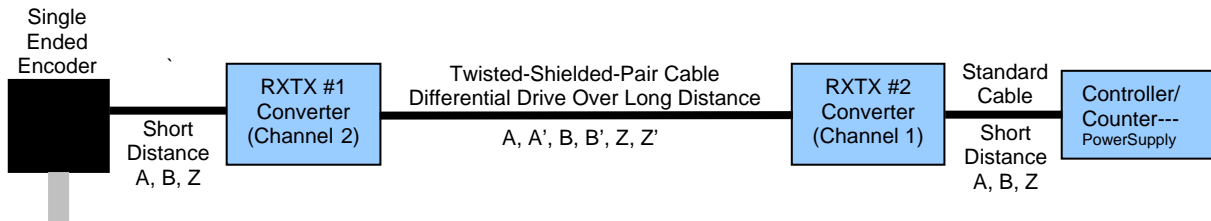


## RXTX - Single Ended Encoder Driving Long Distances



### Application Guide

The illustration above utilizes two RXTX Converters to perform the following:

- 1) to convert the encoder's single ended signals (such as open collector, or push-pull type) to complementary/differential signals,
- 2) to transmit the differential signals over a long distance, and
- 3) to then convert the encoder signals back again to single ended for connection to the receiving electronics.

Note: Refer to the RXTX Converter connection diagram for the correct signal, power, and shield wiring to the terminal blocks (P1 and P2).

Suggestions:

- a) Mount RXTX devices as close as possible to the single ended encoder and/or receiving electronics in order to minimize the cable length, thereby reducing susceptibility to electrical noise.
- b) Provide a LOW CAPACITANCE, TWISTED-SHIELDED PAIR CABLE between the two RXTX units, with enough conductors to accommodate the signals plus the power conductors. This cable will help maintain the encoder's signal integrity over the long length of cable by reducing the effects of noise and signal distortion.
- c) Terminate cable shields/drain wires to the INPUT/OUTPUT (P1-2/P2-2) case terminals. The case terminals are connected to the RXTX housing. If, for some reason, it is not desirable to connect the shields to the housing, then connect the input and output shield/drain wires together.

**CAUTION:** The bare shield conductors and drain wires must be electrically insulated from the circuit board and components by a non-conductive sleeve (such as heat-shrink tubing used in cable termination assemblies).

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