

Puregas, LLC

**PVD873D4 Series
4-in-1 Air Dryer Transducer**

Installation



1. Introduction	2
2. Required Tools	3
3. Before You Start	3
4. High Altitude Consideration	3
5. Hardware Contents	3
6. Installing the Hardware	4
7. Wiring the Transducer to the System	6
8. Programming the Transducer Points	7
Input Number Examples	8
Transducer Details	8
9. Calibrating the Transducer	9
Calibrate the Pressure and Flow zero points	9
Calibrate the Pressure full-scale	10
Calibrate the Flow full-scale (PVD873D4H Only).....	11



1. Introduction

This manual provides direction for the installation of the PUREGAS PVD873D4 Series 4-in-1 Air Dryer Transducer. This includes both the PVD873D4L (Low Flow) and the PVD873D4H (High Flow) Transducers. It will cover the procedures for installing the hardware, wiring the transducer to the system, programming the transducer points in the monitoring system, and calibrating the transducer as required.

This manual will be used during the installation of the PUREGAS PVD873D4 Series 4-in-1 Air Dryer Transducer

Troubleshooting and maintenance procedures go beyond the scope of this manual and will not be covered.

2. Required Tools

- Medium size adjustable wrench
- Phillips head screwdriver
- Flat head screwdriver
- Pipe thread sealant or tape
- Frame block spin-down tool
- PGComm or PGEEditor program
- PVD860D Transducer Calibrator / Tester (*as necessary for calibration*)

3. Before You Start

- Verify that your monitoring system meets the minimum requirement to be able to read the PVD873D4 Series transducer:
 - Is either a PUREGAS monitoring system (PVD818 or PVD800v)
 - OR, is a Sparton system that has been upgraded with both PUREGAS Control Board (PVD855) and replacement Dedicated Module boards (P580502, P580503)
- Verify that there is an available Dedicated wire pair to connect to.
- Verify the installation location of the PVD873D4 Series transducer.
- Notify the alarm center that the dryer(s) will be shut down during the installation procedures.

4. High Altitude Consideration

If the PVD873D4 Series 4-in-1 Air Dryer Transducer is being installed at a location higher than 2,500 ft. above sea level, it may be necessary to Zero Calibrate the transducer using the PUREGAS PVD860D Transducer Calibrator / Tester to ensure the most accurate readings. (*See Section 9-Calibrating the Transducer*)

5. Hardware Contents

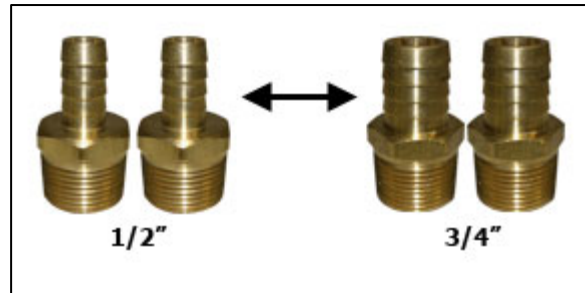
- | | |
|-------------------------------|-------------------------------|
| (1) – Transducer | (1) – Mounting Bracket |
| (2) – ½” Barbed Hose Fittings | (2) – ¾” Barbed Hose Fittings |
| (2) – Hose Clamps | |



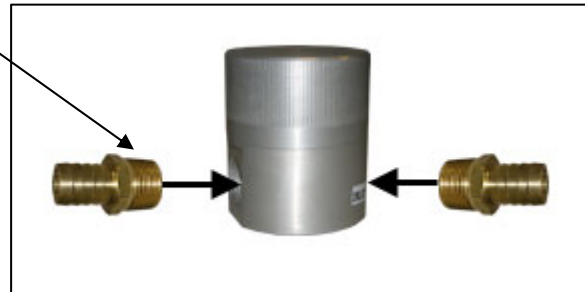
6. Installing the Hardware

1. Turn OFF the dryer(s) supplying air to the hose that the PVD873D4 Series transducer will be installed in.
2. Determine a secure location along your dryer's outlet hose where the PVD873D4 Series transducer will be installed.

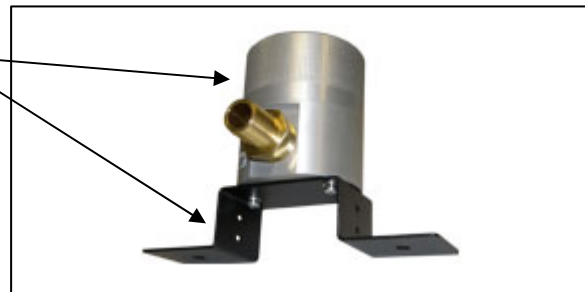
3. Select the two (2) included barbed fittings that are required for your dryer's outlet hose size – either $\frac{1}{2}$ " or $\frac{3}{4}$ ".



4. Using pipe thread sealant or tape (as required), attach these two (2) fittings to the INLET and OUTLET ports of the PVD873D4 Series transducer.



5. Attach the PVD873D4 Series transducer to the included mounting bracket.

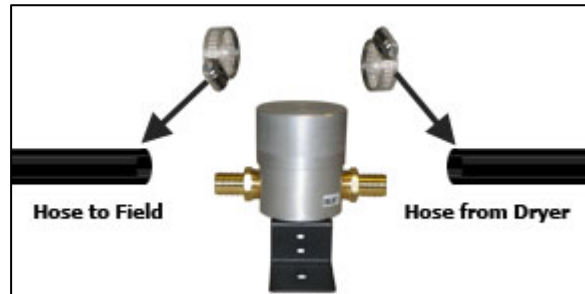


6. Attach the mounting bracket to the installation location.

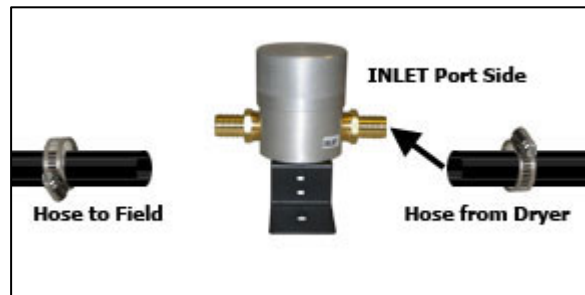
7. Depending on your specific installation, it may be necessary to cut the existing hose coming from the dryer at the location of the PVD873D4 Series transducer installation. This will create two (2) hose ends:

- a. One coming from the dryer (INLET)
- b. The other going to the field (*distribution panels, pipes, etc.*) (OUTLET)

8. Slide the two (2) included hose clamps over the hoses coming from the dryer and going to the field.

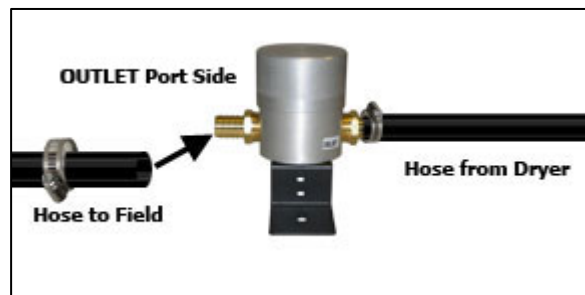


9. Attach the hose end coming from the dryer to the INLET side barbed fitting on the PVD873D4 Series transducer.



10. Secure the INLET hose to the fitting by tightening the hose clamp around the hose – fitting connection.

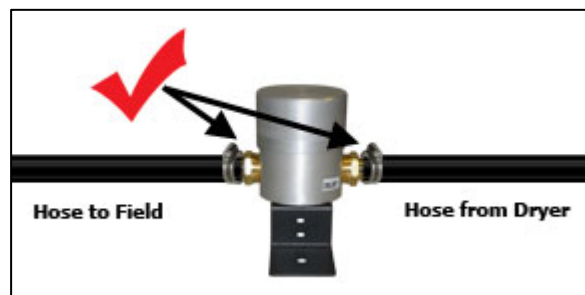
11. Attach the hose end going to the field to the OUTLET side barbed fitting on the PVD873D4 Series transducer.



12. Secure the OUTLET hose to the fitting by tightening the hose clamp around the hose – fitting connection.

13. Turn ON the dryer(s).

14. Check for leaks from hoses or fittings at the PVD873D4 Series transducer installation.



7. Wiring the Transducer to the System

NOTE: If wiring to an existing Sparton system module, that system must be upgraded with PUREGAS modules:

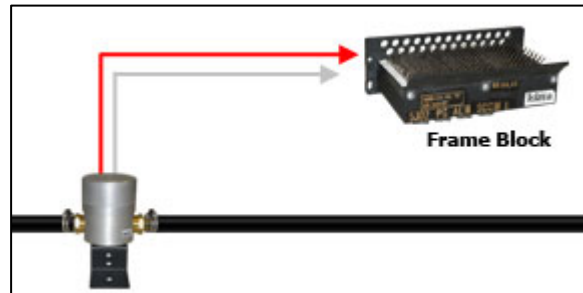
Control Module – PVD855

Dedicated Module – P580502 & P580503's

Also, because of the communication method used by the PVD873D4 Series transducer, it is necessary to use the highest Dedicated wire pair supported by your Sparton system.

For Example: If your system has the capabilities of monitoring 108 Dedicated points, wire the PVD873D4 Series transducer to position 108 on the frame block.

1. Locate an available Dedicated wire pair on the Dedicated frame block.
2. Connect the wires from the PVD873D4 Series transducer to the available wire pair frame block location.



8. Programming the Transducer Points

NOTE: Your company may require the following procedures to be done by a supervisor or an individual at a monitoring center. Please forward the information for these procedures to that individual as necessary.

Use PUREGAS' PGComm or PGEEditor to program the following into a new or existing Unit:

1. Add the necessary Thresholds with Low, High, and Trend values set specific to your system (as required) –

For the **PVD873D4L – LOW** Flow Transducer:

1. Add type 36 – STD-95 *Used for Pressure*
2. Add type 36 – STD-95 *Used for Humidity*
3. Add type 37 – STD-950 *Used for Temperature*
4. Add type 38 – STD-9500 *Used for Flow*

For the **PVD873D4H – HIGH** Flow Transducer:

1. Add type 36 – STD-95 *Used for Pressure*
2. Add type 36 – STD-95 *Used for Humidity*
3. Add type 37 – STD-950 *Used for Temperature*
4. Add type 39 – STD-95000 *Used for Flow*

2. Determine the Input Numbers for each individual point.

NOTE: The PVD873D4 Series transducer uses one (1) actual** input number and three (3) virtual input numbers to monitor each of the four points. They are determined as follows:

Flow -	Actual	=	<input type="text"/>
Pressure -	Actual + 25	=	<input type="text"/>
Humidity -	Actual + 50	=	<input type="text"/>
Temperature -	Actual + 75	=	<input type="text"/>

Input Number Examples

Actual Input #	Flow Input # <i>Actual</i>	Pressure Input # <i>Actual +25</i>	Humidity Input # <i>Actual +50</i>	Temperature Input # <i>Actual +75</i>
1	1	26	51	76
2	2	27	52	77
3	3	28	53	78
40	40	65	90	115
108	108	133	158	183

Table 1 - Input Number Examples

** For PUREGAS PVD800v monitoring systems please refer to the Input Number Conversion Table specific to your system to determine the “actual” input number for the frame block location used.

3. Add each of the four (4) transducer points to the system.
 - a. Use the appropriate Threshold for each (Step 1 of this section)
 - b. Use the appropriate Input Number for each (Step 2 of this section)
 - c. Each point should be identified as Dedicated (Ded) for Module type
 - d. Name each point accordingly (Flow, Pressure, Humidity, Temperature)

Transducer Details

Unit: 1 Transducers:										
No.	Type	Th	Mod	Inpt	Add	Cbl	Dist	AlmPr	S0	Location
1	STD-95000	4	Ded	1				Major	1	Flow
2	STD-95	1	Ded	26				Major	1	Pressure
3	STD-95	2	Ded	51				Major	1	Humidity
4	STD-950	3	Ded	76				Minor	1	Temperature

Detail 1 - Transducers in PGComm Program

9. Calibrating the Transducer

This section describes the processes for calibrating the PVD873D4 Series transducer as necessary only when inaccurate readings are present due to installation at elevations more than 2,500 feet above sea level.

1. Connect the test pair of the PVD860D Transducer Calibrator / Tester to the wire pair of the PVD873D4 Series transducer.
2. Power on the PVD860D Transducer Calibrator / Tester.
3. Press \uparrow +**R** to power the transducer.

Calibrate the Pressure and Flow zero points

- a. Turn off the air flow going to the PVD873D4 Series transducer.
- b. Press **W+2+W** to set the zero points.

If “WARNING...” appears on the display, press the **ENT** key.

When “Finished! ZeroP=123” appears on the display, the calibration was successful.

- c. Press the **ESC** key twice to get back to the main screen

Calibrate the Pressure full-scale

- a. Turn on the air flow going to the PVD873D4 Series transducer.
- b. Regulate the standard pressure to a pressure between 10-20 PSI (as high as possible). This standard pressure reading will be referred to as **(P)** in the following steps.
- c. Press **W+5+W+15+W+90+W**

The message “Finished! Parameter=90” should appear on the display.

- d. Press the **ESC** key twice to get back to the main screen.
- e. With the pressure stable, press **W+5+W+2+W+(P)+W**

Make sure you substitute (P) with the standard pressure reading on the dryer.

The message “Finished! Parameter= (P)” should appear on the display.

- f. Press the **ESC** key twice to get back to the main screen.
- g. Press **W+5+W+15+W+165+W**

The message “Finished! Parameter=165” should appear on the display.

- h. Press the **ESC** key twice to get back to the main screen.
- i. Press **2+R** to read the Pressure.

The difference between the reading and **(P)** should be within the required accuracy.

- j. Press the **ESC** key twice to get back to the main screen.

Calibrate the Flow full-scale (PVD873D4H Only)

- a. Turn on the air flow going to the PVD873D4H transducer.
- b. Regulate the standard pressure to 10 PSI (± 0.2).
- c. Regulate the standard flow rate to between 10,000-20,000 SCFD. This standard flow reading will be referred to as (*F*) in the following steps.
- d. Press **W+5+W+15+W+90+W**

The message “Finished! Parameter=90” should appear on the display.

- e. Press the **ESC** key twice to get back to the main screen.
- f. With the pressure and flow stable, press **W+5+W+1+W+(F / 100)+W**

Make sure you substitute (F / 100) with the standard flow reading on the dryer divided by 100.

The message “Finished! Parameter= (F / 100)” should appear on the display.

- g. Press the **ESC** key twice to get back to the main screen.
- h. Press **W+5+W+15+W+165+W**

The message “Finished! Parameter=165” should appear on the display.

- i. Press the **ESC** key twice to get back to the main screen.
- j. Press **1+R** to read the Flow.

The difference between the reading and (*F*) should be within the required accuracy.

- k. Press the **ESC** key twice to get back to the main screen.