



Pressure, Level & Temperature Products

## User's Guide

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### Submersible Level Transmitter

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## **Pressure, Level & Temperature Products**

### **1. Introduction**

#### **1.1 Product Overview**

The following User's Guide is for use with GP:50 model 311-M351 along with models 313L, 313S, 1103 and any of the other submersible transmitters available.

#### **1.2 Using this Guide**

This manual is intended to help the end user install, maintain, and provide general service of all GP:50 Submersible Level Transducers.

The user should have a general understanding of current loops & general instrument control. All GP:50 Submersible Level Transducers are precision instruments and should be given the same care as any other precision instrument during installation and operation.

### **2. Features**

- Available ranges of 0-20" WC thru 300 PSI
- 316L Stainless Steel housing rated to 900 FTWC
- Up to  $\pm 0.10\%$  FSO accuracy
- Chemical resistant Hytrel cable
- Vented cable with Hydrophobic filter
- Lightning surge suppression
- 4-20mA, 0-5Vdc, and 0-10Vdc output

### **3. Installation and Maintenance**

#### **3.1 Wiring**

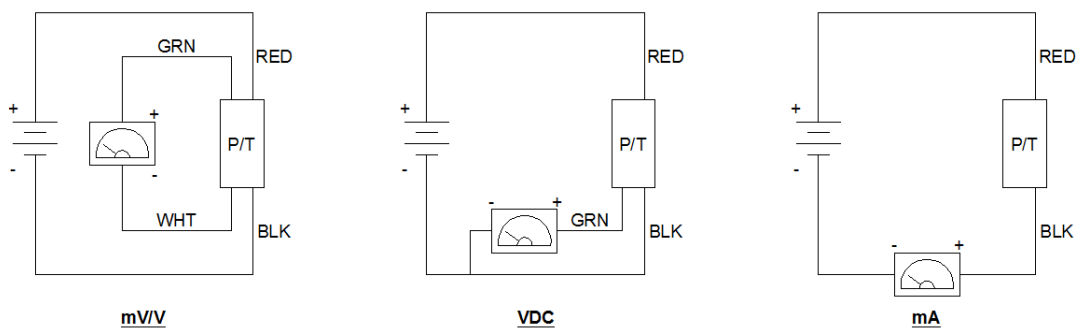
Consult wiring listed under Electrical Connections on the Calibration Record provided with each serialized individual unit. Do not run wires next to power lines, electrical systems, motors, generators, or any other equipment which may generate a significant amount of electrical noise or magnetic fields.



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- A 4-20mA transmitter requires a DC power supply (typically 10-36 VDC) and mA meter wired in a current loop. Connect the Red wire of the transducer to the +Terminal of the power supply and the Black wire of the transducer to the +Input terminal of the meter. Connect the –Input terminal of the meter to the –Terminal of the power supply.
- A VDC transducer requires a DC power supply (10-36 VDC) and voltmeter. Connect the Red wire from the transducer to + on the power supply, the Green wire to the +Signal of the VDC meter and the Black wire from the transducer to both the –Power on the power supply and –Signal on the VDC meter.
- An mV/V transducer requires a regulated 5-15 VDC power supply and voltmeter. Connect the Red wire from the transducer to + on the power supply, the Green wire to the +Signal of the VDC meter the Black wire from the transducer to the –Power on the power supply and White wire to –Signal on the VDC meter.

See the wiring guide below





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### **3.2 Anchoring**

It is recommended that submersible transmitters be installed in a stilling well or attached to rigid conduit using the integrated conduit fitting to prevent possible damage to the transmitter from impact with immovable objects.

Some applications require the transmitter to be suspended without a protective stilling well or conduit attachment. In all installations, care should be taken to prevent damage to the submersible cable. Do not secure transmitter to submerged objects such as a pump that will cause difficulty with transmitter removal.

### **3.3 Submersion**

GP:50 submersible transmitters come standard with Hytrel jacketed cable to minimize the risk of damage from cuts or abrasions.

Use care when lowering the transmitter into the well making sure the cable does not drag over sharp edges. Avoid dropping the transmitter from the surface. Damage to submersible cable can lead to failure of the transmitter.

### **3.4 Water Intrusion**

Although GP:50 employs an integrated hydrophobic filter to minimize water intrusion to the vent tube, care should be taken when terminating the device in a dry, safe location to avoid possible water damage.

### **3.5 Cable Care**

The Hytrel cable can support the full weight of the transmitter. Do not bend the cable more than the suggested bend radius of 2" to ensure the vent tube does not crimp. This can obstruct the vent tube to atmospheric pressure causing improper functionality.

If using a junction box, care must be taken that the fitting is not over tightened causing damage to the cable and or crimping to the vent tube.

### **3.6 Position Sensitivity**

The transmitter should be installed in a vertical position, otherwise it may read an offset. If the transmitter must be installed in a position other than vertical, measure the output with no pressure applied prior to connection to your display, PLC, or controller using the value for your zero reading.



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### **3.7 Sensing Diaphragm**

Refrain from pushing, indenting, or probing the pressure port or diaphragm seal. This will likely cause permanent damage to the unit and will not be covered under warranty.

## **4. Troubleshooting and Return information**

- Verify power supply voltage meets transducer requirements
- Check wiring connections and inspect cable for possible damage
- Ensure the pressure port/diaphragm is not obstructed
- Verify output load is not shorted

If the problem persists, please call the factory or email Contact: [sales@gp50.com](mailto:sales@gp50.com) for assistance. Please have the following information ready:

- Serial number
- Model number

Repairs should only be done by GP:50. Repairs done by customer will void any warranties and may cause permanent damage to unit. Repairs done by customer on Intrinsically Safe units will void the approvals and are a potential explosion hazard.



**Returned products that have been exposed to hazardous substances should be cleaned prior to return and should include the Material Safety Data Sheet for all substances.**



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### 5. Warranty

GP:50 warrants its products to the original customer/purchaser against defects in material and workmanship for a period of one (1) year from the date of delivery by GP:50, as shown in its shipping documents, subject to the following terms and conditions:

Without charge GP:50 will repair or replace products found to be defective in materials or workmanship within the warranty period provided that:

1. The product has not been subjected to abuse, neglect, accident, incorrect wiring (not provided by GP:50), improper installation or servicing, or use in violation of instructions furnished by GP:50.
2. As to any prior defect in materials or workmanship covered by this warranty, the product has not been repaired or altered by anyone except GP:50 or its authorized service agencies.
3. The serial number has not been removed, defaced or otherwise changed.
4. Examination discloses, in the judgment of GP:50, a defect in materials or workmanship which developed under normal installation, use and service.
5. GP:50 is notified in advance of, and approves, the return by issuing a Return Material Authorization Number; and the products are returned to GP:50 transportation prepaid. Products returned without an RMA number will not be accepted and be returned to sender at sender's expense.

***THIS WARRANTY IS THE ONLY WARRANTY AND IS IN LIEU OF ANY OTHER WARRANTY EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANTABILITY OR FITNESS. NO REPRESENTATIVE OR PERSONS ARE AUTHORIZED TO GIVE ANY OTHER WARRANTY OR TO ASSUME FOR GP:50 ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. GP:50 DOES NOT ASSUME THE COSTS OF REMOVAL AND/OR INSTALLATION OF THE PRODUCT OR ANY OTHER WORKMANSHIP, OR WILL GP:50 BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR INSTALLATION OF ITS PRODUCT.***

**For a copy of our warranty policy and to fill out a warranty registration form, visit our website at: <https://www.gp50.com/products/warranty/>**

**For assistance with repairs, call our Repair Dept. at 716-773-9300, ext. 237, or complete a Repairs, Returns, RMA form at: <https://www.gp50.com/resources/repairs-returns-rma/>.**

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