

Wiring CAN Jaguars

This article describes how to connect Jaguar speed controllers to the CAN bus of the 2015 FRC Control System

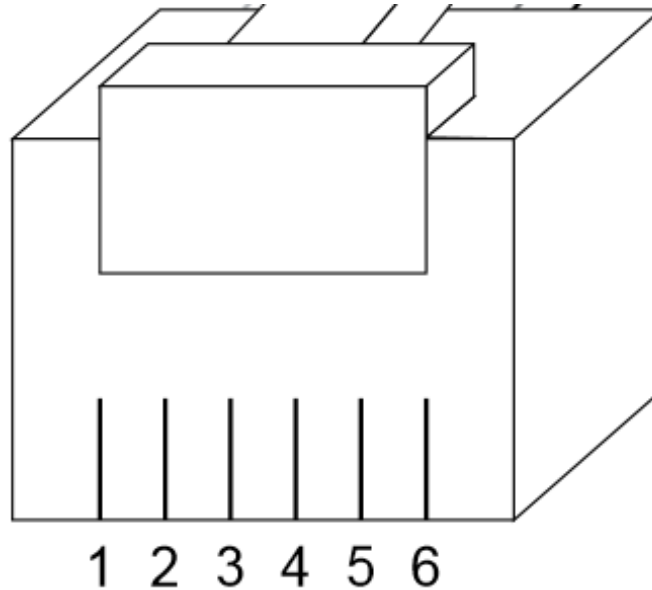
2015 FRC Control System CAN wiring



The 2015 FRC Control System uses simple twisted pair wiring for the CAN connections with Weidmuller wire-to-board connectors on the components allowing you to wire to them directly. The wiring is labeled with CAN High (CANH) as Yellow and CAN Low (CANL) as Green.

Wiring CAN Jaguars

Jaguar CAN Wiring



The Jaguar uses an RJ-11/RJ-12 connector for the CAN connection. The center two pins of the connector are used for the CAN wiring. If crimping to a 6P6C (RJ12) connector, pin 3 is CANH and pin 4 is CANL. If using a 6P4C (RJ11) connector, pin 2 is CANH and pin 3 is CANL. If connecting to a standard telephone cable with standard wire colors, Red will be CANH and Green will be CANL

Wiring Jaguars into 2015 FRC Control System



The recommended method of wiring the 2015 FRC Control System CAN Bus is to utilize the built-in termination of the roboRIO on one end of the bus and the selectable termination (set to On) of the

Wiring CAN Jaguars

Power Distribution Panel on the other end of the bus. To do this with CAN Jaguars you will need to create two adapter cables from the twisted pair wiring to the RJ-45 connector of the Jaguar. Use the descriptions of the color schemes and pinouts above to connect CANH from your twisted pair to CANH of the RJ45 and CANL to CANL. After the first Jaguar you can add additional Jaguars to the bus using a straight-pinned (sometime called a reverse-cable because the tabs will face opposite directions) 6P4C or 6P6C telephone cable as described in the [Jaguar Getting Started Guide](#). After the last Jaguar in the chain you will use another adapter cable to wire from the Jaguar to the PDP.

Alternate termination

If you do not wish to use the built-in termination on the PDP you may set the PDP termination to Off. You will the need to terminate the end of the bus with your own 120 ohm termination resistor. This can be crimped directly into the RJ connector and plugged into the last Jag on the bus or (recommended) connected to stub wires which are crimped into the connector (the stub wires crimp into the contacts more securely and provide better insulation than crimping the resistor directly).

RS-232 Adapter

Though the 2015 Control System has a native CAN interface, an RS-232 to RJ-45 adapter is still necessary for updating Jaguar firmware from a PC using BDC-Comm (more details on this process in the next article). Details on making this adapter can be found in the [Jaguar Getting Started Guide](#).