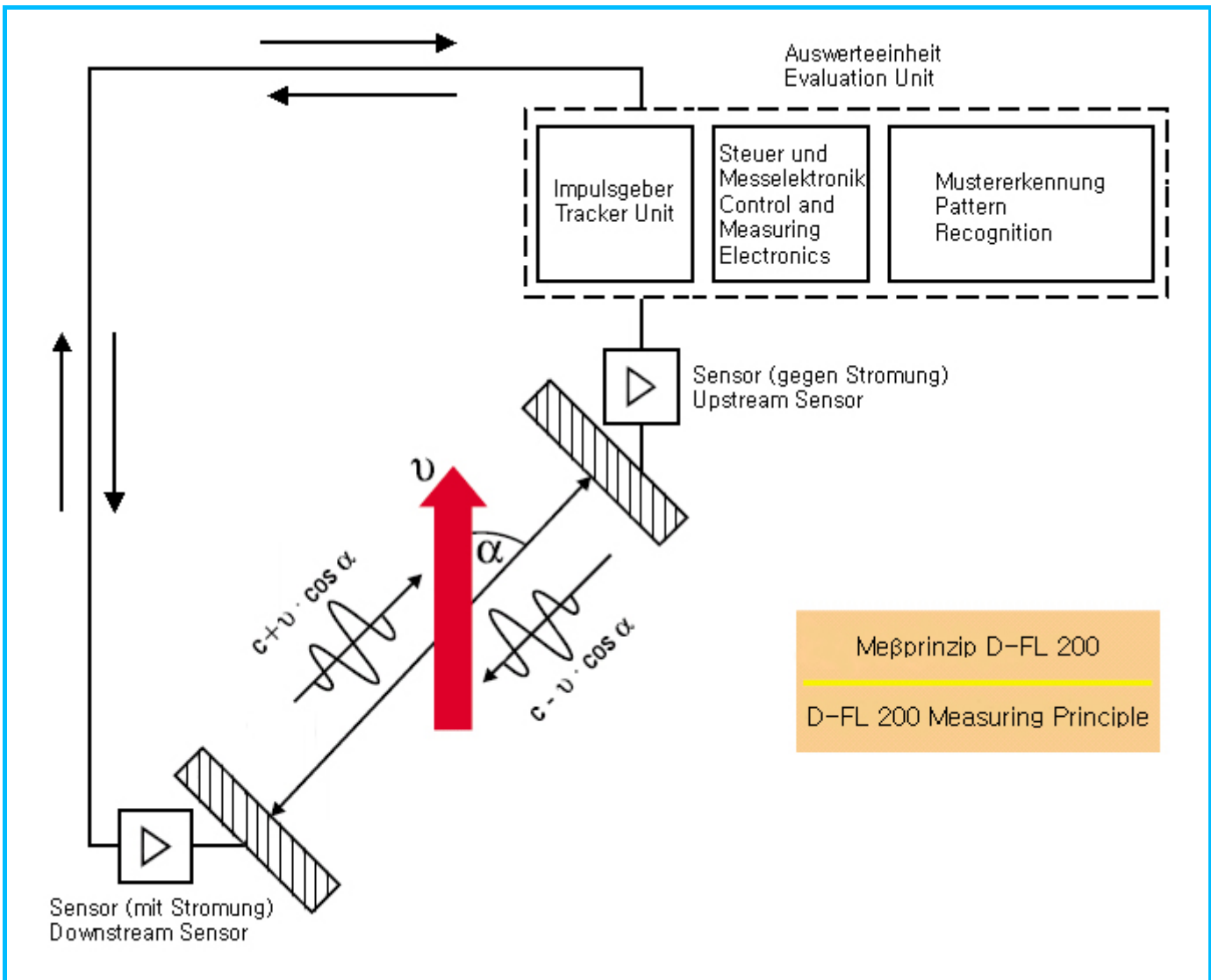
Temperature and pressure are only needed for the calculation of the standard flow.

D-FL 200
Volume Flow Meter
(Gas)

Measuring principle

The D-FL 200 measuring system works according to the acoustic transit time differential method.

Ultrasonic transducers mutually send and receive short pulses with and against the gas flow direction which affects their transit time. The volume flow is calculated from the difference of transit times.



Applications

- Volume flow measuring at low speeds
- Plants with damp and/or aggressive exhaust gas, e.g. in waste incineration plants.
- Volume flow measurement at high dust content.

According to TA-Luft pollutant emissions of industrial plants must be monitored. For mass determination of the pollutants, also the exhaust gas flow must be measured with the help of a measuring device.

The DURAG D-FL 200 measuring system continuously determines the flow velocity and the flow rate of the exhaust gas. Pre-scaleable limit value surpassings are indicated at once, so permitting necessary interventions in the plant control system in order to comply with prescribed emission values.

The measurement system is especially designed for flow monitoring below the dew-point and for aggressive gases. The sensors are completely decoupled from the gas by means of purge air.

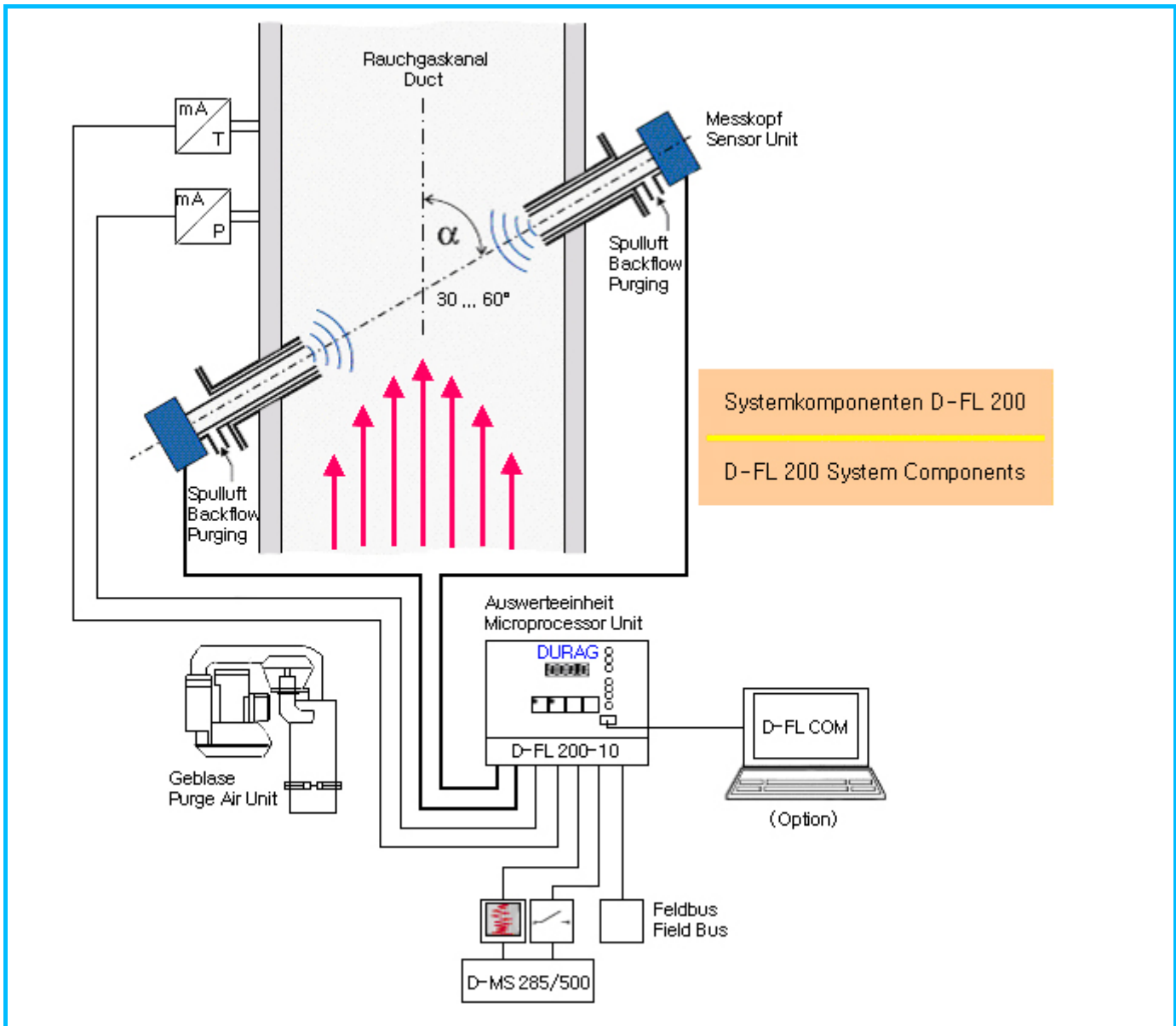
Approvals

- Suitability-tested by the TÜV Hamburg, test report 99CU019
- Itemized in the list of suitable measuring devices for continuous emission measuring
- MCERTS pending.

Installation

Equipment delivered includes extensive documentation on mounting and installation.

For alignment of the welding pipes we offer an optical sighting device. On request, you can hire our technicians for instrument initiation, who, at the same time, can instruct your personnel on the functioning and maintenance of the unit



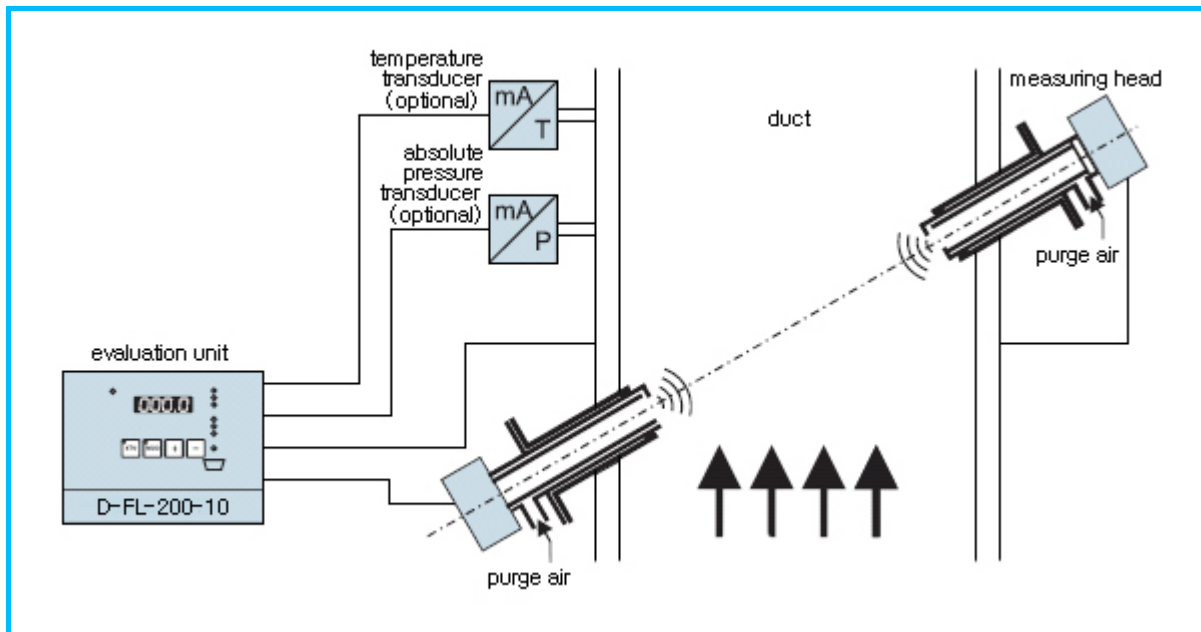
Optional Accessories

- Temperature measuring transmitter
- Absolute pressure transmitter
- Weather protective hood for the evaluation unit
- Weather protective hoods for the sensor units
- Weather protective hood for the purge air fan

The weather protective hoods are not necessary when the instrument is mounted in a protected area.

Scope of delivery of the D-FL 200 standard system

- 2 mounting flanges (Mat. 1.4571)
- 2 measuring heads
- 1 evaluation unit D-FL 200-10 with IP 65 housing
- 1 purge air fan for keeping the sensors clean and for cooling



Operating Specifications (Gas)

• Measuring Head

Length of the measuring range:	up to 8m
Installation angle:.....	30°-60°
Measuring range:	0-5,000,000m ³ /h / according 0-40 m/s
Temperature range:	200°C max.
Protection class:.....	IP65
Electrical connection:	15m / 50 m max. (option)
Weight:	15 kg per sensor

• Evaluation Unit D-FL 200-10

Mains voltage:	115/230 V, ±10%, 50/60 Hz (other voltages on request)
Power consumption:.....	approx. 50 VA
Conventional error limit:.....	±2% of the measuring range
Output signal:.....	standard flow and velocity (4-20 mA / 500 Ohms)
Current inputs:	pressure, temperature (4-20 mA / 100 Ohms)
Status contacts:.....	relay LIMIT VALUE (relay ERROR, relay MAINTENANCE)
Measuring value integration time:.....	1-180 s freely adjustable
Max possible ambient temperature rang.....	-20..+50°C
Protection class:.....	IP65
Measurements:	265 *300 *240mm (L * W * H)

• Purge Air Fan

Mains voltage:	230 V, ±10%, 50 Hz
Power consumption:.....	0.25 kW
Air output at 0 mm WH:.....	approx. 1.4 m ³ /min
Weight:	20 kg