Current monitoring

My intent in monitoring the current on all of the devices is that we don’t trip the main breaker by drawing too large of a load. Since the breaker is rated for 120 amps I was going to start my software off using a maximum of 118 amps. We could go even larger with some experiments. I’ll add this maximum number to my spread sheet so we can change it without having to change the software.

If we see the total current on the PDP goes to > 118 amps we should reduce the maximum power allowed for each of the drive wheels until the power on the PDP goes to < 118 amps.

The power needed by the winch and arm in total is 70 amps, 30 for the arm and 40 for the winch.

This leave approximately 48 amps for the wheel in a worst case scenario.

I was going to use an up/down mechanism for setting the amperage limits on the wheels.

That is if the PDP total amperage is at > 118 the maximum current allowed for each of the wheels is reduced by 1 amp each 50 milliseconds until the total current goes to < 118 amps.

If the total current is < 118 amps 1 amp maximum current will be added each 50 millisconds to each of the motor current until the total current is > 118 amps.

To be on the safe side, when the current is > 118 amps the maximum current draw allowed for the lights will be set to 0.