

ION

SPARK MAX Motor Controller

SKU: REV-11-2158

\$90.00

Quantity:

1

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Building on the robust foundation of the original SPARK, the SPARK MAX Motor Controller incorporates advanced brushed and brushless DC motor control in a small and easy-to-use package with PWM, CAN, and USB connectivity. Never before has an FRC motor controller featured a built-in USB interface for configuration and control. Users can test prototypes and tune parameters without needing the full control system. SPARK MAX is a true all-in-one controller that will push the envelope for teams.

Features

- Brushed and sensored-brushless motor control
- PWM, CAN*, and USB* control interfaces
- USB configuration and control
 - USB type C connector
 - Rapid configuration with a PC
 - Save/load configurations
 - Realistic prototyping using the actual control parameters
- Smart control modes
 - Closed-loop control
 - Follower mode
- Data port
 - Analog input
 - Limit switch input
 - Quadrature encoder input with index
- Brushless DC sensor connector
 - 3-phase hall sensors
 - Motor temperature sensor
- Compatible with the following motors
 - NEO Brushless Motor
 - NEO 550 Brushless Motor
 - CIM/Mini CIM Motors
 - 775Pro/Redline Motors
 - BAG Motor
 - Virtually any 12V brushed DC motor**
 - Brushless DC
 - Brushed DC

*CAN and USB control is supported for the FRC roboRIO and REV Hardware Client. Other platforms are not currently supported.

**Check that motor specifications do not exceed the maximum electrical specification of the SPARK MAX.

Specifications

- Input Voltage (nominal): 12V
- Operating Voltage Range: 5.5V - 24V
- Absolute Maximum Voltage: 30V
- Continuous Current: 60A
- Peak Current (2 second surge): 100A
- Dimensions: 70mm x 35mm x 25.5mm (2.756in x 1.378in x 1.004in)
- Weight: 0.25lbs (113.3g)
- Motor Wires
 - Length: 150mm (5.91in)
 - 12AWG
- Power Wires
 - Length: 150mm (5.91in)
 - 12AWG
- Included 4-pin JST-PH to CAN cable: SPARK MAX CAN Cable V2 (REV-11-1880)
 - Length: 200mm (7.87in)
 - 24AWG
- Included 4-pin JST-PH to single PWM cable: SPARK MAX PWM Cable (REV-11-1274)
 - Length: 200mm (7.87in)
 - 24AWG

Kit Contents

- QTY 1 - SPARK MAX Motor Controller
- QTY 1 - USB-A male to USB-C cable
- QTY 1 - SPARK MAX CAN Cable V2 (REV-11-1880)
- QTY 1 - SPARK MAX PWM Cable (REV-11-1274)
- QTY 1 - Cable Retention clip
- QTY 1 - Port Saver cap

Notes

- **FIRMWARE UPDATE:** All SPARK MAX Motor Controllers purchased on or after 11/18/2019 ship with version 1.4.0 firmware. Please see the [SPARK MAX Software Resources](#) for the latest firmware and update instructions.
- KIT CONTENTS UPDATE: SPARK MAX Motor Controllers purchased after May 12, 2021 ship with the V2 versions of the [SPARK MAX CAN Cable V2](#) (REV-11-1880).

Documentation

- [ION Build System Guide](#)
- [ION Brushless Documentation](#)
- [SPARK MAX Getting Started Guide](#)
- [SPARK MAX Specifications](#)
- [SPARK MAX Software Resources](#)
- [SPARK MAX Troubleshooting Guide](#)
 - [Wiring the SPARK MAX](#)
 - [SPARK MAX Status LED Pattern](#)
- [SPARK MAX User's Manual](#)
 - [Using Encoders with SPARK MAX](#)
 - [Calibration for MAXSwerve](#)
- [REV Hardware Client](#)
 - [Connecting a SPARK MAX](#)
 - [Updating SPARK MAX Software](#)
 - [Navigating the Client - SPARK MAX](#)

CAD & Drawings

- [REV-11-2158 STEP File](#)
- [REV-11-2158 Onshape](#)
- [REV-11-2158 Drawing](#)

Videos



Related Products

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SKU: REV-21-1650


NEO Brushless Motor V1.1

\$48.00

1

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DUO



SKU: REV-11-1144

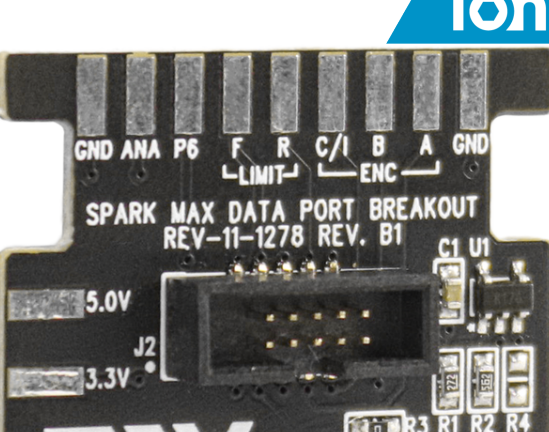
Servo Power Module

\$57.50

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SKU: REV-11-1278


SPARK MAX Data Port Breakout Board

\$10.00

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SKU: REV-11-1271

Through Bore Encoder

\$48.00

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