

DS10.2 Current Sensor Evaluation Board Manual

This manual is presented by *Tell-i Technologies* to instruct the user of the procedure to test the Tell-i DS10.2 current sensor using the provided evaluation board. The board is designed to quickly test the sensor using the current trace provided.

The evaluation board comes ready to use from the manufacture. The user needs to provide the following:

- +9V Control Supply
- Connection for Current Trace

To view where to provide the recommended the connections, please refer to Figure 1 below.

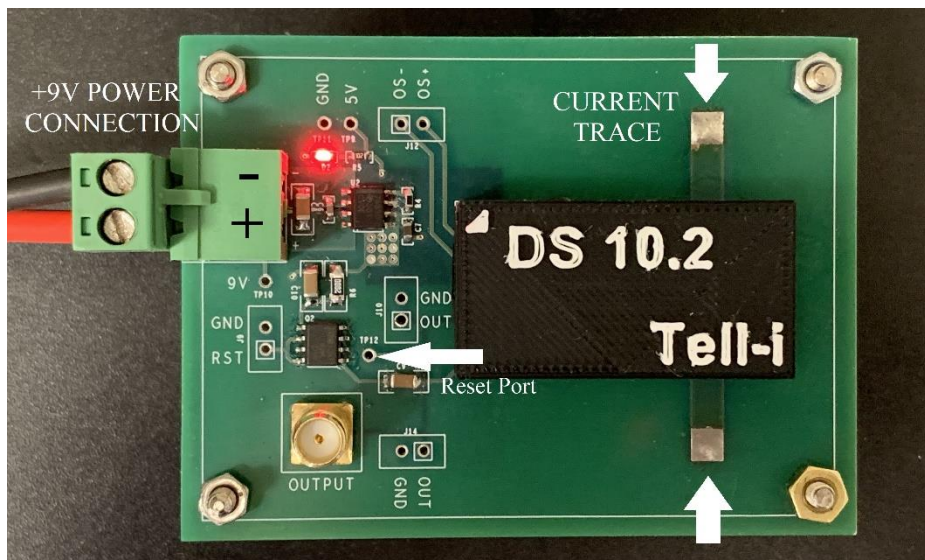


Figure 1: Connections and Reference of Evaluation Board w/ DS10.2S Current Sensor

Reference:

Position/Testpoint	Function
TP10	+9V Supply
TP9	+5V Supply
TP11	GND
TP12	Manual Set/Reset
Square Pads	Input/Output Current Connections
	N/A
J10 and J14	Sensor Output

+9V Control Supply

The sensor needs to be powered by a +9V supply. The polarity of voltage is noted in Figure 1 and not on the Printed Circuit Board (PCB). Please note that the positive is on Testpoint 10; this can be used as a reference. A recommendation to twist the +9V supply leads is suggested to further reduce noise if it exists. Figure 2 also shows a representation of the twisted leads.



Figure 2: Example of Twisted Leads for Voltage Supply

Measurements

On the evaluation board, an BNC connector is placed for a cleaner measurement of high frequency waveforms. It is highly recommended to have it terminated at 50 Ω if available. Although, if an BNC is not available, the evaluation board does contain test points for regular probing. Figure 3 shows the two test points (J10 and J14) on the PCB to use a regular probe with a very short ground lead to reduce the effect of any inductance.

Note: BNC connector is found above these test points which can be used as an alternative to probing. Simply attach SMA connector to use.

Once the +9V supply has been connected and turned ON, the output on these sensors should show 2.5V. This is the default offset of the current sensor. To confirm the sensor is working correctly, please refer to Figure 1 for sensor output and use a multimeter to check for correct voltage.

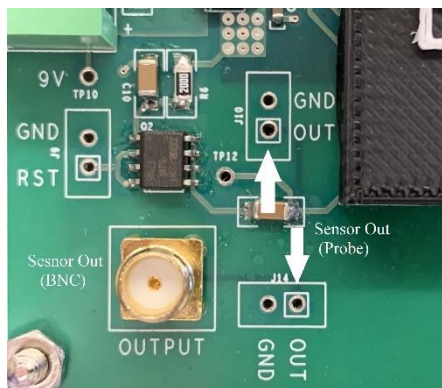


Figure 3: Regular Probing Location and Polarity



Figure 4: Example of Regular Probing Location

Reset of Current Sensor

If for any reason the sensor output is not 2.5V, the evaluation board has a manual reset for the current sensor. Simply use a thin lead to connect Testpoint 9 to Testpoint 12 for at least 2 seconds, as shown in Figure 4. This will reset the current sensor and should make the sensor output 2.5V. If the sensor output is still not 2.5V, please contact *Tell-i* for further assistance.



Figure 4: Demonstration of Reset (Testpoint 9 short to Testpoint 12)

Input/Output Power Connections

To connect your power connection, simply solder the cables from your setup to the input/output connection pads (Testpoint 5 and Testpoint 6) on the evaluation board. The DS10.2S is a bidirectional contactless current sensor that carries no power through the sensor.

Set-up Examples for Reference

Below is an example of how the evaluation board and the current sensor should be properly connected to a power connection. Figure 5 shows this example by connecting the DS10.2 with a Pulse Generator board.

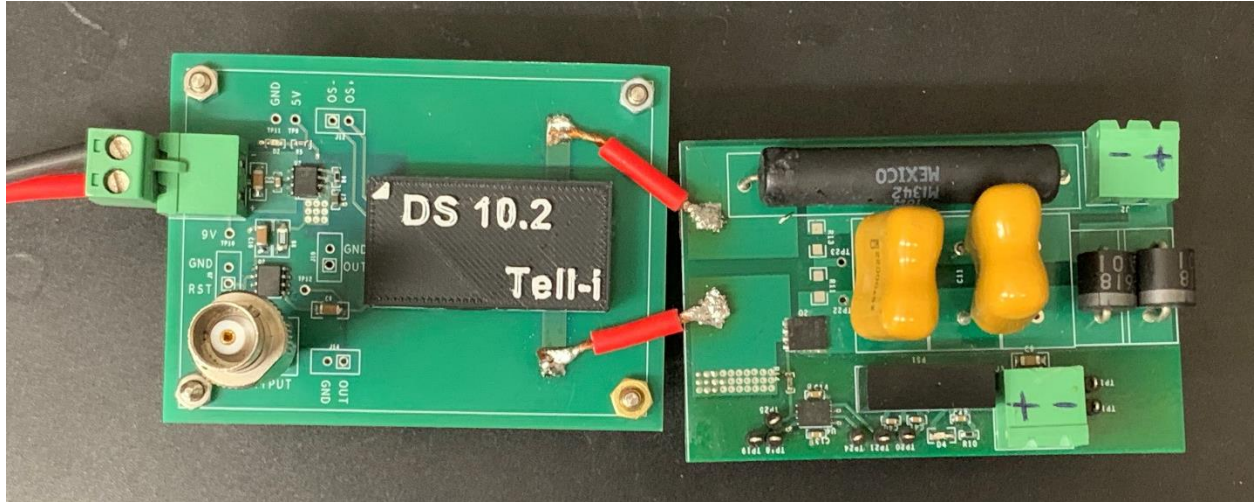


Figure 5: Example of DS10.2 and Evaluation Board (Left) connected to Pulse Generator (Right)