



# ATI-5010

## Liquid Level Float Sensors

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### INSTRUCTIONS

#### Installation and Maintenance of the ATI-5010B and 5010T Series Liquid Level Float Sensors

#### **IMPORTANT**

**Please read these installation and operating instructions completely and carefully before starting. Failure to do so will void warranty.**

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ATI.MAN.5007\_liquid level float sensors

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## **1 - WARRANTY**

The ATI- 5010B & 5010T Liquid Level Float Sensors are warranted against defects in material and workmanship for a period of one (1) year from date of shipment. During the warranty period, *Armstrong Technologies Inc. (ATI)* will repair or replace components that prove to be defective in the opinion of ATI. ATI is not liable for auxiliary interfaced equipment, or consequential damage. This warranty shall not apply to any product, which has been modified in any way, which has been repaired by any other party other than a qualified technician or authorized ATI representative, or when such failure is due to misuse or conditions of use.

### **1.1 - LIABILITY**

All ATI products must be installed and maintained according to instructions. Only qualified technicians should install and maintain the equipment. ATI shall have no liability arising from auxiliary interfaced equipment, for consequential damage, or the installation and operation of this equipment. ATI shall have no liability for labour or freight costs, or any other costs or charges in excess of the amount of the invoice for the products.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND SPECIFICALLY THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE THEREOF.

### **1.2 - MODIFICATIONS AND SUBSTITUTIONS**

Due to an ongoing development program, ATI reserves the right to substitute components and change specifications at any time without incurring any obligations.

### **1.3 - PRODUCT RETURN**

All products returned for warranty service will be by prepaid freight and they will only be accepted with an R.G.A. number issued by ATI. All products returned to the client will be freight collect.

## **WARNING**

<p><b>USING ELECTRICALLY OPERATED EQUIPMENT NEAR GASOLINE OR OTHER COMBUSTIBLE VAPOURS MAY RESULT IN FIRE OR EXPLOSION, CAUSING PERSONAL INJURY AND PROPERTY DAMAGE. CHECK TO ASSURE THE WORKING AREA IS FREE FROM SUCH HAZARDS DURING INSTALLATION OR WHEN PERFORMING MAINTENANCE, AND USE PROPER PRECAUTIONS.</b></p>
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## 2 - PRODUCT INFORMATION

### 2.1 - LIQUID LEVEL FLOAT SENSORS

Sensor Part Number .....	_____
Sensor Serial Number .....	_____
Sensor Warranty Period .....	1 year
Operating Temperature .....	Water: 0 to +60°C (+32 to +140°F) Petrol.: -40 to +60°C (-40 to +140°F)
Operating Pressure .....	Ambient atmospheric pressure
<b>Electrical Rating</b> ( <i>maximum</i> ) .....	80 mA @ 120 VAC, 60 Hz, resistive 40 mA @ 240 VAC, 60 Hz, resistive 1 A @ 24 VDC, resistive

#### 2.1.1 - SENSOR CONFIGURATION

Float Switch	Switching Function (Normally Open or Closed)		
	Single Level	2 Levels (5010T2)	3 Levels (5010T3)
1	N/O N/C	N/O N/C	N/O N/C
2		N/O N/C	N/O N/C
3			N/O N/C

**Note:**

All *Armstrong Technologies Inc.* products must be installed and maintained according to instructions, to ensure proper operation. Only qualified technicians should install and maintain the equipment.

### 3 - PRODUCT DESCRIPTION

#### 3.1 - GENERAL DESCRIPTION

The ATI-5010B & 5010T Liquid Level Float Sensors detect changes in liquid levels at a single location, with single or multiple level points (3 max). The changing level of liquid will raise or lower the float and activate the alarm. This simple design allows for flexibility of installation and immediate alarm response. Provides efficient monitoring in pump and dispenser sumps, in other critical areas, as an in-tank liquid level control, or in interstitial spaces.

The ATI-5010B & 5010T Liquid Level Float Sensors features:

- ◆ Reusable
- ◆ Instant response
- ◆ Intrinsically safe (when connected through an approved I.S. barrier, or to an ATI liquid monitor).
- ◆ Ease of Installation

#### 3.1.1 - SENSOR SPECIFICATIONS

DETECTABLE LIQUIDS	Water, gasoline, diesel, waste oil, petroleum products, and various acids (Contact factory for more information if required)
SENSOR	Magnetically activated float switch
RESPONSE TIME	Instantaneous
REPEATABILITY	Excellent even after repeated immersions
OPERATING TEMPERATURE	Water: 0 to +60 °C (+32 to 140 °F) Petroleum: -40 to +60 °C (-40 to +140 °F)
STORAGE	10 YEARS @ -65 to +60 °C (-85 to +140 °F)

#### 3.1.2 - SAMPLE APPLICATIONS

See installation section for more details.

APPLICATION	TYPE	LOCATION	PRODUCT
Underground Storage Tanks	Steel single-wall	Near bottom of sump and/or inside tank	Levels of petroleum products water and chemicals
	Steel/F.R.P. double-wall		
Aboveground Tanks	Single/double wall	Near bottom of sump	
Pump Sumps	All		
Dispenser Sumps	All		

## 4 - INSTALLATION

### 4.1 - ATI-5010B LOCATION AND MOUNTING

For best overall coverage, the ATI-5010B sensor should be positioned on a side wall as close as possible to the bottom of the spill collection area of a sump, trough or containment area (refer to FIGUREs 1, 2 and 3).

#### WARNING

To comply with local municipal, provincial, or federal electrical regulations and for safety reasons, ALL cables must pass through conduit seals installed between the hazardous and non-hazardous areas.

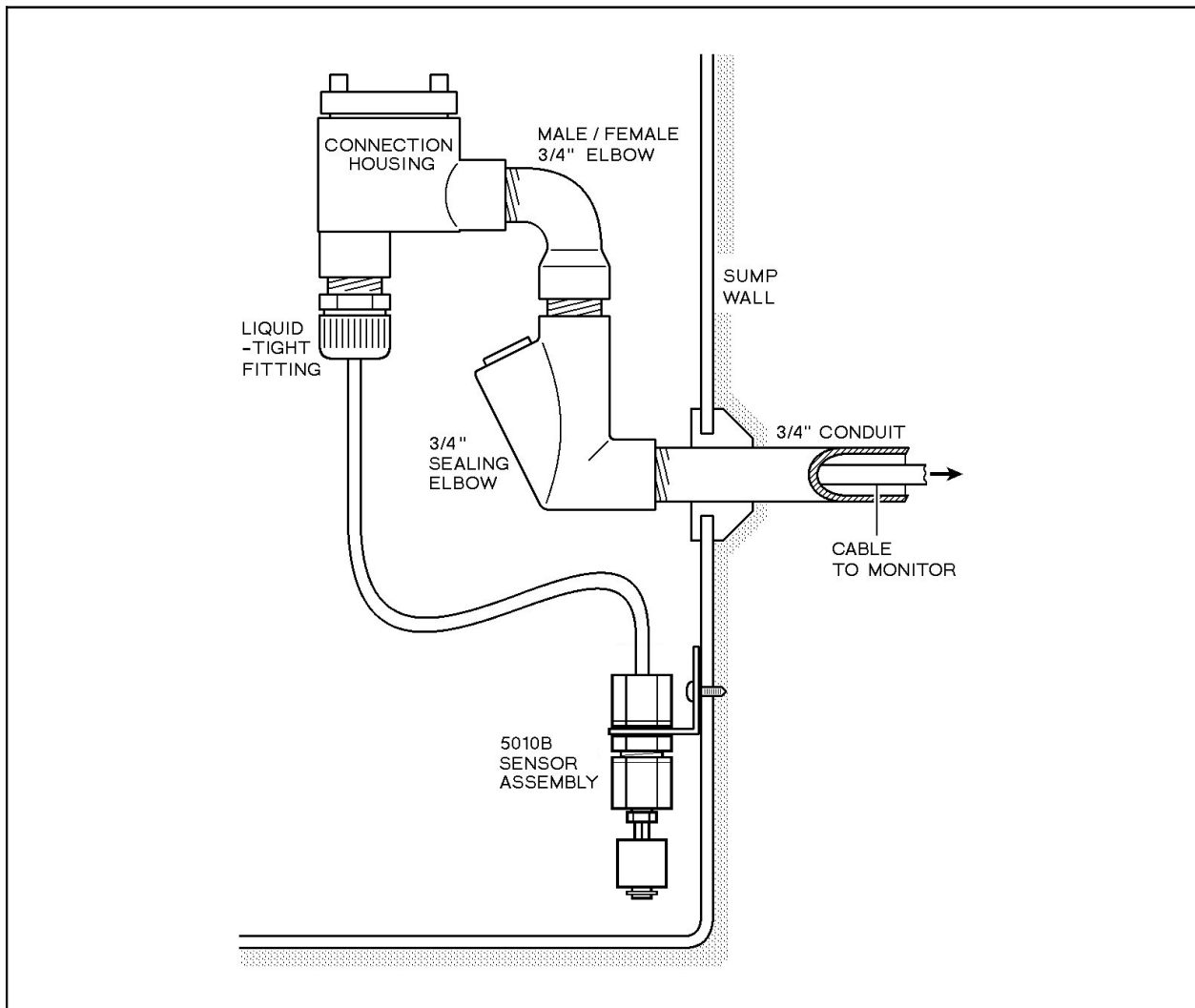


FIGURE 1: Typical installation of an ATI-5010B liquid level float sensor in a sump.

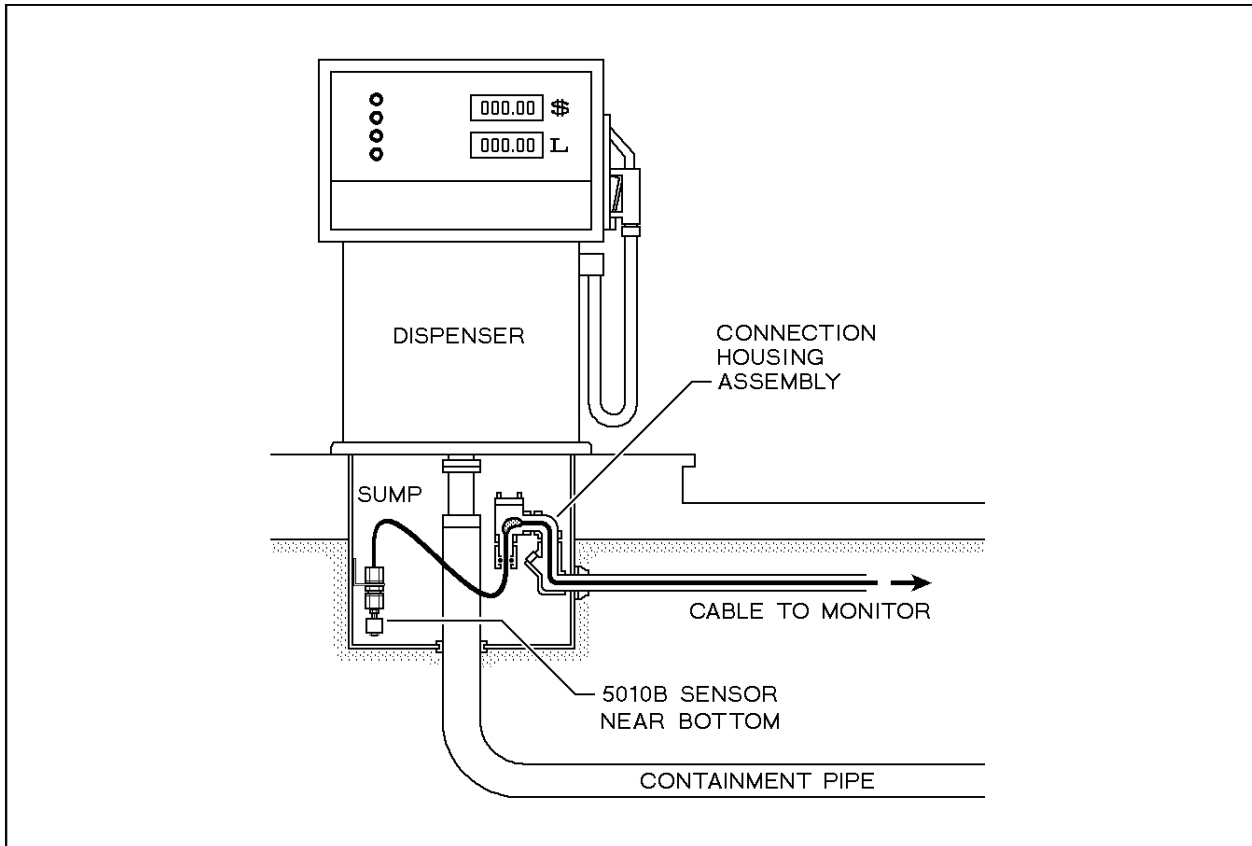


FIGURE 2: The ATI-5010B sensor installed in a dispenser sump.

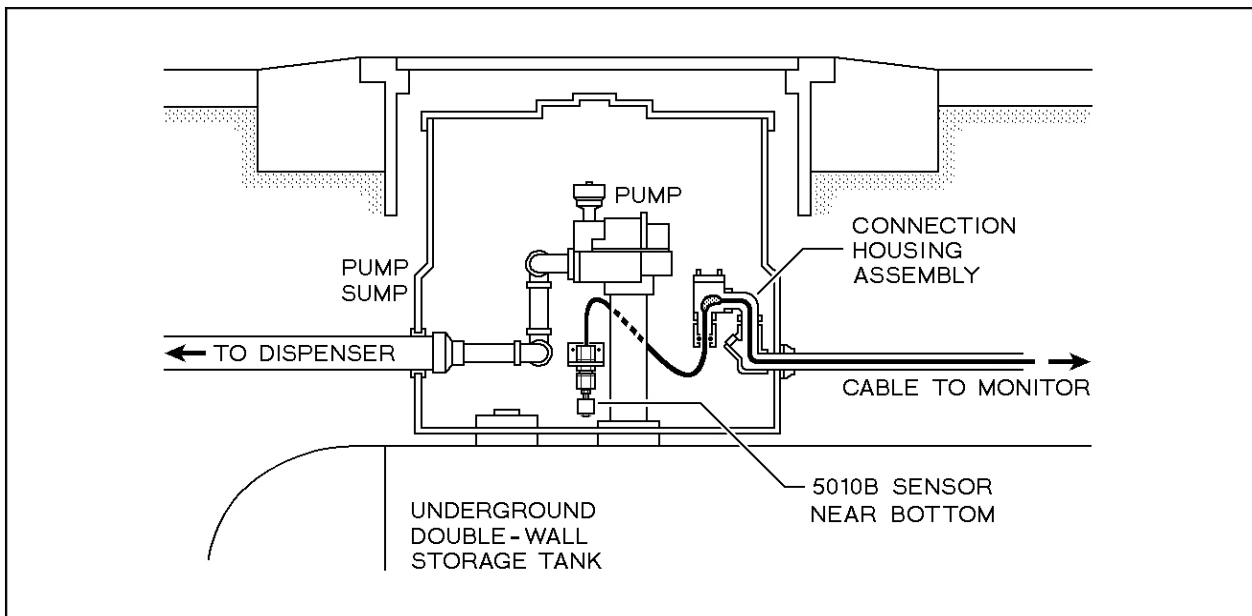


FIGURE 3: The ATI-5010B sensor installed in a pump sump.

## 4.2 - ATI-5010T LOCATION AND MOUNTING

The ATI-5010T sensor installs into an available threaded fitting on the top of a single-wall or double-wall storage tank (see FIGURE 4). This sensor can provide 1, 2 or 3 level points of detection at user specified depths. A reducer can be installed if the tank fitting is larger than the sensor housing's thread size.

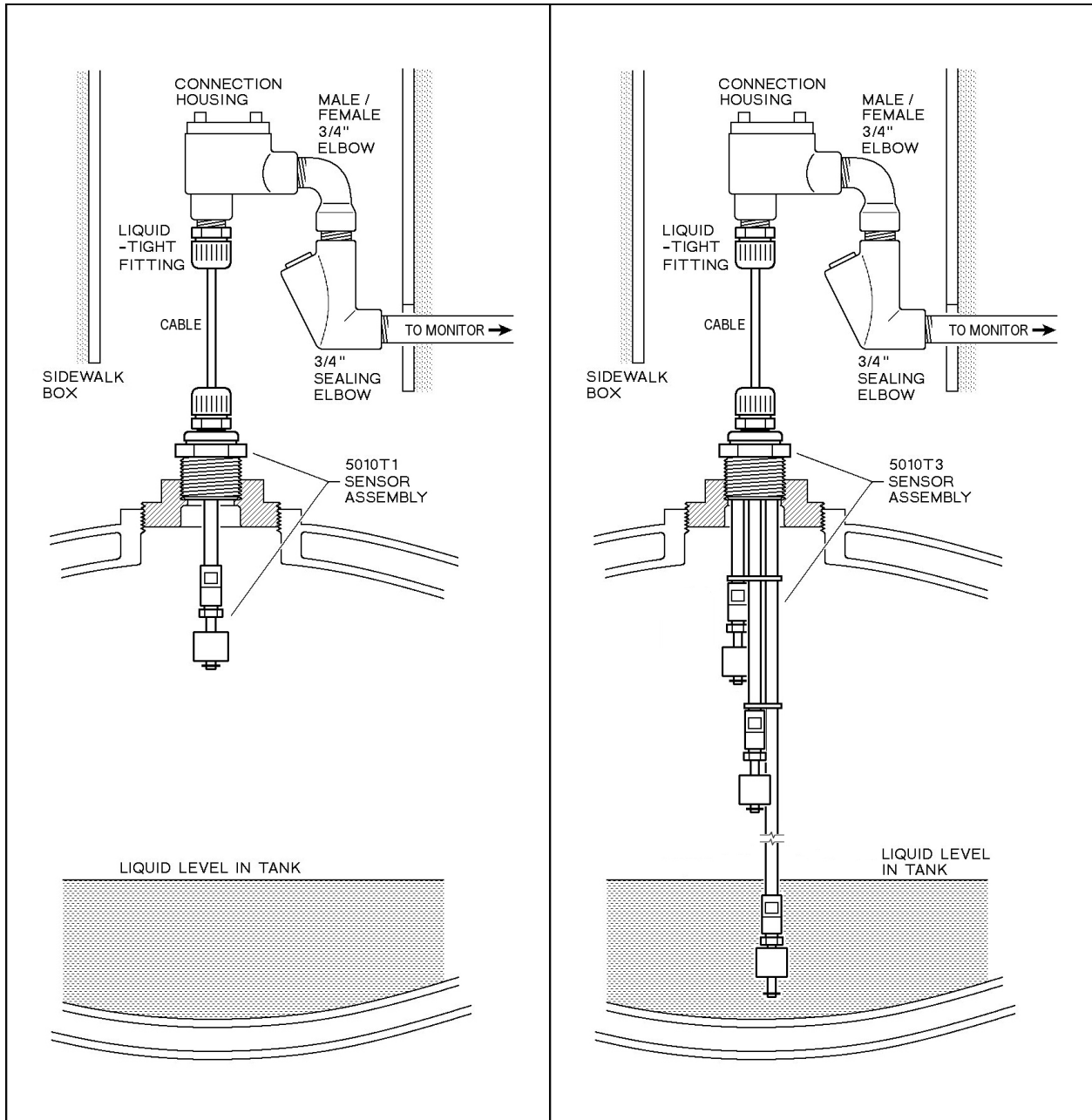


FIGURE 4: The ATI-5010T1 and 5010T3 sensors installed in a double-wall tank.

## 5 - PREVENTIVE MAINTENANCE

### 5.1 - SENSOR VERIFICATION

For verifying each of the liquid level switches, connect a digital multimeter set for continuity (use resistance setting if continuity not available) to each level switch's wire pair (refer to the table below). The continuity should read as an open circuit. Next, using your fingers, lift the float of the level switch and observe the reading — continuity should now read as a closed circuit.

For level switches that have the float reversed, the readings will be the opposite of what is stated above (refer to section 2.1.1).

Float Switch	Single Level	2 Levels (5010T2)	3 Levels (5010T3)
1	Black / Red	Black / Red	Black / Red
2		Green / White	Green / White
3			Orange (or Brown) / Blue

**MAKE SURE TO VERIFY THE INTEGRITY OF EACH SENSOR DURING INSTALLATION.**

### 5.2 - TROUBLESHOOTING

If any unusual multimeter readings are obtained (other than those described in section 5.1), some wires may be shorted or the sensor may have been damaged during installation. **Remember to use caution when installing each ATI-5010 liquid level sensor.**

When verifying each sensor with a digital multimeter, make sure the readings obtained agree with the following sensor data.

#### 5.2.1 - LIQUID LEVEL SENSOR DATA

	Default Float Orientation	Float Reversed
Float At Rest	Circuit open (N/O)	Circuit closed (N/C) Low resistance < 100 Ohms
Float Raised	Circuit closed (N/C) Low resistance < 100 Ohms	Circuit open (N/O)