

# **PT-400 User Manual**

# Table of Contents

<b>Introduction .....</b>	<b>iii</b>
<b>Warranty Statement .....</b>	<b>iv</b>
<b>Chapter 1: Specifications and Options.....</b>	<b>1</b>
Dimensions .....	1
Specifications .....	2
Model Number Configurator.....	3
Electrical Connectors and Pinout Table .....	4
<b>Chapter 2: Installation and Removal Procedures and Notes.....</b>	<b>5</b>
Tools Needed.....	5
Physical Installation Notes .....	5
Mounting Instructions .....	5
Electrical Installation .....	6
Removal Instructions .....	6
<b>Chapter 3: Maintenance .....</b>	<b>7</b>
General Care .....	7
Zero Trimming.....	7
Re-Calibration.....	8
Repair and Returns.....	8
<b>Chapter 4: Hazardous Location Installation and Certification .....</b>	<b>9</b>
Intrinsically Safe Wiring Diagram .....	9
Non-Incendive Wiring Diagrams.....	10-12
CSA Certificate of Compliance .....	13-16
EC Declaration of Conformity .....	17

# Introduction

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

The PT-400 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, Canada, Europe and internationally by CSA, ATEX, and IECEx for Class 1, Zone 0 environments. The small size, integrated electronics, wide operating temperature range, and durability, make the PT-400 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. The following electrical ratings and approvals are also listed on the label. Please refer to the Certificate of Compliance and Declaration of Conformity at the back of this manual for further details.

## Electrical ratings

Input: 9 to 28 Volts DC; Outputs: 4-20mA / 0-5VDC\* / 0-10VDC (per order)



Exia Class I Division 2; Groups C, D T4

Class I, Zone 2, Group IIB

AEx nC IIB T4: Ta: -40°C to 85°C

Ex nL IIB T4: Ta: -40°C to 85°C

Maximum Working Pressure: 10,000 PSI

PT-400-L1 (4-20mA)

$V_{max} U_i = 28VDC$ ,  $I_{max} I_i = 110mA$ ,  $P_{max} P_i = 0.77W$ ,  $C_i = 0.055\mu F$ ,  $L_i = 7.95\mu H$

Install in accordance with drawing 9002794, sheet 2 (page 9).

PT-400-L3/L10 (0-5V\*/0-10V)

$V_{max} U_i = 28VDC$ ,  $I_{max} I_i = 110mA$ ,  $P_{max} P_i = 0.77W$ ,  $C_i = 0\mu F$ ,  $L_i = 0\mu H$

Install in accordance with drawing 9002794, sheets 3 & 4 (page 10 & 11).

Input: 9 to 28 Volts DC; Output: 4-20mA (per order)

Exia Class I Division 1; Groups C, D T4

Class I, Zone 0, Group IIB

AEx ia IIB T4: Ta: -40°C to 85°C

Ex ia IIB T4: Ta: -40°C to 85°C

Maximum Working Pressure: 10,000 PSI




$V_{max} U_i = 28VDC$ ,  $I_{max} I_i = 110mA$ ,  $P_{max} P_i = 0.77W$ ,  $C_i = 0.055\mu F$ ,  $L_i = 7.95\mu H$

Install in accordance with drawing 9002794, sheet 1 (page 8).

\*Note: 0-5 VDC includes output ranges 0.5-4.5 VDC and 1-5 VDC.

**i** IMPORTANT: Your PT-400 MUST be installed according to drawing 9002794 (Intrinsically Safe Wiring Diagram or Non-Incendive Wiring Diagrams) as indicated above to meet listed approvals. Faulty installation will invalidate all safety approvals and ratings.

## The following approvals only apply to the L1 (4-20mA) version

ATEX Directive:  0344

Sira 12ATEX2294



II 1G Ex ia IIB T4 Ga

Ta: -40°C to 85°C

$U_i \leq 28 \text{ V}$ ,  $I_i \leq 110 \text{ mA}$ ,  $P_i \leq 0.77 \text{ W}$ ,  $C_i = 0.055 \mu\text{F}$ ,  $L_i = 7.95 \mu\text{H}$

IECEX CSA 12.0018  
Ex ia IIB T4 Ga

## Warranty Statement

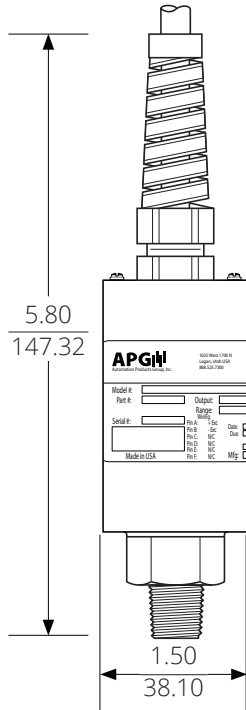
This product is covered by APG's warranty to be free from defects in material and workmanship under normal use and service of the product for 24 months. For a full explanation of our Warranty, please visit <https://www.apgsensors.com/about-us/terms-conditions>. Contact Technical Support to receive a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

Scan the QR code below to read the full explanation of our Warranty on your tablet or smartphone.

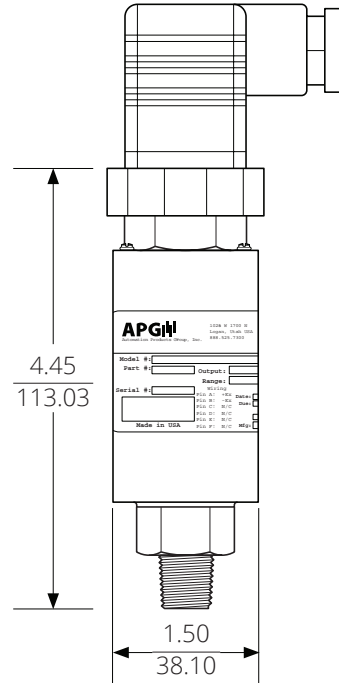


# Chapter 1: Specifications and Options

- Dimensions

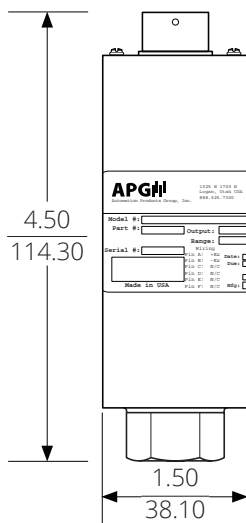


PT-400 with Pigtail and NPTM

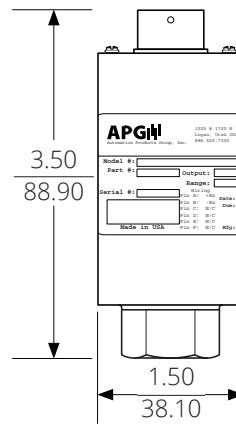


PT-400 with DIN 43650 and L-Bracket and NPTM

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



PT-400 with 4 or 6 pin Bayonet on Extended Can and NPTF



PT-400 with 4 or 6 pin Bayonet and NPTF

## • Specifications

### Performance

Pressure Ranges	0 to 30K PSI
Analog Output	4-20mA, 0-5VDC, 0.5-4.5VDC, 1-5VDC, 0-10VDC
Over Pressure	2X Full Scale or limit of fitting, whichever is less
Burst Pressure	3.0X Full Scale or limit of fitting, whichever is less

### Accuracy

Linearity, Hystereses & Repeatability	±0.25% of Full Scale (BFSL) (1% for pressure ≤ 1 psi)
Thermal Zero Shift	[±0.036% FSO/°C      (±0.02% FSO/°F)]
Thermal Span Shift	[±0.036% FSO/°C      (±0.02% FSO/°F)]

### Environmental

Operating Temperature	-40 - 85°C / -40 - 185°F
Compensated Temperature	
≤ 10 psi:	0° - 60°C / 32° - 140°F
10 < x ≤ 1000 psi:	-10° - 70°C / 14° - 158°F
> 1000 psi:	-17° - 54°C / 0° - 130°F
Enclosure Protection	IP67

### Electrical

Supply Voltage (at sensor)	4-20 mA:      9-28 VDC
	0 to 5 VDC:    9-28 VDC
	0.5 to 4.5 VDC: 9-28 VDC
	1 to 5 VDC:    9-28 VDC
	0 to 10 VDC:   12.5-28 VDC
	RS-485:        9-28 VDC
Output Signal @ 21°C	4-20 mA:      3-30 mA max.
	0 to 5 VDC:    7mA max
	0 to 10 VDC:   14mA max

### Materials of Construction

Wetted Materials	316L Stainless Steel (≤ 1,000 psi) 17-4 Stainless Steel (> 1,000 psi) Incoloy (10,000 - 30,000 psi)
Enclosure	316L Stainless Steel

### Mechanical

Pressure Connection	See model number configurator for complete list
Weight	283g (10 oz.)

## • Model Number Configurator

Model Number: PT-400 -      -      -      -      -      -      -      -      -      -      -       
                                  A      B      C      D      E      F      G      H      I      J

### A. Operation / Output

- L1**<sup>▲</sup> 4 - 20 mA output
- L3** 0 - 5 VDC output
- L10** 0 - 10 VDC output
- L12** 1 - 5 VDC output
- L20** 0.5 - 4.5 VDC output

#### Modbus

- L5** RS-485 (Modbus/RTU), 4-wire Pressure reading only (Approvals Pending)
- L31** RS-485 (Modbus/RTU), 4-wire Level calculations, tank volume (Approvals Pending)

### B. Common Pressure Ranges - PSI\*

- 5**       **50**       **200**       **1000**       **5000**
- 15**       **60**       **300**       **2000**       **10000**
- 30**       **100**       **500**       **3000**       **30000**

\*Other ranges available. Please consult factory.

### C. Units of Measure

- psi**<sup>▲</sup>       **bar**       **kPa**       **inH<sub>2</sub>O**       **inWC**
- fH<sub>2</sub>O**       **fWC**       **mmH<sub>2</sub>O**       **inHG**

### D. Pressure Type

- A** Absolute (10 - 200 psi)
- S**<sup>▲</sup> Sealed (200 psi - 30,000 psi)
- G** Gauge (≤ 500 psi)
- CG** Compound Gauge (-1 - 1 psi or -15 - 15 psi)
- V** VAC (-15 - 0 psi)

### E. Electrical Connection

(Mating connector sold separately unless noted otherwise)

- E3** 4 pin bayonet (PT 1H-8-4P or equiv.)†
- E4** 4 pin M12 micro connector
- E5**<sup>▲</sup> Pigtail with cable (specify cable length below)
- E6** 4 pin per DIN 43650, short can (mating connector included)
- E17** 6 pin bayonet (PT02E-10-6P)
- E19** 1/2 in NPTM with cable, short can
- E36** 1/2 in NPTM with 6 in flying leads, long can
- E40** 3 pin bayonet††
- E41** Blue Junction Box
- E45** 4 pin minifast Turck

†Note: Not currently available with L5/L31 Modbus Output

††Note: L1 4-20 mA Output only

### F. Electrical Cable Length

- Number represents cable length, in 5-ft increments, included on E5 and E19 options. (ex. E5-10 equals pigtail, 10 ft cable)

### G. Process Connection

- P0**<sup>▲</sup> 1/4 - 18 NPTM (≤ 10,000 psi)
- P1** 1/2 - 14 NPTM (≤ 10,000 psi)
- P5** 1/4 - 18 NPTF (≤ 15,000 psi)
- P6** 1/2 NPTF (≤ 10,000 psi)
- P38** 1 1/2 in. tri-clover with 3/4 in. diaphragm (≤ 1,000 psi)
- P52** 1 1/2 in. NPTM (≤ 1,000 psi)
- P54** 7/16 - 20 UNJF-3A Male w/ Cone (≤ 1,000 psi)
- P56** F250C High Pressure (10,000 psi - 30,000 psi)
- P57** F560C40 High Pressure (10,000 psi - 30,000 psi)

### H. Accuracy

#### 1-5,000 PSI

- N0**<sup>▲</sup> ±0.25% (1% for pressure ≤ 1 psi)
- N1**\* ±0.25% with NIST certification
- N2** ±0.1% with NIST certification

\*Note: ±0.25% available at 10,000 psi for 4-20 mA output only.

#### 10,000 PSI

- N12** ±0.5%
- N13** ±0.5% with NIST certification

### I. Materials

- M1**<sup>▲</sup> 316L SS (≤ 1,000 psi)
- M2** 17-4 SS (> 1000 psi)
- M7** Incoloy (10,000 psi - 30,000 psi; P56/P57 only)

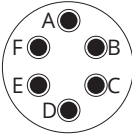
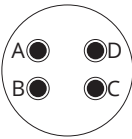
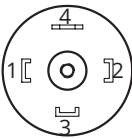
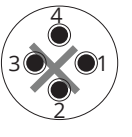
### J. Compensated Temperature Range

- S0**<sup>▲</sup> -17° - 54°C / 0° - 130°F (> 1000 psi)
- S1** -40° - 82°C / -40° - 180°F (> 1,000 psi)
- S3** -34° - 77°C / -30° - 170°F (> 1,000 psi)
- S9**<sup>▲</sup> 0° - 60°C / 32° - 140°F (≤ 10 psi)
- S10**<sup>▲</sup> -10° - 70°C / 14° - 158°F (10 < x ≤ 1000 psi)

▲This option is standard

• **Electrical Connectors, Pinout Table, and Supply Power Table**

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 Ground	- 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	
Flying Leads	Red	+ Excitation	+ Excitation	+ Excitation	+ Excitation
	Grn	No wire	+ Output	+ Output	B (Tx-)
	Wht	No wire	- Output	- Output	A (Tx+)
	Blk	- Excitation	- Excitation	- Excitation	- Excitation
	Shld	No wire	No wire	No wire	No wire
	Grn/Ylw	Case Ground	No wire	No wire	No wire

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



# Chapter 2: Installation and Removal Procedures and Notes

- **Tools Needed**

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

- **Physical Installation Notes**

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

- Ambient temperature between -40°C and 85°C (-40°F to +185°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 NH<sub>3</sub>, SO<sub>2</sub>, Cl<sub>2</sub> etc.)
- Ample space for maintenance and inspection
- Class II power supply

- **Mounting Instructions**

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. 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-400 against your order.
- Check that your electrical system wiring matches the pinout table on your PT-400.
- For instruments with connectors, make the connection. Otherwise, attach your wires to the provided terminal strip.

- **Removal Instructions**

Removing your PT-400 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° F and 180° F.

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

# Chapter 3: Maintenance

## • General Care

Your PT-400 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 the protective screw.
- Ensure that the transmitter 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, or 1 V output.

**i** 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.

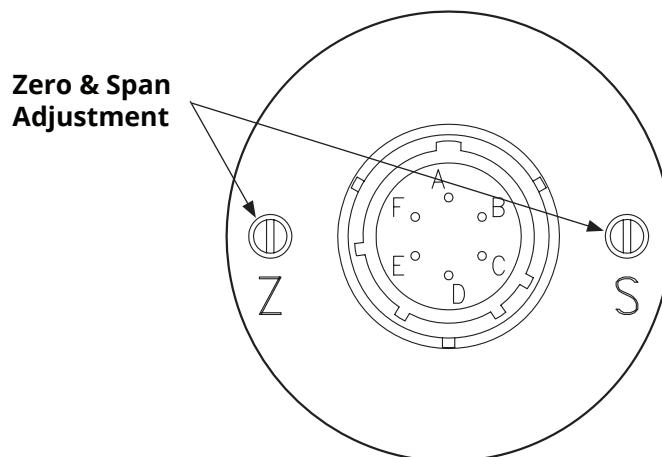


Figure 3.1

## • **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-400. (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 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-400 to the factory for repair and/or adjustment.

## • **Repair and Returns**

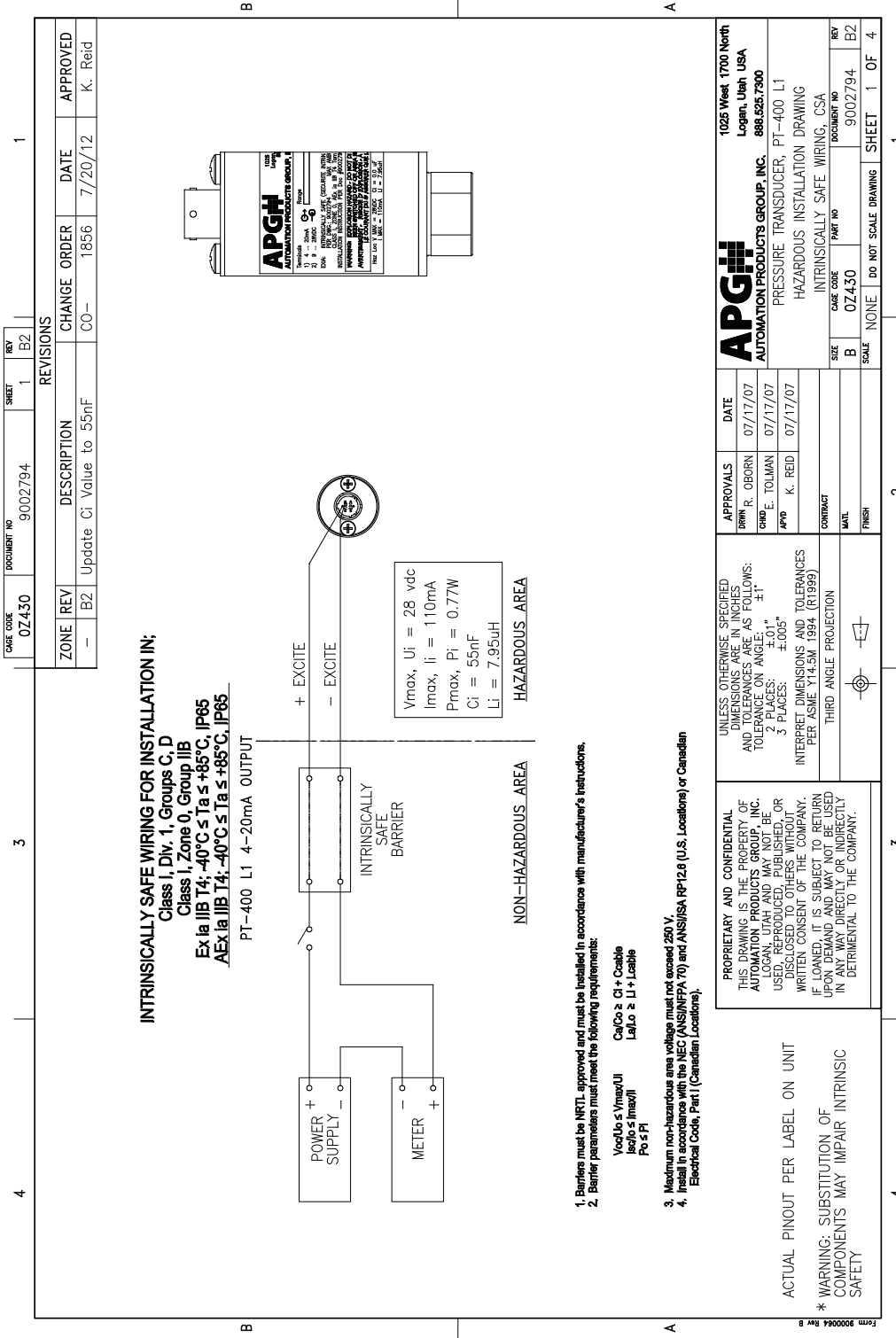
Should your PT-400 series pressure transmitter require service, please contact the factory via phone, email, or online chat. We will issue you a Return Material Authorization (RMA) number with instructions.

- Phone: 888-525-7300
- Email: [sales@apgsensors.com](mailto:sales@apgsensors.com)
- Online chat at [www.apgsensors.com](http://www.apgsensors.com)

Please have your PT-400's part number and serial number available. See Terms & Conditions (<https://www.apgsensors.com/about-us/terms-conditions>) for more information.

# Chapter 4: Hazardous Location Installation and Certification

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



• **Non-Incendive Wiring Diagram (4-20mA Output)**

CASE CODE <b>0Z430</b>	DOCUMENT NO 9009794	SHEET 2	REV B2	1	
<b>REVISIONS</b>					
ZONE	REV	DESCRIPTION	CHANGE ORDER	DATE	APPROVED
—	B2	Update Ci Value to 55nF	CO—	1856	7/20/12 K. Reid

**NONINCENDIVE WIRING FOR INSTALLATION IN:**  
 Class I, Division 2, Groups C and D  
 Class I, Zone 2, Group IIB  
 Ex nL IIB T4; -40°C ≤ T<sub>a</sub> ≤ +65°C  
 AEx nL IIB T4; -40°C ≤ T<sub>a</sub> ≤ +85°C  
 PT-400 L1 4-20mA OUTPUT

+ EXCITE  
- EXCITE

V<sub>max</sub>, U<sub>i</sub> = 28 vdc  
 I<sub>max</sub>, I<sub>i</sub> = 110mA  
 P<sub>max</sub>, P<sub>i</sub> = 0.77W  
 C<sub>i</sub> = 55nF  
 L<sub>i</sub> = 7.95uH

HAZARDOUS AREA

NON-HAZARDOUS AREA

1. These devices must be connected to a suitably certified and approved apparatus that provides non-incendive outputs either equal to or less than those as indicated by the applicable control drawings. This certified apparatus must be located in a safe area.
2. This certified apparatus must be located in a safe area.
3. Maximum non-hazardous area voltage must not exceed 280 V
4. Install in accordance with the NEC (ANSI/NFPA 70) and ANSI/ISA RP12.8 (U.S. Locations) or Canadian Electrical Code, Part 1 (Canadian Locations).

ACTUAL PINOUT PER LABEL ON UNIT

\* WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY

PROPRIETARY AND CONFIDENTIAL  
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND TOLERANCES ARE AS FOLLOWS:  
 TOLERANCE ON ANGLES: ±1°  
 2 PLACES: ±0.005"  
 3 PLACES: ±0.005"  
 INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994 (R1995)  
 THIRD ANGLE PROJECTION

<b>APGH</b>	1025 West 1700 North Logan, Utah USA 888.525.7300	DATE 07/17/07	APPROVALS DWR R. OBORN	1
<b>AUTOMATION PRODUCTS GROUP, INC.</b>		07/17/07	E. TOLMAN	2
HAZARDOUS INSTALLATION DRAWING		07/17/07	K. REID	3
NONINCENDIVE WIRING, CSA				
SIZE B	CASE CODE 0Z430	PART NO	DOCUMENT NO	REV
SCALE NONE	DO NOT SCALE DRAWING	SHEET	2	OF 4

• **Non-Incendive Wiring Diagram (0-5VDC Output)**

CASE CODE <b>0Z430</b>	DOCUMENT NO 9002794	SHEET 3	REV B2	1
ZONE REV DESCRIPTION CHANGE ORDER DATE APPROVED				
- B2 Update Li value CO- 1856 7/11/12 K. Reid				

**NONINCENDIVE WIRING FOR INSTALLATION IN ;**  
**Class I, Division 2, Groups C and D**  
**Class I, Zone 2, Group IIB**  
**Ex nL IIB T4; -40°C ≤ Ta ≤ +85°C**  
**AEx nC IIB T4; -40°C ≤ Ta ≤ +85°C**  
**PT-400 L3 0-5VDC VOLTAGE OUTPUT**

**CERTIFIED ASSOCIATED  
NONINCENDIVE  
FIELD WIRING**

**HAZARDOUS AREA**

**HAZARDOUS AREA**

**NON-HAZARDOUS AREA**

**APGH**  
1025 West 1700 North  
 Logan, Utah USA  
 888.525.7300

**PT-400 L3**  
NONINCENDIVE WIRING, CSA

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 UPON DEMAND AND MAY NOT BE USED  
 IN ANY MANNER THAT IS DIRECTLY  
 DETRIMENTAL TO THE COMPANY.

**UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 AND TOLERANCES ARE AS FOLLOWS:**  
 DIMENSIONS ON ANGLES: ±1°  
 DIMENSIONS IN PARENT SQUARE  
 PLACES: ±.005"  
 INTERPRET DIMENSIONS AND TOLERANCES  
 PER ASME Y14.5M, 1994 (R1995)

THIRD ANGLE PROJECTION

**APPROVALS**

BY: R. OBORN	DATE: 07/17/07
CHKD: E. TOLMAN	DATE: 07/17/07
APP: K. REID	DATE: 07/17/07

CONTRACT: \_\_\_\_\_  
 MAIL: \_\_\_\_\_  
 FINISH: \_\_\_\_\_

1. These devices must be connected to a suitably certified and approved apparatus that provides non-incendive outputs either equal to or less than those as indicated by the applicable control drawings. This certified apparatus must be located in a safe area.

2. This certified apparatus must be located in a safe area.

3. Maximum non-hazardous area voltage must not exceed 250 V

4. Install in accordance with the NEC (ANSI/NFPA 70) and ANSI/ISA IEC 126 (U.S. Locations) or Canadian Electrical Code, Part I (Canadian Locations).

1025 West 1700 North  
 Logan, Utah USA  
 888.525.7300

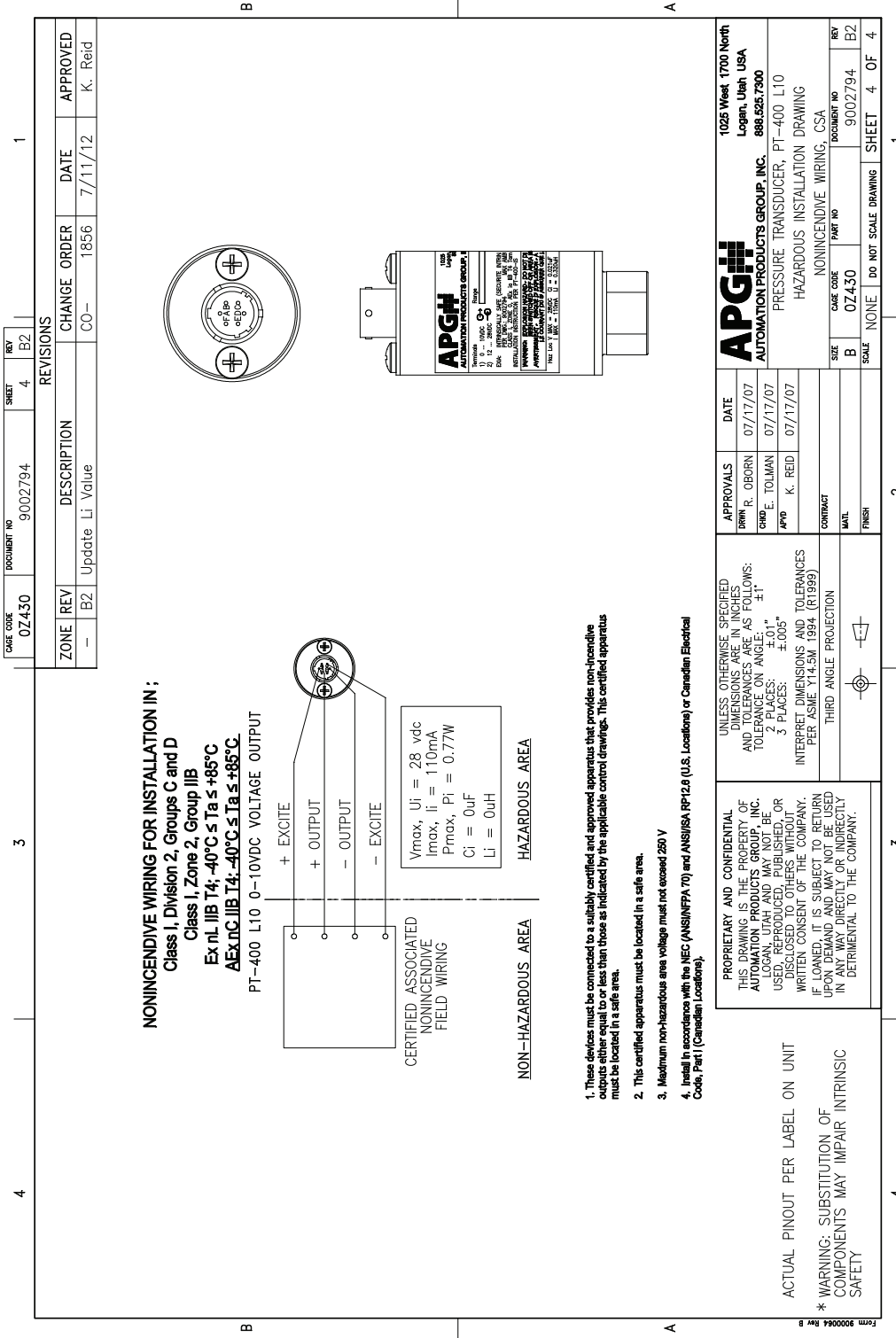
HAZARDOUS INSTALLATION DRAWING  
 PRESSURE TRANSDUCER, PT-400 L3  
 NONINCENDIVE WIRING, CSA

SIZE: B CASE CODE: 0Z430 PART NO: 9002794 REV: B2  
 SCALE: NONE DO NOT SCALE DRAWING SHEET 3 OF 4

**NOTE:**  
 Certification of 0-5 VDC output includes 1-5 VDC and 0.5-4.5 VDC outputs.

• **Non-Incendive Wiring Diagram (0-10VDC Output)**





- **CSA Certificate of Compliance**



# Certificate of Compliance

**Certificate:** 1984045

**Master Contract:** 237484

**Project:** 2587208

**Date Issued:** December 17, 2012

**Issued to:** Automation Products Group Inc

1025 West 1700 North  
Logan, UT 84321  
USA  
Attention: Karl Reid

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*



*Eshwar Kashyap*

**Issued by:** Eshwar Kashyap

## **PRODUCTS**

**CLASS 2258 03** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non - Incendive Systems - For Hazardous Locations

**CLASS 2258 83** - PROCESS CONTROL EQUIPMENT-Intrinsically Safe and Non-Incendive - Systems-For Hazardous Locations-Certified to U.S. Standards

**Class I, Div. 2, Groups C and D**

**Class I, Zone 2, Group IIB**

**Ex nL IIB T4; Ta: -40°C ... +85°C**

**AEx nC IIB T4; Ta: -40°C ... +85°C**

- Model PT-400-L1xxxx Pressure Transmitter. Rated 9-28VDC, 4-20mA. Maximum Ambient 85° C; Temperature Code T4; Maximum Working Pressure 10,000 PSI. Enclosure type: IP65. Installed as per Drawing 9002794. Non-Incendive with the following Entity Parameters:

Vmax, Ui = 28V

Imax, Ii = 110mA

Pmax, Pi = 0.77W



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$C_i = 0.055\mu\text{F}$

$L_i = 7.95\mu\text{H}$

- Model PT-400-L3/L10xxxx Pressure Transmitter. Rated 9-28VDC, 4-20mA or 0-5V, 20mA or 0-10V, 20mA; Maximum Ambient 85° C; Temperature Code T4; Maximum Working Pressure 10,000 PSI. Installed as per Drawing 9002794. Non-Incendive with the following Entity Parameters:

$V_{\text{max}}, U_i = 28\text{V}$

$I_{\text{max}}, I_i = 110\text{mA}$

$P_{\text{max}}, P_i = 0.77\text{W}$

$C_i = 0\mu\text{F}$

$L_i = 0\mu\text{H}$

- Model PT-500-xxxx Pressure Transmitter, Rated 10-28VDC, 4-20mA; Maximum Ambient 85° C; Temperature Code T4; Maximum Working Pressure 10,000 PSI; Non-Incendive with the following Entity Parameters:

$V_{\text{max}}, U_i = 28\text{V}$

$I_{\text{max}}, I_i = 110\text{mA}$

$P_{\text{max}}, P_i = 0.77\text{W}$

$C_i = 0\mu\text{F}$

$L_i = 0\mu\text{H}$

Notes for Models PT-400, PT-500:

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 suitably certified and approved apparatus that provides non-incendive outputs either equal to or less than those as indicated by the applicable control drawings. This certified apparatus must be located in a safe area.

**CLASS 2258 04** - Process Control Equipment - Intrinsically Safe, Entity - For Hazardous Locations



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**Master Contract:** 237484

**Project:** 2587208

**Date Issued:** December 17, 2012

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**CLASS 2258 84** - Process Control Equipment - Intrinsically Safe, Entity - For Hazardous Locations - Certified to US Standards

**Class I, Div. 1, Groups C, D**

**Class I, Zone 0, Group IIB**

**Ex ia IIB T4; Ta: -40°C ... +85°C**

**AEx ia IIB T4; Ta: -40°C ... +85°C**

- Model PT-400-L1xxxx Pressure Transmitter. Rated 9-28VDC, 4-20mA. Maximum Working Pressure: 10,000 PSI. Installed as per Drawing 9002794. Ambient Range: -40°C to +85°C. Enclosure type: IP65. Intrinsically safe with the following entity parameters:

$V_{max}, U_i = 28V$

$I_{max}, I_i = 110mA$

$P_{max}, P_i = 0.77W$

$C_i = 0.055\mu F$

$L_i = 7.95\mu H$

- Model PT-500-xxxx Pressure Transmitter; Maximum Ambient 85° C; Temperature Code T4; Maximum Working Pressure 10,000 PSI; Entity parameters as follows:  $V_{max}, U_i = 28V$

$I_{max}, I_i = 110mA$

$P_{max}, P_i = 0.77W$

$C_i = 0.042\mu F$

$L_i = 0.320\mu H$

Notes for Models PT-400, PT-500:

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).



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**Master Contract:** 237484

**Project:** 2587208

**Date Issued:** December 17, 2012

**APPLICABLE REQUIREMENTS**

C22.2 No 0 - M1991	General Requirements - Canadian Electrical Code Part II.
C22.2 No 0.4 - M2004	Bonding and Grounding of Electrical Equipment (Protective Grounding).
C22.2 No 142 - M1987	Process Control Equipment.
C22.2 No 157 - M1992	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations.
C22.2 No 213 - M1987	Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations.
CAN/CSA-C22.2 No. 60079-0:11	Explosive Atmospheres - Part 0: Equipment - General requirements
CAN/CSA-C22.2 No. 60079-11:11	Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i"
CAN/CSA-C22.2 No. 60079-15:12	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus
CAN/CSA-C22.2 No. 60529:05	Degrees of protection provided by enclosures (IP Code)
UL 508, 17th Edition	Industrial Control Equipment.
UL 913, 7th Edition	Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, III, Division 1, Hazardous (Classified) Locations.
ANSI/ISA-12.12.01-2007	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
ANSI/UL 60079-0:09	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
ANSI/UL 60079-11:09	Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i"
ANSI/UL 60079-15:09	Electrical apparatus for Explosive Gas Atmospheres - Part 15: Type of Protection "n"
ANSI/IEC 60529:2004	Degrees of Protection Provided by Enclosures (IP Code)

• **EC Declaration of Conformity**

**EU** *Declaration of Conformity*



**Manufacturer's Name:** Automation Products Group Inc.

**Address:** 1025 West 1700 North  
Logan, UT 84321

Tel: (435) 753-7300  
Email: sales@apgsensors.com  
Web: www.apgsensors.com

*Declares that the product:*

**Product Name:** Pressure Transmitter PT-400-L1

*Conforms to:*

**ATEX Directive 2014/34/EU**

**- EC Type Examination Certificate:** Sira 12ATEX2294  
Sira 0518

Sira Certification Service, Rake Lane, Eccleston, Chester, CH4 9JN, England

**Description of Equipment or Protective System:**

The equipment measures a Pressure and provides a 4-20mA output signal proportional to the measured Pressure.

Series: PT-400-L1

*Report conforms to the following Standards*

EN 60079-0:2012  
EN 60079-26:2007  
EN 60079-11:2012

A gap analysis was conducted to confirm that product, Pressure Transmitter PT-400-L1 conforms to the amended harmonized standard:

EN 60079-0:2012/A11:2013, and standard  
EN 60079-26:2015.

**Markings:** : ATEX: Ex II 1G Ex ia IIB T4 Ga (Ta = -40°C to +85°C)

**Supplementary Information:**

The product described in this Declaration of Conformity complies with the Applicable European Directives and relevant sections of the Applicable International Standards. The signature on this document authorizes the distinctive European mark to be applied to the equipment described.

**Authorized Signature:**

Karl Reid, Product Line Manager



**Automation Products Group, Inc.**

Tel: 1/888/525-7300 • Fax: 1/435/753-7490 • [www.apgsensors.com](http://www.apgsensors.com) • [sales@apgsensors.com](mailto:sales@apgsensors.com)