

QYB401

High Precision Differential Pressure Transmitter

Overview

QYB401 monocrystalline silicon differential pressure transmitter adopts a monocrystalline silicon sensor chip made of Germany's advanced MEMS technology. It has a double-diaphragm structure and combines with exquisite production technology to achieve high accuracy and ultra-high stability of the product. The built-in intelligent signal processing module realizes the perfect combination of pressure and temperature compensation, providing reliable measurement accuracy and excellent long-term stability under a wide range of static pressure and temperature changes.



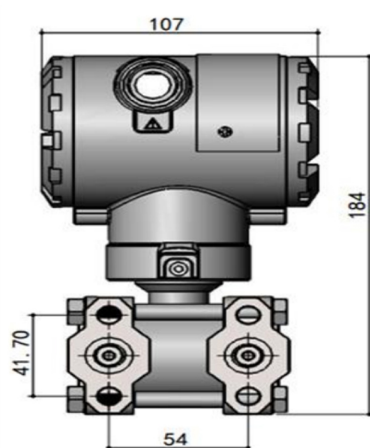
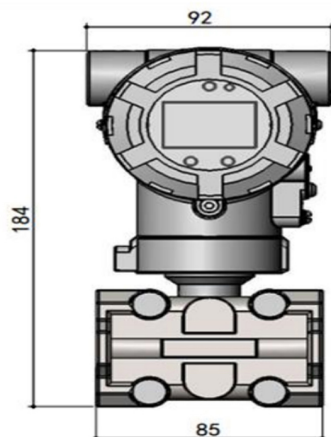
Features

- High-precision grade, German high-precision monocrystalline silicon sensor chip, accuracy $\leq \pm 0.05\%$
- Strong load resistance, double overload protection diaphragm design, single overvoltage up to 42MPa
- Intelligent static pressure compensation and temperature compensation eliminate the influence of temperature, static pressure and overload on the transmitter, minimizing the comprehensive test error on site.
- Stability can be maintained at 0.1FS%/10 years. Flexible remote assistance debugging function
- Remote and local parameter setting function configuration can be realized through Hart or RS485 communication and panel buttons.
- Suitable for petroleum/chemical/fossil industry, matched with throttling device to provide accurate flow measurement of pressure and liquid level in pipelines and storage tanks.
- Electricity/city gas, places requiring high stability and precision in pressure, flow, liquid level measurement, etc.
- Pulp/paper industry, etc., used in furnace pressure, negative pressure measurement and other places that require high stability and high precision measurement.
- Mechanical equipment/shipbuilding, used to strictly control pressure, flow, liquid level, etc.

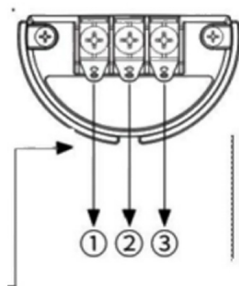
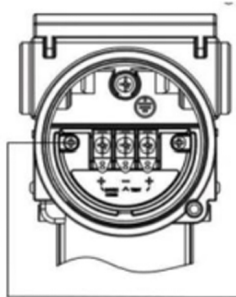
Performance Parameter

Measuring Medium	Measuring the pressure of liquids, gases or vapors
Measurement Type	Differential pressure measurement, absolute pressure measurement
Output	4~20mA+HART/RS485/FF
Range	(0~0.6)KPa~6KPa/TD: 10:1
	(0~2)KPa~40KPa/TD: 10:1
	(0~2.5)KPa~250KPa/TD: 10:1
	(0~10)KPa~1MPa/TD: 10:1
	(0~30)KPa~3MPa/TD: 10:1
Accuracy	$\pm 0.05\%F.S./\pm 0.075\%F.S./\pm 0.1\%F.S$
If TD>10 (TD=maximum range/adjustment range)	$\pm (0.005*TD)\% / \pm (0.0075*TD)\% / \pm (0.01*TD)\%$
Ambient Temperature Effect	The total influence at (-25~+65)°C is $\pm (0.15*TD+0.05)\%*Span$ The total influence at (-40~-25)°C and (+65~+85)°C is $\pm (0.2*TD+0.05)\%*Span$
Overvoltage Effects	$\pm 0.075\%*Span$
long Term Stability	$\pm 0.1\%*Span/10year$
Power Supply Impact	0.001%/10V(12~36)V DC, Negligible
Insulation Resistance	More than 100MΩ to ground (DC500V)
Dielectric Strength	AC 500V50/60Hz to ground, 1 minute
Ambient Temperature	-40~+85°C -20~+65°C(With display)
Alarm Current Goes Offline	3.6mA
Alarm Current Goes Online	21mA
Process Temperature	-40~125°C
Storage Temperature	-40~+85°C -20~+65°C(With display)
Isolation Diaphragm	SS316L/Hastelloy C-276/Tantalum/Overgild
Process Connection Material	SS304/SS316L
Nuts And Bolts	SS(A2-70)/Galvanized carbon steel(12.8)
Pressure Transmitter Housing	Aluminum alloy material, surface sprayed with epoxy resin/Stainless Steel materials
Sealing Ring	Nitrile rubber (NBR), fluorine rubber (FKM), polytetrafluoroethylene (PTFE)
Housing Seal	Nitrile rubber
Filler	Silicone oil, edible oil, FL oil
Electrical Connections	M20*1.5 cable sealing buckle, terminal block suitable for (0.5~2.5)mm² wires
Thread	NPT1/2F NPT1/2M G1/2M M20*1.5F
Protection Level	IP65, IP67 (explosion-proof type)
Weight	2.6Kg (without mounting bracket, process connection accessories)

Dimensions



Electrical connection diagram



①	+	Power and HART communication terminals	digital output
②	-		
②	-	External indicator (Ammeter) terminal	
③	+		

Electromagnetic Compatibility Environment

- Electromagnetic Compatibility Schedule
- The performance of this product complies with the requirements of the European EMC directive "Electromagnetic Compatibility Directive 2002/108/EC" standard.
- EN61326-1:2006 Class A (industrial area)

Serial Number	Test Experiment	Basic Standards	Test Conditions	Performance Level
1	30~230MHz	EN55011:1998 +A1:1999/+A2:2002 (Group1 Class A)	40dB(μV/m) quasi-peak, measured at a distance of 10 meters	\
2	230~1000MHz		47dB(μV/m) quasi-peak, measured at 10 meters distance	\

- Anti-interference requirements
- EN61326-1:2006 Table2(industrial area)

3	Electrostatic Discharge	IEC 61000-4-2:1995 +A1:1998+A2:2001	2/4KV(contact) 2/4/8KV(Air)	B
4	Electromagnetic field	IEC 61000-4-3:2002 +A1:2002	10V/m(80~1000MHz) 3V/m(1.4~2.0GHz) 1V/m(2.0~2.7GHz) 80%Am(1KHz)	A
5	Rated Power Frequency Electromagnetic Field	IEC 61000-4-8:1993 +A1:2001	30A/m 50/60Hz	A
6	Burst	IEC 61000-4-4:2004	2KV	B
7	Surge	IEC 61000-4-5:1995 +A1:2001	1.2/50μs(Voltage) 8.0/20μs(Current) 0.5/1kV Fire Wire - Fire Wire 0.5/1/2kV Fire Wire - Bottom Wire	B
8	Conducted RF	IEC 61000-4-6:1996+A1:2001	0.15~80MHz 3V 80%AM(1KHz)	A

Performance standard definition:

A: During the measurement process, it meets the standard performance index requirements.

B: During the measurement process, there is a temporary performance degradation or loss of function/performance, but it can recover on its own.

Ordering Guide

QYB401	High Precision Differential Pressure Transmitter	
DP	Code	Connection Type
	DP	Intelligent differential pressure transmitter
	DL	Single flange level transmitter(DN25~DN150)
	DF	Single flange remote differential pressure transmitter(DN25~DN150)
	DWF	Double flange remote transmission differential pressure transmitter(DN25~DN150)
P2	Code	Fixed Work Stress
	P2	16MPa
	P3	25MPa
	P4	42MPa
OB	Code(Range)	
	OB (0~0.6)KPa~6KPa	OF (0~10)KPa~1MPa
	OC (0~2)KPa~40KPa	OG (0~30)KPa~3MPa
	OE (0~2.5)KPa~250KPa	
E	Code	Output
	E	4-20mA+HART
	R	RS485
L1	Code	Electrical Interface Selection
	L1	Aluminum alloy shell, electrical interface M20*1.5
	L2	Aluminum alloy shell, electrical interface NPT1/2
	G1	Stainless steel 316L shell, electrical interface M20*1.5
	G2	Stainless steel 316L housing, electrical interface NPT1/2
S	Code	Isolation Diaphragm
	S	SS316L(Related wetted parts SS304)
	H	SS316L(Related wetted parts SS316)
	C	HC-276(Related wetted parts SS316)
	T	Tantalum(Related wetted parts SS316)
	I	Titanium(Related wetted parts SS316)
	G	SS316L gold plated(Related wetted parts SS316)
G	Code	Sensor Filling Fluid
	G	Silicone oil
	F	Fluorine oil
	S	Edible oil
E0	Code	Explosion-proof Certification
	E0	Non-explosion proof
	E1	Exia II BT6Ga
	E2	Exdb CT6Gb
	E3	Extd A21IP67 T85°C
W	Code	Mounting Brackets
	W	No mounting bracket
	P	Tablet mounting bracket
	Z	Right angle mounting bracket
T0	Code	Thread
	T0	1/4 NPT(F)
	T1	1/4NPT-M20*1.5(M)-φ14 pressure tube (1 set)
	T2	1/4NPT-M20*1.5(M) T-type joint-φ14 pressure tube (1 set)
	T3	1/4NPT-1/2NPT(F) waist connector
	T4	1/4NPT-G1/2(F) waist connector
	T5	Three Valves Manifold