

Gas Density and Pressure Monitoring



Densistat 100 for SF₆ and other Gases

Type: D100 for indoor and outdoor use

The Densistat Model 100 is designed specially to monitor the density of the SF₆ gas used to blanket high-voltage circuit breakers. It incorporates a manometer for relative pressure, referenced to 20 °C.

- Pressure range 0...10 bar rel.
0...145 psi rel.
- Large pressure gauge (Ø 100 mm)
- Pressure connection concentric or angled in any of four directions
- High long term stability
- Precise switching accuracy
- Rugged construction
IEC 60529 : IP 65
- Up to four micro switches



The Densistat 100 uses a chamber filled with an identical gas as a reference. When the reference chamber and the switching enclosure are at the same temperature, a change in density in the latter will induce a pressure differential. The switching enclosure and the reference chamber are separated one from another by a metal bellows. A differential in pressure will cause a deformation of the bellows. This deflection motion is transferred via a switching rod with a switching plate to actuate the micro switch required for signaling purposes. The switching thresholds can be adjusted by way of lockable screws at the switching cam.

Up to four micro switches with double-throw contacts can be installed in the Model 100. The contact outputs for the micro switches terminate in an appropriate multi pole socket inside the junction box. The corresponding connector cable passes to the outside world through a suitable cable gland.

The junction box cover, the cable gland, the connector cable and the plug-type connector form a unit that can easily be mounted and removed with just a screwdriver.

The pressure connection can be installed at the factory either concentric to the housing at the rear or angled in any of the four directions.

The analog pressure indicator with color-coded scale (Ø 100 mm) shows the relative pressure of the SF₆ gas, referenced to 20°C in the switching enclosure. If the density of the gas drops as a result of a leak, the change will be indicated by the pointer as it moves along the color-coded scale. The colors and the transition points along the scale can be specified by the customer. The micro switch response points are then calibrated to the specified values.

The arrangement of the measurement mechanism and the use of vibration-resistant micro switches eliminate any shock-induced chattering at the switching contacts.

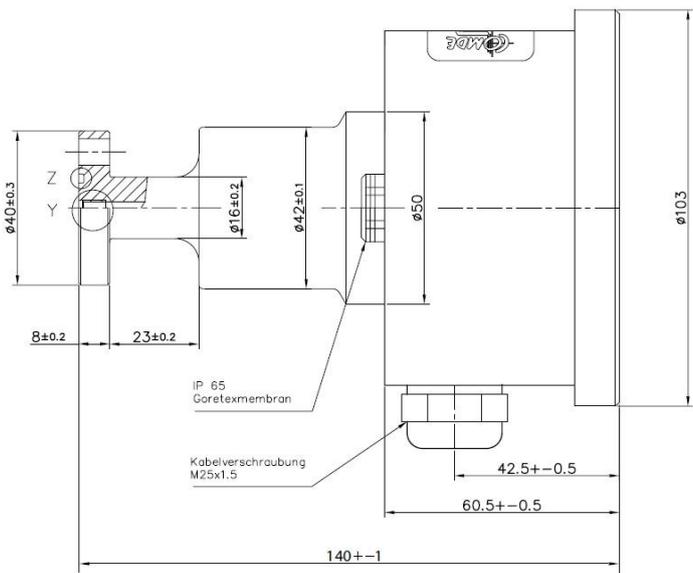
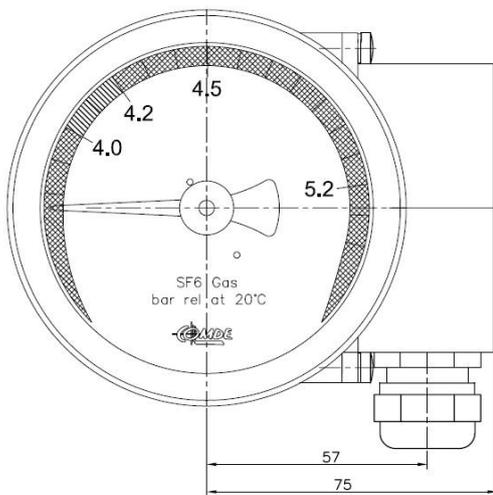
The unit is equipped with a GORE-TEX® membrane vent to prevent condensation.

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Technical Data Densistat 100

Range:	0 ... 10 bar rel. / 0... 145 psi rel.
Hysteresis:	< 0.1 bar / 1,5 psi
Switching accuracy:	± 0.08 bar / 1,2 psi
Threshold:	± 0.05 bar / 0,7 psi
Leakage of reference chamber:	< 0.005 bar/Year ($5 * 10^{-9}$ mbar * l * s ⁻¹)
Operating temperature:	-40...+70 °C / -40... +158°F -60 ... +70 °C (optional)
Storage temperature:	-50...+80 °C / -58... +176°F
Indicator diameter:	100 mm
Tolerance of indication:	± 0,1 bar
Vibration (min. difference 0.05 bar from changeover point):	> 4 g (20...80 Hz)
Protection:	IEC 60529: IP 65
Connector:	Phoenix Combicon
Standard 3 micro switches:	IEC 60947, max 2,5 mm ²
Electrical Rating:	AC 250 V, 10 (2) A
Switch contacts load, charge resistive (inductive):	DC 250 V, 0,2 (0,2) A DC 220 V, 0,25 (0,2) A DC 125 V, 0,4 (0,25) A DC 110 V, 0,5 (0,3) A DC 60 V, 1,5 (0,4) A DC 48 V, 1,9 (0,7) A DC 24 V, 3,0 (2) A
Electric strength:	2kV (50/60 Hz) to ground
Surge:	IEC 61000-4-5 5 kV 1,2/50 µs to ground
Cable gland:	M25x1.5 EMV
Material	
Pressure connection:	AlSi1MgMn, anodized
Housing:	AlSi12, powder coated RAL 9006
Reference system:	1.4541 / 1.4301
Window, resistant to UV, Ozone:	Acrylic glass
Typeplate, resistant to UV, Ozone, climate, chemicals and solvents:	3M Scotchcal foil 3690
Weight:	790 g



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