

Electrical connection

## Aviation plug (M12\*1, 4 pins)



1	2	3	4
Power+	RS485A+	Power-	RS485B-
Power+	Transistor output 2	Power-	Transistor output 1
Power+	Transistor output 2	Power-	
Power+		Power-	Transistor output 1
Power+	*Signal+	Power-	Transistor output 1

\*Signal: 4~20mA, 1-5VDC

## Aviation plug (M12\*1, 5 pins)



Aviation plug without cable (5 pins)



\*Signal: 4~20mA, 1-5VDC



### Power supply

Independent linear direct-current power supply is suggest to be adopted for the power supply of pressure transmitter, over large resistive load will result in a large pressure drop, so it requires to calculate the all-in resistance of signal cable, display meter and other record and display equipment, to ensure the voltage provided to the pressure transmitter accord with normal operating requirements.

- Standard current signal output+transistor output: 12-30VDC,
- Modbus-RTU/RS485 output+standard current signal output: 12-30VDC,
- Transistor output: 12-30VDC.

## Grounding

- Using cable with shielded twisted-pair signal has the best effect, to avoid ground loop, shielded layer adopts single-end grounded.
- Transient resistance built-in module only effect in the case of good grounding. Metal shell and internal grounding terminals are used to the nearest grounded directly.

### Cable protection system

### Standard protection system



In order to avoid the liquid flowing along with the cable to flow into the terminal box or result in waterproof joint effusion, an U-shaped ring needs to be configured between pull box and pressure switch as the picture shows, and please ensure the U-shaped bottom is

under the pressure switch. Considering the maintenance and replacement, enough cable length needs to be reserved.

### Intrinsic safety type

A The signal connection of intrinsic safety instruments needs to refer to isolated safety barrier factory instructions.

### Zero point adjustment

- Please make adjustment after installation because the mounting position will affect zero setting.
- Please ensure the vessel is absolutely empty (No pressure or medium on
- the measuring diaphragm and the vessel connect to the atmospheric air).
- Power connection please refer to "Keys operation manual-keyboard shortcuts-PV=0".
- Please set PV=0 after three weeks of installation to ensure the best accuracy.
- Set PV=0 each year.
- A Zero point adjustment is only available for gauge pressure transmitter



## Depot repair

- Please finish the following steps before the depot repair:
- Removal of all the residues which would be harmful to human health, such as inflammable, poisonous, cancerigenic and radioactive substances.
- ▲ Do not return the instruments back if can not ensure the dangerous residues are removed, eg: the dangerous residues permeate into cracks or spread to the plastic.

# Discard disposal

- The instrument is not restrained of WEEE instruction 2002/96/EG and laws of relevant countries.
- Please pass the instrument to specialized recycling companies other than local recycling points.

## Alarm settings function

Lable	Item	Setting range	Description	
SPx (Note1)	OUT upper limit	-99999~99999	Upper limit value of transistor output	
Rpx	OUT lower limit	-99999~99999	Lower limit value of transistor output	
SPDTx	OUT output delay	0.0~60.0(S)	Delay time before transistor output active	
RPDTx	OUT reset delay	0.0~60.0(S)	Delay time before transistor output reset	
Modex	OUT working mode	Modex=0	No output. OUTx keeps reset state	
		Madavad	Measured value > SPx, delay SPDTx, OUTx active (Note2)	
		Modex=1	Measured value < RPx, delay RPDTx, OUTx reset (0V, the same below)	
		Ma dave 0	Measured value > SPx, delay SPDTx, OUTx reset	
		Modex=2	Measured value < RPx, delay RPDTx, OUTx active	
	working mode		RPx < measured value < SPx, delay SPDTx, OUTx active	
		Modex=3	Measured value > SPx or measured value < RPx, delay RPDTx, OUTx reset	
			Measured value > SPx or measured value < RPx, delay SPDTx, OUTx active	
		Modex=4	RPx < measured value < SPx, delay RPDTx, OUTx reset	

Notes: 1. x = 1 or 2,  $SPx \ge RPx$ 

2. Active electrical level is 2V lower than power supply level. Eg, power supply level is 24V, then active electrical level is 22V.

### Application

### High level alarm

Output alarm signal when pressure is higher than 1MPa. Normal setting: SP1=1MPa, RP1=0.95MPa, Mode1=1, SPDT1=1, RPDT1=1. Pressure rises to 1MPa, delay 1s, OUT1 active (on); pressure drops to 0.95MPa, delay 1s, OUT1 reset (off)

### Low level alarm

Output alarm signal when pressure is lower than 1MPa. Normal setting: RP1=1MPa, SP1=1.05MPa, Mode1=2, SPDT1=1, RPDT1=1. Pressure drops to 1MPa, delay 1s, OUT1 active (on); pressure rises to 1.05MPa, delay 1s, OUT1 reset (off)

### Window function

Starting devices normally requires pressure is within the range 0.5~1MPa. Normal setting: SP1=1MPa, RP1=0.5MPa, Mode1=3, SPDT1=1, RPDT1=1. Pressure rises to 1MPa, delay 1s, OUT1 active (on); pressure rises to 1MPa, delay 1s, OUT1 reset (off); Pressure drops to 1MPa, delay 1s, OUT1 active (on); pressure drops to 0.5MPa, delay 1s, OUT1 reset (off)



#### Automatically keep pressure function

Applying pressure on a device by a compressor and keeping the pressure within the range 0.5~1MPa need two ways output. The first way output controls the compressor and the second way output controls the device. The first way output setting: SP1=0.9MPa, RP=0.6MPa, Model=2, SPDT1=1, RPDT1=1. The first way contact controls the power supply of compressor through intermediate relay to disconnect once the pressure is higher than 0.9MPa and connect once the pressure is lower than 0.6MPa. The pressure value needs to be controlled within 0.6~0.9MPa. The second way output setting: SP2=1MPa, RP2=0.5MPa, Mode2=3, SPDT2=1, RPDT2=1. Once the working pressure of device is not within the range 0.5MPa~1MPa, after 1s, the second way contact controls the alarm output of the device through intermediate relay to ensure the abnormal working pressure of the device can be discovered and handled in time.

## Oscillogram of alarm function

