



Advanced Talon Breakout Board User Guide

(JCB-0004)

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Overview

Introduction

The Advanced Talon Breakout Board was designed to provide a reliable connection to the Talon SRX data port while still unlocking all of the features and capabilities of the data port. Using this product will allow you to take advantage of all the features in the Talon SRX data port and create a reliable and easy way to diagnose CAN bus issues. With the Advanced Talon Breakout Board, you can simultaneously utilize the features of the data port and connect a SRX Mag Encoder directly to the board without modification. The Advanced Talon Breakout Board features JST connectors which provide you with an easy way to wire a reliable connection that will stand up to FRC game play. For even faster wiring, you can pair the board with our pre-crimped [wires](#). There are also [connectors](#) available so you can crimp your own wires.

Features

- Allows for the use of both 5 and 3.3V encoders.
- Allows for simultaneous transfer between 3.3V and 5V analog sensors (without an external voltage divider).
- Allows for simultaneous use of end-stops, encoders, and analog sensors.
- Optional pull-up resistors for encoders.
- LED indicators for end-stops, encoder data, and power.
- Native mounting for a SRX Mag Encoder Ribbon Cable.
- All connections are secured through JST connectors.
- Flush and level mounting.

Installation Instructions

Mounting the Advanced Talon Breakout Board

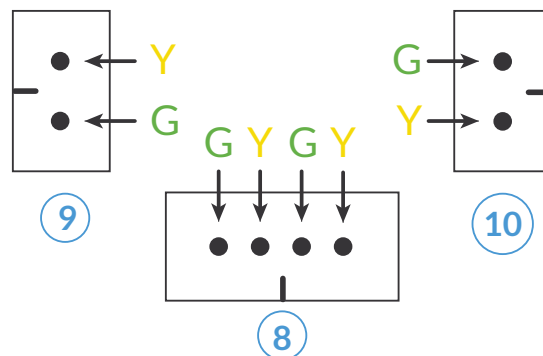
Note: This process is much easier to do prior to mounting the Talon SRX.

1. Remove the data port cover from the Talon SRX completely by unscrewing the bolts. Make sure you keep the bolts, they will be used to mount the Advanced Talon Breakout Board.
2. Line up the data port on the Talon SRX with the connector on the back of the Advanced Talon Breakout Board.
3. Press down on the edges of the board until the connector is fully connected and the board is flat on the Talon SRX.
4. Place the included spacers on top of the board over the mounting holes.
5. Securely screw in the bolts that were removed early into the mounting holes through the spacers, board, and Talon SRX.

Wiring the CAN Bus

The Advanced Talon Breakout Boards use JST PH connectors which allow the CAN bus to be wired efficiently and maintain secure connections. This also creates a system where you can easily unplug the CAN bus in order to diagnose problems within your control system.

CAN Diagram*

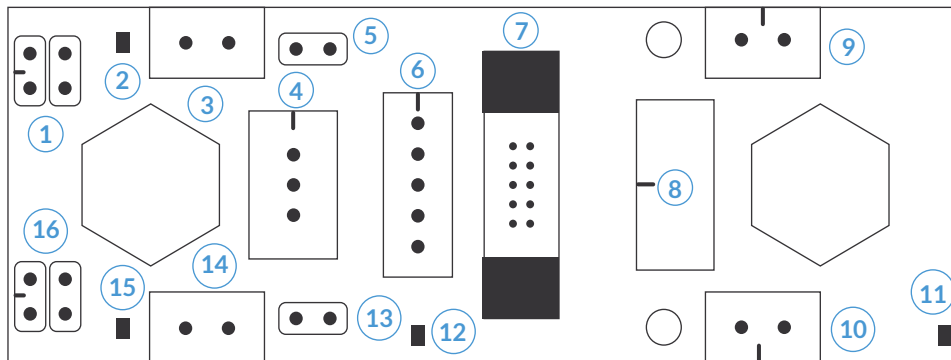


*See page 5 for full diagram.

1. Strip the ends of the CAN wire on the Talon SRX 0.125".
2. Insert the bare wire into the terminal crimps.
3. Using a crimping tool, crimp the terminal crimps onto the wire.
4. Repeat for each of the 4 CAN cables.
5. Insert the 4 cables into a female 4 pin JST-PH connector ([CON-0007](#)).
6. Lift the cables up and backwards and plug the 4 pin JST-PH into the CAN input port on the Advanced Talon Breakout Board.
7. Use 2.5" 2 pin JST-PH cables ([WRE-0010](#)) to connect the CAN between Advanced Talon Breakout Boards.

Technical Details

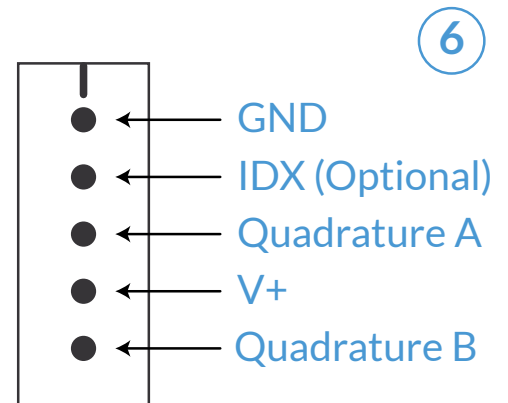
Diagram



- | | | |
|--|---------------------------------------|--|
| 1 Encoder Power Selection. | 7 Native SRX Mag Encoder Port. | 13 Encoder Pull Up Resistor. |
| 3.3V 5V | 8 CAN Bus Input Port. | 14 Reverse Limit. |
| <i>Blue pins/line represent jumper location.</i> | 9 CAN Bus Output Port. | 15 Reverse Limit LED. |
| 2 Forward Limit LED. | 10 CAN Bus Output Port. | 16 Analog Power Selection. |
| 3 Forward Limit. | 11 Power LED. | 3.3V 5V |
| 4 JST Analog Port. | 12 Encoder Feedback LED. | <i>Blue pins/line represent jumper location.</i> |
| 5 Encoder Pull Up Resistor. | | |
| 6 JST Encoder Port. | | |

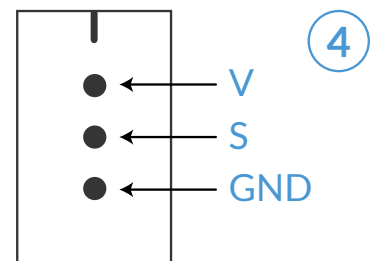
Encoder Features

- Support for the SRX Mag encoder ribbon cable.
- 5 pin JST PH for connecting a quadrature encoder.
- LED indicator to show signals from the encoder.
- Jumpers for easy transfer between 3.3V and 5V encoders.
- Optional pull-up resistor.



Analog Sensor Features

- 3 pin JST PH for connecting an analog sensors.
- 3.3V and 5V selector jumper with built in voltage dividing.



Limit Switch Features

- Forward Limit Switch.
- Reverse Limit Switch.
- LED Indicator for Limit Closed.