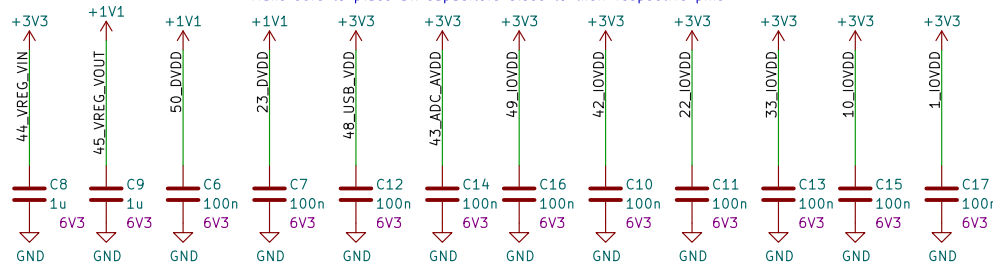
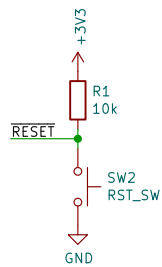


## MCU Filters

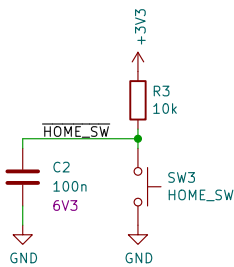
Make sure to place all capacitors close to their respective pins



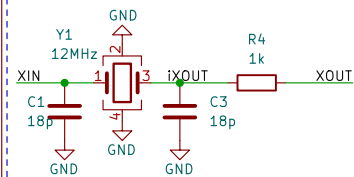
## Reset Switch



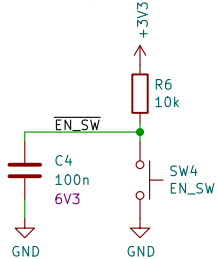
## Home Switch



## Crystal

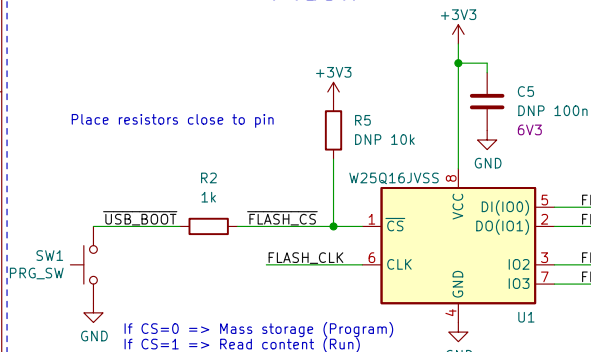


## Tracking Switch

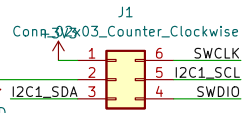


## Flash

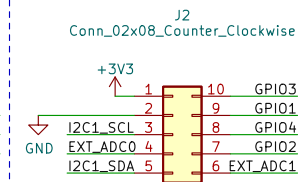
Place resistors close to pin



## Debug

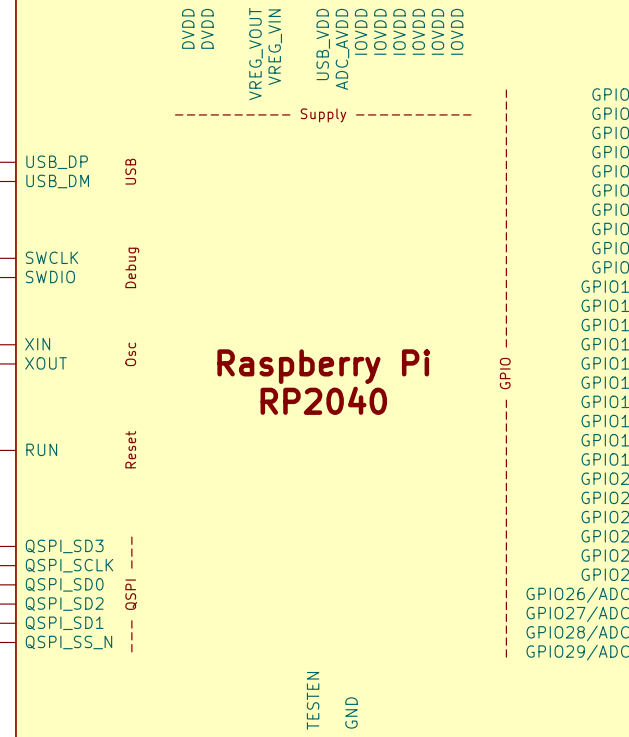


## Expansion



FLASH\_D3 51  
FLASH\_CLK 52  
FLASH\_D0 53  
FLASH\_D2 54  
FLASH\_D1 55  
FLASH\_CS 56

RP2040



Raspberry Pi  
RP2040

GPIO0 2 BUZZ\_EN >Buzzer  
GPIO1 3 GPIO1  
GPIO2 4 GPIO2  
GPIO3 5 GPIO3  
GPIO4 6 GPIO4  
GPIO5 7 EN\_SW  
GPIO6 8 HOME\_SW  
GPIO7 9 LED\_G >LED\_G  
GPIO8 11 LED\_R >LED\_R  
GPIO9 12 LED\_B >LED\_B  
GPIO10 13 M2\_W11 >M2\_W11  
GPIO11 14 M2\_W12 >M2\_W12  
GPIO12 15 M2\_W21 >M2\_W21  
GPIO13 16 M2\_W22 >M2\_W22  
GPIO14 17 M1\_W11 >M1\_W11  
GPIO15 18 M1\_W12 >M1\_W12  
GPIO16 27 M1\_W21 >M1\_W21  
GPIO17 28 M1\_W22 >M1\_W22  
GPIO18 29 I2C1\_SDA >I2C1\_SDA  
GPIO19 30 I2C1\_SCL >I2C1\_SCL  
GPIO20 31 CMP\_DRDY >CMP\_DRDY  
GPIO21 32 ACC\_INT >ACC\_INT  
GPIO22 34 GPS\_EN >GPS\_EN  
GPIO23 35 GPS\_TP >GPS\_TIMEPULSE  
GPIO24 36 UART1\_TX >UART1\_TX  
GPIO25 37 UART1\_RX >UART1\_RX  
GPIO26/ADC0 38 V\_PANEL >VPANEL  
GPIO27/ADC1 39 I\_PANEL >IPANEL  
GPIO28/ADC2 40 EXT\_ADC0  
GPIO29/ADC3 41 EXT\_ADC1

### Group members:

Thomas Nonis - 209445  
Tommaso Canova - 209270  
Simone Tollardo - 209002  
Lisa Santarossa - 209386  
Gabriele Berretta - 209466

Sheet: /Control/  
File: control.kicad\_sch

### Title: Control

Size: A4 Date: 2022-04-13  
KiCad E.D.A. kicad 6.0.6-1.fc36

Rev: 1.0  
Id: 2/6

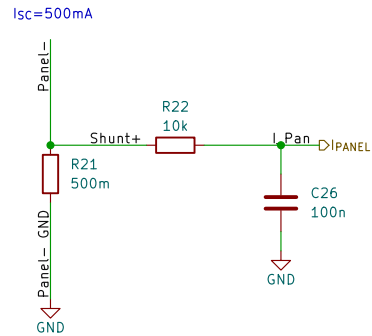


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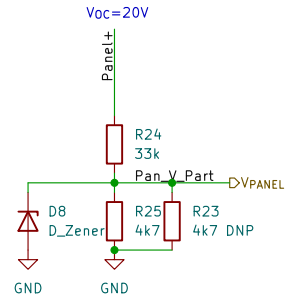




## Current sensing

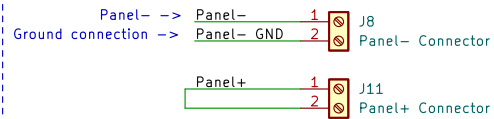


## Voltage sensing



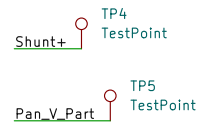
Second resistor is in case we want to increase the input range

## Panel connector



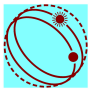
Connect load between Panel+ and GND.

## Manual Testpoints



### Group members:

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Sheet: /Sensing/

File: sensing.kicad\_sch

### Title: Sensing

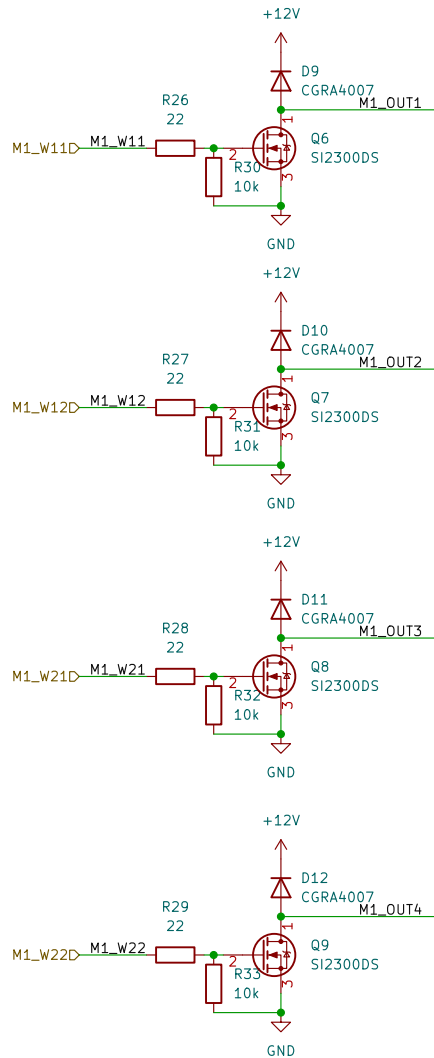
Size: A4 Date: 2022-04-13

KiCad E.D.A. kicad 6.0.6-1.fc36

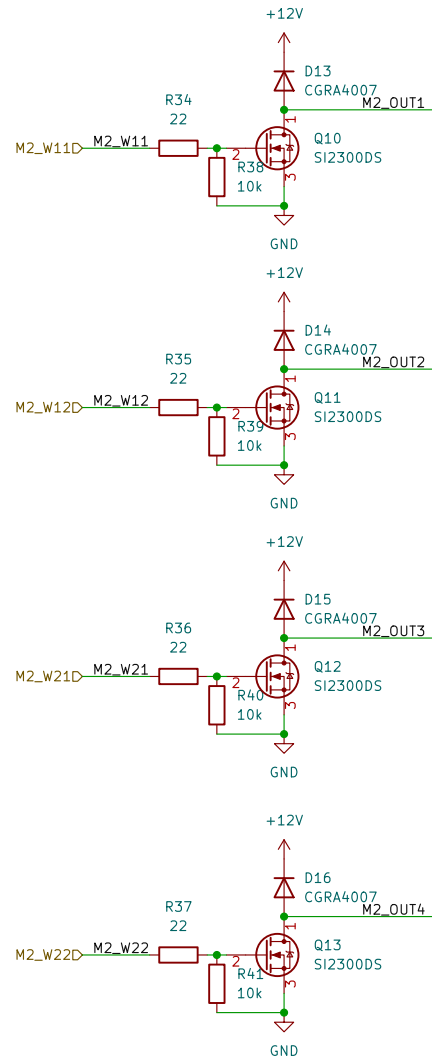
Rev: 1.0

Id: 5/6

## Stepper Driver 1

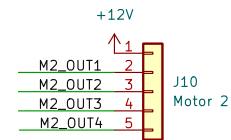
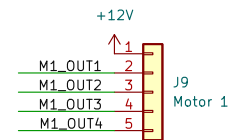


## Stepper Driver 2



## Stepper Motors

Unipolar stepper motor  
28BYJ (ADAFRUIT 918) 12V version



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Sheet: /Actuation/  
File: actuation.kicad\_sch

### Title: Actuation

Size: A4 Date: 2022-04-13  
KiCad E.D.A. kicad 6.0.6-1.fc36

Rev: 1.0  
Id: 6/6