



### 1. General Information

A. Before starting any electronic troubleshooting, first ensure the following:

(1.) The sensor cover glasses are clean and free of any dirt or grease. If necessary the cover glasses can be cleaned with window cleaner or mild soap and water. Ensure all cleaner residue is removed from cover glasses.

(2.) The sensor configuration jumper on the **TRANSMITTER** PCB is properly installed for the application. (i.e., set for either **EDGE GUIDE** mode or **CENTER GUIDE** mode.)

B. The SE-17 Sensor uses a receiver and transmitter PCB. The receiver PCB is located in the sensor leg which contains the cable connector. The transmitter PCB is located in the opposite sensor leg.

C. Refer to the illustration provided on this Figure Sheet for sensor nomenclature and item location.

### 2. Troubleshooting Preparation

A. Remove the end caps from both of the sensor legs.

B. Apply proper power to the sensor.

C. Allow sensor to warm-up for a minimum of 15 minutes.

### 3. Full Web Test and Calibration

Tests A. through E. evaluate the null values of the detector circuits (i.e., when the web is completely covering the sensing band of the sensor.)

A. Using a voltage meter, connect the negative lead to TP1 on the **RECEIVER** PCB and connect the positive lead to TP2 on the **TRANSMITTER** PCB.

B. Completely block the sensing band of the sensor with an opaque material.

C. Check voltage reading. The meter should read +1.20 volts to +1.30 volts.

(1.) If reading is not within tolerance, adjust the R5 potentiometer on the **TRANSMITTER** PCB until the reading is within tolerance range.

(2.) If this setting cannot be obtained, the sensor is defective and should be returned to Fife for repair.

D. Move the positive lead of the voltage meter to TP3 on the **TRANSMITTER** PCB, leaving the negative lead connected to TP1 on the **RECEIVER** PCB.

E. With the sensing band of the sensor completely covered, check voltage reading. The meter should read +1.20 volts to +1.30 volts.

(1.) If reading is not within tolerance, adjust the R4 potentiometer on the **TRANSMITTER** PCB until the reading is within tolerance range.

(2.) If this setting cannot be obtained, the sensor is defective and should be returned to Fife for repair.

### 4. No Web Test and Calibration

Tests A. through F. evaluate the full scale signals of the detector circuits (i.e., when the web is completely out of the sensing band of the sensor.)

A. Unblock the sensing band of the sensor and ensure the cover glasses are clean.

B. Using a voltage meter, connect the positive lead to TP3 on the **TRANSMITTER** PCB and connect the negative lead to TP1 on the **RECEIVER** PCB.

C. Check voltage reading. The meter should read +0.005 volt to 0.020 volt.

(1.) If reading is not within tolerance, adjust the R5 potentiometer on the **RECEIVER** PCB until the reading is within tolerance range.

(2.) If this setting cannot be obtained, the sensor is defective and should be returned to Fife for repair.

D. Move the positive lead of the voltage meter to TP2 on the **TRANSMITTER** PCB, leaving the negative lead connected to TP1 on the **RECEIVER** PCB.

E. With the sensing band of the sensor completely uncovered, check voltage reading. The meter should read +0.005 volt to +0.020 volt.

(1.) If reading is not within tolerance, adjust the R4 potentiometer on the **RECEIVER** PCB until the reading is within tolerance range.

(2.) If this setting cannot be obtained, the sensor is defective and should be returned to Fife for repair.

F. Voltage readings obtained in steps C. (TP3) and E. (TP2) should be balanced to within 0.005 volt of each other. If necessary, readjust R4 and R5 potentiometers on the **RECEIVER** PCB to obtain this balance. The individual tolerance range between +0.005 volt and 0.020 volt must be maintained for both test points.

### 5. Edge Guide Mode Test

A. Configure the sensor for Edge Guide mode by placing the Mode Select Jumper on the **TRANSMITTER** PCB on jumper pins **COMMON** and **EDGE GUIDE**.

B. Using a voltage meter, connect the negative lead to TP1 on the **RECEIVER** PCB and connect the

positive lead to the two jumpered pins on the **TRANSMITTER PCB**.

(1.) With the sensing band of the sensor uncovered, check the voltage reading. The meter should read +0.010 volt to +0.060 volt. If this reading is incorrect the sensor is defective and should be returned to Fife for repair.

(2.) With the sensing band of the sensor completely covered with an opaque material, check voltage reading. The meter should read +2.40 volts to +2.60 volts. If this reading is incorrect the sensor is defective and should be returned to Fife for repair.

**6. Centerguide Mode Test**

A. Configure the sensor for Centerguide mode by placing the Mode Select Jumper on the **TRANSMITTER PCB** on jumper pins **CENTER GUIDE** and **COMMON**.

B. Using a voltage meter, connect the negative lead to TP1 on the **RECEIVER PCB** and connect the positive lead to the two jumpered pins on the **TRANSMITTER PCB**.

C. With the sensing band of the sensor uncovered, check the voltage reading. The meter should read +1.20 volts to +1.30 volts.

(1.) If this reading is not within tolerance, adjust the R9 potentiometer on the **TRANSMITTER PCB** until this reading is within tolerance range.

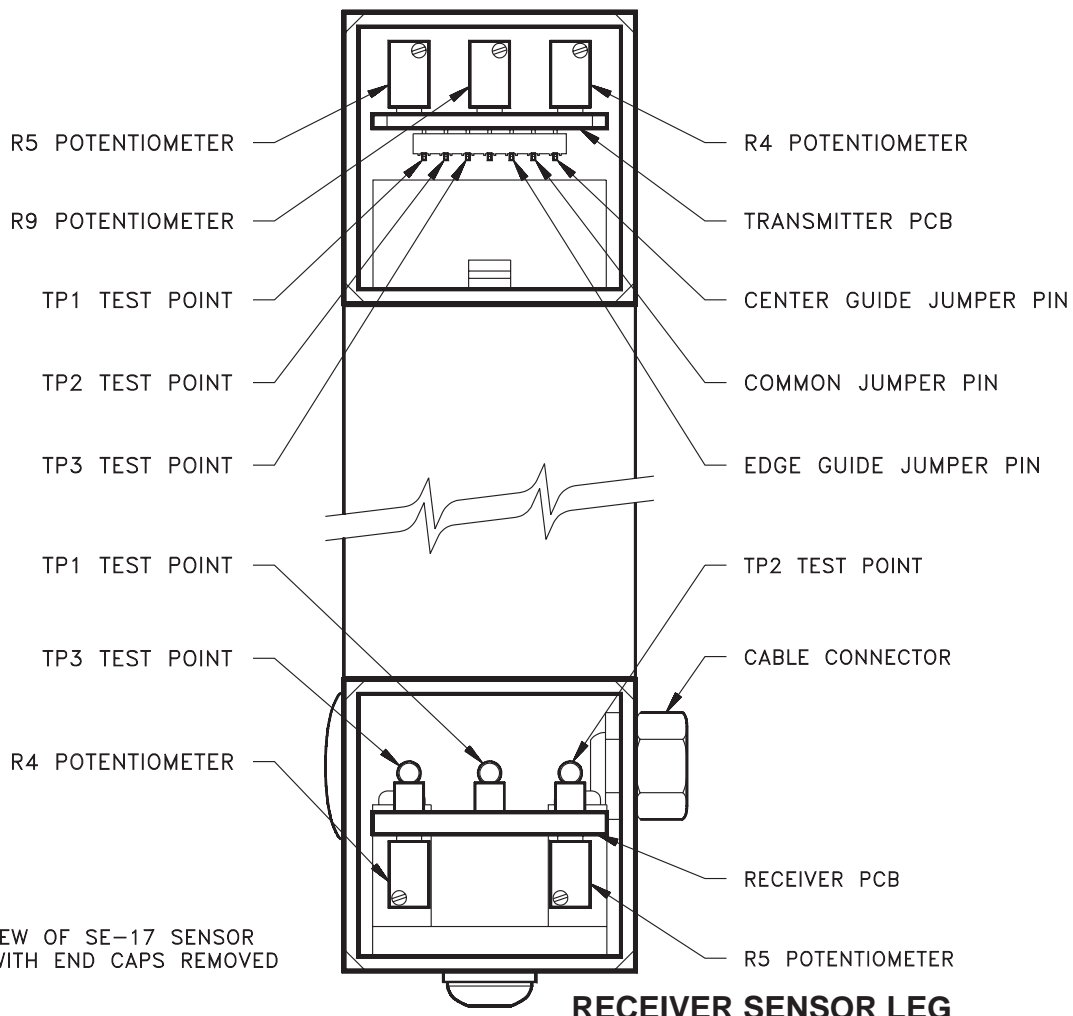
(2.) If this setting cannot be obtained, the sensor is defective and should be returned to Fife for repair.

**7. Final Checks**

The final output stage of the sensor requires factory disassembly. If all of the voltage checks and adjustments to the sensor have been performed according to the procedures on this Figure Sheet, and the sensor still does not work properly, the sensor will require factory servicing.

A. Before using the sensor or returning it to Fife, place the Mode Select Jumper on the **TRANSMITTER PCB** on the appropriate jumper pins for your application and reinstall the two plastic end caps on the sensor legs.

**TRANSMITTER SENSOR LEG**



END VIEW OF SE-17 SENSOR SHOWN WITH END CAPS REMOVED

**RECEIVER SENSOR LEG**