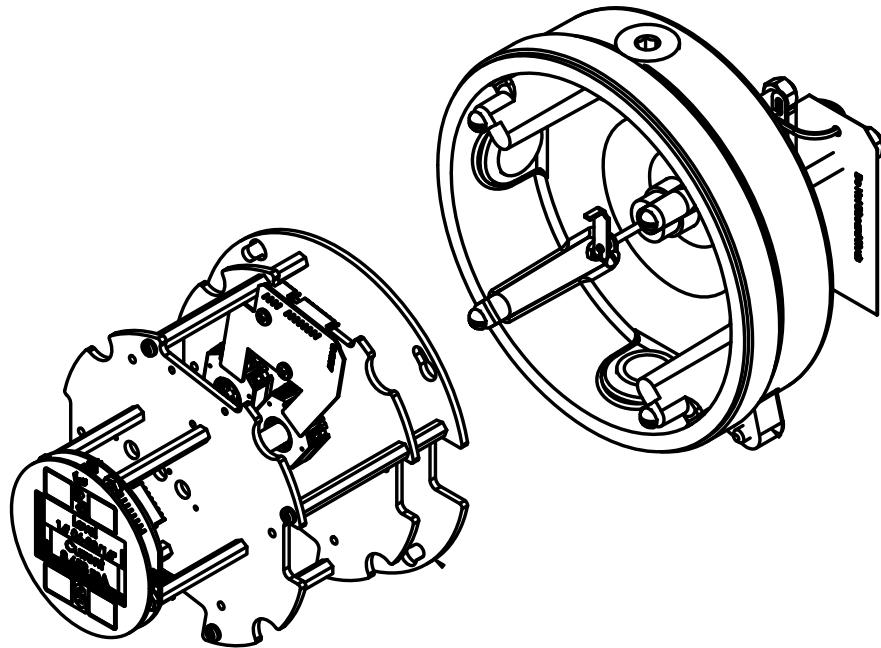


8200 DC Electronic Upgrade Guide

This document provides directions for upgrading and configuring an 8200 Current Output Transmitter with a new Varec 8200 DC electronic upgrade.



Electronic Upgrading Steps



General Steps for Upgrading

The 8920 LPT fits within the 8200 COT's housing, so retrofitting and updating the hardware is performed following these steps.

1. **Mechanical** — Physically disconnecting the 8200 transmitter and replacing the transmitter with a new 8920 transmitter.
2. **Electrical** — Connecting the wiring to bring power to the 8920 within the housing.
3. **Setup/Configuration** — Configuring the 8920 LPT through the display interface.
4. **Calibration Setup** — Calibrating, if needed the 8920 to fit the needs of the company using it.

Mechanical Retrofitting

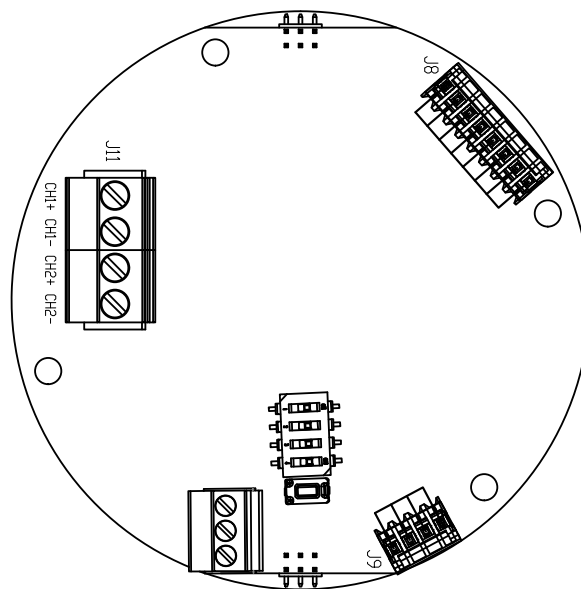
Perform the following steps to remove the 8200's transmitter and replace it with the 8920's transmitter.

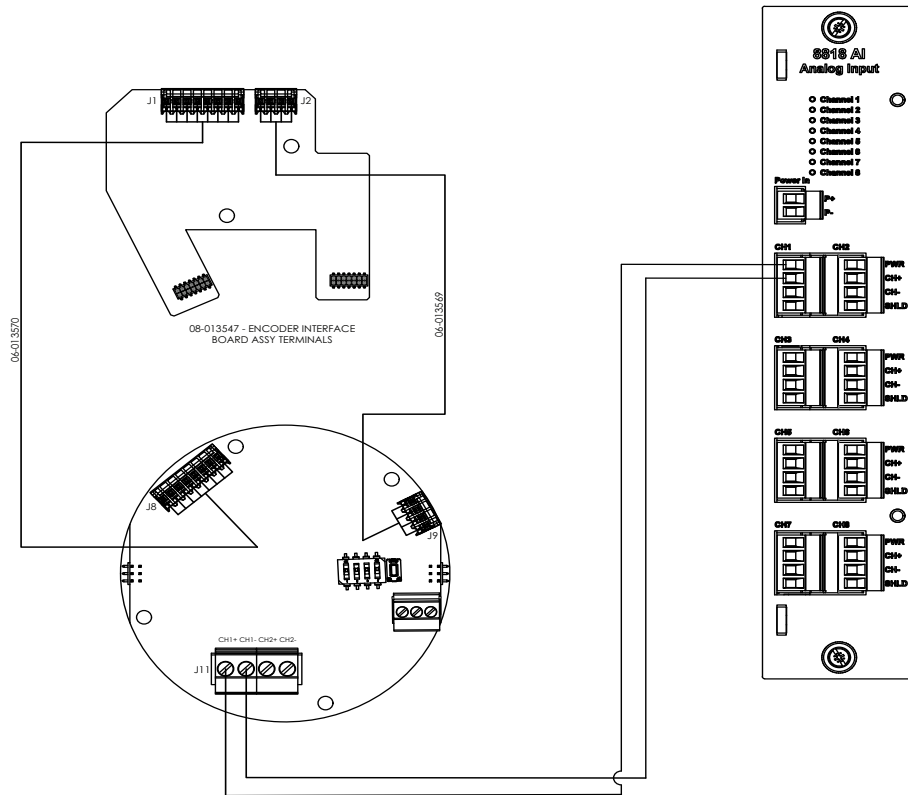
1. Remove the enclosure cover.
2. Remove the four screws for the 8200 encoder as well as the rectangular washers.
3. Slide the 8200 encoder assembly off the central shaft.
4. Install the 8920 encoder assembly on the central shaft.
5. Replace the screws and washers to the base to lock the encoder assembly into place.
6. Verify the new encoder assembly is secure.
7. Follow the **Electrical Wiring** steps below to ensure the wiring is connected.
8. Follow the **Setup/Configure** steps below to ensure the upgrade is configured for your tank.
9. Reinstall the enclosure cover.

Electrical Wiring

Perform the following steps to connect the DC electronic upgrade's wiring:

1. Plug the display into the 2-pin connector wire and thread it through one of the side holes.
2. Connect the other end of the 2-pin connector wire to the RTU such as the 8818 Analog Input card.





Setup/Configure the 8200 DC Electronic Upgrade Display Interface

Perform the following steps to configure the 8200 DC electronic upgrade display interface to work with the equipment.

	Name	Function
	Cancel	Cancels the operation and returns you to the previous menu
	Enter	Enters the selection or confirms the selection made
	Minus (-)	Scrolls down through the menu options
	Plus (+)	Scrolls up through the menu options

Note To adjust the LCD contrast on the screen, go to the Main Data display by pressing the E and the up arrow (+) or the E and down arrow (-) to adjust the contrast up or down respectively. To access the configuration menu tree, press E.

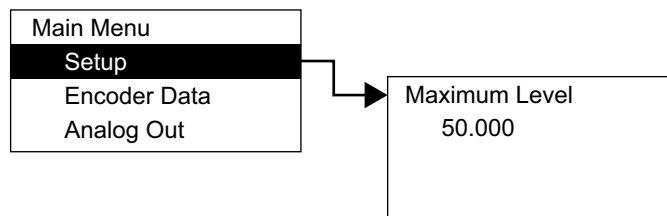
Setup

The Setup menu is used to configure various parameters of the device, such as level, temperature, communications and so on. The Setup parameters menu presents 3 options:

- Display Only — displays the current reading, such as with a level or temperature, or current setting such as feet or degrees Fahrenheit
- Config Params — allows you to change the configuration parameters in Setup
- All Params — scrolls through the Display, Commands, and Config parameters in one all inclusive list

To Access the Setup

1. Press **E** to access the Main Menu. The Setup menu is automatically highlighted.



2. Press the **up arrow** (the + arrow) or the **down arrow** (the - arrow) on the display interface to get to Setup.
3. Press **E** and the Setup menu opens.
4. To select one of the options, press the **down arrow** to move the highlight to the option you want and then press **E**.

Refer to the table below for more information about each Setup option.

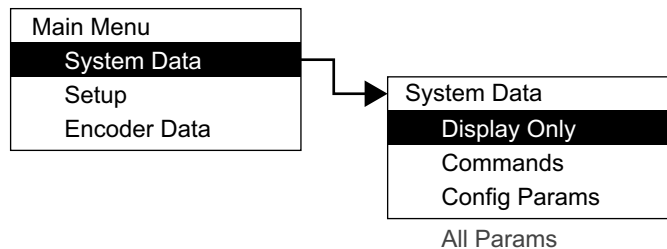
Setup		Description
	Maximum Level	The 20 mA value for the tank
	Cal Level	<p>Calibration Level is used to set (calibrate) the encoder level.</p> <p>Note If you enter a decimal value, the 8920 interprets the measurement as a decimal value and applies the Level Display Units to format the level</p> <p>If you enter a string of numbers separated by a dash (xx - xx - xx), the 8920 applies the format of feet-inches-sixteenths</p>

	Enc Failure mA	The mA output value to alert the terminal unit if the encoder reaches a specific value If an alarm is set to trigger in the inventory management/SCADA software when the Enc Failure mA reaches the value, the user can be alerted
	Gauge Type	Mechanical gauge type: <ul style="list-style-type: none"> English for 2500 English Metric for 2500 Metric
	Lev Disp Units	Level Display Units - How the level is formatted on the display, for example, in decimal feet, or feet, inches & 16ths, meters, and so on
	Enc Direction	The direction the encoder turns: <ul style="list-style-type: none"> Forward for Varec 2500 Reverse for L&J
	Minimum Level	The 4 mA value for the tank

To Access the System Data

If other system settings need to be configured, follow the steps below to set up the 8200 DC electrical upgrade.

1. Press **E** to access the Main Menu. The System Data point is automatically highlighted.

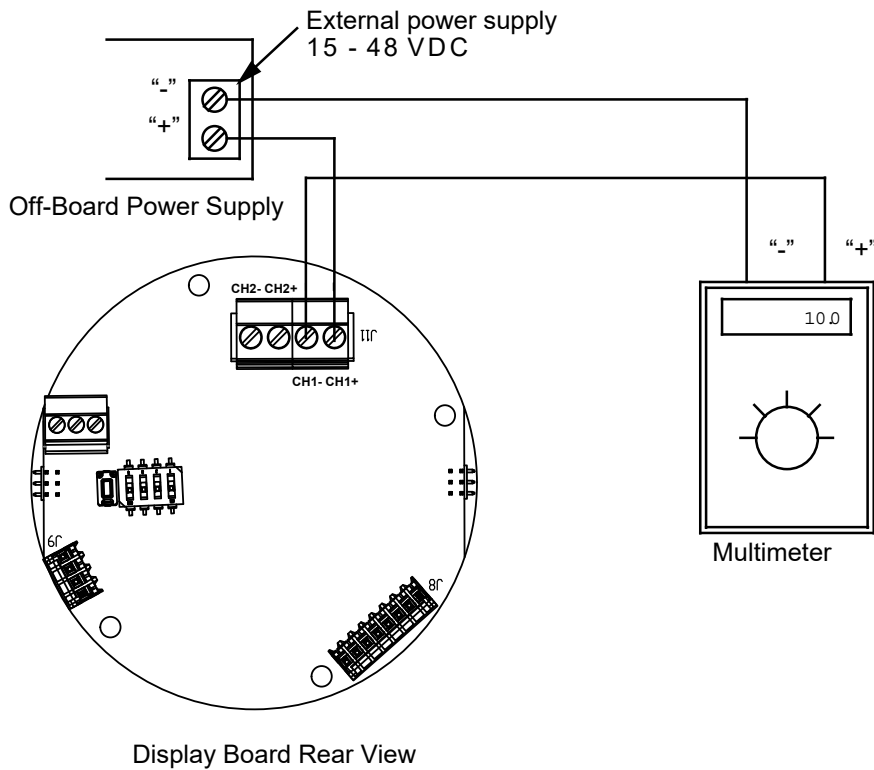


2. Press **E** to open the System Data parameters and the System Data options appear.
3. To select one of the options, press Minus to move the highlight to the option you want and then press Enter.
4. Refer to the table below for more information on each System Menu option.

Display Only		Description
	softw. version	The firmware version
	Sys Checksum	CRC-16 Checksum of the firmware
	Build Date	The date the database structure was generated
	DB Size	The size of the database in bytes
	Num DB Pnts	The number of database points defined
	Board Number	The specific number of the encoder board
	Product SN	The product serial number
	Order Code	The product's order code of the encoder assembly added during production
	Pnt Checksum	CRC-16 Checksum of point's static configuration parameters
	hardw. version	The PCB hardware version
Commands		Description
	Admin PIN	Allows you to set the administrative PIN code. See "Administrative PIN".
	Display Test	The Display test temporarily illuminates all segments of the graphical display to test the operation of the display.
	Reset Cmd	The Reset Command allows reset of the transmitter through the user interface. A soft reset restarts the application. A hard reset resets all configuration data to default values. Note Be careful not to perform a hard reset inadvertently.
	User PIN	Allows you to set the user PIN code. See "User PIN".

Config Params	Description
Tag	The Tag contains 7 bytes of data to identify the transmitter The format of the TAG is "LT xxx" where xxx is the transmitter address
User Ref Level	The user reference level is alternative ways to set the calibration level of the transmitter Default setting is 0'00-00/16"
Sec. Display 4 through 1	These parameters determine which data items is displayed in the lower (secondary) area of the display. Display 1 defaults to Tank Temperature. Display 2 to 4 default to no value (undefined)
Prim Display	This determines data value displayed in the upper (primary) portion of the LCD The default in Tank Level
Display Timeout	The time in seconds without a key press before the Display will returns to the main data display screen
LCD Contrast	Set the contrast on the LCD. The LCD contrast can be adjusted from the Main Data display by pressing the E and Plus (+) or the E and Minus (-) to adjust the contrast up or down respectively
Backlight Ctrl	Sets how long the LCD back light is illuminated after the last key press Setting this value to zero, causes the back light to illuminate continuously
Scroll Rate	The bottom portion of the display can display up to four data values by scrolling through the items. This parameter sets (in seconds) how long each item is displayed
leading zeroes	Select to display leading zeros in front of the numerical values
Format of zero	Selects either a zero or a zero with a slash
Decimal Sep.	Selects the display of the decimal separator, either a period (.) or a comma (,)
All Params	Lists all Display, Commands, and Config Params in a list

Calibration



1. Press **E** to bring up the Main Menu.
2. Press the **up arrow** (the + arrow) or the **down arrow** (the - arrow) on the display interface to get to **Calibration**.
3. Press **E** and the Calibration starting screen opens.
4. Press the **up arrow** (the + arrow) or the **down arrow** (the - arrow) on the display interface to configure the calibration points as needed. Press **E** to move to the next digit. Press **E** after entering or accepting all of the digits to finish the calibration point value and to go to the next calibration point to configure.
5. Repeat Step 4 until finished.