TFDP-70

SMART DIFFERENTIAL PRESSURE TRANSMITTER

Trumen
sensing matters

Product Overview

TFDP-70 series pressure (differential pressure) transmitters are available in various forms and can accurately and reliably measure gauge pressure, absolute pressure, differential pressure, or liquid level. The transmitter outputs a two-wire 4-20 mA DC standard. In addition to signals, it can also provide digital signal output through HART protocol to facilitate remote configuration and monitoring using software.

TFDP-70 is made from high-quality metal capacitive differential pressure sensor. The TFDP-70 transmitter is suitable for measuring flow, liquid level and pressure. Smart pressure transmitter is microprocessor based pressure-sensing instrument, it have high performance and reliability with the flexibity of digital electronics.

Standard Pressure Ranges

S. No.	Nominal pressure	SG	SD	SH
1	1kPa	▪	▪	
2	6kPa	▪	▪	
3	40kPa	▪	▪	▪
4	100kPa	▪	▪	▪
5	400kPa	▪	▪	▪
6	1mPa	▪	▪	
7	4mPa	▪	▪	▪
8	10mPa	▪	▪	▪

SG : Gauge pressure
SD : Differential pressure
SH : High static pressure

Features

- High Accuracy :±0.075%FS(Standard),±0.05%FS(Platinum).
- Excellent over pressure performance under micro range.
- Flexible range compression range ratio 10:1 (100:1 optional).
- Excellent envirnonment adaptability intelligent static pressure compensation & temperature compensation.

Applications

TFDP-70 Smart differntial pressure transmitter accurately measure pressure & level used in different process industries like-

- Process Control Systems
- Chemical Industry
- Energy Industry
- Machine building
- Paper & pulp Industry
- Sugar Industry
- Dairy Industry

Working Principle

The monocrystalline silicon sensor chip made of MEMS technology and the monocrystallinesilicon double beam suspension design achive high accuracy, ultra-high overvoltage performance and excellent stability. Embedded intelligent signal processing module realizes the perfact combination of static pressure and temperature compensation, which can be used in a wide range of Provides extremely high measurement accuracy and long-term stability under static pressure and temperature changes.

It can accurately measure the differential pressure and convert it into a 4-20mADC output signal. The sensor can be operated locally through three buttons, or remotely through a universal handheld terminal, configuration software. It can disply and configure the sensor without affecting the 4-20mA DC output signal.

TFDP -70: Smart Differential Pressure Transmitter

Performance Specifications

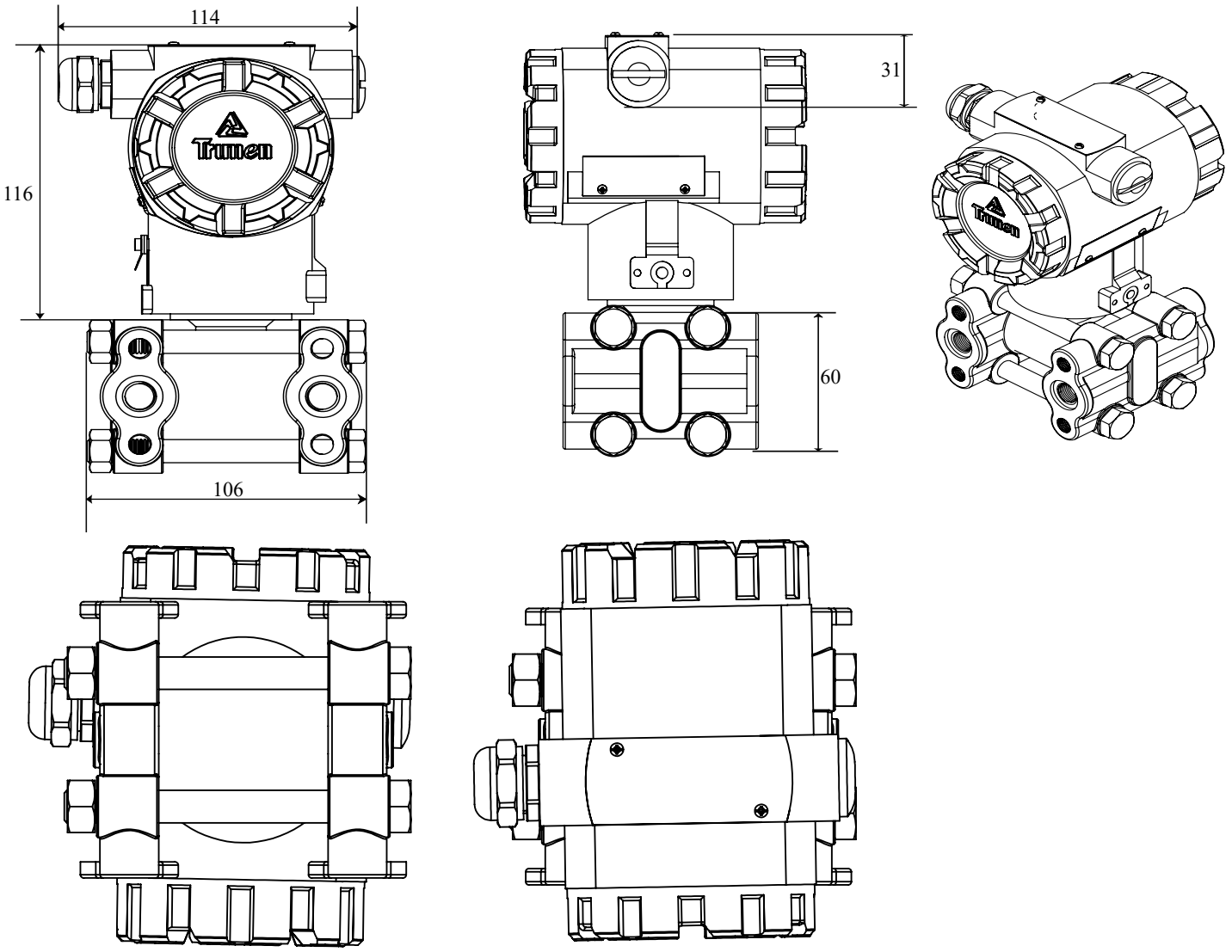
Parameter	Value	Notes
General		
Output Signal	Analog: 4~20mA(2 wire) Digital: HART Communication protocol	
Power Supply(Vs)	General Purpose 10.5-45VDC Explosion Proof 10.5-26VDC	
Load Resistance	0~1500ohm (common),250~550ohm (with HART)	
Display	5 digit LCD digital disply with backlight	
Start Time	<5 seconds	
Refresh Time	0.2 seconds	
Dump Adjusting	0.2~15 seconds	
Operating Temperature Range	-40 to +85°C (no display) -20 to +70°C (with display) -30 to +60°C (Explosion-proof)	
Storage Temperature Range	-40 to +100°C (no display) -40 to +85°C (with display)	
Media Temperature Range	-40 to +104°C (silicone oil) -18 to +71°C (inert liquid)	
Humidity Scale	5%~100%RH	
Static Pressure Limit	SD: 6.89MPa(for range2) SD: 13.8MPa(for range3,4,5,6,7,8) SH: 31.0MPa(for range4,5,6,7)	
Over Pressure Limit	SG: 13.8MPa(for range3,4,5,6,7,8) SG: 31.0MPa(for range9) SG: 51.7MPa(for range0)	
Parameter		
Accuracy	0.05%FS,0.075%FS,0.1%FS, 0.2%FS, 0.5%FS	
Temperature Effect	Total effects per 28°C(50°F)change: For range 2: ±[0.05% URL+0.25% Span] For other ranges: ±[0.025% URL+0.125% Span]	
Long-Term Stability	In 12 months, ±0.1% of maximum range	
Static pressure effect	For range 2: ±1%URL/6.9MPa For range 3: ±0.5%URL/6.9MPa For other ranges: ±0.25%URL/6.9MPa	
Location installed effect	The maximum of the zero point movement is 0.25kPa 0.05	
Power Effect	<0.005%/Vrange calibrated	
Physical Specifications		
Electrial connection	2x1/2"NPT	
Process port connection	1/4-18NPT, 1/2-14NPT	
Material NetWeight Output Signal	Isolated membrane: 316LSS, Hastelloy-C, Monel, Tantalum Exhaust/outlet valve: 316SS, 316LSS Flange and connector: 316SS O-ring: fluororubber Bolt: Zinc plating carbon steel housing: low copper of albronze	
	3.6kg(with display), 3.4kg(no display)	

Notes

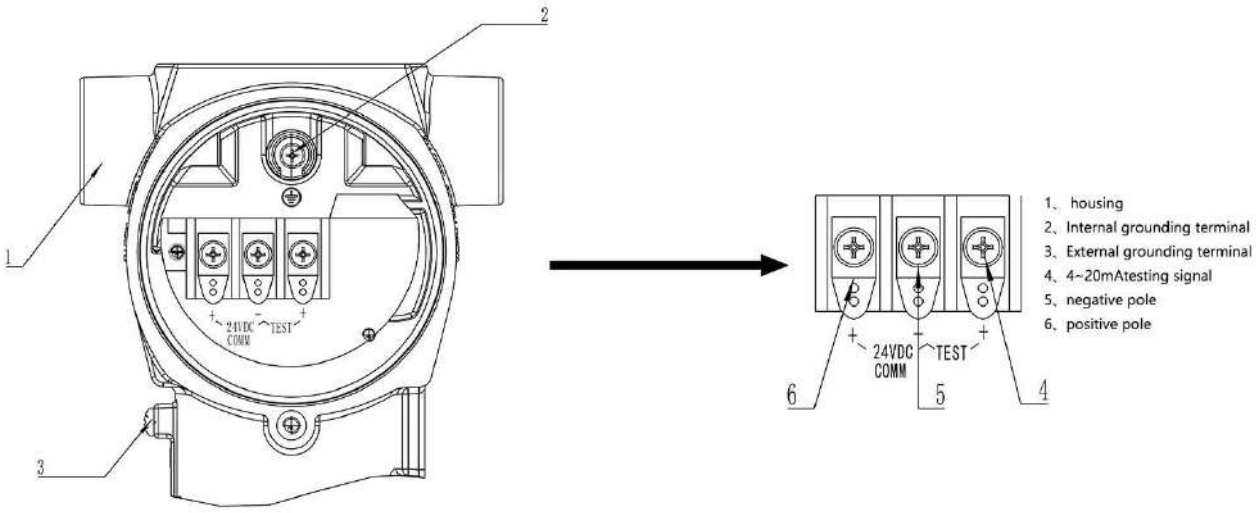
1. All values measured at 25°C(77°F)
2. Including non-linearity, hysteresis and repeatability.

The listed specifications and dimensions are subject to change without prior notice.

MECHANICAL DIMENSION



ELECTRICAL CONNECTION



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Ordering Information

Option1: Model										
TFDP-70	Smart Differential Pressure Transmitter									
	Option2: Enclosure									
	HAN	Cast Aluminum, Weatherproof Enclosure, Gland 2x1/2"NPT								
	HAX	Cast Aluminum, Flameproof Enclosure, Gland 2x1/2"NPT								
		Option3: Pressure Range								
		001	1kPa							
		002	6kPa							
		003	40kPa							
		004	100kPa							
		005	400kPa							
		006	1MPa							
		007	4MPa							
		008	10MPa							
			Option 4 : Pressure Type							
			G	Gauge Pressure Transmitter						
			A	Absolute Pressure Transmitter						
			D	Differential Pressure Transmitter						
			H	High Static Pressure Transmitter						
				Option 5 : Output Signal						
				A	4...20mA Analog Signal					
				H	4..20mA+ HARTProtocol					
					Option 6: Accuracy					
					01	0.05% FS				
					02	0.065%FS				
					03	0.075% FS				
					04	0.1% FS				
					05	0.2% FS				
					06	0.5% FS				
						Option7: Membrane Material				
						S	SS316 L			
						H	Hastelloy-C			
						M	Monel			
						T	Tantalum			
							Option 8: Fill Fluid			
							A	Silicon Oil		
							B	FDL Food Grade Oil		
								Option 9 : Seal		
								F	FKM	
								P	PTFE	
								V	Viton	
								N	NBR	
									Option 10 : Port Connection	
									N1	1/4- 18 NPT
									N2	1/2- 14 NPT
										Option 11 : Flange Connection
										F005 1-1/2 " B16.5 ANSI/ASA 150#RF
										F006 2" B16.5 ANSI/ASA 150#RF
										F007 2-1/2" B16.5 ANSI/ASA 150#RF
										F008 3" B16.5 ANSI/ASA 150#RF
										F009 4" B16.5 ANSI/ASA 150#RF
										FLSS Special Flange

TFDP 70	HAN	0001	G	A	01	S	A	F	N1	F005	Example of Ordering Code: TFDP-70-HAN-0001-G-01-S-A-F-N1-F005

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