



# ATI-5005B

**Water Sensor**

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## **INSTRUCTIONS**

**Installation and Maintenance of the  
ATI-5005B Water Sensor**

### **IMPORTANT**

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

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ATI.MAN.5005B\_water sensor

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## **1 - WARRANTY**

The ATI-5005B Water Sensor is 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 - WATER DETECTION SENSOR

Sensor Warranty Period .....	1 year
Operating Temperature .....	0 to +87 °C (+32 to +188 °F)
Operating Pressure .....	Ambient atmospheric pressure

**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-5005B Water Sensor is designed to detect the presence and accumulation of water at a point location in tanks, sumps, piping and any other location to detect the presence of water or conductive liquids. The sensor is designed to operate with monitors accepting Normally Open sensor inputs.

The ATI-5005B Water Sensor features:

- ◆ Reusable
- ◆ Instant response
- ◆ Single point location sensing
- ◆ 1/2" NPT thread mounting
- ◆ Intrinsically safe (when connected through an approved I.S. barrier, or to an ATI liquid monitor)

#### 3.1.1 - SENSOR SPECIFICATIONS

DETECTABLE LIQUIDS	Water and other conductive liquids (as long as resistance is less than 5 Meg) (Contact factory for more information if required).
SENSOR	Immersion type conductivity sensor.
RESPONSE TIME	Instantaneous for water.
REPEATABILITY	Excellent even after repeated immersions in non-contaminating liquids.
OPERATING TEMPERATURE	Most liquids: 0 to +87 °C (+32 to +188 °F). Will also function with conductive liquids with freezing points below 0°C (32°F) as long as liquid does not solidify (i.e.: water/glycol mix).
STORAGE	10 years @ -65 to +60 °C (-85 to +140 °F).

## 4 - INSTALLATION

### 4.1 - LOCATION AND MOUNTING

The ATI-5005B Water Sensor can be installed into the bottom of a pipeline, underneath a storage tank or container, or onto a wall-mount bracket near the floor (see Figure 1). The sensor is simply screwed tightly into a 1/2" NPT on a pipeline, storage tank, container or pan (depending on the application).

**CAUTION: Make sure to use the proper thread sealing tape or compound required for your application, in order to prevent leaks.**

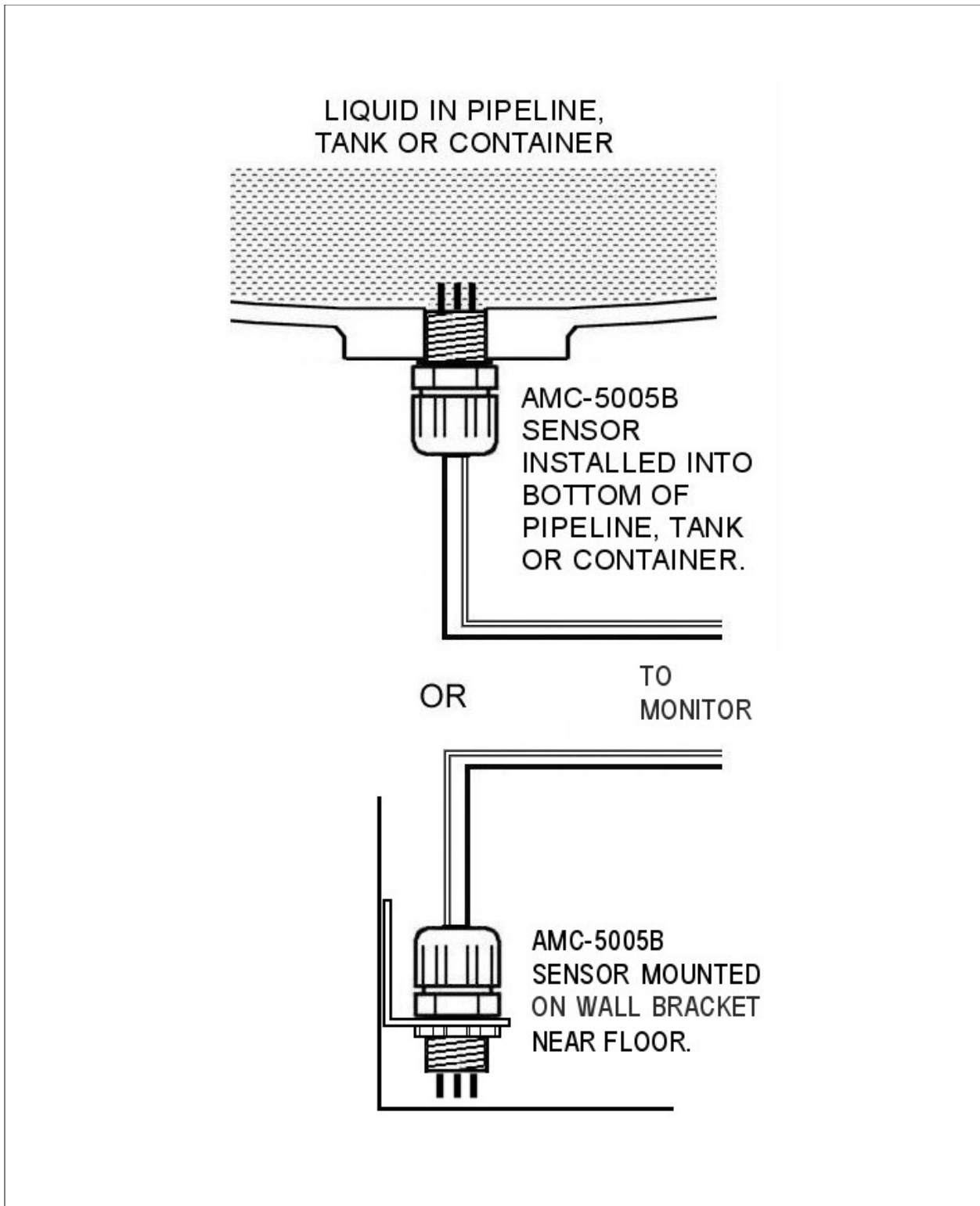
### 4.2 - WIRING TO MONITOR

The ATI-5005B Water Sensor is a 2-wire device that may be wired to a monitor that accepts Normally Open sensor inputs. Each sensor should be on a separate cable but more than one cable can be run through the same conduit. For hazardous locations, the cabling must be installed through conduit and conduit sealing fittings.

On the liquid circuit, each ATI-5005B sensor connects to the terminals of one zone (channel). Connect the BLACK sensor lead to the sensor input Ground (-) terminal, and the RED sensor lead to the Positive (+) terminal of one channel.

A water sensor (Normally Open) and a petroleum sensor (Normally Closed) **MUST NOT** be connected to the terminals on the same channel. For more details on liquid sensor wiring and programming, please refer to the instruction manuals for the monitor used.

**NOTE: Make sure the pipeline, storage tank or container is empty and turn off the power supply before removing or replacing a sensor.**



**FIGURE 1: Typical installations for the ATI-5005B sensor.**

## 5 - PREVENTIVE MAINTENANCE

### 5.1 - SENSOR VERIFICATION

For verifying the liquid sensor, connect a digital multimeter (set for resistance) to the BLACK and RED wires. The resistance should read as an open circuit. Next, put the sensor's contact pins into water to short out the sensor conductivity elements together and observe the reading — it should drop to a low resistance, approximately 170K ohms.

**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 the Sensor Verification section), some wires may be shorted or the sensor may have been damaged during installation. **Remember to use caution when installing each ATI-5005B water sensor.**

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

#### 5.2.1 - WATER SENSOR DATA

Normal Status:      Circuit open (N/O)

Alarm ON status:    Circuit closed (N/C)  
                          Low resistance < 1M Ohms (water is approximately 170K Ohms)