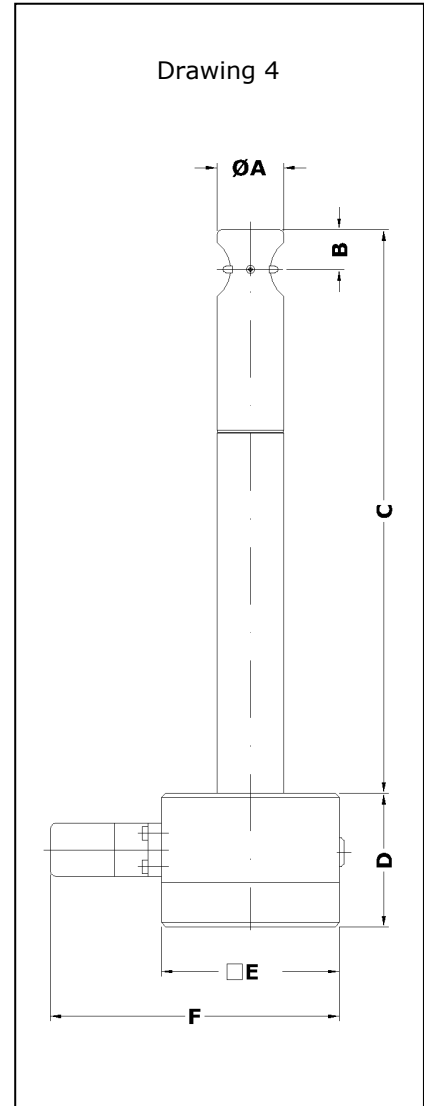


## Flow measurement with ZS30 sensors at working temperatures up to +350 °C optional with integrated transducer UFA capable of parameterization



Vane wheel flow sensor ZS30  
(see Page 3 for measurements)

### Measurable variable

- actual flow velocity  $v$  [m/s] in air/gases

### Measuring range

- 0.3 ... 3.0 m/s

### Functional principle

- vane wheel flow sensor
- scanning the vane rotation; non-contact inductive proximity switch

### Advantages

- minimum reaction time
- high time yield thanks to ultralight titanium vane wheel which is easy on the bearings
- corrosion resistant
- can be sterilized
- high working temperature and pressure range
- operates largely irrespective of density and composition of gas
- low pressure drop
- easy adjustment to process parameter

### Design

- insertion probe with AS80 housing

### Medium

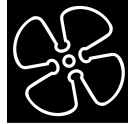
- air, gas mixtures and clean gases

### Range and examples of application

- flow measurement of air, exhaust gas, process gas, for example
- monitoring laminar flow
- monitoring flow in pharmaceutical works

### Humidity in the gas

- relative gas humidity of less than 100 % does not affect the measuring uncertainty



### Model designation (example)

|                |             |          |          |             |            |           |           |            |
|----------------|-------------|----------|----------|-------------|------------|-----------|-----------|------------|
| <b>ZS30/30</b> | <b>-350</b> | <b>G</b> | <b>E</b> | <b>md3T</b> | <b>350</b> | <b>p6</b> | <b>Ex</b> | <b>ZG4</b> |
| (1)            | (2)         | (3)      | (4)      | (5)         | (6)        | (7)       | (8)       | (9)        |

### Basic types

| Type  | Transducer/output       | Article No.  |
|---|-------------------------|--------------|
| <b>Design '100 °C' / integrated UFA</b>       |                         |              |
| ZS30/30- <b>250</b> GE-md3T/100/p6/ZG4        | UFA-int / 4-20 mA       | b014/129-ufa |
| ZS30/30- <b>350</b> GE-md3T/100/p6/ZG4        | UFA-int / 4-20 mA       | b014/130-ufa |
| ZS30/30- <b>450</b> GE-md3T/100/p6/ZG4        | UFA-int / 4-20 mA       | b014/131-ufa |
| ZS30/30- <b>550</b> GE-md3T/100/p6/ZG4        | UFA-int / 4-20 mA       | b014/132-ufa |
| ZS30/30- <b>680</b> GE-md3T/100/p6/ZG4        | UFA-int / 4-20 mA       | b014/133-ufa |
| <b>Design '350 °C' / integrated UFA</b>       |                         |              |
| ZS30/30- <b>250</b> GE-md3T/350/p6/ZG4        | UFA-int / 4-20 mA       | b014/109-ufa |
| ZS30/30- <b>350</b> GE-md3T/350/p6/ZG4        | UFA-int / 4-20 mA       | b014/110-ufa |
| ZS30/30- <b>450</b> GE-md3T/350/p6/ZG4        | UFA-int / 4-20 mA       | b014/111-ufa |
| ZS30/30- <b>550</b> GE-md3T/350/p6/ZG4        | UFA-int / 4-20 mA       | b014/112-ufa |
| ZS30/30- <b>680</b> GE-md3T/350/p6/ZG4        | UFA-int / 4-20 mA       | b014/113-ufa |
| <b>Design '100 °C' / ext. evaluation unit</b> |                         |              |
| ZS30/30- <b>250</b> GE-md3T/100/p6/ZG4        | ext. e-unit nec. / v/FA | b014/129     |
| ZS30/30- <b>350</b> GE-md3T/100/p6/ZG4        | ext. e-unit nec. / v/FA | b014/130     |
| ZS30/30- <b>450</b> GE-md3T/100/p6/ZG4        | ext. e-unit nec. / v/FA | b014/131     |
| ZS30/30- <b>550</b> GE-md3T/100/p6/ZG4        | ext. e-unit nec. / v/FA | b014/132     |
| ZS30/30- <b>680</b> GE-md3T/100/p6/ZG4        | ext. e-unit nec. / v/FA | b014/133     |
| <b>Design '+350 °C' / ext. eval. unit</b>     |                         |              |
| ZS30/30- <b>250</b> GE-md3T/350/p6/ZG4        | ext. e-unit nec. / v/FA | b014/109     |
| ZS30/30- <b>350</b> GE-md3T/350/p6/ZG4        | ext. e-unit nec. / v/FA | b014/110     |
| ZS30/30- <b>450</b> GE-md3T/350/p6/ZG4        | ext. e-unit nec. / v/FA | b014/111     |
| ZS30/30- <b>550</b> GE-md3T/350/p6/ZG4        | ext. e-unit nec. / v/FA | b014/112     |
| ZS30/30- <b>680</b> GE-md3T/350/p6/ZG4        | ext. e-unit nec. / v/FA | b014/113     |

### (1) Sensor type / Sensor diameter

Vane wheel flow sensor ZS30 with sensor Ø 30 mm and shaft Ø 30 mm

### (2) Sensor length measurement C (see drawing Page 1)

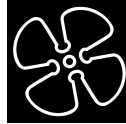
250 / 350 / 450 / 550 / 680 mm

### (3) Medium

... G ... air / gases

### (4) Materials in contact with the medium

| Design    | Material  |
|-----------|---|
| ... E ... | stainless steel 1.4404 / AISI 316L, titanium, ceramics Al <sub>2</sub> O <sub>3</sub> 99,9 %, pure graphite |



**(5) Vane wheel type / Measuring range**

|                       |  |
|-----------------------|--|
| Design                | Measuring range  |
| ... md3T ...          | 0.3 ... 3.0 m/s (with a gas density of approx. 1.2 kg/m <sup>3</sup> ) |
| Measuring uncertainty | < 1.5 % of reading + 0.03 m/s  |
| Consistency           | ± 0.02 m/s   |

**(6) Permissible temperature of the medium**

|             |  |
|-------------|--|
| Design      | Temperature  |
| ... 100 ... | -20 ... +100 °C (continuous)                                 |
| ... 350 ... | -40 ... +350 °C (continuous)<br>-40 ... +400 °C (short-time) |

|                            |                |                                    |
|----------------------------|----------------|------------------------------------|
| <b>ambient temperature</b> | -40 ... +80 °C | with separate evaluation unit      |
|                            | -40 ... +80 °C | with integrated transducer UFA-int |
|                            | -5 ... +50 °C  | with 'LCD' option                  |

**(7) Max. working pressure / Type of protection for sensor**

|   |
|---|
| up to 6 bar / 600 kPa above atmospheric |
| type of protection IP68                 |

**(8) Option 'Ex'**

| Type of protection  | Art.-No. | Comment  |
|---|----------|--|
| Ex ia IIC T6<br>Gas-Ex:<br>Category 2G (Zone 1)   | faex1    | only in connection with:<br><ul style="list-style-type: none"> <li>isolation/supply unit LDX2 <u>and</u> 'non-Ex evaluation unit or</li> <li>compatible separate evaluation unit with Ex-output</li> </ul> |
| Ex nA IIC T6<br>Gas-Ex:<br>Category 3G (Zone 2)<br>Ex tc IIIC TX<br>Dust-Ex:<br>Category 3D (Zone 22) | faex2    | only in connection with:<br><ul style="list-style-type: none"> <li>evaluation unit or</li> <li>flowtherm NT</li> </ul>   |

**(9) Design**

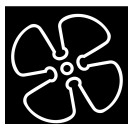
|                       |   |         |   |       |                          |
|-----------------------|---|---------|---|-------|--------------------------|
| as Drawing 4 (Page 1) |   |         |   |       |                          |
| measurements          | A | Ø 30 mm | B | 18 mm | C 250/350/450/550/680 mm |
|                       | D | 60 mm   | E | 80 mm | F 130 mm                 |

**Connection housing AS80**

|                      |                                       |
|----------------------|---------------------------------------|
| measurements         | 80 / 80 / 60 mm (l / b / h)           |
| connection           | connector GO 070 with terminal screws |
| terminal connections | see Page 4                            |
| type of protection   | IP65                                  |

**Output / transducer (see Page 2, 'Basic types')**

|   |   |
|---|---|
| output 4-20 mA / integrated UFA   | UFA transducer integrated in the sensor housing (see Page 4)  |
| output sensor v/FA / sep. eval. unit necessary  | Höntzsch evaluation unit with v/FA input necessary for signal evaluation  |
| output sensor v/FA-Ex, sensor with option 'Ex' for use in Category 2G (Zone1) / sep. eval. unit necessary | Höntzsch evaluation unit with intrinsically safe v/FA-Ex signal or evaluation unit with v/FA input in conjunction with a series connected isolation/supply unit necessary for signal evaluation |



**Design - Transducers UFA-int, integrated in the sensor connection housing**

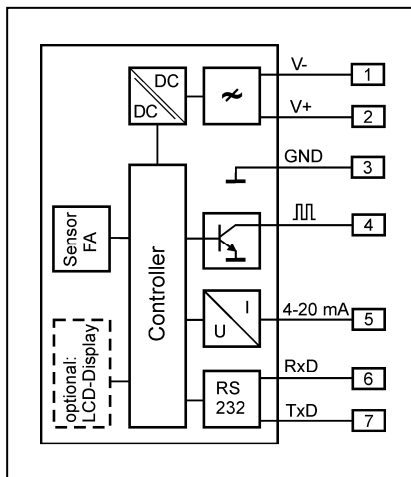
|  |   |   |
|--|---|---|
| analog output / burden   | 4 ... 20 mA, burden max. 400 Ohm  |   |
| output limit value   | Open Collector / max. 50 mA / max. 27 V DC  |   |
| PC interface   | RS232   |   |
|  | the output signals are electrically isolated from the power supply                        |   |
| self-regulation  | parameter settings, sensor interface;<br>in case of error: analog output less than 3.6 mA |   |
| connection   | connector GO 070 with terminal screws   |   |
| power supply   | 24 V DC (20 ... 27 V DC)  |   |
| power consumption  | less than 3 W   |   |
| working temp. range  | -25 ... +80 °C  |   |
| housing  | sensor connection housing AS80  |   |
| EMC  | EN 61 000-6-2:2001  |   |
| transducer with PC software UCOM and programming adapter capable of parameterization | <b>Parameter</b>  | <b>Factory settings</b>                         |
|  | analog output   | 4...20 mA = 0...x m/s<br>(x = customers desire) |
|  | time constant   | 1 s   |
|  | limit value v   | 3.00 m/s  |
|  | coefficient / profile factor  | 1.000   |

**Accessories (optional)**

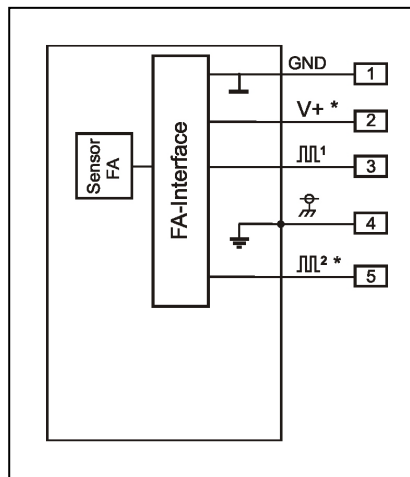
|                                    | Description   | Art. No. |
|------------------------------------|---|----------|
| LCD in housing cover               | 2 x 16 digit, numerals 3 mm high, working temperature range -5...+50 °C         | a010/007 |
| calibration cert. v/FA             | calibration values 0.5;0.75;1;1.5;2;3 m/s                                       | klbneu   |
| PC software UCOM                   | for configuring the UFA/int via RS232   | a010/052 |
| programming adapter GO 070 / RS232 | for software UCOM, connection PC Sub-D 9-pin, plug to mains supply 230VAC/24VDC | a010/004 |
| Interface converter USB / RS232    | connection PC : USB plug type A<br>connection unit : Sub-D 9-pin                | a010/100 |



optional LCD in housing cover



wiring diagram integrated transducer UFA



wiring diagram for external evaluation unit (\* optional)

**Höntzsch GmbH**

Gottlieb-Daimler-Straße 37  
D-71334 Waiblingen (Hegnach)  
Telefon +49 7151 / 17 16-0  
Telefax +49 7151 / 5 84 02  
E-Mail info@hoentzsch.com  
Internet www.hoentzsch.com

Subject to alteration