



Inline sensor-fitting with paddle wheel for flow measurement

- DN06 to DN65
- Wide range of materials and type of process connections available to ideally fit to the individual applications and process conditions
- Closed pipe system, sensor inside fitting
- Quarter-turn technology
- Transmitter available for
 - Indication, Monitoring, Transmitting
 - On/Off control, Batch control

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

| | | |
|---|---|---|
|  | Type SE30 Transmitter for Inline sensor-fitting | ▶ |
|  | Type SE32 Transmitter for INLINE sensor-fitting | ▶ |
|  | Type SE35 Transmitter or batch controller for INLINE sensor-fitting | ▶ |
|  | Type SE36 ELEMENT transmitter for INLINE sensor fitting | ▶ |
|  | Type 8611 eCONTROL - Universal controller | ▶ |

Type description

The sensor-fitting Type S030 has a built-in paddle wheel to measure the flow rate and is especially designed for use with neutral, slightly aggressive, solid free liquids.

The compact sensor-fitting (S030) must be equipped with a Bürkert transmitter (SE30, SE30 Ex, SE32, SE35, SE36 or 8611) quickly and easily connected together by a bayonet catch. The Bürkert "Inline quarter-turn" technology is a construction ensuring a leakage free operation.

The paddle wheel rotation (permanent magnets included in the wheels) is detected contactless through the sensor-fitting wall. The transmitter can be snapped-on or removed without opening the pipe or interrupting the process.

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1. General technical data

| Product properties | |
|--|---|
| Materials | |
| Please make sure the device materials are compatible with the fluid you are using. Detailed information can be found in chapter “3.1. Chemical Resistance Chart – Bürkert resistApp” on page 5. | |
| Wetted parts | |
| Body, sensor armature | Stainless steel (316L - 1.4404), brass (CuZn ₃₉ Pb ₂), PVC, PP, PVDF (depending on S030 version) |
| Seal | FKM or EPDM (depending on S030 version). Detailed information can be found in chapter “11.4. Ordering chart” on page 16 |
| Axis and bearings | Ceramics (Al ₂ O ₃) |
| Paddle wheel | PVDF (PP or stainless steel on request, detailed information about stainless steel paddle wheel, see data sheet Type 8030HT ▶) |
| Screws | Stainless steel (316L - 1.4404) |
| Dimensions | Detailed information can be found in chapter “4. Dimensions” on page 6 |
| Compatibility | With flow transmitter Type SE30, SE30 Ex, SE32, SE35, SE36, batch controller SE35 or 8611 Universal controller |
| Pipe diameter | DN06...DN65 |
| Performance data | |
| Measuring range | 0.5...1200 l/min |
| Measurement deviation | Teach-In (via a remote transmitter): ± 1 % of the measured value ¹⁾ (at Teach-In flow rate value) Standard K-factor: ± 2.5 % of the measured value ¹⁾ |
| Linearity | ± 0.5 % of full scale ¹⁾ |
| Repeatability | ± 0.4 % of the measured value ¹⁾ |
| Medium data | |
| Fluid | Clean, neutral or slightly aggressive, solid-free liquids |
| Pollution | Max. 1 %, size of particles 0.5 mm max. |
| Viscosity | 300 cSt. max. |
| Velocity | 0.3...10 m/s Detailed information can be found in chapter “6.2. Selection of the nominal diameter” on page 11. |
| Fluid temperature | For sensor-fitting in: PVC: 0...+50 °C (+32...+122 °F) PP: 0...+80 °C (+32...+176 °F) Stainless steel, brass or PVDF: -15...+100 °C (+5...+212 °F) f |
| Fluid pressure (max.) | PN10 for plastic sensor-fitting PN16 for metal sensor-fitting. Detailed information can be found in chapter “5.1. Pressure temperature diagram” on page 10. |
| Approvals and Certificates | |
| Directives | |
| CE directives | The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable) |
| Pressure equipment directives | Complying with Article 4, Paragraph 1 of 2014/68/EU directive. Detailed information on the pressure equipment directive can be found in chapter “2.2. Pressure Equipment Directive” on page 4. |
| Certificates | Certificates must be ordered separately. Detailed information can be found in chapter “11.5. Ordering chart accessories” on page 18 <ul style="list-style-type: none"> • Inspection certificate 3.1 (acc. to EN-ISO 10204) • Test report 2.2 (acc. to EN-ISO 10204) • Certification of Conformity for the surface Quality (DIN4762-DIN4768-ISO/4287/1) • 3 points Flow calibration certificate • FDA declaration of conformity (stainless steel fitting only with EPDM seal) |
| Product connections | |
| Process connection | Metal sensor-fitting: Internal or external thread, weld ends, Clamp or flange Plastic sensor-fitting: True union with nut and solvent/fusion socket, spigot or external thread |


Environment and installation

| | |
|---------------------|--|
| Ambient temperature | Operation and storage: - 15...+60 °C (+5...+122 °F) for sensor-fitting in PVC - 15...+80 °C (+5...+176 °F) for sensor-fitting in PP - 15...+100 °C (+5...+212 °F) for sensor-fitting in stainless steel, brass or PVDF Temperature limits may depend on the inserted device. Refer to the relevant data sheet or instruction manual for more details. |
|---------------------|--|

1.) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C (68 °F), while maintaining the minimum inlet and outlet distances and the appropriate internal diameters of the pipes.

2. Approvals

2.1. Certification FDA

| Certificates | Description |
|---|--|
|  | FDA The versions with the housing made of stainless steel materials and the seal made of EPDM materials comply in their composition with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA). |

2.2. Pressure Equipment Directive

The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions:

Device used on a pipe

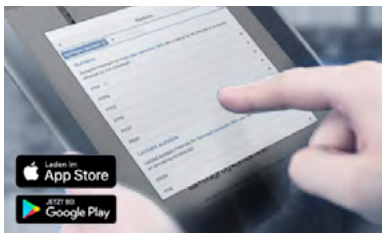
Note:

- The data in the table is independent of the chemical compatibility of the material and the fluid.
- PS = maximum admissible pressure; DN = nominal diameter of the pipe

| Type of fluid | Conditions |
|--|-------------------------------------|
| Fluid group 1, Article 4, Paragraph 1.c.i | DN ≤ 25 |
| Fluid group 2, Article 4, Paragraph 1.c.i | DN ≤ 32 or PS*DN ≤ 1000 |
| Fluid group 1, Article 4, Paragraph 1.c.ii | DN ≤ 25 or PS*DN ≤ 2000 |
| Fluid group 2, Article 4, Paragraph 1.c.ii | DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000 |

3. Materials

3.1. Chemical Resistance Chart – Bürkert resistApp



Bürkert resistApp – Chemical Resistance Chart

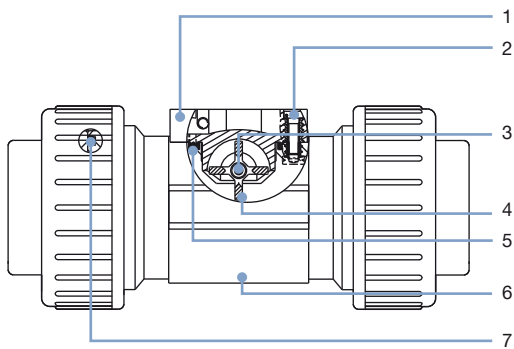
You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

[Start Chemical Resistance Check](#)

3.2. Material specifications

Note:

The drawing shows the sensor-fitting with a process True union connection with nut and solvent/fusion socket, but this also applies to all versions of process connection.



| No. | Description | Material |
|-----|---------------------|---|
| 1 | Sensor armature | Stainless steel |
| 2 | Screws | Stainless steel |
| 3 | Axis and bearings | Ceramics (Al ₂ O ₃) |
| 4 | Paddle wheel | PVDF |
| 5 | Seal | FKM or EPDM (depending on S030 version) |
| 6 | Sensor-fitting body | Stainless steel (316L - 1.4404), brass (CuZn ₃₉ Pb ₂), PVC, PP, PVDF (depending on S030 version) |
| 7 | Seals | FKM or EPDM (depending on S030 version and only for True union connection with nut and solvent/fusion socket) |

4. Dimensions

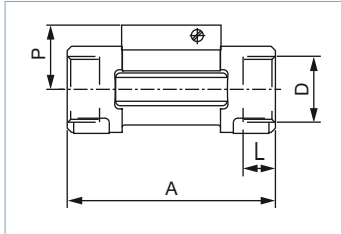
4.1. Metal sensor-fitting

Internal thread connection

Note:

Specifications in mm

G, NPT or Rc in stainless steel (316L - 1.4404) or brass (CuZn₃₉Pb₂)



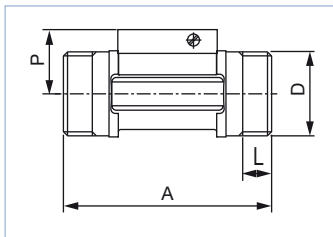
| DN | P | A | D | | L |
|----|------|-------|-----------|--|------|
| | | | [inch] | | |
| 15 | 34.5 | 84.0 | G 1/2 | | 16.0 |
| | | | NPT 1/2 | | 17.0 |
| | | | Rc 1/2 | | 15.0 |
| 20 | 32.0 | 94.0 | G 3/4 | | 17.0 |
| | | | NPT 3/4 | | 18.3 |
| | | | Rc 3/4 | | 16.3 |
| 25 | 32.2 | 104.0 | G 1 | | 23.5 |
| | | | NPT 1 | | 18.0 |
| | | | Rc 1 | | 18.0 |
| 32 | 35.8 | 119.0 | G 1 1/4 | | 23.5 |
| | | | NPT 1 1/4 | | 21.0 |
| | | | Rc 1 1/4 | | 21.0 |
| 40 | 39.6 | 129.0 | G 1 1/2 | | 23.5 |
| | | | NPT 1 1/2 | | 20.0 |
| | | | Rc 1 1/2 | | 19.0 |
| 50 | 45.7 | 148.5 | G 2 | | 27.5 |
| | | | NPT 2 | | 24.0 |
| | | | Rc 2 | | 24.0 |

External thread connection

Note:

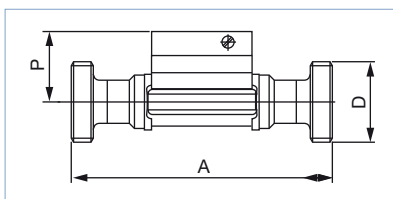
Specifications in mm

G, NPT or Rc in stainless steel (316L - 1.4404), brass (CuZn₃₉Pb₂), PVC (only DN06 and DN08) or PVDF (only DN08)



| DN | P | A | D | | L |
|----|------|-------|------------------|---------|------|
| | | | [inch] | [mm] | |
| 06 | 29.5 | 90.0 | G 1/2 | - | 14.0 |
| 08 | 29.5 | 90.0 | G, NPT or Rc 1/2 | M16x1.5 | 14.0 |
| 15 | 34.5 | 84.0 | G 3/4 | - | 11.5 |
| 20 | 32.0 | 94.0 | G 1 | - | 13.5 |
| 25 | 32.2 | 104.0 | G 1 1/4 | - | 14.0 |
| 32 | 35.8 | 119.0 | G 1 1/2 | - | 18.0 |
| 40 | 39.6 | 129.0 | - | M55x2 | 19.0 |
| 50 | 45.7 | 148.5 | - | M64x2 | 20.0 |

SMS 1145 in stainless steel (316L - 1.4404)



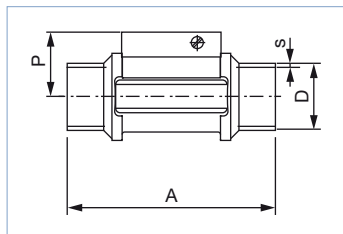
| DN | P | A | D |
|----|------|-----|-------------|
| 25 | 32.0 | 130 | Rd 40x 1/6" |
| 40 | 35.8 | 164 | Rd 60x 1/6" |
| 50 | 39.6 | 173 | Rd 70x 1/6" |

Weld end connection

Note:

Specifications in mm

EN ISO 1127/ISO 4200/DIN 11866 series B, SMS 3008, BS 4825-1/ASME BPE/DIN 11866 series C or DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A in stainless steel (316L - 1.4404)



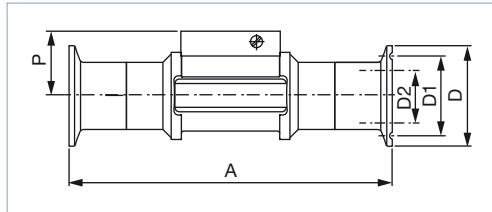
| DN | P | A | Standard | D | s |
|----|------|-------|---|-------|------|
| 08 | - | - | EN ISO 1127/ISO 4200/DIN 11866 series B | - | - |
| | - | - | SMS 3008 | - | - |
| | - | - | ASME BPE/DIN 11866 series C | - | - |
| | 29.5 | 96.0 | DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A | 13.00 | 1.50 |
| 15 | 34.5 | 84.0 | EN ISO 1127/ISO 4200/DIN 11866 series B | 21.30 | 1.60 |
| | - | - | SMS 3008 | - | - |
| | - | - | ASME BPE/DIN 11866 series C | - | - |
| | 34.5 | 84.0 | DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A | 19.0 | 1.50 |
| 20 | 32.0 | 94.0 | EN ISO 1127/ISO 4200/DIN 11866 series B | 26.9 | 1.60 |
| | - | - | SMS 3008 | - | - |
| | 34.5 | 84.0 | ASME BPE/DIN 11866 series C | 19.05 | 1.65 |
| | 34.5 | 84.0 | DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A | 23.00 | 1.50 |
| 25 | 32.2 | 104.0 | EN ISO 1127/ISO 4200/DIN 11866 series B | 33.70 | 2.00 |
| | 32.0 | 94.0 | SMS 3008 | 25.00 | 1.20 |
| | 32.0 | 94.0 | BS 4825-1/ASME BPE/DIN 11866 series C | 25.40 | 1.65 |
| | 32.0 | 94.0 | DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A | 29.00 | 1.50 |
| 32 | 35.8 | 119.0 | EN ISO 1127/ISO 4200/DIN 11866 series B | 42.40 | 2.00 |
| | - | - | SMS 3008 | - | - |
| | 32.2 | 104.0 | BS 4825-1/ASME BPE/DIN 11866 series C | 32.00 | 1.65 |
| | 32.2 | 104.0 | DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A | 35.00 | 1.50 |
| 40 | 39.6 | 129.0 | EN ISO 1127/ISO 4200/DIN 11866 series B | 48.30 | 2.00 |
| | 35.8 | 119.0 | SMS 3008 | 38.00 | 1.20 |
| | 35.8 | 119.0 | BS 4825-1/ASME BPE/DIN 11866 series C | 38.10 | 1.65 |
| | 35.8 | 119.0 | DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A | 41.00 | 1.50 |
| 50 | 45.7 | 148.5 | EN ISO 1127/ISO 4200/DIN 11866 series B | 60.30 | 2.60 |
| | 39.6 | 128.0 | SMS 3008 | 51.00 | 1.20 |
| | 39.6 | 128.0 | BS 4825-1/ASME BPE/DIN 11866 series C | 50.80 | 1.65 |
| | 39.6 | 128.0 | DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A | 53.00 | 1.50 |
| 65 | - | - | EN ISO 1127/ISO 4200/DIN 11866 series B | - | - |
| | 45.7 | 147.0 | SMS 3008 | 63.50 | 1.60 |
| | 45.7 | 147.0 | BS 4825-1/ASME BPE/DIN 11866 series C | 63.50 | 1.65 |
| | - | - | DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A | - | - |

Clamp connection

Note:

Specifications in mm

DIN 32676 series B, SMS 3017¹⁾, BS 4825-3/ASME BPE¹⁾ or DIN 32676 series A in stainless steel (316L - 1.4404)



| DN | P | A | Standard | D | D1 | (D2) |
|----|------|-----|----------------------------------|------|------|-------|
| 08 | - | - | DIN 32676 series B ²⁾ | - | - | - |
| | - | - | SMS 3017 | - | - | - |
| | - | - | ASME BPE | - | - | - |
| | 29.5 | 125 | DIN 32676 series A | 34.0 | 27.5 | 10.00 |
| 15 | 34.5 | 130 | DIN 32676 series B ²⁾ | 34.0 | 27.5 | 18.10 |
| | - | - | SMS 3017 | - | - | - |
| | - | - | ASME BPE | - | - | - |
| | 29.5 | 119 | DIN 32676 series A | 34.0 | 27.5 | 16.00 |
| 20 | 32.0 | 150 | DIN 32676 series B | 50.5 | 43.5 | 23.70 |
| | - | - | SMS 3017 | - | - | - |
| | 34.5 | 119 | ASME BPE | 25.0 | 19.6 | 15.75 |
| | 34.5 | 119 | DIN 32676 series A | 34.0 | 27.5 | 20.00 |
| 25 | 32.2 | 160 | DIN 32676 series B | 50.5 | 43.5 | 29.70 |
| | 32.0 | 129 | SMS 3017 | 50.5 | 43.5 | 22.60 |
| | 32.0 | 129 | BS 4825-3/ASME BPE | 50.5 | 43.5 | 22.10 |
| | 32.0 | 136 | DIN 32676 series A | 50.5 | 43.5 | 26.00 |
| 32 | 35.8 | 180 | DIN 32676 series B | 50.5 | 43.5 | 38.40 |
| | - | - | SMS 3017 | - | - | - |
| | - | - | BS 4825-3/ASME BPE | - | - | - |
| | - | - | DIN 32676 series A | - | - | - |
| 40 | 39.6 | 200 | DIN 32676 series B | 64.0 | 56.5 | 44.30 |
| | 35.8 | 161 | SMS 3017 | 50.5 | 43.5 | 35.60 |
| | 35.8 | 161 | BS 4825-3/ASME BPE | 50.5 | 43.5 | 34.80 |
| | 35.8 | 161 | DIN 32676 series A | 50.5 | 43.5 | 38.00 |
| 50 | 45.7 | 230 | DIN 32676 series B | 77.5 | 70.5 | 55.10 |
| | 39.6 | 192 | SMS 3017 | 64.0 | 56.5 | 48.60 |
| | 39.6 | 192 | BS 4825-3/ASME BPE | 64.0 | 56.5 | 47.50 |
| | 39.6 | 170 | DIN 32676 series A | 64.0 | 56.5 | 50.00 |
| 65 | - | - | DIN 32676 series B | - | - | - |
| | 45.7 | 216 | SMS 3017 | 77.5 | 70.5 | 60.3 |
| | 45.7 | 216 | BS 4825-3/ASME BPE | 77.5 | 70.5 | 60.2 |
| | - | - | DIN 32676 series A | - | - | - |

1.) Available with internal surface finish Ra = 0.8 µm

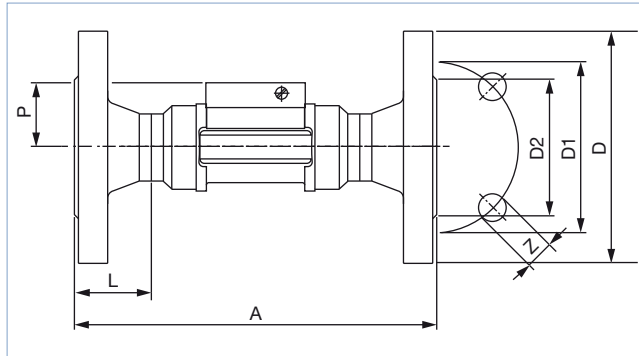
2.) Similar to DIN 32676 series B but with clamp 34.0

Flange connection

Note:

Specifications in mm

EN1092-1/B1/PN16, ANSI B16-5 or JIS 10 K in stainless steel (316L - 1.4404)



| DN | P | A | Standard | L | Z | D | D1 | D2 | | | | |
|----|------|-----|----------|------|--------|-------|-------|-------|--------|-------|-------|------|
| 15 | 34.5 | 130 | EN | 23.5 | 4x14.0 | 95.0 | 65.0 | 45.0 | | | | |
| | | 130 | ANSI | | | | | | 4x15.8 | 89.0 | 60.3 | 34.9 |
| | | 152 | JIS | | | | | | 4x15.0 | 95.0 | 70.0 | 51.0 |
| 20 | 32.0 | 150 | EN | 28.5 | 4x14.0 | 105.0 | 75.0 | 58.0 | | | | |
| | | 150 | ANSI | | | | | | 4x15.8 | 99.0 | 69.8 | 42.9 |
| | | 178 | JIS | | | | | | 4x15.0 | 100.0 | 75.0 | 56.0 |
| 25 | 32.2 | 160 | EN | 28.5 | 4x14.0 | 115.0 | 85.0 | 68.0 | | | | |
| | | 160 | ANSI | | | | | | 4x15.8 | 108.0 | 79.4 | 50.8 |
| | | 216 | JIS | | | | | | 4x19.0 | 125.0 | 90.0 | 67.0 |
| 32 | 35.8 | 180 | EN | 31.0 | 4x18.0 | 140.0 | 100.0 | 78.0 | | | | |
| | | 180 | ANSI | | | | | | 4x15.8 | 117.0 | 88.9 | 63.5 |
| | | 229 | JIS | | | | | | 4x19.0 | 135.0 | 100.0 | 76.0 |
| 40 | 39.6 | 200 | EN | 36.0 | 4x18.0 | 150.0 | 110.0 | 88.0 | | | | |
| | | 200 | ANSI | | | | | | 4x15.8 | 127.0 | 98.4 | 73.0 |
| | | 241 | JIS | | | | | | 4x19.0 | 140.0 | 105.0 | 81.0 |
| 50 | 45.7 | 230 | EN | 41.0 | 4x18.0 | 165.0 | 125.0 | 102.0 | | | | |
| | | 230 | ANSI | | | | | | 4x19.0 | 152.0 | 120.6 | 92.1 |
| | | 267 | JIS | | | | | | 4x19.0 | 155.0 | 120.0 | 96.0 |

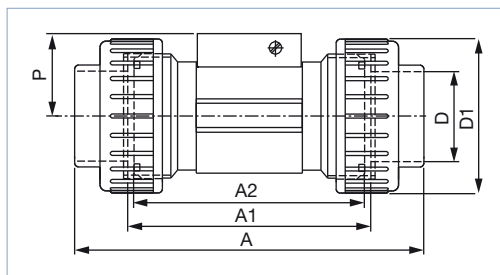
4.2. Plastic sensor-fitting

True union connection with nut and solvent/fusion socket

Note:

Specifications in mm

DIN 8063, ASTM D 1785/76 or JIS K in PVC DIN 16962 in PP or ISO 10931 in PVDF



| DN | P | A | Standard | A1 | A2 | D | D1 |
|-------------------|------|-------|----------|-----|-----|-------|-----|
| 08 ^{1.)} | 29.5 | 122.0 | DIN/ISO | 92 | 90 | 12.00 | - |
| | | - | ASTM | - | - | - | - |
| | | - | JIS | - | - | - | - |
| 15 | 34.5 | 128.0 | DIN/ISO | 96 | 90 | 20.00 | 43 |
| | | 130.0 | ASTM | | | 21.30 | |
| | | 129.0 | JIS | | | 18.40 | |
| 20 | 32.0 | 144.0 | DIN/ISO | 106 | 100 | 25.00 | 53 |
| | | 145.6 | ASTM | | | 26.70 | |
| | | 145.0 | JIS | | | 26.45 | |
| 25 | 32.2 | 160.0 | DIN/ISO | 116 | 110 | 32.00 | 60 |
| | | 161.4 | ASTM | | | 33.40 | |
| | | 161.0 | JIS | | | 32.55 | |
| 32 | 35.8 | 168.0 | DIN/ISO | 116 | 110 | 40.00 | 74 |
| | | 170.0 | ASTM | | | 42.20 | |
| | | 169.0 | JIS | | | 38.60 | |
| 40 | 39.6 | 188.0 | DIN/ISO | 127 | 120 | 50.00 | 83 |
| | | 190.2 | ASTM | | | 48.30 | |
| | | 190.0 | JIS | | | 48.70 | |
| 50 | 45.7 | 212.0 | DIN/ISO | 136 | 130 | 63.00 | 103 |
| | | 213.6 | ASTM | | | 60.30 | |
| | | 213.0 | JIS | | | 60.80 | |

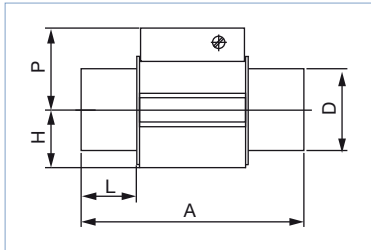
1.) Only available in PVC

Solvent/fusion spigot connection

Note:

Specifications in mm

DIN 8063 in PVC, DIN 16962 in PP or ISO 10931 in PVDF

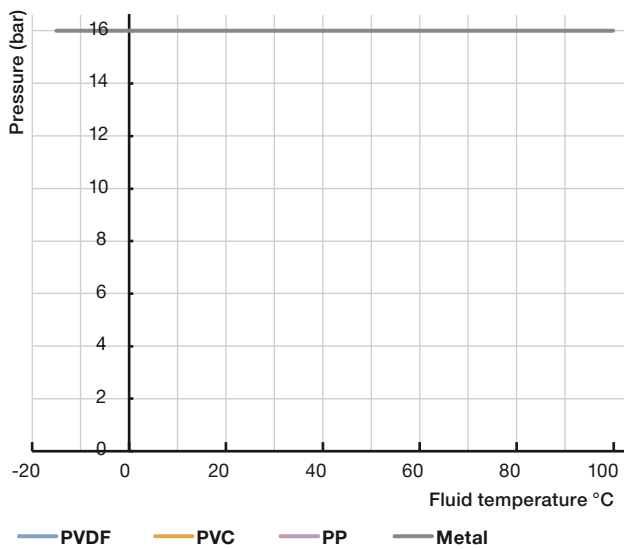


| DN | P | A | Standard | L | D | H |
|----|------|-----|-----------|------|----|------|
| 15 | 34.5 | 90 | DIN 8063 | 16.5 | 20 | 17.5 |
| | | 85 | DIN 16962 | 14.0 | | |
| | | 85 | DIN 10931 | 14.0 | | |
| 20 | 32.0 | 100 | DIN 8063 | 20.0 | 25 | 17.5 |
| | | 92 | DIN 16962 | 16.0 | | |
| | | 92 | DIN 10931 | 16.0 | | |
| 25 | 32.2 | 110 | DIN 8063 | 23.0 | 32 | 21.5 |
| | | 95 | DIN 16962 | 18.0 | | |
| | | 95 | DIN 10931 | 18.0 | | |
| 32 | 35.8 | 110 | DIN 8063 | 27.5 | 40 | 27.5 |
| | | 100 | DIN 16962 | 20.0 | | |
| | | 100 | DIN 10931 | 20.0 | | |
| 40 | 39.6 | 120 | DIN 8063 | 30.0 | 50 | 31.5 |
| | | 106 | DIN 16962 | 23.0 | | |
| | | 106 | DIN 10931 | 23.0 | | |
| 50 | 45.7 | 130 | DIN 8063 | 37.0 | 63 | 39.5 |
| | | 110 | DIN 16962 | 27.0 | | |
| | | 110 | DIN 10931 | 27.0 | | |

5. Performance specifications

5.1. Pressure temperature diagram

Application range for complete device (sensor-fitting Type S030 + transmitter Type SE30, SE32, SE35, SE36 or 8611)



6. Product installation

6.1. Installation notes

Note:

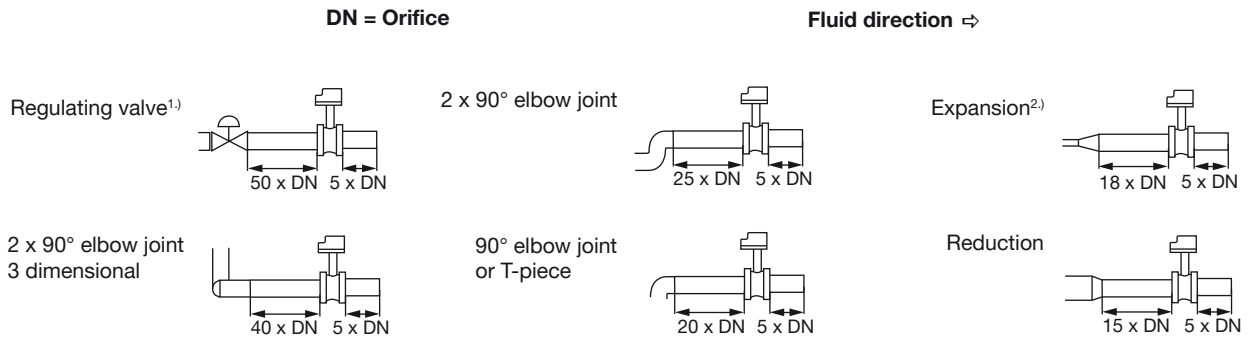
The device is not designed for gas and steam flow measurement.

Minimum straight upstream and downstream distances must be observed. According to the pipe's design, necessary distances can be bigger or use a flow conditioner to obtain the best accuracy.

For more information, please refer to EN ISO 5167-1.

EN ISO 5167-1 prescribes the straight inlet and outlet distances that must be complied with when installing fittings in pipe lines in order to achieve calm flow conditions. The most important layouts that could lead to turbulence in the flow are shown below, together with the associated prescribed minimum inlet and outlet distances.

Make sure that the measuring conditions at the point of measurement are calm and problem-free.

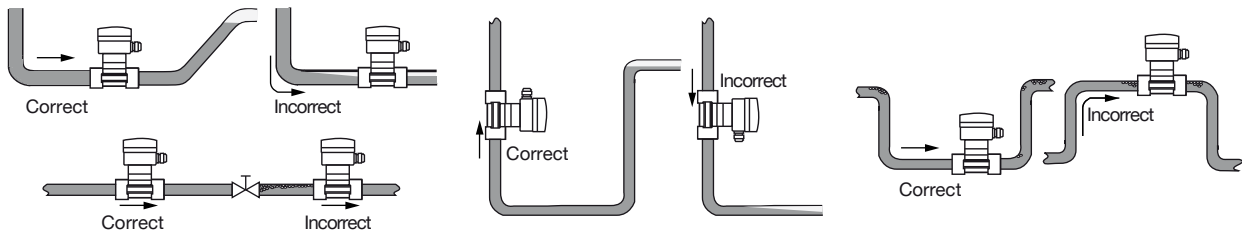


1.) If the valve cannot be mounted after the measuring device, the minimal distances have to be respected.

2.) If an expansion cannot be avoided, the minimal distances have to be respected.
Please note minimum flow velocity

The complete measuring device can be installed into either horizontal or vertical pipes.

Important criteria for this are; ensure that the measurement pipe is fully filled and that the measurement pipe is air bubble free.



Pressure and temperature ratings must be respected according to the selected sensor-fitting material. The suitable pipe size is selected using the diagram for selecting the nominal diameter of the sensor-fitting.

See chapter [“6.2. Selection of the nominal diameter”](#) on page 11.

6.2. Selection of the nominal diameter

The following graph is used to determine the DN of the pipe and the fitting appropriate to the application, according to the fluid velocity and the flow rate. On the chart, the intersection of flow rate and flow velocity gives the appropriate diameter.

Note:

For the sensor fittings listed below, the corresponding nominal size in the bracket must be used:

- External threads acc. to SMS 1145
- Weld ends acc. to SMS 3008, BS4825-1/ASME BPE/DIN 11866 series C or DIN 11850 series 2/DIN 11866 series A/
DIN EN 10357 series A
- Clamp acc. to SMS 3017, BS 4825-3/ASME BPE or DIN 32676 series A

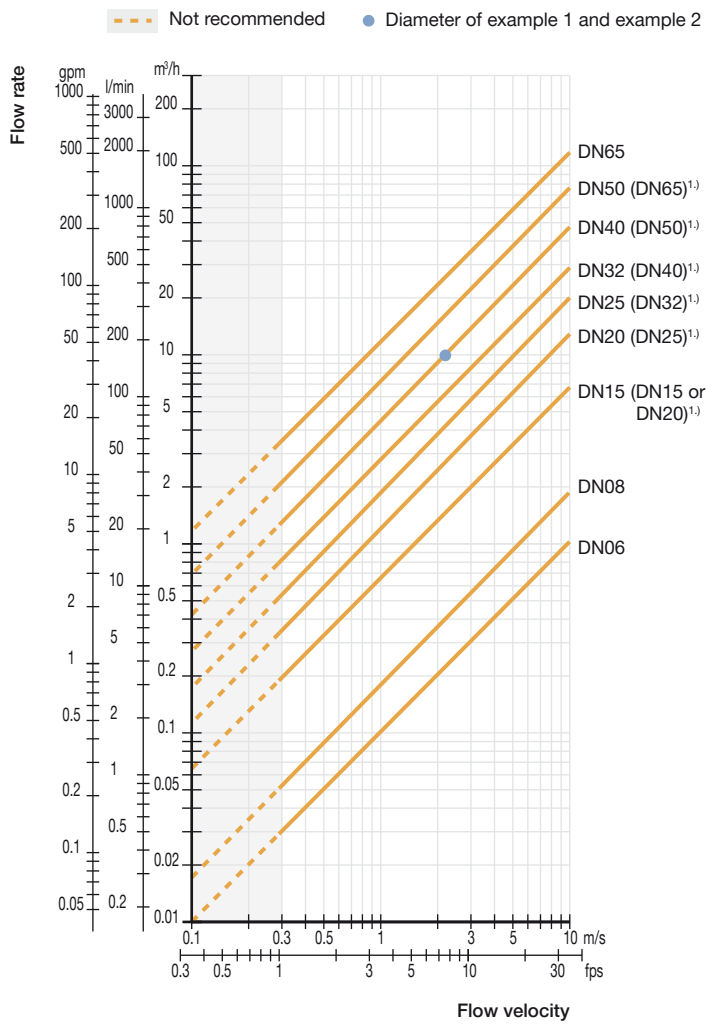
For all other sensor fittings, the corresponding nominal diameter without clamp applies.

Example 1:

- nominal flow: 10 m³/h
 - optimal flow rate: 2...3 m/s
- Result: Select a pipe size of DN40

Example 2 with external threads acc. to SMS 1145:

- nominal flow: 10 m³/h
 - optimal flow rate: 2...3 m/s
- Result: Select a pipe size of DN50



1.) See note at the beginning of this chapter.

7. Product operation

7.1. Measuring principle

When liquid flows through the pipe, the paddle wheel with 4 inserted magnets is set in rotation producing a frequency signal in the transducer (Hall sensor) of the mounted transmitter. The rotation is detected contactless through the sensor-fitting wall. The frequency signal is proportional to the flow velocity of the fluid.

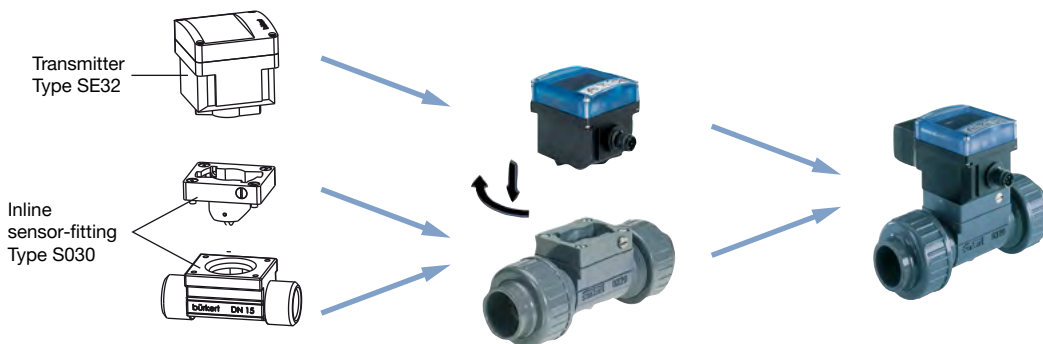
8. Product design and assembly

8.1. Product assembly

Note:

- A complete device to measure the flow rate is made up of a compact Inline sensor-fitting (S030) with paddle wheel and a transmitter (SE30, SE30 Ex, SE32, SE35, SE36 or 8611).
- The Inline sensor-fitting (S030) ensures simple installation into pipes from DN06...DN65. The transmitter can easily be installed into any Bürkert sensor-fitting system (S030), by means of a quarter turn.
- The drawing shows the assembly of a sensor-fitting Type S030 with a process True union connection with nut and solvent/fusion socket and a transmitter Type SE32 (Type S030 + Type SE32 = Type 8032). This also applies to all versions of process connection and compatible type of transmitter.

See **Data sheet Type 8030** ▶ Inline flowmeter, **Data sheet Type 8032** ▶ Flowmeter/threshold detector, **Data sheet Type 8035** ▶ Inline flowmeter or batch controller, **Data sheet Type 8036** ▶ Inline flowmeter, ELEMENT design or **Data sheet Type 8611** ▶ eCONTROL - Universal controller for more information.



9. Product accessories

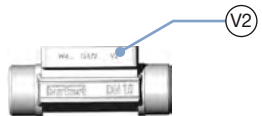
Note:

Since March 2012, sensor-fittings Type S030 in DN15 and DN20 exist in two versions, that have different K factors. The second version is identified by the marking "v2". This "v2" marking can be found:

- on the bottom of the DN15 or DN20 sensor-fitting in plastic



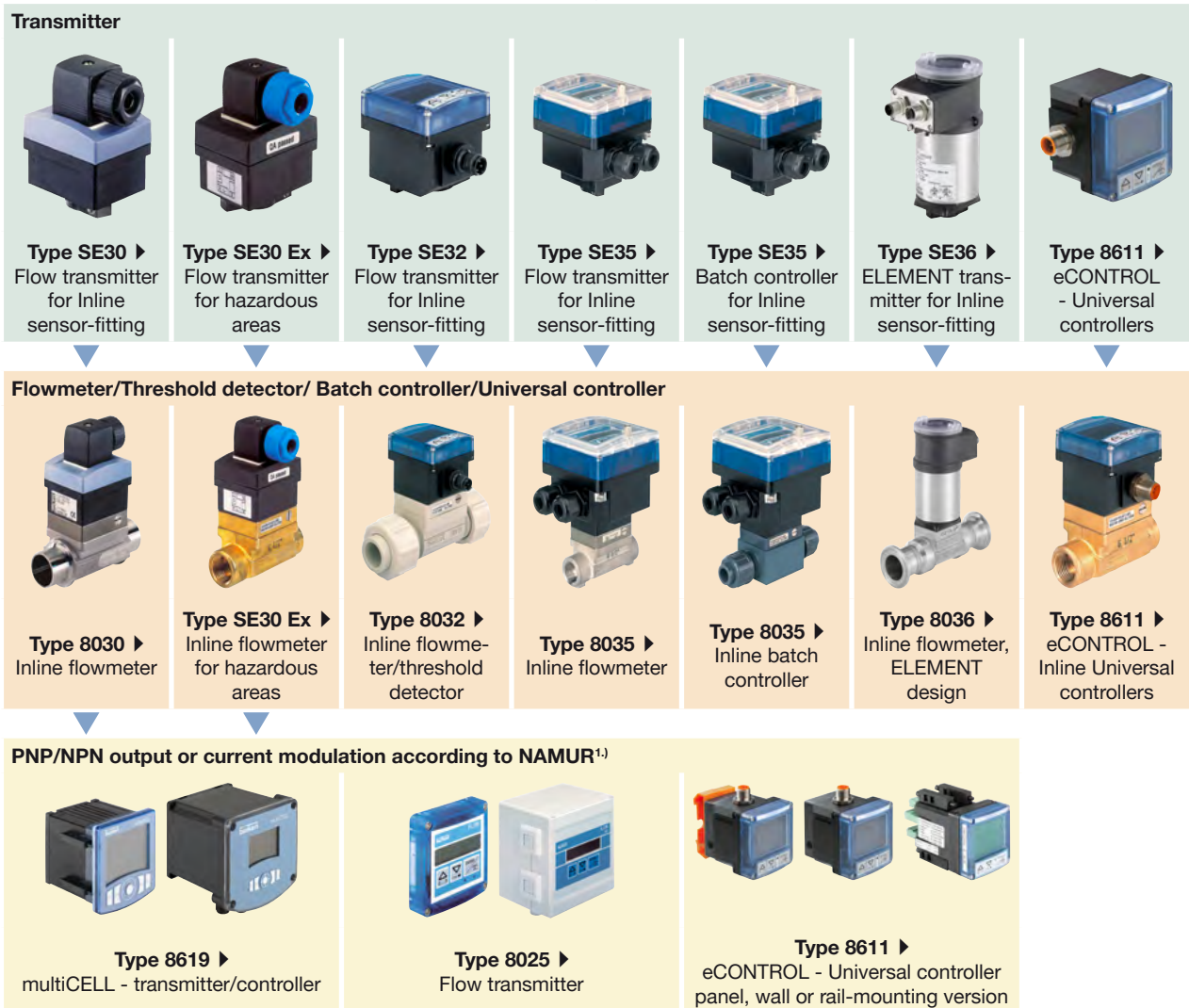
- on the side of the DN15 or DN20 sensor-fitting in metal



| Accessory | No. | Description |
|---|-----|--|
| | 1 | Sensor holder |
| | 2 | O-ring set for metal sensor-fitting |
| | 3 | O-ring set for plastic sensor-fitting (O-Ring for process connection and seal ^{1.)} for sensor holder). |
| 1.) Depending on sensor holder version: flat seal to use for holder with groove (old version, no more available for sale), O-Ring to use for holder with lug (version "v2") | | |

10. Networking and combination with other Bürkert products

Example:



1.) Only for SE30Ex: depending on the category, to be used with an intrinsic safety barrier with NAMUR input

11. Ordering information

11.1. Bürkert eShop – Easy ordering and quick delivery



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11.2. Recommendation regarding product selection

A complete device to measure the flow rate is made up of a compact Inline sensor-fitting (S030) with paddle wheel and a transmitter (SE30, SE30 Ex, SE32, SE35, SE36 or 8611).

Two different components must be ordered in order to select a complete device. The following information is required:

- **Article no.** of the desired flow transmitter (see [Data sheet Type 8030](#) ▶, [Data sheet Type 8032](#) ▶, [Data sheet Type 8035](#) ▶, [Data sheet Type 8036](#) ▶ or [Data sheet Type 8611](#) ▶)
- **Article no.** of the selected S030 Inline sensor-fitting (see chapter [“11.4. Ordering chart”](#) on page 16)

11.3. Bürkert product filter



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11.4. Ordering chart

Metal sensor-fitting

| Standard | Article no. | | | | | | | | | |
|---|-----------------------------|-----------------------------|-----------------------------|--------------------------|--------------------------|--------|--------|--------|--------|--------------------------|
| | DN06 ^{1.)} - ¼" | DN06 ^{1.)} - ½" | DN08 ^{1.)} - ½" | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 | DN65 |
| Brass - with PVDF paddle wheel - Fluid temperature max. 100 °C, PN16 | | | | | | | | | | |
| FKM seal | | | | | | | | | | |
| Internal thread connection | | | | | | | | | | |
| G | - | - | - | 423980 | 423981 | 423982 | 423983 | 423984 | 423985 | - |
| NPT | - | - | - | 423986 | 423987 | 423988 | 423989 | 423990 | 423991 | - |
| Rc | - | - | - | 423992 | 423993 | 423994 | 423995 | 423996 | 423997 | - |
| External thread connection | | | | | | | | | | |
| G | 552557 | 552527 | 444023 | 423998 | 423999 | 424000 | 424001 | 424002 | 424003 | - |
| NPT | - | - | 449182 | - | - | - | - | - | - | - |
| Rc | - | - | 448668 | - | - | - | - | - | - | - |
| Metric in mm | | | | | | | | | | |
| - | - | - | 16 x 1.5 552526 | - | - | - | - | - | - | - |
| Stainless steel - with PVDF paddle wheel - Fluid temperature max. 100 °C, PN16 | | | | | | | | | | |
| FKM seal | | | | | | | | | | |
| Internal thread connection | | | | | | | | | | |
| G | - | - | - | 424004 | 424005 | 424006 | 424007 | 424008 | 424009 | - |
| NPT | - | - | - | 424010 | 424011 | 424012 | 424013 | 424014 | 424015 | - |
| Rc | - | - | - | 424016 | 424017 | 424018 | 424019 | 424020 | 424021 | - |
| External thread connection | | | | | | | | | | |
| G | 552733 | 552559 | 444029 | 424022 | 424023 | 424024 | 424025 | 424026 | 424027 | - |
| NPT | - | - | 449050 | - | - | - | - | - | - | - |
| Rc | - | - | 448669 | - | - | - | - | - | - | - |
| Weld end connection | | | | | | | | | | |
| EN ISO 1127/ ISO 4200/ DIN 11866 series B | - | - | 552845 ^{3.)} | 424028 | 424029 | 424030 | 424031 | 424032 | 424033 | - |
| Clamp connection | | | | | | | | | | |
| DIN 32676 series B | - | - | - | 424034 ^{4.)} | 424035 | 424036 | 424037 | 424038 | 424039 | - |
| Flange connection | | | | | | | | | | |
| EN 1092-1/B1/ PN16 | - | - | - | 424040 | 424041 | 424042 | 424043 | 424044 | 424045 | - |
| ANSI B16-5 | - | - | - | 424046 | 424047 | 424048 | 424049 | 424050 | 424051 | - |
| JIS 10K | - | - | - | 430108 | 430109 | 430110 | 430111 | 430112 | 430113 | - |
| EPDM seal | | | | | | | | | | |
| External thread connection | | | | | | | | | | |
| SMS 1145 | - | - | - | - | - | 443306 | - | 443307 | 443308 | - |
| Weld end connection | | | | | | | | | | |
| SMS 3008 | - | - | - | - | - | 443298 | - | 443299 | 443300 | 443374 ^{6.)} |
| BS 4825-1/ ASME BPE/ DIN 11866 series C | - | - | - | - | 443369 ^{5.)} | 443370 | 443371 | 443372 | 443373 | 443374 |
| DIN 11850 series 2/ DIN 11866 series A/ DIN EN 10357 series A | - | - | 551788 | 551789 | 551790 | 551791 | - | 551792 | 551793 | - |
| Clamp connection | | | | | | | | | | |
| SMS 3017 | - | - | - | - | - | 443302 | - | 443303 | 443304 | 443399 ^{6.)} |
| SMS 3017 ^{2.)} | - | - | - | - | - | 443387 | - | 443388 | 443389 | 443720 ^{6.)} |

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| Standard | Article no. | | | | | | | | | |
|---|-----------------------------|-----------------------------|-----------------------------|--------|--------|--------|--------|--------|--------|--------|
| | DN06 ^{1.)} - ¼" | DN06 ^{1.)} - ½" | DN08 ^{1.)} - ½" | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 | DN65 |
| BS 4825-3/ ASME BPE | - | - | - | - | 443395 | 443396 | - | 443397 | 443398 | 443399 |
| BS 4825-3/ ASME BPE ^{2.)} | - | - | - | - | 443400 | 443717 | - | 443718 | 443719 | 443720 |
| DIN 32676 series A | - | - | 551794 | 551795 | 551796 | 551797 | - | 551798 | 551799 | - |
| Stainless steel - with PVDF paddle wheel - Fluid temperature max. 100 °C, PN40 | | | | | | | | | | |
| FKM seal | | | | | | | | | | |
| Internal thread connection | | | | | | | | | | |
| G | - | - | - | 427138 | 425737 | 425729 | 427152 | 427153 | 427154 | - |

- 1.) External thread
- 2.) Internal surface finish Ra = 0.8 µm
- 3.) EPDM seal
- 4.) Refer to Clamp with D dimensions of 34 mm (see chapter "Clamp connection" on page 8)
- 5.) DN20 only available in ASME BPE
- 6.) Please refer to ASME BPE

Plastic sensor-fitting

| Standard | Article no. | | | | | | | | | |
|--|-----------------------------|-----------------------------|-----------------------------|--------|--------|--------|--------|--------|--------|------|
| | DN06 ^{1.)} - ¼" | DN06 ^{1.)} - ½" | DN08 ^{1.)} - ½" | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 | DN65 |
| PVC - with PVDF paddle wheel - Fluid temperature max. 50 °C, PN10 | | | | | | | | | | |
| FKM seal | | | | | | | | | | |
| True union connection with nut and solvent socket | | | | | | | | | | |
| DIN 8063 | - | - | 444022 | 423938 | 423939 | 423940 | 423941 | 423942 | 423943 | - |
| ASTM D 1785/76 | - | - | - | 423950 | 423951 | 423952 | 423953 | 423954 | 423955 | - |
| JIS K | - | - | - | 429072 | 429073 | 429074 | 429075 | 429076 | 429077 | - |
| Solvent spigot connection | | | | | | | | | | |
| DIN 8063 | - | - | - | 423944 | 423945 | 423946 | 423947 | 423948 | 423949 | - |
| External thread connection | | | | | | | | | | |
| G | - | 552560 | 444025 | - | - | - | - | - | - | - |
| True union connection with nut and without socket | | | | | | | | | | |
| - | - | - | - | 430734 | 430735 | 430736 | 430737 | 430738 | 430739 | - |
| EPDM seal | | | | | | | | | | |
| True union connection with nut and without socket | | | | | | | | | | |
| - | - | - | - | 430740 | 430741 | 430742 | 430743 | 430744 | 430745 | - |
| PP - with PVDF paddle wheel - Fluid temperature max. 80 °C, PN10 | | | | | | | | | | |
| FKM seal | | | | | | | | | | |
| True union connection with nut and fusion socket | | | | | | | | | | |
| DIN 16962 | - | - | - | 423956 | 423957 | 423958 | 423959 | 423960 | 423961 | - |
| Fusion spigot connection | | | | | | | | | | |
| DIN 16962 | - | - | - | 423962 | 423963 | 423964 | 423965 | 423966 | 423967 | - |
| PVDF - with PVDF paddle wheel - Fluid temperature max. 100 °C, PN10 | | | | | | | | | | |
| FKM seal | | | | | | | | | | |
| True union connection with nut and fusion socket | | | | | | | | | | |
| ISO 10931 | - | - | - | 423968 | 423969 | 423970 | 423971 | 423972 | 423973 | - |
| Fusion spigot connection | | | | | | | | | | |
| ISO 10931 | - | - | - | 423974 | 423975 | 423976 | 423977 | 423978 | 423979 | - |
| External thread connection | | | | | | | | | | |
| ISO 10931 | - | - | 444028 | - | - | - | - | - | - | - |

- 1.) External thread











































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11.5. Ordering chart accessories

Note:

Since March 2012, sensor-fittings Type S030 in DN15 and DN20 exist in two versions, that have different K factors. The second version is identified by the marking "v2".

See chapter "9. Product accessories" on page 13.

| Description | Article no. |
|--|--|
| Sensor holder | |
| Stainless steel with paddle wheel (PVDF), seal (FKM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2 | 448678  |
| Stainless steel with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 432306  |
| Stainless steel with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 432305  |
| Stainless steel with paddle wheel (PVDF), seal (EPDM), screws and certificate, Ra int. = 0.8 µm for DN15 (except DN15 v2 and DN20 v2)...DN65 | 434149  |
| Stainless steel with paddle wheel (PP), seal (EPDM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2 | 554896  |
| Stainless steel with paddle wheel (PP), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 449425  |
| Brass with paddle wheel (PVDF), seal (FKM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2 | 448677  |
| Brass with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 432304  |
| Brass with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 432303  |
| Brass with paddle wheel (PP), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 449866  |
| PVC with paddle wheel (PVDF), seal (FKM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2 | 448674  |
| PVC with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 432298  |
| PVC with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 432297  |
| PVC with paddle wheel (PP), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 443982  |
| PP with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15...DN65 | 432300  |
| PP with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15...DN65 | 432299  |
| PP with paddle wheel (PP), seal (FKM), screws and certificate for DN15...DN65 | 552881  |
| PP with paddle wheel (PP), seal (EPDM), screws and certificate for DN15...DN65 | 443983  |
| PVDF with paddle wheel (PVDF), seal (FKM), screws and certificate for DN06, DN08, DN15 v2 and DN20 v2 | 448676  |
| PVDF with paddle wheel (PVDF), seal (FKM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 432302  |
| PVDF with paddle wheel (PVDF), seal (EPDM), screws and certificate for DN15 (except DN15 v2 and DN20 v2)...DN65 | 432301  |
| O-ring set | |
| FKM - for metal sensor-fitting, DN06...DN65 | 426340  |
| EPDM - for metal sensor-fitting, DN06...DN65 | 426341  |
| FKM - for plastic sensor-fitting, DN08 | 448679  |
| FKM - for plastic sensor-fitting, DN15 | 431555  |
| FKM - for plastic sensor-fitting, DN20 | 431556  |
| FKM - for plastic sensor-fitting, DN25 | 431557  |
| FKM - for plastic sensor-fitting, DN32 | 431558  |
| FKM - for plastic sensor-fitting, DN40 | 431559  |
| FKM - for plastic sensor-fitting, DN50 | 431560  |
| EPDM - for plastic sensor-fitting, DN08 | 448680  |
| EPDM - for plastic sensor-fitting, DN15 | 431561  |
| EPDM - for plastic sensor-fitting, DN20 | 431562  |
| EPDM - for plastic sensor-fitting, DN25 | 431563  |
| EPDM - for plastic sensor-fitting, DN32 | 431564  |
| EPDM - for plastic sensor-fitting, DN40 | 431565  |
| EPDM - for plastic sensor-fitting, DN50 | 431566  |
| Approvals/Certificates | |
| Inspection certificate 3.1 (acc. to EN-ISO 10204) | 803723  |
| Test report 2.2 (acc. to EN-ISO 10204) | 803722  |
| Certification of Conformity for the surface Quality (DIN4762-DIN4768-ISO/4287/1) | 804175  |
| 3 points Flow calibration certificate (S020 combined with the flow device inserted, only for DN ≤ 200) | 550676  |
| FDA approval | 803724  |

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