

## Thank You

Thanks for purchasing a PT-400 series pressure transmitter from us! We appreciate your business and your trust. Please take a moment to familiarize yourself with the product and this manual before installation. If you have any questions, at any time, don't hesitate to call us at 402-434-9102.

NOTE: Scan the QR code to the right to see the full user manual on your tablet or smartphone. Or visit [www.binmaster.com/literature](http://www.binmaster.com/literature) to find it on our website.



## Table of Contents

1. Description	5. Mounting Instructions	9. General Care
2. How To Read Your Label	6. Wiring Information	10. Repair Information
3. Limited Warranty	7. Zero Trimming	11. Disassembly Instructions
4. Dimensions	8. Re-calibration	12. Hazardous Location Wiring

### 1 Description

The PT-400 series pressure transmitter offers reliability over a wide range of pressures and in harsh industrial conditions and hazardous locations. It is certified intrinsically safe for hazardous areas in the US, Canada, Europe and internationally by CSA, ATEX, and IECEx for Class 1, Zone 0 environments.

### 2 How To Read Your Label

Each label comes with a full model number, a part number, and a serial number. The model number for the PT-400 will look something like this:

▲ SAMPLE: PT-400-L1-100-PSI-G-E5-5-P5-N0-M1-S0

The model number correlates with all the configurable options and tells you exactly what you have. Compare the model number to the options on the datasheet to identify your exact configuration. You can also call us with the model, part, or the serial number and we can help you.

The label also includes the pinout, as does this installation guide.

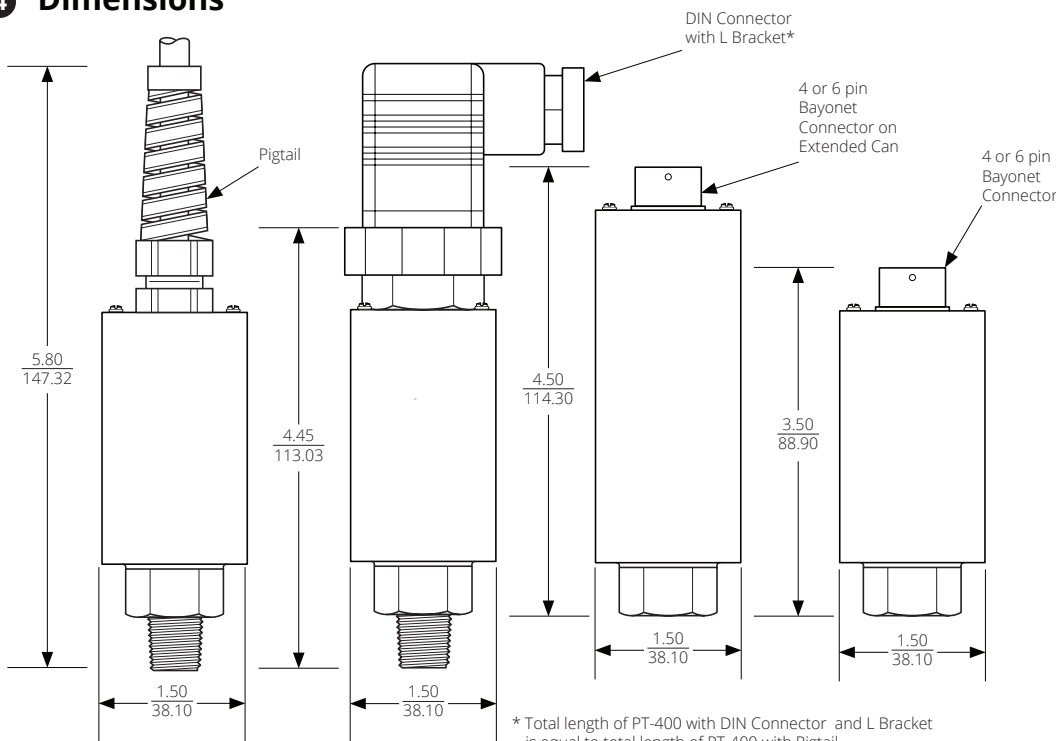
You'll also find all hazardous certification information on the label.

### 3 Limited Warranty

BinMaster warrants this product against defects in material and workmanship for two (2) years according to the following terms;

- 1.) This warranty extends to the original purchaser only and commences on the date of original purchase.
- 2.) BinMaster's sole obligation under said warranty is to repair, or at its option replace the defective parts. The buyer shall have no other remedy. All special, incidental and consequential damages are excluded. The buyer must deliver the product under warranty prepaid to the factory. BinMaster's obligation is limited to the cost of material and labor to repair or replace, and does not include transportation expenses.
- 3.) This warranty shall be voided, in our sole judgment, by alterations of equipment except by BinMaster, or tampering with, improper installation or maintenance, accident or misuse, or act of God. This warranty expressly excludes all damage to the product resulting from careless or neglectful packaging or transportation. The warranty does not extend to repairs made necessary by normal wear.
- 4.) This warranty is in lieu of all other warranties, expressed or implied including any implied warranties or merchantability or fitness for particular purpose. No employee, agent, franchise dealer or other person is authorized to give any warranties of any nature on behalf of BinMaster.
- 5.) BinMaster shall in no event be responsible for any warranty work done without first obtaining BinMaster's written consent.
- 6.) Except as provided herein, BinMaster shall have no liability, loss or damage caused or alleged to be caused directly or indirectly by this equipment.
- 7.) This warranty gives the buyer specific legal rights, and you may also have other rights which vary from state to state.
- 8.) For service, please call 402-434-9102.

### 4 Dimensions



# PT-400 Series Pressure Transmitters

## Installation Guide

### For The PT-400



BinMaster  
PO Box 29709 Lincoln, NE 68529  
[www.binmaster.com](http://www.binmaster.com) | phone: 402-434-9102 | email: [info@binmaster.com](mailto:info@binmaster.com)

Part # 122950-0007  
Doc #9004130 Rev B

### 5 Mounting Instructions

The PT-400 should be installed in an area--indoors or outdoors--which meets the following conditions:

- Ambient temperature between -40°F and 185°F (-40°C to 85°C)
- Relative humidity up to 100%
- Altitude up to 2000 meters (6560 feet)
- IEC-664-1 Conductive Pollution Degree 1 or 2
- IEC 61010-1 Measurement Category II
- No chemical corrosive to stainless steel (such as NH<sub>3</sub>, SO<sub>2</sub>, Cl<sub>2</sub>, etc.)
- Ample space for maintenance and inspection
- Class II power supply

Mounting your pressure transducer is easy if you follow a few simple steps:

- Never over-tighten the sensor. This can compress the diaphragm, changing how it reacts to pressure. In all cases, tighten the sensor as little as possible to create an adequate seal. On straight threads, tighten only until you feel the o-ring compress - making sure you don't damage or extrude the o-ring.
- Always use thread tape or sealant compound on tapered threads. Straight threads use an o-ring. If using thread tape, wrap the tape in the opposite direction of the threads so it does not unravel as you screw it into place. Unraveling can cause uneven distribution and seal failure.
- Always start screwing in your sensor by hand to avoid cross-threading. Thread failure can be a problem if you damage threads by over-tightening them or by crossing threads.

### 6 Wiring Information

PT-400 Series Pin Out Table

		4-20 mA	0-5 / 0.5-4.5 / 1-5 VDC	0-10 VDC	RS-485
 6 Pin Bayonet	A	+ Excitation	+ Excitation	+ Excitation	+ Excitation
	B	- Excitation	+ Output	+ Output	- Excitation
	C	N/C	- Output	- Output	N/C
	D	N/C	- Excitation	- Excitation	B (Tx-)
	E	N/C	N/C	N/C	A (Tx+)
	F	N/C	N/C	N/C	Case GND
 4 Pin Bayonet	A	+ Excitation	+ Excitation	+ Excitation	N/A
	B	- Excitation	+ Output	+ Output	N/A
	C	N/C	- Output	- Output	N/A
	D	N/C	- Excitation	- Excitation	N/A
 4 Pin DIN	1	+ Excitation	+ Excitation	+ Excitation	+ Excitation
	2	- Excitation	+ Output	+ Output	A (Tx+)
	3	N/C	- Output	- Output	B (Tx-)
	4	Case GND	- Excitation	- Excitation	- Excitation
 4 Pin M12	1	+ Excitation	+ Excitation	+ Excitation	+ Excitation
	2	- Excitation	+ Output	+ Output	A (Tx+)
	3	N/C	- Output	- Output	- Excitation
	4	N/C	- Excitation	- Excitation	B (Tx-)
Cable	Red	+ Excitation	+ Excitation	+ Excitation	+ Excitation
	Grn	N/C	+ Output	+ Output	B (Tx-)
	Wht	N/C	- Output	- Output	A (Tx+)
	Blk	- Excitation	- Excitation	- Excitation	- Excitation
	Shld	Gnd	Gnd	Gnd	N/A

N/C indicates no connection  
For alternate pinouts, please consult factory

PT-400 Series Supply Power Table

	4-20 mA	0-5 / 0.5-4.5 / 1-5 VDC	0-10 VDC	RS-485
Power Supply	9-28 VDC	9-28 VDC	12.5-28 VDC	9-28 VDC

IMPORTANT: Refer to section 12 for Hazardous Location Wiring.

IMPORTANT: PT-400 Modbus sensors use reversed Tx+/Tx- pins. When connecting to your system, ensure continuity of Tx- to Tx- and Tx+ to Tx+, rather than A to A and B to B.

## 7 Zero Trimming

- Remove the protective screw.
- Ensure that the transducer is at 0 psig or 0 psia (vacuum if absolute). For compound ranges, i.e. -15 psi to 30 psi, the 4 mA, 0 V, 0.5 V, or 1 V set point is also at vacuum.
- Using a jeweler's screwdriver or a suitable instrument, adjust the "Z" pot until you have a 4 mA, 0 V, 0.5 V, 1 V output.

**NOTE:** You may also return the transducer to the factory for repair and/or adjustment.

**IMPORTANT:** Do not make changes to the Span adjustment (the "S" pot to the right, see Figure 7.1) as part of the zero trimming. The Span should only be changed as part of the recalibration of a gauge with a known pressure source.

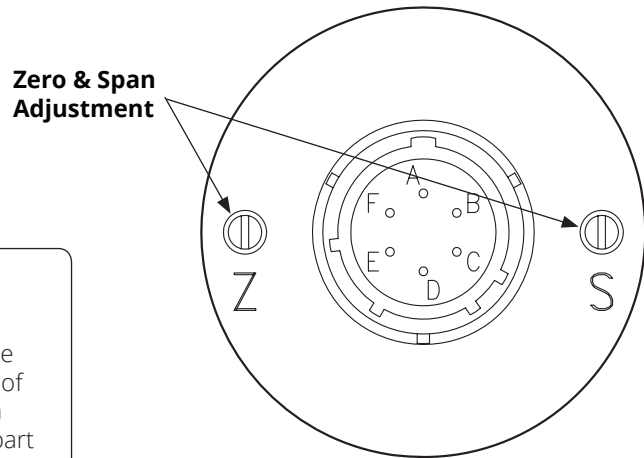


Figure 7.1

## 8 Re-Calibration

This procedure requires a known pressure source of at least  $\pm 0.1\%$  accuracy in order to fully utilize the accuracy potential of the transducer. (If not available, you can return it to the factory for re-calibration.)

- Ensure that the transducer is at 0 psig or 0 psia (vacuum if absolute), and adjust zero as per instructions for zero trimming.
- Apply full scale pressure to the pressure port and adjust the Span ("S") pot (on the right of Figure 7.1) until the full scale signal is reached.
- Re-check zero and re-adjust the zero ("Z") pot if required
- Repeat previous two steps until no further adjustment is required.

**NOTE:** You may also return the transducer to the factory for repair and/or adjustment.

## 9 General Care

Your pressure transmitter is very low maintenance and will need little care as long as it was installed correctly. However, in general, you should:

- Keep the sensor and the area around it generally clean.
- Avoid applications for which the sensor was not designed, such as extreme temperatures, contact with incompatible corrosive chemicals, or other damaging environments.
- Inspect the threads whenever you remove the sensor from duty or change its location.
- Avoid touching the diaphragm. Contact with the diaphragm, especially with a tool, could permanently shift the output and ruin accuracy.
- Cleaning the diaphragm or the diaphragm bore should be done with extreme care. If using a tool is required, make sure it does not touch the diaphragm.

## 10 Repair Information

If your pressure transmitter needs repair, contact us via email or phone. We will issue you an RMA number with instructions.

- Phone: 402-434-9102
- Email: info@binmaster.com

## 11 Removal Instructions

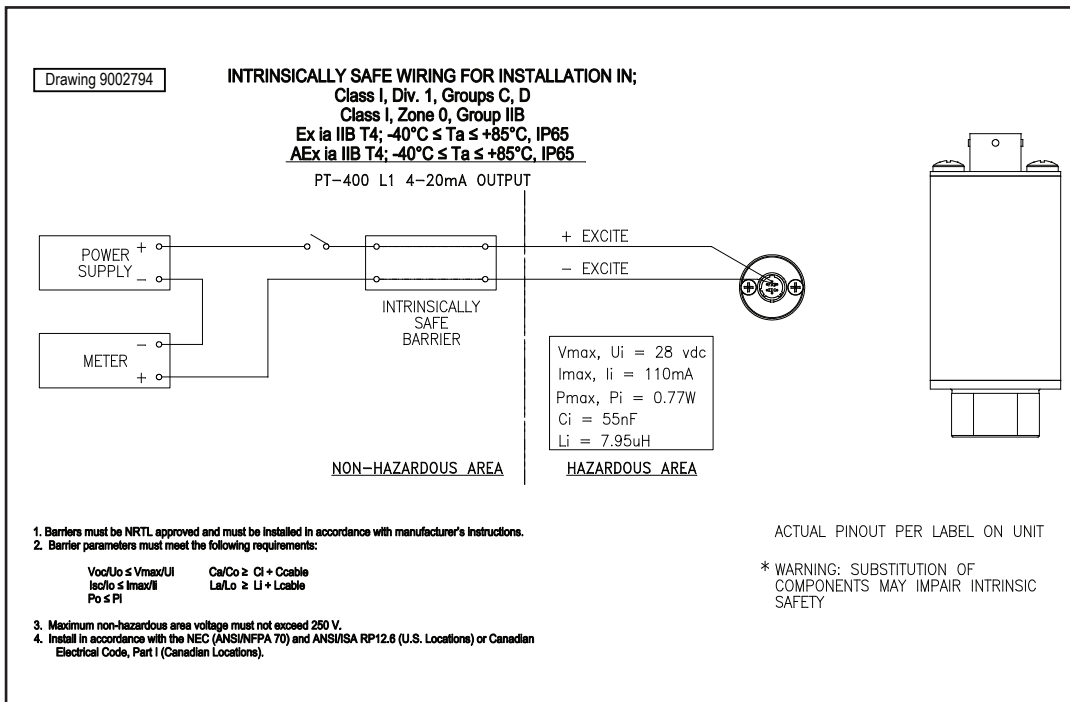
Removing your pressure transducer from service must be done with care. It's easy to create an unsafe situation, or damage your sensor, if you are not careful to follow these guidelines:

- Make sure the pressure is completely removed from the line or vessel where your sensor is installed. Follow any and all procedures for safely isolating any media contained inside the line or vessel.
- Remove the sensor with an appropriately sized wrench (per your process connection).
- Clean the sensor's threads of any sealant compound or tape. Inspect the threads and the diaphragm for any damage.
- Store your sensor in a dry place between  $-40^{\circ}\text{F}$  and  $180^{\circ}\text{F}$ .

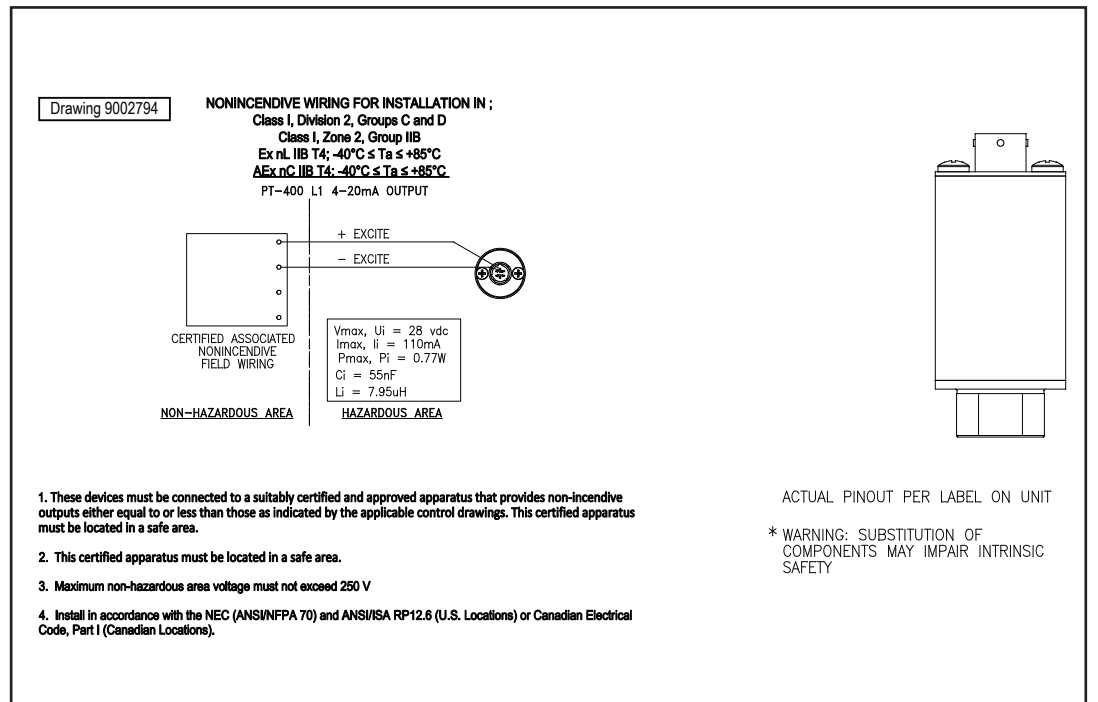
**DANGER:** Removing the pressure transmitter while there is still pressure in the line or vessel could result in injury or death.

## 12 Hazardous Location Wiring

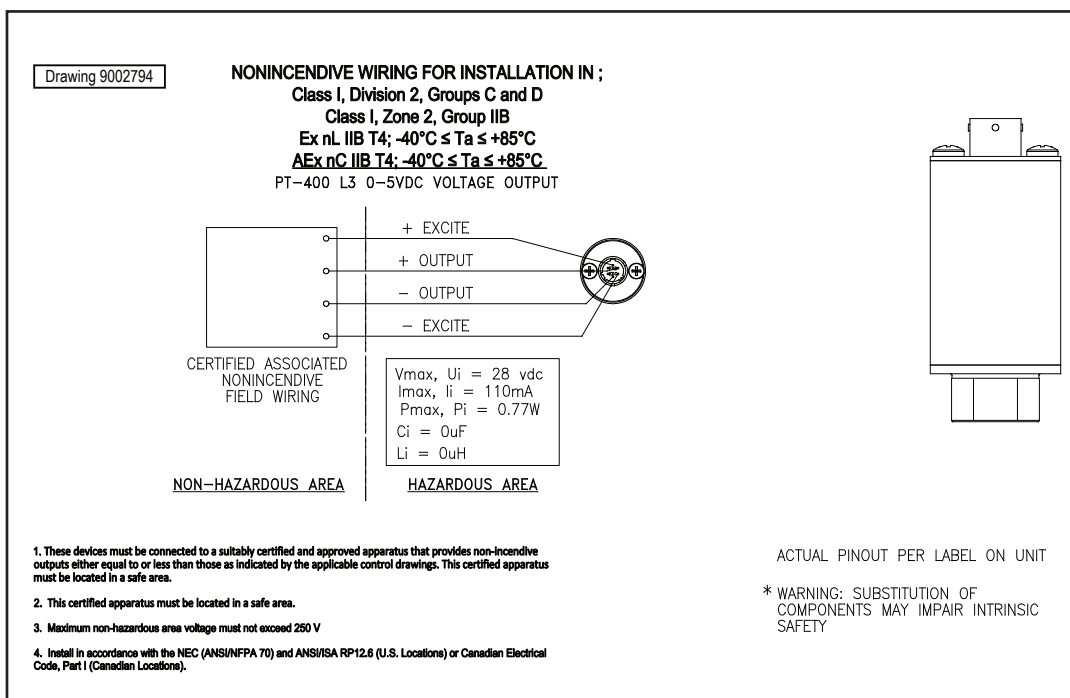
### Intrinsically Safe Wiring (4-20mA Output)



### Non-Incendive Wiring (4-20mA Output)



### Non-Incendive Wiring (0-5 VDC Output) [Includes 0.5-4.5 and 1-5 VDC]



### Non-Incendive Wiring (0-10 VDC Output)

