Ziasiot

Instructions

Smart Pressure Switch Instruction Manual

PT300

CE attestation

Please read this instruction manual carefully before installation

www.ziasiot.com
400-821-0137
info@ziasiot.com

Content

Product Description

The PT300 intelligent pressure switch is an intelligent digital display pressure measurement and control product integrating pressure measurement, display, and output control. The product is a fully electronic structure, which measures and controls the pressure of the control system. The intelligent pressure switch is flexible to use, simple to operate, easy to debug, safe and reliable. Widely used in hydropower, tap water, petroleum, chemical, machinery, hydraulic and other industries to measure, display and control the pressure of fluid media

Technical Parameters

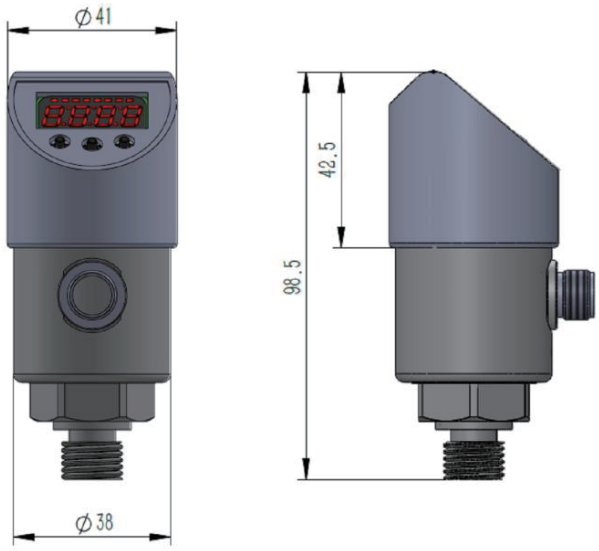
Measuring range	-0.1~0-0.02~100MPa
Measurement Accuracy	⩽±0.25%, 0.5%FS
Stability	⩽0.2% /year
Display Method	4-digit digital tube unit display
Type of pressure	Gauge pressure, absolute pressure, sealed gauge pressure
Display range	-1999~9999
Overload capacity	1.5times full scale
Maximum power consumption	⩽1W
Power supply	15~36V.DC

PL	IP65
Switch load capacity	＜1.2A(24V.DC)
Output form	2 switch quantity（PNP/NPN)+4~20mA
Load resistance	≤(U-12)/0.02Ω
Switch life	＞10years
Response time	≤5ms
Medium temperature	-40℃~85℃
Ambient temperature	-40℃~70℃
Relative temperature	0~95%
Storage temperature	-20℃~60℃
Temperature effect	Within the specific working temperature,the output change≤±0.05% of the range for every 10℃ change in the ambient temperature

Selection Guide

Series guide		PT300	-	X	-	X	X	-	X	-	X	-	X	-	X
Product type	Gauge			G											
	Absolute Pressure			A											
Pressure Unit	bar					B									
	MPa					M									
	kPa					K									
Pressure range	Pressure Range Value x						X								
Process connection	G1/4								G1/4						
	1/4NPT								1/4NPT						
	G1/2								G1/2						
	M20×1.5								M20						
	R1/4								R1/4						
	R1/2								R1/2						
	1/2NPT								1/2NPT						
Output signal	1 change PNP+4-20mA output										H1				
	2 change PNP output										H2				
	2 change PNP+4-20mA output										H3				
	1 change NPN+4-20mA output										H4				
	2 change NPN output										H5				
	2 change NPN+4-20mA output										H6				
Accuracy class	0.5%FS												--		
	0.25%FS												2A		
Special	Please consult for other special requirements														...

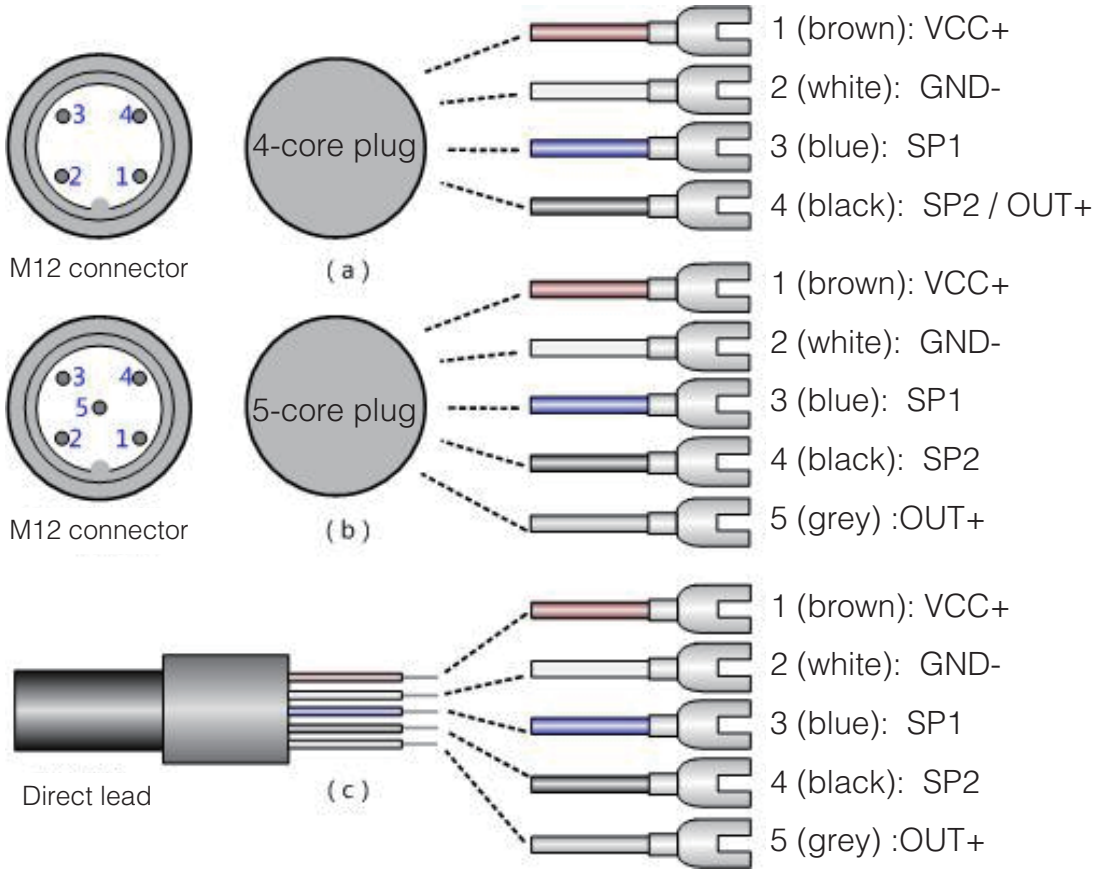
Electrical wiring and Settings



Electrical wiring and Settings

1. Pin Definition

The intelligent pressure switch adopts two types of M12 sensor special connector with high protection level and direct wire outlet. The definition of each pin of M12 connector 4-core, 5-core and direct lead mode is shown in Figure



2. Electrical wiring (this wiring diagram is a schematic diagram, the field wiring should be subject to the actual product)

a) PNP output wiring diagram is shown in Figure 5-2, 5-3, 5-4

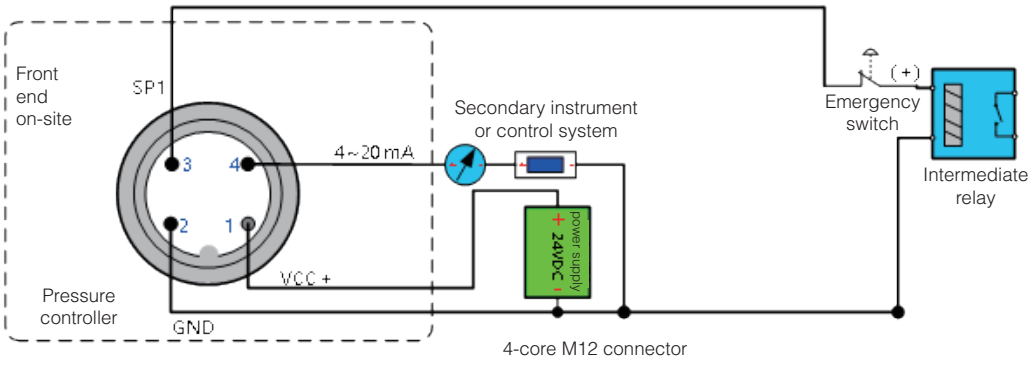


Figure 5-2 1 channel PNP+4~20mA analog signal output (4-wire system)

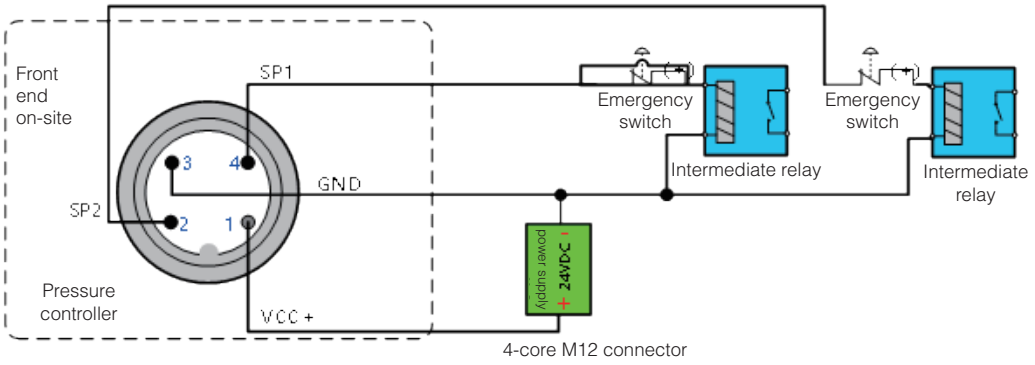


Figure 5-3 2 channel PNP output, no analog signal output (4-wire system)

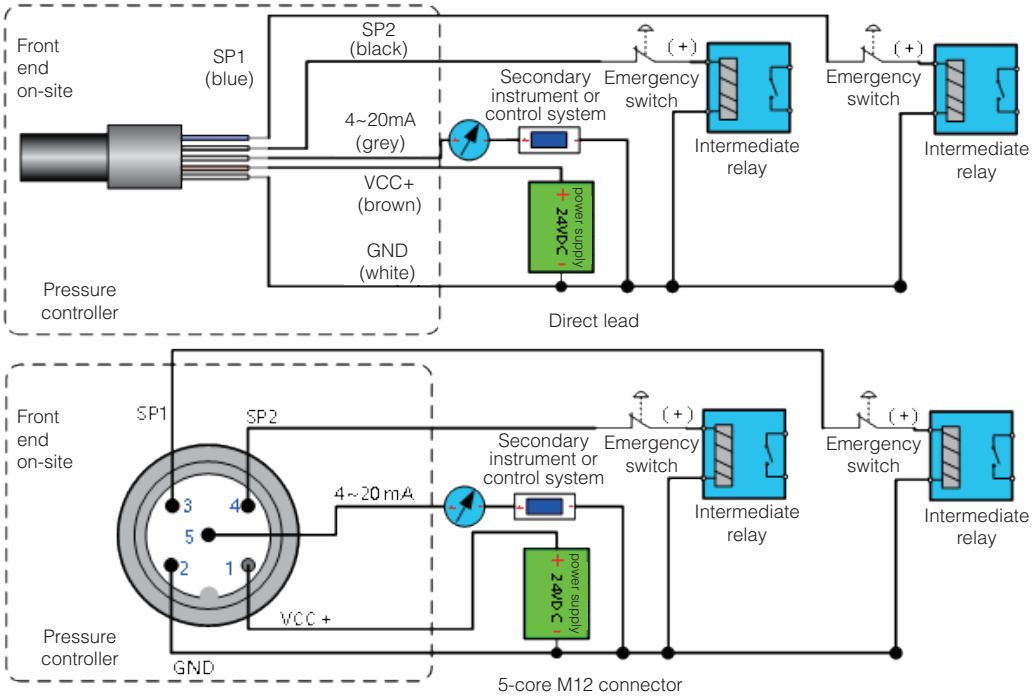


Figure5-4 2 channel PNP+4~20mAanalog signal output (5-wire system)

a) b) NPN the wiring diagram is shown in Figure 5-5,5-6,5-7

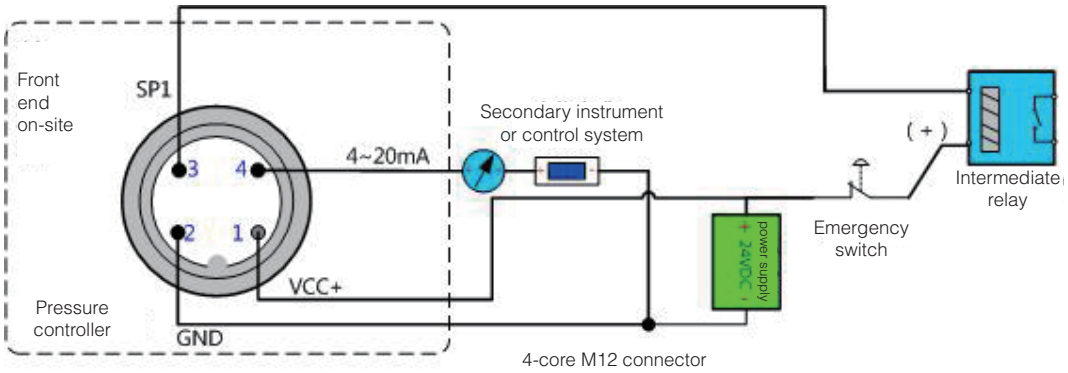


Figure 5-5 1 channel NPN+4～20mAanalog signal output (4-wire system)

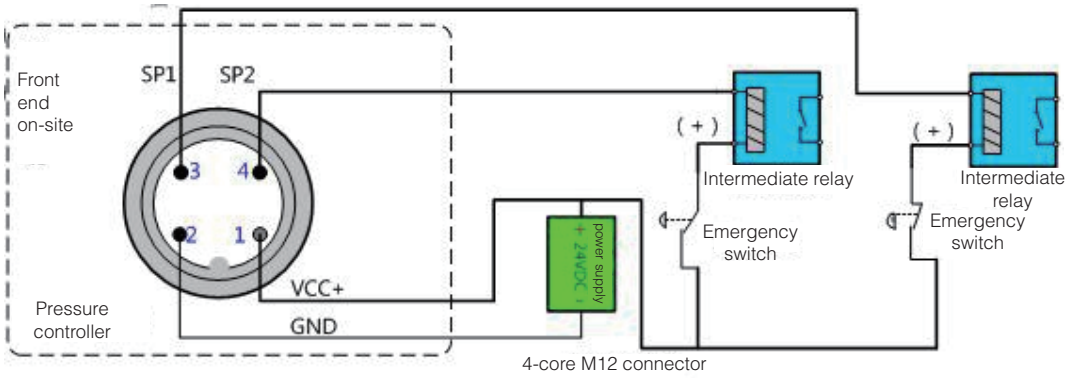


Figure5-6 2channel NPN output, no analog signal (4-wire system)

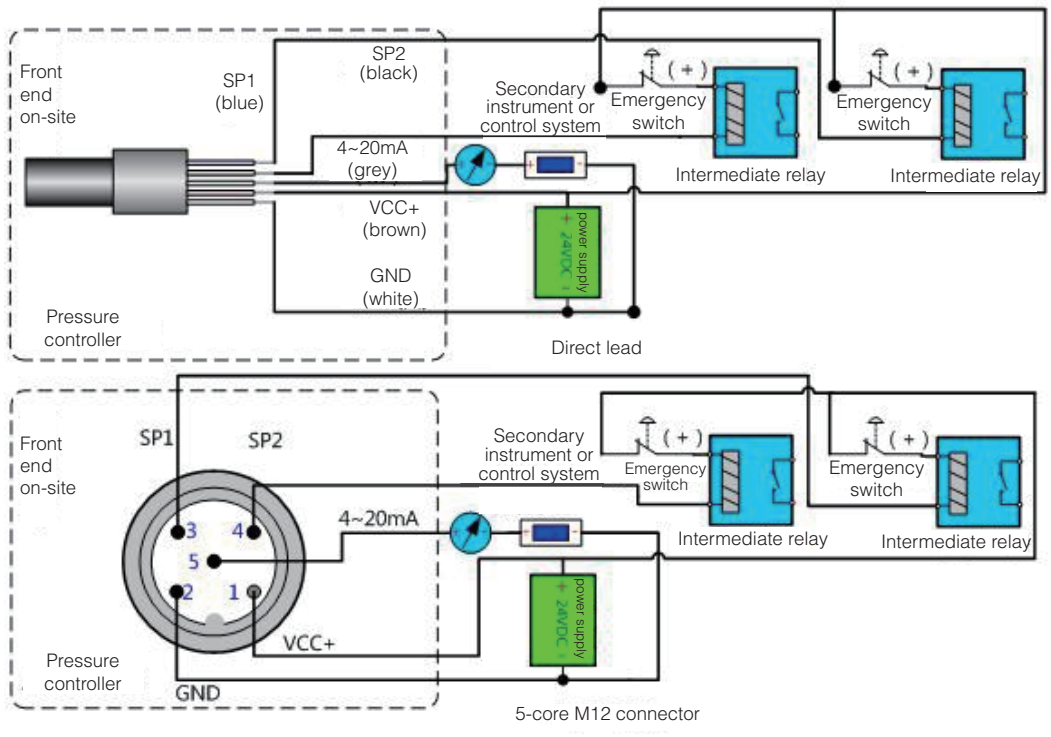


Figure 5-7 2channel NPN+4~20mA analog signal output (5-wie system)

Please note that when installing the controller, the cables should be connected correctly according to the wiring diagram. If a shielded cable is used, connect the shielding layer to the shielded ground and ensure a reliable connection. The DC power supplied by the switch should be routed separately from the strong current cables, and try to avoid parallel routing at close distances.

2) On-site setting

a) Switch output description
The intelligent pressure switch has 1~2 (optional) switch output. Each switch output can set a pressure switch point and a set of opening and closing delay values. The corresponding output will switch when the pull-in value of the switch point is reached and resume when the pressure drops below the release value.

b)Analog output description
Provide one analog output (can be selected according to the model). It can output 4~20mA analog signal, corresponding to full scale pressure range

c) Set the switching point action limit. Take 2 switch output example (1 switch output follow the same method)

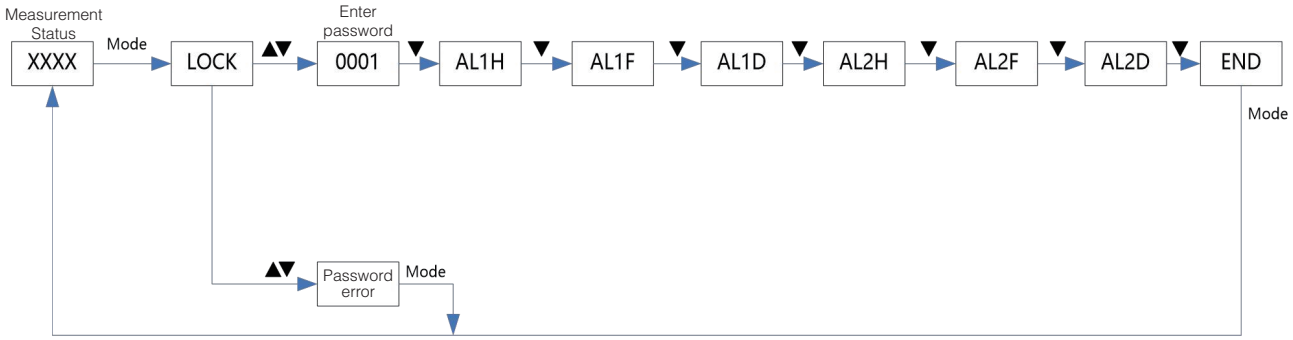


Figure 5-5 Switch point setting flow chart

Table 3 Setting Parameters

Parameter name		Parameter meaning	Predeter mined area	Factory default
Common parameters	AL1H	Switch 1 pull-in value	0~100% range	
	AL1F	Switch 1 release value	0~100% range	
	AL1D	Switch 1 action delay	0-30S	
Password 0001	AL2H	Switch 1 pull-in value	0~100% range	
	AL2F	Switch 2 release	0~100% range	
	AL2D	Switch 2 action delay	0-30S	

Note:
The switch point is determined by the pull-in value and the release value configuration. When the pull-in value is greater than the release value, it is the upper limit alarm output (normally open function), and when the pull-in value is less than the release value, it is the lower limit alarm output (normally closed function). The difference between the value and the release value is the hysteresis of the switching point.

Example:
To set switch point 1 as the upper limit alarm output (normally open function) at 4.00MPa, and when it is less than 3.95MPa to disconnect, the switching delay is 3.0 seconds; switch point 2 is the lower limit alarm output (normally closed function) at When 10.00MPa is disconnected, if the suction is lower than 9.95MPa, the switching delay is 1.0 second:

Enter the menu,set
AL1H=4.00 AL1F=3.95 AL1D=3.0
AL2H=9.95 AL2F=10.00 AL2D=1.0

Description:
HHHH-- display the maximum value (>9999). After the data is normal, it will bw automatically restored.

LLL-- displays the minimum value(<-1999). Automatically restore after data is normal.

Precautions

1. When installing the connecting cable, the power supply 24VDC to the instrument should be separated from the electrical cable, and try to avoid parallel wiring at close distances.

2. Based on the anti-interference principle of digital circuit AD sampling, we solemnly remind users that the alarm speed of the switch is not as fast as possible. The choice of the alarm speed should be based on the need, in the balance between speed and stability. When the alarm speed is selected quickly, accidental fluctuations in the pressure signal or accidental interference burrs on the power supply may cause frequent alarms after being collected by the digital circuit. When the alarm speed is selected relatively slowly, the digital circuit can have sufficient time to correct The signal is subjected to interference removal filtering, and the stability can be greatly improved.

Operation&Maintenace

Operation:
1. The user can put into operation without any adjustment of pressure switch.Before operation, check whether the installation and electrical connection are correct, turn on the power and put it into operation.

2. The pressure switch can work when the power is turned on, and the output signal is stable and reliable.

Maintenance:
The pressure switch is a high-precision measuring instrument. In daily maintenance, check whether the cable sheath is aging and cracked, and whether there is water ingress. If the pressure hole is blocked or the diaphragm is fouled, please clean it with a solvent compatible with the material of the pressure switch structure. Do not use a wire to poke the pressure hole or brush the diaphragm.

Attachment Description

The intelligent pressure switch should be stored in a dry and ventilated room with an ambient temperature of -20~60℃ and a relative humidity of not more than 95%. There should be no corrosive gas in the indoor air.

	Pressure switch	one
2	Manual	one
3	Certificate of conformity	one