

EVM-DS10.2m

Evaluation Board for the Ultrafast, Contactless Current Sensor, DS10.2m



This manual is presented by *Telli Technologies* to instruct the user of the procedure to test the Tell-i DS10.2m 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.

Reference:

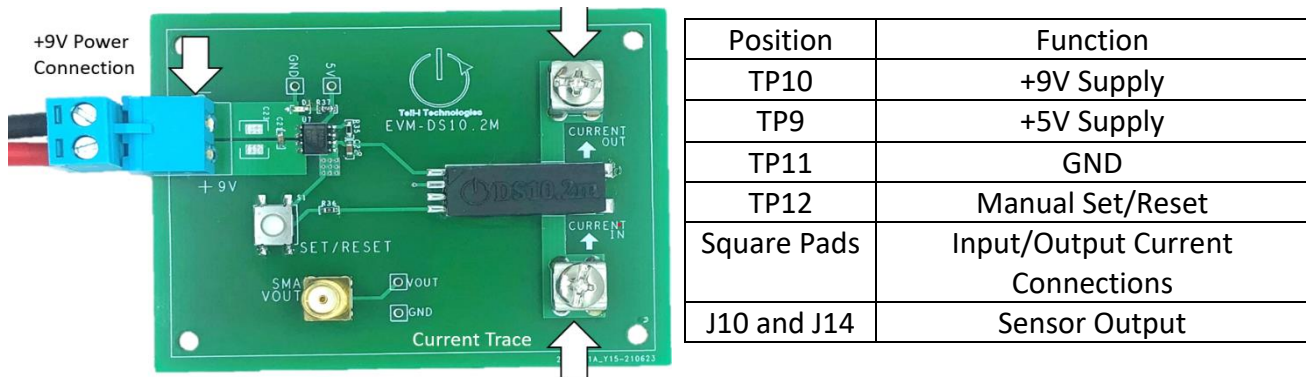


Figure 1. Connections and Reference of Evaluation Board w/ DS10.2S Current Sensor

+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, a BNC connector is placed for a cleaner measurement of high frequency waveforms. It is highly recommended to have a high impedance termination impedance. On most oscilloscopes, the 1MΩ termination option is available. Although, if a BNC is not available, the evaluation board does contain test points for regular probing. Figure 3 shows the test point (Vout and GND) on the PCB to use a regular probe with a very short ground lead to reduce any inductance.

Note: SMA connector is found on board which can be used as an alternative to probing. Simply attach SMA to BNC or relatable connector to use. 50 Ohm termination increases resolution of Sensor Output

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 4. Regular Probing Location and Polarity

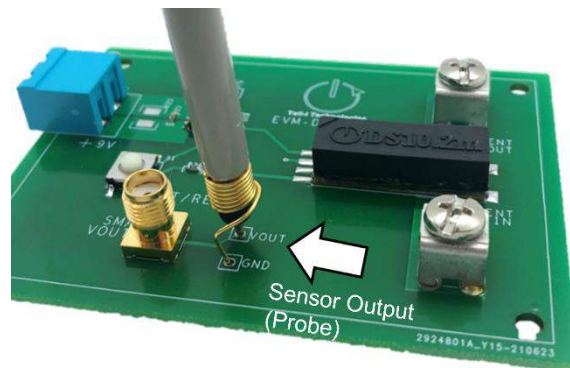


Figure 3. Example of Regular Probing Location

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 the button located by the 9V input called Set/Reset and hold the button for at least 2 seconds, as shown in Figure 5. 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.

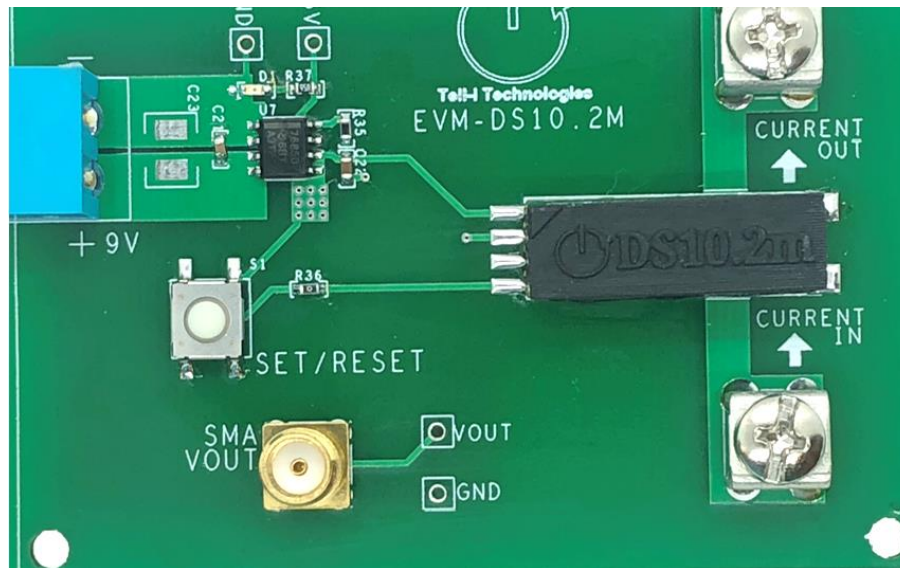


Figure 5. Demonstration of Reset (Set/Reset)

Note: A MOSFET is added on the evaluation board to reset the sensor pin by using a microcontroller or function generator by applying a signal to gate. This is not required for operation. Add capacitor C9

Input/Output Power Connections

To connect your power connection, simply solder the cables from your setup to the input/output connections (Testpoint 5 and Testpoint 6) on the evaluation board. The DS10.2m 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 6 shows this example by connecting the DS10.2m with a Pulse Generator board.

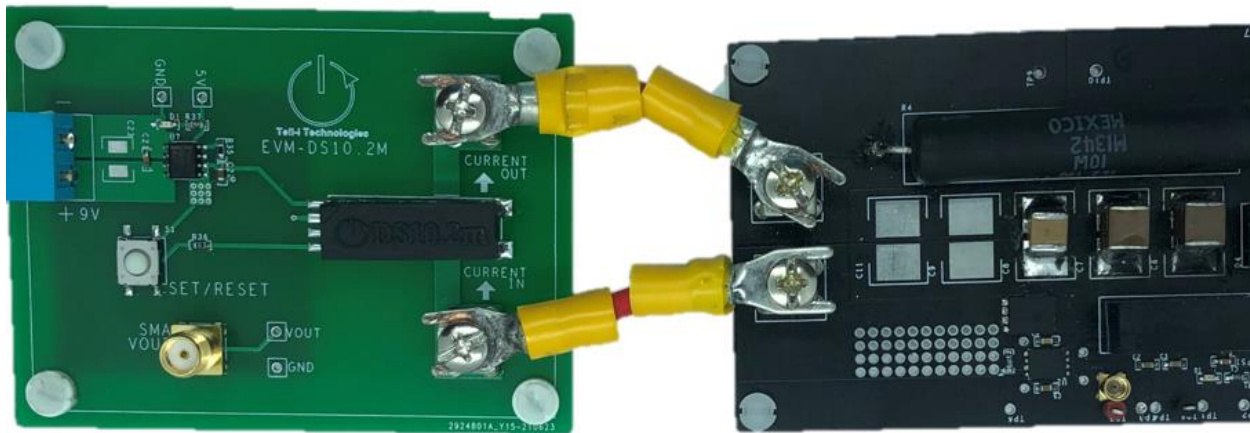


Figure 6. Example of DS10.2m and Evaluation Board (Left) connected to Pulse Generator (Right)

Please note the length of the power connection leads. They are intended on being very small to reduce as much inductance as possible.