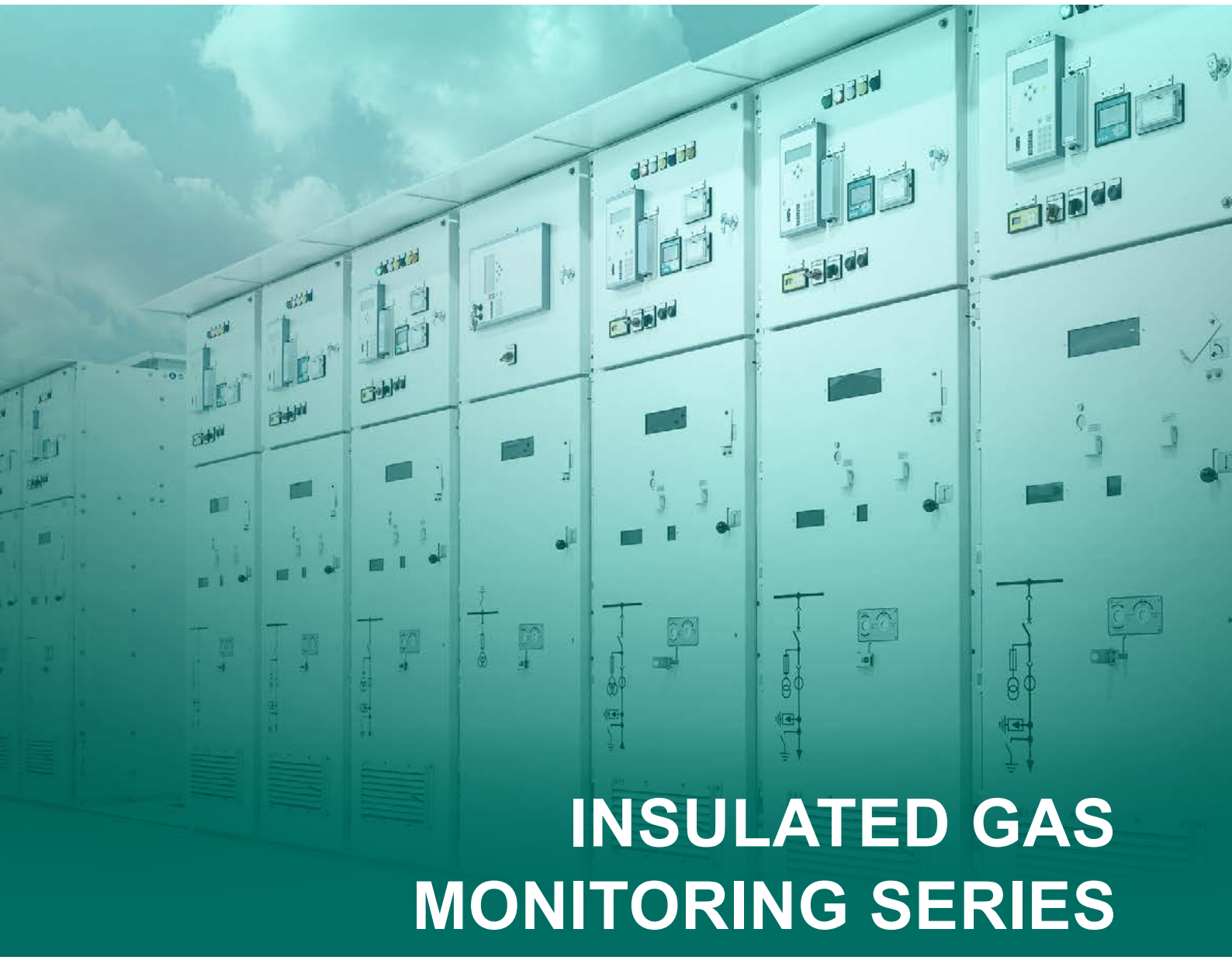
LANSO



INSULATED GAS MONITORING SERIES

MEDIUM VOLTAGE

LANSO KONLY (SHANGHAI) INSTRUMENTS CO.,LTD.

Lanso Konly (Shanghai) Instruments Co., Ltd. is an innovation-driven and high-tech enterprise. The company is committed to creating globally leading SF_6 and other alternative insulating gas monitoring solutions and digital transformer accessories series products.

Backed by cutting-edge technology, the company has established a full-fledged industrial ecosystem spanning R&D, production, marketing, and technical services, continuously safeguarding the operation of power equipment worldwide.

In technology and market, Lanso Instruments relies on its independent R&D innovation platform and holds multiple technical invention patents. Through technological breakthroughs, the company has obtained multiple honors and certifications, including National High-Tech Enterprise, Little Giant Enterprise, and 2024 Shanghai Manufacturing Individual Category Champion. The company's products have been exported to more than 20 countries, including France, Germany, Italy, Spain, and India etc.

In globalization strategy, the company has established deep strategic partnerships with international electrical giants like ABB, HITACHI, Schneider, and Siemens, while maintaining long-term collaborations with leading domestic switchgear companies such as Taikai Group (TK), Sieyuan Electric, Pinggao Electric (PG), and China XD Group etc.

The company attaches utmost importance to quality management and ensures product stability and reliability through a series of scientific and rigorous measures. It has obtained the ISO 9001 quality management system certification and established a full-process quality traceability system covering raw material procurement to finished product delivery.

The company's product portfolio includes three major series. The insulation gas monitoring series includes various digital density monitors (density meters), density switches, density transmitters, and valves. The transformer accessories series mainly includes intelligent buchholz relays, oil temperature indicators, and oil level indicators. The equipment and instruments series mainly includes gas density relay calibrators.

With outstanding technological strength, strict quality management, and a global strategy, Lanso Instruments is innovation-driven and quality-backed, continuously leading industry development and contributing to the intelligent and green transformation of the global power industry.

CONTENTS

KL50
Pressure Gauge

Description

KL50 Pressure Gauges are used to monitor the pressure of the gas in sealed tanks. They are applied to indicate the relative pressure of the gas on site. They are designed to monitor Medium Voltage systems.

KL50 Pressure Gauge

Features

- Display the relative pressure of the gas in the closed container at real-time temperature.
- Suitable for indoor or outdoor installation.
- AISI 304 hermetically sealed stainless steel case.
- Gas connection tubes are made of AISI 316 stainless steel.

Application

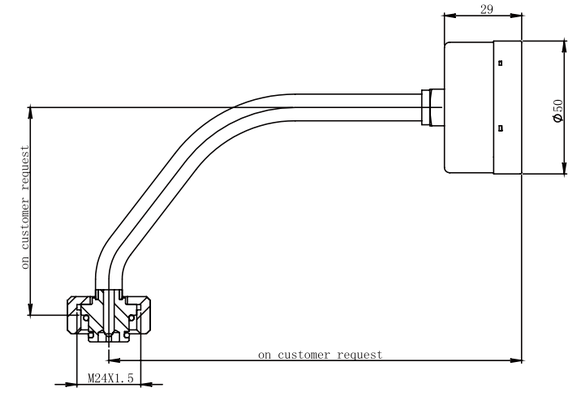
- SF_6 Gas Insulated RMU
- SF_6 Gas Insulated Switchgear

Options

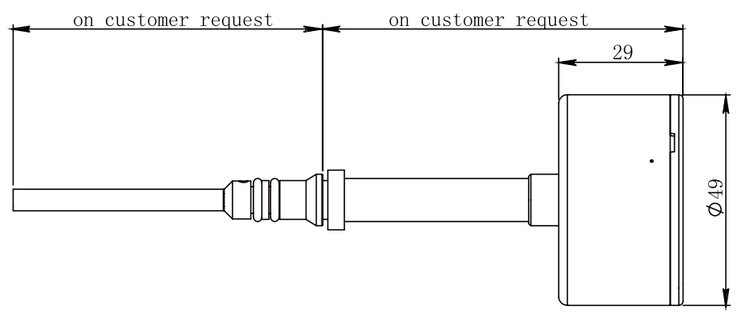
- Pressure connection: customizable
- Measuring medium: SF_6, Air, N_2, SF_6 + N_2 and other gases
- Wide temperature range: -40°C to +60°C

Technical Parameters	
Case diameter	50mm
Scale range	0 to 0.6 bar
Accuracy	±1.5%FS (+20±1°C) ±2.5%FS (-20°C～ +60°C) (gas phase)
Ambient conditions	-20° C to +60° C，relative humidity ⩽ 95%RH
Leakage rate	⩽ 1×10^{-9} Pa·m^3/s (Helium leakage inspection)
Process connection	M24 × 1.5 (customizable)
Installation method	Radial or Axial
Window glass	Laminated safety glass
Weight	0.2kg

Dimensions



KL50 pressure gauge sample table 1 size



KL50 pressure gauge sample table 2 size

KL60
Density Meter

Description

KL 60 Density Meters are used to monitor SF_6 gas density in sealed tanks. They are applied to indicate gas density. They are designed to monitor Medium Voltage systems.

KL60 Density Meter

Features

- Bimetal temperature compensation ensures higher measurement accuracy.
- Suitable for indoor or outdoor installation.
- AISI 304 hermetically sealed stainless steel case.
- Gas connection tubes are made of AISI 316 stainless steel.
- The on-screen display value and output signals are independent of the impact of external environment, such as altitude.

Application

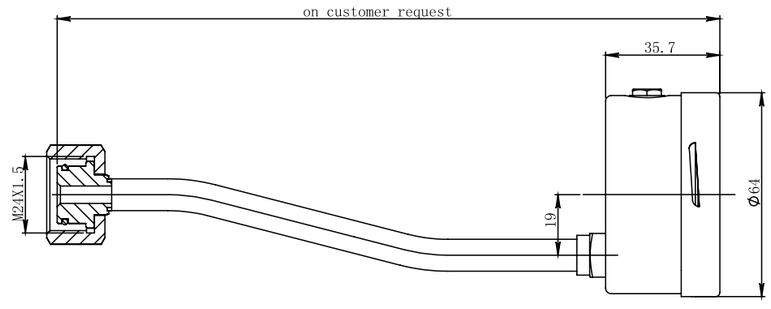
- SF_6 Gas Insulated RMU
- SF_6 Gas Insulated Switchgear

Options

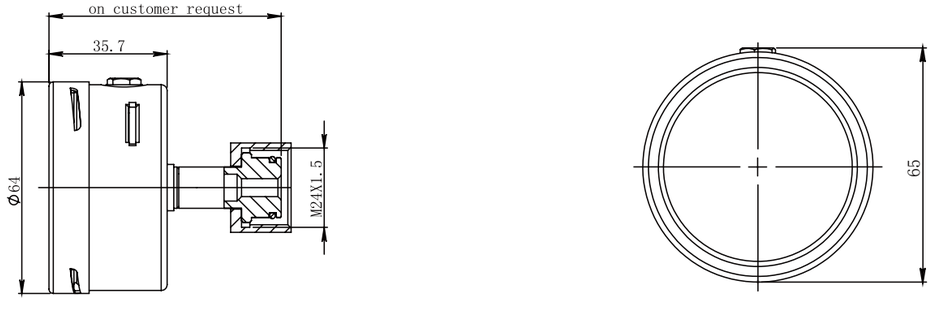
- Process connection: customizable
- Measuring Medium: SF_6, Air, N_2, SF_6 + N_2 and other gases
- Suitable for High-altitude environment
- Wider temperature range: -40°C to +60°C
- Optional measurement accuracy: ±1.0%FS (+20±1°C), ±2.5%FS (-20°C～ +60°C) (gas phase)

Technical Parameters	
Case diameter	64mm
Scale range	1 to 2bar abs
Accuracy	±1.5%FS (+20±1°C), ±2.5%FS (-20°C～ +60°C) (gas phase)
Degree of protection	IP65
Ambient conditions	-20° C to +60° C, relative humidity ⩽ 95%RH
Leakage rate	⩽ 1×10^{-9} Pa·m^3/s (Helium leakage inspection)
Process connection	M24 × 1.5 (customizable)
Installation method	Radial or Axial
Watch glass	Laminated safety glass
Impact rating	30g
Weight	≈ 0.2kg
Pressure element	Bourdon tubes

Dimensions



KL60 eccentric sample gauge size



KL60 centerpiece sample gauge size

KL60R
Remote-Transmission Density Meter

Description

These instruments are used to monitor the density of SF_6 gas in sealed tanks and can be widely used in medium voltage switchgear and RMU.They are applied to indicate the gas density and reliably output SF_6 gas density signal for remote monitoring.
They can provide multiple solutions to support new substations and the intelligent transformation of existing substations.

KL60R Remote-Transmission
Density Meter

Features

- Volume minimization,customized installation interface,convenient and reliable.
- Pressure interface customized in accordance with customer’ s demands.
- Utmost three pairs of switching contacts can be provided according to user’ s needs.
- The RS485 remote function ensures remote monitoring.

Application

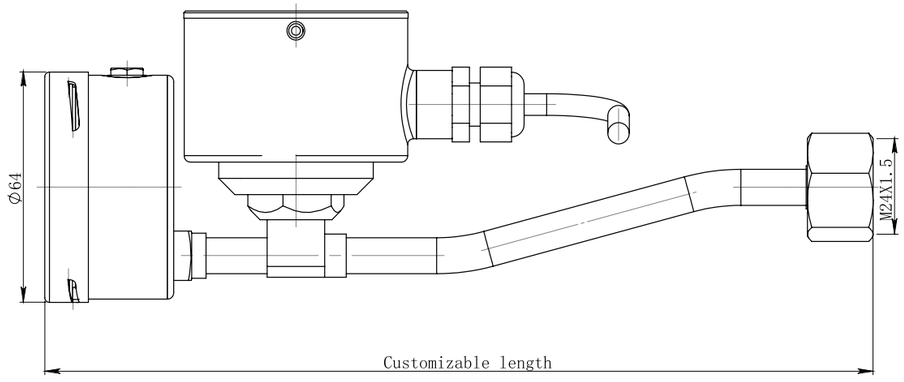
- SF_6 gas Insulated RMU
- SF_6 gas Insulated Switchgear

Options

- Measuring range
- Ambient condition
- Outlet Direction and cable length
- Installation method
- Suitable for High-altitude environment
- Measurement Medium: SF_6, Air, N_2, SF_6 + N_2 and other gases

Technical Parameters	
Case diameter	Φ64mm
Scale range	1.0 to 2bar abs
Accuracy	a) At 20° C: Class 1.0 or 1.5 b) -40° C to +60° C: Class 2.5
Degree of protection	IP65
Ambient conditions	-40° C to +60° C, relative humidity ⩽ 95%RH
Leakage rate	⩽ 1 × 10-9 Pa·m3/s (Helium leakage inspection)
Process connection	M24×1.5 (customizable)
Installation method	radial or axial
Weight	0.3kg

Dimensions



ZMJ60
Density Monitor

Description

ZMJ60 Density Monitors are used to monitor the density of SF_6 gas in sealed tanks and can be widely used in medium voltage switchgear and RMU. They’ re also suitable for outdoor harsh conditions.
They can provide multiple solutions to support new substations and the renovation and upgrading of existing substations.

ZMJ60 Density Monitor

Features

- Compact design, customizable installation interface, convenient and reliable.
- Process connection customizable in accordance with customer's demands.
- Up to three sets of switching contacts can be provided according to user’ s needs.
- Temperature compensation for higher accuracy.

Application

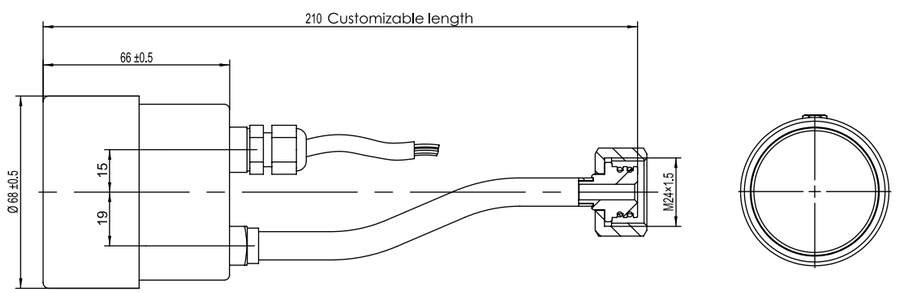
- SF_6 Gas Insulated RMU
- SF_6 Gas Insulated Switchgear

Options

- Different measuring ranges
- Wider temperature range: -40°C to +60°C
- Outlet Direction and cable length
- Installation method
- Suitable for High-altitude environment
- Can detect SF_6、Air、N_2、SF_6+N_2 and other gases
- Optional measurement accuracy：±1.0%FS（+20±1°C），±2.5%FS（-20°C～ +60°C）（gas phase）

Technical Parameters	
Case diameter	Φ64mm
Case material	Stainless steel
Scale range	0 to 2bar abs. （customizable）
Accuracy	±1.5%FS（+20±1° C） ±2.5%FS（-20° C～ +60° C）(gas phase)
Ambient conditions	-20° C to +60° C, relative humidity ⩽ 95%RH
Degree of protection	IP65
Leakage rate	⩽ 1 × 10^{-9} Pa·m^3/s(Helium leakage inspection)
Contact type	Magnetic snap-action contacts (up to 3 sets, NO or NC)
Process connection	M20×1.5 (customizable)
Installation method	Radial or Axial
Insulation properties	Insulation resistance: >100 MΩ (500 V DC) Withstand voltage: 2kV, 50/60 Hz 1 min
Contact electrical parameters	Rated Power: 30VA Max operating voltage: 380V Max current: 1A
Weight	≈ 0.5kg
Pressure Element	Bourdon tubes

Dimensions



ZMJ60R
Density Monitor

Description

ZMJ60R Density Monitors is used to monitor the density of gas in closed containers, and can be widely used in medium voltage switchgear and ring network cabinet. It can display gas density on site, and reliably output SF_6 gas density signal for remote monitoring and monitoring. It can be used in the new substation building and renovation and upgrading of existing substation.

Features

- Compact design, customizable installation interface to user'sneed, convenient and reliable.
- Suited for different indoor and outdoor installation requirements.
- Up to three sets of contact switches.
- RS485 remote transmission function, convenient remote monitoring.
- Temperature compensated.

Application

- SF_6 Gas Insulated Ring Main Unit
- SF_6 Gas Insulated Switch Gear

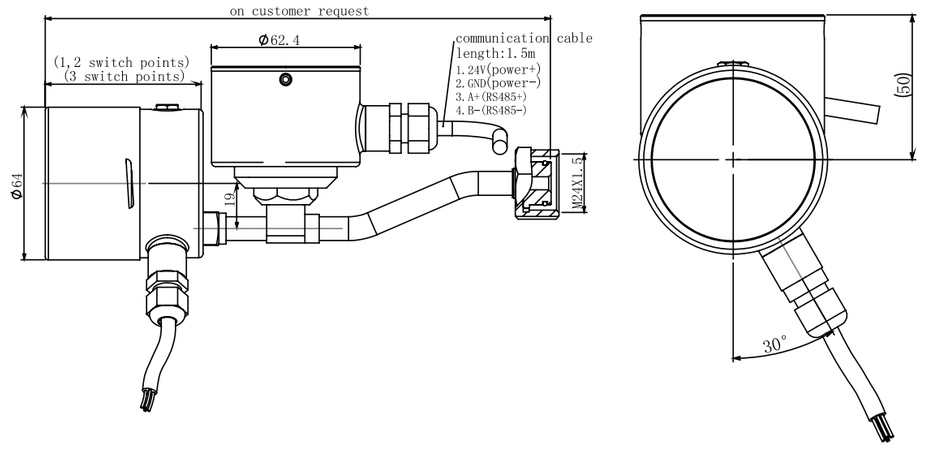
Options

- Measuring range
- Wider temperature range: -40℃ ~ +60℃
- Outlet mode and cable length
- Installation method
- High altitude environment application
- Measuring Medium: SF_6, Air, N_2, SF_6+N_2 and other gases
- Optional measurement accuracy: ±1.0%FS(+20±1℃)，±2.5%FS（-20℃～ +60℃）(gas phase)

Technical Parameters for Remote Module			
Operating voltage	10~30VDC	EMC Class	IEC61000-4-2: Level 4 IEC61000-4-3: Level 3 IEC61000-4-4: Level 4 IEC61000-4-5: Level 3 IEC61000-4-6: Level 3 IEC61000-4-8: Level 5
Power consumption	<0.5W		
Communication mode	RS485		
Communication protocol	Modbus RTU		
Baud rate	9600bps		

Technical Parameters	
Case diameter	64mm
Scale range	0 ~ 2bar abs.(customizable)
Accuracy of indication	±1.5%FS（+20±1℃）; ±2.5%FS（-20℃～ +60℃）（gas）
Degree of protection	IP65
Ambient condition	-20℃ ~ +60℃ realative humidity ⩽ 95%
Leakage rate	⩽ 1×10^{-9} Pa·m^3/s (Helium leakage inspection)
Process connection	M20 x 1.5 (customizable)
Installation mode	Radial or axial
Electrical connection	Pluggable connector, wire diameter 1 ~ 2.5 mm^2 (1.5mm^2 recommended)
Insulation property(contact part)	Insulation resistance: >100MΩ (DC500V) withstand voltage: 2kV, 50/60Hz, 1min
Contact type	Magnetic snap-action contact (Up to 3 set of contacts.s ,NO & NC)
Impact rating	30 g
Contact electrical parameters	Rated Power: 30VA Max switching voltage: 380V Max switching current: 1A
Weight	≈ 0.9kg
Pressure element	Bourdon tube

Dimensions



ZMJ60V
Density Monitor

ZMJ60V Density Monitor

Description

ZMJ60V Density Monitors are used to monitor the density of SF_6 gas in sealed tanks, and can be widely used in medium voltage switchgear, RMU. It’ s suitable for outdoor harsh conditions.
It can provide multiple solutions to support new substations and the renovation and upgrading of existing substations.
The electrical maintenance personnel can make SF_6 gas density monitor calibration or gas filling without disassembling SF_6 density monitor.

Features

- Compact design, customized installation interface, convenient and reliable.
- Process connection customizable in accordance with customer’ s demands.
- Up to three sets of switching contacts can be provided according to user’ s needs.
- Without disassembling SF_6 density monitor, SF_6 gas density monitor can be calibrated or replaced.
- Without disassembling the screws, a person can operate independently, which is convenient.
- Temperature compensation for higher accuracy.
- It can facilitate on-site personnel to measure micro-water and supplement air for switch.
- Avoid the sealing surface and sealing joint damage caused by the disassembling.

Application

- SF_6 Gas Insulated RMU
- SF_6 Gas Insulated Switchgear

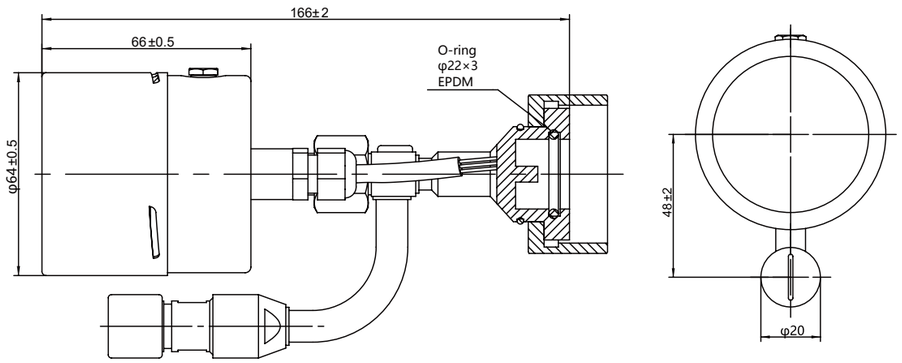
Options

- Different measuring ranges
- Wide temperature range: -40° C to +60° C
- Measuring Medium: SF_6, Air, N_2, SF_6+N_2 and other gases
- Remote transmission function
- Optional measurement accuracy: ±1.0%FS (+20±1°C)，±2.5%FS (-20°C～ +60°C)（gas phase)

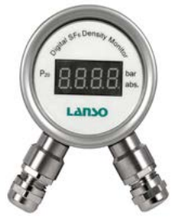
Technical Parameters

Case diameter	Φ64mm
Case material	Stainless steel
Scale range	0 to 2bar abs. (customizable)
Accuracy	±1.5%FS (+20°C ±1°C) ±2.5%FS (-20°C～ +60°C) (gas phase)
Ambient conditions	-20° C to 60° C, relative humidity ⩽ 95%RH
Degree of protection	IP65
Leakage rate	⩽ 1×10^{-9} Pa·m^3/s (Helium leakage inspection)
Contact type	Magnetic snap-action contacts (up to 3 sets, NO or NC)
Process connection	M20×1.5 (customizable)
Maintenance connection	M16×1.5 (customized and additional adapter needed to the calibrator or gas tank)
Installation method	Radial or Axial
Insulation properties	Insulation resistance: >100 MΩ (500 V DC) Withstand voltage: 2kV, 50/60 Hz 1 min
Contact electrical parameters	Rated Power: 30VA
Max. operating voltage	380V
Max. current	1A
Weight	≈ 0.6kg
Pressure element	Bourdon tubes

Dimensions



DDM60R
Digital Density Monitor



DDM60R
Digital Density Monitor

Description

DDM60R Digital Density Monitor are used to monitor the density of SF_6 gas in sealed tanks. It has real-time remote transmission of SF_6 gas density change data, realizes online remote monitoring function, and can display the gas density digitally on site. When the density value reaches the set value, the contact output alarm signal. Suitable for medium voltage system monitoring. It can be used in the new substation building and the renovation and upgrading of existing substation.

Features

- Local digital display and control.
- The microswitch is used as the signal output device to realize the free switching between normally open and normally closed points.
- Temperature Compensated.
- The alarm value can be set on site and can be applied to cabinets with different alarm values.
- Small size, installation interface can be customized, convenient and reliable.
- RS485 bus interface, easy to do the system expansion, and to achieve telemetry, remote control functions. Strong EMC capability.

Application

- SF_6 Gas Insulated Swithchgear (GIS)
- SF_6 Insulated Circuit Breaker
- SF_6 Insulated Pole-Mounted Switch
- SF_6 Insulated Transformer
- SF_6 Insulation Current Transformer or Voltage Transformer
- SF_6 Insulated Bus System

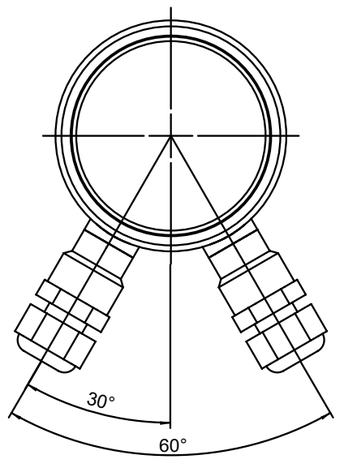
Options

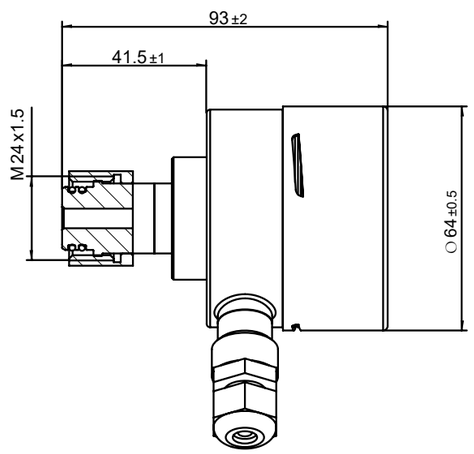
- Measuring Medium: SF_6, Air, N_2, SF_6+N_2 and other gases

Remote part of the main electrical performance indicators and specifications			
Operating voltage	10~30VDC	EMC Class	IEC61000-4-2: Level 4 IEC61000-4-3: Level 3 IEC61000-4-4: Level 4 IEC61000-4-5: Level 4 IEC61000-4-6: Level 3 IEC61000-4-8: Level 5 IEC61000-4-9: Level 5 IEC61000-4-10: Level 5
Power consumption	<1W(max. 1.5W)		
Communication mode	RS485		
Communication protocol	Modbus RTU		
Baud Rate	9600bps		

Technical parameters	
Scale range	-0.1 ~ 0.9MPa
Accuracy of transmitter	Pressure: ±0.5%FS Temperature: ±1℃ Pressure at 20℃: ±1.0%FS
Degree of protection	IP65
Ambient conditions	-40℃ ~ +70℃ , relative humidity: ⩽ 95%RH
Leakage rate	⩽ 1×10^{-9} Pa·m^3/s (Helium leakage inspection)
Process connection	M20×1.5 (customizable)
Installation method	Radial or Axial
Electrical connection	Preset cable
Insulation property(contact part)	Insulation resistance: >100MΩ (DC500V) Power frequency withstand voltage: 2kV, 50/60Hz, 1min
Contact type	Magnetic holding electronic relay
Impact rating	30 g
Contact electrical parameters	Maximum switching voltage: 380VAC/240VDC Maximum switching current: 5A
Watch glass	Laminated safety glass
Weight	0.3kg

Dimensions





DT26
Density Transmitter

DT26 Density Monitor

Description

DT26 Density Transmitters are used to monitor SF_6 gas density in sealed tanks. It can provide multiple solutions to support new substations and the renovation and upgrading of existing substations.

Features

- SF_6 gas remote density transmitter suitable for medium and high pressure system monitoring.
- All welded sensor structure, long - term stable sealing performance.
- RS485 bus communication (MODBUS RTU) .
- The EMC characteristics of the transmitter meet the requirements of IEC 61000-4-2 to IEC 61000-4-6 standards.
- Compact design.

Application

- SF_6 Gas Insulated Switchgear (GIS)
- SF_6 Insulated Circuit Breakers
- SF_6 Insulated Pole-Mounted Switch
- SF_6 Insulated Transformer
- SF_6 Insulated Current Transformer or Voltage Transformer
- SF_6 Gas Insulated Busbar Systems
- SF_6 Insulated Inflatable Cabinet
- SF_6 Insulated RMU

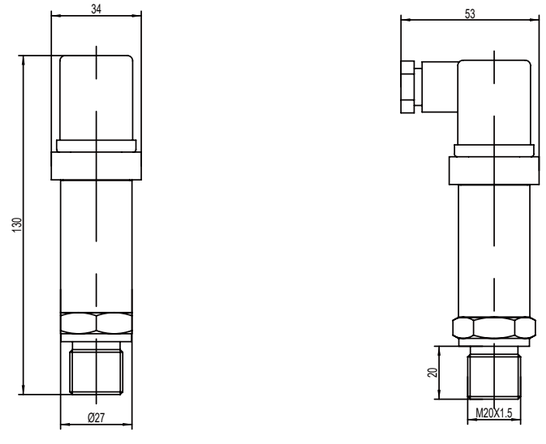
Options

- Pressure connection: M20 × 1.5(customizable)
- Measuring Medium: SF_6, Air, N_2, SF_6 + N_2 and other gases

Technical Parameters	
Measuring range	0 to 1.0MPa abs.or 0 to 0.2MPa abs.(customized)
Temperature measurement range	-40℃～ +80℃
Pressure measurement accuracy	±0.5% FS
Temperature measurement accuracy	±1℃
Density (P20) measurement accuracy	±1.0%FS
Degree of protection	IP65
Ambient conditions	-40° C to 70° C, relative humidity ⩽ 95%RH
Leakage rate	⩽ 1×10^{-9} Pa·m^3/s (Helium leakage inspection)
Electrical connection	Hirschmann Connector
Weight	0.2kg

Technical Parameters for Remote Module			
Power supply	24V DC	EMC tests	IEC61000-4-2:level 4 IEC61000-4-3:level 3 IEC61000-4-4:level 4 IEC61000-4-5:level 4 IEC61000-4-6:level 3
Power consumption	< 0.5W		
Communication mode	RS485		
Protocol	ModBus RTU		
Baud rate	9600bps		

Dimensions



DT10
Density Transmitter

Description

DT10 Density Transmitters are used to monitor SF_6 gas density in sealed tanks. It can provide multiple solutions to support new substations and the renovation and upgrading of existing substations.

Features

- Suitable for medium or high volatage systems.
- All welded sensor structure, long-term stable sealing performance .
- RS485 bus interface (Modbus RTU).
- Strong EMC capability.

Application

- SF_6 Gas Insulated Swithchgear (GIS)
- SF_6 Insulated Circuit Breaker
- SF_6 Insulated Pole-Mounted Switch
- SF_6 Insulated Transformer
- SF_6 Insulation Current Transformer or Voltage Transformer
- SF_6 Insulated Bus System

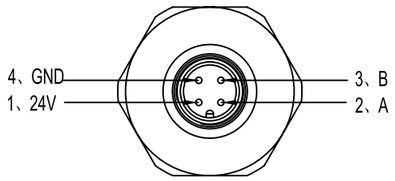
Options

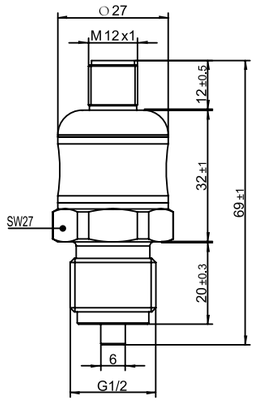
- Measuring Medium: SF_6, Air, N_2, SF_6 + N_2 and other gases

Technical parameters	
Measuring range	0 ~ 1.0MPa
Accuracy of transmitter	Temperature: ±1℃ Pressure: ±0.5%FS Pressure at 20℃: ±1.0%FS
Degree of protection	IP65
Ambient Condition	-40℃ ~ +70℃ , Relative humidity ⩽ 95%RH
Leakage rate	⩽ 1×10^{-9} Pa·m^3/s (Helium leakage inspection)
Process connection	M20 x 1.5 (customizable)
Electrical connection	M12 x 1 Circular connector
Weight	0.1kg

Technical Parameters for Remote Module			
Operating voltage	10~30VDC	EMC tests	IEC61000-4-2: level 4(15kV) IEC61000-4-3: Level 3 (10V/m) IEC61000-4-4: Level 4 (4kV) IEC61000-4-5: level 3 (1kV /2kV) IEC61000-4-8: level 5 (100A/m) IEC61000-4-9: level 5 (1000A/m) IEC61000-4-10: level 4 Class (30A/m)
Power consumption	<0.5W		
Communication mode	RS485		
Communication protocol	Modbus RTU		
Baud rate	9600bps		

Dimensions





RD40
Density Transmitter

Description

The RD40 density transmitter is used to monitor the temperature, pressure and density of the gas in sealed tanks, and the functional parameters meet the requirements of the National Grid.
"QGDW123554-2023 Smart substation technical specification Part 4: Digital remote transmission meter" standard. It can be used in the new substation and the renovation and upgrading of existing substation.

RD40 Density Transmitter

Features

- All welded sensor structure, long-term stable sealing performance.
- RS485 bus interface, easy to do the system expansion.
- Meet the requirements of "QGDW123554-2023 Smart substation technical specification Part 4: Digital remote transmission meter".
- Compact and beautiful design.

Application

- SF_6 Gas Insulated Swithchgear (GIS)
- SF_6 Insulated Circuit Breaker
- SF_6 Insulated Pole-Mounted Switch
- SF_6 Insulated Transformer
- SF_6 Insulation Current Transformer or Voltage Transformer
- SF_6 Insulated Bus System

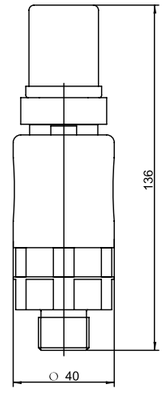
Options

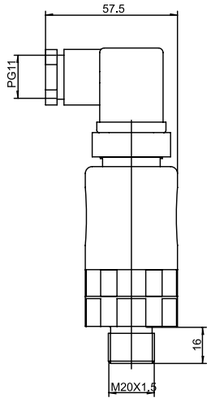
- Measuring Medium: SF_6, Air, N_2, SF_6 + N_2 and other gases

Technical Parameters	
Measuring range	-0.1 ~ 0.9MPa
Accuracy of transmitter	Pressure: ±0.5%FS Temperature: ±1℃ Pressure at 20℃: ±1.0%FS
Degree of protection	IP65
Ambient condition	-40℃ ~ +70℃ , relative humidity: ⩽ 95%RH
Leakage rate	⩽ 1×10^{-9} Pa·m^3/s (Helium leakage inspection)
Process connection	M20 x 1.5 (customizable)
Electrical connection	Hersman connector
Impact Rating	50 g
Weight	0.4kg

Technical Parameters for Remote Module			
Operating voltage	10~30VDC	EMC tests	IEC61000-4-2: Level 4 IEC61000-4-3: Level 3 IEC61000-4-4: Level 4 IEC61000-4-5: Level 4 IEC61000-4-6: Level 3 IEC61000-4-8: Level 5 IEC61000-4-9: Level 5 IEC61000-4-10: Level 5
Power consumption	<0.5W		
Communication mode	RS485		
Communication protocol	Modbus RTU		
Baud Rate	9600bps		

Dimensions





RDH40
SF_6 Gas Density and Dew Transmitter

RDH40
SF_6 Gas density and dew transmitter

Description

RDH40 Gas Density and Dewpoint Transmitter is mainly used to monitor the temperature, pressure, density and moisture content of SF_6 gas in closed containers, with real-time remote monitoring function. The intelligent compensation technology is used inside the product, which can track the nonlinear change of SF_6 gas pressure and the change of micro-water content in real time, and the measurement is accurate and widely used. Suitable for monitoring of medium and high voltage systems. It can be used in the new substation building and the renovation and smart upgrading of existing substation.

Features

- Suitable for medium or high volatage systems.
- Multi-parameter instrument for simultaneous monitoring of gas dew point, density, pressure and temperature with excellent accuracy.
- RS485 bus interface (Modbus RTU).
- Small size, beautiful structure.

Application Range

- SF_6 Gas Insulated Swithchgear (GIS)
- SF_6 Insulated Circuit Breaker
- SF_6 Insulated Pole-Mounted Switch
- SF_6 Insulated Transformer
- SF_6 Insulation Current Transformer or Voltage Transformer
- SF_6 Insulated Bus System

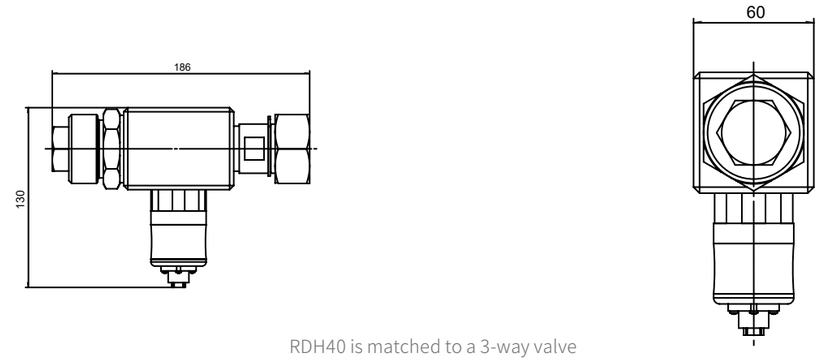
Optional features

Measuring Medium: SF_6, Air, N_2, SF_6+N_2 and other gases

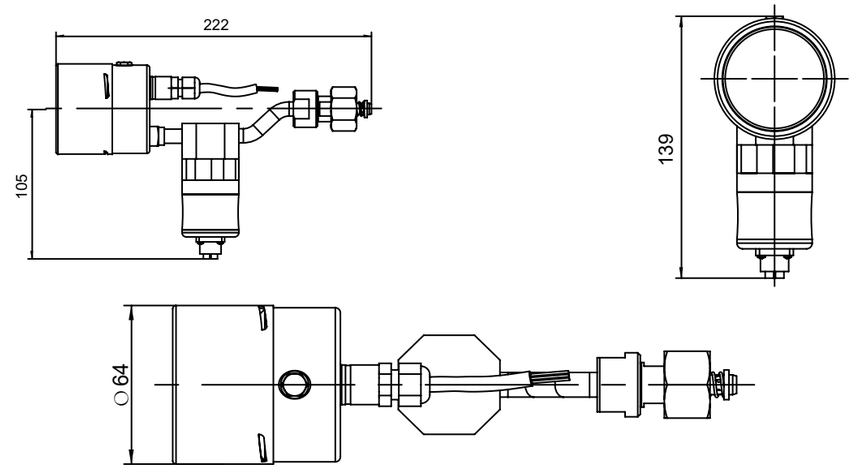
Remote part of the main electrical performance indicators and specifications			
Operating voltage	10~30VDC	EMC Class	IEC61000-4-2: Level 4 IEC61000-4-3: Level 3 IEC61000-4-4: Level 4 IEC61000-4-5: Level 4 IEC61000-4-6: Level 3 IEC61000-4-8: Level 5 IEC61000-4-9: Level 5 IEC61000-4-10: Level 5
Power consumption	<0.5W		
Communication mode	RS485		
Communication protocol	Modbus RTU		
Baud rate	9600bps		

Technical parameters	
Pressure measuring range	0 ~ 1.4MPa(customizable)
Dew measuring range	-50°C ~ +20°C
Accuracy of transmitter	Temperature: ±1°C Pressure: ±0.5%FS Pressure at 20°C: ±1.0%FS Dew: ±3°C
Degree of protection	IP65
Ambient condition	-40°C ~ +80°C , Relative humidity ⩽ 95%RH
Leakage rate	⩽ 1 x 10^{-9}Pa · m^3/s (Helium leakage inspection)
Process connection	G1 (customizable)
Electrical connection	M12 x 1 Circular connector
Weight	0.4kg

Dimensions



RDH40 is matched to a 3-way valve



The RDH40 is matched to a medium pressure gauge

MDK40
Density Switch

Description

MDK40 Density Switches are used to monitor the density of SF_6 gas in sealed tanks, and can be widely used in medium voltage switchgear and RMU. They' re suitable for outdoor harsh environments.
They can provide multiple solutions to support new substations and the renovation and smart upgrading of existing substations.

MDK40 Density Switch

Features

- Temperature compensation ensures higher set point accuracy.
- Can provide up to three sets of microswitch contacts allowing instant and accurate switching.
- High shock resistance.
- Normally closed contacts will not set a false alarm due to vibration.

Application

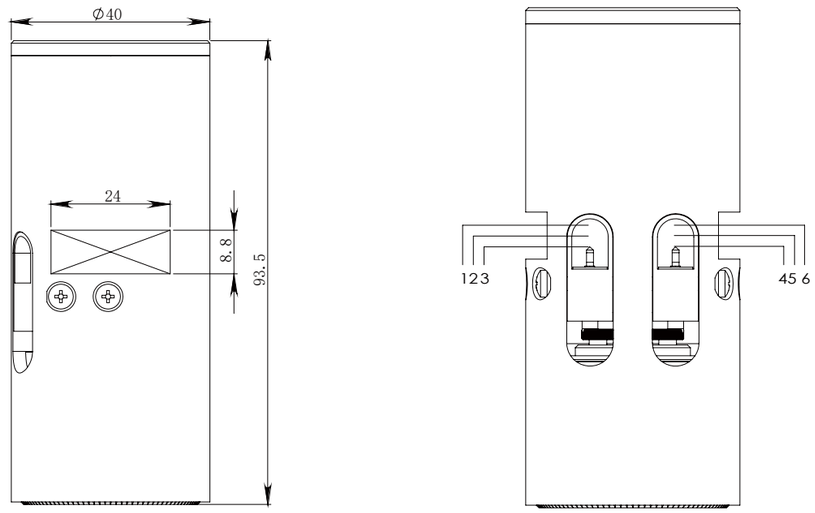
- SF_6 Gas Insulated RMU
- SF_6 Gas Insulated Switchgear

Options

- Different measuring ranges
- Wide temperature range
- Measuring medium: SF_6、Air、N_2、SF_6+N_2 and other gases

Technical Parameters	
Measuring range	0 ～ 3 bar abs. (customizable)
Accuracy of set point	±2.0% @–30 ° C ～ +50 ° C
Degree of protection	IP42
Ambient conditions	-25° C ～ +60° C, relative humidity ⩽ 95%RH
Leakage rate	⩽ 1 x 10^{-9}Pa · m^3/s(helium leakage inspection)
Process connection	G1/4 (customizable)
Installation method	Axial
Electrical connection	Plug-in connection cable size: 0.2mm^2 to 2.5mm^2
Insulation properties	Insulation resistance: >100 MΩ (DC 500V) Withstand voltage: 2kV, 50/60 Hz,1min
Contact type	Mirco switch
Impact rating	30g
Contact electrical parameters	30W/50VA, 1A (upper limit) 220VDC/380V 50/60Hz (upper limit)
Weight	0.3kg
Pressure element	Bellow

Dimensions



CV
Self-Sealing Valve

CV Self-closed Valve

Description

The CV Self-Sealing Valve is a device connecting SF_6 gas density meter or density monitor and SF_6 gas chamber; after the completion of the assembly, SF_6 gas chamber can be effectively sealed. It can be applied to high and medium voltage equipment.

Features

- Self-sealing: when this valve is disconnected from either side,it can seal and stop the flow of gas.
- Can withstand repeated usage.
- Can be used on outdoor switchgear.
- Can connect SF_6 gas filling and vacuum pumping devices.
- Can connect SF_6 gas recovery truck.

Application

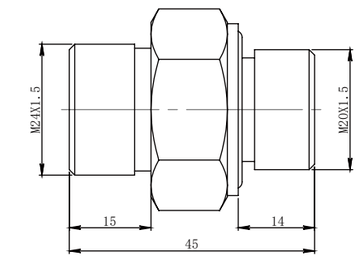
- SF_6 Gas Insulated Switchgear (GIS)
- SF_6 Insulated Circuit Breakers
- SF_6 Insulated Pole-mounted Switch
- SF_6 Insulated Transformer
- SF_6 Insulated Current Transformer or Voltage Transformer
- SF_6 Gas Insulated Busbar Systems
- SF_6 Insulated Inflatable Cabinet
- SF_6 Insulated RMU

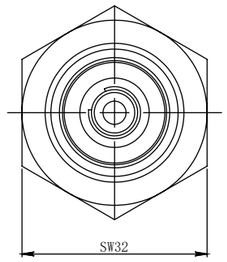
Options

- Pressure connections: customizable
- Nominal diameter: customizable

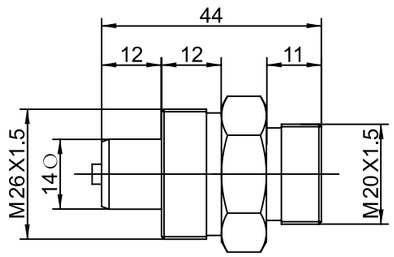
Technical Parameters	
Valve material	stainless steel, aluminum or a copper alloy
Nominal bore	DN6、DN8、DN12、DN20 etc
Surface finish	Aluminum: Oxidation treatment Stainless steel, copper alloys: Not processed
Ambient conditions	-40° C to 60° C
Leakage rate	$\leqslant 1\times10^{-9}Pa\cdot m^3/s$

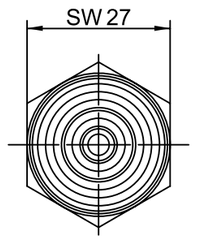
Dimensions



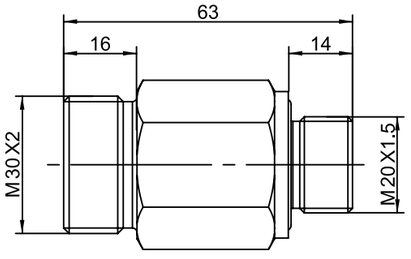


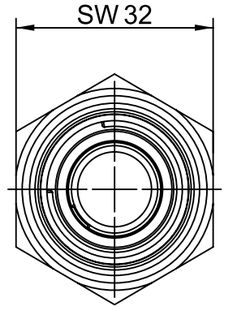
DN6



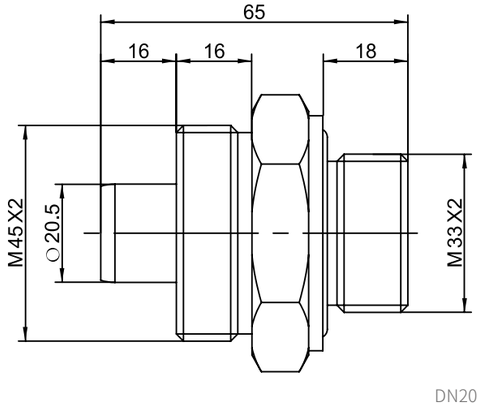


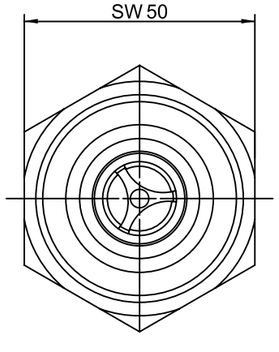
DN8





DN12





DN20

FMZ
Connection Valves

FMZ Connection Valves

Description

The FMZ Connection Valves is a connecting device of SF_6 density monitor to SF_6 switch gear. The maintenance personnel can inspect SF_6 density monitor or replace jt without disassembling the device from installed switchgear. It provides a solution to gas density monitor inspection, replacement and gas filling, without damage to the sealing surface and seal rings of the switch caused by disassembling of valves in the process of regular checks. Therefore, it can reduce the leakage rate, improve the work efficiency, and ensure the safe operation of SF_6 electrical switch.

Features

- The SF_6 density meters can be inspected/replaced without disassembling the SF_6 meter/monitor.
- Operation can be done by one person alone without removing screws, convenient, labor – saving and time-saving.
- Easy for personnel on site to make micro-water detection and gas filling.
- Avoid the damage to sealing surface and seal rings due to disassembling .
- High-quality stainless steel with good looking appearance, never get rusted.
- With stainless steel rain cover, it can resist rain and sun, greatly improving the reliability and service life of the density relay.

Application

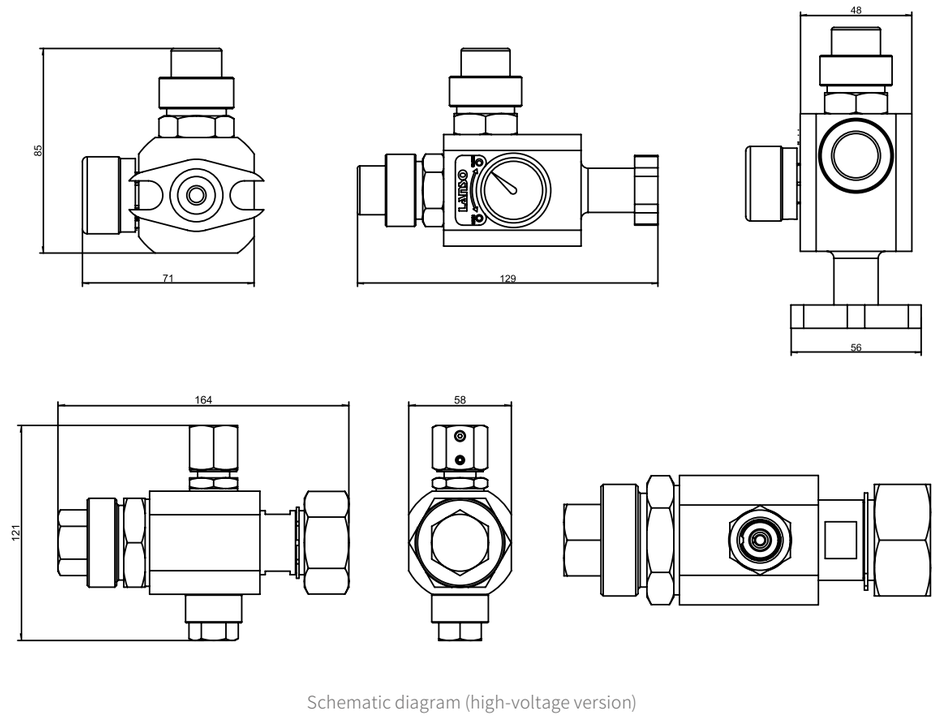
- SF_6 Gas Insulated Switchgear (GIS)
- SF_6 Insulated Circuit Breaker
- SF_6 Insulated Pole-Mounted Switch
- SF_6 Insulated Transformer
- SF_6 Insulated Current Transformers or Voltage Transformers
- SF_6 Insulated Bus System

Options

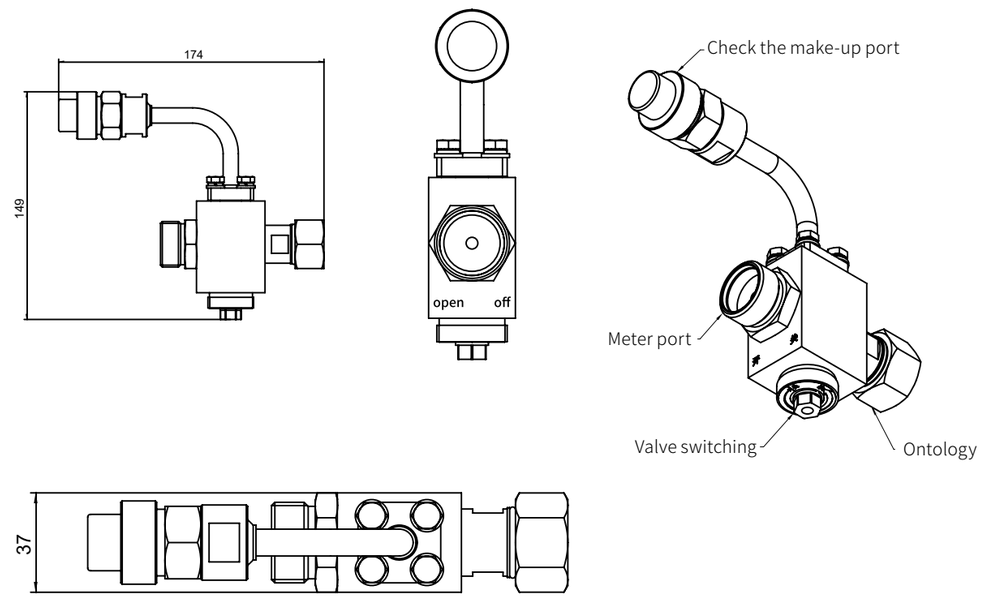
- Pressure connections: customizable
- Nominal diameter: customizable
- Valve type: needle valve or ball valve

Technical Parameters	
Valve Material	Aluminium /Copper alloy/ Stainless steel
Nominal bore	DN6、DN8、DN12、DN20 etc
Surface Finish	Aluminium – anodized Copper alloy – natural AISI304 stainless steel-natural
Ambient conditions	-40° C to +70° C
Leakage rate	Needle valve: ⩽ 1×10^{-8}Pa·m^3/s Ball valve: ⩽ 1×10^{-9}Pa·m^3/s
Operating pressure range	0~1.6MPa
Maximum withstand pressure	6.4MPa

Dimensions



Schematic diagram (high-voltage version)



Schematic diagram (medium voltage model)

VDA-03
Gas Density Monitor Calibrator

Description

The VDA-03 Gas Density Monitor Calibrator is an intelligent, fully automatic calibration instrument that uses advanced embedded microprocessors to test the performance of Gas Density Monitors for SF_6, SF_6/N_2 hybrid and SF_6/CF_4 hybrid gases. The device has two working modes: zero-pressure mode and working pressure modes. Working pressure calibration mode tests the accuracy of GDM from the rated filling pressure to zero, while zero pressure mode starts from zero and rises to the rated pressure. This portable calibration instrument provides great convenience for the operation, testing, calibration and maintenance of electrical products.

VDA-03
Gas Density Monitor Calibrator

Features

- The instrument adopts a dual gas path design, supporting two types of gas supply methods: external gas cylinder and internal gas pump.
- The instrument is equipped with a high-performance proportional valve, and the calibration rate can be adjusted automatically according to the parameters of the calibrated instrument.
- It supports the calibration of various gas types of instruments, including pure SF_6, SF_6/N_2 mixed gas, and SF_6/CF_4 mixed gas.
- The output voltage supports 24VDC and 110VDC voltage out, and has the function of measuring contact resistance.
- It supports zero pressure and working pressure calibration methods.
- The product is equipped with a 7-inch color touch screen for easy observation and operation.
- It is equipped with a complete set of transition adapters, so that most models of switches' density monitors can be field-on-site calibrated without disassembly.
- The engineering plastic case is beautiful and durable, with a high protection level.
- It is equipped with a large capacity memory, and the calibration data can be stored for a long time.
- It is equipped with a high-speed micro thermal printer, which can print the calibration results after the calibration is completed.
- It has a USB interface for easy export of historical data and system upgrades.

Configuration

- Calibrator: 1 Unit
- Essential accessories: 1 self-sealing connection tube; 1 calibration point sampling line; 1 temperature sensor; 1 external gas cylinder & connecting tubes; 1 power cord; 1 production inspection record & 1 user manual.
- Optional accessories: 1 toolbox (including a complete set of adaptors)

Technical parameters	
Power supply	Internal rechargeable lithium battery or external 220VAC
Measuring range	Pressure calibration range 0~1Mpa; Temperature measurement range -40℃ ~+100℃
Accuracy	0.1 grade
Resolution	Pressure display resolution 0.0001Mpa; Temperature display resolution 0.1℃
Density monitor contact calibration	Single signal (single alarm, single lockout), single alarm and single lockout, single alarm and double lockout
Full calibration time ⩽ 5min	

JXQ Series
RS485 Hub

JXQ Series RS485 Hub

Description

JXQ series RS485 hub is a RS-485 bus splitter designed to address the requirements of large RS-485 systems in complex electromagnetic environments. The product supports transmission rates up to 115.2Kbps. To ensure safe and reliable data communication, the RS-485 interface uses optical isolation technology to prevent lightning surges from introducing into the converter and equipment. The built-in optical isolator and 1500W surge protection circuit provide 2500V isolation voltage and effectively prevent lightning, ESD, and grounding interference. The power supply uses an external switching power supply for reliable operation. In the RS-485 mode of operation, the discrimination circuit automatically senses the direction of data flow and switches the enable control circuit automatically, solving the delay problem of RS-485 transceiver conversion easily. It is widely used in power collection systems and is a high-performance and cost-effective data interface conversion product.
JXQ series RS-485 HUB provides star-type RS-485 bus connection. Each port has short circuit and open circuit protection. Optical isolation of 2500V allows users to easily improve the RS-485 bus structure, divide network segments, and improve communication reliability. When lightning or equipment failure occurs, the problematic network segment will be isolated to ensure the normal operation of other network segments. This performance greatly improves the reliability of the existing RS-485 network and effectively reduces maintenance time of the network.

Application

- RS485 Bus Connections

Features

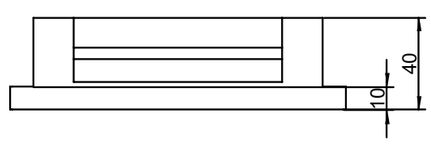
- The interface adopts optical isolation technology to prevent lightning surges from introducing into the converter and equipment.
- It automatically detects and controls the RS485 data stream, and can automatically generate the RS485 transceiver switching enable signal based on the transmitted data.
- Each port has short circuit and open circuit protection, and any interface failure will not affect the normal operation of other interfaces.
- The number of RS485 interfaces is optional for 4 or 8 ports.

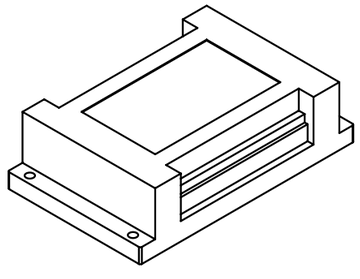
Technical parameter	
Interface characteristics	The interface is compatible with EIA/TIA's RS-232C and RS-485 standards
Operating voltage	DC 12-48V with a current of 350mA
Transmission medium	twisted pair or shielded wire
Operating mode	asynchronous half-duplex
Signal display	Eleven signal indicators including power (PWR), transmit (TX), receive (RX), and fault (E1-E8) indicators
Interface protection	Using optical isolation
Transmission rate	300bps-115.2kbps
Size	145mmx90mmx40mm
Operating environment	Temperature: -40°C ~+85°C , relative humidity: 5%~95%
Installation method	Rail installation

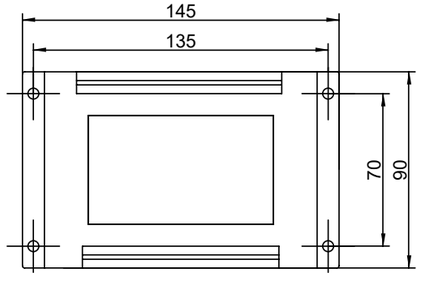
Options

Model	Instruction	Installation	Operate power
JXQ-RS-08	Eight RS485 ports	Rail installation	12~48VDC
JXQ-RS-04	Four RS485 ports	Rail installation	12~48VDC

Dimensions







DA Series
Digital Meter Monitoring Terminal

DA Series
Digital meter monitoring terminal

Description

DA-type digital meter monitoring terminal is a communication management machine product based on embedded hardware. The system adopts Linux operating system and is stable, reliable, and easy to use. It adopts a highly integrated new generation of 32-bit computer internally, and can be integrated with our company's dedicated communication management software. It can be used to collect information from the entire field of power distribution automation system and send it to the local background or remote dispatching master station, and at the same time, it will pass the command of the background or master station to each measurement and control device to achieve local or remote control.
DA-type digital meter monitoring terminals can directly collect data from all devices in the automation system, supporting over 100 protocols, such as Modbus, IEC101, IEC103, IEC104, IEC61850, CSC2000, DL645, etc., and send them to the monitoring background through the user-specified communication protocol (101, 104, Modbus, CDT, etc.) and communication medium (ethernet, fiber optics, etc.), completing the background monitoring of the entire site.

Features

- Support Modbus, IEC101, IEC103, IEC104, CSC2000, DL645 and other up to 100 protocol conversion, fully support IEC61850 standard.
- Support the State Grid "Smart Substation Technical specification Part 4: Digital remote meter" meter access.
- Support multi-channel adaptive industrial 10/100M Ethernet, 2/4 optional; Multiple RS485 ports, 4/8/16 optional.
- Support one single mode and one multi-mode fiber output.
- Support a variety of voltage access, a variety of installation methods.
- Support data storage, block logic programming.
- The RS485 port uses optoelectronic isolator.

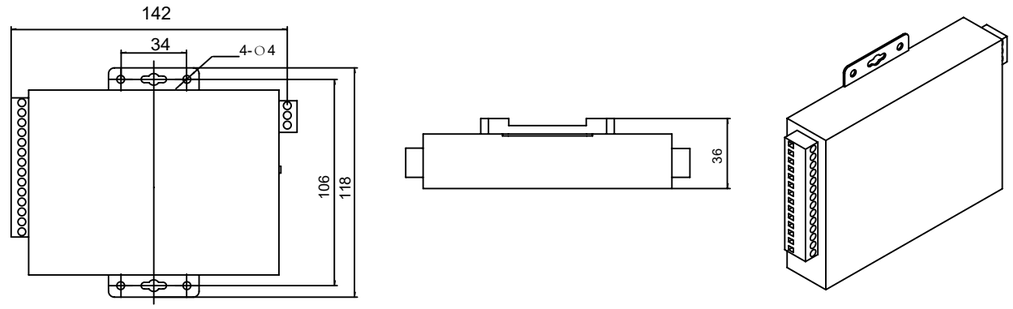
Application

- Online Monitoring of Digital Meters

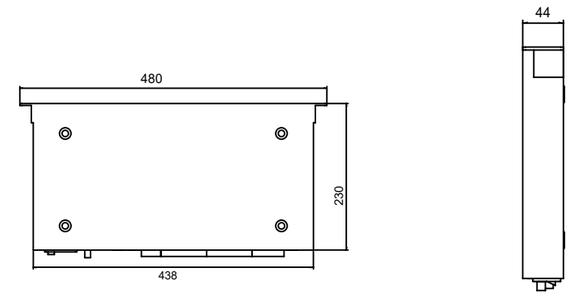
Technical parameters	
Ambient condition	-40°C ~ +85°C
Operating voltage	220VAC/220VDC (some series use DC24V power supply)
Power consumption	<15W

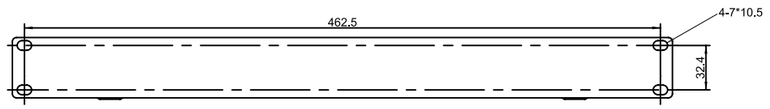
Model	Instruction	Installation	Operate power
DA8240	Two 10M/100M Ethernet ports and four RS485 ports	Flat mounting	9~24VDC
DA8600-8-D	Four 10M/100M Ethernet ports and eight RS485 ports	Flat mounting	12~24VDC
DA8600-8	Four 10M/100M Ethernet ports and eight RS485 ports	1U rack mounting	85~230VDC/VAC
DA8600-16	Four 10M/100M Ethernet ports and sixteen RS485 ports	1U rack mounting	85~230VDC/VAC
DA8600-8-F	Two 10M/100M Ethernet ports, eight RS485 ports, One single-mode Fibre Channel port and one multi-mode Fibre Channel port	1U rack mounting	85~230VDC/VAC

Dimensions



IED-8240





IED-8600

GLM Type
SF_6 Gas Leakage Quantitative Alarm System

GLM type
SF_6 gas chamber leak monitoring system

Description

The SF_6 gas leakage quantitative alarm system is based on the current situation in which the power system emphasizes safe production, and is an intelligent online detection system designed and developed to provide personal health and safety protection for the personnel in the power distribution device room where SF_6 equipment is installed.
The system mainly detects the SF_6 gas content and oxygen content in the ambient air. When the SF_6 gas content in the environment exceeds the standard or lacks oxygen, it can alarm in real time. At the same time, the ventilation system is automatically turned on, with temperature and humidity detection, working status voice prompts, remote alarm, Historical data query and many other rich features.

Features

- The well-designed high-frequency, low-current, high-voltage switching power supply is applied to the SF_6 sensor monitoring head, which is characterized by safety, reliability, and high efficiency. Take full advantage of the flexibility of the microcontroller.
- 85V ~ 265V AC, to meet the different field environment needs
- Large-screen LCD color display, beautiful and generous, running status at a glance. Simple operation interface, simple operation.
- The large-capacity memory supported by the system host can store historical data for more than one year. The excellent performance of the query system software ensures that the system can quickly query historical data in seconds.
- The use of high-sensitivity imported sensors, long life, with false alarm filtering software, to avoid false alarms.
- The micro-monitoring technology can send out early on-site warnings and indicate the locations of gas leaks, promptly notify personnel in hazardous locations to evacuate, find and eliminate sources of leakage, and protect operating equipment.
- A cable connects the SF_6/O_2 transmitter, infrared, main unit, and fan controller, and can be discretely combined to achieve high field adaptability.
- Multi-point monitoring at the same time meets the needs of the site environment and improves monitoring reliability.
- The data can be transmitted far to the telecontrol control center via the RS485 or RS232 bus. The control center can also directly inquire and control the monitoring system.

Configuration

- SF_6 quantitative leak monitoring alarm system host.
- Accessories: SF_6/O_2 double gas transmitter (on-demand), 1 fan controller, 1 warning light, and cable (several).

Technical indicators	
SF_6 gas concentration alarm range	50 ~ 2000PPM (alarm point can be set up, the state regulations 1000PPM)
SF_6 gas detection sensitivity	±5% setting
Oxygen concentration alarm point	18%
Oxygen measurement accuracy	<0.4%
Temperature display range	-50 ～ 99° C
Humidity display range	0 to 99% RH
Input power	85 ～265V AC
Alarm output point power supply	2A
Fan output contact power supply	16A
Fan ventilation time setting	15MIN/time or user set arbitrarily
Data recording capacity	10000 entries
Communication	RS-485 standard protocol

SF_6 Gas Monitor and Receiver Based on LoRa Wireless Transmission Technology

SF_6 Gas Monitor and Receiver Based on LoRa Wireless Transmission Technology (LS-WC and LS-WT Series)

Product Overview

SF_6 (Sulfur Hexafluoride) gas is widely used as an excellent insulating and arc-suppressing medium in medium and high voltage, as well as in high voltage switchgear and GIS. The density index of SF_6 gas is crucial to its insulation and arc-suppressing performance.

SF_6 Gas State Monitor and Receiver (LS-WC and LS-WT series) are self-developed monitoring products by our company. The monitor can adapt to our full range of transmitters and remote density relays, monitoring SF_6 gas pressure, temperature, density, and moisture content in real time. The data is transmitted back to the background system in real time through wireless LoRa data transmission. The background system can perform online monitoring and analysis, and achieve functions such as real-time data query, historical data statistics, pre-set alarm reminders, and data curve query for all data. This system is mainly designed for real-time monitoring of critical equipment such as SF_6 gas insulated switchgear, GIS, transformers, and mutual inductors in various high-voltage electrical devices.

The monitor is powered by a battery and transmits data wirelessly, without the need for cables on site. The transmitters and remote density relays can be powered by the monitor, without the need for separate power supply on site.

Applications

- SF_6 Insulated Combination Apparatus (GIS)
- SF_6 Insulated Circuit Breaker
- SF_6 Insulated On-site Switch
- SF_6 Insulated Transformer
- SF_6 Insulated Mutual Inductor
- SF_6 Insulated Busbar System

Options

- The receiver has an RS485 MODBUS RTU output or a network port TCP/IP output.
- It comes with a background software package.
- The receiver can be equipped with an instrument cabinet.

Features

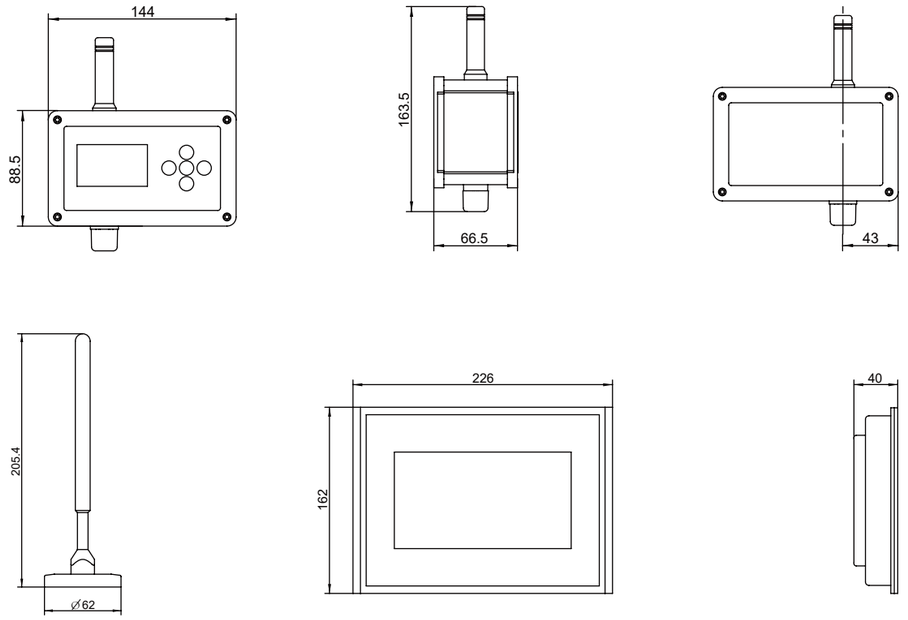
- The monitor is powered by a battery, without the need for cables on site, enabling non-stop upgrade and transformation of online monitoring systems.
- The monitor and receiver have user-friendly human-machine interfaces, facilitating field debugging and testing.
- The monitor can adapt to our full range of transmitters and remote density relays (with a accuracy of full scale 1.0), which can be configured according to customer needs with different functions, ranges, and interface sizes.
- It is suitable for both indoor and outdoor installations.
- The battery uses a large capacity lithium battery, with a service life of over 10 years (related to the data collection period).
- The receiver has data storage function; it can store data for over 10 years.
- The background software has data storage, query, and statistical analysis functions.
- It has a RS485 bus interface that can upload pressure, temperature, and density data in real time.
- It has 470MHz and 2.4GHz optional frequencies for wireless transmission.

Technical Parameters

Monitor	Button	Membrane keypad, with a life of 2 million presses at a force of 300gf Keypad
	Screen	Resolution: 128x64 Dot ; Viewing size: 54.2x32.5mm; Supply voltage: 3.3V; Supply current: 45mA
	Battery	Type: Lithium thionyl chloride battery; Nominal capacity: 19AH; Voltage: 3.6V
	Transmitter interface	Power supply: 12V@20mA; Communication: RS485 rotocol; Private protocol can be customized
	Standby current	<10uA
	Protection grade	IP65
	Operating temperature	-40° C ~ +70° C
	Installation method	Metal zip tie installation
Receiver	Screen	Resistive touch 7-inch LCD screen; Resolution: 1024*600
	Power supply	12V DC @1A (manufacturer can provide 220Vac adapter)
	Signal interface	Double RS485 interface, two interfaces can use different communication protocols; RJ45 interface: 10M/100M; USB interface: 2.0
	Other hardware	16G SD card
	Antenna	Suction cup antenna; Feeder line: 2m (2m~20m)
	Installation method	Wall mounted installation

Dimensions

Monitor: 144 × 88.5 × 66.5mm
Receiver: 226 × 162 × 40mm
Instrument box: 330 × 235 × 68mm



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