



ATI-5005F-RC

Floor Water Sensor with Relay Contact

INSTRUCTIONS

**Installation and Maintenance of the
ATI-5005F-RC Floor Water Sensor**



IMPORTANT

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

filename:
ATI.MAN.5005F-RC

Revised: 02/05/2018
Copyright © ATI, July 2009

A.T.Monitors, a division of Armstrong Technologies Inc.
14 Birch Drive, Kemptville, Ontario, K0G 1J0, CANADA
Tel: 613-258-5225 • Fax: 613-258-2698
E-mail: info@atmonitors.com • Internet: www.atmonitors.com

TABLE OF CONTENTS

Section Title	Page
1 – WARRANTY	1
1.1 – LIABILITY	1
1.2 – MODIFICATIONS AND SUBSTITUTIONS	1
1.3 – PRODUCT RETURN	1
2 – PRODUCT INFORMATION	2
2.1 – WATER DETECTION SENSOR.....	2
3 – PRODUCT DESCRIPTION	3
3.1 – GENERAL DESCRIPTION.....	3
3.1.1 – SENSOR SPECIFICATIONS.....	3
4 – INSTALLATION	4
4.1 – LOCATION AND MOUNTING.....	4
4.2 – WIRING THE SENSOR.....	5
5 – PREVENTIVE MAINTENANCE	6
5.1 – SENSOR VERIFICATION.....	6
5.2 – TROUBLESHOOTING.....	6
5.2.1 – FLOOR WATER SENSOR DATA.....	6

1 – WARRANTY

The ATI-5005F-RC Floor 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

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.

2 – PRODUCT INFORMATION

NOTE: This page must be filled-in at site by client, contractor or installer and this manual returned to the owner or manager.

2.1 – WATER DETECTION SENSOR

Sensor Serial Number	_____
Sensor Warranty Period	1 year
Power Supply Requirement	12 to 24 VDC @ 200 mA
Internal Relay Contact Ratings	SPST normally open, 0.3 Amp (300mA) @ 125 VAC, 1 Amp @ 24 VDC
Operating Temperature	0 to +75 °C (+32 to +167 °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-5005F-RC Floor Water Sensor is primarily designed to detect the presence of water at a point location directly on the floor or at the base of a wall. This sensor is designed to operate as a stand-alone unit without any need for a monitor, and features a built-in relay contact. It can also be easily interfaced to a PLC or other systems that accept switching type sensors.

The ATI-5005F-RC Floor Water Sensor features:

- Reusable
- Instant response
- Single point location sensing
- Corrosion resistant stainless-steel water conductivity pins
- Built-in relay contact
- Intrinsically safe (when connected through an approved I.S. barrier)

3.1.1 – SENSOR SPECIFICATIONS

DETECTABLE LIQUIDS	Water and other conductive liquids (as long as resistance is less than 500K ohms). Contact factory for more information if required.
SENSOR	Contact/immersion type conductivity sensor.
RESPONSE TIME	Instantaneous for water.
REPEATABILITY	Excellent even after repeated contact with or immersion in non-contaminating liquids.
POWER REQUIREMENT	12 to 24 VDC power supply or wall adapter, 200 mA minimum.
RELAY CONTACT	One SPST, Normally Open contact. Ratings: 0.3 Amp (300mA) @ 125 VAC, 1 Amp @ 24 VDC.
POWER INDICATOR	High intensity clear Blue LED.
ALARM INDICATOR	High intensity clear Red LED.
OPERATING TEMPERATURE	Water: 0 to +75 °C (+32 to +167 °F). Will also function with conductive liquids with freezing points below 0°C (32°F) as long as liquid does not thicken or solidify. (i.e.: water/glycol mix)
STORAGE	10 years @ -20 to +60 °C (-4 to +140 °F).

4 – INSTALLATION

4.1 – LOCATION AND MOUNTING

The ATI-5005F-RC Floor Water Sensor can be easily installed simply by placing the sensor on the floor at the selected location, or mounting it to the wall with the conductivity pins close to the floor (see Figure 1 for wall mounting holes). The wiring end of the lead cable is then connected in a nearby junction box.

IMPORTANT: When using the adhesive backing pad for mounting, the surface must be smooth, flat and free of any oil and dirt.

When placed on the floor, the conductivity pins are approximately 1/8" (3.2mm) above the floor. If the pins need to be closer to the floor, simply insert a wedge block under the sensor.

When the sensor is mounted to the wall, adjust the sensor so that the tips of the conductivity pins are at least 1/16" (1.6mm) above the floor.

CAUTION: Be careful to NOT over-tighten the mounting screws when installing the sensor.

Since this sensor can operate independently, it can be powered by a 12V battery with a buzzer connected to the relay contact, and be used as a portable, emergency water leak detector.

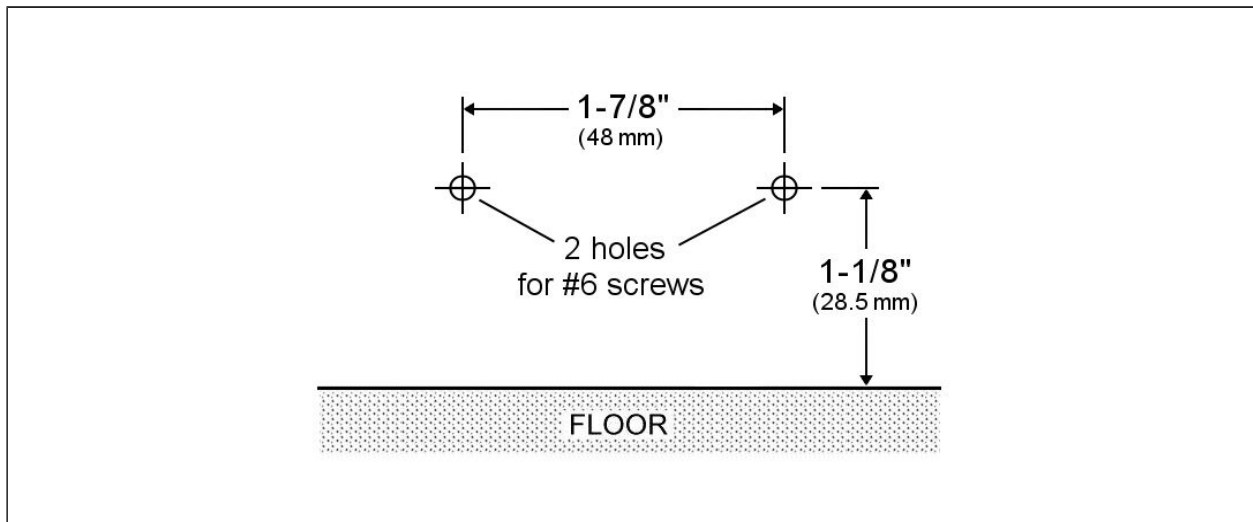


FIGURE 1: Dimensions of wall mounting screw holes for the ATI-5005F-RC sensor.

4.2 – WIRING THE SENSOR

The ATI-5005F-RC Floor Water Sensor is a 4-wire device. A cable size of 20 or 22 AWG is recommended for wiring the sensor. For hazardous locations, the cabling must be installed through conduit and conduit sealing fittings. Indicator LEDs are on the housing next to the cable.

POWER SUPPLY The sensor operates on 12 to 24 VDC @ 200 mA. The power supply connects to the Black (-) and Red (+) leads. When power is ON, the Blue LED is lit.

RELAY CONTACT There is an internal SPST relay which activates when water touches both conductivity pins. The contact is rated for 0.3 Amp (300mA) @ 125 VAC, 1 Amp @ 24 VDC. External device connects to the Green and White leads.

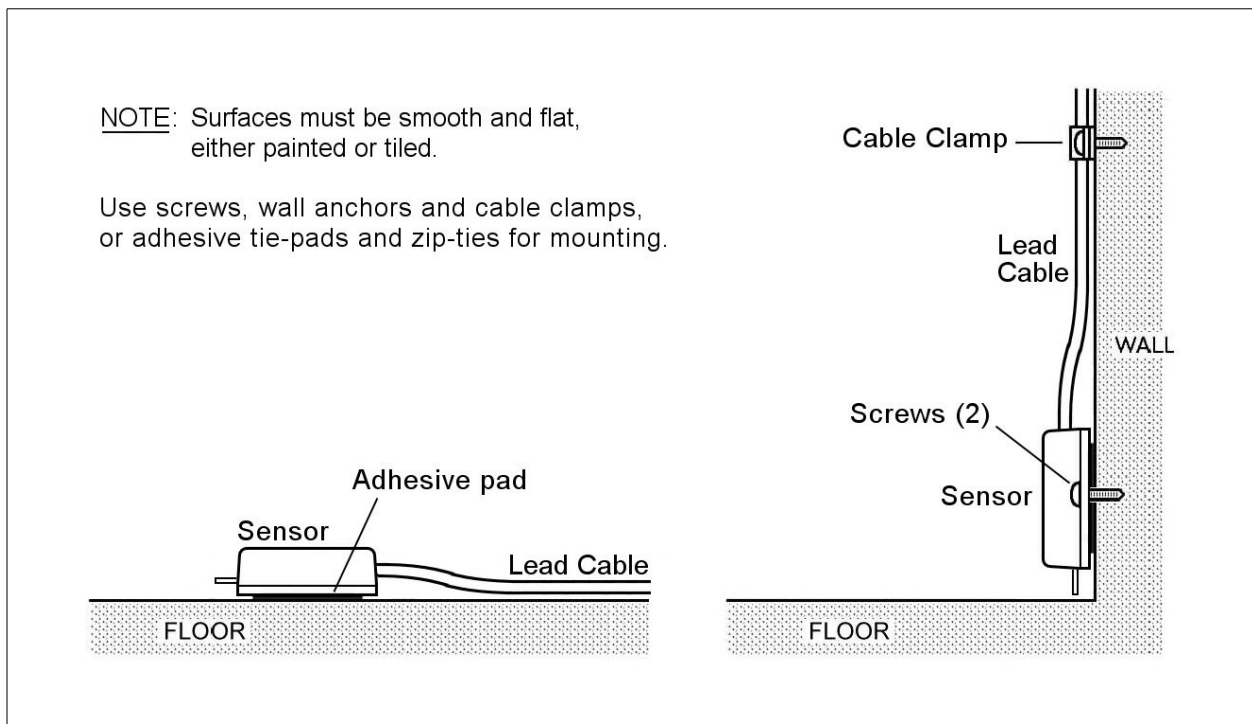


FIGURE 2: Typical installations for the ATI-5005F-RC sensor.

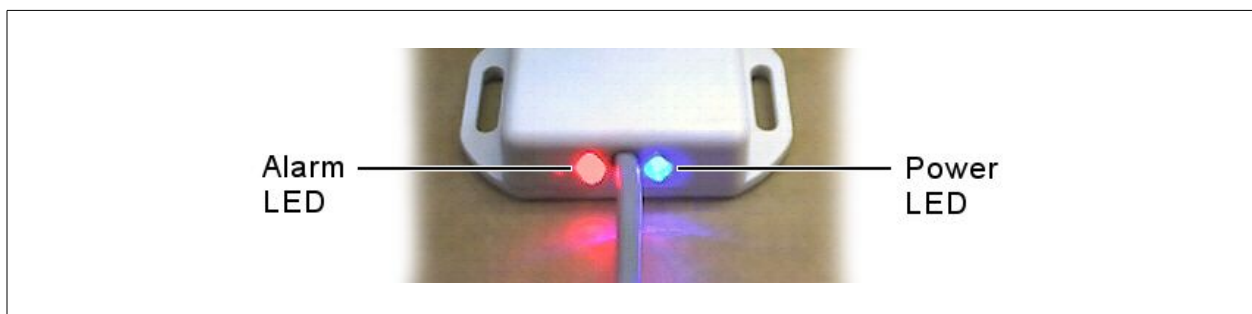


FIGURE 3: Power and alarm LED indicators on sensor housing.

5 – PREVENTIVE MAINTENANCE

5.1 – SENSOR VERIFICATION

For verifying the liquid sensor, first connect 12 to 24 VDC power to the BLACK (-) and RED (+) wires. The Blue LED should light. Next, connect a multimeter to the GREEN and WHITE wires and set it for resistance. The resistance should read as an open circuit. Then, immerse the sensor's contact pins into water and observe the meter reading — it should drop to zero or a very low resistance, and the Red LED should light.

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 Sensor Verification), some wires may be connected wrong or the sensor may have been damaged during installation. **Remember to use caution when installing each ATI-5005F-RC Floor Water Sensor.**

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

5.2.1 – FLOOR WATER SENSOR DATA

Normal Status:	Blue LED is ON Relay contact circuit is open (N/O). Red LED is OFF.
Alarm ON status:	Blue LED remains ON Relay contact circuit is closed, as long as water is present. Resistance at or near Zero ohms. Red LED is ON.