



STATISCHER  
DIFFERENZDRUCKTRANSMITTER  
VFP-300



UNIVERSALREGLER VRP

## STATIC DIFFERENTIAL PRESSURE TRANSDUCERS

### FOR THE STATIC EFFECTIVE AND DIFFERENTIAL PRESSURE MEASUREMENT

Differential pressure transducers based on the static measurement principle for volume flow rate measuring units Type VMR, VMRK or VME

- Linear volume flow rate actual value 2 – 10 V DC
- Recording of measured values for the display of volume flow rates or for the control of slave controllers
- Parameters are factory set

## Application



### Application

- Electronic volume flow controller Universal with static differential pressure transducer for use with volume flow rate measuring units
- For applications with polluted extract air, e.g. with fluff, sticky particles or aggressive substances
- Parameters are factory set
- On-site adjusting is not required
- For this application the Universal controller is only used for measuring the differential pressure and for transforming the measured value into a linear voltage signal. Connections for setpoint value signal and actuator are not relevant, and neither are the corresponding technical data.
- Volume flow rate actual value is available as linear voltage signal

## Description



### Parts and characteristics

- Sensor for static differential pressure measurements

### Maintenance

- Zero point correction once per year is recommended

## TECHNICAL INFORMATION

Function, Technical data, Produktbeziehungen

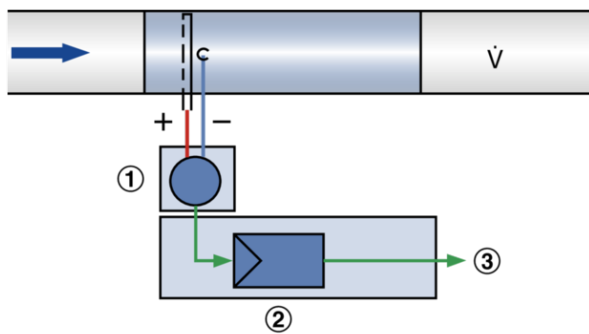


### Functional description

The volume flow rate is determined by measuring the effective pressure. For this reason the measuring unit is fitted with an effective pressure sensor.

The static differential pressure transducer (diaphragm pressure transducer) transforms the effective pressure into a voltage signal. The volume flow rate actual value is hence available as a voltage signal. The factory setting is such that 10 V DC always corresponds to the nominal volume flow rate ( $V_{nom}$ ).

### Principle of operation – static differential pressure transducer



- ① Differential pressure transducer
- ② Volume flow controller
- ③ Actual value signal

#### Volume flow controller VRP

|                             |   |
|-----------------------------|---|
| Supply voltage (AC)         | 24 V AC $\pm$ 20 %, 50/60 Hz            |
| Power rating (AC)           | without actuator max. 2.6 VA            |
| Setpoint value signal input | 2 – 10 V DC, $R_a > 100\text{ k}\Omega$ |
| Actual value signal output  | 2 – 10 V DC linear, max. 0.5 mA         |
| IEC protection class        | III (protective extra-low voltage)      |
| Protection level            | IP 42                                   |
| EC conformity               | EMC according to 2014/30/EU             |

#### Static differential pressure transducer VFP-300

|                      |                                    |
|----------------------|------------------------------------|
| Supply voltage       | from the controller                |
| Measuring range      | 0 – 300 Pa                         |
| Linearity            | $\pm 3\text{ Pa}$                  |
| IEC protection class | III (protective extra-low voltage) |
| Protection level     | IP 42                              |
| EC conformity        | EMC according to 2014/30/EU        |

## Variants



Any attachments are to be defined with the order code of the volume flow rate measuring unit.

### BBO

#### Application

- Electronic volume flow controller VRP with static differential pressure transducer for use with volume flow rate measuring units
- Separate casings for differential pressure transducer and controller electronics

#### Signal voltage range

- 2 – 10 V DC

#### Parts and characteristics

- Sensor for static differential pressure measurements

#### Installation and commissioning

- Installation orientation is relevant
- Zero point correction required

#### Static differential pressure transducers for volume flow rate measuring units

| Order code detail | Controller  |      | Static differential pressure transducer |         | Volume flow rate measuring unit |
|-------------------|-------------|------|---|---------|---------------------------------|
|                   | Part number | Type | Part number                             | Type    |                                 |
| BB0               | M546EG2     | VRP  | M546EJ1                                 | VFP-300 | VMR, VME, VMRK                  |

Universal controller VRP



Static differential pressure transducer VFP-300



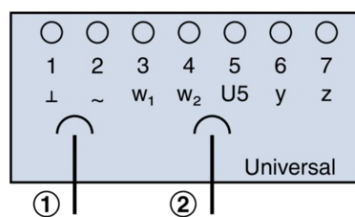
## Electrical connection, Characteristics



### Installation and commissioning

- Installation orientation is relevant
- Zero point correction required

### BB\*, Klemmenbelegung



① Steckverbindung zum Anschluss des Differenzdrucktransmitters VFP

② Steckverbindung zum Anschluss des Stellantriebs

1 ⊥: Masse, Null

2 ~: Versorgungsspannung

3 w<sub>1</sub>: Sollwertsignal

4 w<sub>2</sub>: Sollwertsignal (0 – 20 V Phasenschnitt)

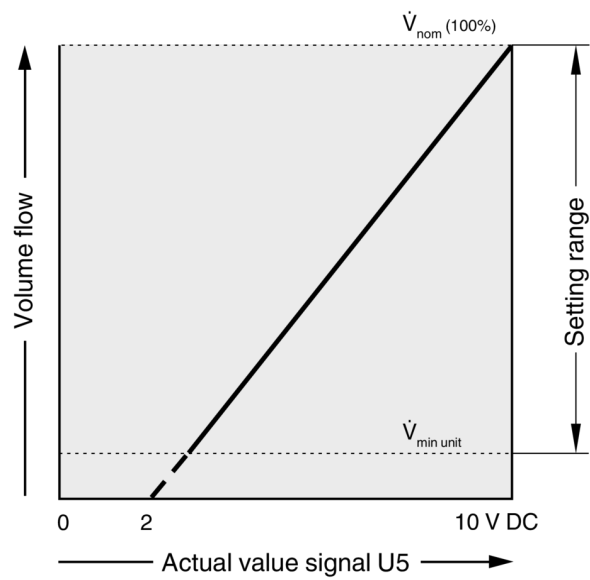
5 U5: Istwertsignal

6 y: Stellantriebssignal

7 z: Zwangssteuerung

Universal: VRP

BL0, BB\*, Kennlinie des Istwertsignals



LMV-D3LON, VRP