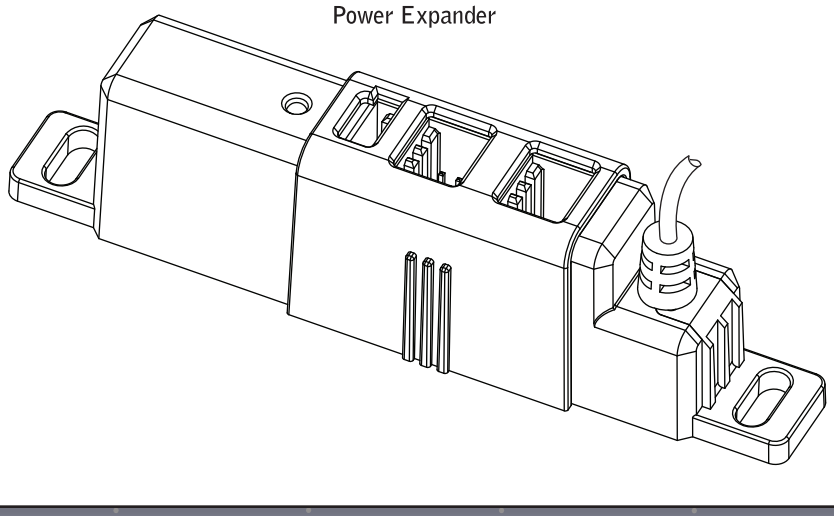
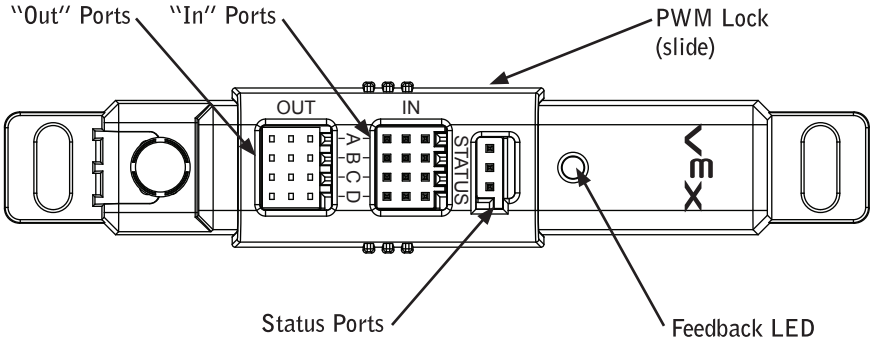
VEX Power Expander

Use the VEX Power Expander to add a secondary power source for four of the PWM outputs on the VEX Microcontroller. Balance a robot's motor load across two batteries to extend robot run time and increase performance.

INSERT THIS PAGE at the **back of the Motion chapter** in your VEX Inventor's Guide.



The "In" and "Out" ports are labeled "A, B, C, D". Each "In" port is paired with an "Out" port. A motor or servo connected to an "Out" port is controlled by the Microcontroller Motor Port connected to it's corresponding "In" port. (i.e. "In" port A controls "Out" port A)



Innovation First, Inc.
1519 IH 30 W.
Greenville, TX 75402

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For More Information, and additional Parts & Pieces refer to:
www.VEXRobotics.com

accessories

VEX Power Expander, continued

Usage

- Connect a secondary 7.2V battery to the power connector of the Power Expander. The Power Expander LED should flash green briefly signaling power is being supplied to it.
- Connect up to four (4) Microcontroller Motor Ports to the "In" ports of the Power Expander using VEX PWM Cables.
- Connect VEX Continuous Rotation Motors or VEX Servos to the corresponding "Out" ports of the Power Expander.
- Slide the Power Expander PWM Lock to secure cables.
- Turn on your Microcontroller. The feedback LED should now show the status of the Power Expander and motors/servos should respond normally based on the secondary battery power.

Status Port

The VEX Power Expander includes a Status port that can be connected to an Analog/Digital input on the VEX Microcontroller. The VEX Microcontroller can use this data to calculate the approximate voltage of the battery connected to the Power Expander. To determine this value, divide the Power Expander read-out by 70.8.

Example:
The VEX Power Expander returns a value of 531.

531 / 70.8 = 7.5

7.5V is the current voltage of your Power Expander battery.

If the battery drops below 339, the internal Circuit Breaker may have tripped. Set the joysticks to neutral for 5 seconds to let the Circuit breaker reset.

LED Feedback

The VEX Power Expander also incorporates an internal circuit breaker to prevent damage to the unit or connected devices. Refer to the following LED status chart for more information. The Feedback LED provides the battery and circuit breaker status of the unit.

Green	Battery Good
Yellow	Battery Low
Red	Battery Critical
Slow Red Blink	Circuit breaker is tripped
Fast Green Blink	Circuit breaker was tripped / Battery Good
Fast Yellow Blink	Circuit breaker was tripped / Battery Low - Charge soon
Fast Red Blink	Circuit breaker was tripped / Battery Critical - Charge Now