



Title:

i-Controller to E2E Communication Connection Ver.1

i-Controller to E2E Communication Connection Guide



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IMPORTANT: Please Read before Continuing

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

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

Step 1: Connect FLō i-Controller to E2

The FLō i-Controller 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. (See below figure for reference)
2. Connect the other side of the RS485 cable to the i-Controller's RS485 Slave port.

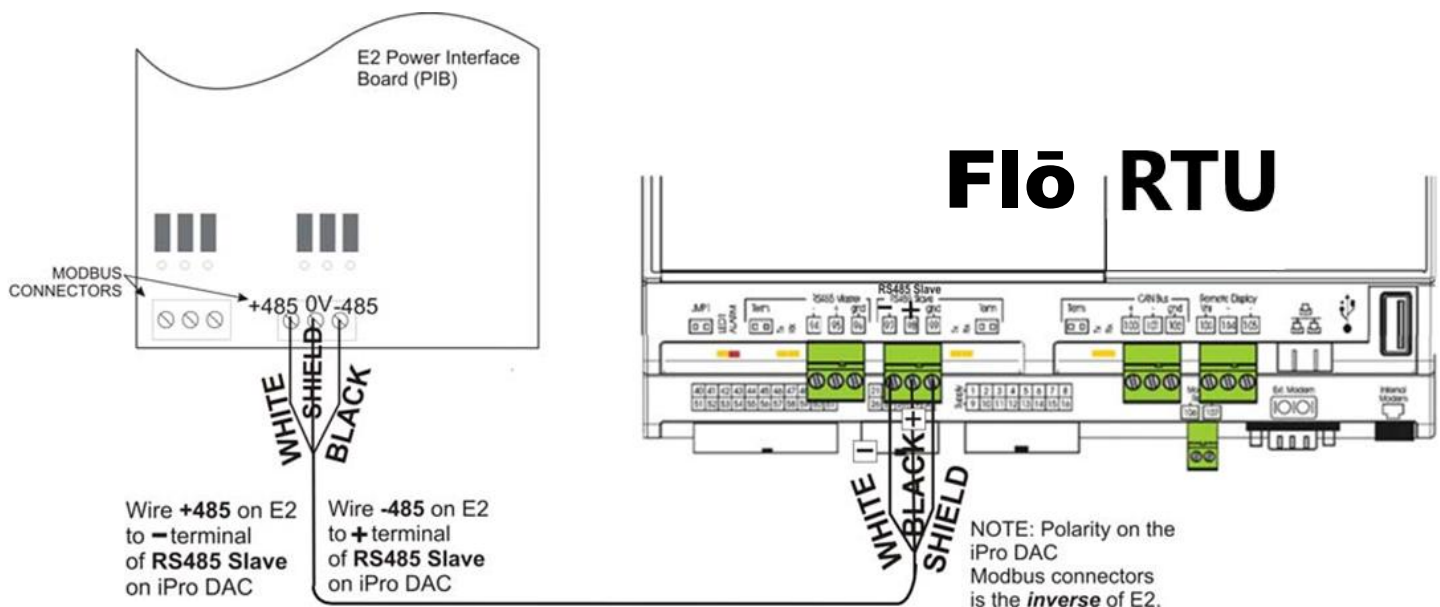


Figure 1. Connection the RS-485 Communication Wire

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Setting the Modbus Address

1. On the Visograph display, navigate to the Network Info page by pressing number 5 on the Main Menu screen.
2. On the Network Info screen, use the Up and Down arrow keys to highlight the Flö i-Controller Modbus Address value.
3. Once highlighted, press Enter and use the Up and Down arrow keys to change the Modbus address to the desired value. When the desired value has been set, press Enter. Power cycle the Flö i-Controller for the address change to take effect.

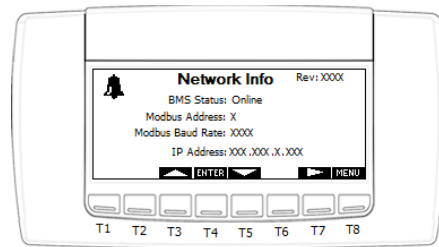


Figure 2. i-Controller Network Information Screen

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.

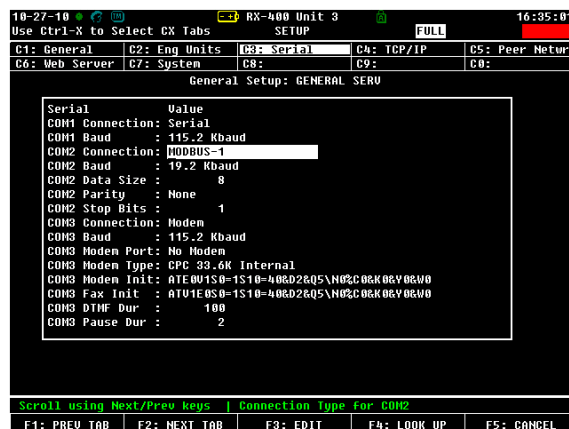


Figure 3. E2E Communication Port Configuration screen

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5. Once the field is highlighted, press **F4: LOOK UP**. A list of four options will appear. From the list select MODBUS.
6. Scroll down until the appropriate COM# Baud field is highlighted. Press the **F4: LOOK UP** button. Change the Baud rate to **9600** 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 FLō i-Controller 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.

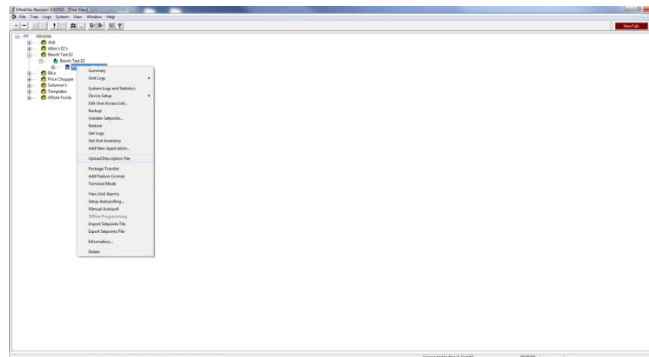


Figure 4. UltraSite Navigation screen

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.

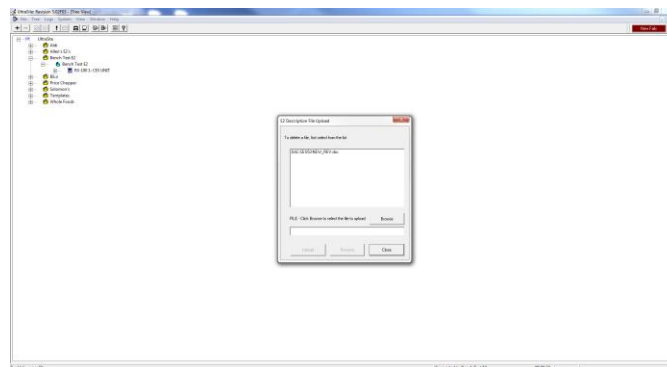


Figure 5. UltraSite Description File Upload screen

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

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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**.

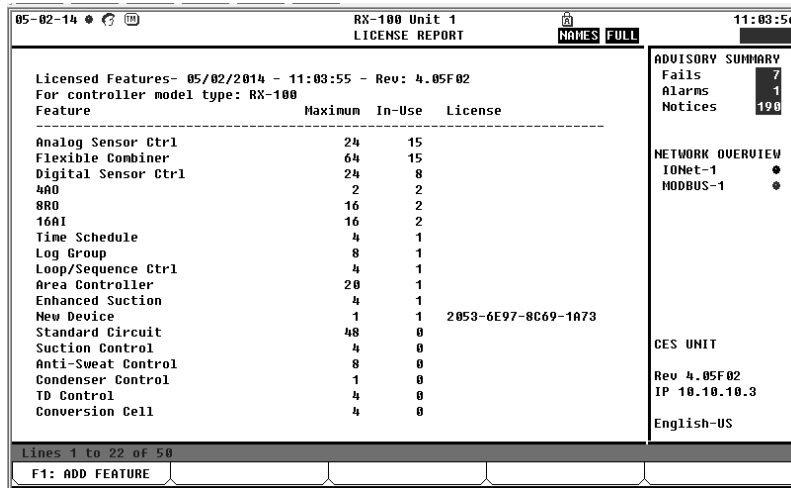


Figure 6. E2E Licensing screen

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

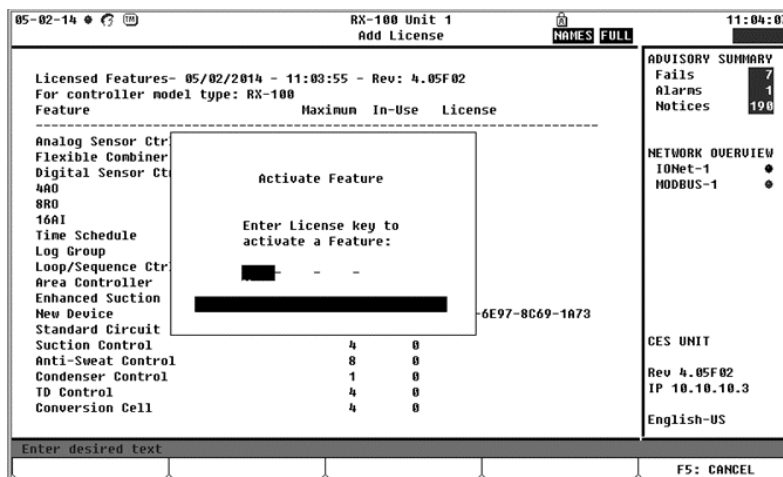


Figure 7. E2E License Activation

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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.

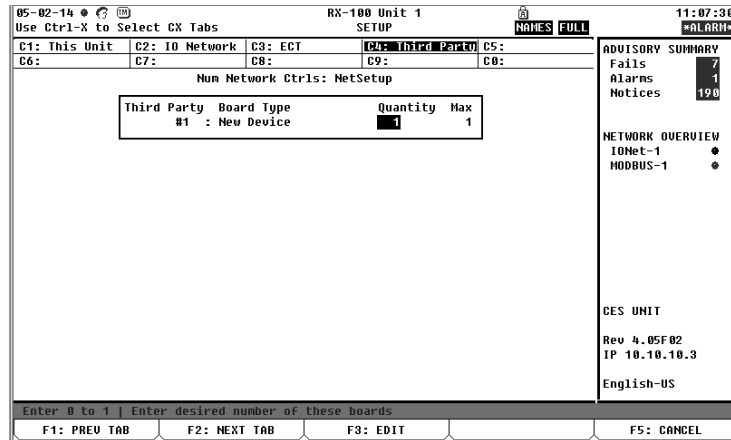


Figure 8. E2E Third Party screen

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**.

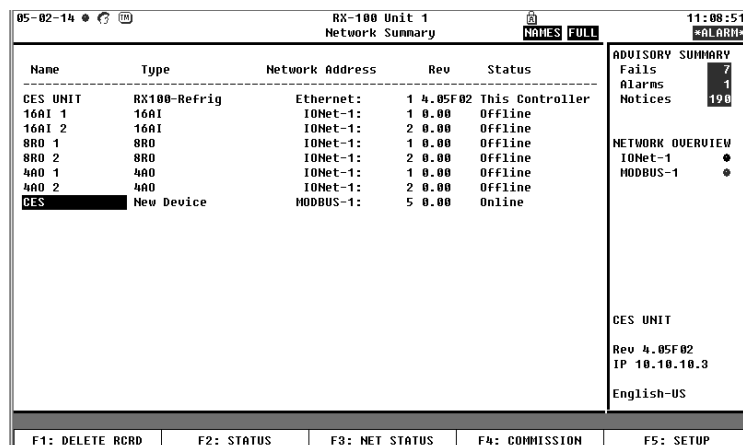


Figure 9. Network Summary screen

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

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

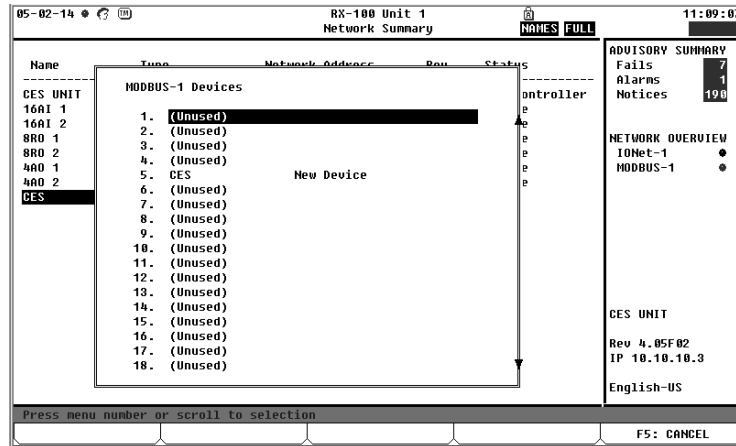
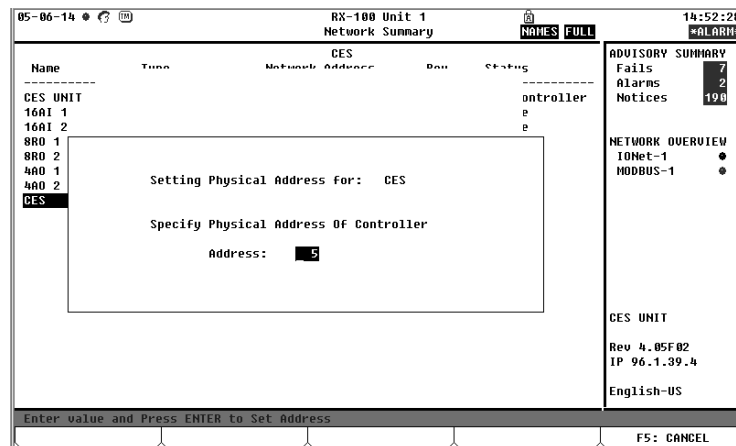


Figure 10. E2E Modbus Device screen

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



8. Press Enter again.

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

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

Setting Flō 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)

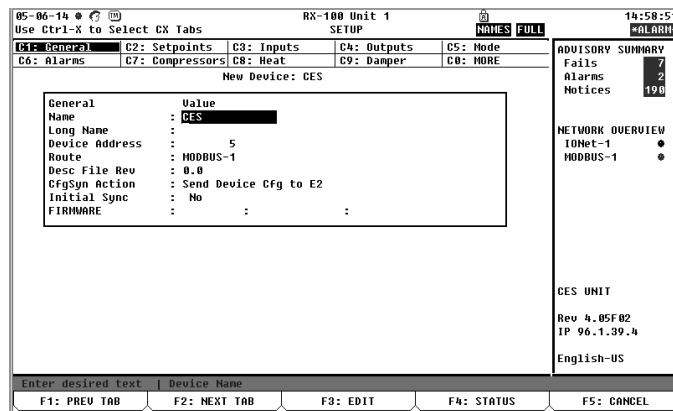


Figure 11. E2E General Setup screen

Changing Set Points

Custom set points are factory set in the i-Controller 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.

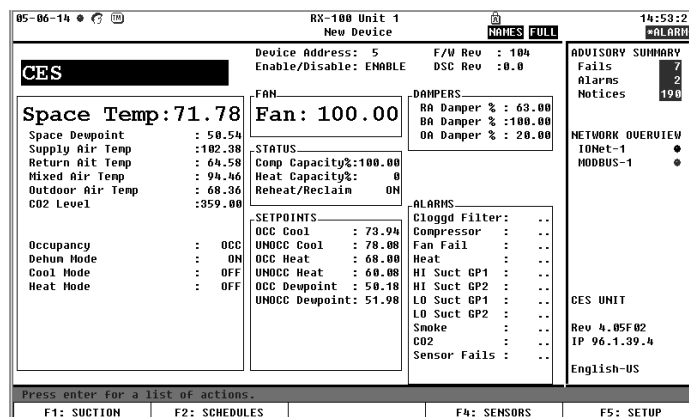


Figure 12. E2E iController Home screen

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

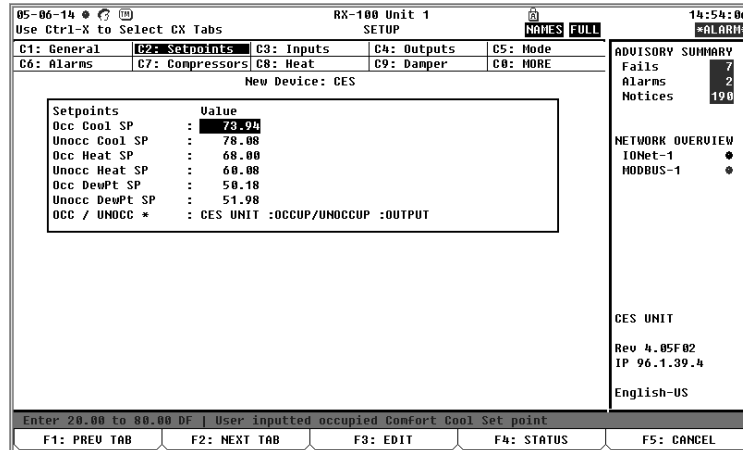


Figure 13. E2E iController Setpoints

- 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 Flö 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 CES 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.

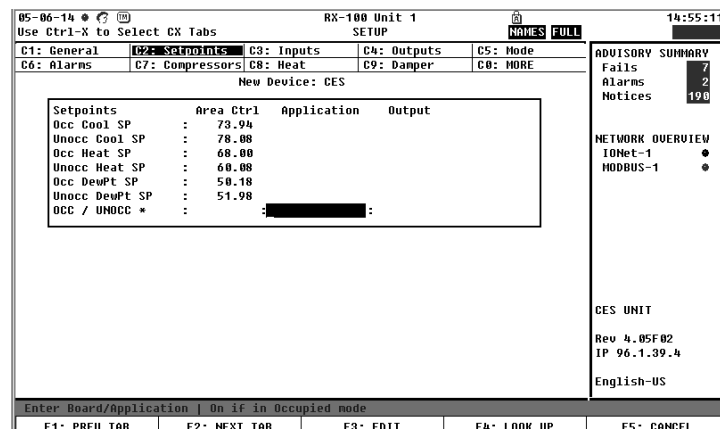


Figure 14. E2E iController Setpoints screen

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

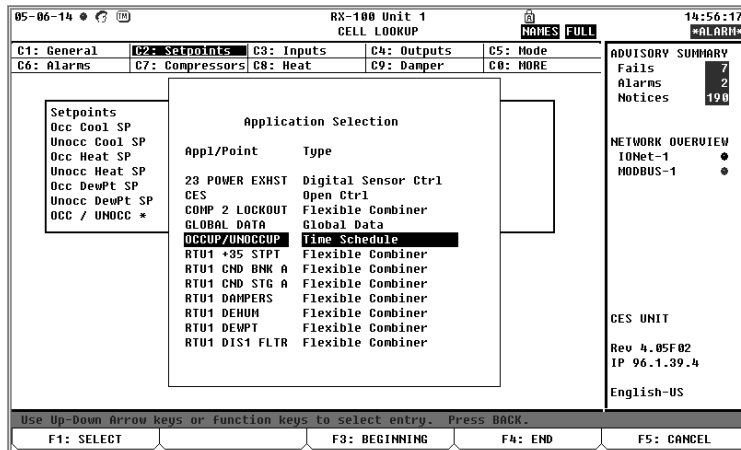


Figure 15. E2E iController Application Selection screen

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

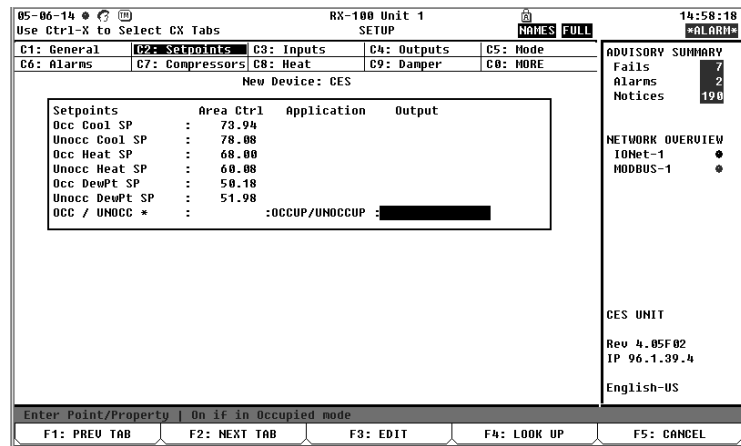


Figure 16. E2E iController Output Configuration

6. Press **F4: LOOK UP**.
7. Scroll down and select “OUTPUT” from the menu. Press Enter.

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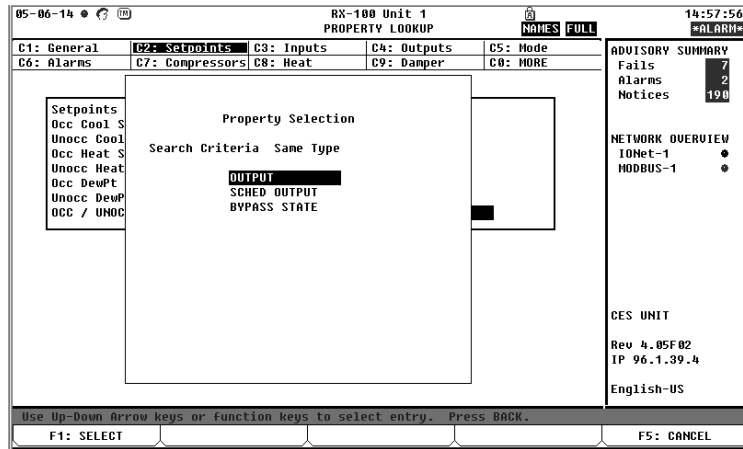


Figure 17. E2E iController Output Configuration Selection

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