



Title:

i-Controller 2.0 to E2E Communication Connection

i-Controller 2.0 to E2E Communication Connection Guide



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Contents

IMPORTANT: Please Read before Continuing.....	3
Step 1: Connect FLō i-Controller 2.0 to E2.....	3
Verify i-Controller Modbus Address	4
Setting i-Controller Modbus Address.....	4
Step 2: Configuring the E2 Site Controller Communication Port.....	5
Uploading the Description File.....	6
Inputting the License Key.....	7
Adding the FLō i-Controller Device.....	8
Step 3: Setting FLō i-Controller Control Values from E2.....	10
Setting CES Unit Name	10
Changing Set Points	10
Linking E2 Schedule for Occupancy Mode	11

Title: i-Controller 2.0 to E2E Communication Connection

IMPORTANT: Please Read before Continuing

Before beginning the E2/i-Controller integration, obtain a license key for each i-Controller 2.0 along with the FLō RTU description file from Emerson Retail Solutions. Part number: 527-0845

CAUTION: Before connection, ensure there is no earth ground on the wires used for the RS485 connection. Do not ground any of the wires connected to the RS485 port on the i-Controller 2.0. Doing so will result in damage to the i-Controller hardware.

Step 1: Connect FLō i-Controller 2.0 to E2

The FLō i-Controller 2.0 uses an RS485 network to communicate to E2 site controllers over the Modbus protocol. Perform the following steps to connect the RS485 cable.

1. Connect the RS485 network cable to the three-terminal connector on the E2 COM port you choose to assign as the Modbus port. Reverse the polarity of +/- on the RS485 cable between the E2 and the FLō i-Controller 2.0. (See below figure for reference)
2. Connect the other side of the RS485 cable to the RS485 Modbus terminal block located in the unit.

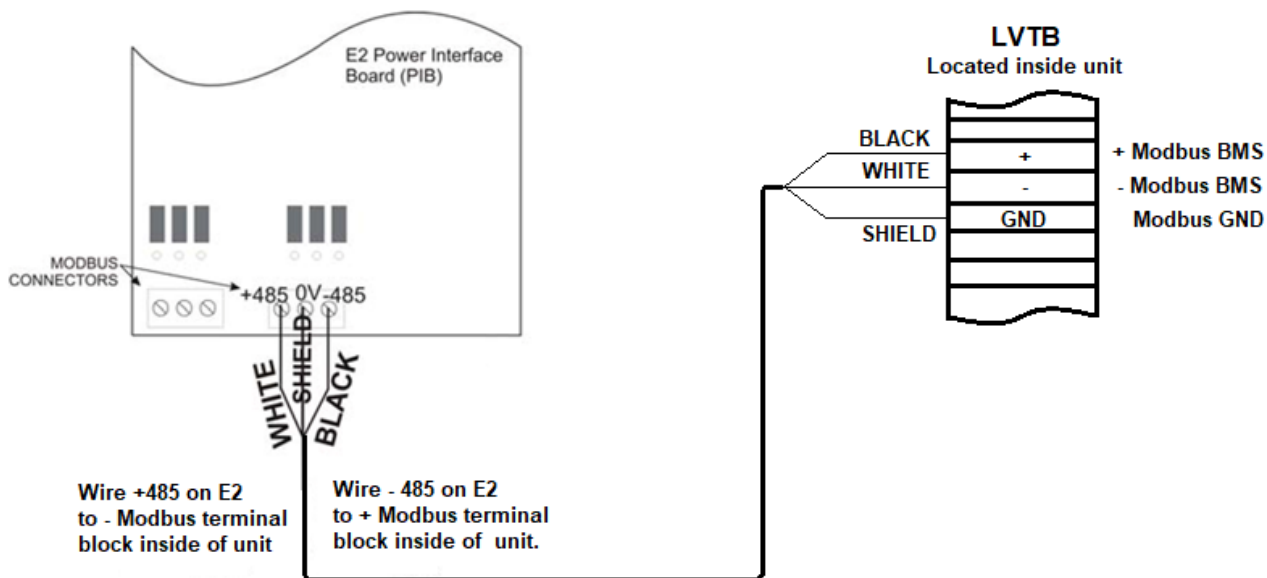


Figure 1. Connection the RS-485 Communication Wire

Title: i-Controller 2.0 to E2E Communication Connection

Verify i-Controller Modbus Address

1. From the Home Screen, use the down arrow button to scroll to status, in the Quick Menu located on the lower right of the screen and press enter button.
2. Use the down arrow button to scroll to the BMS Status page.
3. Press the escape button to return to the Home Screen.

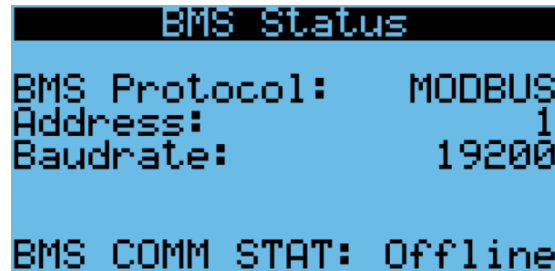
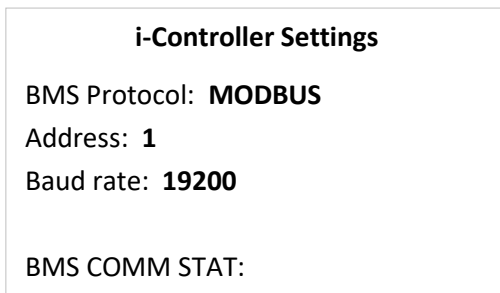


Figure 2. i-Controller BMS Status screen

Setting i-Controller Modbus Address

1. From the Home Screen, press the program button three times to navigate to the settings menu.
2. Use the down arrow button to highlight “Communications” and press enter button twice to navigate to the BMS Configuration Screen.
3. On BMS Connectivity page 1, you can set the controller address and baud rate.
4. Use the enter button to navigate to the value that you wish to change.
5. Using the and buttons increase and decrease the value as desired.
6. Once the desired value has been reached press the enter button to set the value.
7. Repeat steps 4-6 until all desired values have been updated.
8. On BMS Connectivity page 2, you can set the communication protocol.
9. With the cursor back in the home position, at top right of screen, Use the down arrow button to navigate to page2.
10. Use the enter button to navigate to the value that you wish to change.
11. Using the and buttons increase and decrease the value as desired.
12. Once the desired value has been reached press the enter button to set the value.
13. Once all changes have been completed, press and hold the escape button to return to the Home Screen.

Note: Once the baud rate is changed, you will be prompted to restart the controller. A restart is required apply this change.

Title: i-Controller 2.0 to E2E Communication Connection

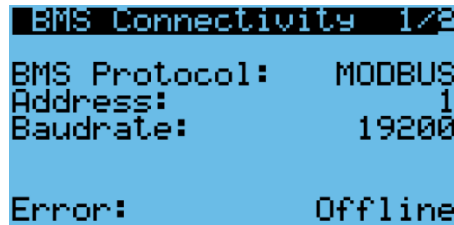


Figure 3. i-Controller BMS Configuration Screen 1

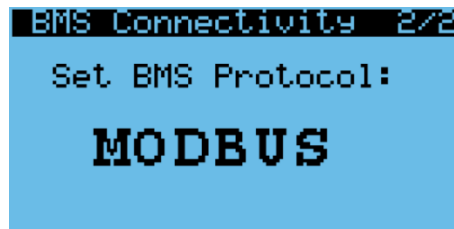


Figure 4. i-Controller BMS Configuration Screen 2

Step 2: Configuring the E2 Site Controller Communication Port

Configure the E2E COM port where the RS485 i-Controller ModBus cable was connected as a Modbus port type.

1. Log on to the E2 with Level 4 access.
2. Press the **Menu** button followed by **7. System Configuration**, then **3. System Information**, and then **1. General Controller Info**.
3. Press the **F2: Next Tab** button twice to view the **C3: Serial** menu.
4. Using the arrow keys, scroll down until the appropriate COM# Connection field is highlighted.

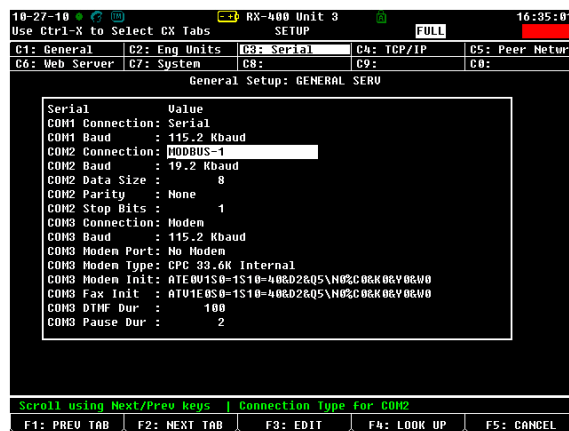


Figure 5. E2E Communication Port Configuration screen

5. Once the field is highlighted, press **F4: LOOK UP**. A list of four options will appear. From the list select MODBUS.

Title: i-Controller 2.0 to E2E Communication Connection

6. Scroll down until the appropriate COM# Baud field is highlighted. Press the **F4: LOOK UP** button. Change the Baud rate to **19200** baud. Ensure the COM# Data Size is **8**, the COM# Parity is **“None”**, and the COM# Stop Bits is **1**.
7. After completing the steps above the COM port has been configured and return to the main menu.

Uploading the Description File

Once the RS485 cable has been connected and the port has been configured, the description file for the Flö i-Controller 2.0 needs to be uploaded to the E2.

1. Open UltraSite and connect to the E2.
2. Right click on the device and select **“Upload Description File”** from the menu.

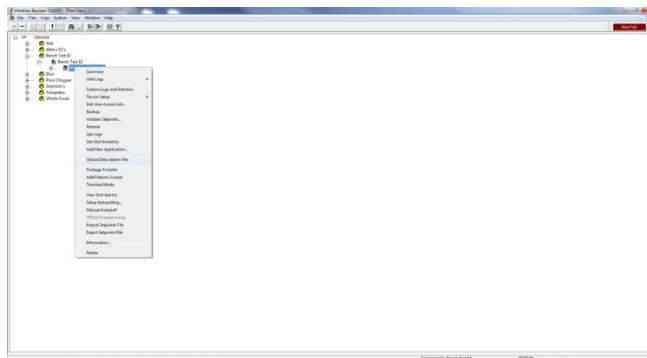


Figure 6. UltraSite Navigation screen

3. If a description file for the device already exists, delete the file, reboot the E2 and repeat steps 1-2.
4. Browse for the description file on your computer, and select Upload.

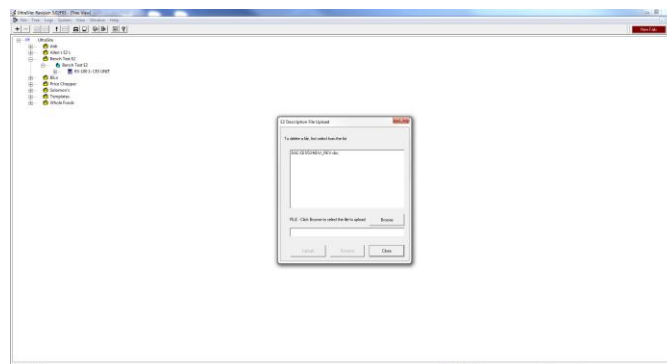


Figure 7. UltraSite Description File Upload screen

5. Once the file has been uploaded, select Close and reboot the E2.

Title: i-Controller 2.0 to E2E Communication Connection

Inputting the License Key

Once the description file has been loaded, the license key needs to be inputted into the E2 in order for the Flō i-Controller to be recognized by the E2.

1. On the E2, press the **Menu** button followed by **7. System Configuration**, and then **9. Licensing**.

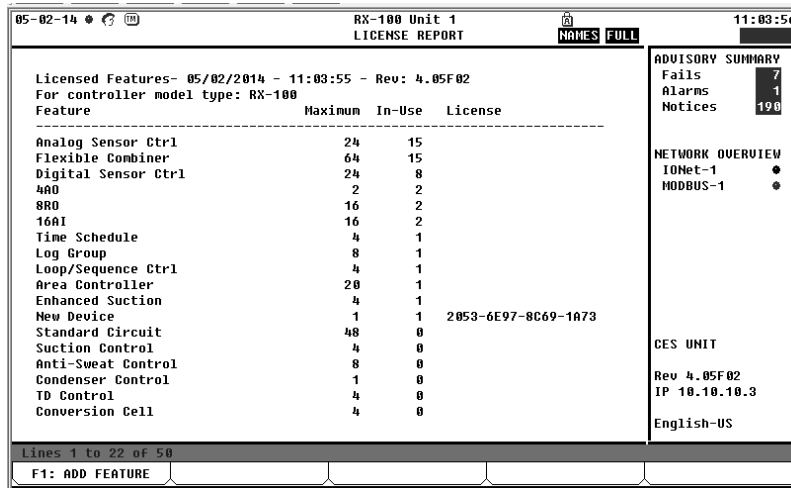


Figure 8. E2E Licensing screen

2. Press the **F1: Add Feature** button.
3. Enter the License Key into the Activate Feature box and press Enter.

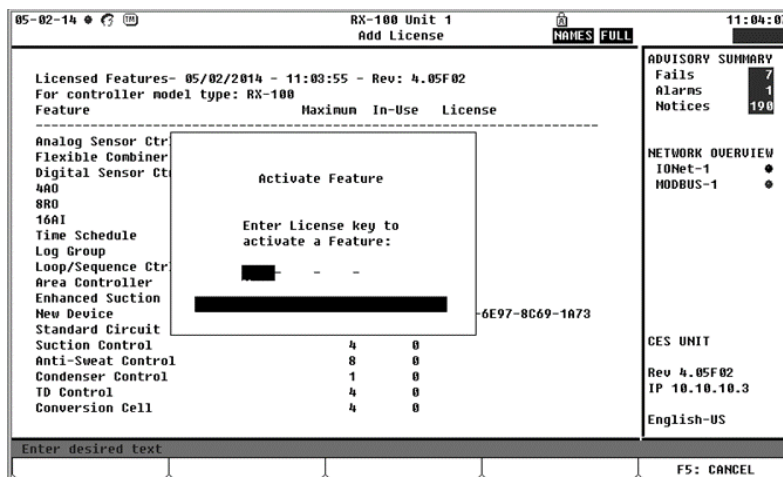


Figure 9. E2E License Activation

Title: i-Controller 2.0 to E2E Communication Connection

Adding the Flö i-Controller Device

1. On the E2, press the **Menu** button followed by **7. System Configuration**, then **7. Network Setup**, then **2. Connected I/O Boards & Controllers**.
2. Press the **F2: Next Tab** button to navigate to the **C4: Third Party** screen.

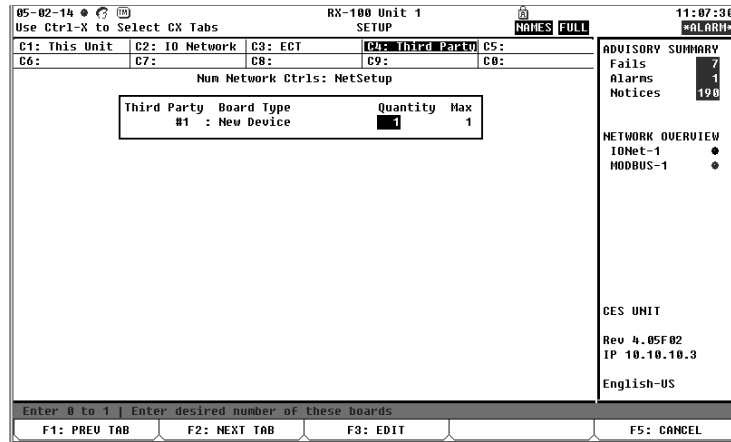


Figure 10. E2E Third Party screen

3. Highlight the “Quantity” field Next to the “New Device” board type.
4. Change the quantity to 1.
5. Press the **Menu** button followed by **7. System Configuration**, then **7. Network Setup**, then **1. Network Summary**.

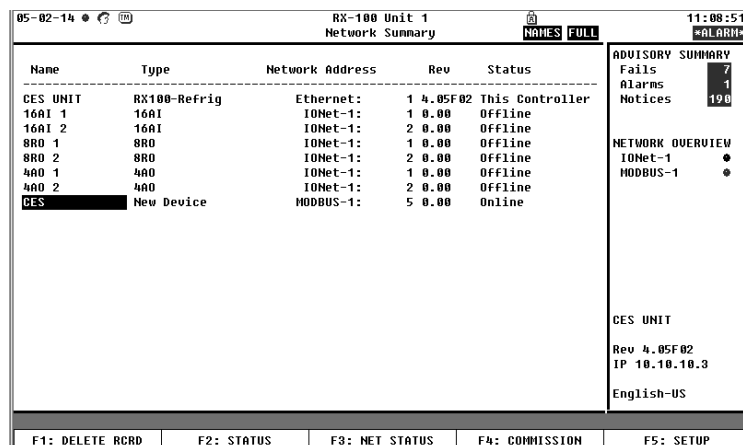


Figure 11. Network Summary screen

6. Scroll down until the Name of the New Device is highlighted. Press **F4: Commission**.

Title: i-Controller 2.0 to E2E Communication Connection

7. Scroll down and highlight the Modbus address that was set on the Flö i-Controller (Default address is 11).

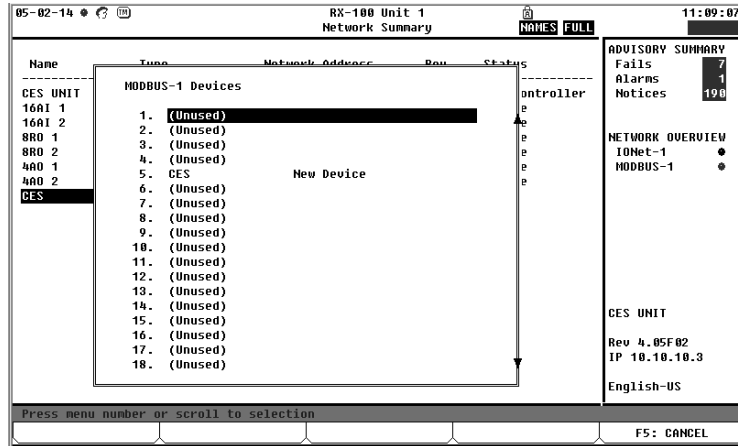
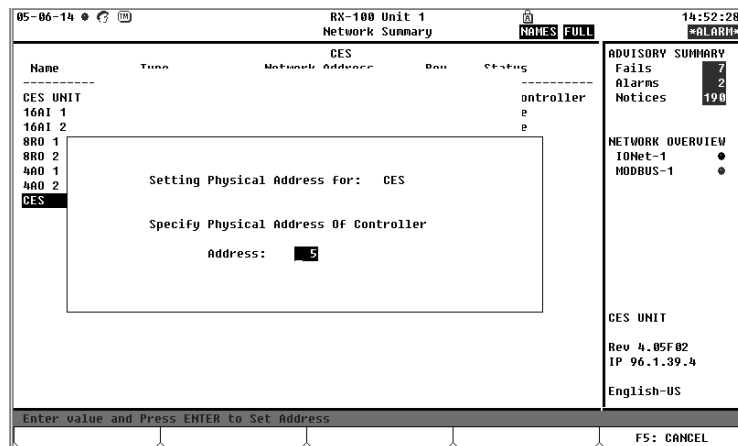


Figure 12. E2E Modbus Device screen

8. Press Enter and a box with the Modbus address should appear.



9. Press Enter again.
10. Press the back button. If the Modbus connection has been setup properly the Status next to the New Device should ready "Online."

Title: i-Controller 2.0 to E2E Communication Connection

Step 3: Setting Flō i-Controller Control Values from E2

Setting CES Unit Name

1. On the Flō i-Controller home screen, press **F5: SETUP**.
2. On the **C1: General** tab scroll down until the Name field is highlighted. Use the keyboard to change the name to the unit name. (i.e. CES RTU1)

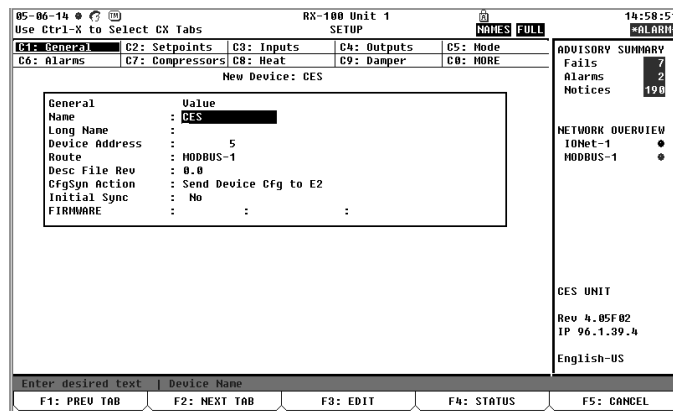


Figure 13. E2E General Setup screen

Changing Set Points

Custom set points are factory set in the i-Controller 2.0 and will display on the E2. If the set points need to be adjusted, perform the following steps to adjust the Flō unit set points from the E2.

1. Log in to the E2 controller.
2. On the E2, press the **Menu** button, followed by **5. Configured Applications**, and then **400. CES RTU**. The Flō i-Controller home screen will appear.

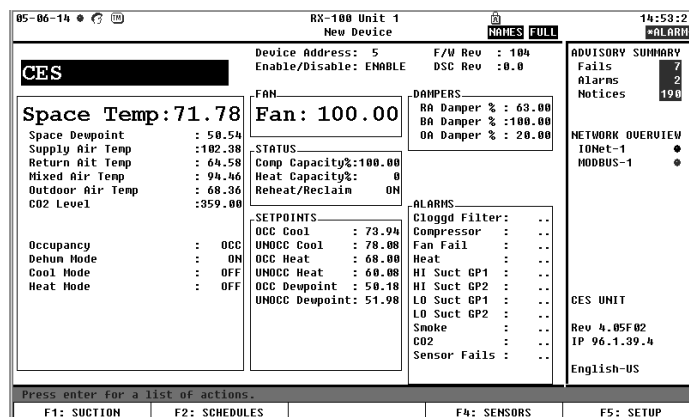


Figure 14. E2E i-Controller Home screen

Title: i-Controller 2.0 to E2E Communication Connection

- On the home screen, press **F5: Setup**.
- Press the **F2: Next Tab** button once to view the Setpoints screen.

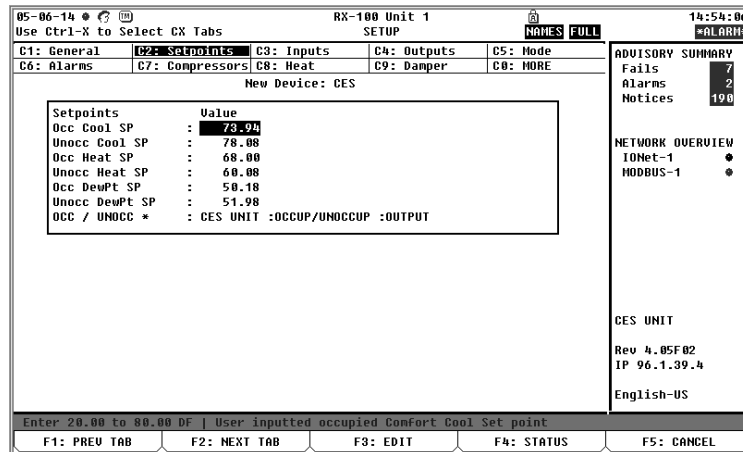


Figure 15. E2E i-Controller Setpoints

- Use the number pad to adjust the set points as necessary, or press **F3:EDIT**, **1. Alternate I/O Format**, **2. Area Ctrl: Application: Property** to link a setpoint from an E2 application to the CES RTU application.

Linking E2 Schedule for Occupancy Mode

The Flö i-Controller accepts an Occupied or Unoccupied signal from the E2. This variable needs to be linked to the Flö i-Controller screen on the E2. The occupancy signal will be defaulted to Occupied until a schedule output is linked to the application.

- On the Setpoints screen Setup menu, scroll down to the OCC/UNOCC field and press **F3:EDIT**, **1. Alternate I/O Format**, **2. Area Ctrl: Application: Property** to change the value property from a fixed value to an application link.
- Scroll down to the OCC/UNOCC field and scroll to the right until the “Application” field is highlighted.

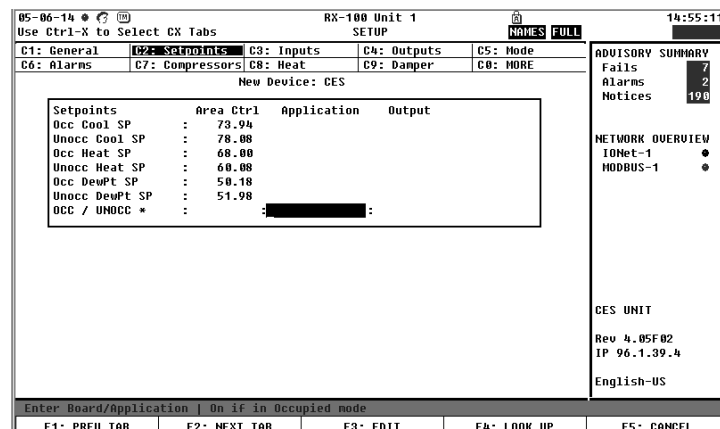


Figure 16. E2E i-Controller Setpoints screen

Title: i-Controller 2.0 to E2E Communication Connection

3. Press **F4: LOOK UP**.
4. In the Application Selection box, scroll down and select the OCCUP/UNOCCUP application. Press Enter.

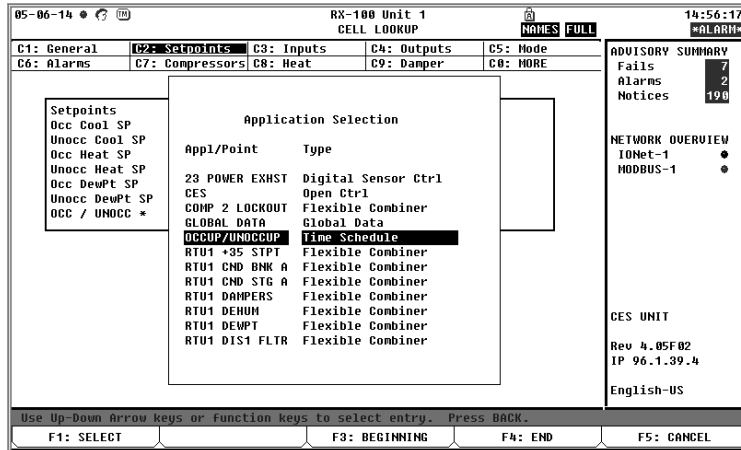


Figure 17. E2E i-Controller Application Selection screen

5. Scroll over to the right until the "Output" field is highlighted.

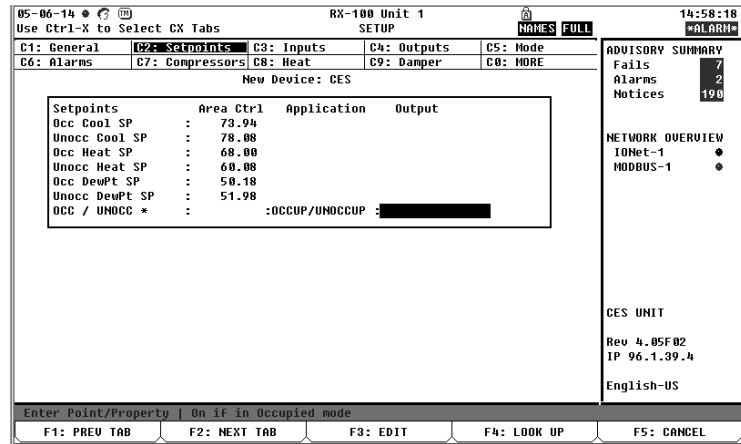


Figure 18. E2E i-Controller Output Configuration

6. Press **F4: LOOK UP**.

Title: i-Controller 2.0 to E2E Communication Connection

7. Scroll down and select "OUTPUT" from the menu. Press Enter.

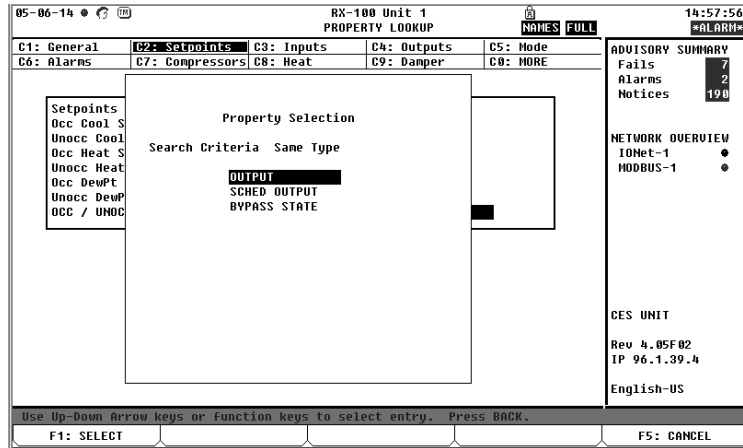


Figure 19. E2E i-Controller Output Configuration Selection

8. Press the back button to return to the home screen.