# Interface board features

Outputs from the DSP:

1. 3x PWM signals
2. 1x enable signals
   1. To activate drivers
3. Signal to show DSP is ON

Inputs to DSP:

1. 3x encoder signals
2. 3x current measurements
3. 1x voltage measurement
   1. Maybe 2, if we want to measure at both battery packs
4. 1x torque pedal

LEDs:

1. On enable signal to drivers
2. On ON-signal from DSP
3. On every supply line
4. On move-enable
5. On all extra switches

Switches:

1. Movement Enable
2. Stuff for selecting different options
3. Speed/torque reference selection

Potentiometers:

1. Speed/torque reference
2. Include spares

Additional circuits:

1. 1x Voltage sensor circuit
2. 3x current sensor circuit
3. 3x voltage dividers for encoder signal

Power supplies:

1. 24V 🡪 +/- 15V
   1. Sensor opamp
   2. Current sensor
2. 24V 🡪 5V
   1. Output of voltage sensor
   2. Potmeters
   3. DSP
3. 36V 🡪 5V
   1. Input of voltage sensor
   2. We might need to find a different one, as the power dissipation could be too high.
4. 24V 🡪 12V
   1. Fan supply

Test points:

1. 3x current
2. 1x voltage
3. 3x encoder
4. 3x PWM
5. 1x enable
6. DC-bus
   1. 5V-HV
7. 24V supply control circuit
   1. +/- 15V
   2. 5V-LV
   3. 12V
8. Inverter output
9. Potmeters

Other considerations:

1. Add relay+switch to be able to activate/deactivate fan
2. Multiplexer to select voltage measurement
3. Select way to supply DSP
   1. External
   2. Through USB
4. Protection circuits
   1. Supply of DSP/USB connected to computer
   2. Fuses?