AUTOMATION PRODUCTS GROUP, INC.

Operator's Manual

PT-500

Automation Products Group, Inc.
APG...Providing tailored solutions for measurement applications
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• Warranty and Warranty Restrictions

APG warrants its products to be free from defects of material and workmanship and will, without charge, replace or repair any equipment found defective upon inspection at its factory, provided the equipment has been returned, transportation prepaid, within 18 months from date of shipment from factory.

THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESSED OR IMPLIED BY OPERATION OF LAW OR OTHERWISE INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

No representation or warranty, express or implied, made by any sales representative, distributor, or other agent or representative of APG which is not specifically set forth herein shall be binding upon APG. APG shall not be liable for any incidental or consequential damages, losses or expenses directly or indirectly arising from the sale, handling, improper application or use of the goods or from any other cause relating thereto and APG's liability hereunder, in any case, is expressly limited to the repair or replacement (at APG's option) of goods.

Warranty is specifically at the factory. Any on site service will be provided at the sole expense of the Purchaser at standard field service rates.

All associated equipment must be protected by properly rated electronic/ electrical protection devices. APG shall not be liable for any damage due to improper engineering or installation by the purchaser or third parties. Proper installation, operation and maintenance of the product becomes the responsibility of the user upon receipt of the product.

Returns and allowances must be authorized by APG in advance. APG will assign a Return Material Authorization (RMA) number which must appear on all related papers and the outside of the shipping carton. All returns are subject to the final review by APG. Returns are subject to restocking charges as determined by APG's "Credit Return Policy".

- **Instructions**

All units are factory calibrated prior to shipment.

1. Output

The PT-500 transmitter is a two wire 4-20mA output devce. The two wire system connects the power supply, transmitter, and indicating/recording instruments in a series circuit. This creates a "current loop" with the transmitter functioning as a current regulating device.

2. Wiring Information

Below, are the wiring diagrams, and terminal coding notes, needed to assist you in wiring your transducer.

2-Wire Current Loop

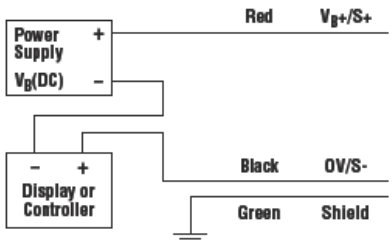
Signal	Wire Color
Supply +	Red
Signal -	Black
Ground	Green

Terminal Coding Notes:

V_B+ : Plus power supply
OV : Minus power supply
S+ : Plus output signal
S- : Minus output signal
Shield : Cable shield/transmitter body

The supply voltage must be higher than the minimum required voltage as determined by the load equation for the specific transmitter. Refer to the specifications section of the data sheets for additional information.

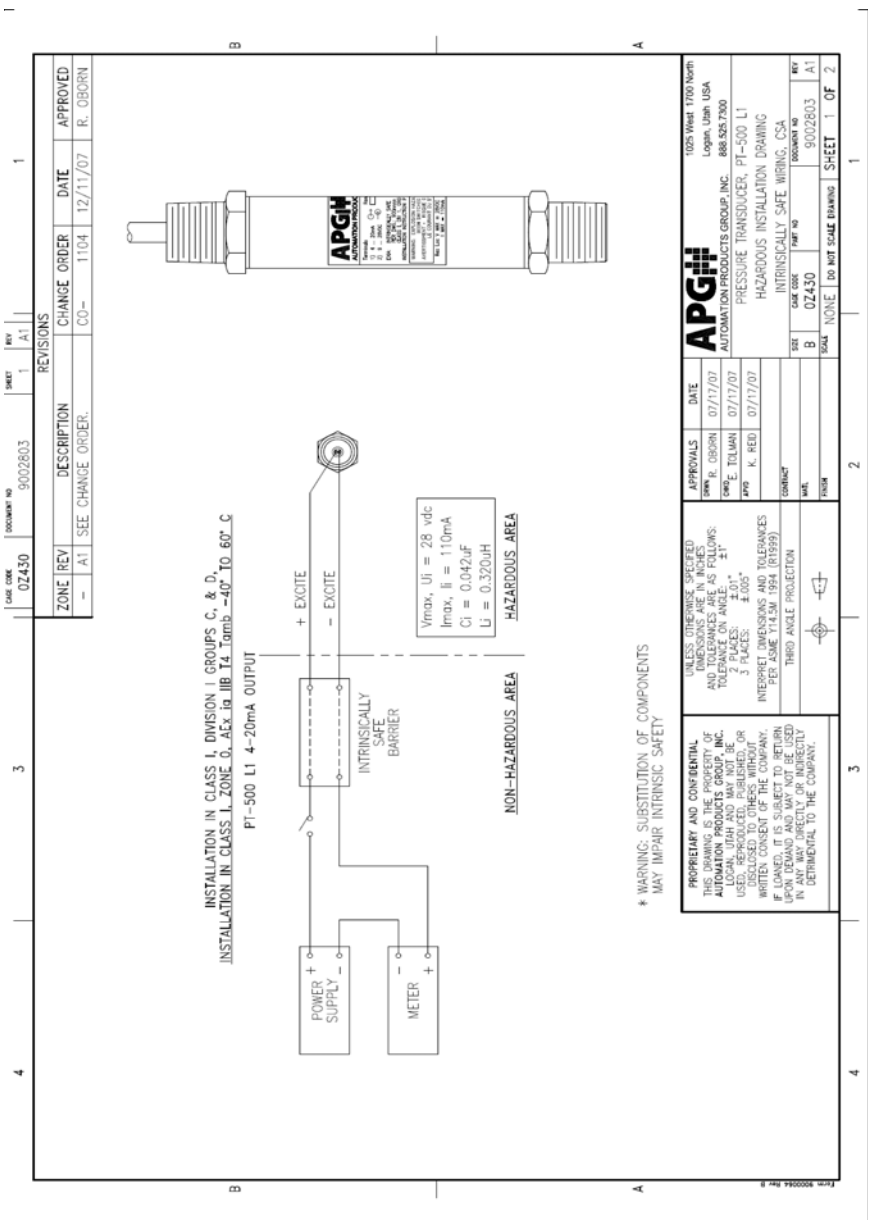
Flying Leads



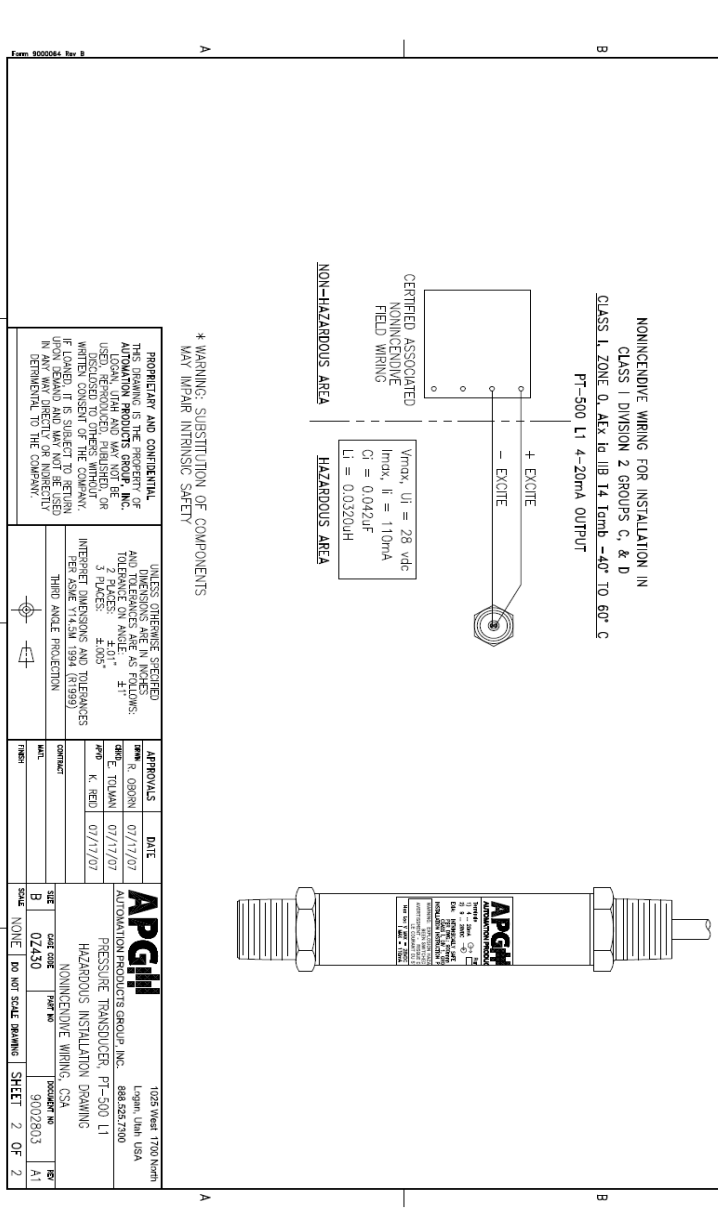
Load Limitation

$R_{(max)}$ = $((V_S - 12V)/0.02\ A)$ - (0.042 Ω per ft. of cable)

- **Intrinsically Safe Wiring**



- **Nonincendive Wiring**



- **Model Configurator**

PT-500 - [ ] - [ ] - [ ] - [ ]

Standard Ranges

	Pressure	Water Depth
5 psig	0-5 psig	11.5 ft. (3.5 m)
10 psig	0-10 psig	23.0 ft. (7.0 m)
15 psig	0-15 psig	34.7 ft. (10.6 m)
25 psig	0-25 psig	57.8 ft. (17.6 m)
50 psig	0-50 psig	115.5 ft. (35.2 m)
100 psig	0-100 psig	231.1 ft. (70.4 m)
200 psig	0-200 psig	462.2 ft. (140.9 m)

Output

L1	4-20 mA, 2-wire

Process Connection

P1	1/2" NPTM with removable plastic nose cone
P38	1-1/2" tri-clover with 3/4" diaphragm
P39	Cage (includes P38 fitting)

Cable Length

Specify length in feet. (Standard length is 40 ft.)

• Field Maintenance

1. Zero Adjust

The zero output (4mA) can be adjusted by holding a magnet close to the can, approx. **1 1/2 inches** from the top or bottom of the can.

If the zero output values do not change right away, hold the magnet in place near the top of the can until the values change, up to two minutes. If there is no change, repeat the procedure near the bottom of the can. If there is still no change,consult the factory.

Holding the magnet perpendicular near the top increases the output.

Holding the magnet perpindicular near the bottom decreases the output

Note: Span calibration must be done at the factory.

2. Suspension Mounting

For suspension mounting the PT-500, drill a 3/16” hole into the 1/2”NPTF to 1/2”NPTF hex coupler (P/N 511414) and secure it to the 1/2”NPTM coupler fitting of the PT-500. Attach a .060 in diameter 316L SS cable of desired length to the hex coupler and secure the steel cable according to your application requirements.

3. Desiccant Drying Cartridge

The desiccant drying cartridge with vent tube adapter is used to keep vapor from condensing in the vent tube. Condensation in the vent tube could create an output offset.

The installation of the desiccant drying cartridge is quick and easy. Common installation methods are cable tie, velcro and cable clamps

Note: Replacement of the desiccant cartridge is recommended when the desiccant crystals have turned from blue to pink.

Desiccant Drying Cartridge with vent tube adapter attached to vented cable

CSA INTERNATIONAL

Certificate of Compliance

Certificate:	1984045	**Master Contract:**	237484
Project:	1984045	**Date Issued:**	2008/03/04

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'

C US

Issued by: Andrew Redeker

Authorized by: Patricia Pasemko, Operations Manager

PRODUCTS

CLASS 2258 83	- PROCESS CONTROL EQUIPMENT-Intrinsically Safe and Non-Incendive - Systems-For Hazardous Locations-Certified to U.S. Standards
CLASS 2258 03	- PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non - Incendive Systems - For Hazardous Locations
CLASS 2258 84	- PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - - For Hazardous Locations - Certified to US Standards
CLASS 2258 04	- PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

The 'C' and 'US' indicators adjacent to the CSA Mark signify that the product has been evaluated to the applicable CSA and ANSI/UL Standards, for use in Canada and the U.S., respectively. This 'US' indicator includes products eligible to bear the 'NRTL' indicator. NRTL, i.e. National Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.

DQD 507 Rev. 2004-06-30

CSA INTERNATIONAL

Certificate: 1984045 **Master Contract:** 237484

Project: 1984045 **Date Issued:** 2008/03/04

2258 03 - Process Control Equipment - Intrinsically Safe and Non Incendive systems For Hazardous Locations

2258 83 - Process Control Equipment - Intrinsically Safe and Non Incendive – Systems For Hazardous Locations - Certified to US Standards

Class I, Division 2, Groups C and D; Class I, Zone 2, Group IIB; Ex nL IIB T4; -40°C ≤ Ta ≤ +85°C; AEx nL IIB T4; -40°C ≤ Ta ≤ +85°C

Model PT-400-xxxx 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; Non-Incendive with the following Entity Parameters:

Vmax, Ui = 28V; Imax, Ii = 110mA; Pmax, Pi = 0.77W; Ci = 0uF; Li = 0uH

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:

Vmax, Ui = 28V; Imax, Ii = 110mA; Pmax, Pi = 0.77W; Ci = 0uF; Li = 0uH

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.

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

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

Class I, Division 1, Groups C,D; Class I, Zone 0, Group IIB; Ex ia IIB T4; -40°C ≤ Ta ≤ +85°C; AEx ia IIB T4; -40°C ≤ Ta ≤ +85°C

DQD 507 Rev: 2004-06-30

CSA INTERNATIONAL

Certificate:	1984045	**Master Contract:**	237484
Project:	1984045	**Date Issued:**	2008/03/04

Model PT-400-L1xxxx Pressure Transmitter; Maximum Ambient 85°C; Temperature Code T4; Maximum Working Pressure 10,000 PSI; Entity parameters as follows:

Vmax, Ui = 28V; Imax, Ii = 110mA; Pmax, Pi = 0.77W; Ci = 0.021uF; Li = 0.302uH

Model PT-500-xxxx Pressure Transmitter; Maximum Ambient 85°C; Temperature Code T4; Maximum Working Pressure 10,000 PSI; Entity parameters as follows:

Vmax, Ui = 28V; Imax, Ii = 110mA; Pmax, Pi = 0.77W; Ci = 0.042uF; Li = 0.320uH

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.

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 E60079-0:07 - Electrical apparatus for explosive gas atmospheres. PART 0: General requirements.

CAN/CSA E60079-11:02 - Electrical apparatus for explosive gas atmospheres. PART 11: Intrinsic safety "i".

CAN/CSA E60079-15:02 - Electrical apparatus for explosive gas atmospheres. PART 15: Type of protection "n"

UL 508, Seventeenth Edition - Industrial Control Equipment.

UL 913, Seventh 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

UL 60079-0 Fourth Edition - Electrical apparatus for explosive gas atmospheres. PART 0: General requirements.

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Certificate:	1984045	**Master Contract:**	237484
Project:	1984045	**Date Issued:**	2008/03/04

UL 60079-11 Second Edition - Electrical apparatus for explosive gas atmospheres. PART 11: Intrinsic safety "i".

UL 60079-15 First Edition - Electrical apparatus for explosive gas atmospheres. PART 15: Type of protection "n"

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Notes

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