

LANSO®



ZMJ60XD Gas Density Monitor

ZMJ60XD



Description

Designed to monitor the density of SF₆ gas in hermetically sealed containers, it provides on-site display of gas density and triggers an alarm when the density reaches the set value. Suitable for the detection of high-voltage systems, it offers a variety of solutions including the supporting of new substation construction and the renovation of existing substations.

Application

- SF₆/Other Gas Insulated Switchgear (GIS)
- SF₆/Other Gas Insulated Circuit Breakers
- SF₆/Other Gas Insulated Pole-Mounted Switch
- SF₆/Other Gas Insulated Transformers
- SF₆/Other Gas Insulated Current Transformers or Voltage Transformers
- SF₆/Other Gas Insulated Busbar Systems

Features

- Higher accuracy from reference chamber temperature compensation technology.
- Suitable for indoor or outdoor installation.
- Micro-switch that can switch freely between normally open and normally closed points.
- Up to 4 pairs of contacts, supporting multiple options such as double alarm and double interlock, ensuring safer and more reliable monitoring.
- High shock resistance.
- No need to fill oil, no oil leakage risk.
- Normally closed contacts will not falsely alarm due to vibration.

Product Introduction	https://www.lanso.com.cn/chanpinzhongxin/576.html
Product Description	https://www.lanso.com.cn/uploads/soft/20230927/1-23092G525033V.pdf
Related Software	https://www.lanso.com.cn/ruanjianxiaizai/

Chapter 1 Gas Density Monitor / Standard Specifications

General specifications

Environmental conditions	Ambient temperature^{※1)}	-30°C ~ +60°C				
	Humidity	≤95%RH				
	Protection Class	IP65				
	Leakage Rate	≤1×10 ⁻⁹ Pa·m ³ /s (Helium Leak Testing)				
Mechanical data	Measurement Principle	Reference chamber				
	Contact Type	Micro-switch				
	Displayed Pressure Type^{※2)}	Relative Pressure				
	Measuring Medium^{※3)}	SF ₆				
	Alarm switchpoint Accuracy^{※4)}	Temperature range	+20°C	-30°C~+50°C	-40°C~+60°C	
		First alarm switchpoint setting pressure abs. @ 20°C				
		≤650kPa [kPa max]	±8	±10	±12	
		>650kPa~≤1000kPa [kPa max]	±8	±12	±14	
	>1000kPa [kPa max]	±10	±15	±16		
	Indicator Dial Unit^{※5)}	bar				
	Housing Material	YL113				
	Process Connection Size^{※6)}	M20×1.5				
	Process Connection Direction^{※7)}	Radial or Axial				
Wire terminal	Plugable, wire diameter 0.2~2.5 mm ²					
Connector Gland^{※8)}	M20*1.5					
Number of Contacts^{※9)}	1~4 sets					
Dial Display^{※10)}	With main dial scale					
Vibration Resistance	The density monitor shall not exhibit false tripping of its alarm switchpoint, when subjected to sinusoidal vibration within the frequency range of 10Hz to 150Hz and an acceleration amplitude of 20m/s ² .					
Shock Rating	70g / 3ms / 10000 times at all axes excited on process connection without damage to instrument					
Window	PC					
Corrosion Protection^{※11)}	C4-M					
Weight	≈1.0kg					
Pressure Sensitive Element	316L Stainless Steel bellow					
Electrical	Contact Electrical Parameters	10(1.5)A, 250V AC; 0.1(0.05)A, 250V DC				
Performance	Insulation Performance	Insulation Resistance:>100 MΩ (DC 500V)				
	Power Frequency Withstand Voltage	2kV, 50/60 Hz, 1min				

Note: Parameters marked with “※” can be customized according to user requirements; customization options are provided in the next chapter, "Gas Density Monitor - Optional Configurations".

Chapter 2 Gas Density Monitor / Optional Configurations

※1) Operating Temperature	Option 1	-30°C~+60°C
	Option 2	-40°C~+80°C
	Option 3	-60°C~+60°C
	Option 4	According to customer specification

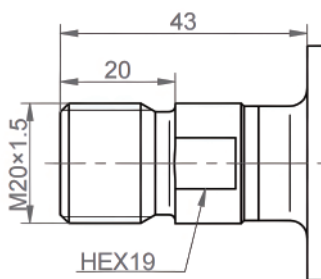
※2) Displayed Pressure Type	Option 1	Relative Pressure
	Option 2	Absolute Pressure

※3) Measuring Medium	Option 1	SF ₆
	Option 2	SF ₆ +N ₂
	Option 3	C ₄ F ₇ N-based gas mixture
	Option 4	CO ₂ +O ₂ -based gas mixture
	Option 5	According to customer specification

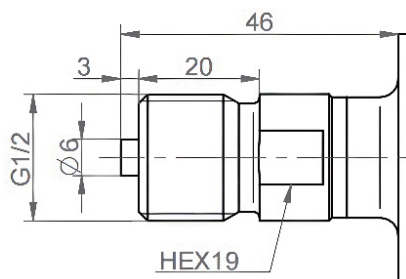
※4) Alarm switchpoint Accuracy	Option 1	Temperature range	+20°C	-30°C~+50°C	-40°C~+60°C
		First alarm switchpoint setting			
		pressure abs. @ 20°C			
		≤650kPa [kPa max]	±8	±10	±12
	>650kPa ~ ≤1000kPa [kPa max]	±8	±12	±14	
	>1000kPa [kPa max]	±10	±15	±16	
	Option 2	According to customer specification			

※5) Dial Unit	Option 1	bar
	Option 2	kPa
	Option 3	MPa
	Option 4	psi
	Option 5	According to customer specification

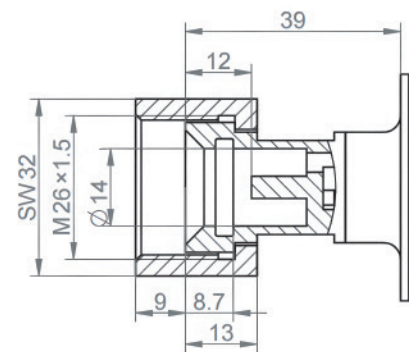
※6) Process Connection Size	Option 1	M20*1.5
	Option 2	G1/2
	Option 3	M26*1.5
	Option 4	M30*2
	Option 5	φ59 flange
	Option 6	Customizable flange, According to customer specification
	Option 7	According to customer specification



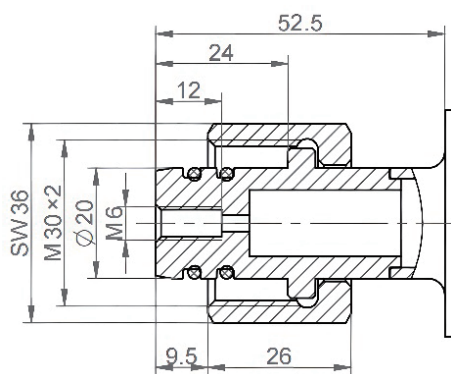
Option 1 M20*1.5



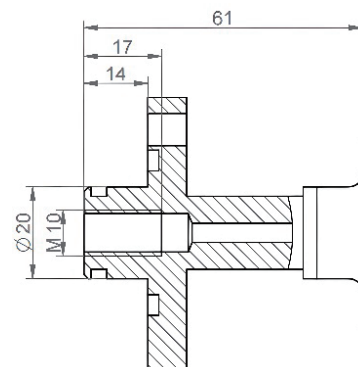
Option 2 G1/2



Option 3 M26*1.5

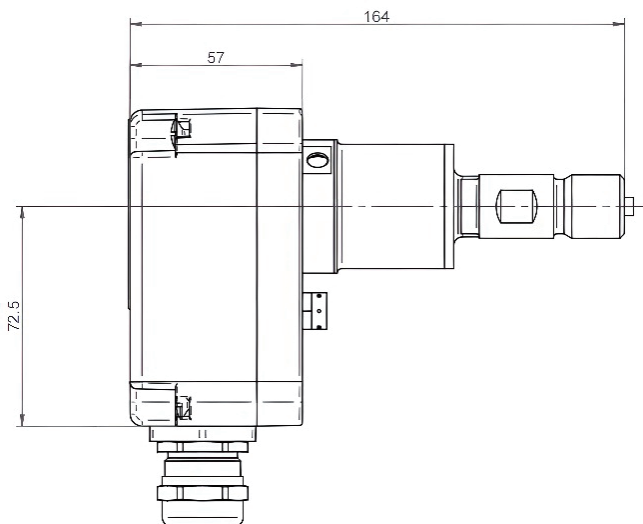


Option 4 M30*2

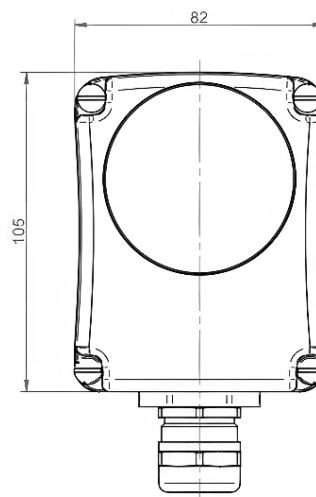


Option 5 φ59 Flange

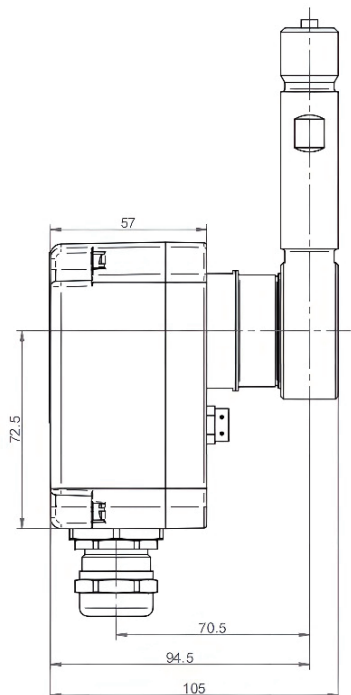
※7) Process Connection Direction	Option 1	Axial
	Option 2	Radial 3 o'clock
	Option 3	Radial 6 o'clock
	Option 4	Radial 9 o'clock
	Option 5	Radial 12 o'clock
	Option 6	According to customer specification



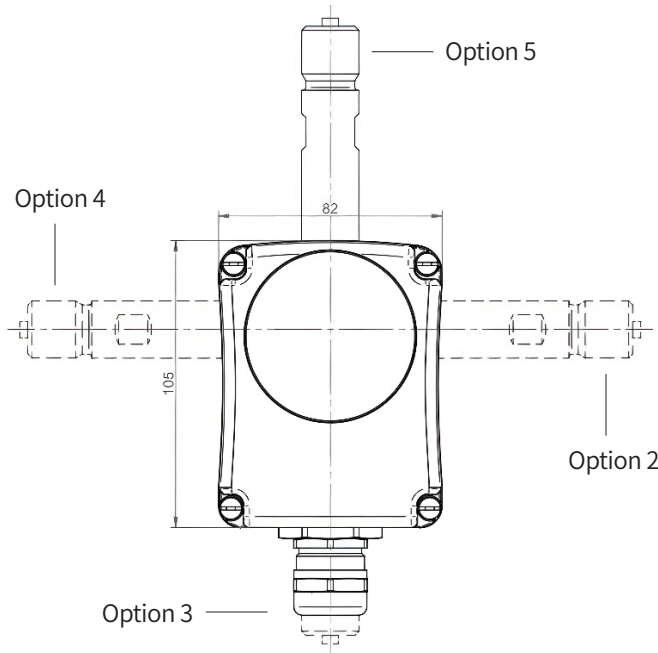
Option 1 Axial Side View Dimension Diagram



Option 1 Axial Front View Dimension Diagram

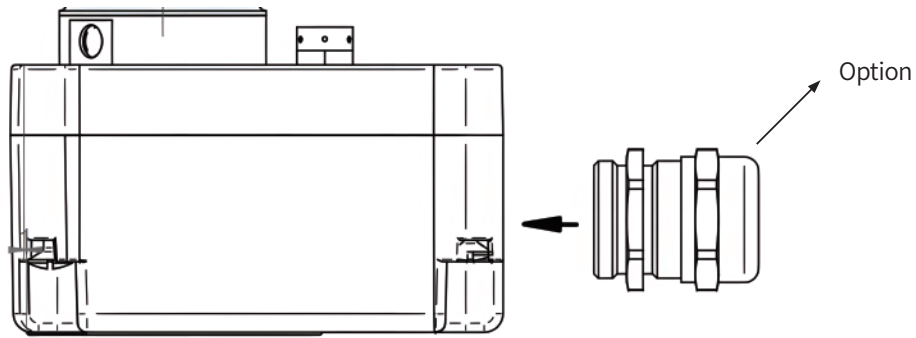


Option 2~5 Radial Side View (Option 5 Shown)



Option 2~5 Radial Front View

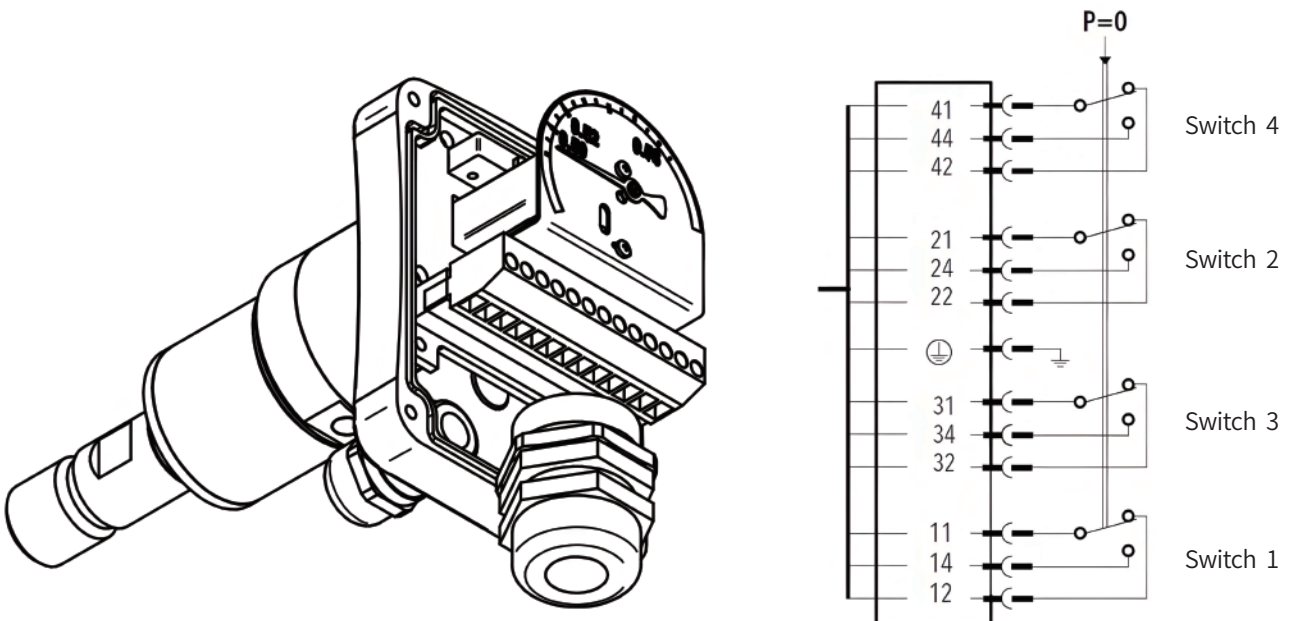
※8) Connector Gland	Option 1	M20×1.5
	Option 2	M25×1.5
	Option 3	M30×2
	Option 4	According to customer specification



Connector Gland

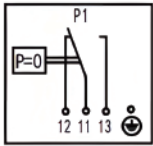
※9) Number of Contacts	Option 1	1 set
	Option 2	2 sets
	Option 3	3 sets
	Option 4	4 sets

Based on micro-switch requirements for specific applications

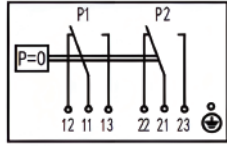


Microswitches under non-pressurized conditions (Pref=0)

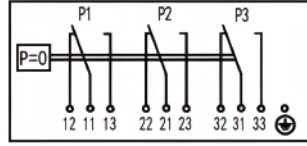
For reference only; actual product may vary.



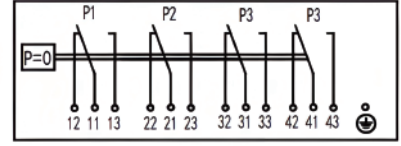
Option 1



Option 2



Option 3



Option 4

Micro-switch Parameters	Electrical Rating	0.5A 5VDC / 10(3)A 250V AC
	Electrical Life	≥10,000 operations
	Contact Resistance	≤50mΩ
	Insulation Resistance	≥100MΩ (500VDC test voltage)

※10) Dial Display	Option 1	With main scale
	Option 2	With main scale + full-scale indicator
	Option 3	Without main scale/full-scale indicator (equivalent to density switch)
	Option 4	According to customer specification

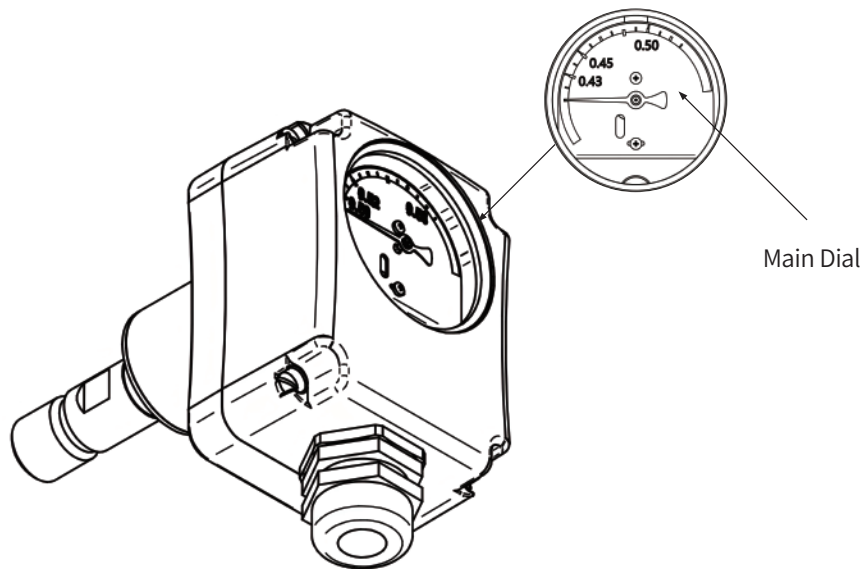
Note: See Chapter 3 for detailed specifications of ※10 options.

※11) Corrosion Protection	Option 1	C4-M
	Option 2	C5-H
	Option 3	According to customer specification

Chapter 3 Gas Density Monitor / Dial Display

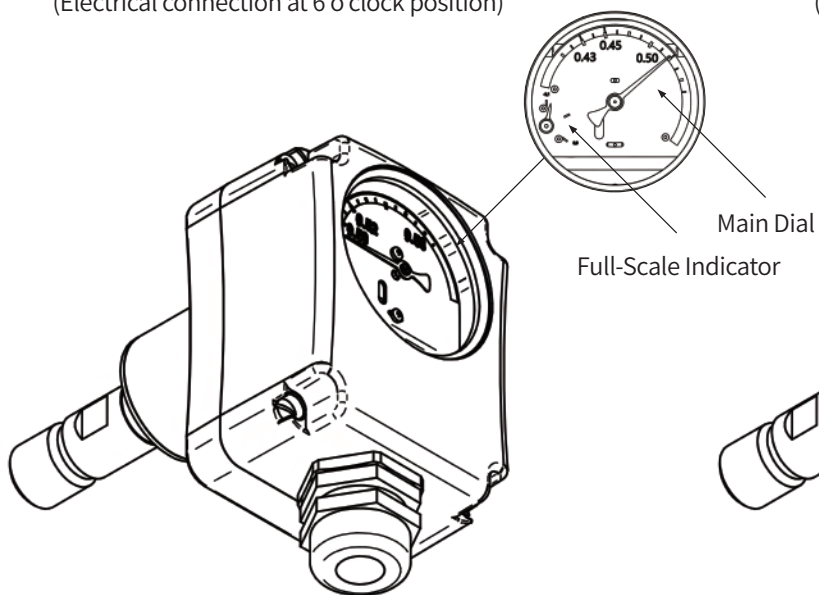
Option 1: With main scale

(Electrical connection at 6 o'clock position)



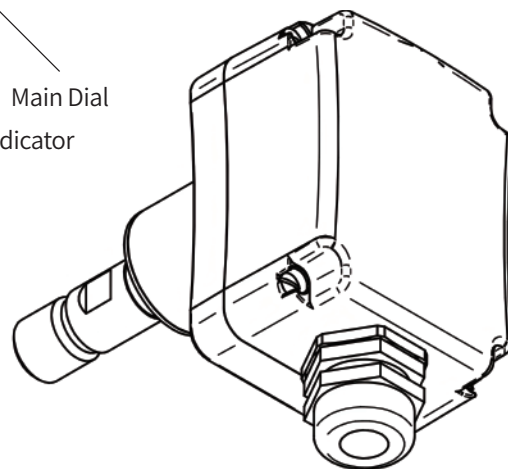
Option 2: With main scale + full-scale indicator

(Electrical connection at 6 o'clock position)

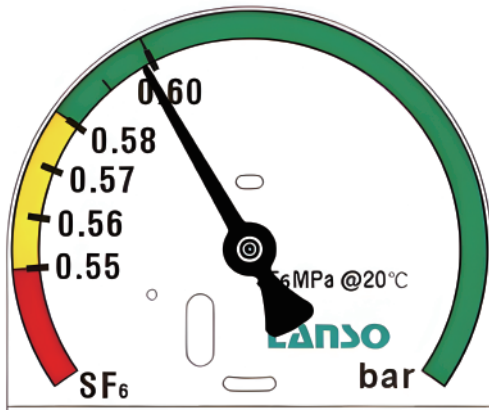


Option 3: Without main scale/full-scale indicator

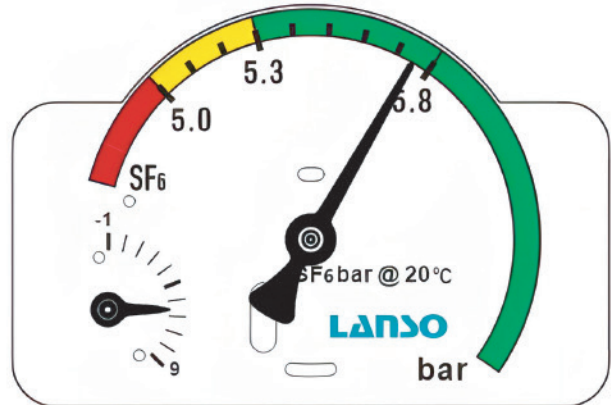
(Functionally equivalent to density switch)



Full-scale indicator is optional

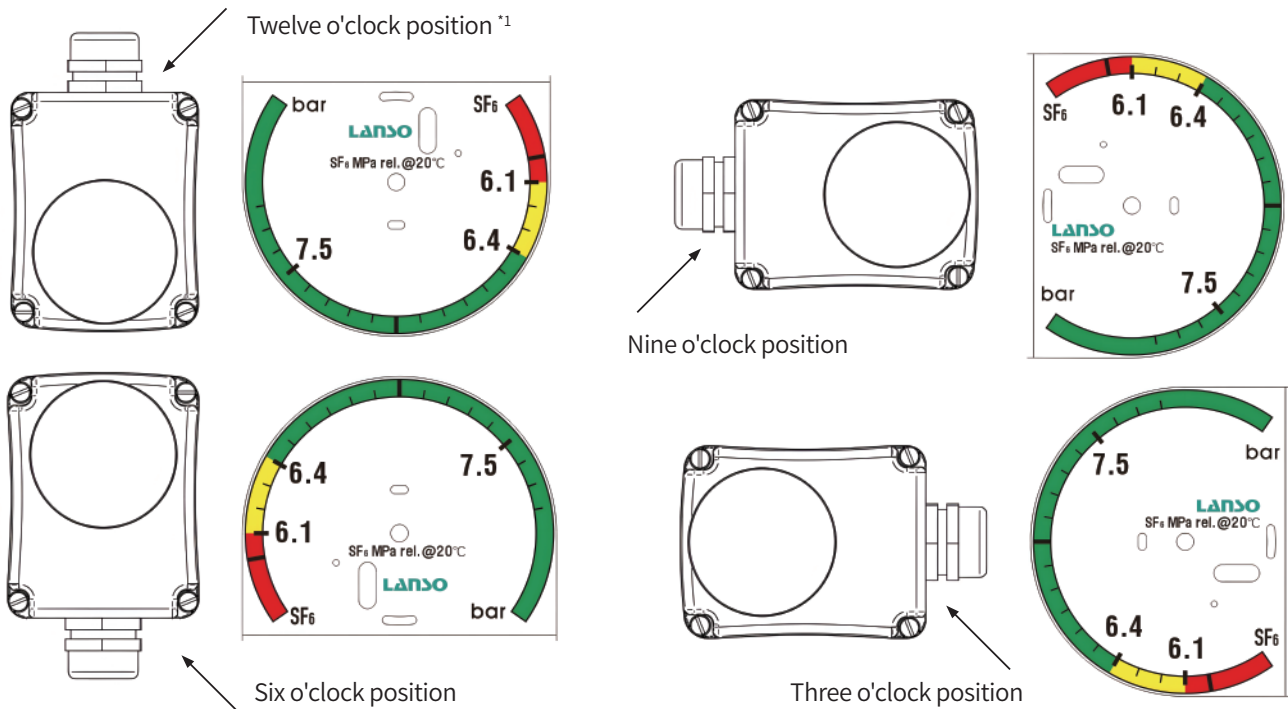


Dial without a full-scale indicator



Dial with a full-scale indicator

Dial direction adjustable via pressure interface position

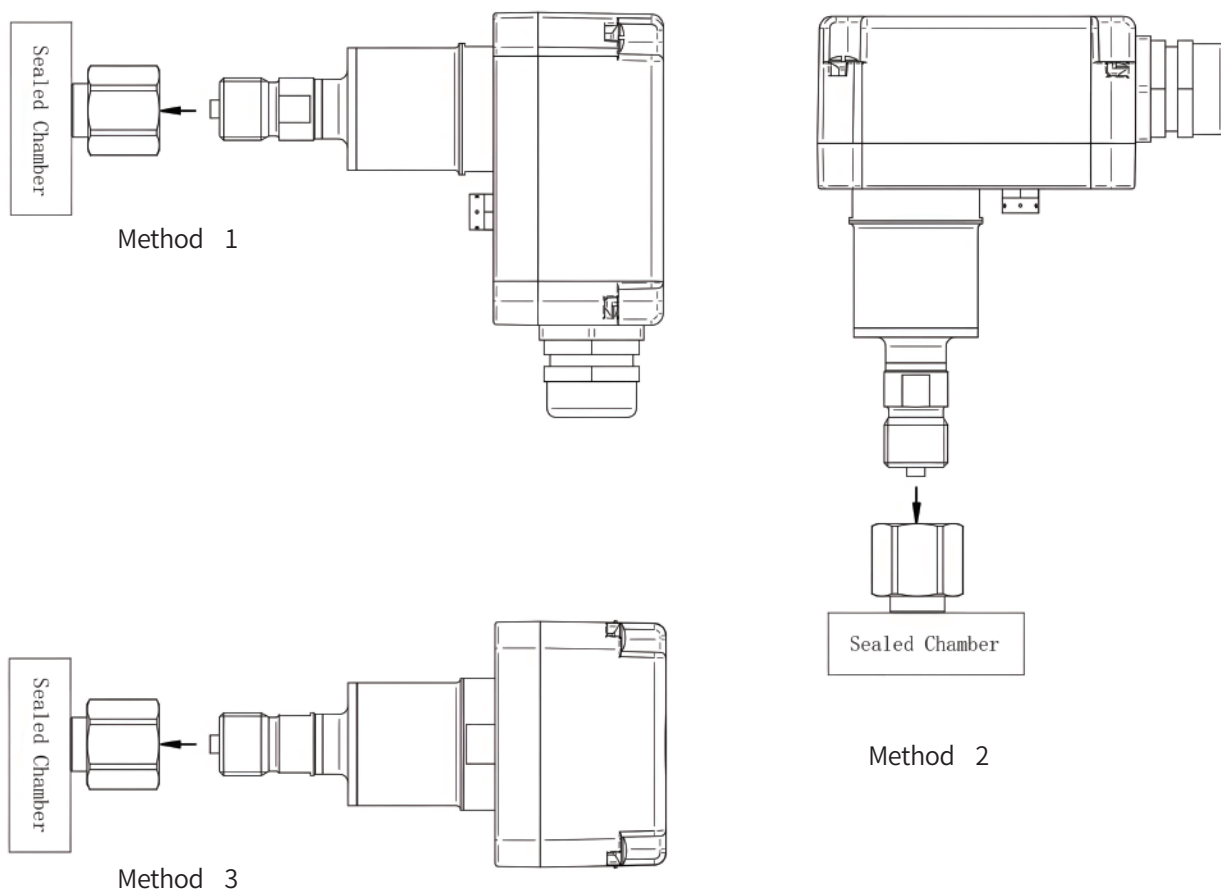


*1 Indoor Use Only at 12 o'clock

Dial Display Content	Indication Unit	bar, MPa, kPa, psi, etc.
	Pressure Type	Relative Pressure (no marking); Absolute pressure (marked "abs.")
	Color Zones	Green: Safe pressure range; Yellow: Alarm zone (equipment inspection required); Red: Danger zone (equipment operation prohibited)
	Full-Scale Indicator	Approximate pressure value (may exceed main scale range); Accuracy: $\pm 2.5\%$ of full scale
	Accuracy Class	Meter accuracy at 20°C constant temperature
	Brand Marking	"LANSO" logo

Chapter 4 Gas Density Monitor / Installation Diagrams

	Indoor	Outdoor
Installation Orientation	No restrictions	See Installation Methods 1, 2, 3 ^{*1}
Recommended Accessories	None	Weatherproof cover, thermal insulation cotton

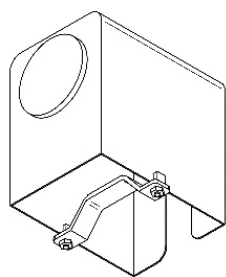


*1 During installation, ensure the unit is not mounted upside down, as this may cause water leakage.

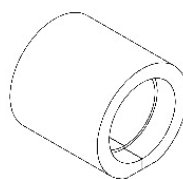
Chapter 5 Gas Density Monitor / List of Optional Auxiliary Materials

Water Protection Measures

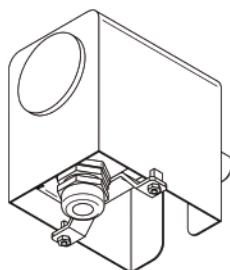
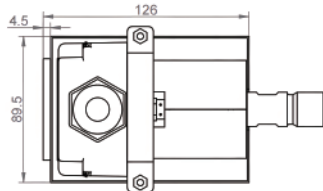
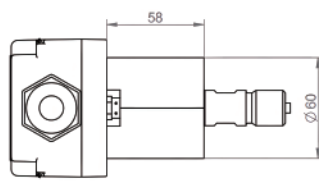
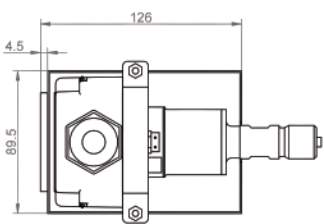
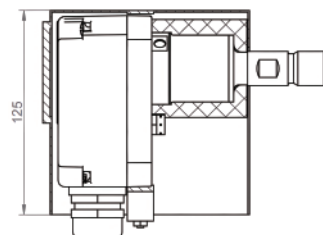
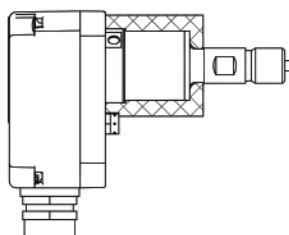
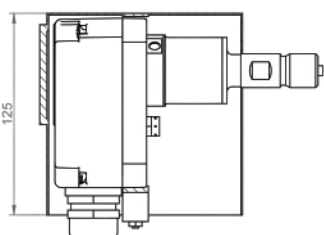
Weatherproof Cover	Option 1	Weatherproof cover
	Option 2	Thermal insulation sponge (indoor use)
	Option 3	Weatherproof cover + thermal insulation sponge



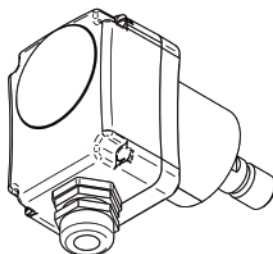
Rain Shield



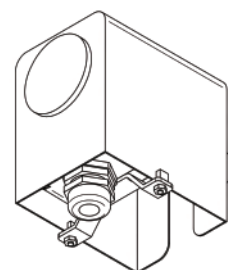
Thermal Insulation Sponge



Option 1
Rain Shield



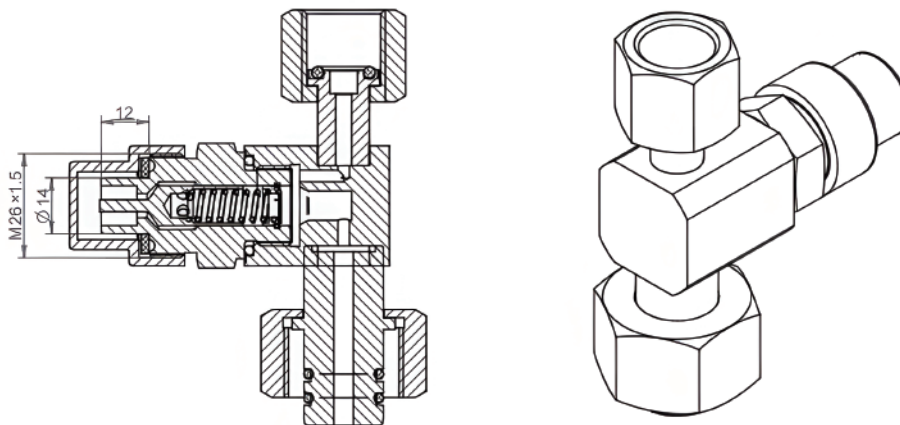
Option 2
Thermal Insulation Sponge



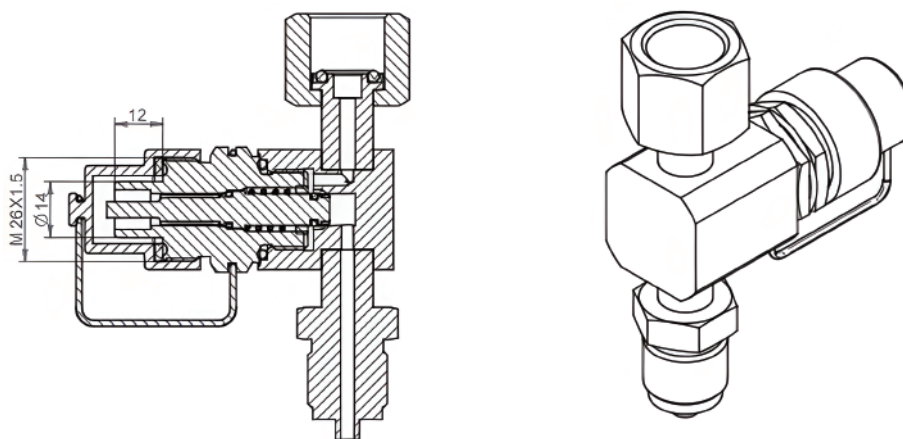
Option 3
Rain Shield + Thermal Insulation Sponge

Other Optional Items	Gas Supplement & Calibration Fittings	Gas supplement connector, calibration adapter
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Gas Charging Calibration Connector Schematic



Charging Connector

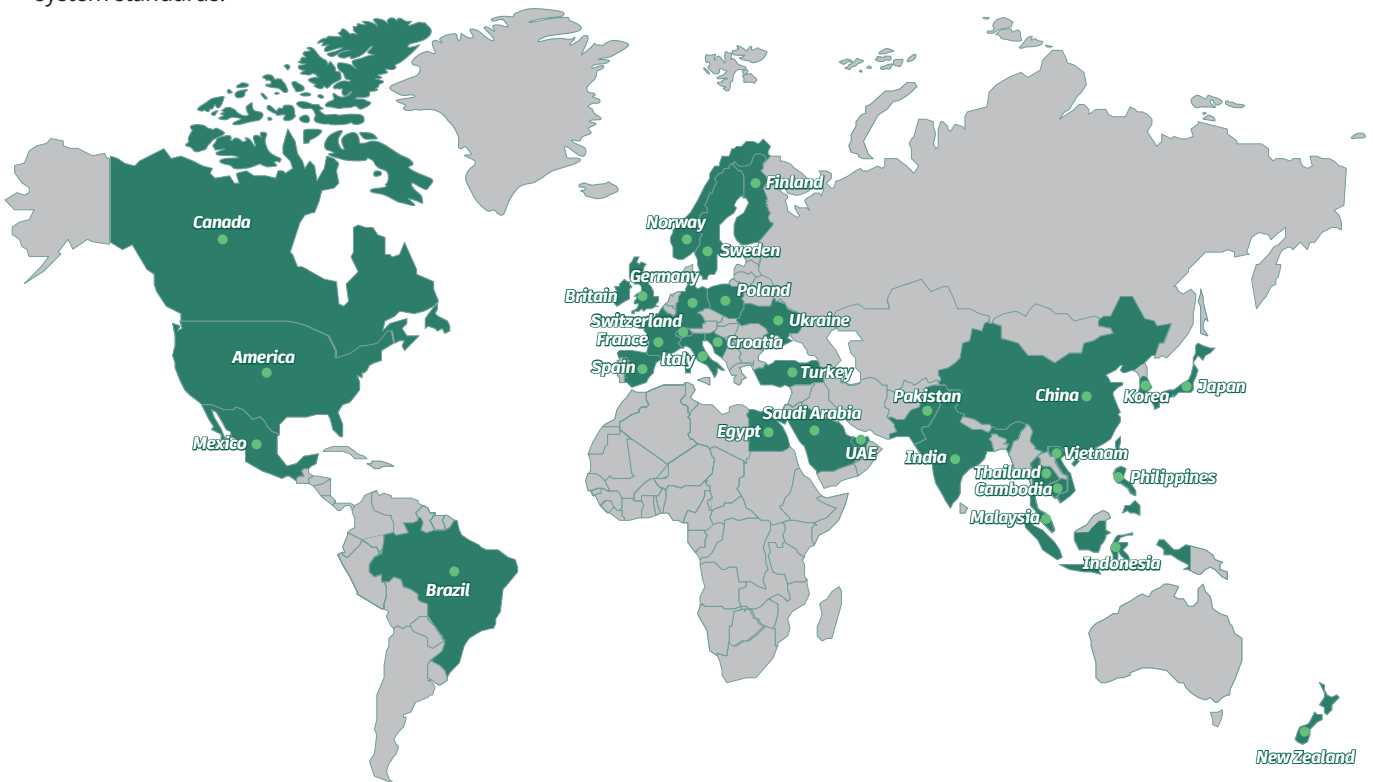


Calibration Connector

Lanso Konly (Shanghai) Instruments Co., Ltd. is an innovation-driven high-tech enterprise, focusing on globally leading SF₆ and alternative insulating gas monitoring solutions, as well as a series of digital transformer accessories. The company has established a full industry-chain ecosystem covering R&D, production, marketing, and service, empowering the safe operation of power equipment worldwide.

Relying on independent research and development, the company has obtained more than 50 patents and received authoritative certifications such as National High-Tech Enterprise, Little Giant Enterprise, and 2024 Shanghai Manufacturing Individual Category Champion. Its products are exported to more than 20 countries and regions globally. The company has established deep cooperation with international giants such as ABB, Schneider, and Siemens, as well as leading domestic enterprises including Taikai Group, Sieyuan Electric, and Pinggao Group etc.

The company strictly controls product quality management, establishing a full-process quality traceability system from raw material procurement to finished product delivery. Through a series of scientific and rigorous measures, it ensures product stability and reliability, and has been certified under the ISO9001 and ISO14001 quality management system standards.



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