Making Data Acquisition Easy

RS-485 Repeaters

Modbus RTU is a widely used industrial protocol that is communicable over RS-485. This works out great for applications where slave devices are located either right next to the master device or within 4000 feet; theoretically.

Theoretically?

RS-485 is designed to provide communication for devices daisy chained together along a twisted pair of copper wire up to 4000 feet away. In reality, there are many factors which can drastically reduce that length. Some examples are poor choice in cable selection, too many devices, and improper termination.

RS-485 is a communication method that requires a differential signal to be sent through a twisted pair of wires. There must be a differential between the high signal and low signal level to communicate the data properly. The signal will be greatest at the source. As the distance from the source increases, the signal dissipates and the differential becomes smaller. When the differential becomes too low, the high and low signals can not be distinguished so you will receive communication errors or no communication to your device.

Luckily, repeaters can be used to read in and retransmit the RS-485 signal. By adding repeaters at strategic points along the bus, the RS-485 signal will be read and understood by the Modbus Slave devices properly. Repeaters can also allow for application in which the distance is greater than 4000 feet.
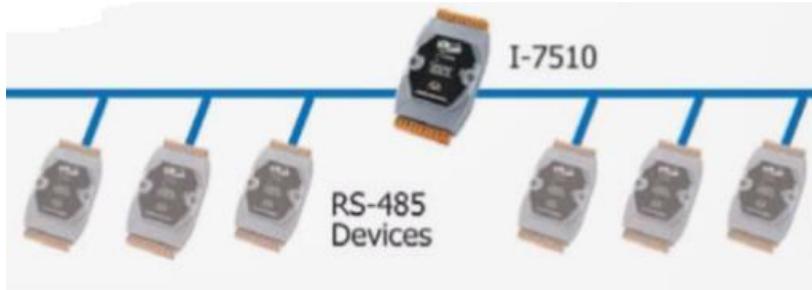
Our I-7510 is an RS-485 repeater which supports both fixed baud rate and automatic baud rate. These are ideal for applications where the RS-485 signal has become too weak to reach the end device or to extend the RS-485 signal beyond 4000 feet.

Making Data Acquisition Easy

I-7510

RS-485 Devices

Our I-7513 is a 3 way repeater which allows for branching of the RS-485 signal in 2 or 3 directions. This is ideal for situations where either the signal strength has become too weak or where the slave devices are not placed where a single bus is practical.

I-7513

RS-485 Devices