



**Warning:** Before installation, commissioning, and operation, ensure that the gas density monitor is suitable for the application in terms of measuring range, design, arrangement and environmental conditions. The device is part of an overall system. Therefore, the system manufacturer's specification must also comply with. Non-observance can result in serious injury and/or damage to equipment.

**Intended use:** This instrument converts insulating gas pressure (density) into an electrical switching signal. The instrument has been designed and built solely for the intended use described here and may only be used accordingly. If the equipment is used in a different manner, the protection provided by the equipment may be impaired and Trafag shall not be liable for any claims at all.

**Datasheet and recommended installation arrangement**

8719 gas density monitor



[www.trafag.com/H72623](http://www.trafag.com/H72623)

**Type label description (example)**

Manufacturing date (W/Y)

The diagram shows a rectangular label for a 'DENSITY MONITOR'. It includes the Trafag logo, a QR code, and the following fields:

- S/N: XXXXXXXX-XXX
- Type: XXXXXXXXXXXXX
- Assigned insulating gas: XXX: XXX%    XXX: XXX%
- Factory calibrated switchingpoints: P1: XXX XXX XXX @ XX °C Contact XX-XX; P2: XXX XXX XXX @ XX °C Contact XX-XX; P3: XXX XXX XXX @ XX °C Contact XX-XX; P4: XXX XXX XXX @ XX °C Contact XX-XX; P5: XXX XXX XXX @ XX °C Contact XX-XX
- Reference chamber gas filling: Device contains=0.001 kg of SF6
- UK CA CE certification logo
- Part No.:XXXXXXXXXX
- Customer specific QR code
- Contact pin assignments

Callouts from the left side of the label:

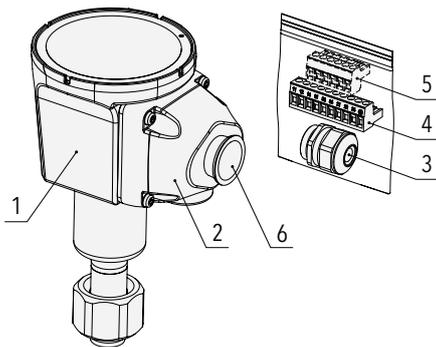
- Serial number
- Type code
- Assigned insulating gas
- Factory calibrated switchingpoints
- Reference chamber gas filling. Only designated when filled with fluorinated gases

Callouts from the right side of the label:

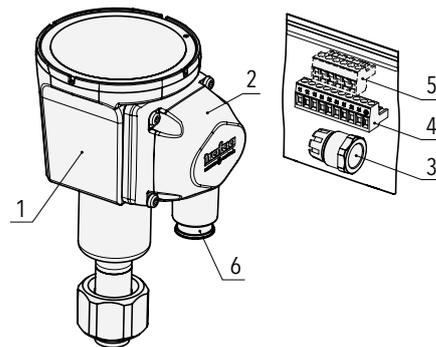
- Customer specific part number if applicable
- Customer specific QR code if applicable
- Contact pin assignments

**Main components**

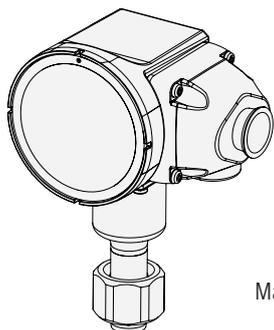
**Axial density monitor with aluminium die casting electrical connector housing**



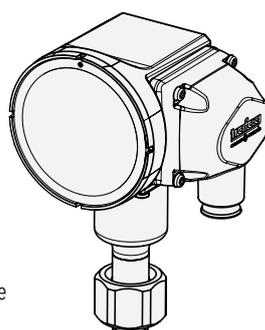
**Axial density monitor with PA injection molding electrical connector housing**



**Radial density monitor with aluminium die casting electrical connector housing**



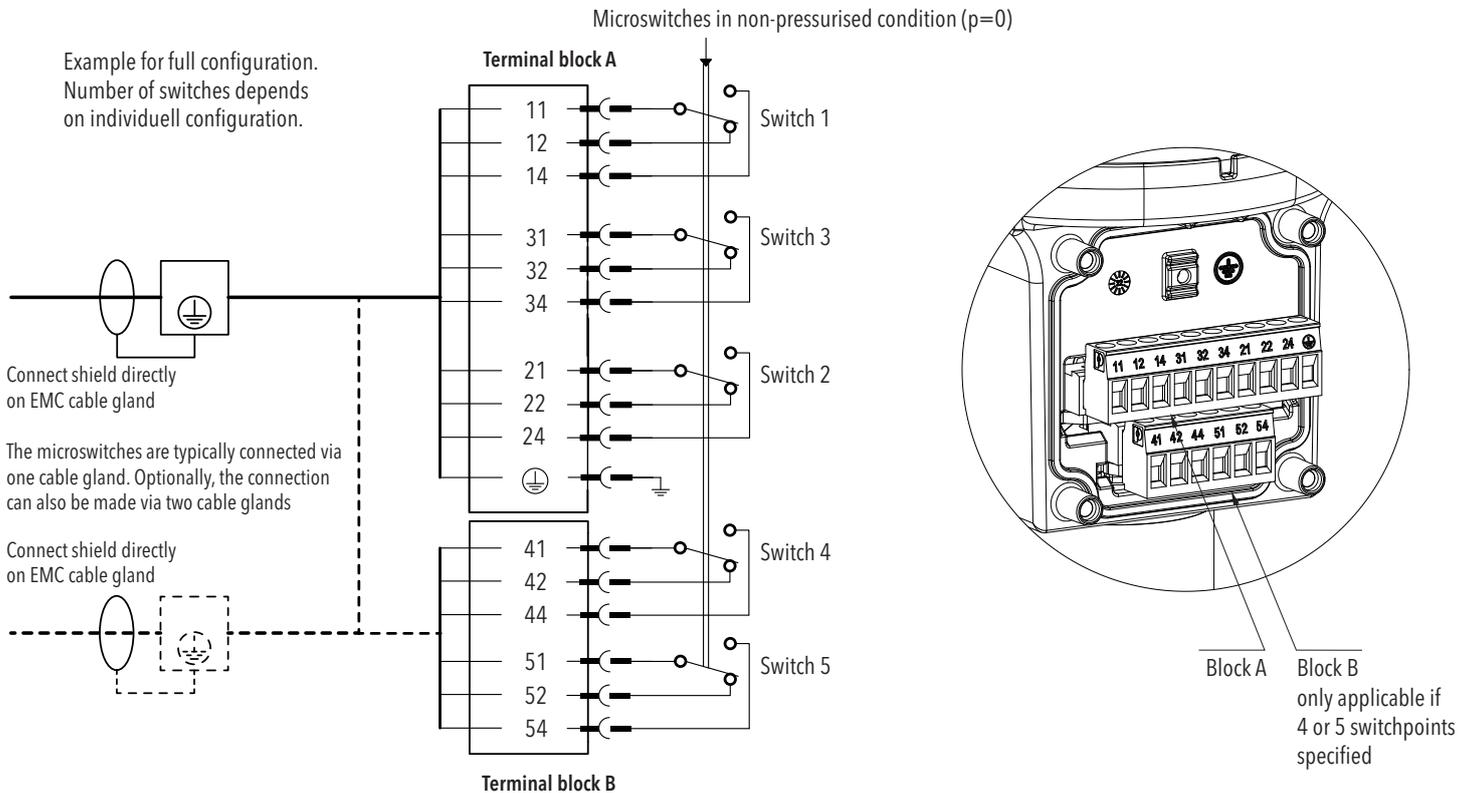
**Radial density monitor with PA injection molding electrical connector housing**



Main components see axial type above

- 1 Density monitor**  
Axial or radial alignment design
- 2 Electrical connector housing**  
Aluminium die casting or PA injection molding according to specific configuration
- 3 Cable gland(s) and/or blind plug(s)**  
According to specific configuration
- 4/5 Wire terminal block(s)**  
According to specific configuration. Pos. 5 for four or five switchpoints only
- 6 Closing plug**  
For thread and dust ingress protection during storage

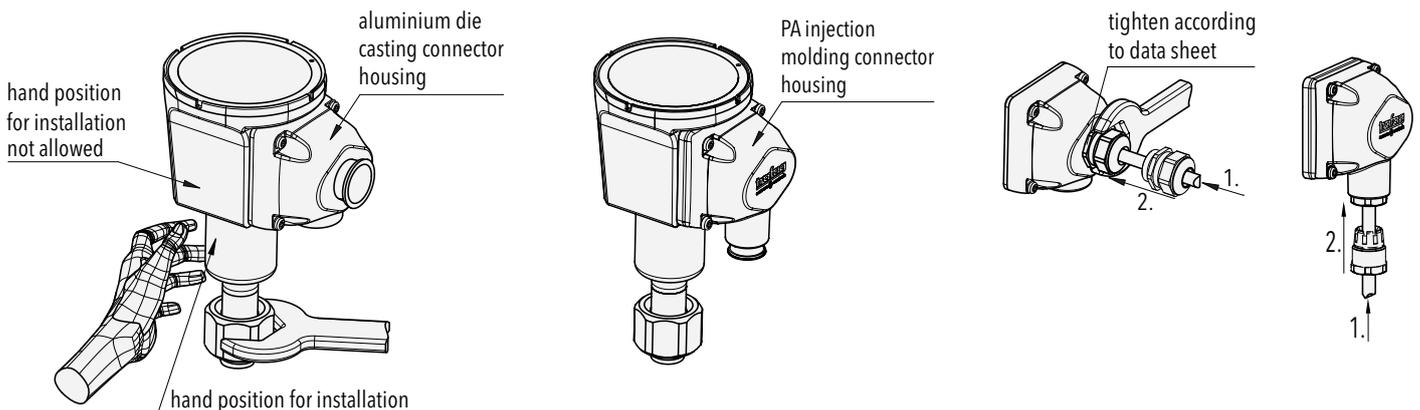
## Electrical connections



## Field installation

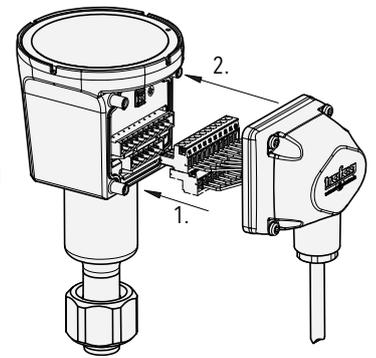
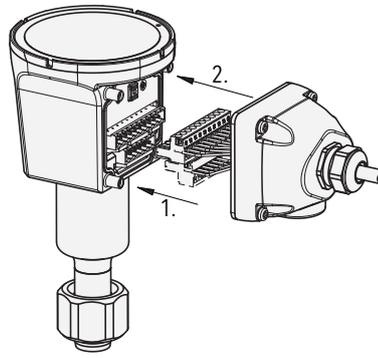
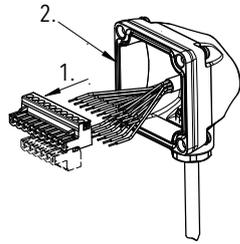
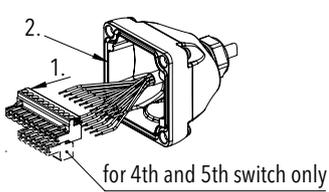
The following installation instructions apply equally to axial and radial density monitors. The below instructions distinguish between the electrical connector housing variants (Aluminium die casting and PA injection molding).

- Caution**
- Check the gas density monitor for any damage that may have occurred during transport or storage. Any obvious damage must be reported immediately. Do not use damaged monitors.
  - Turn off and disconnect any voltage sources before installation
  - Follow the specifications for axial or radial type alignment installation orientations according to the gas density monitor datasheet and system manufacture requirements



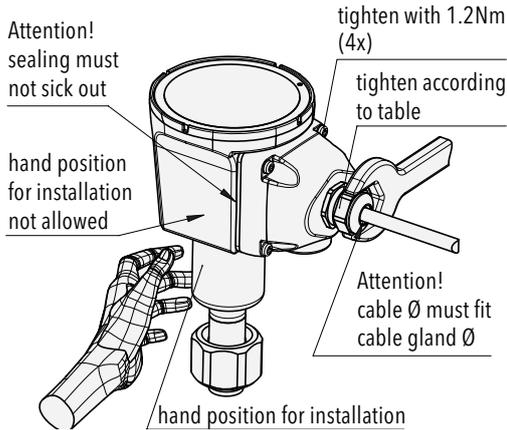
Note:  
Shown process connections are examples and may vary from individual configuration

- Step 1**
- Position the density monitor to the main equipment and tighten the density monitor according to the high-voltage equipment manufacture requirements
  - The use of a torque wrench is strongly recommended
  - The tightening torque of the process connection of the density monitor depends on the requirements of the process connection of the main equipment. Therefore, refer to the instruction manual of the high-voltage equipment manufacturer
- Step 2**
- Dismount electrical connector housing
- Step 3**
- Insert cable into cable gland (1.) and connector housing (2.)
  - Make sure that cable diameter and cable gland fit according to specifications. IP protection is only guaranteed for proper installation and bending radius
- Step 4**
- For metall cable gland: Tighten cable gland to connector housing with torque according to table
  - For PA cable insert: Screw in by hand

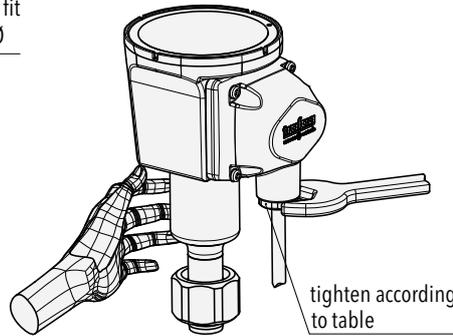


- Step 5**
- Strip individual conductors
  - Connect individual conductors to designated positions (1.) on terminal block(s). See manual of the high-voltage equipment manufacturer for pin positions
- Step 6**
- Check proper position of connector housing sealing into lining groove (2.)

- Step 7**
- Pull back conductors together with terminal block(s)
  - Snap terminal block(s) to the circuit board connector(s) of the density monitor (1.)
- Step 8**
- Mount electrical connector housing back to the gas density monitor (2.)



- Step 9**
- Properly tighten electrical connector housing screws with torque shown in drawing
- Step 10**
- Properly tighten cable gland to cable. For tightening torque see table



## Tightening torque for cable gland/plug

### Caution

The recommended tightening torques for cable fastening are to be considered as the maximal tightening torques for the cable gland cap at normal climatic conditions. Note that a lower tightening torque shall be used with different insulation materials. Otherwise, the cable sheath may be damaged. Check with supplier of cabling for further instructions.

Cable outlet configuration		Maximum tightening torque for gland/plug into connector housing thread and for cable fastening
EMC-cable gland, brass nickel-plated <sup>1)</sup>		
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 <sup>2)</sup>		
M20x1.5	For cable ø7 ... 13 mm	09
Blank plug		
M20x1.5	Brass nickel-plated <sup>1)</sup>	U2
	PA <sup>3)</sup>	02
M25x1.5	Brass nickel-plated <sup>1)</sup>	04
	PA <sup>3)</sup>	05

<sup>1)</sup> IP 65 and IP 67 protection

<sup>2)</sup> IP 65 protection

<sup>3)</sup> Without IP compatibility, not for use in operation

Currently under final design works

### Service and maintenance

Density monitors are high-precision instruments and serve to ensure the safety of the high-voltage equipment.

Trafag recommends periodic cleaning of the density monitor and the optional sheltering equipment with soft soap-based cleaning agent to protect from long-term influences due to dirt, dust, sand and other sediments that might occur due to specific local, environmental conditions.

Directly accessible O-rings are specified for a service life greater than 10 years. Demanding environmental conditions, such as higher grade industrial pollution, can affect or reduce the service life of the o-rings. Please observe the specifications of the manufacturer of the high-voltage equipment for further instructions.

### Density monitor switchpoint testing

Greenhouse regulations (e.g. F-gas regulation) may require regular verifications of the used density monitoring equipment (leakage detection system). When checking the switchpoints of density monitors, it is important to use suitable test instrumentation. Trafag generally recommends the use of automated DILO density monitor devices.

Electrical testing instruments must fulfill a minimum voltage to test microswitches 24VDC, min. 0.1A (max. values according to datasheet)

Low voltage contact testers are not suitable for checking the switch points of density monitors and shall not be used.

### Disposal



Dispose packaging materials in an environmentally friendly way and in accordance with the country-specific waste disposal regulations. Depending on the process gas requirements, the fully sealed reference gas chamber can contain up to 0.001kg (< 1g) of  $CF_4$  and/or  $SF_6$ .

If so, the gas filling is marked on the type plate accordingly. All 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. Contact the manufacturer for a proposal.