OPERATING INSTRUCTIONS

PDFLO™ PDTX3
POSITIVE DISPLACEMENT FLOW TRANSMITTER

INTRODUCTION

The PDTX3 is a microprocessor based, meter mounted, analog output sensor that is well suited for a variety of remote monitoring applications. Microprocessor based, the PDTX3 delivers a fast and linear response. The operational frequency range is user defined and accepts frequencies up to 5,000 Hz. Output signals are available in six types to meet perferred voltage, mA, and zero offset choices.

SAFETY INFORMATION

Do not attempt to install or use your PDFlo Transmitter product until you have read the safety instructions in this section. Save this manual and keep it in an easily accessible place.

WARNING means that failure to follow this safety statement may result in extensive product damage, serious personal injury, or death.

CAUTION means that failure to follow this safety statement may result in minor or moderate personal injury, property or equipment damage.

NOTICE is a statement that informs about installation, operation, maintenance, performance issues, or general tips that are important but do not create a hazard or safety concern.

UNPACKING
Separate the Flow Transmitter from packaging materials and check for any visual signs of damage. If you determine there are damages caused by shipping, file a claim with the shipping company. If the flow transmitter appears to have been improperly assembled or does not operate properly, return it for replacement or repair.

CAUTION: Before connecting, programming, or operating the PDFlo Flow Transmitter, read this manual.

MODEL NUMBER BUILDER

Use the diagram below, working from left to right to construct your FLO-CORP Model Number.
Simply match the category number to the corresponding box number.

Example: PDTX3-05-S *PDFlo PDTX3 Three-Wire meter mounted flow transmitter with 0-5V output and 3-pin connector*

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PDTX3

Output (1)
01) 1-5V
02) 2-10V
04) 4-20mA
05) 0-5V
10) 0-10V
20) 0-20mA

Connection Type
S) 3-Pin Connector
E) Conduit Connection

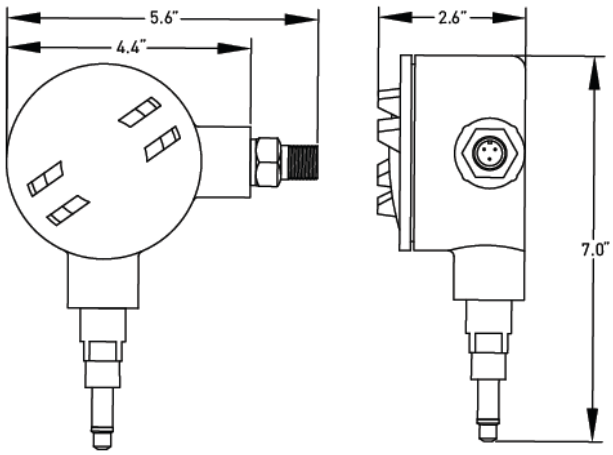
Ordering Notes:
(1) Select the best configuration based on your requirements.

SPECIFICATIONS

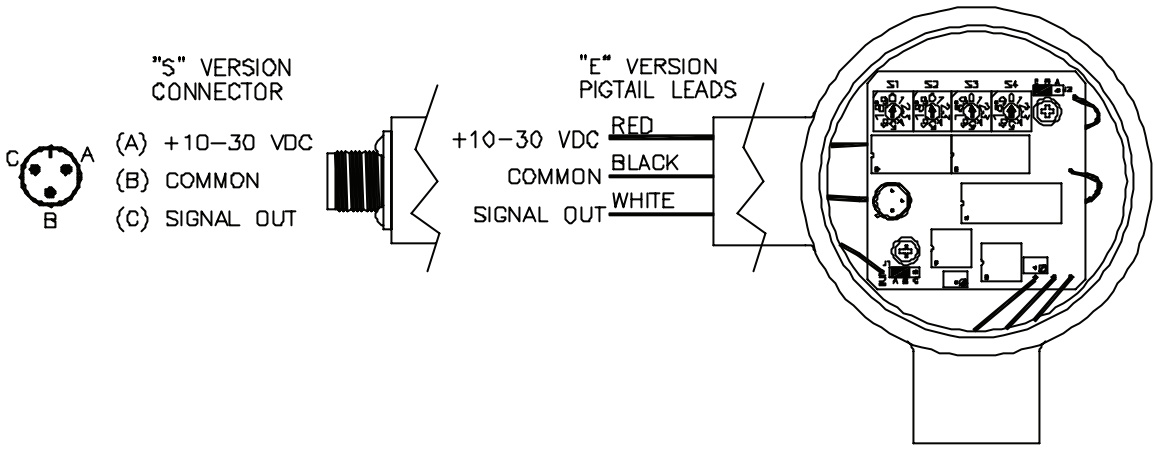
Supply Voltage	10-30 VDC*
Updated Time	1/F + 25 msec
Linearity	± 0.01% of reading
Input	0.25 Hz to 5 KHz
Amplitude	1Vp-p to 40 Vp-p
Output	0 -20 mA, 0-5 V, 0-10 V, 4-20mA, 1-5 V, 2-10 V
Enclosure Approvals	NEC Class I Groups C, D; Class II Groups E, F, G; UL Std. 886 - CSA Std. C22.2 No. 30

Note: Please Consult Factory for Special Requirements
**For supply voltage below 24V consult factory for max. load recommendations*

DIMENSIONS



WIRING



NOTE: This is a 3-wire hookup and is not suitable for a 2-wire installation

SCALING ANALOG OUTPUT

On the front panel there are four rotary switches which are adjustable with a small screwdriver. It is not necessary to power the unit down to change the settings. The switches are read from left to right in order of decreasing value as shown in the figure to the right.

If the maximum frequency is known at which the resulting output should be 20mA, set the switches to this frequency. The output will automatically scale itself. If the maximum frequency is not known, the correct switch settings can be determined in 2 ways.

The following equation can be used to determine what the switch setting should be for any particular meter and flow rate.

$$\text{Switch Setting} = \frac{\text{K Factor} \times \text{Max Flow Rate}}{60}$$

Where: K Factor is the flow meter scaling factor in pulses / volume (found on calibration sheet)
Max. Flow Rate is the flow rate at which the analog output should be at it's max.
Note: K-Factor and Max flow rate MUST have same units, ie: gallon/GPM, liter/LPM
60 is the scaling factor when max. flow rate is in volume/minute. Use 3600 for volume/hour

If the numerical flow rate is not known, the unit can be calibrated in systems with the following:

1) Adjust system flow to the rate at which analog output should read 20 mA.
2) Set scaling switches to a value known to be above the maximum frequency (ex. 9, 49, 799, 2999) if unsure, use 4999
3) If S1 is 0, go to step 4. Decrease S1 until output shows 20 mA. Then increase its setting by one unless value is 4, in which case value should remain 4. If the switch value is 0 and the output is below 20 mA, leave switch at 0 and go to next switch.
4) If S2 is 0, go to step 5. Decrease S2 until output shows 20 mA. Then increase its setting by one unless value is 9, in which case value should remain 9. If the switch value is 0 and the output is below 20 mA, leave switch at 0 and go to next switch.
5) If S3 is 0, go to step 6. Decrease S3 until output shows 20 mA. Then increase its setting by one unless value is 9, in which case value should remain 9. If the switch value is 0 and the output is below 20 mA, leave switch at 0 and go to next switch.
6) Decrease S4 until output shows 20 mA and leave setting. DO NOT increase this setting by one. The switches are now set at the frequency which will result in a 20 mA output.
When setting switches in step 1, try to use numbers ending in 9 for example: 9, 39, 299 and 2999. Any switch setting above 5000 Hz is read as 4999 Hz.

Example: Actual maximum input frequency is 538 Hz. Switches are set to 0999 Hz, a value known to be above actual maximum input frequency. The output shows 12.64 mA.

Starting with the switch of highest order, in this case S2 since S1 is 0, its value is decreased until the output shows 20 mA (S2 shows 4). The switch is then increased by 1 (S2 is set to 5). S3 is then decreased until the output shows 20 mA (S3 shows 2). The switch is then increased by 1 (S3 is set to 3). Finally, S4 is decreased until the output shows 20 mA and left as such (S4 set at 8) the switches are now set to 538 Hz, the frequency which will cause maximum output current / voltage.

Note: Wherever this procedure refers to 20 mA you may substitute either 5V or 10V depending upon the output you have ordered.