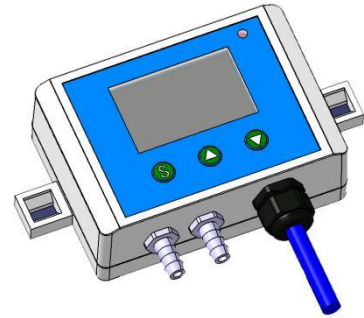


XGZP9091 Differential Pressure Meter

FEATURES

- High precision with internal temperature compensation
- High sensitivity and high resolution
- Reliable quality, stable performance, and low cost
- Outputs available: 4-20mA, 0-5V/10V, RS485 communication
- Configurable parameters via buttons
- Over-range alarm indicator light reminder function
- Compact size and simple installation



APPLICATIONS

- HVAC systems (Heating, Ventilation, and Air Conditioning)
- Wind pressure and speed purification engineering
- Energy management systems
- Industrial process control

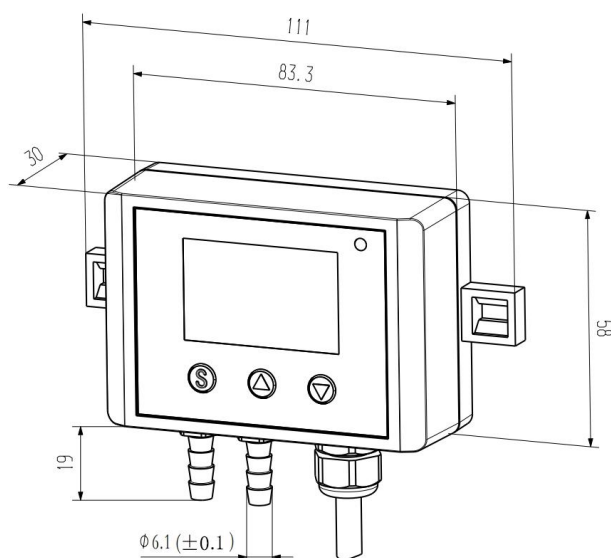
INTRODUCTION

The XGZP9091 Differential Pressure Meter is a product specifically designed for industrial environments requiring high precision, high reliability, and high stability for micro-differential pressure monitoring. It uses a micro-differential pressure gas pressure measurement element, calibrated through a stable, reliable, and strong anti-interference conditioning chip, to convert the pressure signal of the measured medium into a standard analog or digital signal. With exquisite packaging technology and comprehensive assembly and testing processes, it ensures excellent performance. The XGZP9091 Differential Pressure Meter offers multiple output modes and auxiliary alarm functions, along with an LCD screen for real-time display. It can be widely used in HVAC, petroleum, chemicals, metallurgy, environmental protection, metering, automation control engineering, production process detection, and other industrial automation fields.

SPECIFICATION

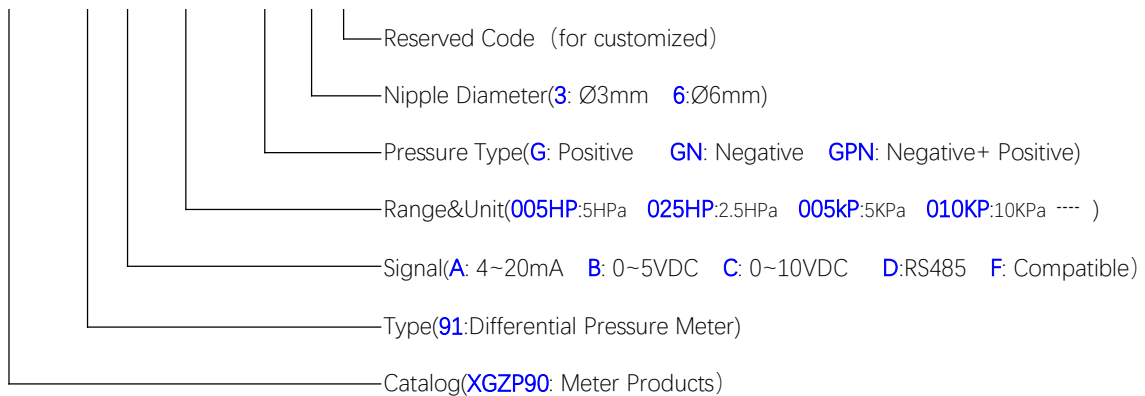
Item	Parameter	Unit
Pressure Range	$\pm 0.5/\pm 1 \dots \pm 100$	KPa
Typical Accuracy	± 1	%Span
Power Supply	12 ~ 30(Typ:24)	V
Output	4-20	mA
	0-5 or 0-10	V
	RS485 Modbus,	
Display	LCD	
Working Temperature	-20 ~ +85	°C
Working Temperature	-40 ~ +85	°C
Overload Pressure	5xRated (Pressure range ≤ 10 kPa)	
	3xRated (Pressure range > 10 kPa)	
Electronic Connection	6 core 0.2mm ² RVVP Shielded Wire	
Case Materials	ABS+30%GF	
Protection Grade	IP65	
Gross Weight	≤ 170	g
Function	Zero Point Setting, Alarm function etc, shown as Use Instruction	

DIMENSION (Unit:mm Unspecified Tolerances: ± 1.0 mm)



ORDER GUIDE


XGZP90-91-A-005HP-GPN-6-X




WIRE INSTRUCTION

XGZP9091 Differential Pressure Transmitter can output a single signal according to customer's requirement, and its different output methods correspond to different wiring harnesses, such as analogue signal output is usually selected 3-wire system, and 4-wire system is selected for RS485 communication; this product also supports analogue voltage/current output and RS485 communication (i.e., compatible signals), and its lead definition is shown as follows:

◆ 5 Core Wire Output

PIN NAME	WIRE COLOUR	WIRE DIFINITION	IMAGE ILLUSTRATION
VCC	BROWN	INPUT (+)	
GND	BLACK	INPUT (-)	
4-20mA	YELLOW	OUTPUT :4-20mA	
RS485B	GREEN	RS485 SIGNAL B	
RS485A	BLUE	RS485 SIGNAL A	
RVVP SHEILDED WIRE			

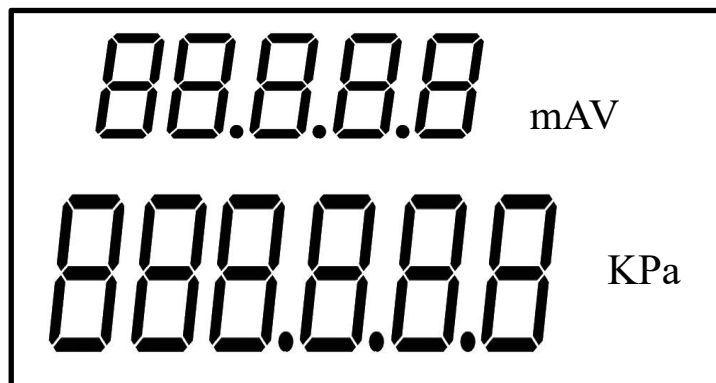
◆ 6 Core Wire Output

PIN NAME	WIRE COLOUR	WIRE DIFINITION	IMAGE ILLUSTRATION
VCC	RED	INPUT (+)	
GND	BLACK	INPUT (-)	
4-20mA	YELLOW	OUTPUT :4-20mA	
0-5V/10V	BROWN	OUTPUT :0-5V/10V	
RS485B	GREEN	RS485 SIGNAL B	
RS485A	BLUE	RS485 SIGNAL A	
RVVP SHEILDED WIRE			

USE INSTRUCTION

1 Menu Description

Menu: includes 5 digital segments and mAV in the upper row for displaying the current temperature, current or voltage values, and 6 digital segments and KPa unit in the lower row for displaying the current barometric pressure value, with the overall layout as shown below:



Bottom: Three buttons: S ▲ ▼

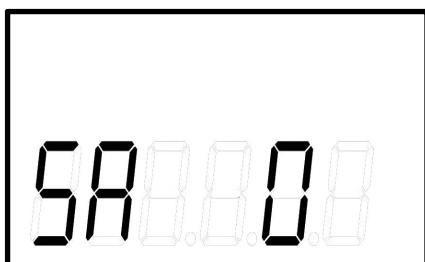
2 Operation Instruction

(1) Power On

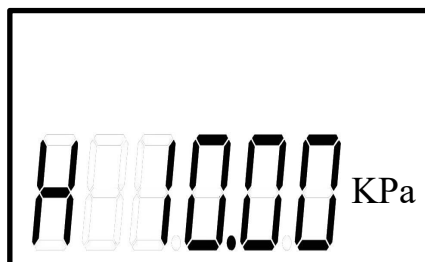
The lower row of the LCD screen displays the current air pressure value, the upper row alternately displays the current temperature or 4-20mA (or 0-5V/10V) value

(2) Value Check

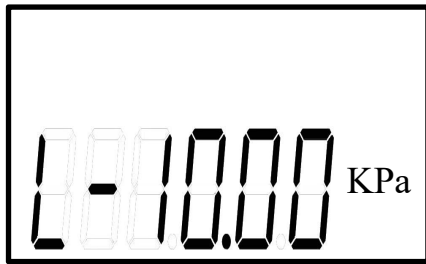
Press the 'S' key (left button) briefly to display in sequence:



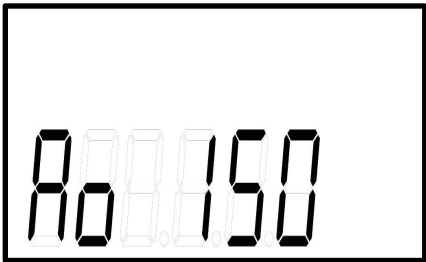
① Check the set switching value (normal display **SA ***): '*' bit shows '0' for 4-20mA output, display '1' for 0-5V/10V output;



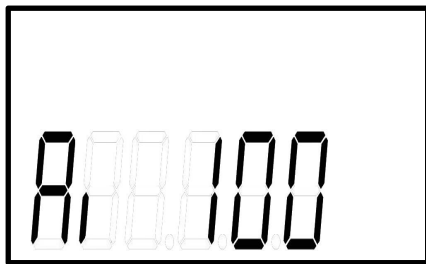
② Check the set pressure upper limit (normal display **H ******, e.g. H 10.00KPa is the default upper limit)



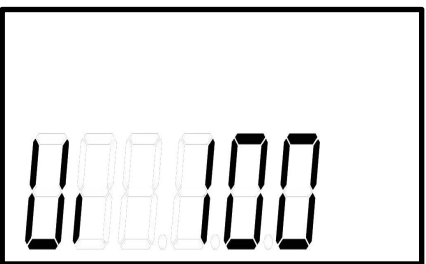
③ Check the set pressure lower limit (normal display L ****, e.g. L -10.00KPa is the default upper limit)



④ Check set current 4-20mA lower current 4mA calibration value (normal display A0 ***, default 120) ;



⑤ Check set current 4-20mA upper current 4mA calibration value (normal display A1 ***, default 100;



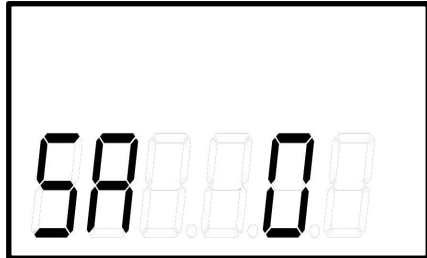
⑥ Check set voltage 0-5/10mA upper voltage calibration value (normal display A1 ***, default 100;



⑦ Returns the current barometric pressure and temperature values read from the sensor (displayed in real time according to the sensor's data)

(3) Output Value Setting

Press the 'S' button (left button) for more than 2 seconds and then release it (i.e., long press) to display as following



Set output value

[when display blinking, a short press of the '▲' key (middle button) or '▼' key (right button), '0' for 4-20mA output, '1' is 0-5V/10V output].

3 Function Setting

(1), Zeroing of current barometric pressure value. Don't power on first, press the right two keys ['▲' key and '▼' key] at the same time and don't release, then power on again, then release the two keys, it can carry out the current barometric pressure value calibration zero;

(2), Alarm light on/off. Do not power on, press the left and right two keys ['S' key and '▼' key] at the same time, then power on, then release the two keys, the alarm light will be on/off;

(3), Low Power Screensaver Mode. Don't power on first, press the left and right two keys ['S' key and '▲' key] at the same time and then don't release, then power on, then release the two keys, it can carry out the Low Power Screensaver Mode;

4 RS485 Communication

Write a single register (function code = 0x06), the current barometric pressure value is calibrated to zero when data is written to 08 06 0001 ffff;

The communication mode of this digital differential pressure meter is RS485, which supports the standard ModBus communication protocol. Based on the universal ModBus protocol, it can work both in stand-alone mode and in multi-machine networking mode.

(1) Parameter

Parameter	Protocol Format
	RTU
Baud Rate	9600bps
Start bit	1 bit
Data bit	8bit
Stop bit	1bit
Parity check	none
Bit time	104.2us
Character time	1.042ms

Each character is sent and received as following format (lowest valid bit of data D0 first, RTU mode, 10 bits):

Star	D0	D1	D2	D3	D4	D5	D6	D7	Stop
Start bit	8 bit data bit								Stop bit

(2) Message Frame

Start Bit	Device ID	Function	Data	CRC Check	Close
T1-T2-T3-T4	8bit	8bit	X....8Bit	16Bit	T1-T2-T3-T4

(3) Communication Format (RTU data format)

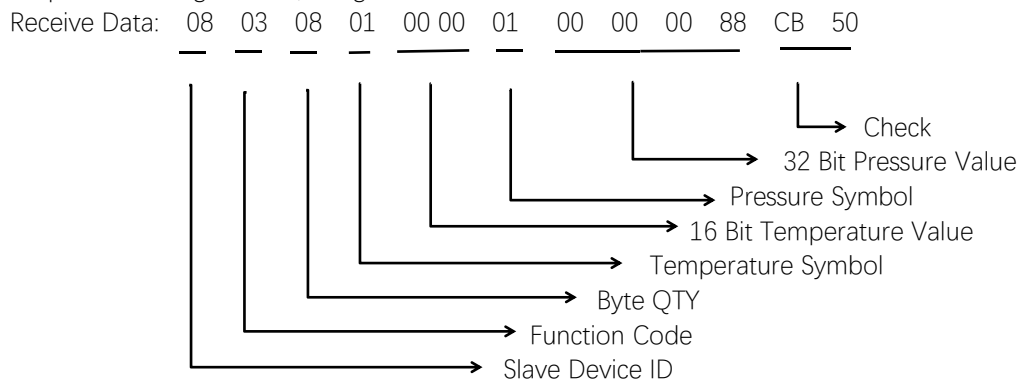
Write Register (Function code=0x06)

Check Message Frame		Response Message Frame	
Slave Device ID	0x08	Slave Device ID	0x08
Function Code	0x06	Function Code	0x06
Register First Add	0x0001	Register First Add	0x0001
Data	****	Data	**** (Same with Check data)
CRC Check	****	CRC Check	**** (Same with CRC check)
When the Check message and the Response message are the same, it means that the communication is normal, and the current barometric pressure value is zero-checked when register 0x0001 writes data to ff00.			

Read Register (Function code=0x03)

Check Message Frame		Response Message Frame	
Slave Device ID	0x08	Slave Device ID	0x08
Function Code	0x06	Function Code	0x03
Register First Add	0x0001	Bits QTY	0x08
Data	0004	Data 1	Temperature symbol (+ -)
CRC Check	****	Data 2	Temp High 8bit and low 8bit
		Data 3	Pressure symbol (+ -)
		Data 4	Pressure High 16bit
		Data 5	Pressure Low 16 bit
		CRC Check	****
Temperature value = data 2 (16-bit binary), when reading, the data should be converted to decimal and then divided by 10. accurate to 0.1 ° C. Barometric pressure = data 4 (16-bit binary) × 65536 + data 5 (16-bit binary), read the data to be converted to decimal and then divided by 10. accurate to 0.1Pa			

Response message frame, e.g.:



【 SAFETY NOTES 】

- Do not use these meters under any circumstances in which the range of their ratings, environment conditions or other specifications are exceeded. Using the sensors in any way which causes their specifications to be exceeded may generate abnormally high levels of heat, emit smoke, etc., resulting in damage to the circuitry and possibly causing an accident.
- Before connecting a connector, check the pin layout by referring to the connector wiring diagram, specifications diagram, etc., and make sure that the connector is connected properly. Take note that mistakes made in connection may cause unforeseen problems in operation, generate abnormally high levels of heat, emit smoke, etc., resulting in damage to the circuitry.
- Do not use any pressure sensor which has been disassembled or remodeled.
- Protection circuit recommended.

The possible failure mode is either open or short of the output transistor.

An excess heat is the cause for short mode failure. For any important and serious application in terms of safety, add protection circuit or any other protection method.

- Various safety equipment and safety equipment
- Traffic light
- Security crime prevention equipment
- Equipment concerning control and safety of trains, cars, etc.
- Applications such as temperature control using sensor output etc.
- If it is expected that malfunction of each sensor may cause injury to persons or serious expansion damage, be sure to implement safety measures such as double safety circuit.

【 WARRANTY 】

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