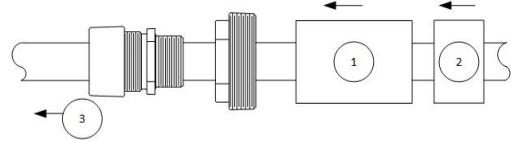
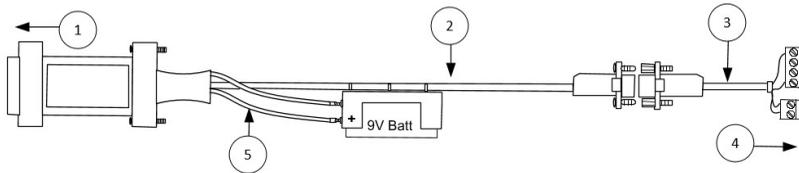


Figure 1: Slide components into the LevelMaster casing



Legend: #	Name
1	Oil float
2	Water float
3	Top of LevelMaster

Figure 2: Local connection cable for 2018546-001 boards



Legend: #	Name
1	Connect to computer with serial or USB (using additional adapter)
2	RS-232/RS-485 converter, P/N 2100241-005
3	Cable Adapter, P/N 2100250-002
4	Connect to Level Master board, P/N 2104836-001
5	See the Notice below

NOTICE – Equipment damage. Disconnect the red wire connector on the battery assembly when power to the LevelMaster is turned off. Failure to do so will result in a constant battery drain.

RS-485 termination (2018546-005 boards only)

Figure 3: Intermediate sensor

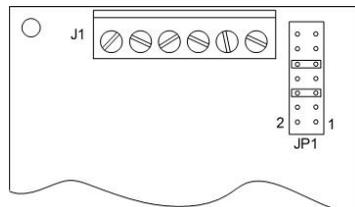


Figure 4: Last or only sensor

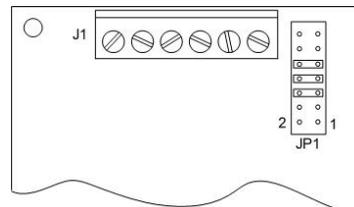
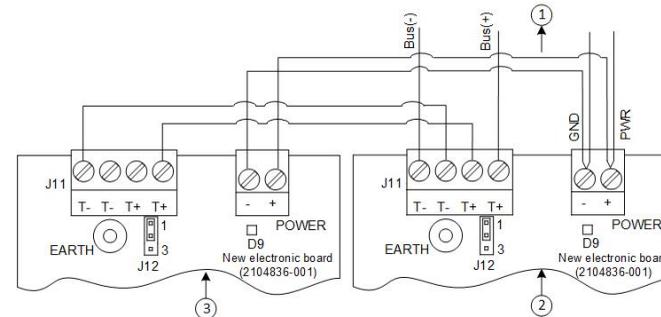


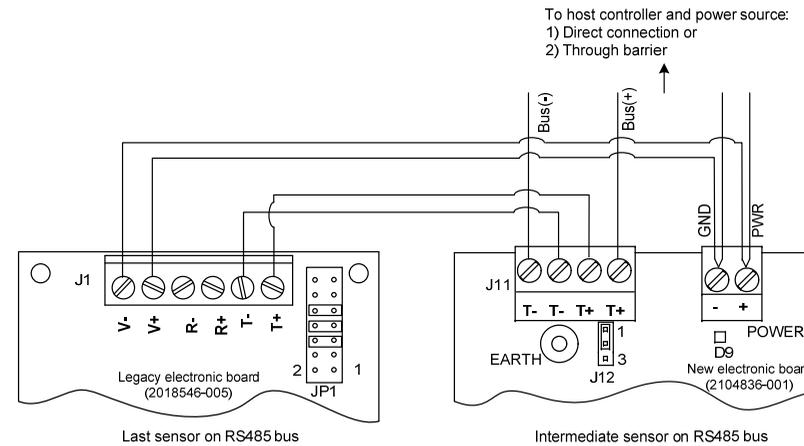
Figure 5: Wiring (2018546-001 boards)



Legend: #	Name
1	To flow computer/remote controller or through barrier
2	First sensor
3	Last sensor

Figure 6: Wiring (Mixed board types)

Single port legacy board (2018546-005) on left. Separate port new board (2104836-001) on right.



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ABB MEASUREMENT & ANALYTICS

LevelMaster 7100

Quick Start with batteryless floats



Safety and compliance information is included with the device in the shipping packaging.

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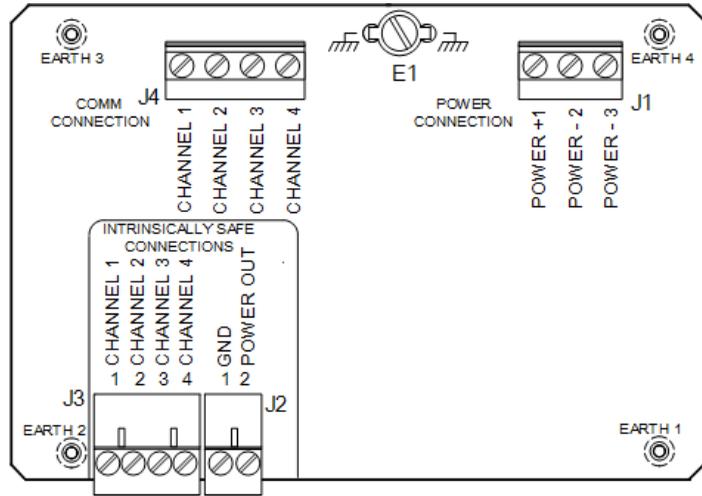
Additional information

Scan the code below for product publications:

LevelMaster 7100



Figure 7: Totalflow CSA-certified barrier board (hazardous locations)



LevelMaster 7100 Quick Start

This guide includes basic steps for a new general-purpose installation and setup in an unclassified area. For hazardous location installations refer to online publications.



IMPORTANT NOTE: Installations may involve single or multiple interconnected units and mixed board types. For multi-unit installations, determine intermediate and last units in the connecting bus to terminate the RS-485 bus correctly.

Setup requirements

Table 1: Requirements per board type below.

Board number	2104836-001	2018546-005
RS-485 termination	Through software	Through onboard termination pins
Float types	All types including batteryless floats (kit 2018392-017)	All types except batteryless floats
MasterLink version	2.0 (required for batteryless floats)	2.0 or earlier
For setup (not for permanent connection)		
RS-485 cable adapter	2100250-002	2100250-001
RS-485-to-RS-232	2100241-005	2100241-002
RS-232-to-USB converter	Digi® Edgeport/1 USB Converter for laptops without RS-232 ports. Software drivers are required (1801382-001).	



DANGER – Bodily injury: Configure the LevelMaster before inserting into the tank. Follow your company policies and safety guidelines to complete installation.

Install LevelMaster components

With the sensor positioned and supported horizontally:

1. Wrap Teflon® tape, or another sealing material, around cord connector and tank port bushing threads.
2. Slide the components into the bottom of the LevelMaster in the following order: Cord connector, tank port bushing, floats. If using two floats, slide the oil float on first (see Figure 1.)
3. Slide and tighten the float clamp at 1 inch above the bottom of the casing.

Assemble local communication cable

Connect the converter cable and adapters based on board type and ports available on the laptop (see Figure 2.)

1. Connect the RS-485 cable adapter to the RS-485-to-RS-232 converter cable.
2. If using a laptop without RS-232 ports, connect the RS-485-to-RS-232 converter cable to the RS-232-to-USB converter.

Connect to the LevelMaster



IMPORTANT NOTE: Ensure MasterLink 2.0 is already installed in the PC or laptop. MasterLink has context-sensitive online help. Click **Help** on the screen of interest for details.

To configure the LevelMaster, connect to the electronic board:

1. Remove cover from the electronic enclosure and pull the electronic board up gently without disconnecting it from the sensor assembly.
2. With a small slotted screw driver, remove the connectors from the onboard communication and power terminals. Save these connectors for wiring.

Use the local communication cable to connect the laptop to the electronic board.

1. Insert the red wire connector to the cable assembly battery.
2. Start **MasterLink** on the laptop.
3. At the main screen, add a location for the new unit:
 - a. Right-click inside the screen (white area) and select **Add New Location**.
 - b. Enter up to 25 characters for a location name.
 - c. Click **OK** to save the name. Verify that the location displays.
 - d. Select the new location (ensure it is highlighted).
4. Click the **Comm. Port** drop-down list.
5. Select the laptop communication port used.
6. Leave the Baud Rate at 9600 (factory default).

Verify communication

1. Click **Setup LevelMaster**. The New LevelMaster Setup window displays.
2. Select **I have only one LevelMaster connected to communication port and I want to set it up**.

3. Click Setup LevelMaster.
4. When prompted to add the LevelMaster to the list, click **Yes**.
5. When prompted for the LevelMaster name, type a unique name of up to 15 characters and click **OK**.
6. Observe the messages displayed on the monitor screen. Verify that communication is successful (100% success).

Set up unit with generic configuration

MasterLink 2.0 includes generic configuration files for different sensor lengths. To load one of these files to the LevelMaster:

1. Click the **Upload/Download** tab.
2. Under Send data to the LevelMaster, click **Browse [...]**.
3. In the browser, navigate to the applicable default files folder. For example, C:\Program Files (x86)\ABB\MasterLink\DefaultDat\7.0 Head board.
4. Locate the file for the correct length of sensor and click **Open**. For example, for a 20 ft sensor, select the "Dual_20ft_batteryless.dat" file.
5. Click **Download Data to LevelMaster**.
6. Click **OK** when the download is complete.
7. Click the **Setup** tab.
8. Type a unique ID in the New LevelMaster ID field and click **Set New ID**.
9. Configure the baud rate for communications. Baud rates for all connecting units, including the controller, must match.
10. Configure termination if the LevelMaster is the only unit installed or is the last unit on an RS-485 bus. Leave intermediate units with factory default configuration.

Configure RS-485 bus termination

Perform this procedure only for boards with part number 2104836-001. For legacy boards, set termination jumpers onboard (see Figure 3.)

1. Click the **Monitor** tab and select the **Add Advanced Setup** tabs. Additional tabs display.
2. Click the **More items** tab.
3. Select **Show memory map**.
4. Scroll down, locate, and double-click the **844-memory address** or "**RS-485 bus termination**". The default value is 0.
5. When the edit box displays, change the value to **1**.
6. Click Send New Value.

Install the LevelMaster into the tank

1. Remove the local connection cable from the board. Position the board inside the enclosure.
2. Reinstall and secure the enclosure cover.
3. Slide components to the bottom.
4. Lift and insert the LevelMaster into the tank.

Wire the LevelMaster electronic board

Refer to Figure 4 or Figure 5 for wiring.

1. Remove enclosure cover to expose the board again for wiring
2. Wire units and controller for communication and power. Insert wired connectors on units, reinstall, and secure cover.