



TFPS-70

SMART PRESSURE TRANSMITTER



HART
COMMUNICATION PROTOCOL

Product Overview

TFPS-70 series pressure transmitters are available in various forms to accurately and reliably measure gauge pressure, absolute pressure, or liquid level. The transmitter outputs a two-wire 4-20 mA DC standard signal and can also provide digital signal output through HART protocol, facilitating remote configuration and monitoring using software. All transmitters feature an on-site digital display for intuitive indication of measured pressure. The LCD multi-segment display of the intelligent product can simultaneously display the measured pressure, current, or percentage, and display the percentage of the measured value in the form of a bar graph. When the transmitter fails, the LCD indicator will display an alarm message.

Standard Pressure Ranges

Nominal pressure	Gauge	Sealed Gauge	Absolute
-1.....0bar	•		
0...0.1bar	•		
0...0.2bar	•		
0...0.35bar	•		•
0...0.7bar	•		•
0...1bar	•		•
0...1.6bar	•		
0...2.5bar	•		•
0...4bar	•		•
0...6bar	•		•
0...10bar	•	•	•
0...16bar	•	•	•
0...25bar	•	•	
0...60bar		•	
0...100bar		•	
0...250bar		•	
0...400bar		•	
0...600bar		•	

Features

- High Accuracy : $\pm 0.075\%$ FS(Standard), $\pm 0.05\%$ FS(Platinum).
- Excellent overpressure performance: Up to 2.5 MPa for 10kPa range; up to 6MPa for 40kPa range.
- Flexible range compression: Range ratio 10:1 (100:1 optional)
- Equipped with 5-digit LCD digital display with backlight..

Applications

TFPS-70 Smart 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 monocrystalline silicon double beam suspension design, achieves high accuracy, ultra-high overvoltage performance, and excellent stability. The embedded intelligent signal processing module combines static pressure and temperature compensation for high measurement accuracy and long-term stability.

The sensor converts measured pressure into 4-20mA output signal and can be operated locally or remotely without affecting the output signal.

TFPS -70: Smart Pressure Transmitter

Performance Specifications

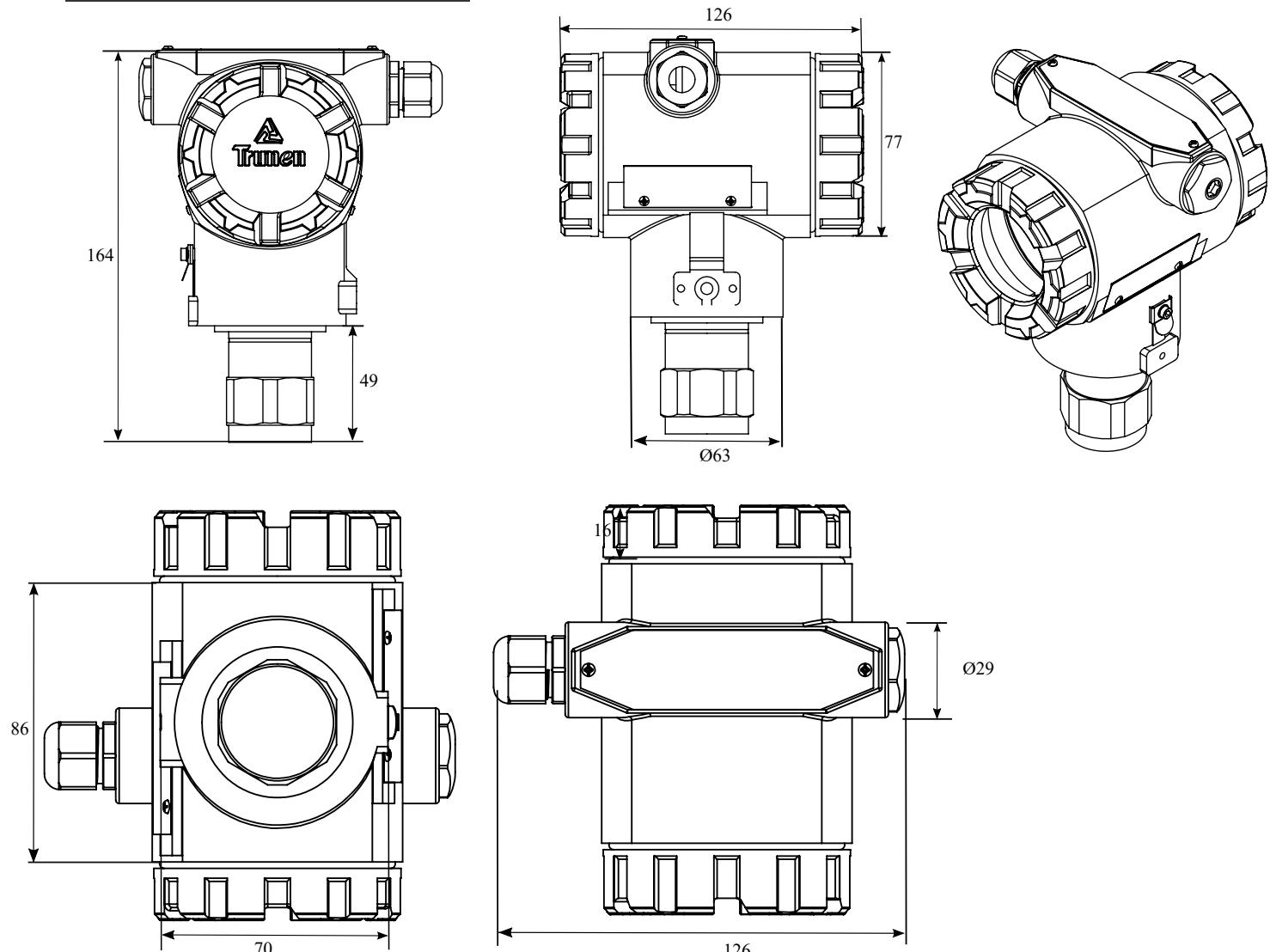
Parameter	Value	Notes
General		
Output Signal	Analog: 4~20mA(2 wire) Digital: HART Communication protocol	
Power Supply(Vs)	General Purpose 10.5~45VDC Explosion Proof 10.5~26VDC	
Load Resistance	0~1500ohm (common), 250~550ohm (with HART)	
Display	5 digit LCD digital display with backlight	
Start Time	<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)	
Approvals & Certifications		
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: $\pm[0.05\% URL + 0.25\% Span]$ For other ranges: $\pm[0.025\% URL + 0.125\% Span]$	
Long-Term Stability	In 12 months, $\pm 0.1\%$ of maximum range	
Static pressure effect	For range 2: $\pm 1\% URL / 6.9MPa$ For range 3: $\pm 0.5\% URL / 6.9MPa$ For other ranges: $\pm 0.25\% URL / 6.9MPa$	
Location installed effect	The maximum of the zero point movement is 0.25kPa 0.05	
Power Effect	<0.005%/V range calibrated	
Physical Specifications		
Electrical connection	2x1/2"NPT	
Material	Isolated membrane: 316LSS, Hastelloy-C, Monel, Tantalum	
Net Weight	Exhaust/outlet valve: 316SS, 316LSS	
Output Signal	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

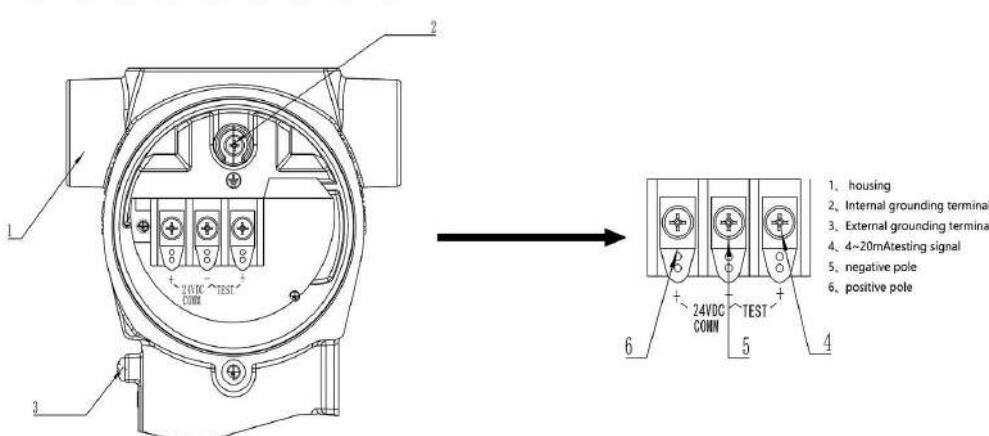
1. All values measured at 25°C(77°F)
2. Including non-linearity, hysteresis and repeatability.

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

MECHANICAL DIMENSION



ELECTRICAL CONNECTION



Specifications are subject to change without prior notice

Trumen Technologies Pvt. Ltd.

(an ISO 9001:2008 company)

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Ordering Information

Option1: Model						
TFPS-70	Smart Pressure Transmitter					
Option2: Enclosure						
HAN	Cast Aluminum, Weatherproof Enclosure, Gland 2x1/2"NPT					
HAX	Cast Aluminum, Flameproof Enclosure, Gland 2x1/2"NPT					
Option 3: Pressure Range						
N001	-1....0bar	0040	0....4bar	1000	0....100bar	
0001	0...0.1bar	0060	0....6bar	2500	0...250bar	
0003	0...0.35bar	0100	0...10bar	4000	0...400bar	
0007	0...0.7bar	0160	0....16bar	6000	0....600bar	
0010	0...1bar	0250	0....25bar	PRS	Customized Range	
0016	0...1.6bar	0350	0....35bar			
0025	0...2.5bar	0600	0....60bar			
Option 4 : Pressure Type						
G	Gauge Pressure Transmitter					
A	Absolute Pressure Transmitter					
S	Sealed Gauge 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	SS316L					
H	Hastelloy-C					
M	Monel					
T	Tantalum					
Option 8: Fill Fluid						
A	Silicon Oil					
B	FDL Food Grade Oil					
Option 9 : Process Connection						
M2	M20x1.5(Male)	F4	G1/4 (Female)	F5	1/4NPT(female)	
G4	G1/4 (Male)	N1	1/4NPT(male)	CS	Customer Specify	
G2	G1/2 (Male)	N2	1/2NPT)			

TFPS70 HAN 0001 G A 01 S A G2

Example of Ordering Code: TFPs-70-HAN-0001-G-01-S-A-G2