Supplementary instructions
Bypass 72
Bypass tube
with VEGAFLEX level sensor
1 Product description

Bypass 72 is a complete level measuring system in a bypass tube, complete with VEGAFLEX sensor.

Bypass 72 with VEGAFLEX sensor is immediately ready for operation and requires no adjustment.

Depending on the process pressure or process temperature, VEGAFLEX 61 and VEGAFLEX 66 sensors can be used in combination with the bypass tube.

Features and fittings of the bypass tube

Fig. 1: Bypass tube with VEGAFLEX
1 Dimensions tube center to tube center, 300 … 3000 mm (11.8 … 118 in)
2 Seal - measuring instrument flange
3 Electrode rod
4 Spacer
5 Type label
6 Closure rinsing connection, e.g. blind stopper
A Measuring instrument flange
B Connection flange, top
C Connection flange, bottom
D Rinsing air connection
E Ventilation connection - optional
2 Mounting

Operating instructions  Take note of the attached mounting instructions and the operating instructions manual of the corresponding VEGAFLEX level sensor.

Seals  The seals for the connection flanges and ventilation fitting (optional) must be provided by the customer.

The seal on the measuring instrument flange (A) and the rinsing connection (D) are already mounted ex works.

Before use, check if the seal material is resistant against the medium, the process pressure and the process temperature.

The max. permissible pressure of the sensor is specified in the operating instructions manual of the sensor in chapter "Technical data" or on the type label of the sensor.
3 Supplement

3.1 Technical data

General data
Take note of the information in the operating instructions manual of the installed VEGAFLEX level sensor

Material 316L corresponds to 1.4404 or 1.4435

Materials
- Bypass tube 316L
- Spacer ≤ 250 °C PEEK
- Spacer > 250 °C (optional) 302 (1.4310)
- Seal - Measuring instrument flange (standard) Klingersil C-4500
- Seal - Measuring instrument flange (higher pressure stages) Convex B45A graphite laminate
- Seal - Measuring instrument flange (high temperature/high pressure) RTJ seal rings

Diameter Ø 60.3 mm (2.37 in)
Wall thickness
- Standard version 2 mm (0.079 in)
- High pressure version 3.91 mm (0.154 in)

Volume - bypass tube See following diagram
**Fig. 2: Volume of the bypass tube**

1. Tube length in mm (in)
2. Volume in L (US.liq.gal)

**A** Standard version  
**B** High pressure version

Process temperature  
Process pressure

See process fitting - connection flange (B,C)

**Process fitting - Measuring instrument flange (A)**

DN 50 PN 40, Form C, DIN 2501

Flange 2" 300 lb RF, ANSI B16.5

**Process fitting - connection flange top/bottom (B, C)**

Process pressure in bar (psig) depending on the process temperature

**Process temperature 150 °C (302 °F)**

<table>
<thead>
<tr>
<th>Flanges</th>
<th>Process pressure</th>
<th>Seal</th>
<th>Wall thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flange DN 20 PN 40, Form C, DIN 2501</td>
<td>12 bar (174 psig)/31 bar (450 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange DN 25 PN 40, Form C, DIN 2501</td>
<td>12 bar (174 psig)/31 bar (450 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange DN 50 PN 40, Form C, DIN 2501</td>
<td>12 bar (174 psig)/31 bar (450 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
</tbody>
</table>
### Flanges

<table>
<thead>
<tr>
<th>Flange</th>
<th>Process pressure</th>
<th>Seal</th>
<th>Wall thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flange 1&quot; 150 lb RF, ANSI B16.5</td>
<td>12 bar (174 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 1&quot; 300 lb RF, ANSI B16.5</td>
<td>12 bar (174 psig)/31 bar (450 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 150 lb RF, ANSI B16.5</td>
<td>12 bar (174 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 300 lb RF, ANSI B16.5</td>
<td>12 bar (174 psig)/31 bar (450 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 1500 lb RF, ANSI B16.5</td>
<td>128 bar (1856 psig)</td>
<td>RTJ seal ring</td>
<td>3.91 mm (0.154 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 1500 lb RJF, ANSI B16.5</td>
<td>128 bar (1856 psig)</td>
<td>RTJ seal ring</td>
<td>3.91 mm (0.154 in)</td>
</tr>
</tbody>
</table>

### Process temperature 250 °C (482 °F)

<table>
<thead>
<tr>
<th>Flanges</th>
<th>Process pressure</th>
<th>Seal</th>
<th>Wall thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flange DN 20 PN 40, Form C, DIN 2501</td>
<td>10.5 bar (152 psig)/27 bar (391 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange DN 25 PN 40, Form C, DIN 2501</td>
<td>10.5 bar (152 psig)/27 bar (391 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange DN 50 PN 40, Form C, DIN 2501</td>
<td>10.5 bar (152 psig)/27 bar (391 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 1&quot; 150 lb RF, ANSI B16.5</td>
<td>10.5 bar (152 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 1&quot; 300 lb RF, ANSI B16.5</td>
<td>10.5 bar (152 psig)/27 bar (391 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 150 lb RF, ANSI B16.5</td>
<td>10.5 bar (152 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 300 lb RF, ANSI B16.5</td>
<td>10.5 bar (152 psig)/27 bar (391 psig)</td>
<td>Klingersil</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 1500 lb RF, ANSI B16.5</td>
<td>111 bar (1610 psig)</td>
<td>RTJ seal ring</td>
<td>3.91 mm (0.154 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 1500 lb RJF, ANSI B16.5</td>
<td>111 bar (1610 psig)</td>
<td>RTJ seal ring</td>
<td>3.91 mm (0.154 in)</td>
</tr>
</tbody>
</table>

### Process temperature 400 °C (752 °F)

<table>
<thead>
<tr>
<th>Flanges</th>
<th>Process pressure</th>
<th>Seal</th>
<th>Wall thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flange DN 20 PN 40, Form C, DIN 2501</td>
<td>6.5 bar (94 psig)/24 bar (348 psig)</td>
<td>graphite</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange DN 25 PN 40, Form C, DIN 2501</td>
<td>6.5 bar (94 psig)/24 bar (348 psig)</td>
<td>graphite</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange DN 50 PN 40, Form C, DIN 2501</td>
<td>6.5 bar (94 psig)/24 bar (348 psig)</td>
<td>graphite</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 1&quot; 150 lb RF, ANSI B16.5</td>
<td>6.5 bar (94 psig)</td>
<td>graphite</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 1&quot; 300 lb RF, ANSI B16.5</td>
<td>6.5 bar (94 psig)/24 bar (348 psig)</td>
<td>graphite</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 150 lb RF, ANSI B16.5</td>
<td>6.5 bar (94 psig)</td>
<td>graphite</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 300 lb RF, ANSI B16.5</td>
<td>6.5 bar (94 psig)/24 bar (348 psig)</td>
<td>graphite</td>
<td>2 mm (0.079 in)</td>
</tr>
<tr>
<td>Flanges</td>
<td>Process pressure</td>
<td>Seal</td>
<td>Wall thickness</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------</td>
<td>--------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Flange 2&quot; 1500 lb RF, ANSI B16.5</td>
<td>95 bar (1378 psig)</td>
<td>RTJ seal ring</td>
<td>3.91 mm (0.154 in)</td>
</tr>
<tr>
<td>Flange 2&quot; 1500 lb RJF, ANSI B16.5</td>
<td>95 bar (1378 psig)</td>
<td>RTJ seal ring</td>
<td>3.91 mm (0.154 in)</td>
</tr>
</tbody>
</table>

**Process fitting - Rinsing air connection (D)**

Thread G½

½ NPT

**Process fitting - Ventilation fitting (E) (optional)**

Flange DN 15 PN 40

Flange ½" 1500 lb RF, ANSI B16.5
3.2 Dimensions

Fig. 3: Bypass tube with VEGAFLEX
1 Dimensions tube center to tube center, 300 … 3000 mm (11.8 … 118 in)
2 Seal - measuring instrument flange
3 Electrode rod
4 Spacer
5 Type label
6 Closure rinsing connection, e.g. blind stopper
A Measuring instrument flange
B Connection flange, top
C Connection flange, bottom
D Rinsing air connection
E Ventilation connection - optional
VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany
Phone +49 7836 50-0
Fax +49 7836 50-201
E-mail: info@de.vega.com
www.vega.com

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

© VEGA Grieshaber KG, Schiltach/Germany 2008

Subject to change without prior notice