

Highly Precise Digital Output Intelligent Pressure Transmitter

IQPT-D



Applications

- Hydrological water resources
- Petroleum and petrochemical industry
- Electricity industry
- Mechanical engineering
- Hydraulic and pneumatic control

Features

- Digital temperature compensation and non-linearity correction
- RS485 interface (customized protocol) or HART® protocol
- Support network application
- Intrinsic safety type, Ex ia IIB T6 Ga
- CE, RoHS and CCS approved

Introduction

IQPT-D industrial pressure transmitter is the highly accurate and stable intelligent pressure transmitter. It uses digital temperature compensation, non-linearity correction technics and the most advanced transmitter production technique, the whole product has compact size, high accuracy, light weight and wider pressure range, can be used for flow pressure precise measurement. The product will instead the 2-wire working 4mA~20mA DC output analogous signal.

Specifications

Range	-1bar...0mbar ~ 100mbar...1000bar
Overpressure	≤ 2 times FS or 1100bar (minimum value is valid)
Pressure Type	gauge, absolute, sealed gauge
Accuracy	see Accuracy on page 2
Long-term Stability	±0.2%FS/year
Compensated Temperature	-10°C ~ 70°C
Application Temperature	-30°C ~ 80°C (B1 type, B3 type)
	-20°C ~ 70°C (B2 type, cable material: PE, PVC)
	-20°C ~ 80°C (B2 type, cable material: PUR)
	-20°C ~ 60°C (intrinsic safety type)
Storage Temperature	-40°C ~ 85°C
	-20°C ~ 85°C (B2 type)
Vibration	20g, 20Hz ~ 5000Hz
Shock	20g, 11ms
Protection Rating	IP65
Weight	≤230g

Accuracy

Pressure Type	Range	Accuracy
Gauge (G)	0mbar ~ 100mbar < X < 200mbar	±0.5%FS
	200mbar ≤ X ≤ 700mbar	±0.25%FS
	700mbar < X ≤ 35bar	±0.25%FS
	-1bar ~ -350mbar < X ≤ 2bar	±0.1%FS
	-1bar ~ -350mbar < X < 2bar ~ 35bar	±0.5%FS
Absolute (A)	0mbar ~ 700mbar < X ≤ 1bar	±0.5%FS
	1bar < X ≤ 10bar	±0.25%FS
	10bar < X ≤ 1000bar	±0.25%FS ±0.1%FS
Sealed gauge (S)	35bar < X ≤ 1000bar	±0.25%FS
		±0.1%FS

Note: the accuracy is between compensated temperature range (-10°C ~ 70°C), HART output products can not reach 0.1% accuracy;
 Test standard: GB/T 17614.1-2015/IEC60770-1:2010

Output Signals

Output Signal	Power Supply	Output Format	Load Resistance
4mA~20mA DC (E)	10V~28V DC	2-wire	≤(U-10)/0.02 (Ω)
RS485, ASCII protocol (R4) RS485, MODBUS_RTU protocol (R8)		4-wire	RS485 bus can load 99 transmitters
HART® protocol (H, non-explosion-proof type)	12V~30V DC	2-wire	≤(U-12)/0.02 (Ω)



Note: Intrinsic safety type product is powered by safety barriers, power supply is 10V~12V DC.

Outline Dimensions

unit: mm

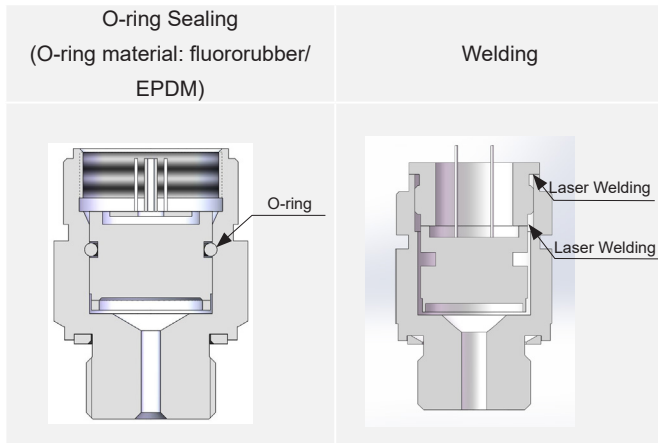
Hirschmann 4-pin Plug Connector(B1)	Cable Type (B2)	7-pin Plug Connector (B3)

Electrical Connection

Definition	Hirschmann 4-pin Plug Connector (B1)		Cable (B2)		7-pin Plug Connector (B3)	
	current 2-wire	RS485 4-wire	current 2-wire	RS485 4-wire	current 2-wire	RS485 4-wire
+V	1	1	red	red	1	1
+OUT	2	2	black	black	2	2
EARTH (explosion-proof)		-	blue	blue	7	7
RS485A	-	3	-	yellow/green	-	4
RS485B	-		-	white	-	5

Note: current output is available only for explosion-proof products with B1 electrical connection

Sensor Sealing



Materials

Wetted Parts

Isolated Diaphragm: SS 316L/Tantalum

Pressure Port: SS 304/SS 316L/Hastelloy C

Non-wetted Parts

Housing: SS 304/SS 316L

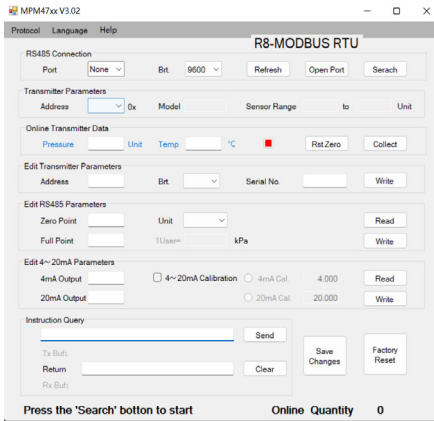
Cable: PE/PUR/PVC

Software

RS485 transmitter software

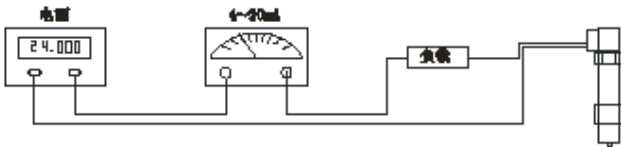
47xx software

Through RS232/485 transfer module, basic information about RS485 interface transmitter can be read including level range, temperature compensation range, version etc. Display actual level value, setting new zero, analog output, address.

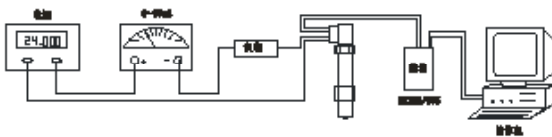


Application Examples

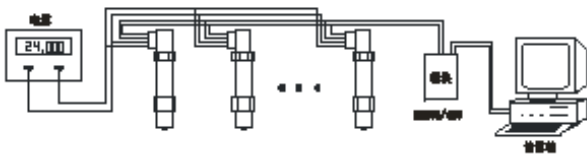
diagram of 2-wire transmitter pressure measurement



wiring diagram of computer field tuning



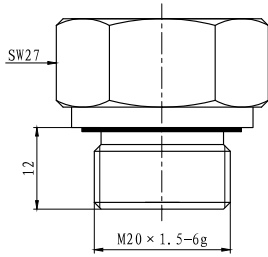
wiring diagram of RS485 interface network application



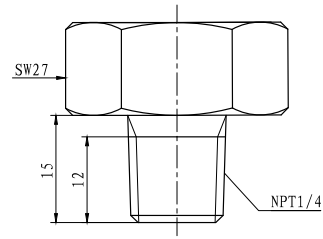
Process Connection

unit: mm

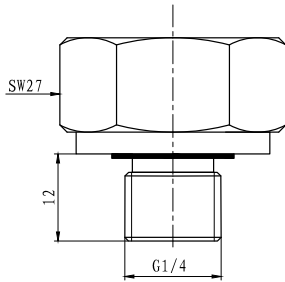
M20×1.5 male, end face seal (C1)



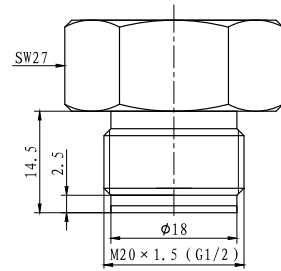
NPT1/4 male(C6)



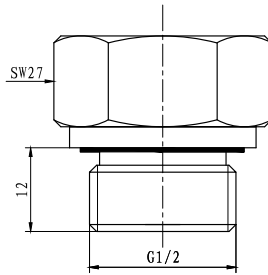
G1/4 male, end face seal (C2)



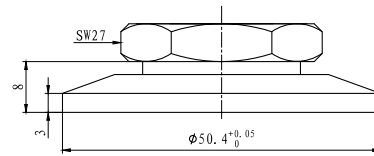
M20×1.5 or G1/2 Flush Structure (PC1/PC3)



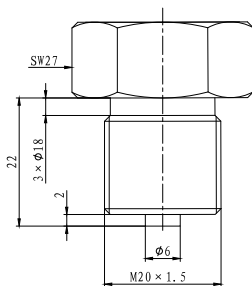
G1/2 male, end face seal (C3)



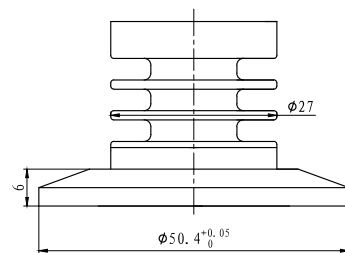
DN25 clamp(PD1)



M20×1.5 male, waterline seal (C5)



DN25 clamp with heat sink (PD1s)



Ordering Guide

IQPT-D	Intelligent Pressure Transmitter								
	Range	Measurement Range -1bar...0mbar ~ 100mbar...1000bar							
	[0 ~ X]mbar or barL	X: actual measured range, L means cable length when electrical connection is B2							
	Code	Output Signal							
	E	4mA~20mA DC							
	R4	RS485 communication interface, customized ASCII protocol							
	R8	RS485 communication interface, MODBUS_RTU protocol							
	H	HART® protocol (for non-explosion-proof type)							
	Code	Material							
		Isolated Diaphragm	Pressure Port				Housing		
	22	SS 316L	SS 304				SS 304		
	24	SS 316L	SS 316L				SS 316L		
	25	Tantalum	SS 304				SS 304		
	35	Tantalum	Hastelloy C				SS 304		
	Code	Electrical Connection ^①							
	B1	4-pin Plug Connector							
	B2	Cable Connection							
	B3	7-pin Plug Connector							
	Code	Process Connection							
	C1	M20×1.5 male, end face seal							
	C2	G1/4 male, end face seal							
	C3	G1/2 male, end face seal							
	C5	M20×1.5 male, waterling seal							
	C6	NPT1/4 male							
	PC1	M20×1.5 flush structure					0mbar ~ 200mbar...350bar		
	PC3	G1/2 flush structure							
	PD1	DN25 clamp					0mbar ~ 350mbar...350bar		
	PD1s	DN25 clamp with heat sink							
	Code	Accessory							
	null	no Accessory							
	M6	4 digits LED digital indicator (4mA ~ 20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)							
	M7	4 digits LCD digital indicator (4mA ~ 20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)							
	Code	Certification Requirement ^②							
	null	no certification requirement							
	i	intrinsic safe Ex ia IIC T6 Ga							
	T	ship-use							
	Code	Pressure Type							
	G	gauge							
	A	absolute							
	S	sealed gauge							
IQPT-D	[0 ~ 16]bar	E	22	B1	C2	M6	i	G	Complete Type Specification

Ordering Guide

1. "①", when electrical connection is B1 or B3, please specify us if cable is needed.
2. "②", refers to certification requirements. For the intrinsically safety type, current output is available only. The product can be intrinsically safe and suitable for ship-use simultaneously or can be flameproof and suitable for ship-use simultaneously.
3. The application temperature range of fluororubber O-ring sealing is $-20^{\circ}\text{C} \sim 250^{\circ}\text{C}$, when application temperature $< -20^{\circ}\text{C}$, EPDM O-ring is needed.
4. The cable length is 1.5m by default, cable material is available for 3 types: PE cable is provided as default; if other material is needed, please specify in the order.
5. When ordering the transmitter with M6 or M7 indicator, power supply should $\geq 20\text{V DC}$.
6. Environmental temperature should be $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$ when ordering the transmitter with M6 indicator, environmental temperature should be $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$ when ordering the transmitter with M7 indicator, indicator setting can refer to our indicator lectotype, which can be found on our company's website.
7. If metrology verification certificate is needed or there are other requirements, please contact us and specify it in the order.