

**NOTE:**

1. Encoders do not always have all three channels (A, B, and Z). If a channel fails to light, ensure that the encoder has that channel available. Refer to the BEI *Optical Encoder Design & Specifying Guide* for encoder pinouts and model number information.
2. If the encoder is designed for an output voltage of 12 to 15 volts, then use the 1 kohm dropping resistor provide with the encoder tester. If the encoder is designed for an output voltage of 24 volts, then use the 2.4 kohm resistor supplied with the tester. These resistors are installed in series with the inputs (See Table 1)

Encoder Signal Voltage	Series Resistance, R	Color Code
5V	None	-----
12-15 VDC	1 kohm, 1/2W	BRN – BLK – RED
24 VDC	2.4 kohm, 1/2W	RED – YEL - RED

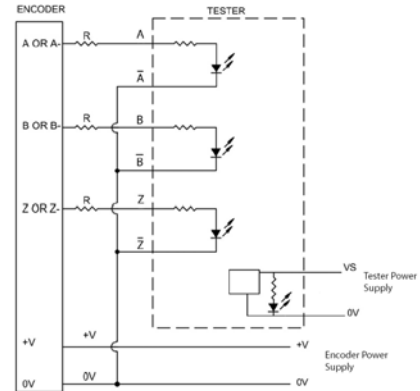
**Table 1**

**CONNECTION INSTRUCTIONS # 1**

**Differential or Single Ended Line Driver**

Encoder Output Voltages from 5 VDC to 24 VDC

1. Connect the terminals for the encoder tester labeled A-, B-, and Z- to the power supply common from the encoder.
2. Connect the encoder A, B, and Z channels to the terminals marked A, B, and Z, respectively, on the encoder tester. See NOTE 2.
3. Supply input power to tester and verify the green LED is lit. Tester is ready to operate.
4. Power up the encoder.
5. Turn the encoder slowly by hand. The A and B channel LED's should alternately blink on and off with the Z channel lighting up once per complete revolution of the encoder shaft. High resolution (>500 cpt) will blink rapidly. By alternately turning and stopping the shaft, it may be easier to see the on/off operation of the LEDs. If this is not the case, the encoder is faulty and needs to be replaced or repaired. See NOTE 1.
6. If your encoder has complementary signals, A-, B-, and Z- you are now ready to test those channels.
7. Turn off the power to the encoder.
8. Disconnect the encoder's A, B, and Z channels from the tester and connect the encoder's complementary channels in place of those. Connect the encoder's A- channel to the tester's A channel, the B- channel into the tester's B channel and the Z- channel in the tester's Z channel.
9. Power up the encoder and turn it slowly by hand as in step 5 above. Note the operation of the LEDs.

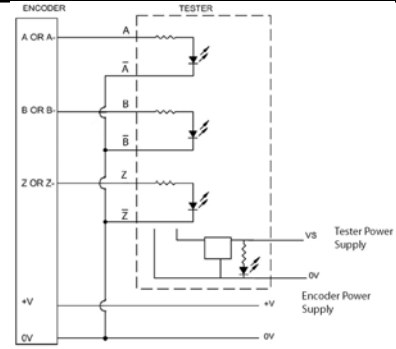


**Figure 1**

**CONNECTION INSTRUCTIONS # 2**

**Single Ended Open Collector with Internal Pull-up Resistor**

1. Connect the terminals for the encoder tester labeled A-, B-, and Z- to the power supply common from the encoder (See Figure 2).
2. Connect the encoder A, B, and Z channels to the terminals marked A, B, and Z, respectively, on the encoder tester.
3. Supply input power to the tester and verify that the green LED is lit. Tester is ready to operate.
4. Power up the encoder.
5. Turn the encoder slowly by hand. The A and B channel LED's should alternately blink on and off with the Z channel lighting up once per complete revolution of the encoder shaft. High resolution (>500 cpt) will blink rapidly. By alternately turning and stopping the shaft, it may be easier to see the on/off operation of the LED's. If this is not the case, the encoder is faulty and needs to be replaced or repaired. See NOTE 1.

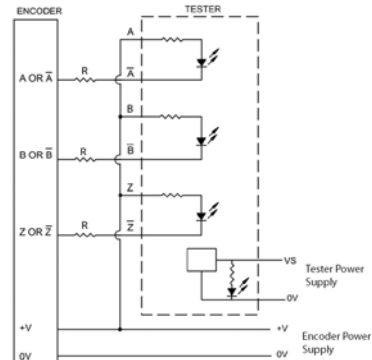


**Figure 2**

**CONNECTION INSTRUCTIONS # 3**

**Single Ended Open Collector Without Internal Pull-up Resistor**

1. Connect the terminals for the encoder tester labeled A, B, and Z to the positive side of the power supply common from the encoder (See Figure 3).
2. Connect the encoder A, B, and Z channels to the terminals marked A-, B-, and Z-, respectively, on the encoder tester. See NOTE 2.
3. Supply input power to the tester and verify that the green LED is lit. Tester is ready to operate.
4. Power up the encoder.
5. Turn the encoder slowly by hand. The A and B channel LED's should alternately blink on and off with the Z channel lighting up once per complete revolution of the encoder shaft. High resolution (>500 cpt) will blink rapidly. By alternately turning and stopping the shaft, it may be easier to see the on/off operation of the LED's. If this is not the case, the encoder is faulty and needs to be replaced or repaired. See NOTE 1.



**Figure 3**