

PT-FD Flush Diaphragm Pressure Transmitter

User Manual



ABUS TECHNOLOGIES INC.

WARNING

- ✓ This manual should be passed on to the end user.
- ✓ The contents of this manual are subject to change without prior notice.
- ✓ All rights reserved.
- ✓ ABUS gives no warranty of any kind with regard to this manual, including, but not limited to, fitness for a particular purpose.
- ✓ If any question arises or errors are found, or if any information is missing from this manual, please inform your supplier or inform at info@abustek.com.
- ✓ The specifications mentioned in this manual are limited to those for the standard type under the specified model number break-down and do not necessarily apply for customized instruments.
- ✓ Please note that changes in the specifications, construction, or component parts of the instrument may not immediately be reflected in this manual at the time of change.
- ✓ If the customer or any third party is harmed by the use of this product, ABUS assumes no responsibility for any such harm owing to any defects in the product which were not predictable, or for any indirect damages.

Although Warning hazards are related to personal injury, and Caution hazards are associated with equipment or property damage, it must be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process system performance leading to personal injury or death. Therefore, comply fully with all Warning and Caution notices.

Information in this manual is intended only to assist our customers in the efficient operation of our equipment. Use of this manual for any other purpose is specifically prohibited and its contents are not to be reproduced in full or part without prior approval of Technical Communications Department, ABUS Technologies

HEALTH AND SAFETY

To ensure that our products are safe and without risk to health, the following points must be noted:

1. The relevant sections of these instructions must be read carefully before proceeding.
2. Warning labels on containers and packages must be observed.
3. Installation, operation, maintenance and servicing must only be carried out by suitably trained personnel and in accordance with the information given. Any deviation from these instructions will transfer the complete liability to the user.
4. Normal safety precautions must be taken to avoid the possibility of an accident occurring when operating in conditions of high pressure and/or temperature.
5. Chemicals must be stored away from heat, protected from temperature extremes and powders kept dry. Normal safe handling procedures must be used.
6. When disposing of chemicals ensure that no two chemicals are mixed.

Safety advice concerning the use of the equipment described in this manual or any relevant hazard data sheets (where applicable) may be obtained from the Company address on the back cover, together with servicing and spares information.

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1. INTRODUCTION

The PT-FD series of transmitters features, a flush diaphragm process connection. They are specifically designed for the measurement of viscous fluids or media containing solids that may clog a process connection. Flush diaphragm pressure transmitters are available in pressure ranges as low as 1500INWC.

The flush diaphragm could be easily flushed or cleaned to remove dirt. The model offers reliable and accurate pressure measurement of the gases, viscous liquids and slurries. And for the electrical parts adopt high performance chips, and deal with special amplified chip, integrated configuration, and smart profile. A wide range of electrical connection and process connection options are available to meet almost any requirement.

2. PRESENTATION

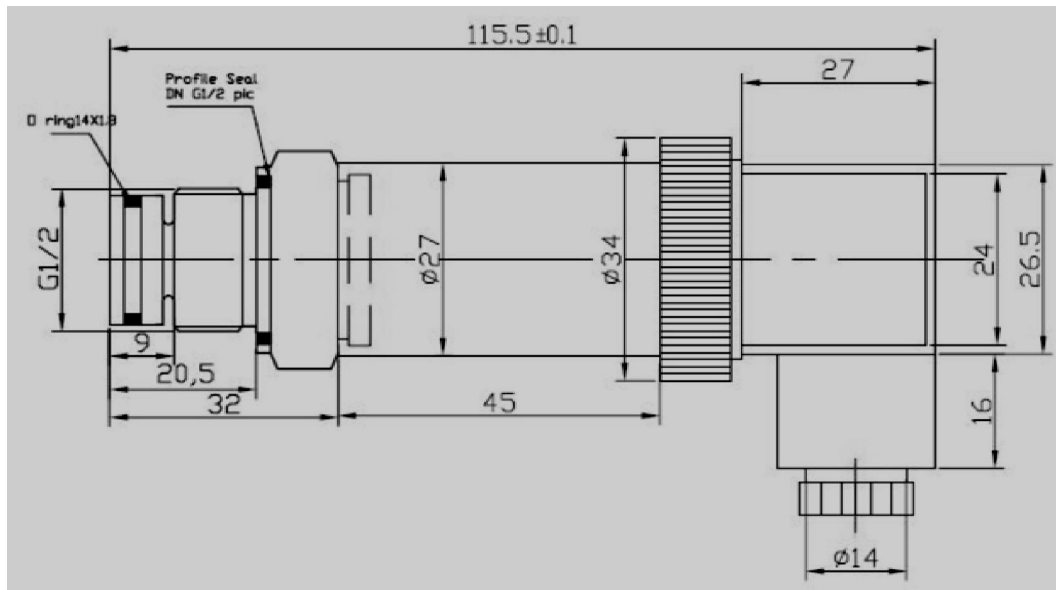
2.1 Features

1. Improved media compatibility.
2. Excellent resistance to corrosive processes.
3. Compact Design and Rugged construction.
4. Wide range of available process connections and signal outputs.
5. OEM process to fit application of the customers.
6. Resistant to pressure spikes and vibrations.
7. Stainless steel case and wetted parts
8. Can be assembled to diaphragm seals for special applications.

2.2 Technical Parameters

Accuracy:	±0.25%FS (BFSL) ±0.5%FS (limit point calibration)
Ranges:	-1 bar... 0 bar...600 bar
Output:	0...5 V, 0...10 V, 0...20 mA, 4...20 mA
Power Supply:	24Vdc (10~36Vdc)
Maximum Pressure:	1.5 x F.S.
Adjustability Zero / Span:	± 10 using potentiometers inside the instrument
Electrical Connections:	M12 connector, five Pin bendix connector, Hirschman and Direct down-lead.
Operating temperature:	-40 ~ 125°C (higher range, on request.)
Ambient temperature:	-20 ~ +80°C
Process Connection:	G1/4, M20 x 1.5, 1/4NPT (Customized On request)

3. DIMENSIONS



All dimensions in mm

4. ORDERING DETAILS

		TYPE		DESCRIPTION
Product	PT-FD	PT Series		Pressure Transmitter with Flush Diaphragm
Range		1	Absolute Pressure	0 ~ 25 bar
		2	Gauge Pressure	0 ~ 100 bar
		3	Vacuum Pressure	-760 ~ 0 mmHG
Lower Range		—		Enter value corresponding to 4mA
Upper Range		—		Enter value corresponding to 20mA
Output		D		4 ~ 20 mA
		V		0 ~ 10 V
		A		Others, specify
Process Connection		1		G 1/2"
		2		G 1"
		3		1/2" NPT
		4		1" NPT
Electrical Connection		W		DIN Connector (Hirschman Type)
		X		Thread Screw
		Y		Bendix Connector
		Z		Direct Down-lead
Integral Indicator (Refer LPI-PT)		LPI-PT		Loop Powered Indicator
		0		W/O Indicator
Zero and Span Adjustment		1		With Internal Z & S
		0		W/O

Example: PT-FD > 2 > __ > __ > D > 1 > W > LPI-PT > 1

STANDARD RANGE FOR PT SERIES

S.No.	GAUGE PRESSURE	S.No.	COMPOUND	S.No.	GAUGE PRESSURE	S.No.	COMPOUND
1	1.00 bar	19	-1 ~ 0.0 bar	7	16.00 bar	25	-1 ~ 9.0 bar
2	1.60 bar	20	-1 ~ 0.6 bar	8	20.00 bar		
3	2.50 bar	21	-1 ~ 1.0 bar	9	25.00 bar		
4	4.00 bar	22	-1 ~ 1.5 bar	10	40.00 bar		VACUUM
5	6.00 bar	23	-1 ~ 3.0 bar	11	60.00 bar	26	-760mm/Hg ~ 0 bar
6	10.00 bar	24	-1 ~ 5.0 bar	12	100.00 bar		

CUSTOMIZED RANGES ALSO AVAILABLE

Process Connection According to Pressure Range



1. Range >10MPa (100 bar)
2. Sticky and complicated medium is allowed



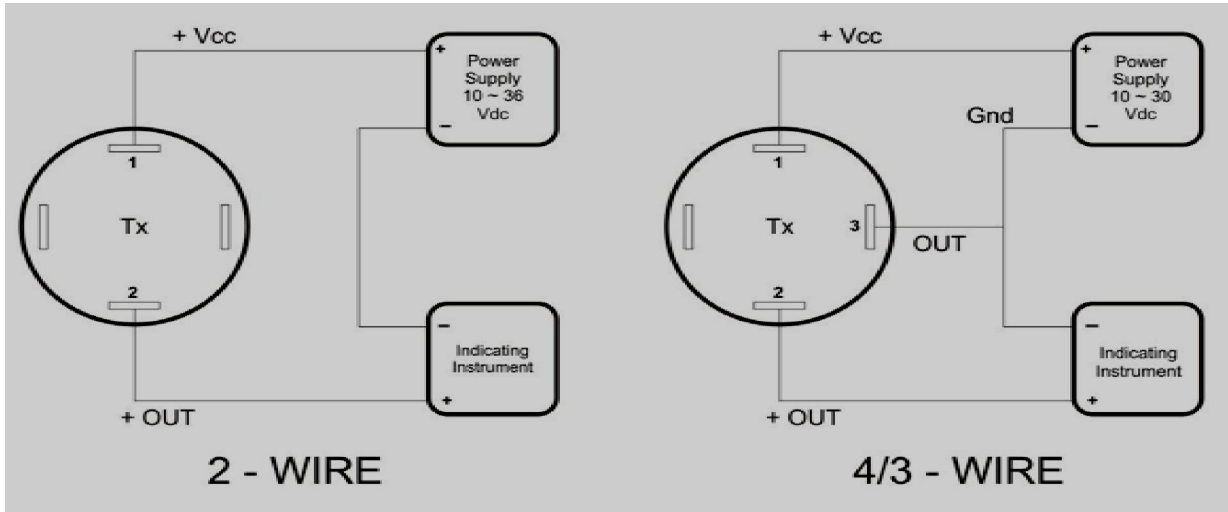
1. 1 MPa Range 10 MPa
2. If medium is very sticky, and can not keep smoothly flowing. It is unallowed.



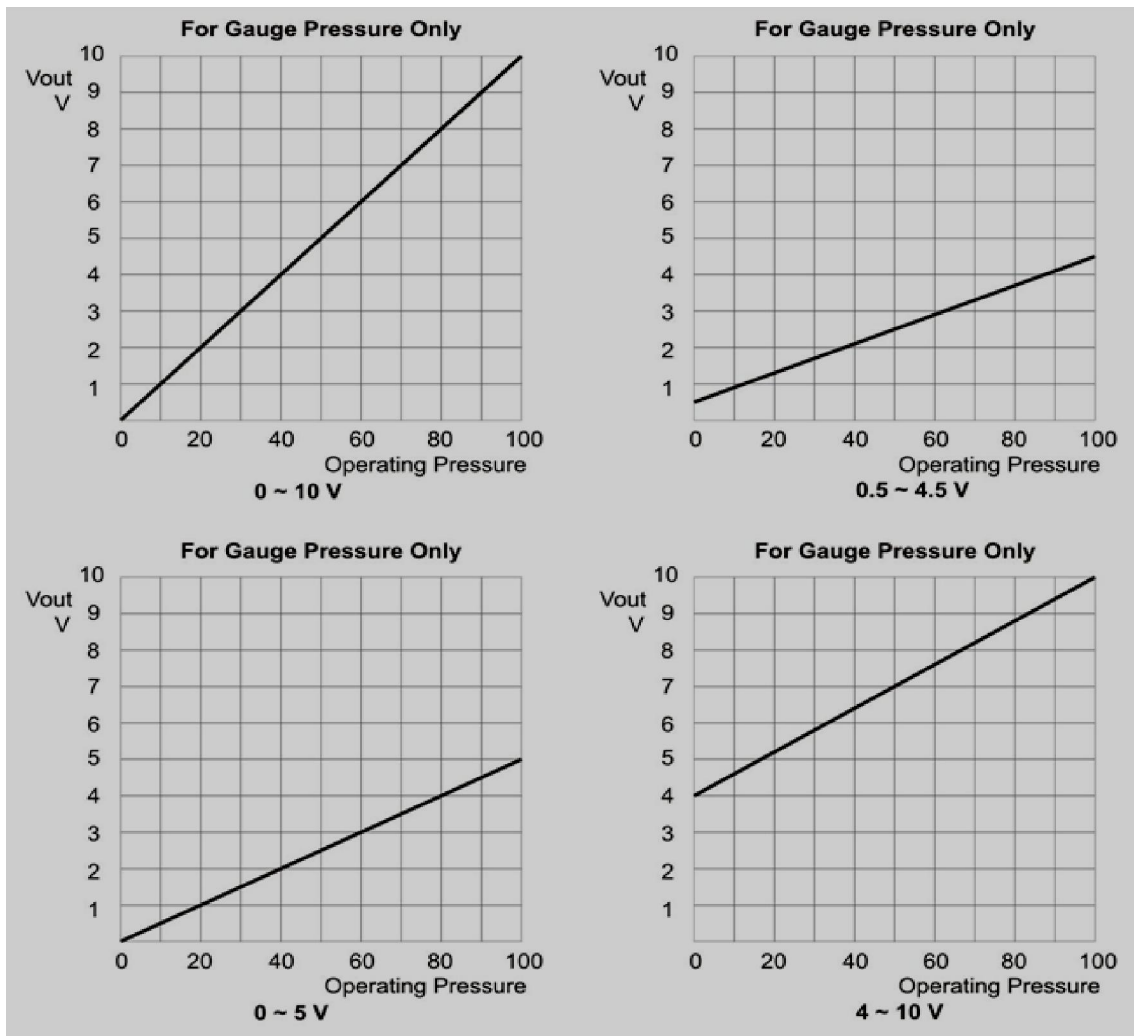
1. Range < 1 MPa
2. If medium is very sticky, and can not keep smoothly flowing. It is unallowed

5. CONNECTIONS

Models	Lead	Color	
Output: 1. 0~5V 2. 0.5~4.5V 3. 0~10V 4. DIN43650	1. Excitation +	Red	
	2. Signal +	Blue	
	3. Excitation - / Signal -	White	
Models	Lead	Color	
Output: 1. 4~20mA 2. DIN43650	1. Excitation + / Signal +	Red	
	2. Excitation - / Signal -	Black	



Output Characteristics



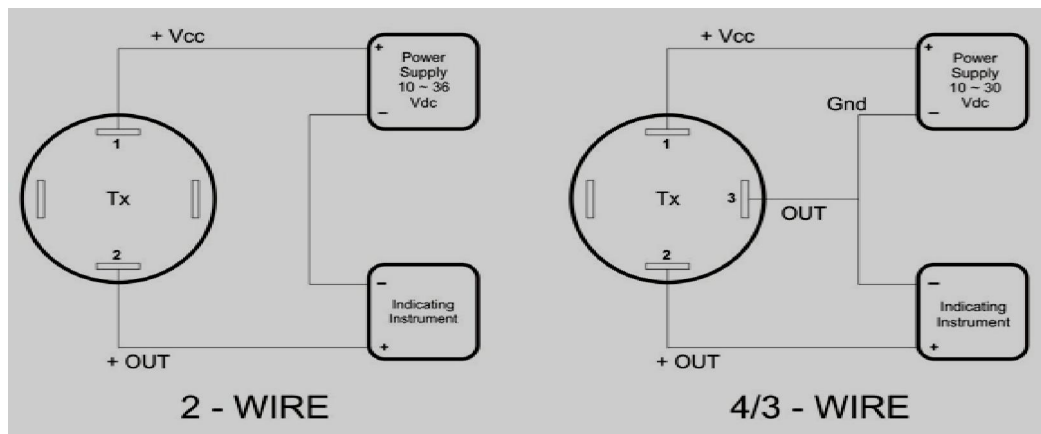
6. INSTALLATION

Recommendation

1. Please confirm the configuration for Pressure Transmitter i.e. 2- wire, 3-wire and accordingly follow the wiring procedure. Ensure that the excitation voltage is supplied to the correct points and is within the specified limits for that particular configuration as mentioned in the table above.
2. When installed, ensure that the transmitter is not subjected to the excessive sources, and it should be considered before installing the Transmitter. Use suitable diaphragm if needed.
3. Process connection must be properly sealed with material compatible with the process liquid / gas.
4. When installing transmitter with diaphragm, seals / process connector should be tightened not the transmitter, otherwise transmitter calibration may get affected.

7. OPERATION

Example for Usage



8. MAINTENANCE

Troubleshooting

S. No.	SPECIFICATIONS	ELIMINATE
1	No output	<ul style="list-style-type: none"> • Check the wiring configuration. • Check the input power supply.
2	No variation in output	<ul style="list-style-type: none"> • Check for leakage at pressure port / point. • Check the span set of Indicating Instrument.
3	Output not holding at constant input pressure.	<ul style="list-style-type: none"> • Check for leakage pressure point. • Check for the connections ensure they are properly tightened.

9. SAFETY PRECAUTIONS

1. The unit should be powered for 15 minutes before use.
2. Use in ambient temperature of 0-60°C.
3. Avoid vibrations, shock, excessive dust, corrosive chemical materials or gaseous environment.
4. Input wire should not be too long. If measured signal have to be far away from the unit, please use 2-core shielded cable.
5. Use this instrument in the scope of its specifications, otherwise fire or malfunctions may result.
6. Contact of the instrument, with organic solvents or oils should be avoided.
7. Do not turn on the power supply until all of the wiring is completed. Otherwise electrical shock, fire or malfunction may result.
8. Do not disassemble, repair or modify the instrument.
9. All connections should be tightened properly.
10. Power supply should be constant, should not be fluctuating.

10. WARRANTY

ABUS provides the original purchaser of this instrument a one (1) year warranty against defects in material and workmanship under the following terms:

- The one year warranty begins on the day of shipment as stated on the sales bill.
- During the warranty period all costs of material and labor will be free of charge provided that the instrument does not show any evidence of misuse.
- For maintenance, return the instrument with a copy of the sales bill to our factory.
- All transportation and insurance costs should be covered by the owner of the equipment.
- Should any sign of electrical or mechanical shock, abuse, bad handling or misuse be evident the warranty voids and maintenance costs will be charged.

REV 01

- Added Process Connection Data in Page 6
- Changed Front Page Picture

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www.abustek.com, E-Mail: info@abustek.com