

IMPORTANT INFORMATION WHEN INSTALLING A DIGITAL NETWORK

Before leaving our facility, every CETCI gas detection system is configured, wired together and tested to ensure all devices work together properly. All sensors are calibrated. Sensors do not need to be re-calibrated following installation. **Allow 24 to 48 hours after equipment has been installed and powered up for the sensors to stabilize and produce accurate readings.** *If you take it upon yourself to make any adjustments to the equipment or calibrate the sensors because of perceived problems directly after power up and as a result create issues with the equipment, these are not considered "warranty" issues and this type of service is not considered "Start-up". This type of service is "Network" service and is a billable service by CETCI Service Department to rectify the problem.*

GUIDELINES TO ENSURE SUCCESSFUL QCC INSTALLATION

The QCC uses digital communication to talk with the other digital devices (sensors/transmitters, peripheral devices) that are connected to it. This is achieved by using two communication wires, labeled A and B. It is important that the A wire of the first device is connected to the A wire of the next device and so on. Likewise, the B wire of the first device is connected to the B wire of the next device and so on in a daisy chain fashion.

IF YOUR ORDER HAS MORE THAN ONE CONTROLLER DO NOT MIX UP THE TRANSMITTERS AND OTHER DIGITAL DEVICES THAT BELONG TO EACH CONTROLLER. Each digital device has a Modbus ID number and has been configured to operate with a specific Controller. It is recommended to install the digital transmitters in their Modbus ID sequence from the first sequenced transmitter (normally Modbus ID 101) closest to the Controller it belongs with.

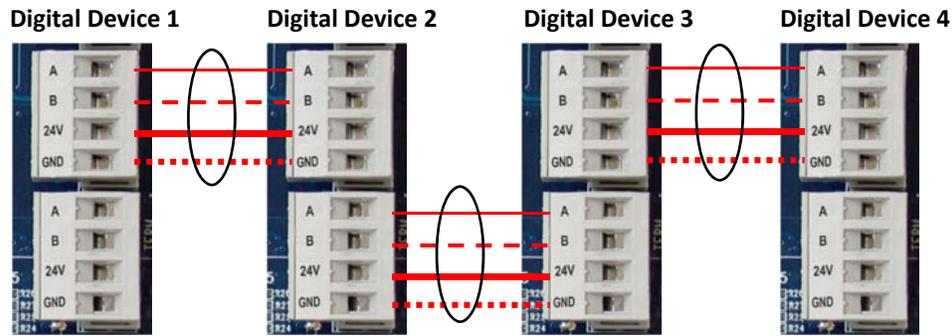
USE THE CORRECT WIRE

Use 4-conductor, 16 AWG stranded, shielded wire is required (Belden 5202FE 008500 or equivalent). DO NOT USE SOLID CORE WIRE. CETCI'S digital transmitters are powered by 24VDC. This means the low power wiring can be run along together with the communications wiring. A single cable with all four conductors inside it helps keep the wires tidy and makes installation easier.

Wire shielding must be connected together at each device and taped off so it cannot cause a short on the circuit board when the door is closed. The wiring shield should be connected to ground only at the controller and left taped and floating at the last device in the network.

USE A DAISY CHAIN WIRING CONFIGURATION ONLY

To ensure robust data communications, a daisy chain wiring configuration must be used. This means, four wires run from one end of the network to the other, through the same connections along the entire run. From one digital device to the next digital device, A goes to A; B goes to B; GND goes to GND; 24V goes to 24V. Each CETCI digital device has two RS-485 terminal blocks to make wiring easier. Use one terminal block for incoming wires and the other for outgoing wires. It does not matter which RS-485 terminal block is used for incoming or outgoing wires, just make sure the four incoming wires are wired to one terminal block and the four outgoing to the other terminal block. Do not mix up the individual wires or the two groups of four wires.



The Controller does not have to be placed at the beginning of the network. It is just another device and it can be connected anywhere along the network that makes sense, such as in a locked maintenance room or in an area that is frequently monitored. The Controller has the same RS-485 terminal blocks for incoming and outgoing wires in a daisy chain fashion as the digital transmitters. You can monitor the strength of the communications signal by measuring the voltage between a devices' A data line and GND or B data line and GND. The voltage should be between 2.1 and 2.7 VDC. If the voltage is something else, check the wiring configuration and the type of wire being used.

Do not use tee taps! Do not use star configurations!

AN END OF LINE JUMPER MUST BE INSTALLED AT BOTH ENDS OF THE NETWORK

The RS-485 bus (A+ and B- connectors) is essentially a transmission line that signal waves travel down. When they get to the last device, if it isn't terminated, they may reflect back and if of significant magnitude and polarity, can result in data corruption and possible damage to the circuitry. Therefore, the RS-485 bus must be terminated at the beginning and the end of the wire run so the signal waves are absorbed rather than reflected back. To terminate, you must place a 120 ohm resistor on the IN (or sometimes labelled EN) termination jumper position ON the TERM jumper bank on the FIRST DIGITAL DEVICE (which might not be the Controller) and the LAST DIGITAL DEVICE in the wire run. The termination resistor jumper on all other digital devices in the network should be in the disabled position. Every CETCI digital device has a termination resistor jumper. The factory default setting of the termination resistor on all digital devices disabled.

**PLEASE CALL FOR ASSISTANCE: IF YOU DON'T KNOW – DON'T DO
CETCI Service Department 604.940.8741 or Toll Free at 1877.940.8741**