

# Gas density monitor, GDM-063

## Model 233.52.063

WIKA data sheet SP 60.70



For further approvals,  
see page 4

### Applications

- Medium-voltage switchgear
- Gas density monitoring of closed SF<sub>6</sub> gas tanks
- Raising an alarm when defined limit values have been reached

### Special features

- Case and wetted parts from stainless steel
- On-site indication with switch contact
- Temperature-compensated and hermetically sealed, therefore no influence of temperature fluctuations, height differences and atmospheric pressure fluctuations
- Compensation possible for gas mixtures
- Traceability by serial number



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### Description

Gas density is a crucial operating parameter for medium-voltage switchgear. If the required gas density is not present, safe operation of the plant cannot be guaranteed.

The WIKA gas density measuring instruments provide reliable warnings against dangerously low gas levels, even under extreme ambient conditions. Electrical switch contacts warn the plant operator when the gas density drops below defined levels due to leakage.

### Wide range of use

The WIKA gas density monitor is hermetically sealed and temperature-compensated. Measured value fluctuations and false alarms caused by changes in either ambient temperature or atmospheric pressure are therefore prevented.

Via the on-site indication, the pressure based on 20 °C [68 °F] can be read directly on the instrument. With the integrated switch contacts, simple switching tasks can be realised quickly and without complication.

## Specifications

Basic information	
Nominal size	63
Window	<ul style="list-style-type: none"> <li>■ Laminated safety glass</li> <li>■ Acrylic glass</li> </ul>
Case	<ul style="list-style-type: none"> <li>■ Stainless steel, with gas filling</li> <li>■ Stainless steel, with fill fluid</li> </ul>
Ring	Bayonet bezel, stainless steel, secured by means of 3 weld spots
High-voltage test 100 %	2 kV, 50 Hz, 1 s

Scale range	
Scale range	<ul style="list-style-type: none"> <li>■ -1 ... +1 bar [-14.5 ... +14.5 psi]</li> <li>■ -1 ... +3 bar [-14.5 ... +43.5 psi]</li> </ul> Others on request
Calibration pressure PE	To customer specification
<b>Pressure element</b>	
Gas-tight	Leakage rate $\leq 1 \cdot 10^{-8}$ mbar · l / s
Test method	Helium mass spectrometry
Material	Stainless steel, welded
<b>Dial</b>	
Scale colour	The scale range is subdivided into red, yellow and green ranges
Material	Aluminium
<b>Movement</b>	
Function	Bimetal link (temperature compensation)
Material	Stainless steel
Pointer	Aluminium, black

Output signal	
Switch technology	Magnetic snap-action contact, model 821
Number of switches	<ul style="list-style-type: none"> <li>■ Single contact</li> <li>■ Double contact</li> <li>■ Triple contact</li> </ul>
Switching function	<ul style="list-style-type: none"> <li>■ Normally closed</li> <li>■ Normally open</li> <li>■ Change-over contact (max. 1 switch contact)</li> </ul>
Switching direction	<ul style="list-style-type: none"> <li>■ Falling pressure</li> <li>■ Rising pressure</li> </ul>
Switching voltage	AC (50 ... 60 Hz) / DC 24 ... 250 V (no undulating voltage)
<b>Switching power</b>	
With gas filling	30 W / 50 VA, max. 1 A
With fill fluid	20 W / 20 VA, max. 1 A
<b>Switching accuracy</b>	
Switch point = calibration pressure PE	See accuracy specifications
Switch point $\neq$ calibration pressure PE	Parallel to the reference isochore of the calibration pressure
<b>Electrical connection</b>	
Cable outlet	Length 1 m [3.28 ft]
Cable bushing	Glass
Circuit	<ul style="list-style-type: none"> <li>■ Galvanically connected (not for change-over contact)</li> <li>■ Galvanically isolated</li> </ul>
Material of switch contacts	80 % Ag / 20 % Ni, gold-plated

→ Further information on magnetic snap-action contacts in data sheet AC 08.05 and IN 00.48

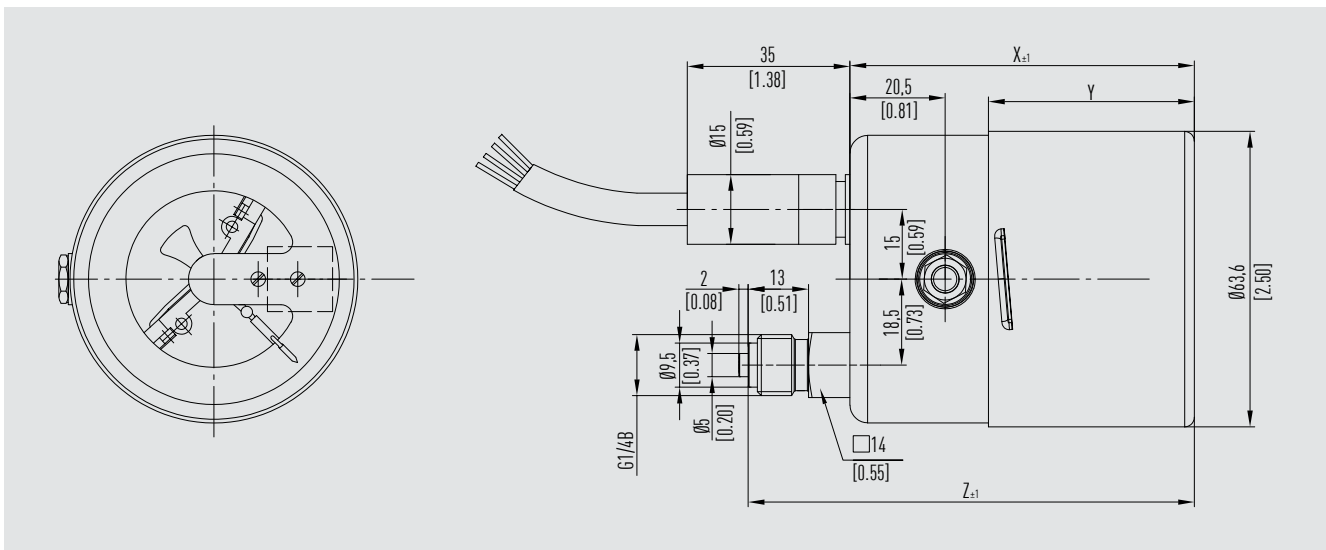
Operating conditions	
Temperature of use / Operating temperature	-30 ... +60 °C [-22 ... +140 °F], gaseous phase
Storage temperature range	-50 ... +60 °C [-58 ... +140 °F]
Relative humidity, condensation	≤ 90 % r. h. (non-condensing)
Gas-tight	Leakage rate ≤ 1 · 10 <sup>-5</sup> mbar · l / s
Ingress protection of the complete instrument	IP65 per EN 60529 / IEC 60529
Weight in kg	
With gas filling	Approx. 0.8 kg [1.76 lb]
With fill fluid	Approx. 1.2 kg [2.64 lb]

Process connection	
Thread size / Size	G ¼ B per EN 837, back mount
Material	Stainless steel, spanner flats 14 mm [0,55]

→ Other connections and connection locations on request



Accuracy specifications	
Accuracy	<ul style="list-style-type: none"> <li>■ ±1 % at ambient temperature +20 °C [+68 °F]</li> <li>■ ±2.5 % at ambient temperature -20 ... +60 °C [-4 ... +140 °F] and with calibration pressure in accordance with reference isochore (reference diagram KALI-Chemie AG, Hanover, prepared by Dr. Döring 1979)</li> </ul>

## Dimensions in mm [in]



Magnetic snap-action contact, model 821	Dimensions in mm [in]		
	x	y	z
Single and double contacts, without galvanic isolation	66.5 [2.62]	35.5 [1.40]	88.5 [3.48]
Double contact, with galvanic isolation	75.3 [2.96]	44.3 [1.74]	97 [3.82]
Triple contact, with galvanic isolation	87.1 [3.43]	56.1 [2.21]	109.1 [4.30]

## Approvals

Logo	Description	Region
	<b>EU declaration of conformity</b>	European Union
	Low voltage directive	
	RoHS directive	
	<b>UKCA</b>	United Kingdom
	Electrical equipment designed for use within certain voltage limits in support of the electrical equipment (safety) regulations	
	Restriction of hazardous substances (RoHS) regulations	

## Optional approvals

Logo	Description	Region
	<b>EAC</b>	Eurasian Economic Community
	Low voltage directive	

→ For approvals and certificates, see website

## Ordering information

Model / Process connection / Pressure unit / Scale range / Filling pressure / Switch configuration / Gas mixture / Options

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