



## Mechanical flow switch for On/Off control

- Economic integration in pipe systems without any additional piping
- Magnetic measuring principle
- Mechanical adjustment of setpoint

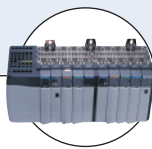
Type 8010 can be combined with...



Valve



Alarm



PLC

The INLINE flow sensor/switch Type 8010 is specially designed for use in pure and water resembling fluids, free from air bubbles and magnetizable particles, to monitor minimum/maximum values of flow.

The sensor/switch is made up of a fitting (Type S010) and an electronic module (Type SE10), quickly and easily connected together by a Quarter-Turn.

This device indicates the presence of a flow in the pipe by switching the Reed contact contained in the electronic module. The switching points Min./Max. for rising and falling velocities can be set with a screw within a defined range.

The SE10 electronic module is available in two versions:

- Normally open (NO): The flow switches on the contact.
- Normally closed (NC): The flow switches off the contact.

These S010 fittings are available in two versions:

- with a short blade «Range1» fitted for the fittings DN15 to 40.
- with a long blade „Range2» fitted for the fittings DN32 to 50.

| General data                  |  |
|-------------------------------|--|
| <b>Compatibility</b>          | With fittings S010 INLINE (see ordering chart)                     |
| <b>Sensor element</b>         | Blade with magnet, Reed contact                                    |
| <b>Materials</b>              |  |
| Housing, cover                | PC, +20% glass fibre reinforced                                    |
| Setting screw                 | Plated brass   |
| Cable plug                    | PA   |
| <b>Materials wetted parts</b> |  |
| Fitting, sensor holder        | Brass (CuZn39Pb2), stainless steel (316L - 1.4435), PVC, PP, PVDF  |
| Blade                         | PVDF   |
| Axis / Seal                   | Stainless steel (316L) / FKM (EPDM on request)                     |
| <b>Electrical connection</b>  | Cable plug: EN 175301-803 (provided)                               |
| <b>Connection cable</b>       | 0.14 up to 0.5 mm <sup>2</sup> cross section;<br>max. 100 m length |

| Complete device data (fitting + electronic module) |  |
|--|--|
| <b>Pipe diameter</b>                               | DN 15 to 50  |
| <b>Switching range</b>                             | 4.7 up to 75.4 l/min (see selection table - on page 3)   |
| <b>Flow velocity max.</b>                          | 10 m/s   |
| <b>Medium temperature</b> with fitting in          |  |
| PVC  | 0 up to 50°C (32 to 122°F)   |
| PP, PVDF, brass, stainless steel                   | 0 up to 55°C (32 to 131°F)   |
| <b>Fluid pressure max.</b>                         | PN10 (with plastic fitting) - PN16 (with metal fitting)<br>see pressure/temperature chart, next page |
| <b>Viscosity / Solid particles rate</b>            | 100 cSt. max. /<br>max. 1% (particle size max.: 0.5 mm)  |

| Electrical data     |  |
|---------------------|--|
| <b>Power supply</b> | Without  |
| <b>Outputs</b>      |  |
| Reed Contact        | Potential free, forme A, switch off or switch on |
| Switching voltage   | 150 V DC/250 V AC max.                           |
| Switching Current   | 0.8 A max.                                       |
| Switching power     | 50 W max., 50 VA                                 |
| Carrying current    | 2.5 A  |

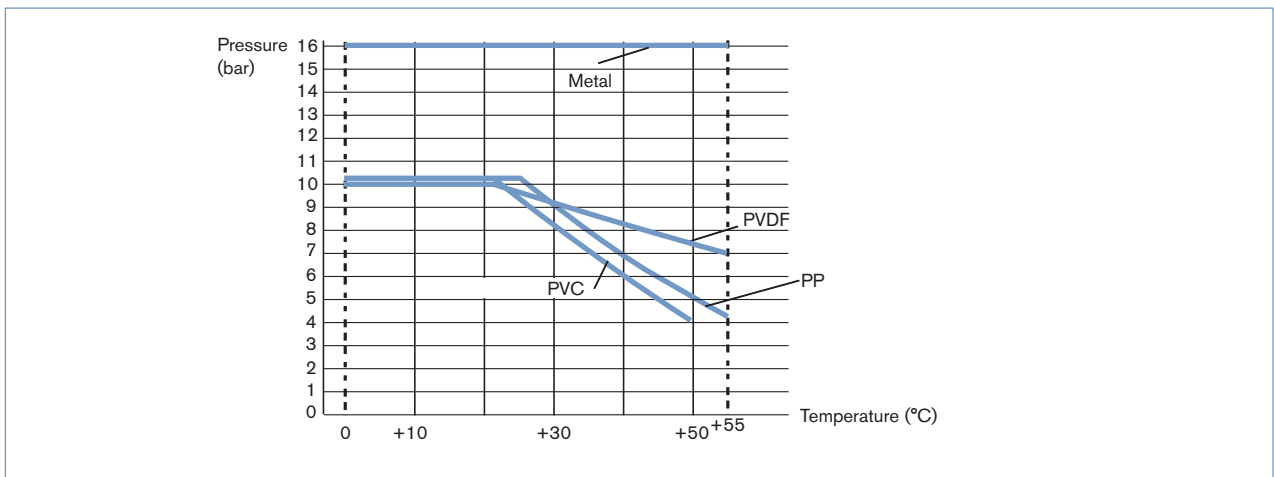
| Environment                |   |
|----------------------------|---|
| <b>Ambient temperature</b> | 0 up to +55°C (32 to 131°F) (operating and storage) |
| <b>Relative humidity</b>   | ≤ 80%, without condensation                         |

| Standards, directives and approvals |  |
|-------------------------------------|--|
| <b>Protection class</b>             | IP65 with connector plugged-in and tightened             |
| <b>Standards, directives</b>        |  |
| Pressure                            | Complying with article 3 of §3 from 97/23/CE directive.* |
| Vibration                           | EN 60068-2-6   |
| Shock                               | EN 60068-2-27  |

\* For the 97/23/CE pressure directive, the device can only be used under following conditions (depend on max. pressure, pipe diameter and fluid).

| Type of fluid         | Conditions   |
|-----------------------|--------------|
| Fluid group 1, §1.3.a | DN25 only    |
| Fluid group 2, §1.3.a | PN*DN ≤ 1000 |
| Fluid group 1, §1.3.b | PN*DN ≤ 2000 |
| Fluid group 2, §1.3.b | DN ≤ 200     |

Pressure / temperature chart

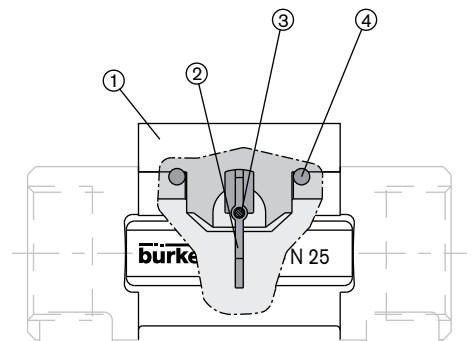


Design, inner materials and principle of operation



The S010 INLINE fitting is made up of a blade with a magnet. The SE10 module contains a rocker arm with a magnet on each end. When liquid flows through the pipe, the blade rotates and, by magnetic adherence, actuates the rocker arm. With this rotation, the upper magnet switches the Reed contact opening or closing the circuit. The switching points can be set with a screw within a defined range

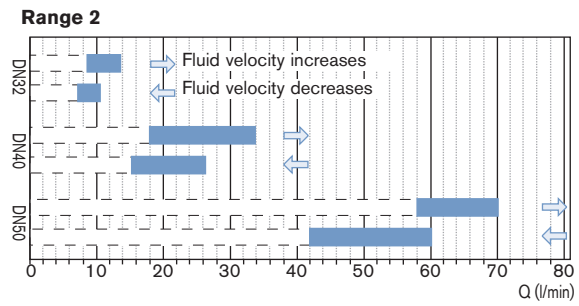
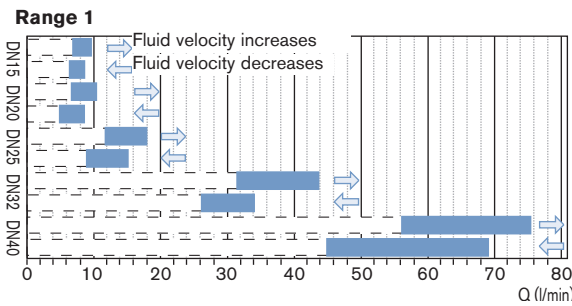
| No. | Description   | Materials                               |
|-----|---------------|---|
| 1   | Sensor holder | Brass, stainless steel, PVC, PP or PDVF |
| 2   | Blade         | PVDF                                    |
| 3   | Axis          | Stainless steel                         |
| 4   | O-Ring        | FKM or EPDM                             |



### Switching threshold and fitting DN selection chart

The type of blade (Range 1 or 2) and the fitting DN define the flow range on which the switching thresholds can be adjusted. The table below shows the switching end values depending on the selected model of type 8010

| Range | Fitting DN | Fluid velocity (Water) [m/s] |            |               | Flow rate |      |      |      |
|-------|------------|------------------------------|------------|---------------|-----------|------|------|------|
|       |            | min.                         | max.       | Variation way | l/min     |      | m³/h |      |
|       |            |                              |            |               | min.      | max. | min. | max. |
| 1     | 15         | 0.65                         | 0.90       | increasing    | 6.9       | 9.5  | 0.41 | 0.57 |
|       |            | 0.60                         | 0.80       | decreasing    | 6.4       | 8.5  | 0.38 | 0.51 |
|       | 20         | 0.35                         | 0.55       | increasing    | 6.6       | 10.4 | 0.40 | 0.62 |
|       |            | 0.25                         | 0.45       | decreasing    | 4.7       | 8.5  | 0.28 | 0.51 |
|       | 25         | 0.40                         | 0.60       | increasing    | 11.8      | 17.7 | 0.71 | 1.06 |
|       |            | 0.30                         | 0.50       | decreasing    | 8.8       | 14.7 | 0.53 | 0.88 |
|       | 32         | 0.65                         | 0.90       | increasing    | 31.4      | 43.4 | 1.88 | 2.61 |
|       |            | 0.55                         | 0.70       | decreasing    | 26.5      | 33.8 | 1.59 | 2.03 |
| 40    | 0.75       | 1.00                         | increasing | 56.5          | 75.4      | 3.39 | 4.52 |      |
|       | 0.60       | 0.90                         | decreasing | 45.2          | 67.9      | 2.71 | 4.07 |      |
| 2     | 32         | 0.18                         | 0.28       | increasing    | 8.5       | 13.5 | 0.51 | 0.81 |
|       |            | 0.15                         | 0.22       | decreasing    | 7.0       | 10.5 | 0.42 | 0.63 |
|       | 40         | 0.25                         | 0.45       | increasing    | 18.8      | 33.9 | 1.13 | 2.04 |
|       |            | 0.20                         | 0.35       | decreasing    | 15.1      | 26.4 | 0.90 | 1.58 |
|       | 50         | 0.49                         | 0.59       | increasing    | 58.0      | 70.0 | 3.48 | 4.20 |
|       |            | 0.36                         | 0.51       | decreasing    | 42.0      | 60.0 | 2.52 | 3.60 |

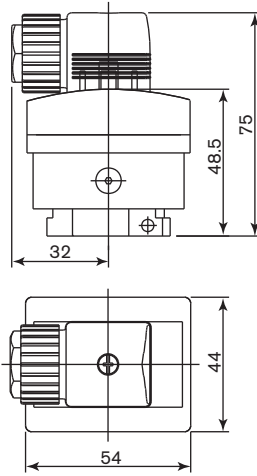


**Attention!**

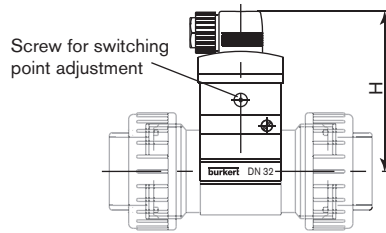
The fitting with nominal diameters of 32 and 40 mm are designed for two different switching range (1 and 2) in relation with flow velocity and equivalent flow values. For all other sizes, there is only one switching range (1 or 2).

Dimensions [mm]

Electronic module SE10

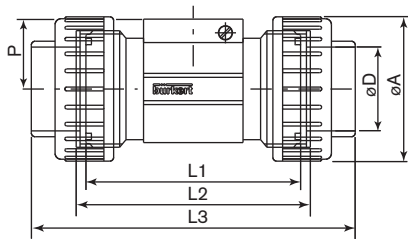


High of Electronic SE10 + Fitting S010

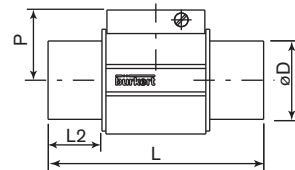


| DN | H   |
|----|-----|
| 15 | 100 |
| 20 | 97  |
| 25 | 97  |
| 32 | 101 |
| 40 | 105 |
| 50 | 111 |

True union connection - (solvent or fusion spigot)



Spigot connection - (solvent or fusion spigot)



| DN | P    | True union connection in Plastic |     |     |       |       |     | Spigot connection in PVC |       |     |     | Spigot connection in PP or PVDF |      |     |     |    |
|----|------|----------------------------------|-----|-----|-------|-------|-----|--------------------------|-------|-----|-----|---------------------------------|------|-----|-----|----|
|    |      | L1                               | L2  | L3  | ANSI* | JIS*  | øD  | L                        | ø D   | L2  | L   | ø D                             | L2   |     |     |    |
|    |      |                                  |     | DIN | ANSI* | JIS*  | DIN | ANSI*                    | JIS*  | øA  |     | ø D                             | L2   |     | ø D | L2 |
| 15 | 34.5 | 90                               | 96  | 128 | 130.0 | 129.0 | 20  | 21.3                     | 18.4  | 43  | 90  | 20                              | 16.5 | 85  | 20  | 14 |
| 20 | 32.0 | 100                              | 106 | 144 | 145.6 | 145.0 | 25  | 26.7                     | 26.45 | 53  | 100 | 25                              | 20.0 | 92  | 25  | 16 |
| 25 | 32.2 | 110                              | 116 | 160 | 161.4 | 161.0 | 32  | 33.4                     | 32.55 | 60  | 110 | 32                              | 23.0 | 95  | 32  | 18 |
| 32 | 35.8 | 110                              | 116 | 168 | 170.0 | 169.0 | 40  | 42.2                     | 38.60 | 44  | 110 | 40                              | 27.5 | 100 | 40  | 20 |
| 40 | 39.6 | 120                              | 127 | 188 | 190.2 | 190.0 | 50  | 48.3                     | 48.70 | 83  | 120 | 50                              | 30.0 | 106 | 50  | 23 |
| 50 | 45.7 | 130                              | 136 | 212 | 213.6 | 213.0 | 63  | 60.3                     | 60.80 | 103 | 130 | 63                              | 37.0 | 110 | 63  | 27 |

\* only for PVC

Dimensions [mm]

| Internal thread connection |      |  |                      |                                  | External thread connection                    |      |         | Weld ends connection                    |      |     |
|----------------------------|------|--|----------------------|----------------------------------|---|------|---------|---|------|-----|
|                            |      |  |                      |                                  |   |      |         |   |      |     |
| DN                         | P    | Internal thread connection in stainless steel or brass |                      |                                  | External thread connection in stainless steel |      |         | Weld ends connection in stainless steel |      |     |
|                            |      | L  | L1                   | D                                | L   | L1   | D       | L                                       | ø D  | e   |
| 15                         | 34.5 | 85   | 16.0<br>17.0<br>15.0 | G 1/2<br>NPT 1/2<br>Rc 1/2       | 84  | 11.5 | G 3/4   | 84                                      | 21.3 | 1.6 |
| 20                         | 32.0 | 95   | 17.0<br>18.3<br>16.3 | G 3/4<br>NPT 3/4<br>Rc 3/4       | 94  | 13.5 | G 1     | 94                                      | 26.9 | 1.6 |
| 25                         | 32.2 | 105  | 23.5<br>18.0<br>18.0 | G 1<br>NPT 1<br>Rc 1             | 104   | 14.0 | G 1 1/4 | 104                                     | 33.7 | 2.0 |
| 32                         | 35.8 | 120  | 23.5<br>21.0<br>21.0 | G 1 1/4<br>NPT 1 1/4<br>Rc 1 1/4 | 119   | 18.0 | G 1 1/2 | 119                                     | 42.4 | 2.0 |
| 40                         | 39.6 | 130  | 23.5<br>20.0<br>19.0 | G 1 1/2<br>NPT 1 1/2<br>Rc 1 1/2 | 129   | 19.0 | M55 x 2 | 129                                     | 48.3 | 2.0 |
| 50                         | 45.7 | 150  | 27.5<br>24.0<br>24.0 | G 2<br>NPT 2<br>Rc 2             | 149   | 20.0 | M64 x 2 | 149                                     | 60.3 | 2.6 |

| Clamp connection |      |   |      | Flange connection                    |                   |      |                            |                         |                         |                       |
|------------------|------|---|------|--------------------------------------|-------------------|------|----------------------------|-------------------------|-------------------------|-----------------------|
|                  |      |   |      |                                      |                   |      |                            |                         |                         |                       |
| DN               | P    | Clamp connection - ISO4200 in stainless steel |      | Flange connection in stainless steel |                   |      |                            |                         |                         |                       |
|                  |      | L   | ø D  | Norm                                 | L                 | I    | J                          | M                       | K                       | N                     |
| 15               | 34.5 | 130   | 34.0 | DIN<br>ANSI<br>JIS                   | 130<br>130<br>152 | 23,5 | 4x14.0<br>4x15.8<br>4x15.0 | 95.0<br>89.0<br>95.0    | 65.0<br>60.3<br>70.0    | 45.0<br>34.9<br>51.0  |
| 20               | 32.0 | 150   | 50.5 | DIN<br>ANSI<br>JIS                   | 150<br>150<br>178 | 28,5 | 4x14.0<br>4x15.8<br>4x15.0 | 105.0<br>99.0<br>100.0  | 75.0<br>69.8<br>75.0    | 58.0<br>42.9<br>56.0  |
| 25               | 32.2 | 160   | 50.5 | DIN<br>ANSI<br>JIS                   | 160<br>160<br>216 | 28,5 | 4x14.0<br>4x15.8<br>4x19.0 | 115.0<br>108.0<br>125.0 | 85.0<br>79.4<br>90.0    | 68.0<br>50.8<br>67.0  |
| 32               | 35.8 | 180   | 50.5 | DIN<br>ANSI<br>JIS                   | 180<br>180<br>229 | 31,0 | 4x18.0<br>4x15.8<br>4x19.0 | 140.0<br>117.0<br>135.0 | 100.0<br>88.9<br>100.0  | 78.0<br>63.5<br>76.0  |
| 40               | 39.6 | 200   | 64.0 | DIN<br>ANSI<br>JIS                   | 200<br>200<br>241 | 36,0 | 4x18.0<br>4x15.8<br>4x19.0 | 150.0<br>127.0<br>140.0 | 110.0<br>98.4<br>105.0  | 88.0<br>73.0<br>81.0  |
| 50               | 45.7 | 230   | 77.5 | DIN<br>ANSI<br>JIS                   | 230<br>230<br>267 | 41,0 | 4x18.0<br>4x19.0<br>4x19.0 | 165.0<br>152.0<br>155.0 | 125.0<br>120.6<br>120.0 | 102.0<br>92.1<br>96.0 |

## Ordering chart for flow switch Type 8010

## Electronic module Type SE10 - for fitting Type S010

| Output           | Electrical connection        | Item no. |
|------------------|------------------------------|----------|
| Reed contact, NO | Cable plug DIN EN 175301-803 | 438 087  |
| Reed contact, NC | Cable plug DIN EN 175301-803 | 438 088  |

**Note:** A complete device Type 8010 consists of a fitting Type S010 and an electronic module Type SE10. Please order the two required units separately.

## Fitting Type S010 (to be ordered separately)

| Port connection                                      | Seal | Standard                           | Item no. |         |         |         |         |         |         |         |
|--|------|------------------------------------|----------|---------|---------|---------|---------|---------|---------|---------|
|  |      |                                    | DN 15    | DN 20   | Range 1 |         | Range 2 |         |         |         |
|  |      |                                    | DN 25    | DN 32   | DN 40   | DN 32   | DN 40   | DN 50   |         |         |
| <b>Brass - Temperature max. 55°C, PN16</b>           |      |                                    |          |         |         |         |         |         |         |         |
| Internal thread                                      | FKM  | G                                  | 438 163  | 438 164 | 438 165 | 438 166 | 438 167 | 438 169 | 438 170 | 438 171 |
|  |      | NPT                                | 438 172  | 438 173 | 438 174 | 438 175 | 438 176 | 438 178 | 438 179 | 438 180 |
|  |      | Rc (ISO7)                          | 438 181  | 438 182 | 438 183 | 438 184 | 438 185 | 438 187 | 438 188 | 438 189 |
| External thread                                      | FKM  | G                                  | 438 190  | 438 191 | 438 192 | 438 193 | 438 194 | 438 196 | 438 197 | 438 198 |
| <b>Stainless steel - Temperature max. 55°C, PN16</b> |      |                                    |          |         |         |         |         |         |         |         |
| Internal thread                                      | FKM  | G                                  | 438 199  | 438 200 | 438 201 | 438 202 | 438 203 | 438 205 | 438 206 | 438 207 |
|  |      | NPT                                | 438 208  | 438 209 | 438 210 | 438 211 | 438 212 | 438 214 | 438 215 | 438 216 |
|  |      | Rc (ISO7)                          | 438 217  | 438 218 | 438 219 | 438 220 | 438 221 | 438 223 | 438 224 | 438 225 |
| External thread                                      | FKM  | G                                  | 438 226  | 438 227 | 438 228 | 438 229 | 438 230 | 438 232 | 438 233 | 438 234 |
| Weld ends  | FKM  | EN ISO 1127/ISO 4200               | 438 235  | 438 236 | 438 237 | 438 238 | 438 239 | 438 241 | 438 242 | 438 243 |
| Clamp  | FKM  | ISO (for pipe EN ISO 1127/ISO4200) | 438 244  | 438 245 | 438 246 | 438 247 | 438 248 | 438 250 | 438 251 | 438 252 |
| Flange   | FKM  | EN1092-1                           | 438 253  | 438 254 | 438 255 | 438 256 | 438 257 | 438 259 | 438 260 | 438 261 |
|  |      | ANSI B16-5-1988                    | 438 262  | 438 263 | 438 264 | 438 265 | 438 266 | 438 268 | 438 269 | 438 270 |
|  |      | JIS 10K                            | 438 271  | 438 272 | 438 273 | 438 274 | 438 275 | 438 277 | 438 278 | 438 279 |
| <b>PVC - Temperature max. 50°C, PN10</b>             |      |                                    |          |         |         |         |         |         |         |         |
| True union   | FKM  | DIN 8063                           | 438 091  | 438 092 | 438 093 | 438 094 | 438 095 | 438 097 | 438 098 | 438 099 |
|  |      | ASTM D 1785/76                     | 438 109  | 438 110 | 438 111 | 438 112 | 438 113 | 438 115 | 438 116 | 438 117 |
|  |      | JIS K                              | 438 118  | 438 119 | 438 120 | 438 121 | 438 122 | 438 124 | 438 125 | 438 126 |
| Spigot   | FKM  | DIN 8063                           | 438 100  | 438 101 | 438 102 | 438 103 | 438 105 | 438 106 | 438 107 | 438 108 |
| <b>PP - Temperature max. 55°C, PN10</b>              |      |                                    |          |         |         |         |         |         |         |         |
| True union   | FKM  | DIN 8063                           | 438 127  | 438 128 | 438 129 | 438 130 | 438 131 | 438 133 | 438 134 | 438 135 |
| Spigot   | FKM  | DIN 8063                           | 438 136  | 438 137 | 438 138 | 438 139 | 438 140 | 438 142 | 438 143 | 438 144 |
| <b>PVDF - Temperature max. 55°C, PN10</b>            |      |                                    |          |         |         |         |         |         |         |         |
| True union   | FKM  | DIN 8063                           | 438 145  | 438 146 | 438 147 | 438 148 | 438 149 | 438 151 | 438 152 | 438 153 |
| Spigot   | FKM  | DIN 8063                           | 438 154  | 438 155 | 438 156 | 438 157 | 438 158 | 438 160 | 438 161 | 438 162 |

## Ordering chart accessories / spare parts (to be ordered separately)

| Description  | Item no. |
|--|----------|
| <b>O-ring set</b>  |          |
| FKM - for metal fitting, DN 15 to 50   | 426 340  |
| EPDM - for metal fitting, DN 15 to 50  | 426 341  |
| FKM - for plastic fitting, DN 15   | 431 555  |
| FKM - for plastic fitting, DN 20   | 431 556  |
| FKM - for plastic fitting, DN 25   | 431 557  |
| FKM - for plastic fitting, DN 32   | 431 558  |
| FKM - for plastic fitting, DN 40   | 431 559  |
| FKM - for plastic fitting, DN 50   | 431 560  |
| EPDM - for plastic fitting, DN 15  | 431 561  |
| EPDM - for plastic fitting, DN 20  | 431 562  |
| EPDM - for plastic fitting, DN 25  | 431 563  |
| EPDM - for plastic fitting, DN 32  | 431 564  |
| EPDM - for plastic fitting, DN 40  | 431 565  |
| EPDM - for plastic fitting, DN 50  | 431 566  |
| <b>Sensor holder</b>   |          |
| Brass with short blade "range 1", gasket (FKM), screws for DN 15 up to DN 40 | 560 906  |
| Brass with long blade "range 2", gasket (FKM), screws for DN 32 up to DN 50  | 561 761  |

 Further versions on request
**Materials**

Stainless steel sensor holder

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In case of special application conditions,  
please consult for advice.

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