

Overview

For this configuration, we will be focusing on the communication and network parameters for both the **FireConnect Jockey & Gateway Controllers**, or **FCJC** and **FCGC**, when paired with the **Eaton; Diesel and Electric Main Fire Pump Controllers**. This is to include **XTJP Eaton Jockey Controllers** as well when paired with the **FCGC & Eaton Main Controllers**. Special notation will be added for one-off configurations.

Some of these communication settings will be configured from the factory if ordered with the correct option, but it is important, and should be common practice, to verify each and every parameter is entered correctly.

The **Key Action Items and Parameters** for this configuration are as follows **Eaton Main Fire Pump Controller** paired with an **Eaton Jockey Controller**:

1. Eaton Main Controller Settings:

- a. Modbus Format- RTU Mode
- b. Modbus Baud Rate- 19,200
- c. Modbus Parity Bit- NONE
- d. Modbus Address- 01

Note – All provided Main Controller settings are standard in FireConnect configurations, regardless of the Jockey Controller used

2. Eaton Jockey Controller Settings:

- a. Modbus Format- RTU Mode
- b. Modbus Baud Rate- 19,200
- c. Modbus Parity Bit- NONE
- d. Modbus Address- 02

3. Verify **RS485** connection from the **Main Controller Control Board & Jockey Controllers** to the **2-wire** network configuration with appropriate network topology.
4. **Power Cycle**  **Both Main & Jockey Controller** after making any changes to the settings to force the reconnection with the new IP Addresses

The **Key Action Items and Parameters** for this configuration are as follows for the **FireConnect Jockey Controller** when combined with the **Eaton Fire Pump Controllers**:

1. FireConnect Jockey Controller Settings:

- a. MODBUS Format- RTU Mode
- b. Modbus BAUD Rate- 19,200

*All other Modbus settings are default programmed by the factory



Setting up the Main Controller; Eaton Electric

To make changes to the communication parameters within Eaton electric main controllers, you may need to enter a password when configuring a new controller. If you are prompted to enter a password during the commissioning process, and/or when configuring the communication parameters, please use the following:

Password- 32866

From the main screen, find your way to the **OPT2 MODBUS** screen as shown in **Figure-1**. This is where you will configure the communication parameters for the main controller to align with the FireConnect system. Once you have reached this point, please configure each of the parameters to align with the following:

1. Eaton Main Controller Settings:

- a. **Modbus Format-** RTU Mode
- b. **Modbus Baud Rate-** 19,200
- c. **Modbus Parity Bit-** NONE
- d. **Modbus Address-** 01

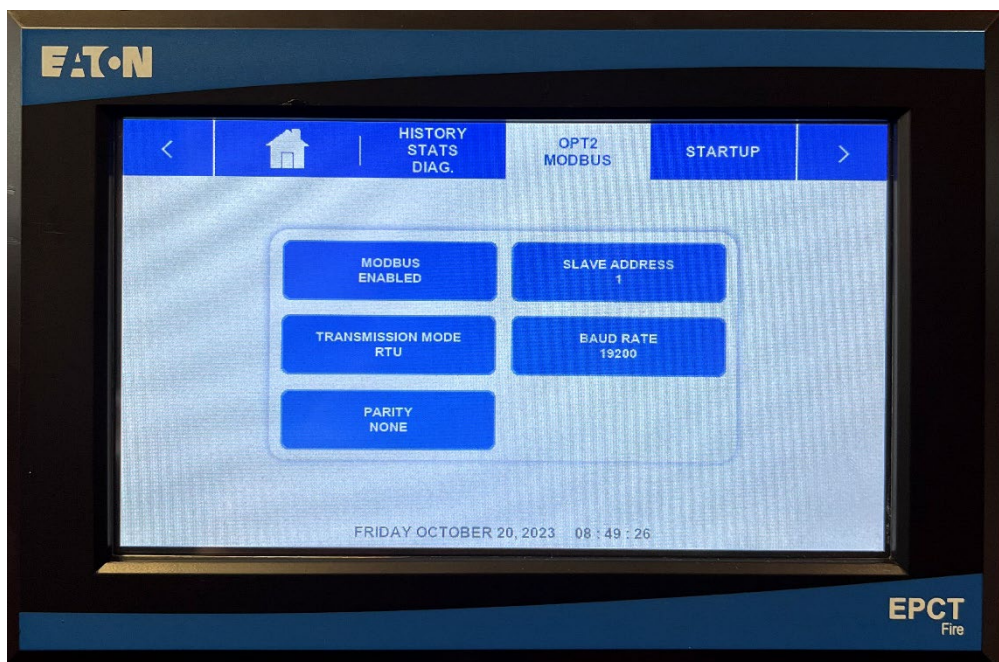


Figure 1 - Eaton Electric HMI Screen; Communication Parameters

Eaton Electric; Communication Hardware

Connection from the **Eaton Main Controllers** to interface with the **FCJC**, or the **Eaton Jockey Controller** and the **FCGC** will both utilize **MODBUS** network topology with **2-Wire** configuration **RS-485** protocol standards. There will also be an 8-pin DIP switch on the control board of each main controller that will need to be adjusted to align with the **2-Wire RS-485** configuration and **No Termination Resistor**.

An example of the correct switch positioning can be found in **Figure-2**, as well as a reference for the **MODBUS Communication Board** location, and wiring, as well as a table for all switch configurations.

- 1. Eaton Main Controller Wiring Polarity (4-Wire to 2-Wire)
 - a. TX0 Positive (+)
 - b. TX1 Negative (-)

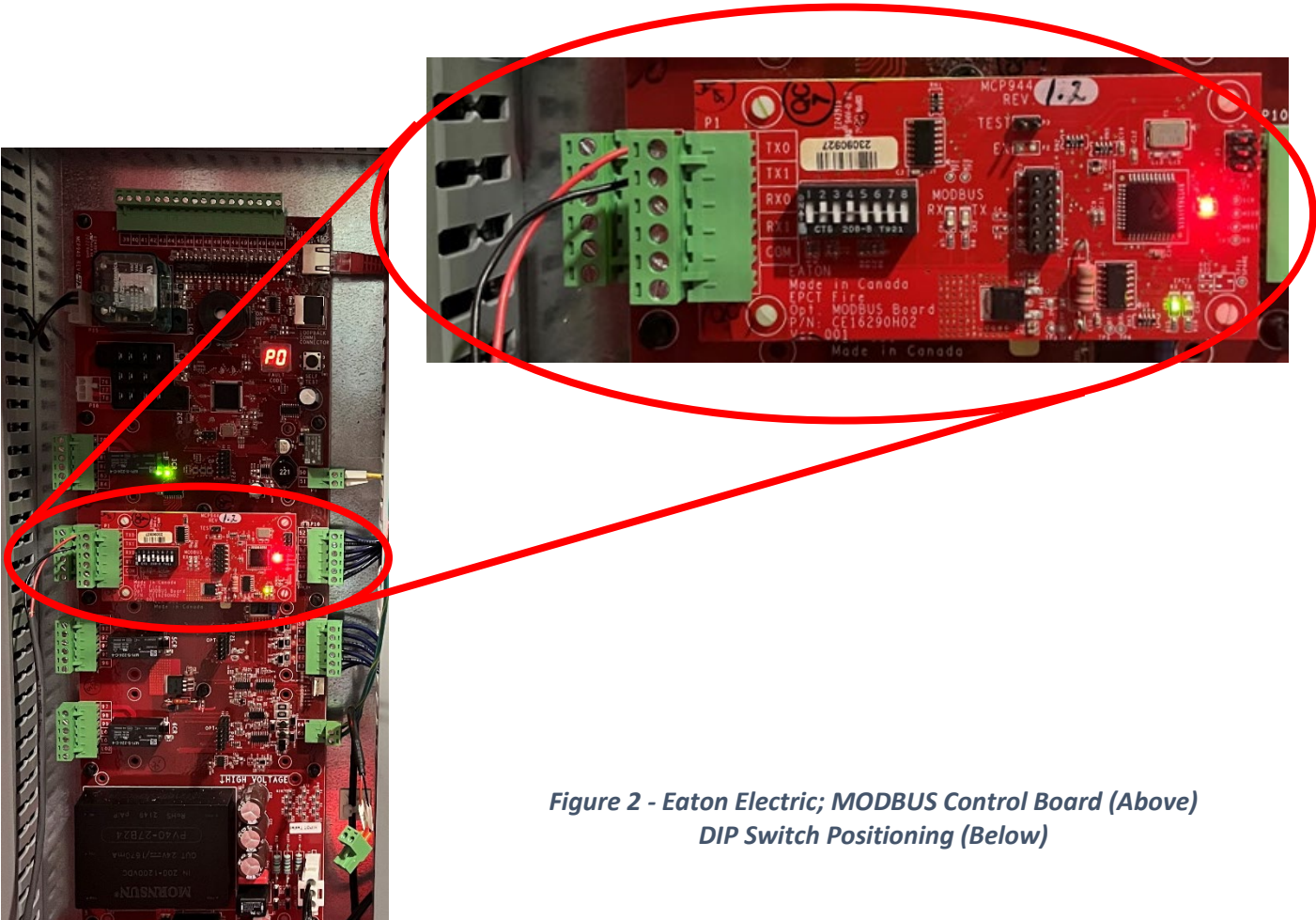


Figure 2 - Eaton Electric; MODBUS Control Board (Above)
DIP Switch Positioning (Below)

	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
RS422 Underterminated	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
RS422 Terminated RX	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
RS422 Terminated TX	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
RS422 Terminated RX/TX	ON	OFF	ON	OFF	ON	ON	OFF	OFF
RS485 Underterminated	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
RS485 Terminated	ON	ON	ON	ON	OFF	OFF	OFF	OFF

Setting up the Main Controller; Eaton Diesel

To make changes to the communication parameters within Eaton Diesel main controllers, you may need to enter a password when configuring the controller. If you are prompted to enter a password during the commissioning process, and/or when configuring the communication parameters, please use the following sequence of buttons :

Password-  +  +  + 
(DOWN) (UP) (RESET) (LAMP TEST)

From the main screen, find your way to the **System Configuration Menu** screen as shown in **Figure-3**. This is where you will be prompted to enter the password above and configure the main controller to align with the FireConnect system. Once you have reached this point, enter the **MODBUS Configuration** screen to configure each of the parameters to align with the following:

Eaton Main Controller Settings:

- a. Modbus Format- RTU Mode
- b. Modbus Baud Rate- 19,200
- c. Modbus Parity Bit- NONE
- d. Modbus Address- 01

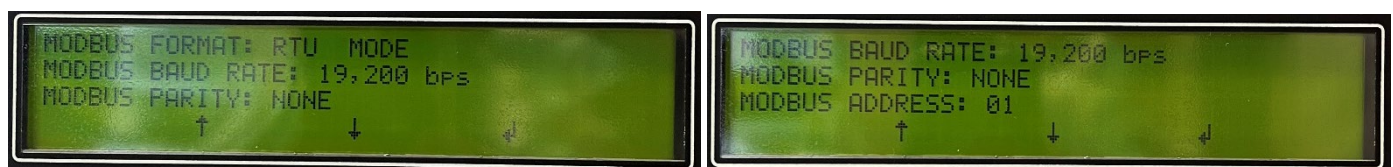


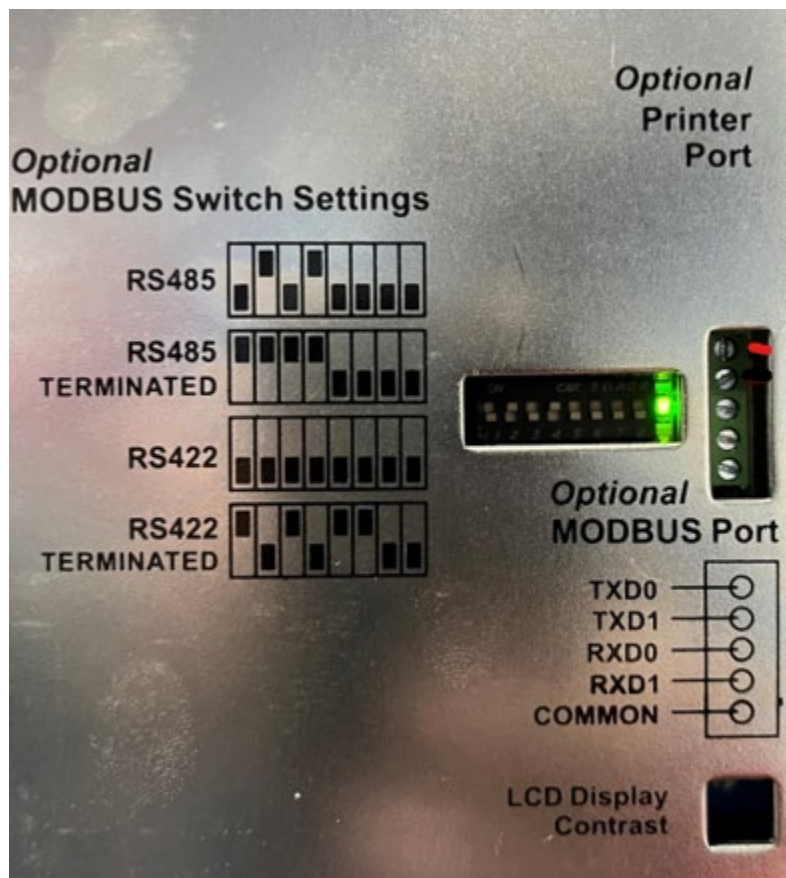
Figure 3 - System Configuration Menu; MODBUS Configuration Settings

Eaton Diesel; Communication Hardware

Connection from the **Eaton Main Controllers** to interface with the **FCJC**, or the **Eaton Jockey Controller** and the **FCGC** will both utilize **MODBUS** network topology with **2-Wire** configuration **RS-485** protocol standards. There will also be an 8-pin DIP switch on the control board of each main controller that will need to be adjusted to align with the **2-Wire RS-485** configuration and **No Termination Resistor**.

An example of the correct switch positioning can be found in **Figure-4**, as well as a reference for the **MODBUS Communication Board** location, and wiring, as well as a table for all switch configurations.

1. **Eaton Main Controller Wiring Polarity (4-Wire to 2-Wire)**
 - a. TX0 Positive (+)
 - b. TX1 Negative (-)



*Figure 4 - Eaton Diesel Controller; MODBUS Interface
(Located on the Backside of the HMI)*

Eaton Jockey; Settings and Communication Hardware

Connection from the **Eaton Main Controllers** to interface with the **FCJC**, or the **Eaton Jockey Controller** and the **FCGC** will both utilize **MODBUS** network topology with **2-Wire** configuration **RS-485** protocol standards.

When configuring the Eaton Jockey Controller for communication with a FireConnect system, the menu settings will be as follows:

Eaton Jockey Controller Settings:

- | | |
|------------------------------|-----------------|
| a. Modbus Format- | <u>RTU Mode</u> |
| b. Modbus Baud Rate- | <u>19,200</u> |
| c. Modbus Parity Bit- | <u>NONE</u> |
| d. Modbus Address- | <u>02</u> |

These settings can be found in the **Main Menu** of the **Jockey Controller** and do not require password entry. Scroll to the bottom of the **Main Menu** and select the Tab labeled **MODBUS**, this will navigate you to the parameters screen, please reference **Figure-5**.

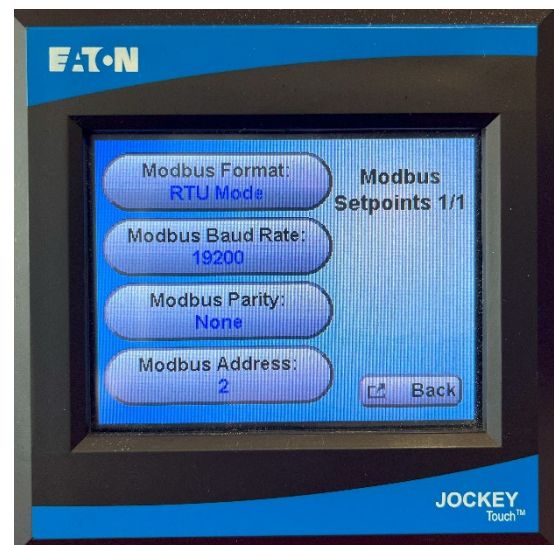


Figure 5 - Eaton Jockey Controller; Main Menu MODBUS Settings

Connection to the **RS-485 2-Wire** network topology will utilize the **Positive/Negative (+/-)** terminals on the back of the **Jockey Controller HMI** respectively, using best means. Reference **Figure-6**.

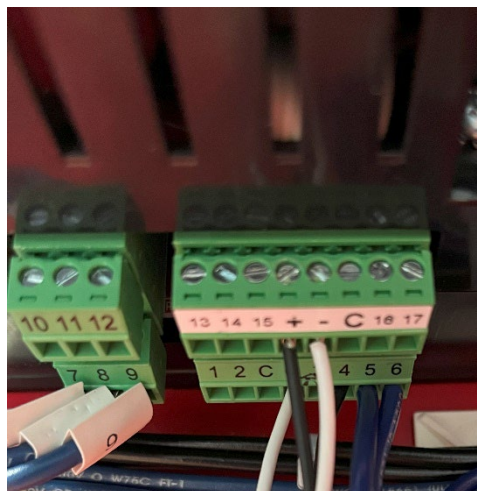
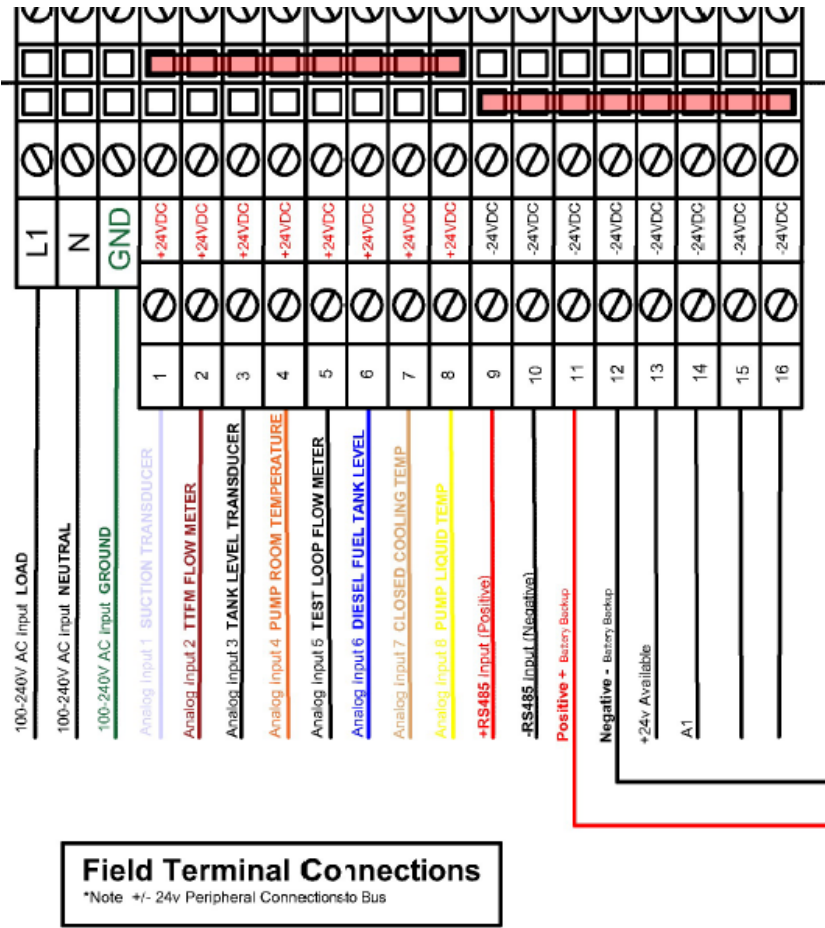


Figure 6 - Eaton Jockey Controller HMI; Backside with MODBUS Termination Positive/Negative (+/-)

When the **Eaton Main Controllers** are combined with an **Eaton Jockey Controller** and **FireConnect Gateway Controller (FCGC)**, the **2-Wire MODBUS** configuration can be connected in the **FCGC**, doubling up the two controllers wire pairs on the **FCGC** terminal blocks labeled **Terminal-9 & 10**, also displayed in Figure-7 for reference below:

All other parameterization for the **FCGC** will be done remotely by the FireConnect Commissioning Team.



*Figure 7 - FCGC Field Terminal Connections;
MODBUS Utilization on Terminals 9 & 10 Respectively*

FireConnect Jockey Controller; Settings and Communication Hardware

To enter or change the **FireConnect Jockey Controller** settings, you will need to hold down the “**HOME**” and “**NEXT**” buttons for approximately 3-5 seconds at the same time. You will then see a menu option to change the Baud rate. Please confirm, or change the Baud rate to the following setting:

Baud Rate- 19,200



Figure 8 - FCJC Baud Rate Screen

For the Ethernet Communications connection to the **FireConnect Jockey Controller**, from the **Main Fire Pump Controller**, it will require connection of the **2-Wire RS485** communication wires coming from the main controller to connect with the **Positive/Negative (+/-)** terminal on the **FCJC Vapor Board**. Reference **Figure-9** below.

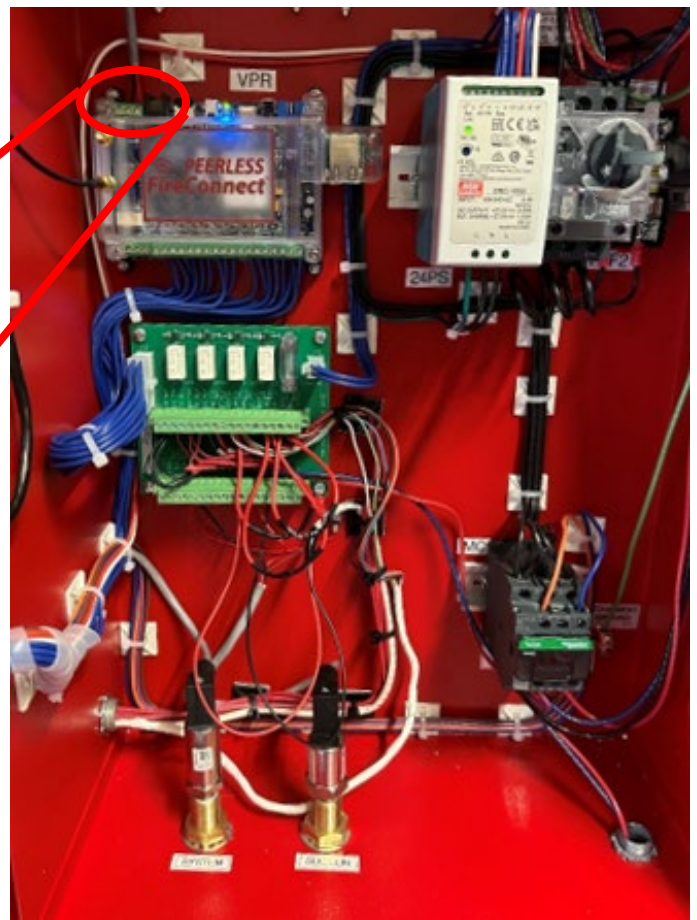


Figure 9 - FCJC Enclosure; Detail Focus on the MODBUS Connection Terminals

Once Complete, **POWER CYCLE** both the **Main Fire Pump Controller** and the **FireConnect Jockey Controller** to ensure all network changes have been forced into place.

Please note, if it is difficult to connect two wires into the one terminal on the **FCJC Vapor board**, the factory recommendation is to install a single wire in the terminal providing a jumper to a customer installed terminal junction, or by best means possible. Wire nuts are not recommended but will suffice in this situation.