

PT-400Y

User Manual

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 **NOTE:** Find additional product documents, specifications, accessories, and more on the PT-400 online product page.
Go to: apgsensors.com/product/pt-400

INTRODUCTION

Thank you for purchasing a PT-400Y series pressure transmitter from APG. We appreciate your business! Please take a few minutes to familiarize yourself with your PT-400Y and this manual.

The PT-400Y series of pressure transmitters 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 and Canada by CSA. The small size, integrated electronics, wide operating temperature range, and durability, make the PT-400Y the perfect instrument for static and dynamic pressure measurements with an amplified output signal.

Reading your label

Every APG instrument comes with a label that includes the instrument's model number, part number, serial number, and a wiring pinout table. Please ensure that the part number and pinout table on your label match your order.

WARRANTY STATEMENT

This product is covered by APG's warranty to be free from defects in material and workmanship under normal use and service of the product for 24 months. For a full explanation of our Warranty, please visit <https://apgsensors.com/warranty-returns/>. Contact Technical Support to receive a Return Material Authorization before shipping your product back.

Repair and Returns

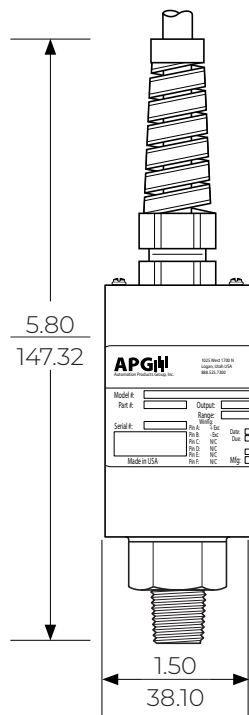
Should your PT-400Y series pressure transmitter require service, please contact the factory via phone, email, or online chat. We will issue you a Return Material Authorization (RMA) number with instructions.

- Phone: 888-525-7300
- Email: sales@apgsensors.com
- Online chat at www.apgsensors.com

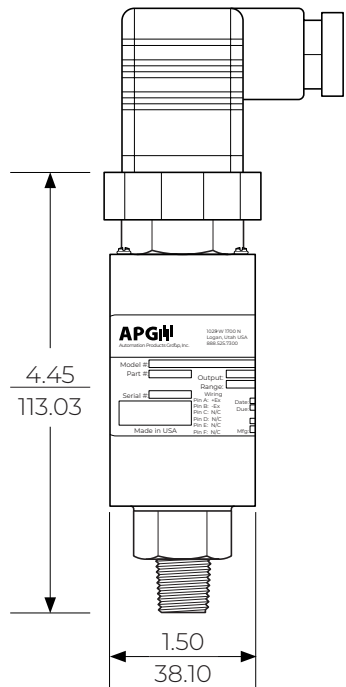
Please have your PT-400Y's part number and serial number available.

CHAPTER 1: SPECIFICATIONS AND OPTIONS

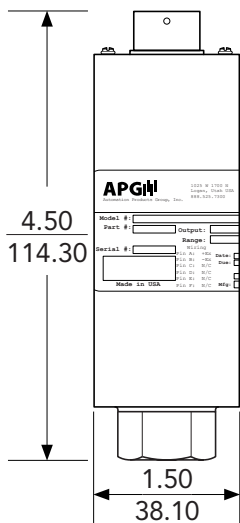
Dimensions



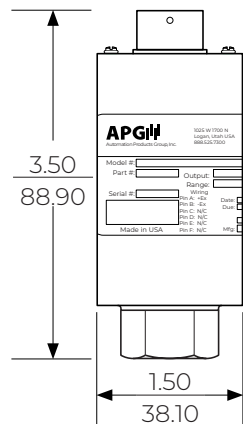
PT-400Y with Pigtail and male NPT



PT-400Y with DIN 43650 and L-Bracket and male NPT
Total length of PT-400Y with DIN 43650 and L-Bracket is equal to total length of PT-400Y with Pigtail.



PT-400Y with 4 or 6 pin Bayonet and female NPT long can



PT-400Y with 4 or 6 pin Bayonet and female NPT short can

Hazardous Location Ratings

The following electrical ratings and approvals are also listed on the label. Please refer to the Certificate of Compliance on the website product page for further details: <https://apgsensors.com/product/pt-400>



Class I, Div. 1, Groups C, D T4, Ex ia
Class I, Zone 0, AEx ia IIB T4 Ga
Ex ia IIB T4 Ga
Ambient Range: $-40^{\circ}\text{C} < T_{\text{amb}} < +80^{\circ}\text{C}$
Maximum Working Pressure: 10,000 psi

PT-400Y-L1xxxx (mA output)
 $V_{\text{max}}, U_i = 28 \text{ VDC}$
 $I_{\text{max}}, I_i = 110 \text{ mA}$
 $P_{\text{max}}, P_i = 0.77 \text{ W}$
 $C_i = 0.055 \mu\text{F}$
 $L_i = 7.95 \mu\text{H}$

Install in accordance with drawing 9002794, Sheet 1. See Appendix A.

Conditions of Acceptability

1. The "x" in the Model designations may be any alpha-numeric character, to denote minor mechanical options, not affecting safety.
2. These devices must be connected to a NRTL approved safety barrier (located in a safe area).
3. The equipment must be connected to a certified class 2 SELV power supply.

Hazardous Location Warnings

WARNING - EXPLOSION HAZARD

- DO NOT DISCONNECT OR OPEN EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS.
- MUST BE CONNECTED TO A CLASS 2 SELV POWER SUPPLY.
- SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
- ENSURE DEVICE IS GROUNDED BEFORE USE.

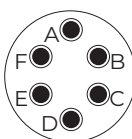
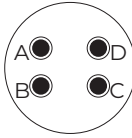
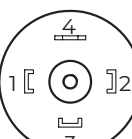
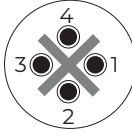
AVERTISSEMENT - RISQUE D'EXPLOSION

- NE PAS DECONNECTER OU OUVRIR L'ÉQUIPEMENT SAUF S'IL EST DECONNECTÉ OU PLACÉ DANS UNE ZONE NON DANGEREUSE.
- DOIT ÊTRE CONNECTÉ À UNE ALIMENTATION ÉLECTRIQUE SELV DE CLASSE 2.
- LE REMPLACEMENT DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSEQUE.
- VÉRIFIER QUE L'ÉQUIPEMENT EST MIS À LA TERRE AVANT UTILISATION.

❗ IMPORTANT: Your PT-400Y MUST be installed according to drawing 9002794 as indicated to meet listed hazardous location approvals. Faulty installation will invalidate safety approvals and ratings.

Electrical Connectors, Pinout Table, and Supply Power Table

PT-400Y Series Pin Out Table

		4-20 mA	VDC Outputs	RS-485
	6 Pin Bayonet	A	+ Excitation	+ Excitation
		B	- Excitation	+ Output
		C	N/C	- Output
		D	N/C	- Excitation
		E	N/C	N/C
		F	N/C	N/C
	4 Pin Bayonet	A	+ Excitation	+ Excitation
		B	- Excitation	+ Output
		C	N/C	- Output
		D	N/C	- Excitation
	4 Pin DIN	1	+ Excitation	+ Excitation
		2	- Excitation	+ Output
		3	N/C	- Output
		4	Case Ground	- Excitation
	4 Pin M12	1	+ Excitation	+ Excitation
		2	- Excitation	+ Output
		3	N/C	- Output
		4	N/C	- Excitation
Cable		Red	+ Excitation	+ Excitation
		Grn	N/C	+ Output
		Wht	N/C	- Output
		Blk	- Excitation	- Excitation
		Shld	Gnd	Gnd
Flying Leads		Red	+ Excitation	+ Excitation
		Grn	No wire	+ Output
		Wht	No wire	- Output
		Blk	- Excitation	- Excitation
		Shld	No wire	No wire
		Grn/Ylw	Case Ground	No wire

One wire per terminal. Maximum wire size: 16 AWG or 1.5mm².
Tightening torque of 56 to 70 oz-in

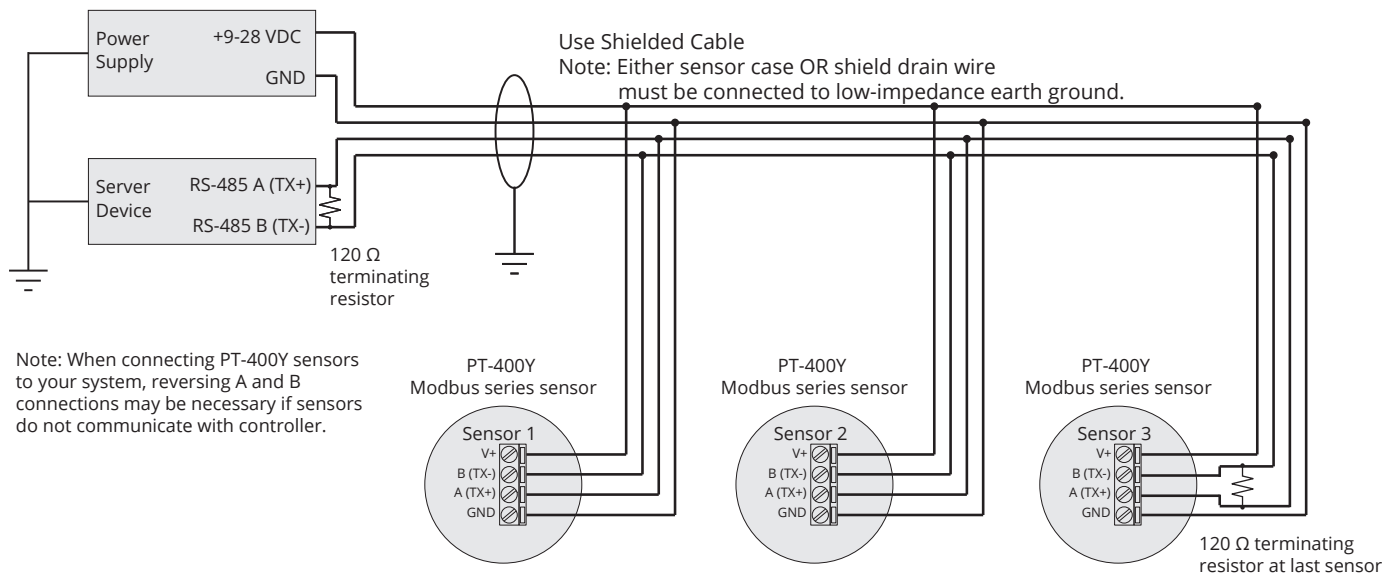
N/C indicates no connection
For alternate pinouts, please consult factory

PT-400Y Series Supply Power Table

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

Modbus Wiring

Modbus System Wiring



CHAPTER 2: INSTALLATION AND REMOVAL PROCEDURES AND NOTES

Tools Needed

- Wrench sized appropriately for your PT-400Y's process connection.
- Thread tape or sealant compound for threaded connections.

Physical Installation Notes

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

- Ambient temperature between -40°C and 80°C (-40°F to +176°F)
- 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 chemicals corrosive to stainless steel (such as NH₃, SO₂, Cl₂ etc.)
- Ample space for maintenance and inspection
- Class 2 SELV power supply

Mounting Instructions

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

- Ensure that the fitting on your sensor matches the fitting on your tank/vessel/pipe/etc. If the fittings do not match, do not attempt to install the sensor. Contact the factory immediately.
- 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. Wrap thread tape in the opposite direction of the threads so it does not unravel as you screw the sensor into place. Unraveling can cause uneven distribution and seal failure. For straight threads, use an o-ring.
- 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.

Electrical Installation

- Check the pinout table on your PT-400Y against your order.
- Check that your electrical system wiring matches the pinout table on your PT-400Y.
- For instruments with connectors, make the connection.

ⓘ IMPORTANT: Your PT-400Y MUST be installed according to drawing 9002794 as indicated to meet listed hazardous location approvals. Faulty installation will invalidate safety approvals and ratings.

Removal Instructions

Removing your PT-400Y 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 fitting and diaphragm of any debris (see General Care) and inspect for damage.
- Store your sensor in a dry place, at a temperature between -40°C and 80°C (-40°F to 176°F).

⚠ DANGER: Removing your PT-400Y Pressure Transmitter while there is still pressure in the line could result in injury or death.

CHAPTER 3: MAINTENANCE

General Care

Your PT-400Y series pressure transmitter is very low maintenance and will need little care as long as it is installed correctly. However, in general, you should:

- Keep the transmitter and the area around it generally clean.
- Avoid applications for which the transmitter was not designed, such as extreme temperatures, contact with incompatible corrosive chemicals, or other damaging environments.
- Inspect the threads whenever you remove the transmitter 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.
- Clean the diaphragm or the diaphragm bore with extreme care. If using a tool is required, make sure it does not touch the diaphragm.

Zero Trimming

- Remove protective screw(s) with 5/64 allen wrench.
- Ensure that the transmitter is at 0 psig or 0 psia (vacuum if absolute).
- Using a jeweler's screwdriver or a suitable instrument, adjust the "Z" pot until you have a 4 mA output.
- Replace protective screws(s) when finished.

ⓘ IMPORTANT: Do not make changes to the Span adjustment (the "S" pot to the right, see Figure 3.1) 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.

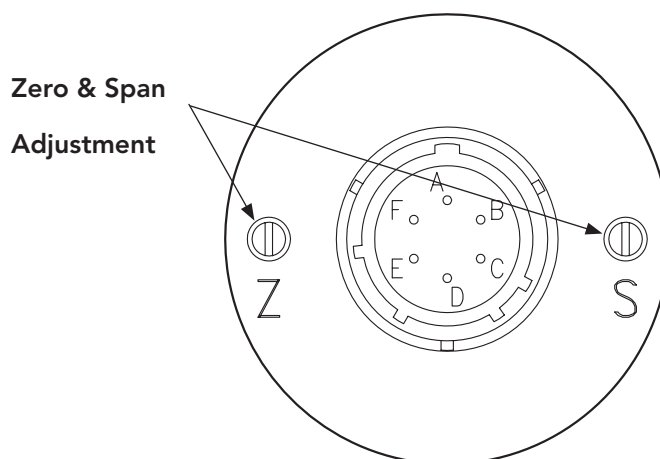


Figure 3.1

⚠ DANGER: Protective screws must be replaced using 28 oz-in of torque to create seal.

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 PT-400Y. (If not available, you can return it to the factory for re-calibration.)

- Ensure that the transmitter 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 3.1) 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 PT-400Y to the factory for repair and/or adjustment.

CHAPTER 4: MODBUS PROGRAMMING

PT-400Y Modbus series sensors use standard Modbus RTU protocol (RS-485). The sensors can only operate as server devices. Sensor default transmission settings are **9600 Baud, 8 Bits, 1 Stop Bit, No Parity**, and require a minimum delay of 300 ms between transactions to return the contents of all registers. Commands returning fewer registers will require shorter delays. See PT-400Y Modbus Register Lists for more details.

NOTE: For more information about Modbus RTU, please visit www.modbus.org.

NOTE: For APG Modbus programming instructions, or to download APG Modbus software, please visit our website at: <https://www.apgsensors.com/resources/product-resources/software-downloads/>.

PT-400Y Modbus Register Lists

The registers listed below are reference addresses. To convert a reference address to an offset address, remove the first digit then subtract one.

Example 1: Reference address = 30300 → Offset register = 299

Example 2: Reference address = 40400 → Offset register = 399

Input Registers (0x04)

Register	Returned Data
30299	Model Type
30300	Pressure (L5 – PSI; L31 – mmH2O)
30301	N/A
30302	Temperature Reading (in °C, signed)
30303–30304	Calculated (raw)
30305–30306	Calculated (float)
30307	Firmware Version
30308	N/A
30309	Trip 1 Status
30310	Trip 2 Status
30311	N/A

NOTE: The Calculated (raw) Readings will be returned without a decimal place. In order to obtain the true result, the Decimal (Calculated) register 40404 value setting must be taken into account.

30299—Model Type

Returns the model type for the device.

9 = L5

10 = L31

30309-30310—Trip Status

Returns the current trip and alarm status. See Alarm Parameter section for more details.

bits [15:8] = Alarm Status

bits [7:0] = Trip Status

Holding Registers (0x03)—PT-400Y L5 Pressure Series

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	0 to 16
40402	Application Type	0 or 8
40403	N/A	N/A
40404	Decimal (Calculated)	0 to 3
40405	N/A	N/A
40406	N/A	N/A
40407	Zero Offset	-15,000 to 30,000 PSI
40408	Pressure Decimal	0 to 3
40409	N/A	N/A
40410	N/A	N/A
40411	Parameter Default	0 = No; 1 = Restore Defaults
40412	Averaging	0 to 10
40413	N/A	N/A
40414	N/A	N/A
40415	Sample Rate	10 to 1000 milliseconds
40416	N/A	N/A
40417	N/A	N/A
40418	N/A	N/A
40419	Baud Rate	0 to 5 (2400, 9600, 19200, 38400, 57600, 115200)
40420	Parity	0 to 2 (none, even, odd)
40421	Stop Bit	0 or 1 (0 = 1 stop bit; 1 = 2 stop bits)
40422–40423	N/A	N/A
40424–40425	N/A	N/A
40426–40427	N/A	N/A
40428–40429	N/A	N/A
40430	Trip 1 Pressure	-15,000 to 30,000 PSI
40431	Trip 1 Window	0 to 30,000 PSI
40432	Trip 1 Type	0 to 29
40433	Trip 2 Pressure	-15,000 to 30,000 PSI
40434	Trip 2 Window	0 to 30,000 PSI
40435	Trip 2 Type	0 to 29
40436–40437	Multiplier	0.0001 to 99.9999 (float)
40438–40439	Description	A to Z, 0 to 9, /.-, +* (16 char)
40446	Temperature Offset	-20 to 20
40447–40448	N/A	N/A
40449–40450	N/A	N/A
40451–40452	N/A	N/A
40453–40454	N/A	N/A

Holding Registers (0x03)—PT-400Y L31 Level Series

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	1 = Feet, 2 = Inches, 3 = Meters
40402	Application Type	0 to 11
40403	Volume Units	1 to 7
40404	Decimal (Calculated)	0 to 3
40405	N/A	N/A
40406	N/A	N/A
40407	Zero Offset	-32,768 mm to 32,767 mm
40408	N/A	N/A
40409	N/A	N/A
40410	Specific Gravity	1 to 2,000
40411	Parameter Default	0 = No; 1 = Restore Defaults
40412	Averaging	0 to 10
40413	N/A	N/A
40414	N/A	N/A
40415	Sample Rate	10 to 1000 milliseconds
40416	N/A	N/A
40417	N/A	N/A
40418	N/A	N/A
40419	Baud Rate	0 to 5 (2400, 9600, 19200, 38400, 57600, 115200)
40420	Parity	0 to 2 (none, even, odd)
40421	Stop Bit	0 or 1 (0 = 1 stop bit; 1 = 2 stop bits)
40422–40423	N/A	N/A
40424–40425	N/A	N/A
40426–40427	N/A	N/A
40428–40429	N/A	N/A
40430	Trip 1 Level	0 to 65,535 (mm)
40431	Trip 1 Window	0 to 65,535 (mm)
40432	Trip 1 Type	0 to 29
40433	Trip 2 Level	0 to 65,535 (mm)
40434	Trip 2 Window	0 to 65,535 (mm)
40435	Trip 2 Type	0 to 29
40436–40437	Parameter 1	0 –1,000,000 mm
40438–40439	Parameter 2	0 –1,000,000 mm
40440–40441	Parameter 3	0 –1,000,000 mm
40442–40443	Parameter 4	0 –1,000,000 mm
40444–40445	Parameter 5	0 –1,000,000 mm
40446	Temperature Offset	-20 to 20
40447–40448	N/A	N/A
40449–40450	N/A	N/A
40451–40452	N/A	N/A
40453–40454	N/A	N/A

PT-400Y Modbus Sensor Parameters—L5 Pressure Series

40401—Units

Determines the units of measure for the calculated reading.

0 = PSI	5 = mmH ₂ O [†]	10 = mmHG [‡]	14 = inSW
1 = BAR	6 = cmH ₂ O [†]	11 = cmHG [‡]	15 = ftSW
2 = mBAR	7 = mH ₂ O [†]	12 = inHG [‡]	16 = mSW
3 = kPa	8 = inH ₂ O [†]	13 = kg/cm ²	
4 = MPa	9 = ftH ₂ O [†]		

[†] All H₂O pressure measurements @ 20° C.

[‡] All HG pressure measurements @ 0° C.

40402—Application Type

Determines the units of measure for the calculated reading.

0 = Standard (units selected in 40401 are displayed)

8 = Custom (units selected in 40401 are NOT factored into calculated output in Application Type 8. The multiplier in 40436-40437 must also include any unit conversion from PSI desired. Use ASCII characters in 40438-40439 to hold a label or description for the measurement.)

PT-400Y Modbus Sensor Parameters—L31 level series

40401—Units

Determines the units of measure for the calculated reading when Application Type is set to 0, 1, or 7.

1 = Feet 2 = Inches 3 = Meters

40402—Application Type

Determines the type of calculated reading performed by the sensor.

- 0 = Distance
- 1 = Level
- 2 = Standing Cylindrical Tank with or without Hemispherical Bottom
- 3 = Standing Cylindrical Tank with or without Conical Bottom
- 4 = Standing Rectangular Tank with or without Chute Bottom
- 5 = Horizontal Cylindrical Tank with or without Spherical Ends
- 6 = Spherical Tank
- 7 = Pounds (Linear Scaling)
- 8 = N/A
- 9 = Vertical Oval Tank
- 10 = Horizontal Oval Tank
- 11 = Strapping Chart

40403—Volume Units

Determines the units of measure for the calculated reading when Application Type is set to 2 to 6 or 9 to 11.

1 = Feet³

2 = Million Feet³

3 = Gallons

4 = Meters³

5 = Liters

6 = Inches³

7 = Barrels

PT-400Y Web / Independent Modbus Alarm Parameters

PT-400Y sensors interfaced with an LOE web-enabled client sensor or a Settler remote monitoring device can be configured to generate website alarms via [explorer.apgsensors.com](https://apgsensors.com/explorer.apgsensors.com). Refer to the LOE or Settler user manuals (available on <https://apgsensors.com/resources/user-manuals/>) for more information.

PT-400Y sensors do not have physical, or electronic, trip outputs. Via LOE or Settler remote monitoring devices, Holding Registers 40430 – 40435 can be configured to create outputs in Input Registers 30309 and 30310 that will trigger alarms through web interfaces. These registers can also be configured/monitored via RS-485 Modbus programming, but APG Modbus software cannot be used to generate such alerts or alarms.

40430 – Trip 1 Value

40433 – Trip 2 Value

Sets the distance to the trip position closest to the sensor face.

40431 – Trip 1 Window

40434 – Trip 2 Window

Sets the distance from the first trip position to the trip position farthest from the sensor face.

40432 – Trip 1 Type

NOTE: All values entered into Trip Values or Windows parameters must be based upon the raw reading in register 30300, not the calculated reading in 30303-30304.

40435 – Trip 2 Type

Sets the Trip Type for web outputs or independently-configured Modbus outputs. Trip Types are configured with two independent digits: the first for Alarm Type (1, or 2), and the second for Trip Condition (0-5, 7, or 9).

Alarm Type

1_ – Active Alarm

Designates the active trip point as an alarm condition. To initiate an alarm whenever the Trip Type _3 is active (on), Trip Type would be set to **13**.

Alarm Type

2_ – Inactive Alarm

Designates an inactive trip point as an alarm condition. To initiate an alarm whenever the Trip Type _3 is inactive (off), Trip Type would be set to **23**.

Trip Condition

_0 – Near

Near activates the trip status whenever the target surface is closer than the Trip Value setting.

Trip Condition

_1 – Exclusive

Exclusive activates the trip status whenever the target surface is closer than the Trip Value setting OR beyond the Trip Value + Trip Window setting.

Trip Condition

_2 – Hysteresis Near

Hysteresis Near activates the trip status whenever the target surface moves closer than the Trip Value setting. The trip status remains activated until the target surface moves beyond the Trip Value + Trip Window setting. The trip status remains off until the target surface moves closer than the Trip Value setting again.

Trip Condition

_3 – Far

Far activates the trip status whenever the target surface is beyond the Trip Value setting.

Trip Condition

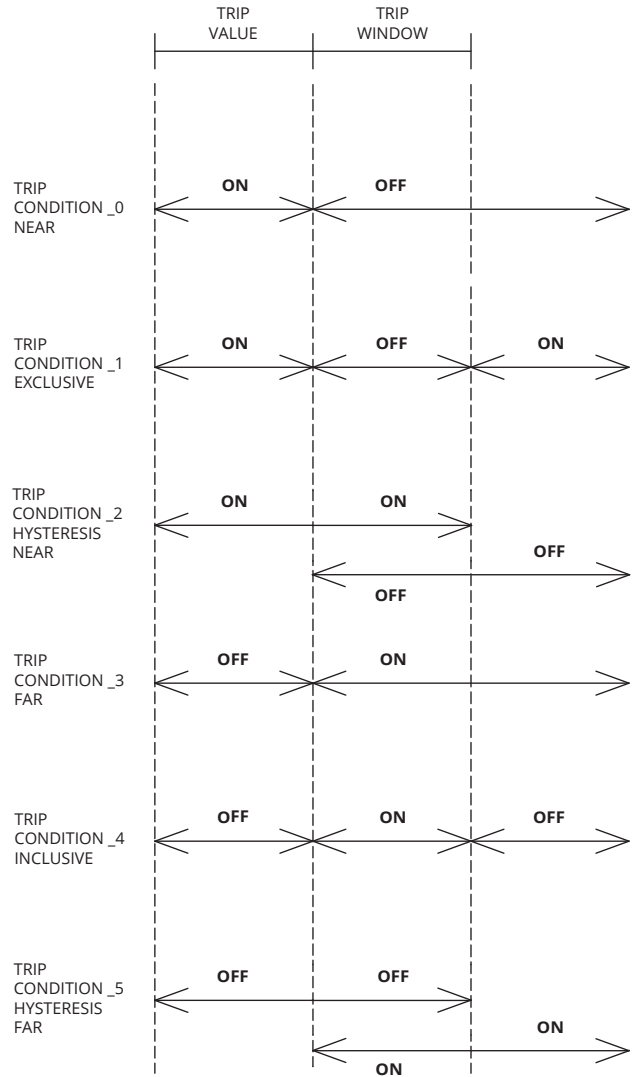
_4 – Inclusive

Inclusive activates the trip status whenever the target surface is beyond the Trip Value setting AND closer the Trip Value + Trip Window setting.

Trip Condition

_5 – Hysteresis Far

Hysteresis Far activates the trip status whenever the target surface moves beyond the Trip Value + Trip Window setting. The trip status remains activated until the target surface moves closer than the Trip Value setting. The trip status remains off until the target surface moves beyond the Trip Value + Trip Window setting again.



Trip Condition

_6 – Trip Disabled

Trip Condition

_7 – N/A

Trip Condition

_8 – N/A

Trip Condition

_9 – Rate of Change

Rate of Change activates the trip status whenever a user-defined maximum rate of level change (change in distance or level divided by elapsed time) is exceeded. Trip Value (Holding Register 40430 or 40433) defines the distance and Trip Window (Holding Register 40431 or 40434) defines the time.

PT-400Y Modbus Application Parameters—L31 level series

Application 0—Distance

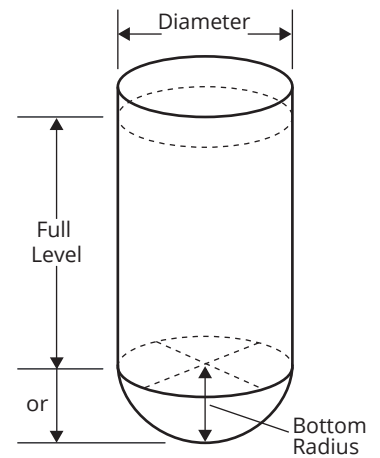
Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	1 = feet, 2 = Inches, 3 = Meters
40402	Application Type	0
40403	Volume Units	—
40404	Decimal (Calculated)	0 to 3

Application 1—Level

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	1 = feet, 2 = Inches, 3 = Meters
40402	Application Type	1
40403	Volume Units	—
40404	Decimal (Calculated)	1 to 3

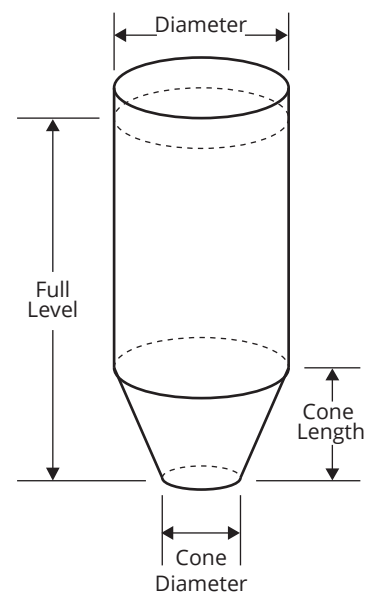
Application 2—Volume of Standing Cylindrical Tank ± Hemispherical Bottom

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	—
40402	Application Type	2
40403	Volume Units	1 to 7
40404	Decimal (Calculated)	0 to 3
40405	Max Level	(factory set)
40406	Full Level	0 to 65,535 mm
40436–40437	Tank Diameter	0 to 1,000,000 mm
40438–40439	Radius of Bottom Hemisphere	0 to 1,000,000 mm



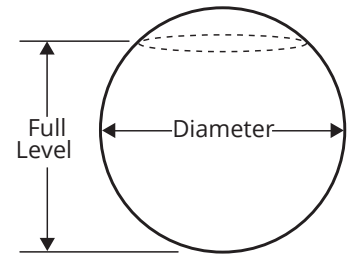
Application 3—Volume of Standing Cylindrical Tank ± Conical Bottom

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	—
40402	Application Type	3
40403	Volume Units	1 to 7
40404	Decimal (Calculated)	0 to 3
40405	Max Level	(factory set)
40406	Full Level	0 to 65,535 mm
40436–40437	Tank Diameter	0 to 1,000,000 mm
40438–40439	Cone Diameter (at bottom of cone)	0 to 1,000,000 mm
40440–40441	Length (height) of Cone	0 to 1,000,000 mm



Application 6—Volume of Spherical Tank

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	—
40402	Application Type	6
40403	Volume Units	1 to 7
40404	Decimal (Calculated)	0 to 3
40405	Max Level	(factory set)
40406	Full Level	0 to 65,535 mm
40436–40437	Tank Diameter	0 to 1,000,000 mm

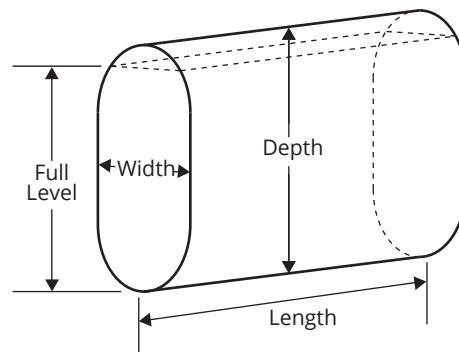


Application 7—Pounds (Linear Scaling)

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	1 = Feet, 2 = Inches, 3 = Meters
40402	Application Type	7
40403	Volume Units	—
40404	Decimal (Calculated)	0 to 3
40405	Max Level	(factory set)
40406	Full Level	0 to 65,535 mm
40436–40437	Multiplier (linear scalar)	0 to 1,000,000 mm (1000 = 1.000)

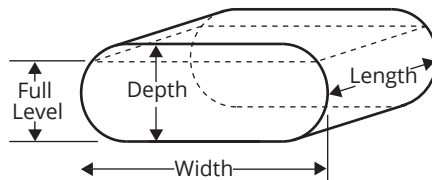
Application 9—Volume of Vertical Oval Tank

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	—
40402	Application Type	9
40403	Volume Units	1 to 7
40404	Decimal (Calculated)	0 to 3
40405	Max Level	(factory set)
40406	Full Level	0 to 65,535 mm
40436–40437	Tank Length	0 to 1,000,000 mm
40438–40439	Tank Depth	0 to 1,000,000 mm
40440–40441	Tank Width	0 to 1,000,000 mm



Application 10—Volume of Horizontal Oval Tank

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	—
40402	Application Type	10
40403	Volume Units	1 to 7
40404	Decimal (Calculated)	0 to 3
40405	Max Level	(factory set)
40406	Full Level	0 to 65,535 mm
40436–40437	Tank Length	0 to 1,000,000 mm
40438–40439	Tank Depth	0 to 1,000,000 mm
40440–40441	Tank Width	0 to 1,000,000 mm

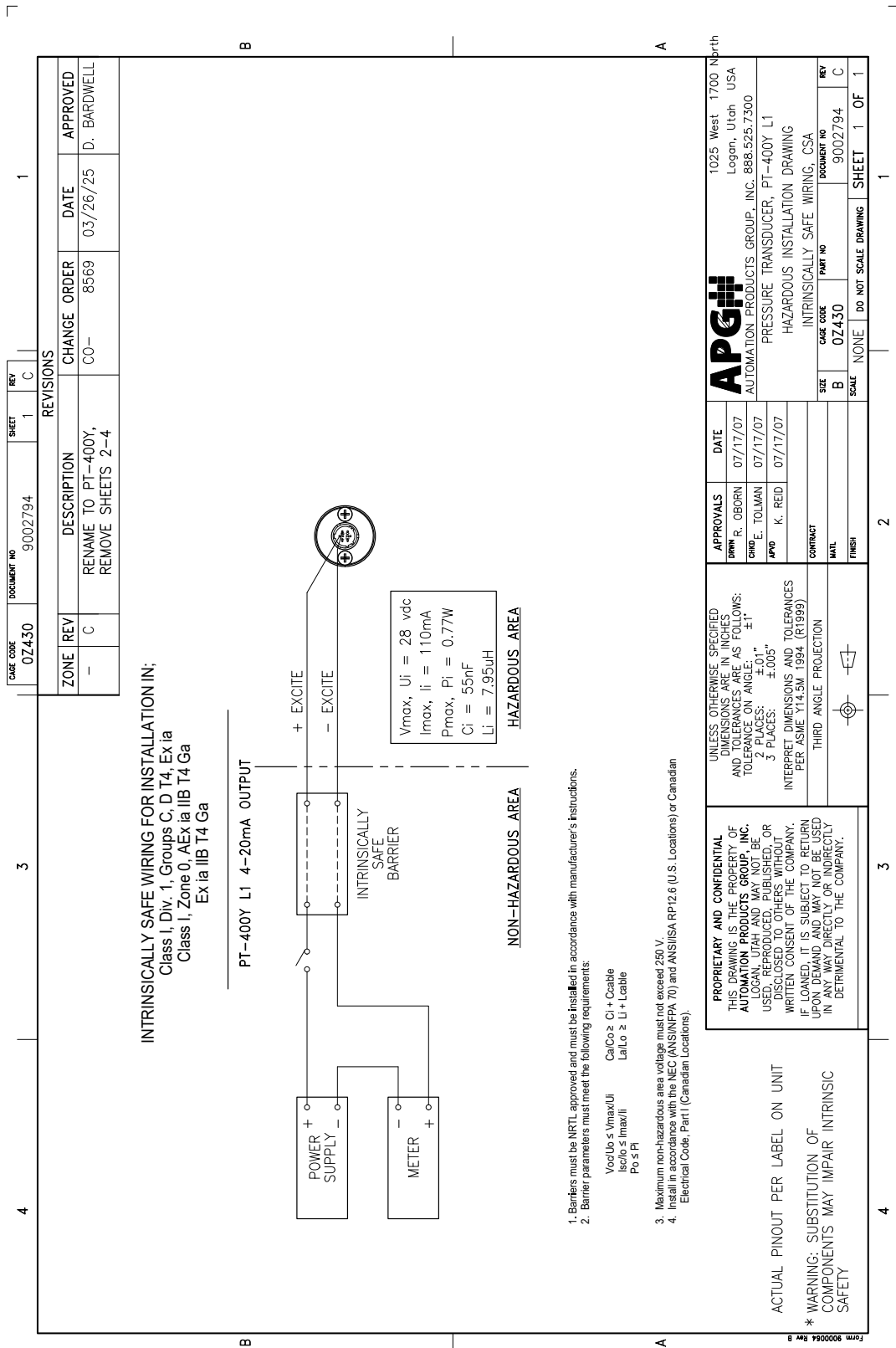


Application 11—Strapping Chart (Polynomial Values)

Register	Function	Value Range
40400	Device Address	1 to 247
40401	Units	1 = Feet, 2 = Inches, 3 = Meters
40402	Application Type	11
40403	Volume Units	1 to 7
40404	Decimal (Calculated)	0 to 3
40405	Max Level	(factory set)
40406	Full Level	0 to 65,535 mm
40436–40437	X ³ Coefficient	0 to 1,000,000
40438–40439	X ² Coefficient	0 to 1,000,000
40440–40441	X ¹ Coefficient	0 to 1,000,000
40442–40443	X ⁰ Coefficient	0 to 1,000,000

APPENDIX A: HAZARDOUS LOCATION INSTALLATION

Intrinsically Safe Wiring Diagram (4-20mA Output)





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