

# Testing Panel User Manual

ECE 492 - Spring 2020

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## Abstract

This document is intended to inform the LFEV team how to setup and engage the testing panel.

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# Introduction

The testing panel is designed to test pedal, brake, and BOT of TSI in the dyno room. The testing panel should be powered when the TSI PCB is powered and in place in the dyno room. The two switches on the left side can be toggled upward to make APPS1 0 and bias the two APPS so that they are 5V apart respectively. The switch on the right side can be toggled upward to enable Brake Over Travel (BOT). The brake button can be used to test the brake light. The panel voltmeter shows the throttle voltage. When using the testing panel to simulate pedal input, the two potentiometers should be adjusted so that the  $APPS1 = APPS2 + 5V$ . The four banana jack sockets on the bottom right are APPS1\_10, APPS1\_RTN, APPS2\_5 and APPS2\_RTN respectively for you to confirm the two potentiometers to have a 5V bias using a multimeter. Through testing a resistance value combination, we know one combination that works is setting RV1's "hour hand" to 1 and "minute hand" to 10 and setting RV2's "hour hand" to 1 and "minute hand" to 0.

All wires to the testing panel come from cable W24 (Check the ATP).

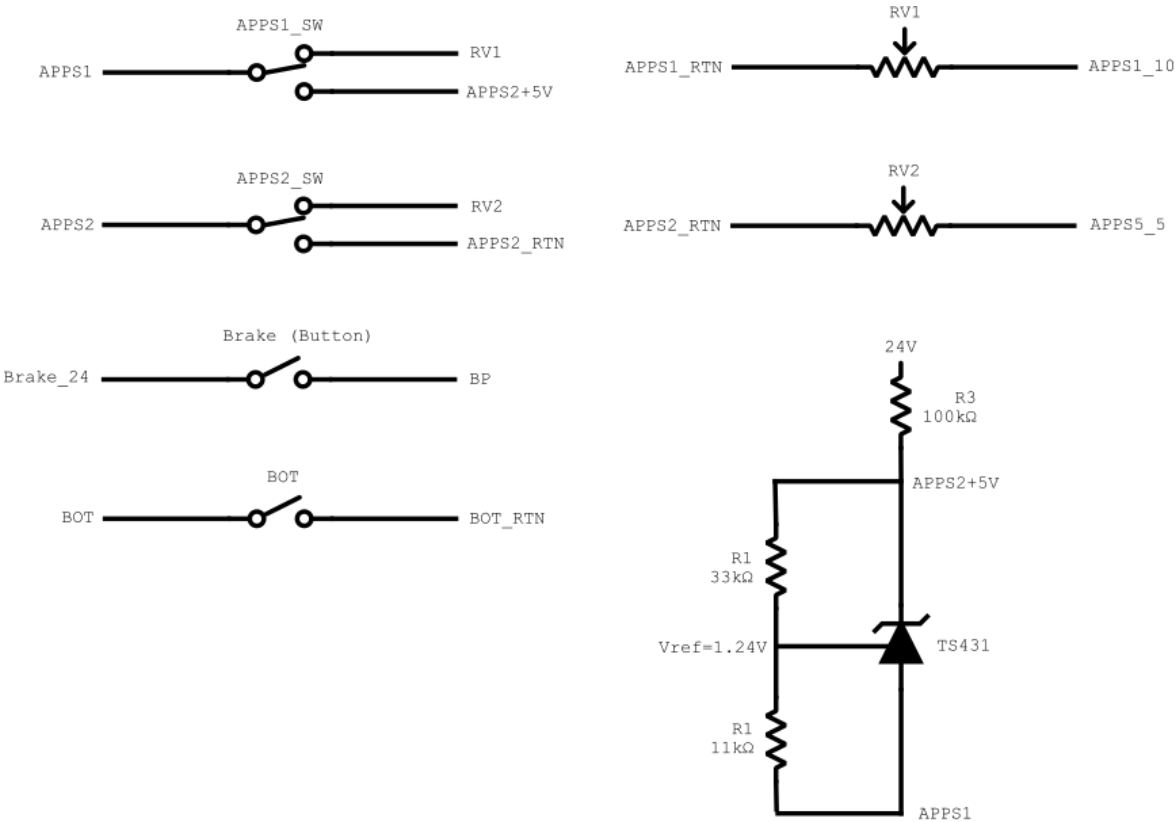


Figure 1. Testing Panel

# Laser Cut File

The inventor file of the testing board for laser cut can be found here ([https://sites.lafayette.edu/motorsports/files/2020/04/testing\\_panel\\_drawing.zip](https://sites.lafayette.edu/motorsports/files/2020/04/testing_panel_drawing.zip)). You can make changes to it if you need a new testing board to be cut.

# Schematic



Can use other resistance value for R1 and R2 as long as  $R1/R2 = 3$   
The Vref will be 2.5V if you replace TS431 with ATL431.  
Check datasheet for details.

Figure 2. Testing Panel Schematic