

# Technical Data Sheet

## Air Flow Regulation Unit

**deltafit**  
made by sys tec



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## Accurate air flow regulation for aeration tasks in wastewater treatment plants

The accurate regulation of the air flow for aeration basins ensures best process quality and also helps save money as energy-intensive compressed air is applied to the basin at an optimised rate.



Insufficient oxygen supply results in incomplete decomposition of harmful substances and thus insufficient cleaning performance. In the worst case, statutory limit values might be exceeded.

Excessive aeration on the other hand does not improve treatment performance but results in higher energy costs for air compression, thus reducing the cost efficiency of your plant.

Deltafit guarantees aeration at the required level and helps save energy costs. Thanks to its robust design the unit can be operated for many years without any need for maintenance or repair even under the toughest conditions. Its carefully chosen components have been tried and tested in thousands of units and are renowned in the process industry for their high precision and availability. The parameterised components are fully assembled. After installation, they can be operated without the need for time-consuming start-up. Install - switch on - forget about it!

### Accuracy

Accurate regulation requires precise and drift-free flow rate measurement, which is a technically demanding task. Are you in a position to guarantee constant optimised air supply conditions to your basin? Is the inlet air dried and purified in order to effectively eliminate contamination and drift at the flow rate sensors?

With deltafit, you do not have to worry about this. Deltafit is equipped with the deltaflow dynamic pressure probe by systec Controls renowned for its accuracy. The deltaflow probe has been tested several times by PtB in Braunschweig, the German national metrology institute, while some of the tests were carried out with extremely short inlet paths. The results speak for themselves: the maximum deviation was 0.6% measured under extremely difficult inlet conditions. Are you concerned about solid particles, condensate and grime? Then deltafit is the product for you: the deltaflow probe is approved by TUEV in

Germany for contaminated, aggressive and condensing waste gases, and can thus easily handle your air.

You are thus benefiting from excellent stability in long-time use and drift-free measurement, while maintenance is kept to a minimum. This ensures that your regulating system works properly and accurately even after many years.



**The profile of the deltaflow can even measure disturbed flow profiles with great accuracy, thanks to its multiple measuring point technology**

If you wish to know more, contact us for a technical documentation pack of the deltaflow unit.

### Efficiency

Thanks to the competitive price of the deltafit, you save money over the entire period of investment. Acquisition costs for deltafit are very economic. As all components are fully assembled and parameterised, it can be easily installed and started. The intelligent actuator system ensures accurate flap positioning. As the unit is equipped with an integrated regulator and transmitter input, there is no need for a costly external regulator. This design also keeps pressure loss to a minimum, thus reducing your energy costs. The high regulating and measuring accuracy of the deltafit unit guarantees optimised processing and prevents wasting of air. The unit is practically maintenance-free and all components are designed to ensure a long service life.



### Reliability

The measuring section is designed in such a way that disturbance in the flow profile at the inlet is effectively

reduced. This results in high accuracy, even under unfavourable inlet conditions.

Our design does away with costly slide valves that are prone to malfunction. The flapper valve works also with contaminated air and ensures unobstructed passage of particles and condensates. With a flapper valve, "flooding" is not possible.

The high-precision regulation actuator also supplies the connected differential pressure transmitter and features a built-in intelligent regulator. There is thus no need for an external regulator with separate wiring.

The deltaflow dynamic pressure probe is in use in thousands of installations and remains fully operational even under extreme conditions. It is approved for use with aggressive, contamination and condensing gases and is thus highly suitable for use under the conditions that exist at wastewater treatment plants.

## Technical data

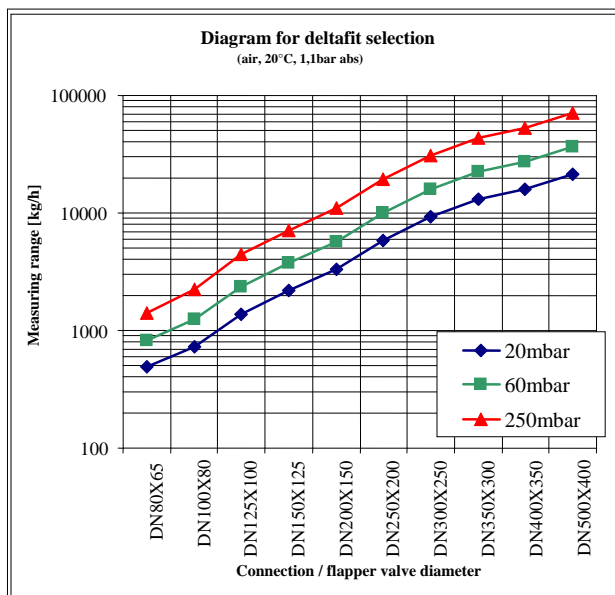
### Overall system

Connecting diameters: DN65-DN500 (other sizes available on request)

Ambient temperature: -20...60°C

Protection rating: IP67

Measuring range (please select connecting size and dp measuring range):



Measuring accuracy: 1%

Regulation accuracy: 1.5%

### Measuring path

Material: Carbon or stainless steel (optional)

Surface: Untreated

Connecting flange: According to DIN, PN6 (optional ANSI)

### Flapper valve material:

Housing: Cast iron

Drive shaft: Stainless steel (1.4029)

Disk: Stainless steel (1.4301)

Seal:

High-grade nitrile

### Actuator:

Supply voltage: 230 VAC (optional 24VDC, 115VAC)

Inputs: 2 x 4...20mA (2x0...10VDC alt), supply voltage 24VDC, 100mA onboard

Outputs: (0)4-20mA or 0...10VDC position feedback, relay cumulative error indicator

Interface: RJ 45 TTL (RS232 or USB port)

Bus: ProfibusDP (optional)

Temperature range: -20...60°C (available with optional heating system)

Protection rating: IP67

### Differential pressure transducer

Measuring range limit: 20mbar (dp20)

60mbar (dp60)

250mbar (dp250)

The limit values of the measuring range can be reduced to 1/10 of the rated value without any loss in accuracy. This means that the measuring range limit values of the measuring path can be reduced by approx. 1/3.

Power supply: 24VDC, 4...20mA two-wire connection, hard-wired

Operation: Local keys and display

Protection rating: IP67

Accuracy: 0.075%

Material: Parts in contact with medium made in stainless steel

Housing: Aluminium

Optional equipment: Multivariable transducer for pressure and temperature measurement for the compensation of changing ambient conditions.

### deltaflow dynamic pressure probe

Material: Probe made in stainless steel

Welded nozzle in same material as measuring path

Three-way manifold made in stainless steel

Seals: PTFE

Accuracy: 0.6%

Long-term drift: 0%

Protection rating: IP69

Installation: Welded nozzle with flange or cutting ring

## Order data

deltafit	Diameter (connecting flange)	Material of measuring path	multivariable (incl. PT100)	Weather protection box	Supply voltage	Optional equipment
DT25	DN					
DN80 X 65 X 80	80					
DN100 X 80 X 100	100					
DN125 X 100 X 125	125					
DN150 X 125 X 150	150					
DN200 X 150 X 200	200					
DN250 X 200 X 250	250					
DN300 X 250 X 300	300					
DN350 X 300 X 350	350					
DN400 X 300 X 400	400					
DN500 X 400 X 500	500					
High-carbon steel, blank		CS				
Stainless steel		ES				
Differential pressure transmitter without pressure and temperature compensation			DP			
Differential pressure transmitter with pressure and temperature compensation			MV			
Without weather protection box				WSK0		
Weather protection box for the frost protection of the transmitter				WSK1		
230 VAC power supply					230	
115VAC power supply					115	
24VAC power supply					24	
Without bus						00
Profibus DP						11
ANSI connecting flange						12
Actuator with heating system (for ambient temperatures below -20°C)						13

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