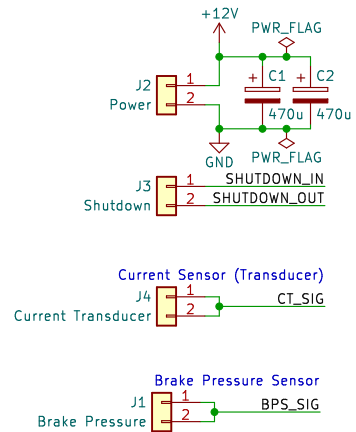
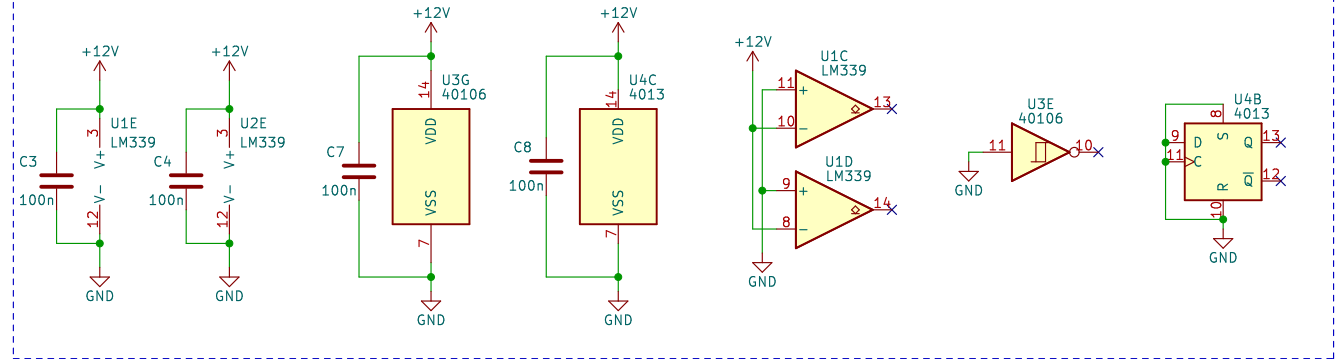


Connectors



- H1 MountingHole
- H2 MountingHole
- H3 MountingHole
- H4 MountingHole

IC Power and Unused Gates



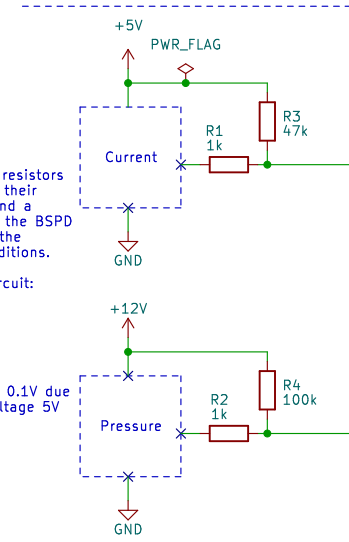
Not part of the BSPD

The sensors will have resistors soldered directly onto their terminals as shown, and a pull-down resistor on the BSPD PCB. This will enable the detection of fault conditions.

Short to GND/open circuit:
0V measured

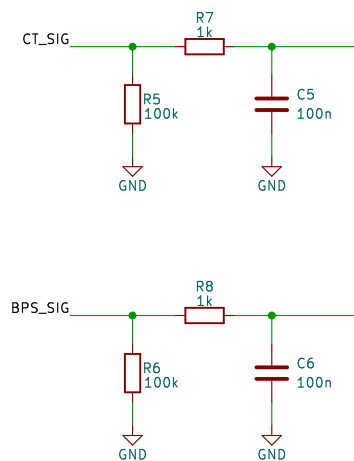
Short to +12V:
12V measured

Normal operation:
Minimum voltage $\approx 0.1V$ due to resistors, max voltage 5V

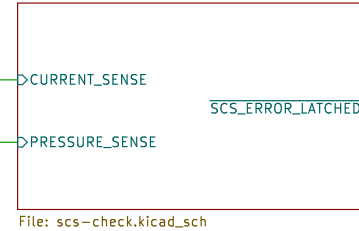


Filters

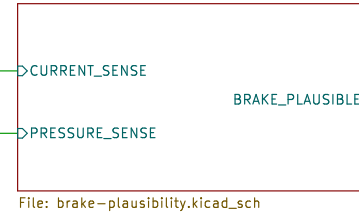
$f_{cutoff} \approx 1500Hz$
Should remove 12kHz PWM noise



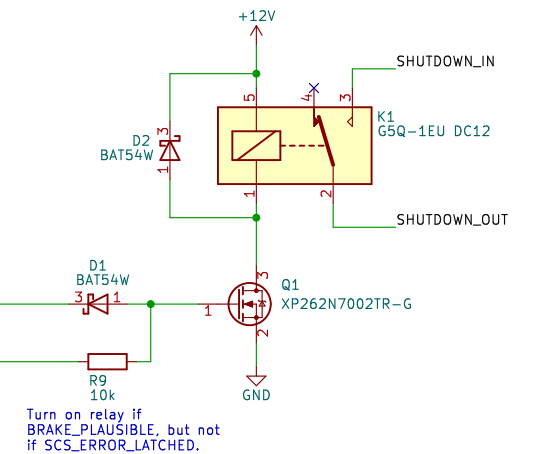
SCS Check



Brake Plausibility



Relay



Vehicle: STAG 9

Drawn By:

Checked By: Marek Frodyma

CAD Part:

SUFST – Southampton University Formula Student Team

Sheet: /

File: BSPD.kicad_sch

Title: BSPD

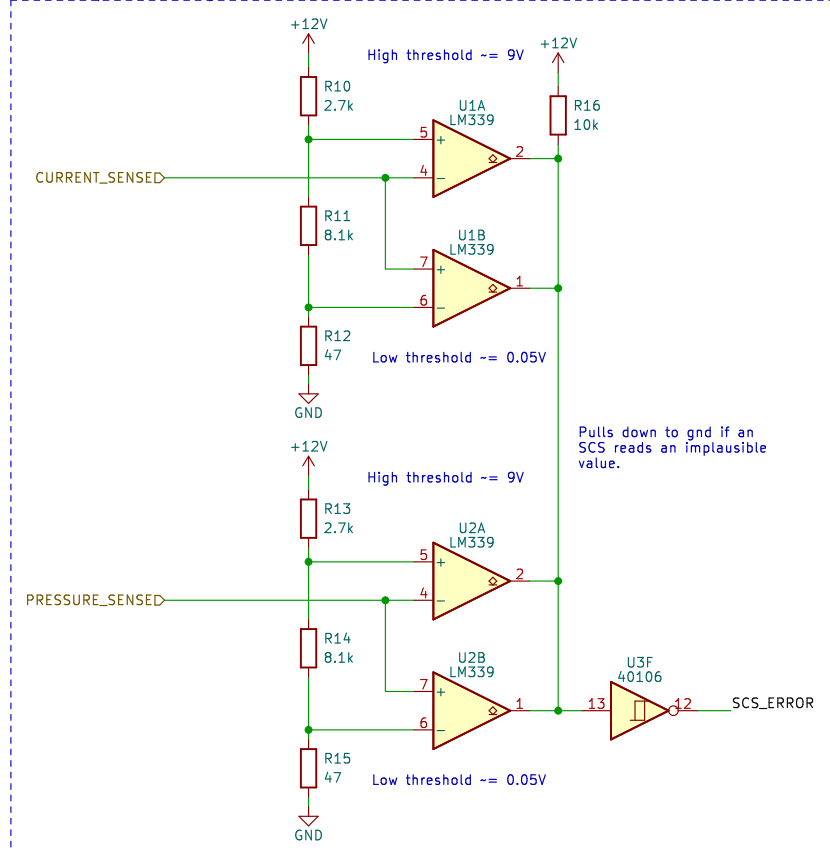
Size: A4 Date: 2022-04-01

KiCad E.D.A. kicad (6.0.11-0)

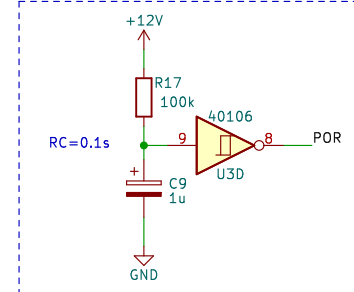
Rev: 1.0.1

Id: 1/3

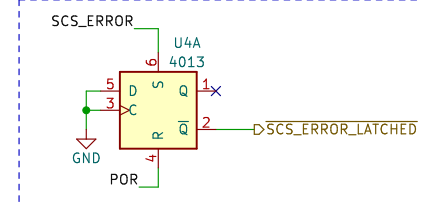
SCS implausibility detection



Power On Reset



Error Latch



Vehicle:
 Drawn By:
 Checked By:
 CAD Part:
SUFST – Southampton University Formula Student Team

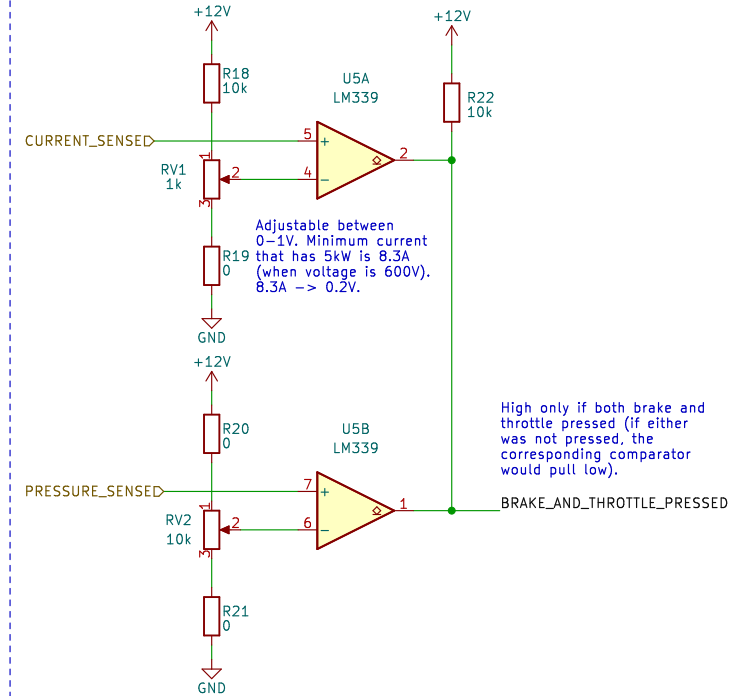
Sheet: /SCS Check/
 File: scs-check.kicad_sch

Title: BSPD

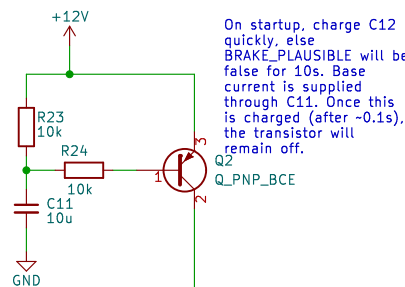
Size: A4
 Date: 2022-04-01
 KiCad E.D.A. kicad (6.0.11-0)

Rev: 1.0.1
 Id: 4/3

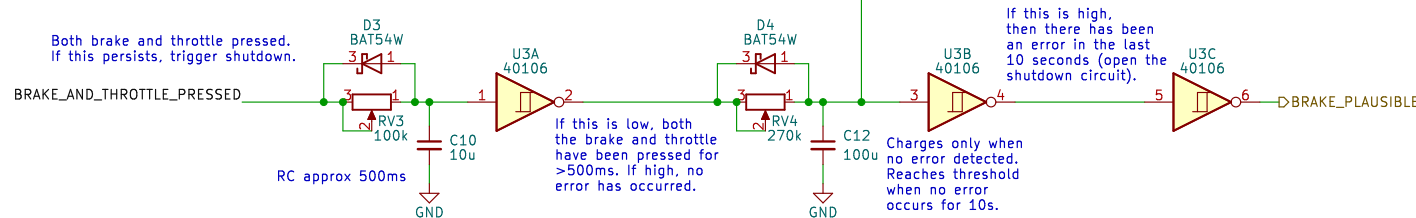
Comparators



Startup timing



Timing



Vehicle:
 Drawn By:
 Checked By:
 CAD Part:
SUFST – Southampton University Formula Student Team

Sheet: /Brake Plausibility/
 File: brake-plausibility.kicad_sch

Title: BSPD

Size: A4
 KiCad E.D.A. kicad (6.0.11–0)

Date: 2022–04–01

Rev: 1.0.1

Id: 5/3