



ATI-5016T

Thread-mount Petroleum Sensor

INSTRUCTIONS

**Installation and Maintenance of the
ATI-5016T Petroleum Sensor**



IMPORTANT

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

filename:
ATI.MAN.5016T

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1 - WARRANTY

The ATI-5016T Petroleum 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>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.</p>

2 - PRODUCT INFORMATION

NOTE: This manual must be returned to the owner or manager after installation of the sensor(s).

2.1 - PETROLEUM SENSOR

Sensor Warranty Period	1 year
Operating Temperature	-40 to +60 °C (-40 to +140 °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-5016T Petroleum Sensor detects leaks of petroleum in the interstitial space of a double-wall tank. This sensor was designed to replace the sight glass on double-wall fuel storage tanks, and screws directly into a female 3/4" NPT tank hub.

The ATI-5016T Petroleum Sensor also features:

- ◆ Male 3/4" NPT thread for mounting into a threaded hub.
- ◆ Reusable (see section 5.2.1)
- ◆ Quick recovery
- ◆ Intrinsically safe (when connected through an approved I.S. barrier, or to an ATI liquid monitor).

3.1.1 - SENSOR SPECIFICATIONS

DETECTABLE LIQUIDS	Gasoline, diesel, waste oil, and other petroleum products (Contact factory for more information if required).
SENSOR	Immersion type cable consisting of a fully reversible liquid hydrocarbon sensitive element.
RESPONSE TIME	Gasoline — under 3 minutes. Diesel — under 10 minutes (Dependent on conditions and temperature). Waste oil — depends on conditions and temperature.
REPEATABILITY	Possible, even after repeated immersions.
OPERATING TEMPERATURE	Petroleum: -40 to +60 °C (-40 to +140 °F).
STORAGE	10 YEARS @ -65 to +60 °C (-85 to +140 °F).

3.2 - APPLICATIONS

APPLICATION	TYPE	MONITORING LOCATION	MONITORED LIQUID
Above-ground Storage Tanks	Double wall	Sight glass hub at end of tank	Petroleum products

4 - INSTALLATION

4.1 - LOCATION AND MOUNTING

Although different practices can be followed, the proper method of installation and use of approved mounting hardware and sealing fittings is highly recommended to ensure sound and durable installation from sensors to monitor.

When installing or removing the ATI-5016T sensor, apply the wrench to the narrow hex of the sensor housing. Avoid over-tightening as it may damage the Sensor. Teflon sealing tape may be used around the threads of the sensor to help prevent leakage.

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.

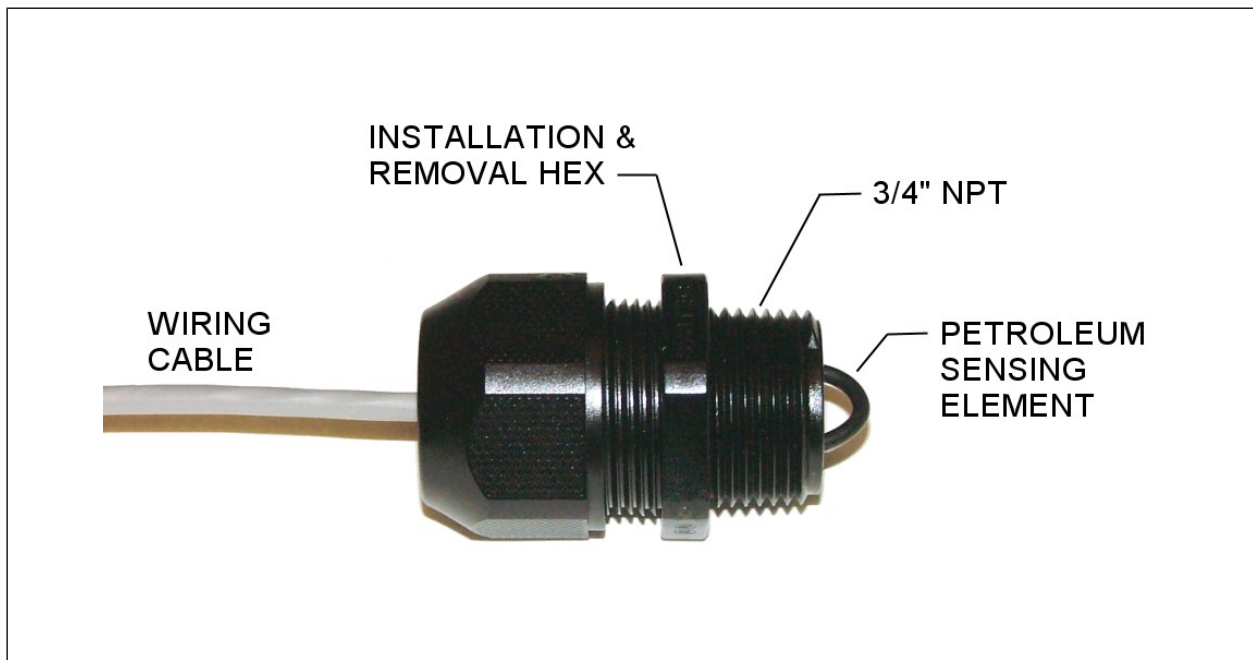


FIGURE 1: Typical conduit wiring housing installation.

4.1.1 - DOUBLE-WALL TANKS

For best overall coverage, the cable should be laid along the walls at the bottom of the spill collection area of the sumps (see installation layouts in FIGURE 2 and 3).

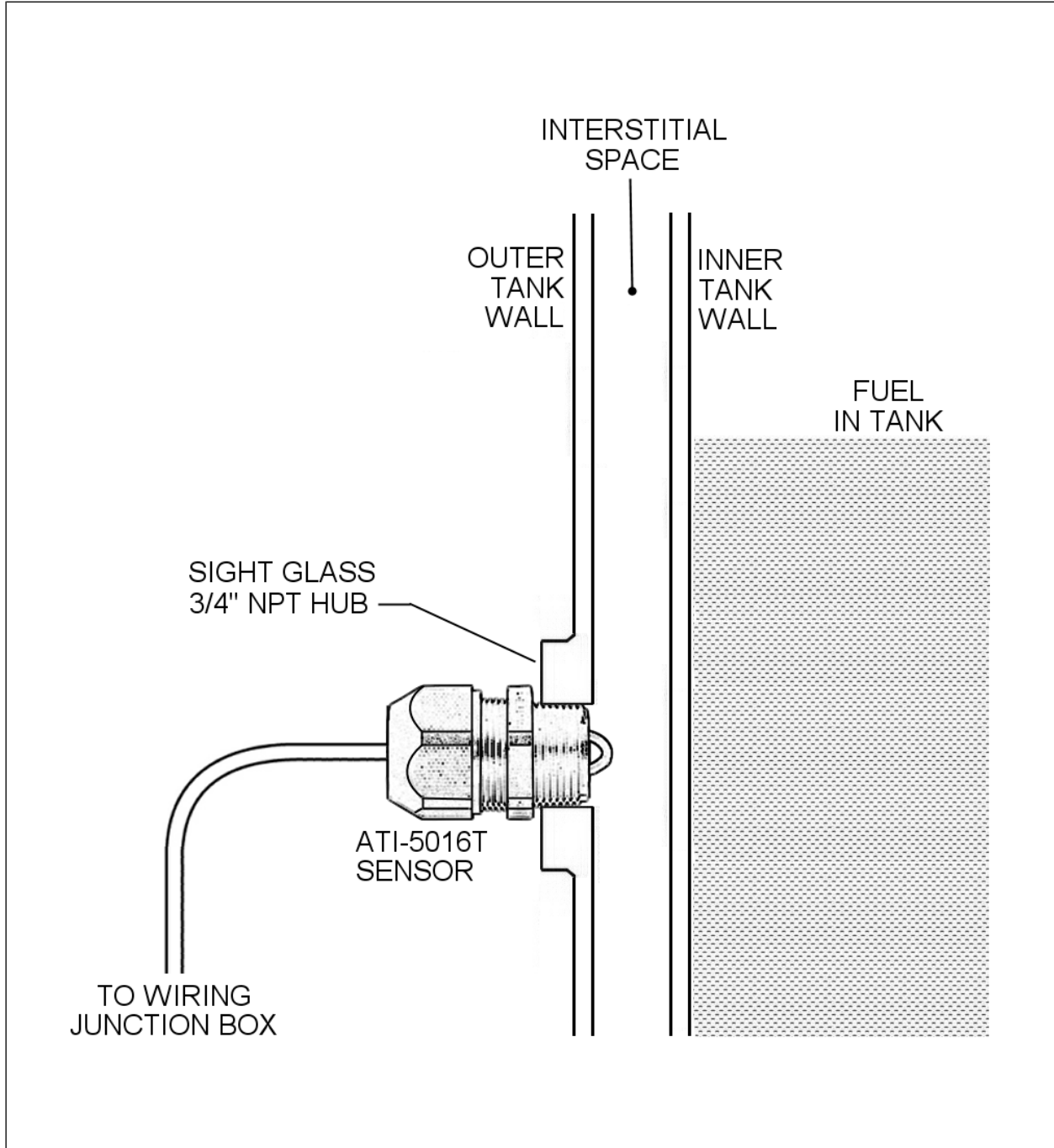


FIGURE 2: Sensor installed in sight glass hub of double-wall tank.

5 - PREVENTIVE MAINTENANCE

5.1 - SENSOR VERIFICATION & TESTING

When verifying the petroleum Sensor, connect a digital multimeter (set for resistance) to the BLACK and RED wires.

MEASURE RESISTANCE OF EACH SENSOR UPON RECEIPT TO VERIFY INTEGRITY BEFORE INSTALLATION, THEN REPEAT THIS PROCEDURE AFTER INSTALLATION.

5.1.1 - SENSOR TESTING PROCEDURE

Connect a multimeter to the BLACK and RED wires and apply LIGHTER FLUID on a small section of the sensing element. Resistance should quickly increase until it becomes an open circuit. Allow the lighter fluid to evaporate and resistance to return to normal before installing the sensor.

CAUTION: The sections of Sensor on either side of the testing point should NOT touch each other. The testing surface must be non-conductive.

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-5016 petroleum Sensor to prevent damage.**

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

5.2.1 - PETROLEUM SENSOR DATA

Normal Status: Normally Closed (N/C)
Low resistance < 100K

Alarm ON Status: Circuit open
High resistance > 18 Meg

If any sensors in sumps show frequent alarm conditions, check the bottom of the sumps for contaminants. When minor contaminants are continually present, the Sensor should be mounted 1 to 2 inches above the normal level of contaminant.

Sensor cable left contaminated or submerged in gasoline after the initial alarm will take longer to recover. In oil products or byproducts (i.e.: diesel), the sensing element should be washed in a mild detergent and dried to aid in the recovery.

No guarantee is implied regarding recovery in various oil products.