Automation 2040 W Mini (PIM652)

Raspberry Pi Pico W

I2C pullups

Buttons
40 to 5V buck converter

Max total for external 5V outputs: 500mA

Input channel state indicators

Output 1/1A
Output 2/1A
System state indicators

ADC channel state indicators

User indicators

Relay state indicators

Pico is powered from 5V

LEDs
Scale the input on ADC channels to bring the maximum of 40V below the ADCs non-amplified range of 0V to 3.3V.
56k and 820k scale 51.62 V to 3.3V leaving a bit of headroom.
\[ V_{adc} = V_{in} \times \left( \frac{56}{56+820} \right) \]
\[ V_{in} = V_{adc} \div \left( \frac{56}{56+820} \right) \]

Max drop across resistor is 37V, 20k resistor inline limits current to around 1.85mA
\[ 0.00185A \times 37V = 0.06845W \]
Max 500mA draw on the 5V output when using the buck regulator.

Screw terminals