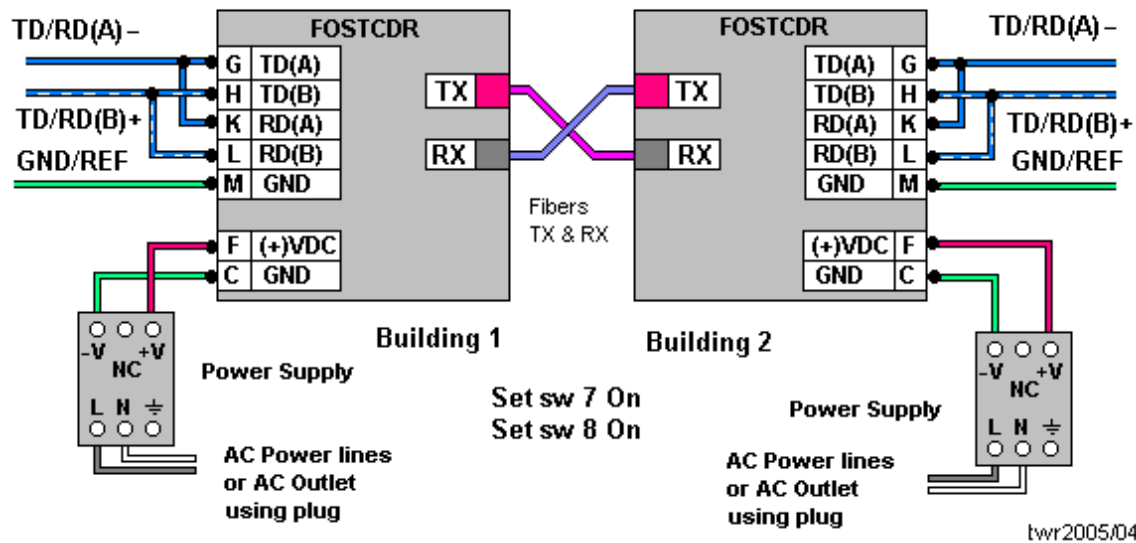


Q: I have 3 FOSTCDR units in parallel going to 3 remote security access gates, but one or more stopped working. They are connected to a computer that reads 2-wire (2W) RS485 card readers. The 2W card readers are at each gate. How do I troubleshoot which one is broken?

FOSTCDR "2-Wire" RS-485 Connections



A: The easiest way to determine if the RS485 chip has become defective is to take advantage of normal bias voltages across the Receive pair. Our devices normally have around 3.7 VDC to 4.0 VDC between the RD(A)-- Input & the RD(B)+ line.. Disconnect the K and L lines and measure the voltage, the 485 bus should not be terminated with 120 ohms during this test. If the voltage is close to the normal, the receiver is likely ok. Bridge G to K and H to L, measure the voltage, it should remain the same, make sure that switches 7 & 8 are set to ON., and SW 6 if OFF for Point-to-Point mode. The transmitter will not affect the bias voltage if the RS485 IC is not damaged, but if the voltage is low across the bus, the IC is most likely damaged and requires replacement. Normal TD(A)- to TD(B)+ voltage when measured in the 4W RS485 mode (separately is 0 volts because the transmitter is not biased, but in RS422 mode, SW 7 is OFF and position SW7 is OFF, the voltage TD(A)- to TD(B)+ is about 4.4 VDC.

The recommended procedure with a daisy chain of up to 31 units is to use the "Split Half" method taught in military technical schools, divide the chain of units in half, separating them, see if the first half of the chain is normal and can be polled and has normal bias voltage, over 200mV at the end unit, device Number # 31. Continue splitting each half or connecting back the 2nd half of the units until the location of the defective unit or units can be confirmed.

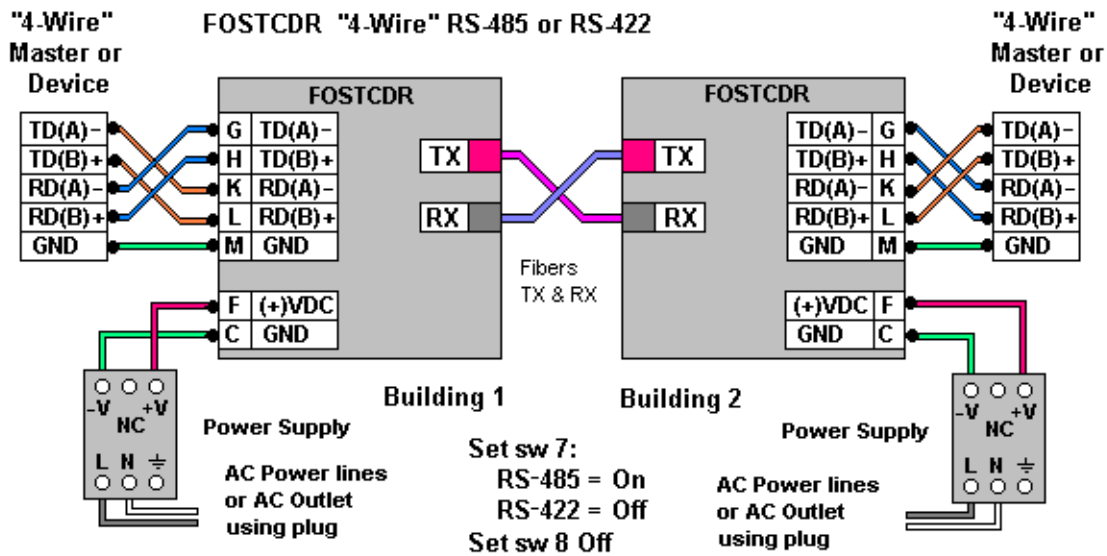
In the tests performed by the field tech, the bias was normal on 3 units, but the voltage was low on two units, but not affected on the 3rd unit tested when G to K and H to L was bridged. To check the units were disconnected one at a time since each has bias.

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Set switch #7 to On for RS-485 transmit, to Off for RS-422 mode transmit. Set switch #8 to Off to enable the receiver. See notes above if receive light is on, or if transmit light is on. A faint red light can be seen in the transmit ST connector when the fiber is removed.

Contact Customer Service for an RMA to return the unit for repair evaluation.

The FOSTCDR (and FOSTC) keep the light in the fiber turned on when no data is transmitted and the input signal is in the MARK state. If light is lost or too low, the electrical signals go to the SPACE state. Measuring A to B (GND) on the RS232 output, the voltage is normally NEGATIVE, but will be POSITIVE when input signal on the RX fiber is too low or missing. The indicator for Transmit indicates when data is sent out the fiber, Receive is data from the fiber. If the Receive indicator is lighted when no fiber is connected, no light is being received. To check, try the other fiber into RX or use a fiber patch cable from TX to RX. -end-