Communication

CAN Bus Wiring
Minimum 28 AWG
Typical 22 AWG

Robot Signal Light
855PB-B12ME522
shown

RSL Wire 18 AWG Typical
22 AWG Minimum

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.**

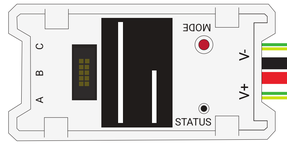
If enabled, devices must support PoE at the supply voltage provided to the radio.

Otherwise damage will occur to them.

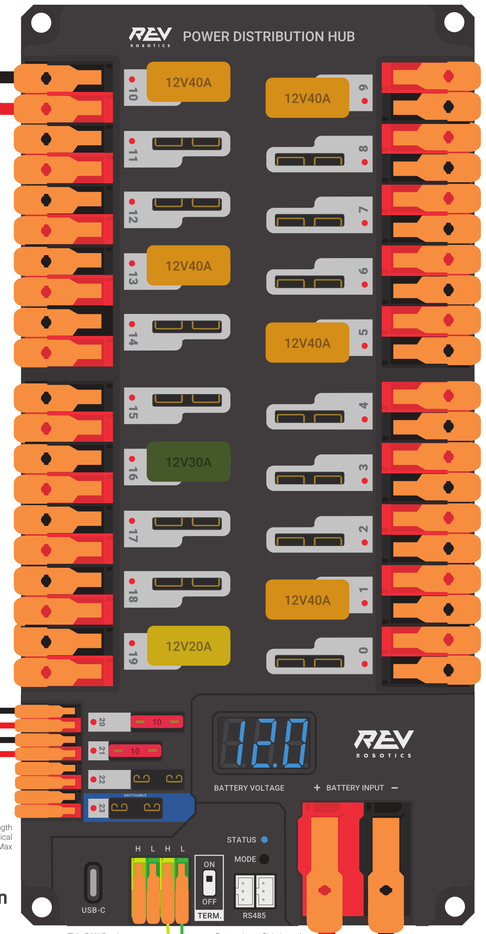
Ethernet Cable

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.



Spark MAX
Brushless/Brushed, CAN/PWM



Low Current and CAN Strip Length
0.33" Typical
0.31" Min 0.35" Max

Power Distribution Hub

This CAN Bus is configured to end on the PDH (Term Switch ON).

Battery Input Strip Length
0.75" Typical
0.72" Min
0.79" Max

Signal wires must be 28 AWG or larger

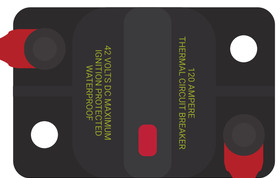
CAN wires should be a twisted pair with a twist per 1 inch or denser.

18 AWG Typical, must be 22 AWG or larger on a 10A Fuse

The main robot CAN loop must start with the RoboRIO.

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

RoboRIO



120A Breaker
CB285-120 shown

Battery lugs must be crimped and properly insulated.

Battery wires must be 6 AWG or larger

12V Battery
Refer to latest Game Manual for specific rules and examples

Main Power

FRC CONTROL SYSTEM - REV

V.3.21.RV

Power
12V DC
Main

LIVE (+) (-) GND

PWM
26 AWG
Minimum

+5V
GND SIG

CAN
28 AWG
Minimum

HI LO

Wires
American Wire Gauge (AWG)
Minimum Gauge per connection type shown.

6 AWG 12 AWG 14 AWG 18 AWG 22 AWG 26 AWG 28 AWG

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