# 8719

## Gas Density Monitor with switching contacts


### Applications

- High voltage technology
- Medium voltage technology

### Features

- Large dial for easy readability
- Up to five galvanically separated circuits
- Exact switching output at all temperatures
- Fully temperature compensated
- Suitable for outdoor and indoor applications
- Maintenance-free

» Compliant with $SF_6$ and full spectrum of alternative mixed insulation gases

### Product description

Swiss based Trafag offers precise, reliable and maintenance-free instruments developed for density monitoring of $SF_6$ and the full spectrum of alternative gases. Monitoring is based on the gas density reference chamber principle. Thus offering the most reliable solution on the market by directly monitoring the insulating gas density.

### Technical data

| | |
|---|---|
| Measurement principle | Absolute presssure reference gas measuring system |
| Measuring range | 0 … 1300 kPa abs. @ 20°C |
| Output signal | Floating change-over contact (SPDT) |
| Quantity of switchpoints | 1 … 5 microswitches |
| Dial | 75 mm, scale and units selectable |
| Ambient temperature | -40 … +80°C |

5th switch on request

### Additional informationen

| | |
|---|---|
| Datasheet | www.trafag.com/H72623 |
| Flyer | www.trafag.com/H70623 |
| Manual | www.trafag.com/H73623 |

## Ordering information/type code

| | | 8719 . XX | XXXX | XX | XX | XX | XX | XX |
|---|---|---|---|---|---|---|---|---|
| **Monitor type** | Axial alignment | | | | | | | |
| | One (1) microswitch | A1 | | | | | | |
| | Two (2) microswitches | A2 | | | | | | |
| | Three (3) microswitches | A3 | | | | | | |
| | Four (4) microswitches | A4 | | | | | | |
| | Five (5) microswitches | A5 | | | | | | |
| | Radial alignment | | | | | | | |
| | One (1) microswitch | R1 | | | | | | |
| | Two (2) microswitches | R2 | | | | | | |
| | Three (3) microswitches | R3 | | | | | | |
| | Four (4) microswitches | R4 | | | | | | |
| | Five (5) microswitches | R5 | | | | | | |
| **Pressure connection** | Threaded | | 7XXX | | | | | |
| | Flanged and cap nut | | 8XXX | | | | | |
| **Indicator dial and monitor orientation** | Without density indicator dial | | | 1Z | | | | |
| | Indicator dial with two colour sectors without markings | | | | | | | |
| | Monitor orientation 1 | | | 1A | | | | |
| | Monitor orientation 2 | | | 2A | | | | |
| | Monitor orientation 3 | | | 3A | | | | |
| | Monitor orientation 4 | | | 4A | | | | |
| | Partial indicator dial with sectors according to customer specification | | | | | | | |
| | Monitor orientation 1 | | | 1B | | | | |
| | Monitor orientation 2 | | | 2B | | | | |
| | Monitor orientation 3 | | | 3B | | | | |
| | Monitor orientation 4 | | | 4B | | | | |
| | Full range indicator dial according to customer specification | | | | | | | |
| | Monitor orientation 1 | | | 1C | | | | |
| | Monitor orientation 2 | | | 2C | | | | |
| | Monitor orientation 3 | | | 3C | | | | |
| | Monitor orientation 4 | | | 4C | | | | |
| **Electrical connector housing configuration** | Aluminium die casting with cable outlet configuration [1] | | | | | | | |
| | 1-thread, horizontal, M25x1.5 | | | | A1 | | | |
| | 1-thread, horizontal, M20x1.5 | | | | A2 | | | |
| | 1-thread, lateral, M25x1.5 | | | | B1 | | | |
| | 1-thread, lateral, M20x1.5 | | | | B2 | | | |
| | 2-threads, horizontal and lateral, M25x1.5 / M25x1.5 | | | | C1 | | | |
| | 2-threads, horizontal and lateral, M25x1.5 / M20x1.5 | | | | C2 | | | |
| | 2-threads, horizontal, M20x1.5 / M20x1.5 | | | | D1 | | | |
| | PA injection moulding with cable outlet configuration [1] | | | | | | | |
| | 1-thread lateral, M20x1.5 | | | | E1 | | | |
| **Cable outlet** | EMC-cable gland, brass nickel-plated | | | | | | | |
| | M20x1.5 for cable ø7 ... 12.5 mm | | | | | 10 | | |
| | M20x1.5 for cable ø8 ... 11 mm | | | | | 07 | | |
| | M20x1.5 for cable ø11 ... 14 mm | | | | | 08 | | |
| | M25x1.5 for cable ø8 ... 16 mm | | | | | 11 | | |
| | M25x1.5 for cable ø12.5 ... 20.5 mm | | | | | 17 | | |
| | Cable gland insert, PA | | | | | | | |
| | M20x1.5 for cable ø7 ... 13 mm | | | | | 09 | | |
| | Blank plug | | | | | | | |
| | M20x1.5, brass nickel-plated | | | | | U2 | | |
| | M20x1.5, PA | | | | | 02 | | |
| | M25x1.5, brass nickel-plated | | | | | 04 | | |
| | M25x1.5, PA | | | | | 05 | | |

## Ordering information/type code

| | | 8719 . XX | XXXX | XX | XX | XX | XX | XX |
|---|---|---|---|---|---|---|---|---|
| **Options** | Steady liquefaction alarm output | | | | | | LQ | |
| | Arctic temperature capability [2] | | | | | | 55 | |
| | Process gas damping element [3] | | | | | | 49 | |
| | Set-up for earthing via cable lug | | | | | | 26 | |
| | Integrated valve for monitor test with DN8 coupling | | | | | | | |
| | Standard test port orientation | | | | | | W3 | |
| | Test port orientation 180° | | | | | | W0 | |
| | Test port orientation 270° | | | | | | W1 | |
| | Test port orientation 90° | | | | | | W2 | |
| | Integrated valve for process gas quality test and re-filling with DN8 coupling | | | | | | | |
| | Standard re-filling port orientation | | | | | | F3 | |
| | Re-filling port orientation 180° | | | | | | F0 | |
| | Re-filling port orientation 270° | | | | | | F1 | |
| | Re-filling port orientation 90° | | | | | | F2 | |
| **Accessories** | Weather protection cover | | | | | | | 46 |
| | Weather protection cover with thermal insulation ring for probe housing | | | | | | | 47 |
| | Weather protection cover with thermal insulation foam jacket inlay | | | | | | | 48 |
| | Pressure connection adapter 2300 - G1/2" male | | | | | | | N1 |

[1] Thread(s) are plugged with a plastic cap
[2] Use for temperatures down to -60°C
[3] Available with pressure connections 8000, 8001, 8300, 8800

## Further customised parameterisation to be indicated

| | |
|---|---|
| Process gas | $SF_6$, $SF_6$- based mixed gas, customer specific alternative gas |
| Variety of units for density dial | kPa, bar, MPa (abs., rel.[1] ), psi (a., g.[1] ), kg/m², kg/cm², also dual units available |
| Switchpoint @ 20°C [2] | Microswitch 1, p= xxx |
| | Microswitch 2, p= xxx |
| | Microswitch 3, p= xxx |
| | Microswitch 4, p= xxx |
| | Microswitch 5, p= xxx |

[1] Monitoring principle is based on absolute pressure reference system and is accordingly calibrated. The difference between relative and absolute pressure is based on one (1) bar. While using relative dial units, local ambient pressure (e.g. altitude or weather derivations) has to be considered if comparing to local installed relative pressure gauges
[2] Factory setting for decreasing or increasing pressure available

## Specifications

| | | |
|---|---|---|
| **Mechanical density monitoring** | Monitoring principle | Absolute pressure measuring system with sealed reference gas chamber, no influence due to ambient pressure fluctuations, fully temperature compensated by design [2] |
| | Monitoring range | 0 … 1300 kPa abs. @ 20°C [3] |
| | Monitoring output | Floating change-over contact (SPDT) |
| | Quantity of switchpoints | 1 … 5 microswitches |
| | Monitoring accuracy | Refer to density indicator and microswitch sections |
| **Environmental conditions** | Ambient temperature | -40°C … +80°C<br>-60°C … +80°C with arctic temperature capability option |
| | Protection [1] | IP65 and IP67 |
| | Humidity | IEC 60068-2-30<br>(damp heat, cyclic, 100 % RH @ +55°C), membrane provides condensation compensation |
| | Overpressure | 1500 kPa abs. |
| | Shock | 70 g / 6 ms / 10'000 times at all axes excited on process connection<br>without damage to instrument [4] |
| | Routine inspection of gas tightness | Integral pressure testing with 6 bar rel. helium,<br>He leakage rate less than 6·10-8 mbar · l/s,<br>corresponding $SF_6$ leakage rate less than 1·10-8 mbar · l/s |
| **Mechanical data** | Process gas wetted material | Process connection and measuring system: 1.4404, 1.4571 (AISI316L, AISI316Ti)<br>Test and re-filling valve: 1.4404 (AISI316L), CuZn39Pb3 (C38500)<br>Sealing: CIIR [5] |
| | Housing | AlSi10Mg, powder coated |
| | Screwed cable gland | Brass nickel-plated, PA as option |
| | Dial | Dial window: PMMA<br>Dial face: PC<br>Pointer: Aluminium sheet |
| | Weight | Gas density monitor: ~ 900 ... 1100 g<br>Gas density monitor with integrated test or re-filling valve: ~ 1200 ... 1400 g |

[1] While using appropriate cable gland and/or mating connector mounted according to instruction
[2] Depending on process gas requirements, the fully sealed reference gas chamber contains up to 0.001kg of $SF_6$. The relevant national regulations governing the disposal of hazardous waste apply and must be followed. Decommissioned or defective monitors can be returned to the manufacturer for disposal in a safe and environmentally appropriate manner
[3] Gas in closed compartments follow specific isochores and therefore the specific operating temperature range has to be considered in respect to overpressure. E.g. 1200 kPa abs. air @ 20°C shifts to 1330 kPa abs. @ 50°C. Please contact us for more information
[4] Density monitor is configurable for different process connections or valve options that affect the overall dimensions. Maximum shock level shall be limited to 120 g measured at dial window.
[5] Sealing only applicable for certain process connections as monitor itself has no internal sealings

**Steady liquefaction alarm output**
Arctic low temperatures can lead to liquefaction of insulating gas.
Liquefaction causes a rapid pressure-drop that can temporarily trigger an alarm switchpoint.
Option L1 (see ordering information) allows to keep the alarm status until the alarm trigger level is exceded again while returing to normal condition.

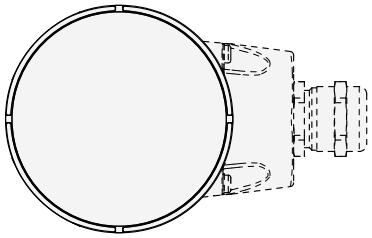
## Density indicator

| | Partial range dial | Full range dial |
|---|---|---|
| Indicator principle | Absolute pressure, fully temperature compensated by means of sealed reference gas chamber. Meter movement operated by reference gas chamber | ditto |
| Visible dial diameter | 75 mm | ditto |
| Scale | Single or double, switchpoint indication and selectable sections with different colours | ditto |
| Unit | Optional kPa, bar, MPa (abs., rel.[1] ), psi (a., g.[1] ), kg/m², kg/cm², customer specific units and dual scale available | ditto |
| Numbered range | Up to 250 kPa @ 20°C between lowest and highest indicated value [2] | Up to 180 kPa @ 20°C between lowest and highest indicated value [2] completed by a low pressure indication down to vaccum |
| Accuracy within numbered range | ± 10 kPa @ 20°C | Switchpoint range: ±10 kPa @ 20°C<br>Low pressure range: ±20 kPa @ 20°C at 100 kPa abs.<br>±10% MV @ 20°C for remaining actual values |

[1] Monitoring principle is based on absolute pressure reference system and is accordingly calibrated. The difference between relative and absolute pressure is based on one (1) bar. While using relative dial units, local ambient pressure (e.g. altitude or weather derivations) has to be considered if comparing to local installed relative pressure gauges

[2] Typically ranges are from lock-out switchpoint to filling pressure (no high-alarm), or from lock-out switchpoint to high-alarm switchpoint

**Axial gas density monitor without indicator dial**

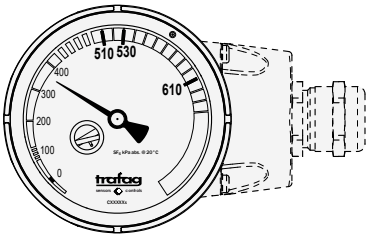


**8719.AX**.XXXX.XX.**1Z**.XX.XX.XX.XX

**Axial gas density monitor with exemplary full range indicator dial**

Electrical connector housing in 3 o'clock alignment.

For complete choice of monitor and dial alignments see page 6 and 7.




**8719.AX**.XXXX.XX.**1C**.XX.XX.XX.XX

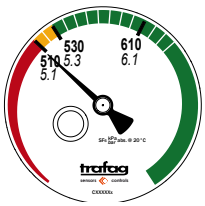
**Density indicator dial according to customer specification**

Availabilty of a full variety of units including dual range indication.

For alignment related to electrical connector housing and process connection see page 6 and 7.

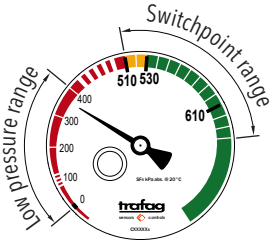

Indicator dial with two colour sectors without markings

**8719**.XX.XXXX.XX.
**1A/2A/3A/4A**.XX.XX.XX.XX




Partial indicator dial with sectors according to customer specification

**8719**.XX.XXXX.XX.
**1B/2B/3B/4B**.XX.XX.XX.XX



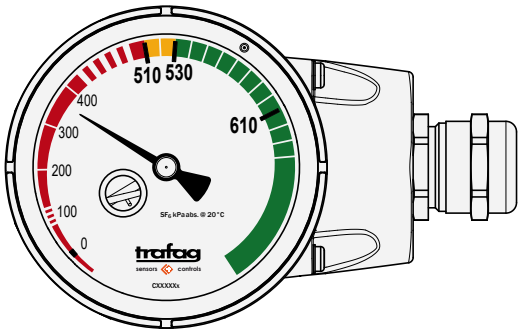

Full range indicator dial according to customer specifications

**8719**.XX.XXXX.XX.
**1C/2C/3C/4C**.XX.XX.XX.XX

## Monitor and indicator dial orientation for axial alignment configuration

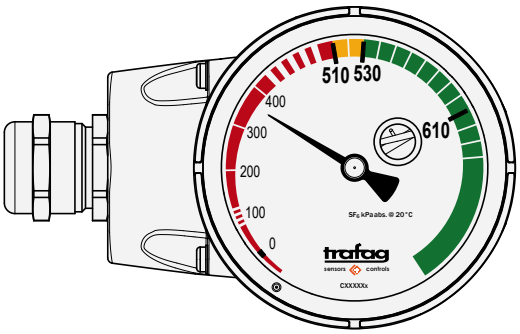
Electrical connector housing is configurable for 12/3/6/9 o'clock orientation. The indicator dial is generally horizontally oriented to ensure optimal readability. The examples shown illustrate a full range indicator dial. The same applies to the other dial variants.

Refer to chapter installation for specific requirements for outdoor installation settings.



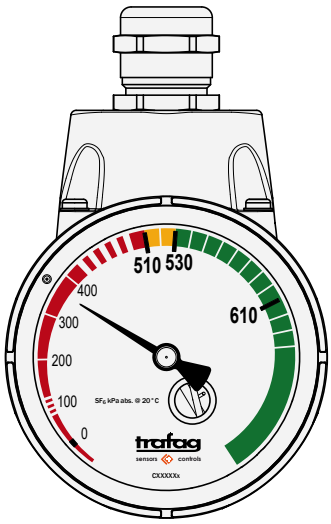

Orientation 1 with electrical connector housing in 3 o'clock alignment

**8719.AX**.XXXX.XX.**1A/1B/1C**.XX.XX.XX.XX



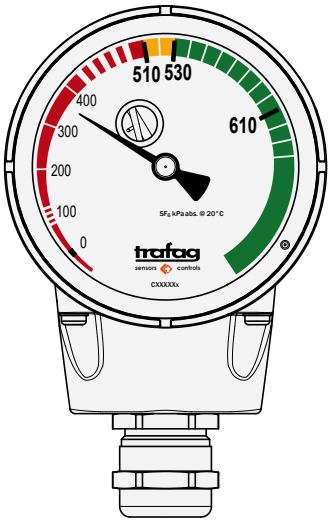

Orientation 2 with electrical connector housing in 9 o'clock alignment

**8719.AX**.XXXX.XX.**2A/2B/2C**.XX.XX.XX.XX




Orientation 3 with electrical connector housing in 12 o'clock alignment

**8719.AX**.XXXX.XX.**3A/3B/3C**.XX.XX.XX.XX



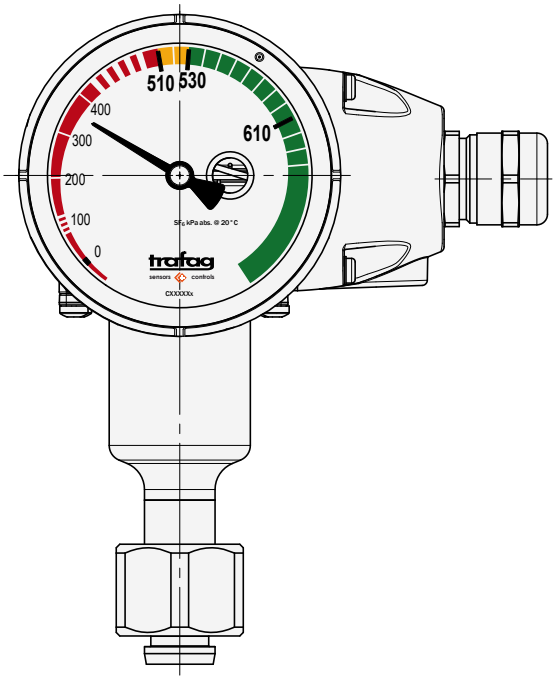

Orientation 4 with electrical connector housing in 6 o'clock alignment

**8719.AX**.XXXX.XX.**4A/4B/4C**.XX.XX.XX.XX

## Monitor and indicator dial orientation for radial alignment configuration

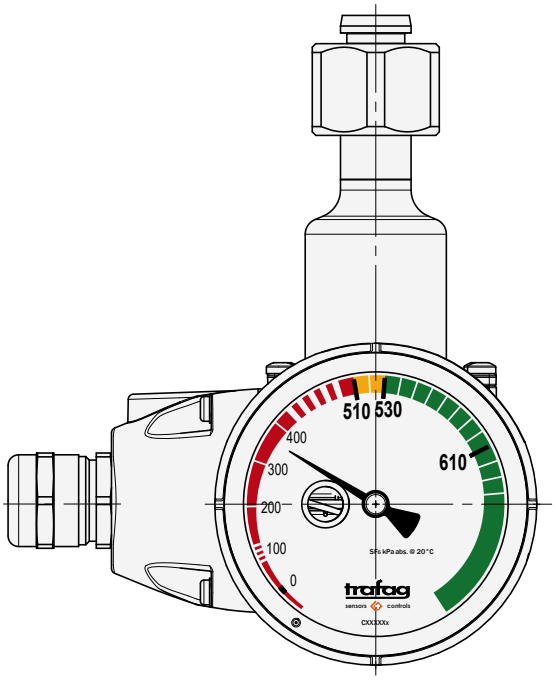
Process connection and related electrical connector housing are configurable for 12/3/6/9 o'clock orientation. The indicator dial is generally horizontally oriented to ensure optimal readability. The examples shown illustrate a full range indicator dial. The same applies to the other dial variants.

Refer to chapter installation for specific requirements for outdoor installation settings.



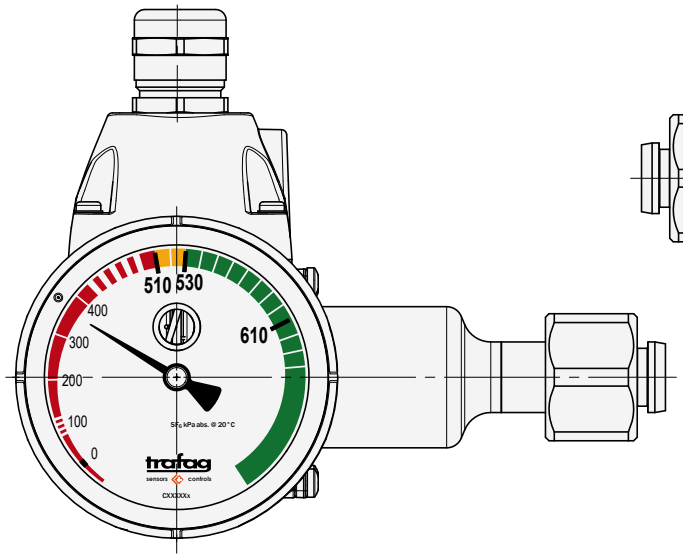

Orientation 1 with process connection in 6 o'clock alignment and electrical connector housing in 3 o'clock alignment

**8719.RX.XXXX.XX.1A/1B/1C.XX.XX.XX.XX**



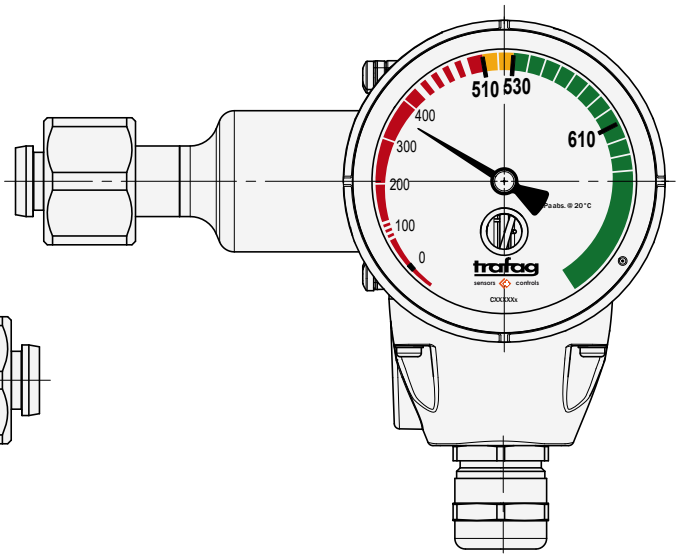

Orientation 2 with process connection in 12 o'clock alignment and electrical connector housing in 9 o'clock alignment

**8719.RX.XXXX.XX.1A/1B/1C.XX.XX.XX.XX**




Orientation 3 with process connection in 3 o'clock alignment and electrical connector housing in 12 o'clock alignment

**8719.RX.XXXX.XX.3A/3B/3C.XX.XX.XX.XX**




Orientation 4 with process connection in 9 o'clock alignment and electrical connector housing in 6 o'clock alignment

**8719.RX.XXXX.XX.4A/4B/4C.XX.XX.XX.XX**

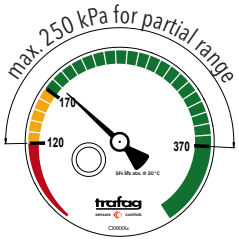
## Microswitch and switchpoint

| | | |
|---|---|---|
| **Microswitch** | Output signal | Floating change-over contact (SPDT) |
| | Resistive load (inductive load) | AC - 250 V/10 (1.5) A<br>DC - 250 V/0.1 (0.05) A, 220 V/0.25 (0.2) A,<br>110 V/0.5 (0.3) A, 24 V/2 (1) A |
| | Resistance of insulation | >100 MΩ, 500 VDC, ex factory |
| | Dielectric strength | 2 kVAC, 50Hz, terminal to ground (earth) |
| | Switching cycle capacity | Up to 1 Mio. mechanical, more than 10'000 with maximum load |
| | Effect of vibration | 4 g / 20 … 100 Hz effects no contact bounce at 5 kPa minimum distance from set switchpoint |
| **Switchpoint setting** | Factory adjustment | According to customer specification, [1]<br>standard setting is for decreasing pressure |
| | Lowest switchpoint setting | 120 kPa abs. @ 20°C |
| | Highest switchpoint setting | 1300 kPa abs. @ 20°C |
| | Distance from the lowest to the highest switchpoint [2] | Up to 250 kPa @ 20°C for partial range or none indication<br>Up to 180 kPa @ 20°C for full range indication |
| | Switching differential | 3 ... 7 kPa typ. (15 kPa max.)<br>if lowest to highest switchpoint distance is up to 130 kPa<br>5 ... 10 kPa typ. (20 kPa max.)<br>if lowest to highest switchpoint distance is 130 ... 180 kPa<br>7 ... 12 kPa typ. (25 kPa max.)<br>if lowest to highest switchpoint distance is 180 ... 250 kPa |

[1] Especially for outdoor installations in areas with high daily temperature fluctuations it is recommended to maintain a minimum switchpoint distance of 40-60 kPa from filling pressure to surrounding switchpoint(s). Please contact us for more information

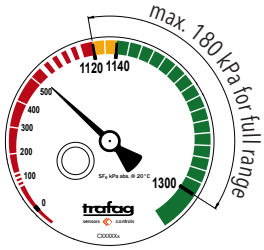
[2] Distance from lock-out to high-alarm pressure, or from lock-out to filling pressure (no high-alarm)

## Overview switchpoint settings




Lowest switchpoint setting:
120 kPa abs. @ 20°C for partial and full range indication

Distance from lowest to highest switchpoint:
Up to 250 kPa @ 20°C for partial range indication




Highest switchpoint setting:
1300 kPa abs. @ 20°C for partial and full range indication

Distance from lowest to highest switchpoint:
Up to 180 kPa @ 20°C for full range indication

## Switchpoint accuracy over temperature based on reference chamber pressure

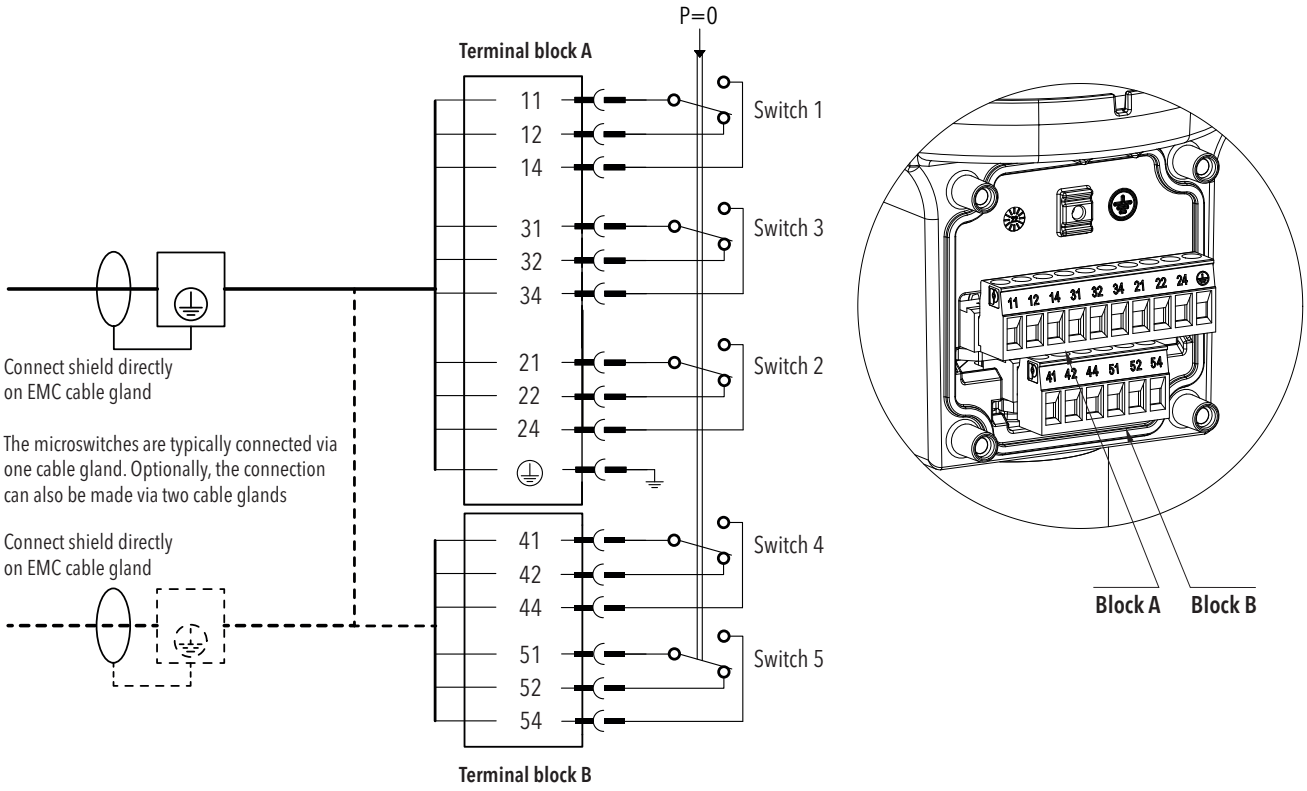
| Temperature range | | +20°C | | -30°C … +50°C | | -40°C … +60°C | | -60°C … +60°C | |
|---|---|---|---|---|---|---|---|---|---|
| **Density monitor configuration** | | **standard** | **with artic option** | **standard** | **with artic option** | **standard** | **with artic option** | **standard** | **with artic option** |
| **First alarm switchpoint setting pressure abs. @ 20°C** [1] | | | | | | | | | |
| ≤ 650 kPa | [kPa max.] | ± 8 | ± 10 | ± 10 | ± 12 | ± 12 | ± 14 | - | ± 15 |
| > 650 kPa to 1000kPa | [kPa max.] | ± 8 | ± 10 | ± 12 | ± 14 | ± 14 | ± 16 | - | ± 18 |
| > 1000kPa | [kPa max.] | ± 10 | ± 10 | ± 15 | ± 18 | ± 16 | ± 22 | - | ± 25 |
| **High pressure alarm** [1] [2] | | | | | | | | | |
| ≤ 1000 kPa | [kPa max.] | ± 10 | ± 10 | ± 16 | ± 18 | ± 20 | ± 22 | - | ± 25 |
| > 1000kPa | [kPa max.] | ± 10 | ± 12 | ± 17 | ± 20 | ± 21 | ± 24 | - | ± 27 |

[1] While no liquefaction occurs and the insulation gas is completely gaseous
[2] Only applicable if factory adjustment includes high-alarm switchpoint above filling pressure

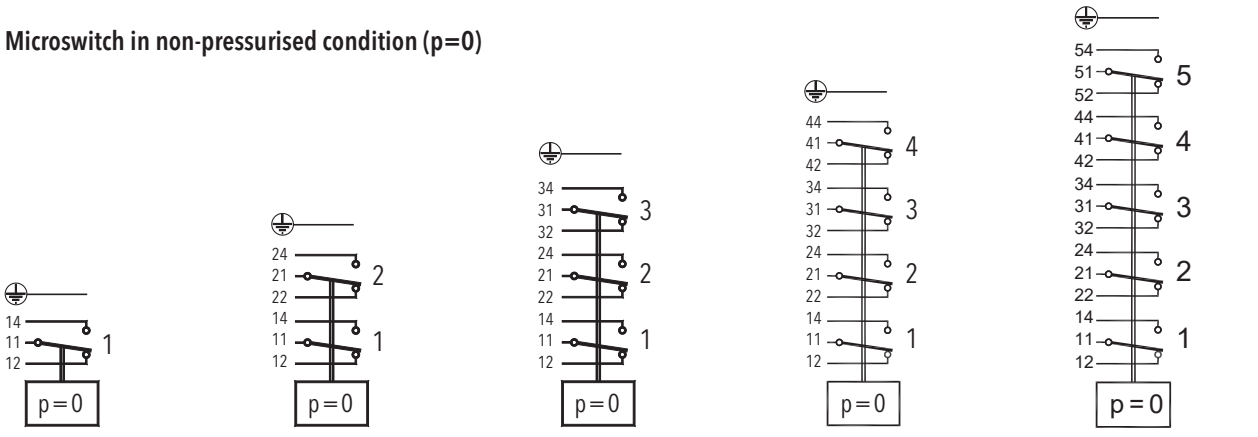
## Electrical connections

| Standard wiring terminal(s) | |
|---|---|
| Number of microswitches according to customer application | Up to three (3) switches connected via wire terminal block A<br>Up to two (2) more switches connected via wire terminal block B [1] |
| Wire terminal blocks | Plugable, for 0.2 … 2.5mm² wiring<br>Terminal block A: 10-pins<br>Terminal block B: 6-pins |

[1] Wire terminal block B only applicable if monitor is configurated with four (4) or five (5) microswitches




### Microswitch in non-pressurised condition (p=0)

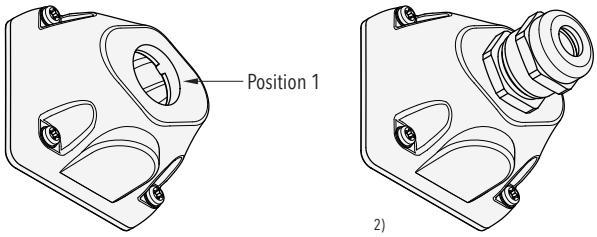



8719.**11**.XXXX.XX… 8719.**12**.XXXX.XX… 8719.**13**.XXXX.XX… 8719.**14**.XXXX.XX… 8719.**15**.XXXX.XX…

Connected with all electrically conductive elements of the density monitor

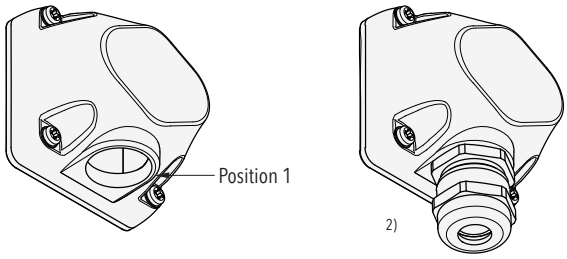
## Electrical connections

### Electrical connector housing configuration, aluminium die casting [1)]



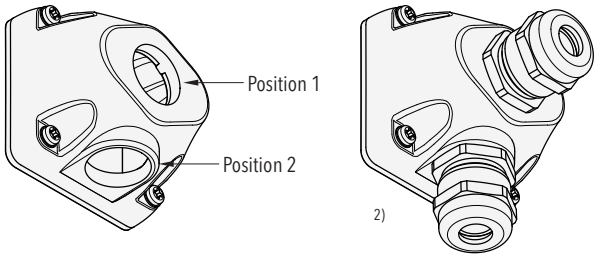

**1-thread, horizontal cable outlet**

M25x1.5 **8719**.XX.XXXX.XX.XX.XX.**A1**...
M20x1.5 **8719**.XX.XXXX.XX.XX.XX.**A2**...



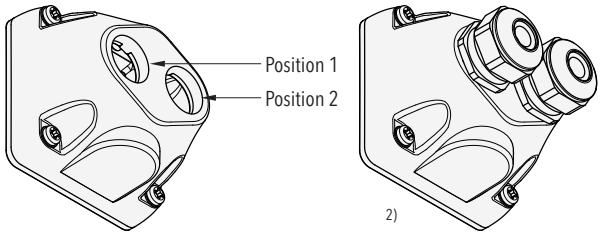

**1-thread, lateral cable outlet**

M25x1.5 **8719**.XX.XXXX.XX.XX.XX.**B1**...
M20x1.5 **8719**.XX.XXXX.XX.XX.XX.**B2**...




**2-threads, horizontal and lateral cable outlets**

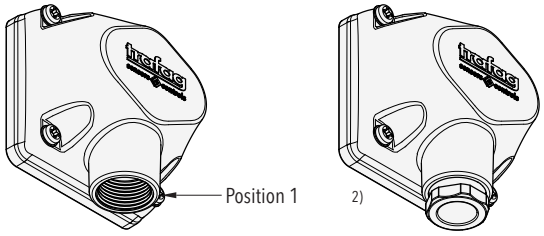
M25x1.5, horizontal **8719**.XX.XXXX.XX.XX.XX.**C1**...
M25x1.5, lateral
M25x1.5, horizontal **8719**.XX.XXXX.XX.XX.XX.**C2**...
M20x1.5, lateral




**2-threads, horizontal cable outlets**

M20x1.5, M20x1.5 **8719**.XX.XXXX.XX.XX.XX.**D1**...

### Electrical connector housing configuration, PA injection molding [1)]



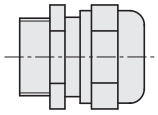

**1-thread, lateral cable outlet**

M20x1.5 **8719**.XX.XXXX.XX.XX.XX.**E1**...

[1)] Thread(s) are plugged with a plastic cap
[2)] Example with mounted cable gland

## Electrical connections

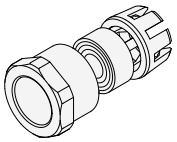
### EMC-cable gland



**8719**.XX.XXXX.XX.XX.XX.XX.**XX**.XX.XX
Type code 07 … 17
See ordering information table below

Material:
Brass, nickel-plated or Polyamide (PA)

### Cable gland insert



**8719**.XX.XXXX.XX.XX.XX.XX.**09**.XX.XX

Material:
Polyamide (PA)

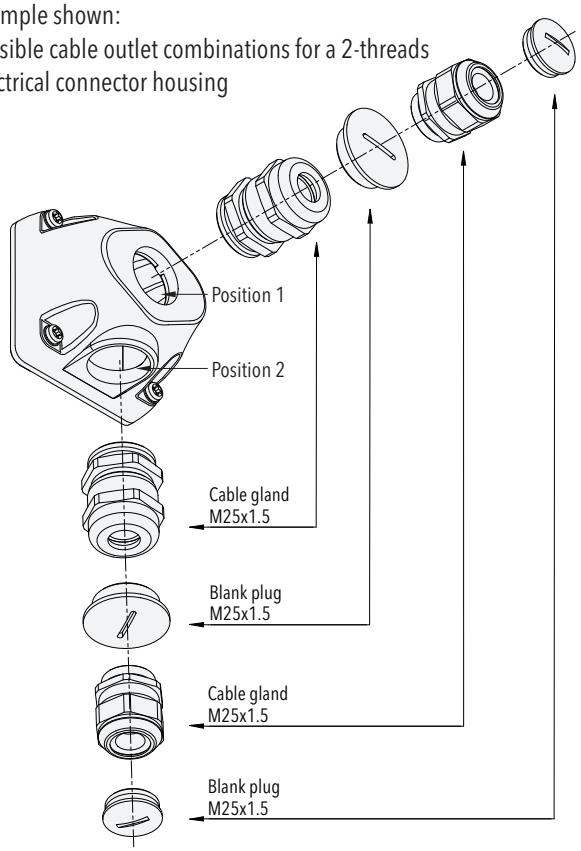
### Blank plug

**8719**.XX.XXXX.XX.XX.XX.XX.**XX**.XX.XX
Type code 02 … U2
See ordering information table below

Material:
Brass, nickel-plated or Polyamide (PA)

### Cable outlet configurations

Example shown:
Possible cable outlet combinations for a 2-threads electrical connector housing




| | | Ordering information<br>Cable outlet options |
|---|---|---|
| **EMC-cable gland, brass nickel-plated** [1] | | |
| M20x1.5 | For cable ø7 ... 12.5 mm | 10 |
| | For cable ø8 ... 11 mm | 07 |
| | For cable ø11 ... 14 mm | 08 |
| M25x1.5 | For cable ø8 ... 16 mm | 11 |
| | For cable ø12.5 ... 20.5 mm | 17 |
| **Cable gland insert, PA** [2] | | |
| M20x1.5 | For cable ø7 ... 13 mm | 09 |
| **Blank plug** | | |
| M20x1.5 | Brass nickel-plated [1] | U2 |
| | PA [3] | 02 |
| M25x1.5 | Brass nickel-plated [1] | 04 |
| | PA [3] | 05 |

[1] IP 65 and IP 67 protection
[2] IP 65 protection
[3] Without IP compatibility, not for use in operation

### Example 1 cable outlet configuration

- Use of a cable connector housing with M25x1.5, horizontal and M20x1.5, lateral threads (-> option C2, see page 11)
- With EMC-cable gland M25x1.5 for cable ø12.5 ... 20.5 mm and EMC-cable gland M20x1.5 for cable ø7 ... 12.5 mm (-> Option 17, 10)

-> 8719.XX.XXXX.XX.C2.17.10.XX…

### Example 2 cable outlet configuration

- Use of a cable connector housing with 2-threads M20x1.5, horizontal (-> option D1, see page 11)
- With two equal EMC-cable glands M20x1.5 for cable ø8 ... 11 mm (-> Option 07, 07)

-> 8719.XX.XXXX.XX.D1.07.07.XX…

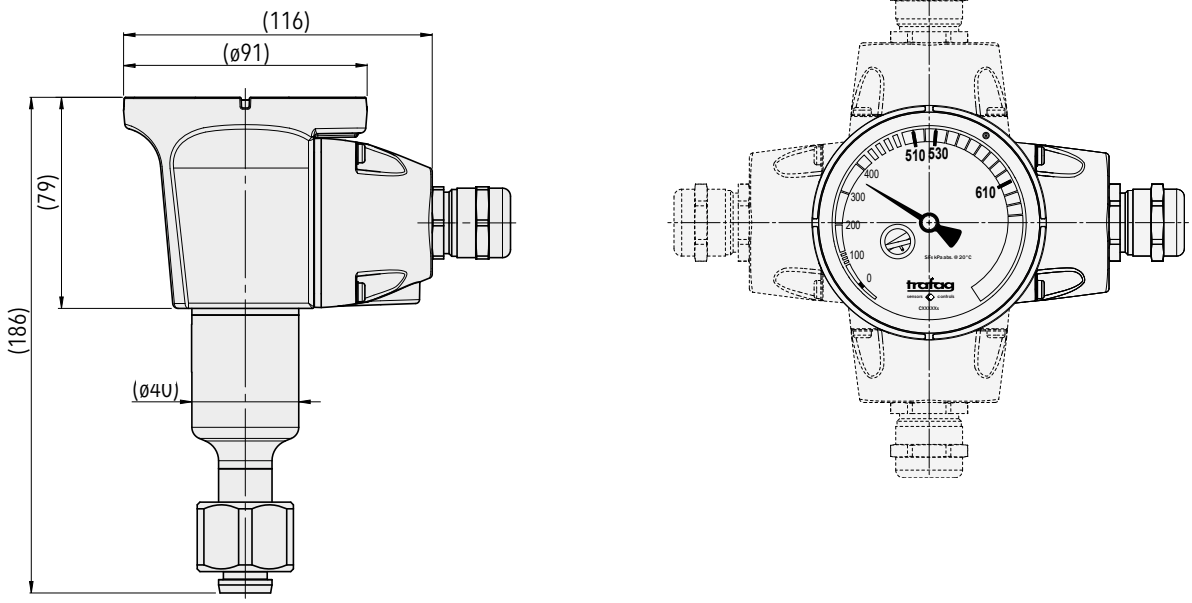
### Example 3 cable outlet configuration

- Use of a cable connector housing with M25x1.5, lateral thread (-> option B1, see page 11)
- With M25x1.5 EMC-cable gland for cable ø8 ... 16 mm (-> Option 11)

-> 8719.XX.XXXX.XX..B1.11.XX…

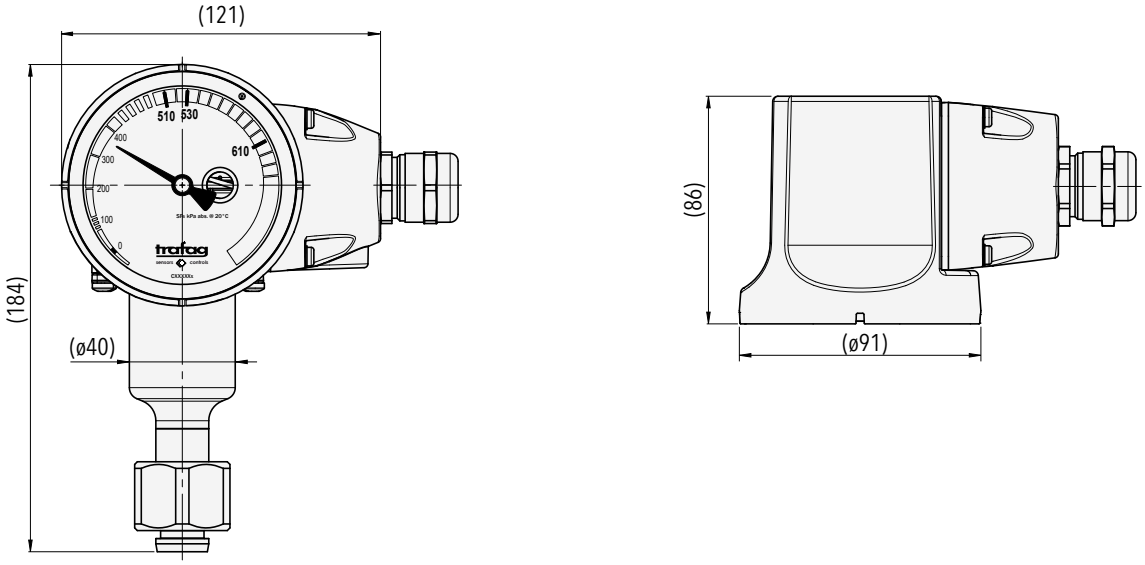
## Main dimensions of density monitor

### Example model with axial aligned process connection with cap nut




**8719.AX.8XXX**.XX.XX.XX.XX...

### Example model with radial aligned process connection with cap nut

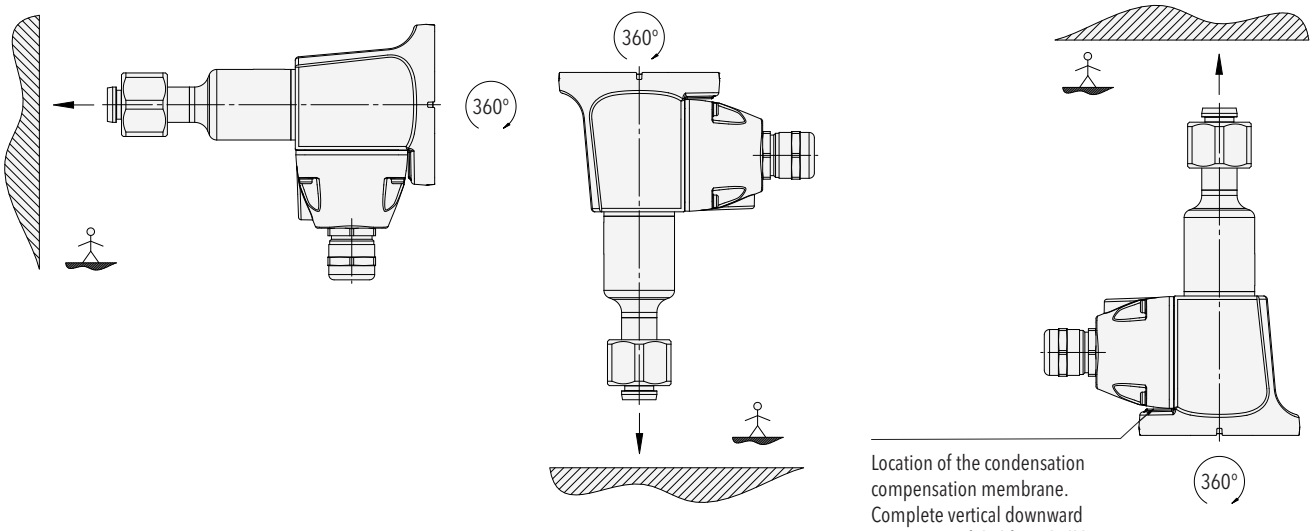



**8719.RX.8XXX**.XX.XX.XX.XX...

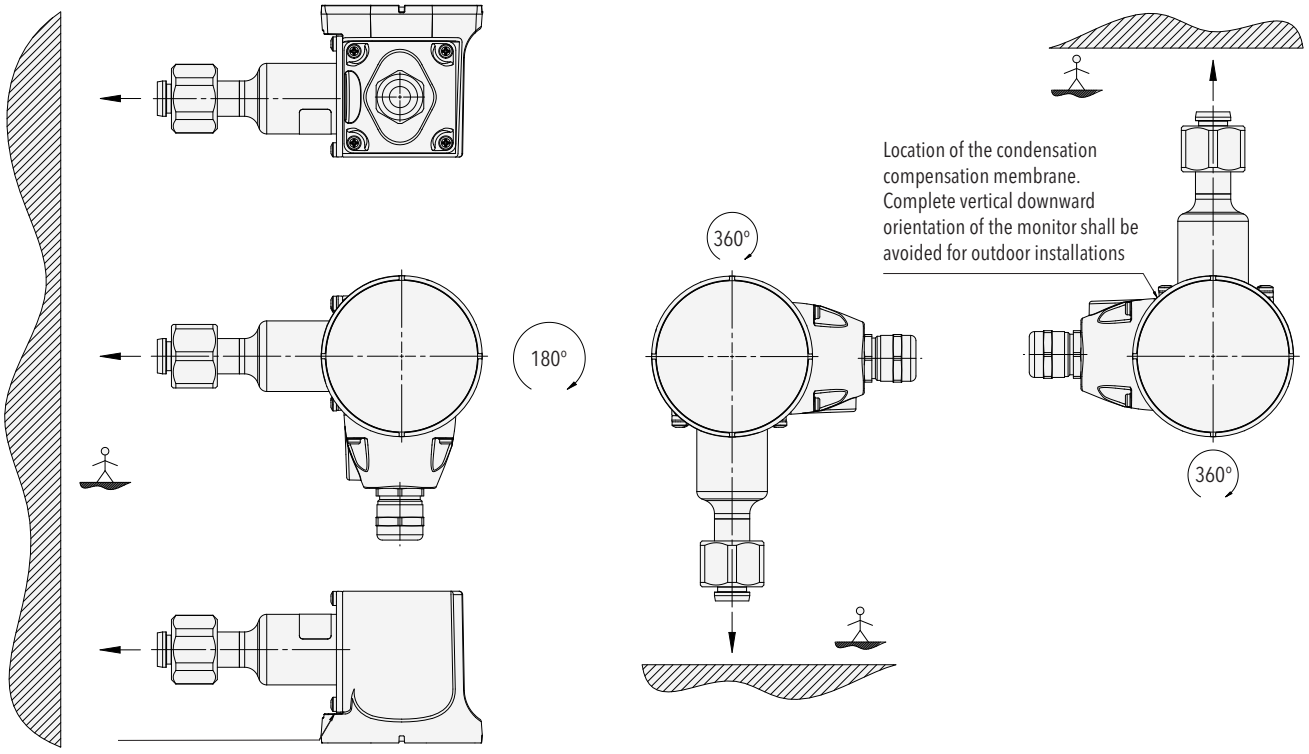
## Installation

| | Indoor application | Outdoor application | Outdoor application with rapidly changing or extreme weather conditions |
|---|---|---|---|
| **Installation orientation** | No limitations, any orientation possible | - A complete vertical downward orientation of the monitor or the dial face shall be avoided to ensure the funtionalty of the membrane providing condensation compensation<br>- Consider a proper cable bending radius to ensure tightness of the cable connection. A complete vertical upward installation of the cable shall be avioded | |
| **Recommended option** | None | - Weather protection cover (46)<br>- Weather protection cover with thermal insulation ring for probe housing (47) | - Weather protection cover with thermal insulation foam jacket inlay (48) |

### Specifications for axial type alignment installation




### Specifications for radial type alignment installation

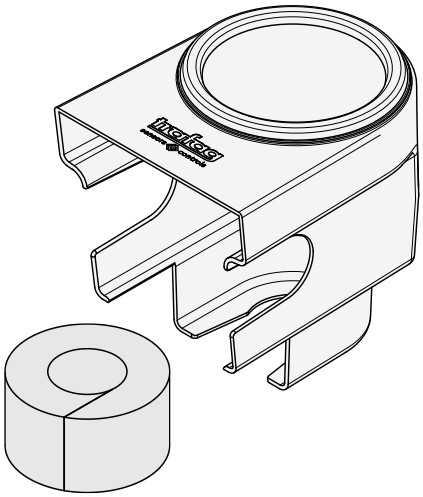


## Sheltering options

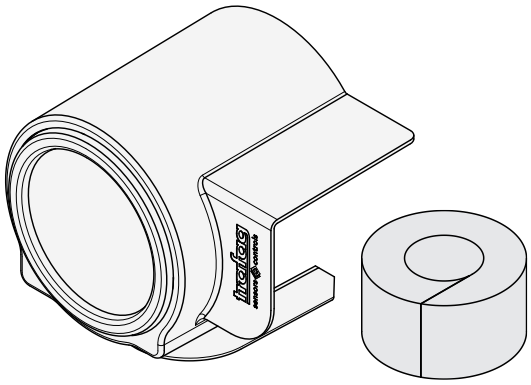
Sheltering options on request

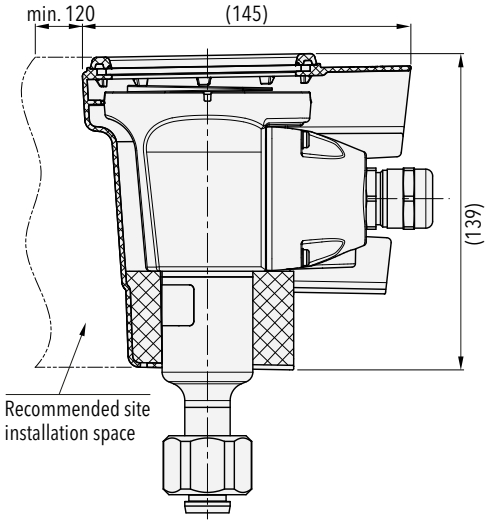
**Weather protection cover with or without thermal insulation ring for probe housing**

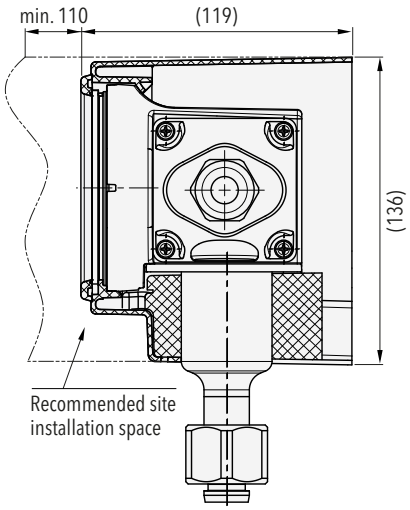
**Design for axial alignment**



**Design for radial alignment**






### Weather protection cover

**8719**.XX.XXXX.XX.XX.XX.XX.XX.**46**

The weather protection cover (46) is aimed for long-term element protection for outdoor installations.

### Weather protection cover with thermal insulation ring for probe housing [1)]

**8719**.XX.XXXX.XX.XX.XX.XX.XX.**47**

The weather protection cover with insulation ring (47) for the probe housing additionally increases thermal inertia in moderate climates. Probe housing refers to the lower part of the density monitor where the reference chamber is located. The aim of the insulation ring is to support temperature balance of the insulation gas in the pressure compartment and the probe housing.

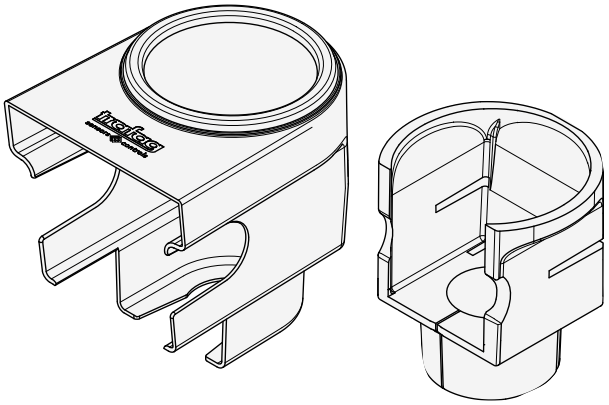
[1)] Insulation ring is intended to use togehter with weather protection cover only

## Sheltering options

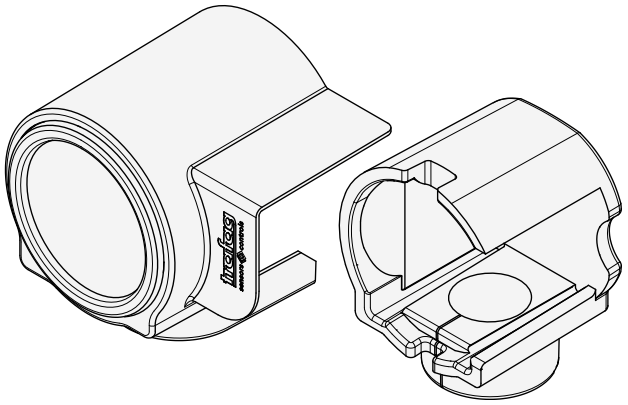
Sheltering options on request

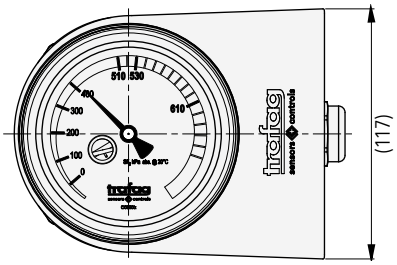
### Weather protection cover with thermal insulation foam jacket inlay

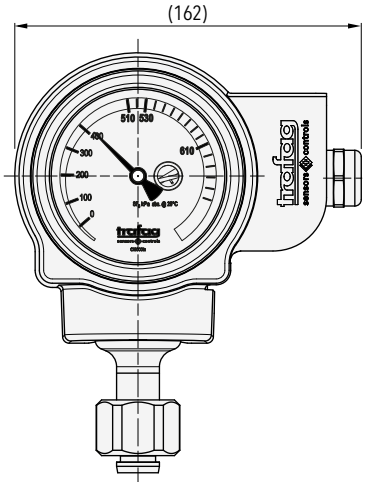
**Design for axial alignment**

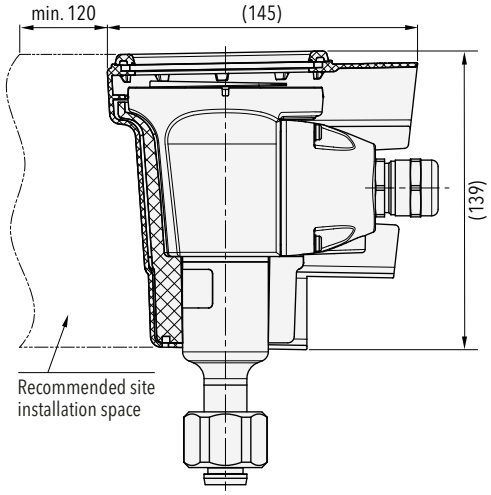


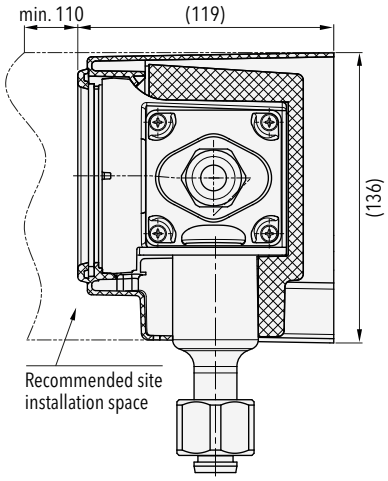
**Design for radial alignment**






### Weather protection cover with thermal insulation foam jacket inlay [1)]

**8719**.XX.XXXX.XX.XX.XX.XX.XX.**48**

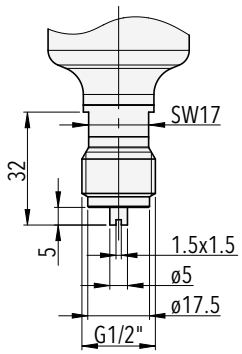
The weather protection cover with thermal insulation foam jacket inlay (48) is aimed for long-term element protection for outdoor installations and for enhanced temperature balance of the insulation gas in the pressure compartment and the density monitor. Accessory combination (48) is recommended for locations with high solar radiation or considerable daily temperature fluctuations (high altitude, arctic, desert).

[1)] Insulation foam jacket inlay is intended to use togehter with weather protection cover only

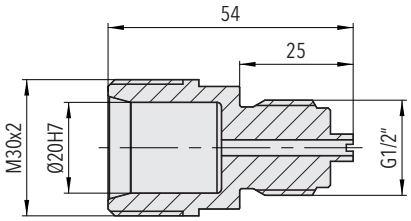
## Process connections

Process connections on request

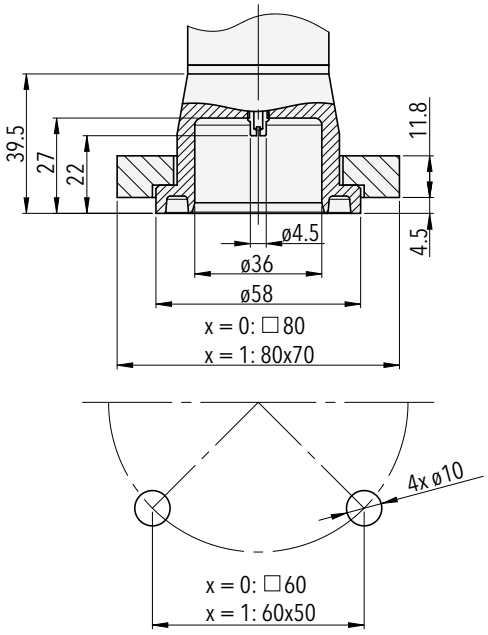
Delivery includes assembly kit and O-Ring set where applicable.
For full range of process connections and more details see data sheet www.trafag.com/ H72522



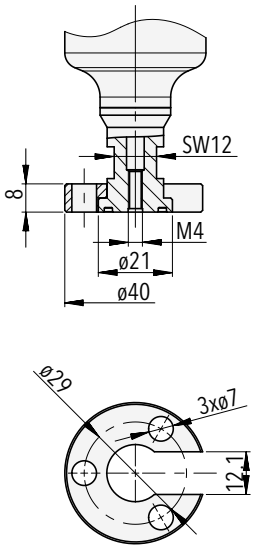

Theaded connection G1/2"
**8719**.XX.**7000**.XX.XX.XX.XX...



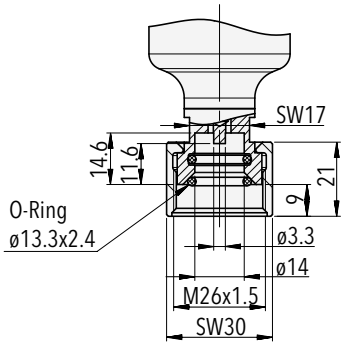

Adapter 2300 - G1/2" male for rotable G1/2" pressure connection
**8719**.XX.**8300**.XX.XX.XX.N1




Flanged connection
**8719**.XX.**800X**.XX.XX.XX.XX...



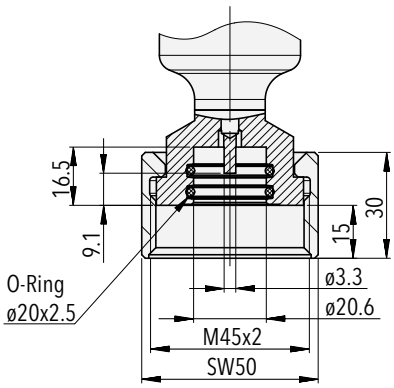

Flanged connection
**8719**.XX.**8200**.XX.XX.XX.XX...



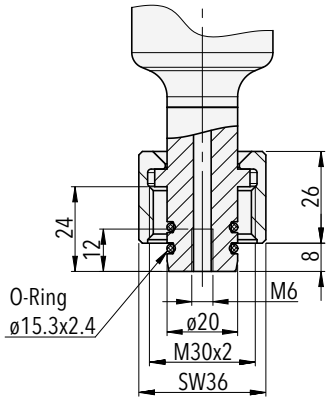

DN8 connection
**8719**.XX.**8550**.XX.XX.XX.XX...

## Process connections

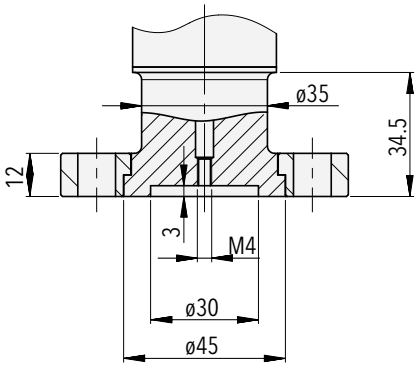
Process connections on request

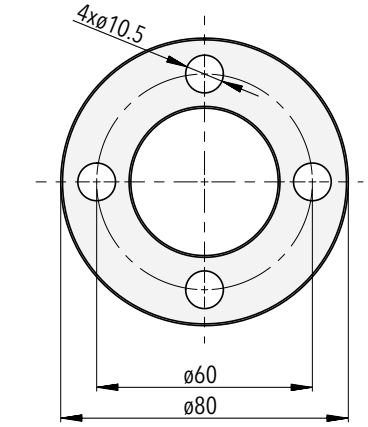



DN20 connection
**8719**.XX.**8570**.XX.XX.XX.XX...

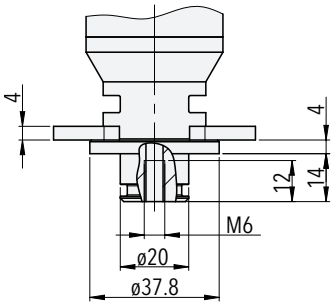


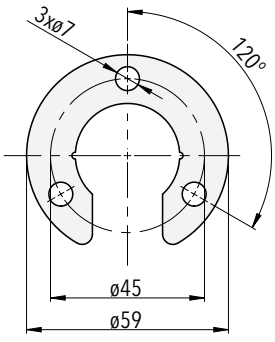

Cap nut connection
**8719**.XX.**8300**.XX.XX.XX.XX...



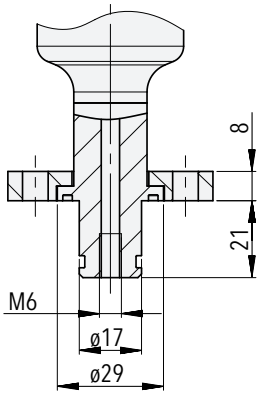



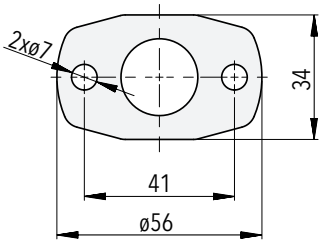

Flanged connection
**8719**.XX.**8621**.XX.XX.XX.XX...




Flanged connection
**8719**.XX.**8900**.XX.XX.XX.XX...




Flanged connection
**8719**.XX.**8800**.XX.XX.XX.XX...

## Valve options

Valve options on request

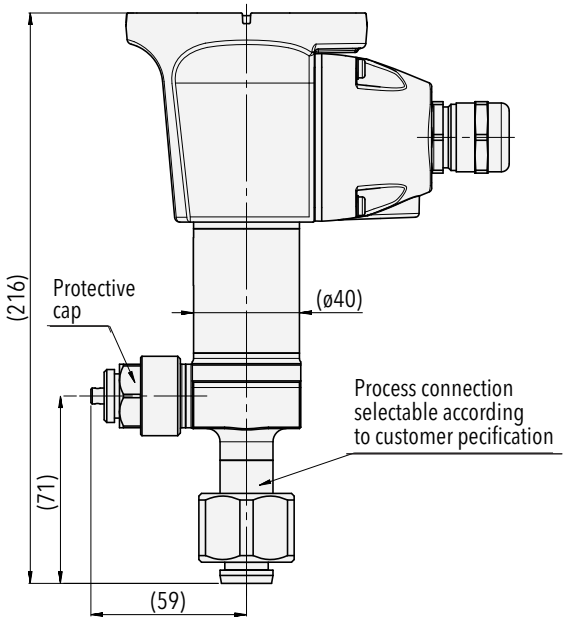
### Integrated valve for density monitor test [1)]

Test valve allows in-situ monitor verification without dismounting from pressure compartment. Test equipment is connected via DN8 port. Connection port is configurable for direction W0/W1/W2/W3.

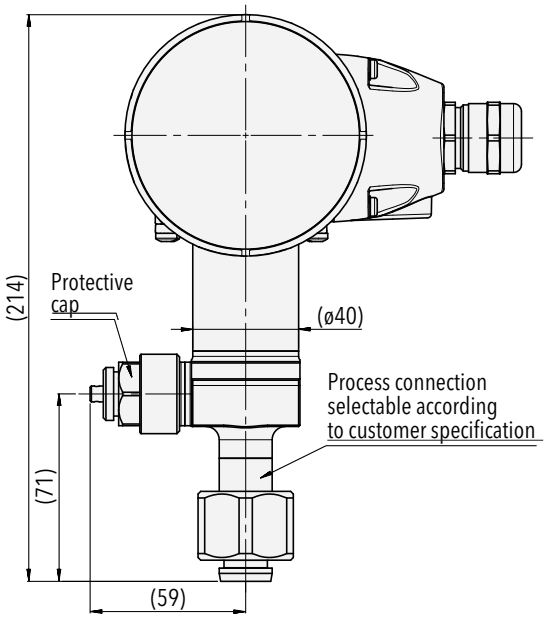
### Integrated valve for process gas quality test and re-filling [1)]

Valve allows in-situ analysing of gas quality and direct insulating gas replenishment of pressure compartment via DN8 port on re-filling valve. Connection port is configurable for direction F0/F1/F2/F3.

### Example model with integrated valve and axial aligned process connection

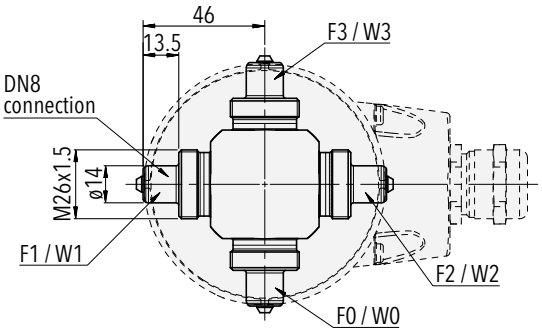



### Example model with integrated valve and radial aligned process connection



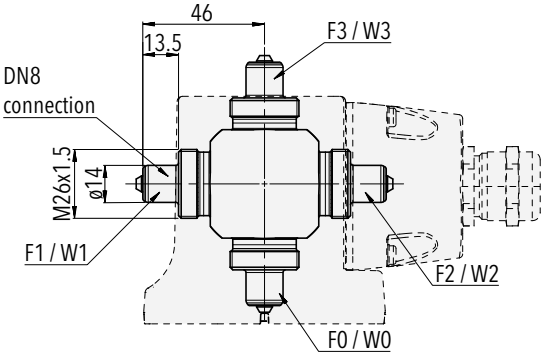

### Orientation service connection (top view, valve port orientation is identical for axial and radial types) [2)]
### Please specify port direction when ordering

#### Top view axial alignment




**8719.AX**.XXXX.XX.XX.XX.XX.**W0/F0/W1/F1/W2/F2/W3/F3**.XX

#### Top view radial alignment




**8719.RX**.XXXX.XX.XX.XX.XX.**W0/F0/W1/F1/W2/F2/W3/F3**.XX

[1)] The outer dimensions for both valves with the respective axis alignment type are the same

[2)] While using weather protection cover or togehter with thermal insulation foam jacket inlay, the indicated installation spaces should be followed. See section installation and sheltering options

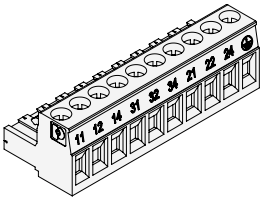
### Operating specification for test and re-filling valve:

Opening and closing shall be limited to temperature range of -25°C ... +50°C.
Mechanical lifetime min. 250 actuation cycles.

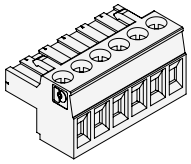
i For more details see instruction: www.trafag.com/ H73623

## Spare parts

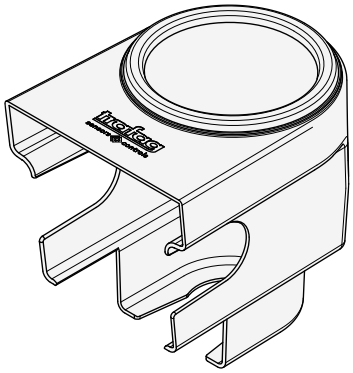
**Weather protection and insulation on request**



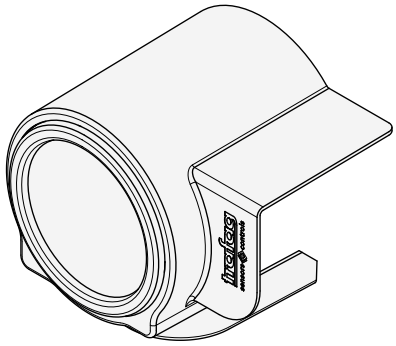

Microswitch wire terminal block A, 10-pins [1)]



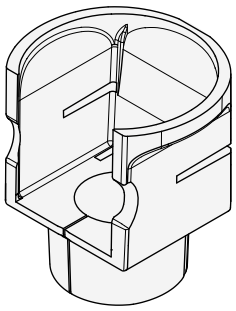
Microswitch wire terminal block B, 6-pins [1)]



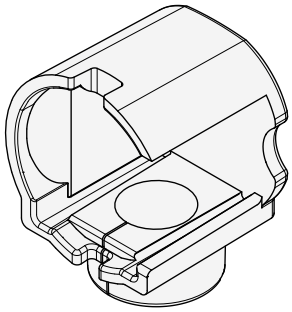
Weather protection cover, axial alignment
(Trafag part no.: XXXXXXX)



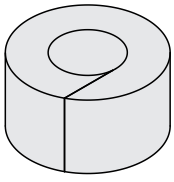
Weather protection cover, radial alignment
(Trafag part no.: XXXXXXX)



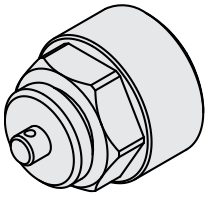
Thermal insulation foam jacket inlay, axial alignment
(Trafag part no.: XXXXXXX)



Thermal insulation foam jacket inlay, radial alignment
(Trafag part no.: XXXXXXX)



Thermal insulation ring for probe housing
(Trafag part no.: XXXXXXX)



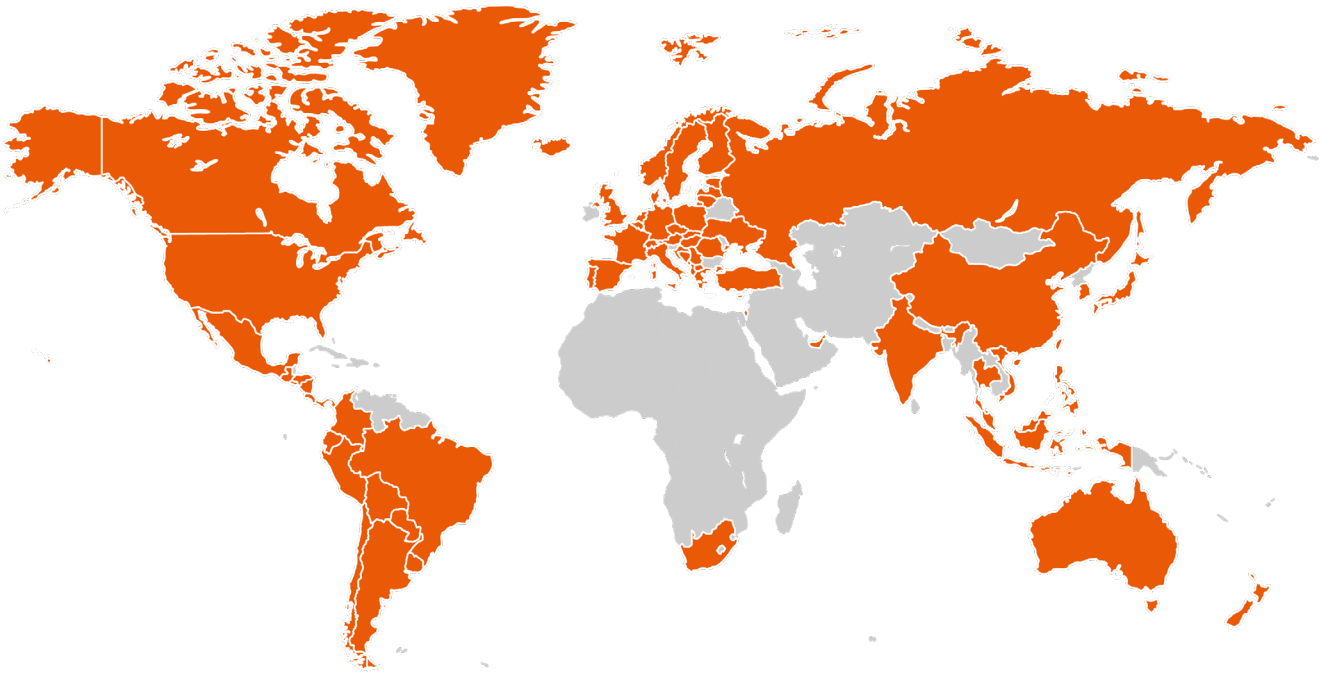
M26x1.5 protective cap for test and re-filling valve
(Trafag part no.: C30645)

[1)] Please contact us for more details

# Reliable quality

## Worldwide represented, globally trusted, Swiss based

Trafag, headquartered in Switzerland, was founded in 1942 and has a broad sales and service network in over 40 countries worldwide. Trafag develops, manufactures and distributes precise, robust and maintenance-free measuring instruments for monitoring $SF_6$ and alternative insulating gases in high and medium voltage switchgear. Trafag guarantees extremely accurate, highly shock-resistant instruments, with the widest temperature range available on the market. In addition, Trafag has a broad product portfolio in pressure and temperature monitoring. With the ability to develop and manufacture all major components in-house, Trafag is able to produce both mass production and short-run small series. Strict quality management according to ISO 9001, state-of-the-art production facilities under clean room conditions and strictly monitored production processes ensure that Trafag products meet the highest quality standards.

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The coordinates to the representatives can be found at **www.trafag.com/trafag-worldwide**

Pressure Transmitters | Electronic Pressure Switchs | Mechanical Pressure Switchs | Pressure gauge | Thermostats | Temperature Transmitters | Gas Density