Connection and Interface Instructions

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AFR-500 Air Fuel Regulation System

1. Overview and Description

In order to commission and interface with the AFR-500 system a browser based application has been designed for not only this AFR controller, but all new and legacy products. While there are some benefits of being online for the latest updates and build options, its main intent is to be fully functional off-line while still hosted in a browser window.

There is no need to download any third party software, install anything, or worry about updates to your operating system. This new browser based Device Display Application replaces the traditional “terminal program” for the AFR-500 system. One additional feature of the browser based tool is that it very easily becomes the same view for a permanently mounted display, which will be discussed further in this document.

2. Connecting to The System

2.1 RS485 Modbus connection

The backbone of the communication system is modbus and its associated registers. Regardless of the protocol being used, all information passed to and from the controller and its application uses the internal modbus registers. Currently there are two RS485 ports, while only one is active for modbus slave operation. Future provisions are there to allow for a modbus master port. To connect over RS485 and using the modbus protocol connect the two wires to port 1 on the controller as shown below

The other end of the two wire connection goes to any standard converter such as the BandB modem

that is conventionally used with Altronic products. A PC or any other RS485 master device can then poll and interact with the AFR-500.

The following setting are used for the modbus protocol connection over RS485:

2.2 Ethernet Connection

As a direct connection over ethernet, an RJ-45 port is vertically mounted on the AFR-500. Using a standard ethernet cable plug one end into the AFR-500 controller, and the other end goes to a device that can send HTTP requests following the modbus/TCP or Ethernet/IP protocols. In general, the two use cases will be with the Altronic AWI application on a computer or permanently displayed on an HMI.

While a direct connection to a computer ethernet port is capable, it is recommended to utilize a USB to ethernet adapter. While using a USB to ethernet adapter it is still possible to use wireless internet. Plugging in to the native ethernet port of a computer diverts the operating system to try and use what is plugged in as the internet connection. This in turn does not allow the wireless and the ethernet port to work in conjunction with each other.