

## Thank You

Thanks for purchasing an MPI-T Series Magnetostrictive Level Sensor from us! We appreciate your business and your trust. Please take a moment to familiarize yourself with the product and this guide before installation. If you have any questions, at any time, don't hesitate to call us at 435-753-7300. You can also find a full list of our product install guides at:

[apgsensors.com/resources/install-guides](https://apgsensors.com/resources/install-guides)

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### 1 Description

The MPI series magnetostrictive level sensor provides highly accurate and repeatable level readings in a wide variety of liquid level measurement applications. It is certified for installation in Class I, Division 1, and Class I, Zone 0 hazardous areas in the US and Canada by CSA, and ATEX and IECEX for Europe and the rest of the world.

### 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 MPI-T will look something like this:

Sample: MPI-R5-XW-P2ST-120-4D-N

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.

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

### 3 Warranty & Return Information

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

[www.apgsensors.com/warranty-returns/](https://www.apgsensors.com/warranty-returns/)

Contact Technical Support to receive a Return Material Authorization (RMA) before shipping your product back.

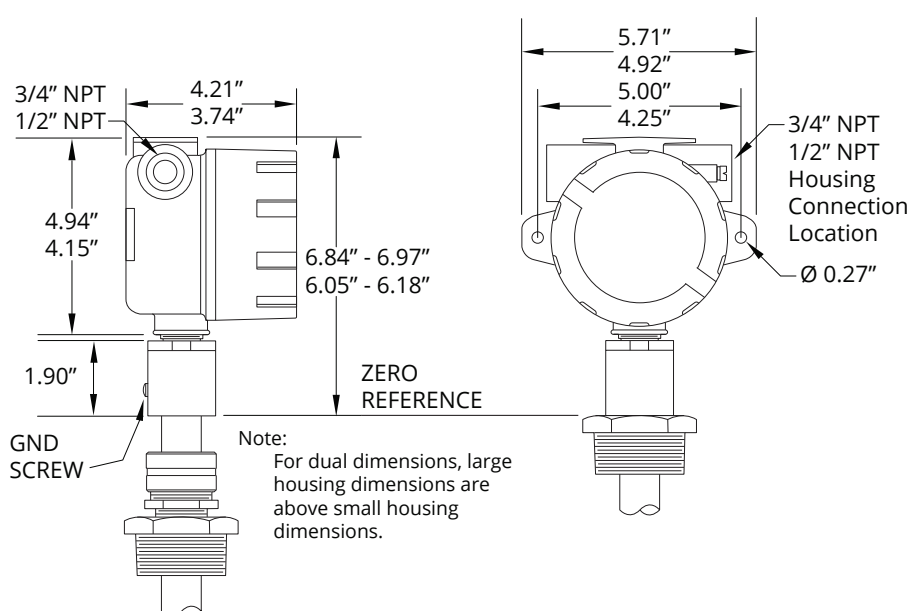
If your product needs to be returned for evaluation, contact us via email, phone, or online chat on our website. We will issue you an RMA number with instructions. You can also find the form on our website by clicking "RMA" in the web footer, or go to

[apgsensors.com/RMA-form](https://apgsensors.com/RMA-form)

- Phone: (435) 753-7300
- Email: [sales@apgsensors.com](mailto:sales@apgsensors.com)
- Online chat at [apgsensors.com](https://apgsensors.com)

Please have your part number and serial number available.

### 4 Dimensions



MPI-T HOUSING DIMENSIONS

# MPI-T Magnetostrictive Level Sensors

## For Titanium Stem, Intrinsically Safe Probes

### INSTALLATION GUIDE



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Doc # 9005627 Rev E  
Part # 200341  
04/2026

### 5 Installation Instructions

The MPI 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 incompatible with Titanium Grade 2
- No chemicals corrosive to stainless steel (such as NH<sub>3</sub>, SO<sub>2</sub>, Cl<sub>2</sub>, etc.) (Not applicable to plastic type stem options)
- Ample space for maintenance and inspection

Additional care must be taken to ensure:

- The probe is located away from strong magnetic fields, such as those produced by motors, transformers, solenoid valves, etc.
- The medium is free from metallic substances and other foreign matter.
- No ignition hazards exist due to impact or friction with the titanium stem.
- The probe is not exposed to excessive vibration.
- The float(s) fit through the mounting hole. If the float(s) does/do not fit, it/they must be mounted on the stem from inside the vessel being monitored.
- The float(s) is/are oriented properly on the stem (See Figure 5.1 below). MPI-T floats are typically installed by customer.

**IMPORTANT:** MPI-T level sensor MUST be installed according to drawing 9005491 (Intrinsically Safe Installation Drawing For Hazardous Areas) in section 9 to meet listed approvals. Faulty installation will invalidate all safety approvals and ratings.

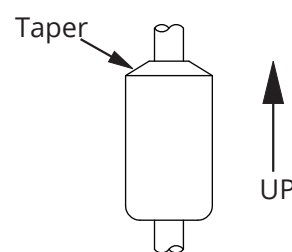


FIGURE 5.1

**IMPORTANT:** Floats must be oriented properly on the stem, or sensor readings will be inaccurate and unreliable. Untapered floats will have a sticker or etching indicating the top of the float. Remove sticker prior to use.

**IMPORTANT:** Only the combustion gas detection performance of the instrument has been tested.

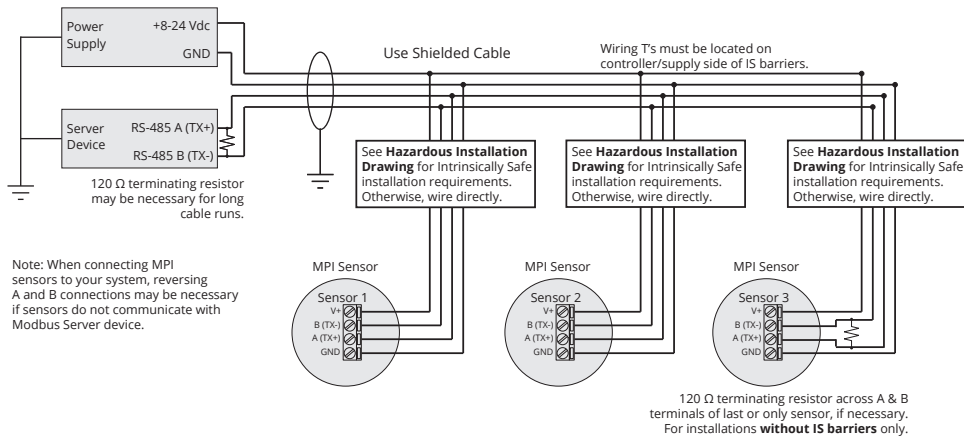
**DANGER:** OPEN CIRCUIT BEFORE REMOVING COVER or KEEP COVER TIGHT WHILE CIRCUITS ARE ALIVE;  
**AVERTISSEMENT—**COUPER LE COURANT AVANT D'ENLEVER LE COUVERCLE, ou GARDER LE COUVERCLE FERME TANT QUE LES CIRCUITS SONT SOUS TENSION.

**DANGER:** WARNING—EXPLOSION HAZARD—SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY;  
**AVERTISSEMENT—**RISQUE D'EXPLOSION—LA SUBSTITUTION DE COMPOSANT PEUT AMELIORER LA SECURITE INTRINSIQUE.

**DANGER:** WARNING—EXPLOSION HAZARD—DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS;  
**AVERTISSEMENT—**RISQUE D'EXPLOSION—AVANT DE DECONNECTER L'EQUIPEMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DESIGNE NON DANGEREUX.

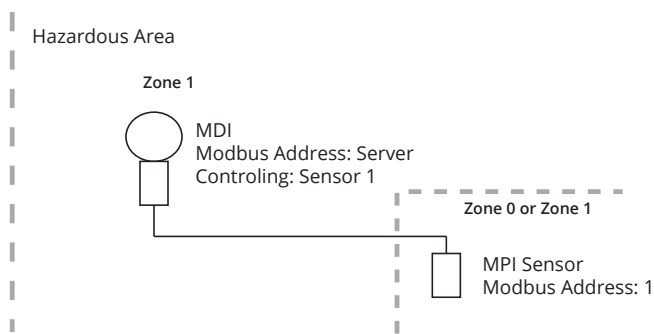
**WARNING:** The model MPI-T contains titanium in excess of 7.5% for Group II and care needs to be taken to avoid ignition hazards due to impact or friction;  
**AVERTISSEMENT—**Le modèle MPI-T contient plus de 7,5% de tetanepour le groupe II et des precautions doivent être prises pour eviter un risque d'inflammation due aux chocs ou aux frottements.

## 6 Sensor & System Wiring Diagrams

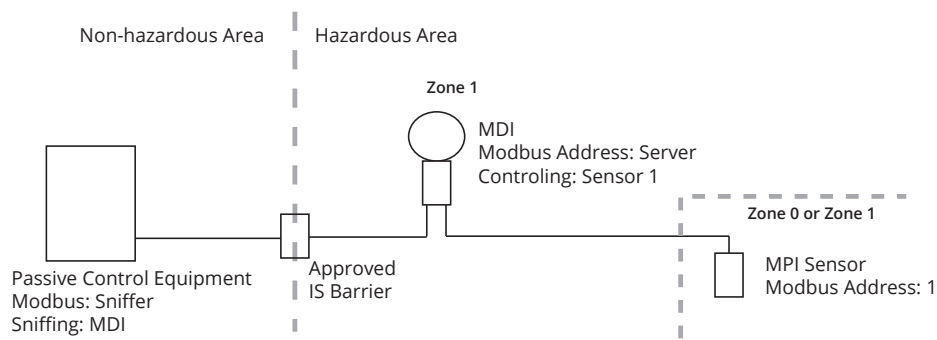


MPI-T INTRINSICALLY SAFE MODBUS SYSTEM WIRING

**IMPORTANT:** MPI-T level sensor MUST be installed according to drawing 9005491 (Intrinsically Safe Installation Drawing For Hazardous Areas) in section 9 to meet listed approvals. Faulty installation will invalidate all safety approvals and ratings.



MPI—MDI USE CASE DIAGRAM



MPI—MDI WITH PASSIVE CONTROLLER USE CASE DIAGRAM

## 7 General Care

Your MPI sensor is very low maintenance and will need little care as long as it is installed correctly. However, in general, you should periodically inspect your MPI-T unit to ensure the stem is free of any heavy buildup that might impede the movement of the float(s). If sediment or other foreign matter becomes trapped between the stem and float(s), detection errors can occur.

If you need to remove the float(s) from the stem of your MPI, be sure to note the orientation of the float(s) prior to removal. This will help ensure proper re-installation of the float(s).

Also, ensure that the housing cover is secured snugly. If the cover becomes damaged or is misplaced, order a replacement immediately.

**IMPORTANT:** All repairs and adjustments of the MPI-T level sensor must be made by the factory. Modifying, disassembling, or altering the MPI-T is strictly prohibited. See section 3 for more return details.

## 8 Specific Conditions of Use

- Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
- The enclosure is manufactured from Aluminium. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.
- Model MPXI shall be installed as per drawing 9006113.
- Unused entries of model MPXI shall be closed with blanking elements maintaining explosion proof properties and ingress protection rating of the enclosure. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
- For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
- For model MPXI only, the Stem Assembly shall not be subject to vibrations or exposed to chemicals which might adversely affect the partition wall.

## 9 Hazardous Location

**IMPORTANT:** Drawing 9005491 is specific to MPI.

REVISIONS		DESCRIPTION	CHANGE ORDER	DATE	APPROVED
ZONE	REV	See Change Order	CO-3982	06/01/2020	A. Fullmer
-	B				

Unclassified Location

Hazardous Location

Class I, Division 1, Group C, D, T4  
Class I, Zone 0, Area B, T4, Gc  
Ex Ia IIB T4 Gc, Ia 40° C to 85° C

**AGENCY APPROVED DRAWING**  
DO NOT ALTER WITHOUT PROPER APPROVAL FROM THE CONTROLLING AGENCY AUTHORIZED PERSON AND THE NUMBER 8007

**PROPRIETARY AND CONFIDENTIAL**  
THIS DRAWING IS THE PROPERTY OF AUTOMATION PRODUCTS GROUP, INC. LOGAN, UTAH AND MAY NOT BE USED, REPRODUCED, PUBLISHED, OR DISCLOSED TO OTHERS WITHOUT WRITTEN CONSENT OF THE COMPANY. IF LOANED, IT IS SUBJECT TO RETURN UPON DEMAND AND MAY NOT BE USED IN ANY WAY DIRECTLY OR INDIRECTLY DETRIMENTAL TO THE COMPANY.

APPROVALS	DATE
DRWN: G. Chibester	6/2/2018
CHD: S. Hutchins	8/29/2018
APP'D: R. Barsoni	8/29/2018

**APG**  
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MPI Series  
Intrinsically Safe Installation Drawing  
for Hazardous Locations

SIZE	CAGE CODE	PART NO	DOCUMENT NO
A	52797	VARIOUS	9005491

SHEET 1 OF 2