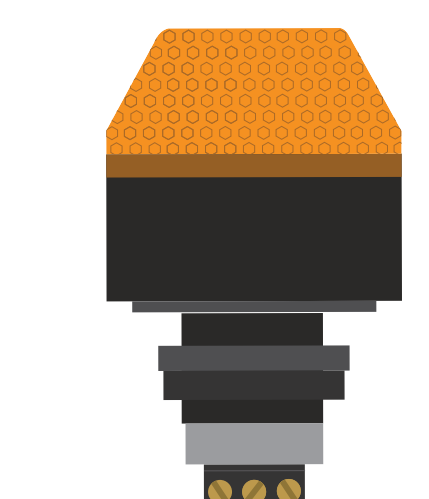


Communication



Robot Signal Light
855PB-B12ME522 shown

RSL Wire 18 AWG Typical
22 AWG Minimum

CAN wires should be a twisted pair with a twist per 1 inch or denser.

The use of the discrete I2C/PC port may induce system lockups. Please refer to WPILib docs for possible workarounds.

DIO Wiring
Minimum 28 AWG
Typical 22 AWG

CAN Bus Wiring
Minimum 28 AWG
Typical 22 AWG

Robot Radio
VH-109

Downstream Power over Ethernet (PoE)

Disabled by default. Please check DIP Switches 1 and 2 to verify unless you want to have them on.

Downstream PoE Devices must support PoE at the supply voltage provided to the radio.

Otherwise Damage will occur to them.

Radio Power
Minimum 22 AWG

Ethernet Cable

Connection to the RoboRIO connected to the port labeled "RIO"

Please refer to the latest Game Manual for specific rules on how to power this radio.

USB Camera
C270 Shown

Servo
Generic shown

PWM

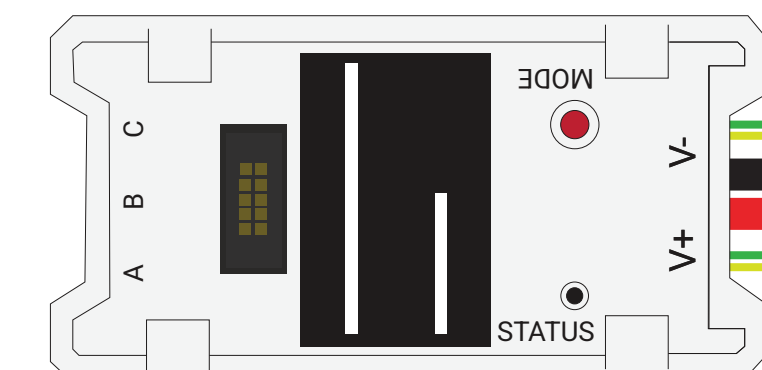
PH/PCM power must be 18 AWG or larger if using a 20A breaker

On-board Compressor
Refer to latest Game Manual for specific rules

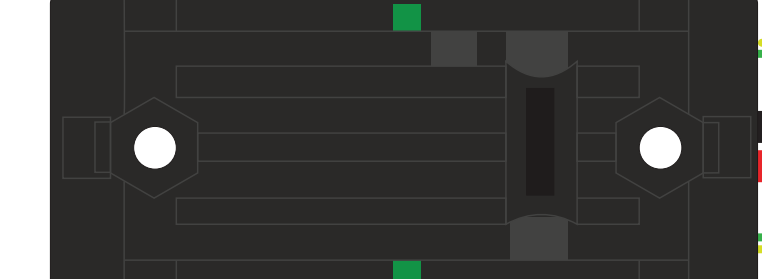
Compressor wires must be 18 AWG or larger

Pneumatic Hub

Pneumatic Systems



Spark MAX
Brushless/Brushed, CAN/PWM



Talon SRX
Brushed Only, CAN/PWM

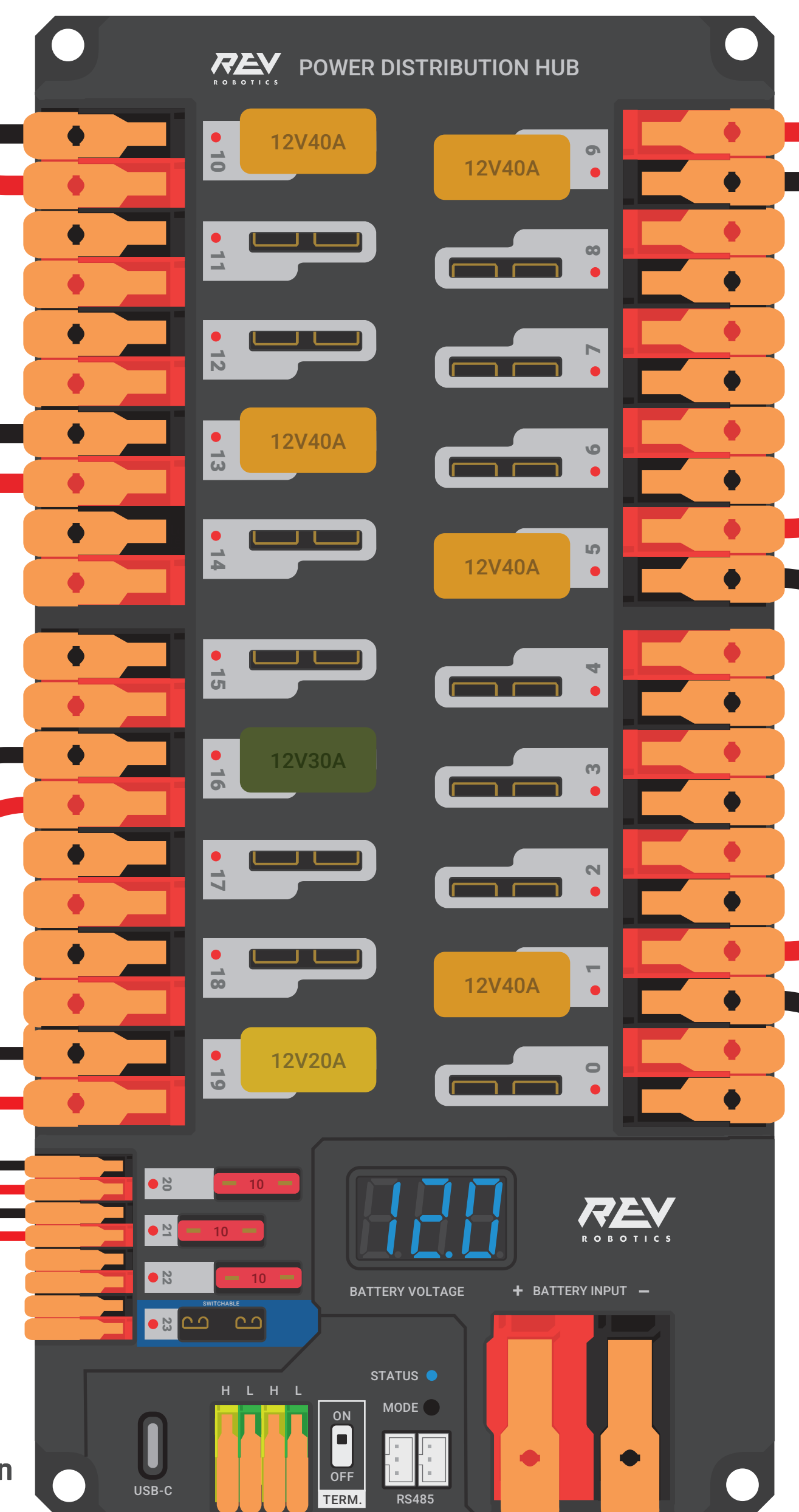
Motor and Motor Controller Wires on 31-40A Breakers must be 12 AWG or larger



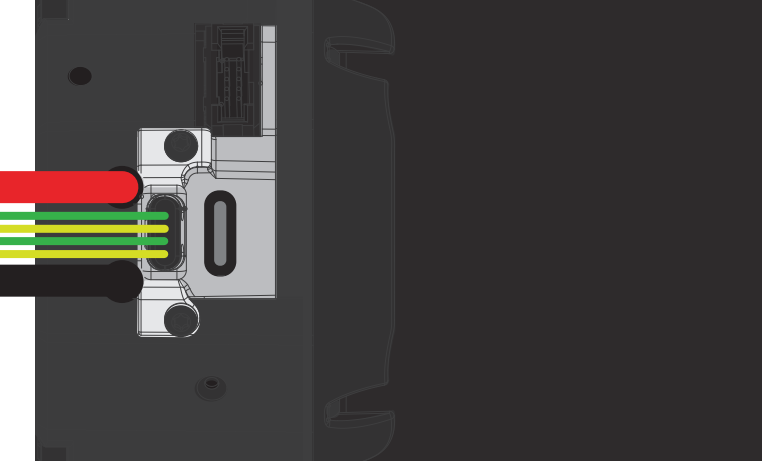
Koors 40
Brushed Only, PWM Only

Motor and Motor Controller Wires on 21-30A Breakers must be 14 AWG or larger

Discrete Motor Controllers
(CAN/PWM Controlled)



Power Distribution Hub



Neo Vortex (Spark FLEX)
Modular Brushless, CAN/PWM

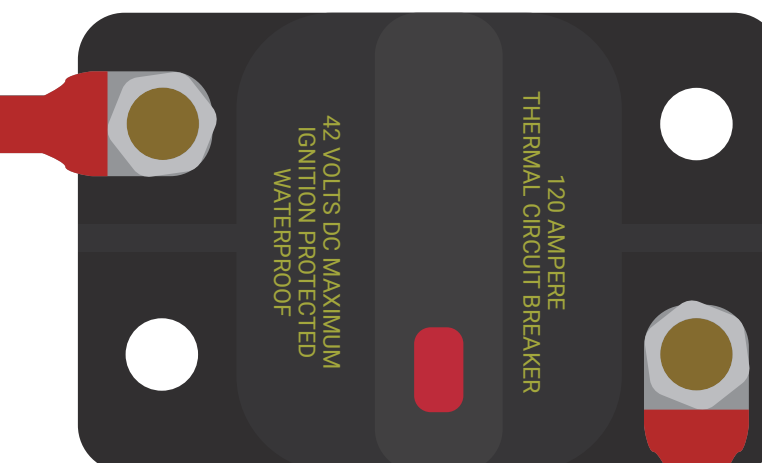


Kraken X44 (Talon FX)
Integrated Brushless, CAN/PWM



Kraken X60 (Talon FX)
Integrated Brushless, CAN/PWM

Integrated/Modular Motor Controllers
(CAN/PWM Controlled)



120A Breaker
CB285-120 shown

12V Battery

Refer to latest Game Manual for specific rules and examples

Main Power

Limit Switch
Generic Switch shown

IR Break
2168 Sensor shown

Analog Encoder
TTB-0040 shown

Potentiometer
Generic shown

Digital Input/Output

Analog Input

FRC CONTROL SYSTEM - REV

V.3.20.RV

TEAM 3161



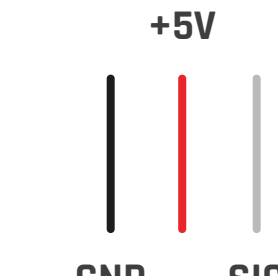
Power

12V DC Main



PWM

26 AWG Minimum



CAN

28 AWG Minimum



Wires

American Wire Gauge (AWG)

Minimum Gauge per connection type shown.



Always practice proper safety precautions and practices when working with electrical systems.

More Information about the FRC Control System can be found at <https://docs.wpilib.org>

KEEP IN MIND