

# SSI Technologies - Application Note AT-AN10

## Acu-Trac® Level Sensor Configuration Kit

### Product Overview

#### Product Description

The Acu-Trac® Level Sensor Configuration Kit provides the user the following flexibility

- The ability to re-configure the Acu-Trac® Level Sensor to support virtually any tank/barrel size or shape.
- The ability to easily set up the Acu-Trac® Level Sensor's analog output to drive any gauge.
- The ability to setup the communications mode and response time parameter.

SSI's Acu-Trac® technology automatically optimizes the level sensor's operating parameters for level, motion, and ambient temperature, which improves performance, while delivering accurate level measurements day in and day out.

The Acu-Trac® Level Sensor Configuration Kit comes complete with hardware, software and user's guide on the CD. Additional application notes and the user's guide can be found on SSI website [www.ssitechnologies.com](http://www.ssitechnologies.com)

#### Hardware

The hardware items included in this kit are

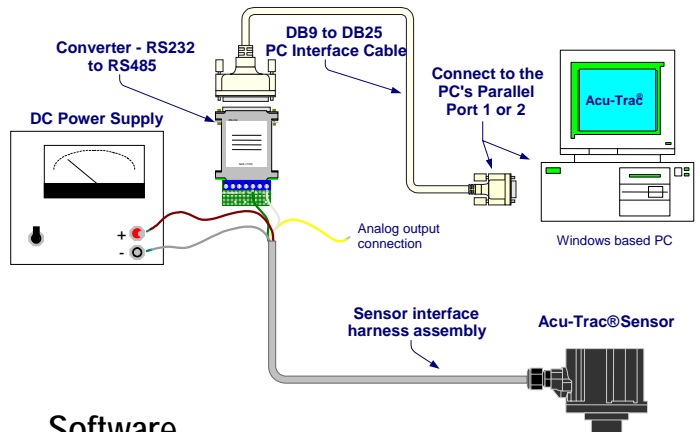
- RS485 to RS232 Converter

The RS485 to RS232 Adapter converts the RS485 level sensor broadcasts into a conventional RS232 signal readable through your computer's serial I/O port.

- DB9 to DB25 PC Interface Cable

This cable provides the RS232 serial data connection between your PC and the RS485 to RS232 Adapter.

- Level Sensor Interface Harness



#### Software

The kit contains an easy to use Acu-Trac® Level Sensor Configuration software package that can be simply installed off of the Acu-Trac® Level Sensor Configuration Software CD ROM supplied with your kit.

The software provides you with the ability to reconfigure the level sensor for different barrel/tank sizes, and reconfigure the level sensor for different gauge interfaces. The kit includes the following software application tools:

- 1) The Acu-Trac® Level Sensor Configuration Install Program which provides a standard Windows® install shield used to install the software, and setup the PC's serial ports.
- 2) The Acu-Trac® Level Sensor Configuration Software which allows the user to:

- **Read** the level sensor's current configuration.
- **Change the settings** for the tanks size and shape, communications mode, and response time.
- **Write** the changes back to the level sensor.
- **Learn Gauge:** This window allows you to change the level sensor's analog output to correctly drive the fuel gauge.
- **Setup:** This window allows you to change the RS232 serial port selection.
- **Monitor:** This window allows you to monitor the outputs of the level sensor.

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#### System Requirements

The Acu-Trac® Level Sensor Configuration software requires that you have a minimum system, which meets or exceeds the following:

- Pentium® Processor-based personal computer or Laptop
- Windows® NT or Windows® 95 and above operating system
- CD-ROM Drive
- 64 MB of RAM memory

#### Electrical Connections

The electrical interface to the Acu-Trac® level sensor is through a 5-pin Packard Connector or integral harness. The illustrations below describe each I/O Electrical connection to the level sensor.

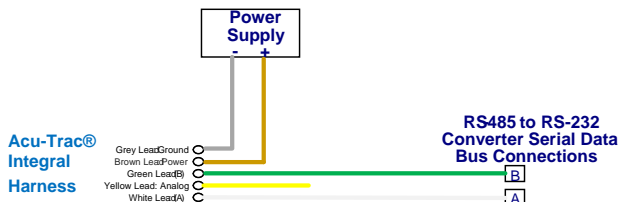


Figure 1 Acu-Trac® Sensor with integral harness

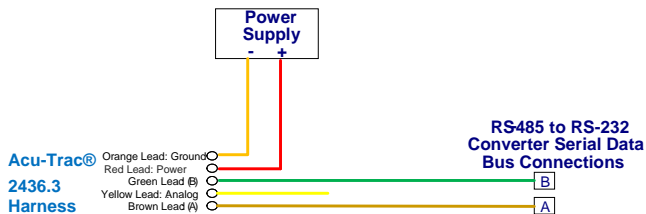


Figure 2 Acu-Trac® Sensor with Packard connector

#### Ground

The Ground lead must be connected to ground (battery negative) for the level sensor to function. The fuel level sensor's internal electronics are ground isolated from the fuel tank to prevent ground loops. All sinked current will be returned through this connection.

#### Supply Voltage

The supply voltage lead must be connected to DC Power (Battery Positive) for the level sensor to function. The power source to the level sensor should contain a fuse with minimum amperage rating of 1 Amp and maximum amperage rating of 5 Amps. The level sensor will function when the supply voltage is between 10 and 16 Volts for the 12 Volt sensor and between 11 and 34 Volts for the 24 Volt sensor. This connection is protected from over voltage, load dumps, and other electrical transients.

#### Analog Output Connection

Two different analog outputs are available depending on which level sensor was purchased. The voltage output part is primarily used to drive a gauge. The current output part is primarily used to interface with industrial equipment.

#### Data Link Positive (A) Connection

Connect to the data link positive (A) connection on the RS-485 to RS-232 adapter (A) position.

#### Data Link Negative (B) Connection

Connect to the data link negative (B) connection on the RS-485 to RS-232 adapter (B) position.