

Thank You

Thanks for purchasing a MPX 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 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 to find it on our website.



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1 Description

The MPX 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 hazardous areas in the US and Canada by CSA for Class I, Division 1 & 2 and Class I, Zones 1 and 2 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 MPX will look something like this:

▲ SAMPLE: MPX-R3-ZY-F2.5WB-L120

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.

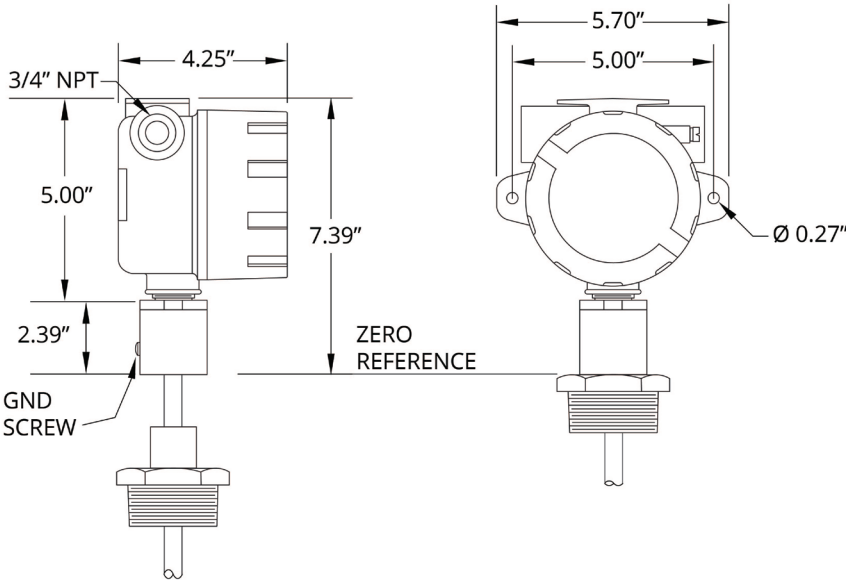
3 Warranty

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

MPX-E Housing Dimensions



MPX Magnetostrictive Level Sensors
Installation Guide

For MPX-E and MPX-R



BinMaster
PO Box 29709 Lincoln, NE 68529
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Part # 122950-0005
Doc #9004123 Rev C

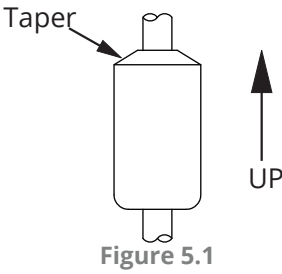
5 Installation Guidelines

The MPX 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 NH₃, SO₂, Cl₂, etc.)
- 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.
- 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). MPX-E floats will be installed by the factory. MPX-R floats are typically installed by customer.



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

Installation Instructions:

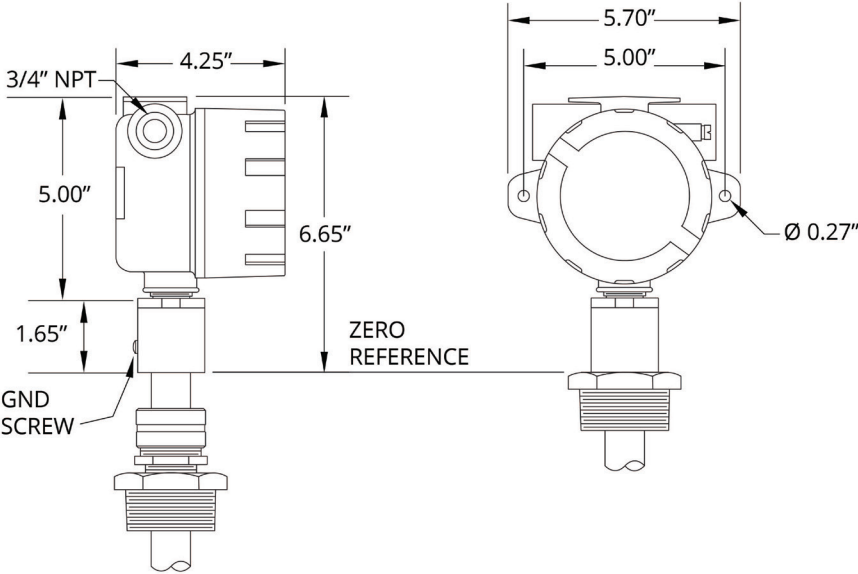
- If your sensor's stem and floats fit through the mounting hole, carefully lower the assembly into the vessel, then secure the sensor to the vessel.
- If the floats do not fit, mount them on the stem from inside the vessel being monitored. Then secure the sensor to the vessel.
- For sensors with float stops, refer to the assembly drawing included with the sensor for float stop installation locations.

Electrical Installation Instructions:

- Remove the housing cover of your MPX.
- Feed system wires into MPX through 3/4" NPT conduit openings. Fittings must be UL/CSA Listed for CSA installation.
- Connect wires to MPX terminals. Use crimped ferruls on wires, if possible.
- Replace housing cover.
- For lightning and surge protection on MPX-E4, -R4 models, either connect the grounding screw (see Dimensions section 4) to an earth ground, or ensure that tank mounting of MPX is grounded.

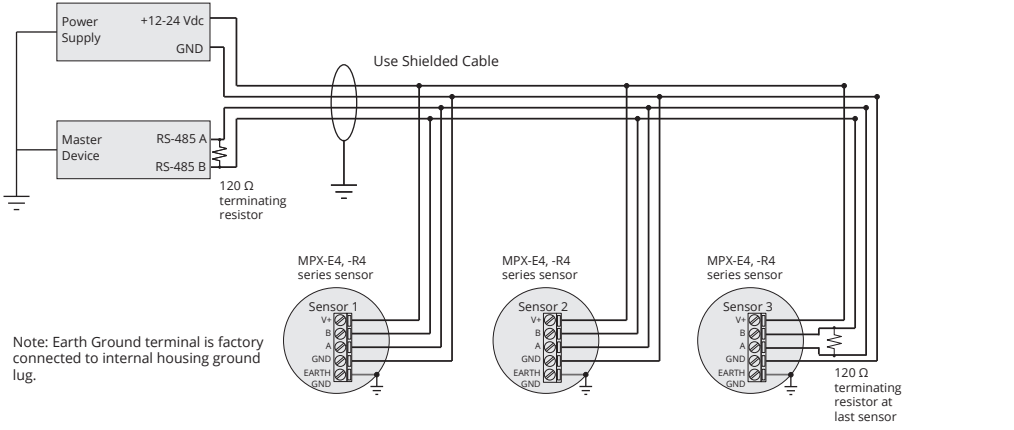
See Sensor and System Wiring Diagrams (section 6) for Modbus and 4-20 mA wiring examples.

MPX-R Housing Dimensions

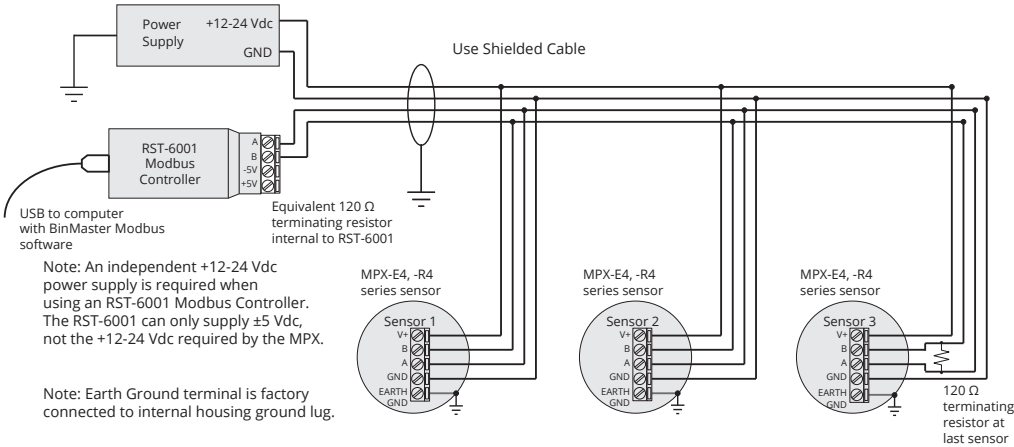


6 Sensor and System Wiring Diagrams

MPX-E4, -R4 Modbus System Wiring



MPX-E4, -R4 Modbus System Wiring with RST-6001



IMPORTANT: Refer to section 9 for Hazardous Location Wiring.

NOTE: For Modbus programming instructions, please see MPX user manual. Modbus software can be downloaded from www.binmaster.com.

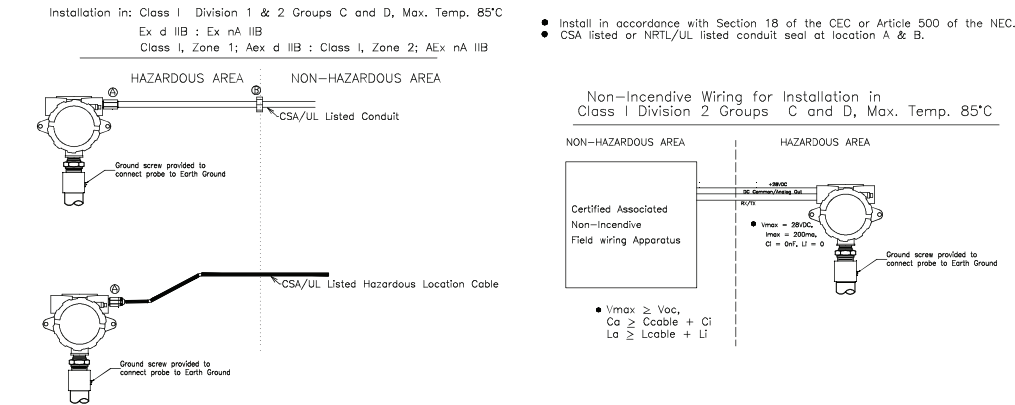
IMPORTANT: For lightning and surge protection on MPX-E/ R4 models, either connect the grounding screw (see section 4) to an earth ground, or ensure that the tank mounting of the MPX is grounded.

7 Repair Information

If your MPX level sensor needs repair, contact the factory via email or phone. We will issue you an RMA number with instructions.

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

9 Hazardous Location Wiring



OPEN CIRCUIT BEFORE REMOVING COVER or KEEP COVER TIGHT WHILE CIRCUITS ARE ALIVE and AVERTISSEMENT -- OUVRIRE LE CIRCUIT AVANT D'ENLEVER LE COUVERCLE, or GARDER LE COUVERCLE BIEN FERMÉ TANT QUE LES CIRCUITS SONT SOUS TENSION

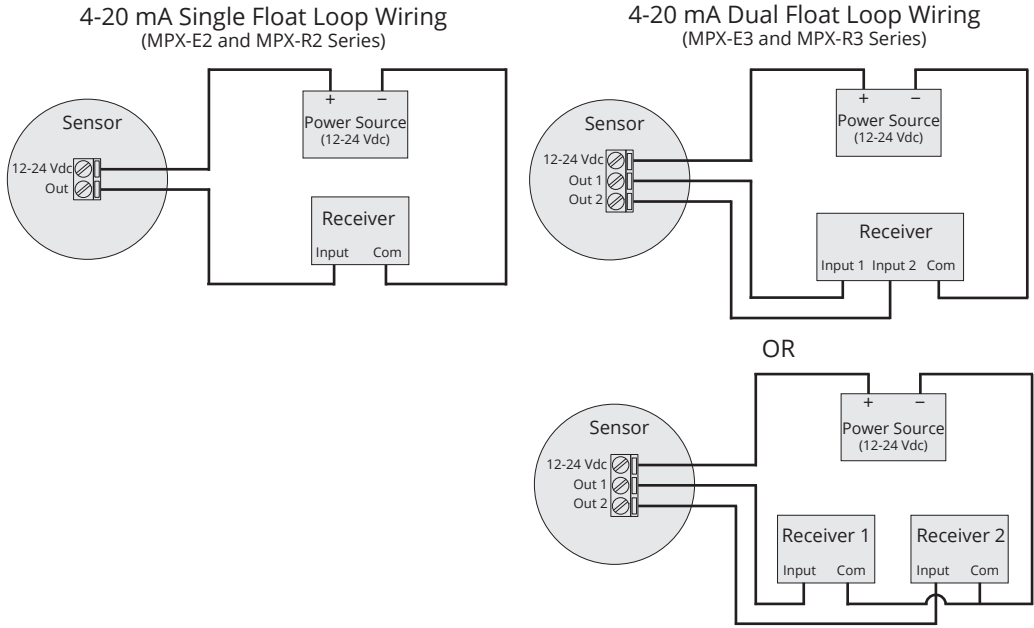
WARNING EXPLOSION HAZARD -- SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2; AVERTISSEMENT -- RISQUE D'EXPLOSION -- LA SUBSTITUTION D E COMPOSANTSP EUTR ENDRE CE MATERIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 2

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 DESIGNÉ NON DANGEREUX

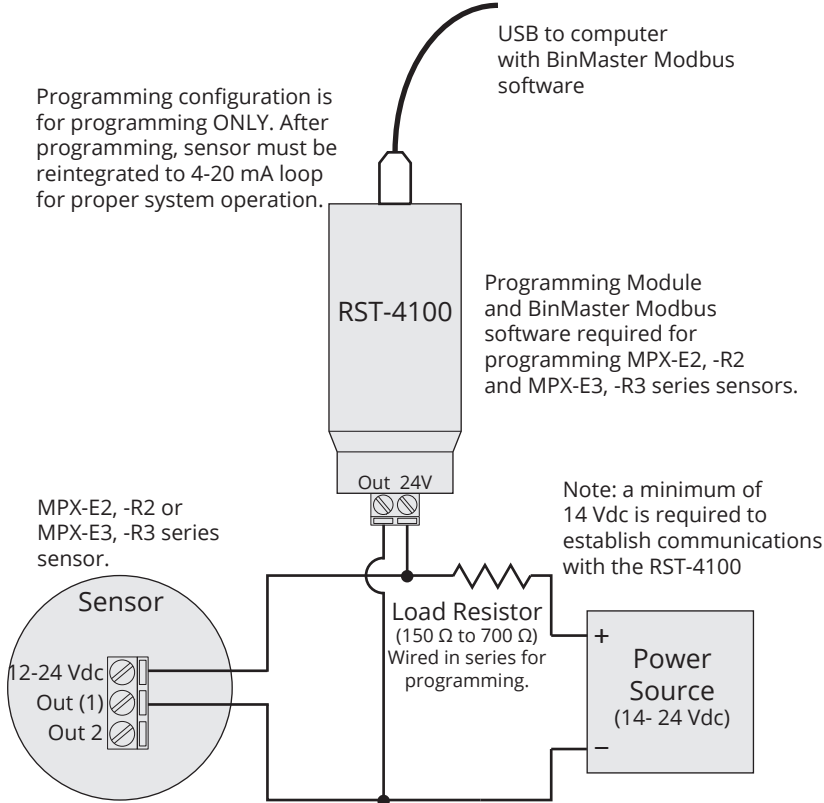
MPX-G Version Only:

WARNING -- POTENTIAL ELECTROSTATIC CHARGING HAZARD -- CLEAN WITH DAMP CLOTH or AVOID STATIC DISCHARGE BY WIPING PLASTIC WITH DAMP CLOTH; AVERTISSEMENT -- ÉLECTROSTATIQUE POTENTIEL DE CHARGEMENT Danger avec un chiffon humide ou ÉVITER UNE DÉCHARGE STATIQUE PAR ESSUYAGE PLASTIQUE avec un chiffon humide

MPX-E2,3 / MPX-R2,3 System Wiring



MPX-E2,3 / MPX-R2,3 Programming Wiring



IMPORTANT: MPX level sensor MUST be installed according to drawing 9003468 (Hazardous Installation and Non-Incendive Wiring Drawing) in section 9 to meet listed approvals. Faulty installation will invalidate all safety approvals and ratings.

8 General Care

Your level 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 MPX 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 floats(s) from the stem of your MPX, be sure to note the orientation of the float(s) prior to removal. This will help ensure proper reinstallation of the float(s).

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

DANGER: OPEN CIRCUIT BEFORE REMOVING COVER or KEEP COVER TIGHT WHILE CIRCUITS ARE ALIVE;
AVERTISSEMENT -- OUVRIRE LE CIRCUIT AVANT D'ENLEVER LE COUVERCLE, or GARDER LE COUVERCLE BIEN FERMÉ TANT QUE LES CIRCUITS SONT SOUS TENSION.

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