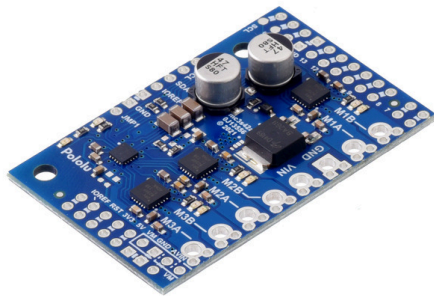


Motoron M3S256 Triple Motor Controller Shield for Arduino (No Connectors)



Pololu item #: 5032

Brand: [Pololu](#) [supply outlook](#)

Status: Active and Preferred [?](#)

✓RoHS3

Price break	Unit price (US\$)
1	34.95
5	32.15
25	29.58
100	27.22

Quantity:

[Add to cart](#)

[backorders](#) allowed

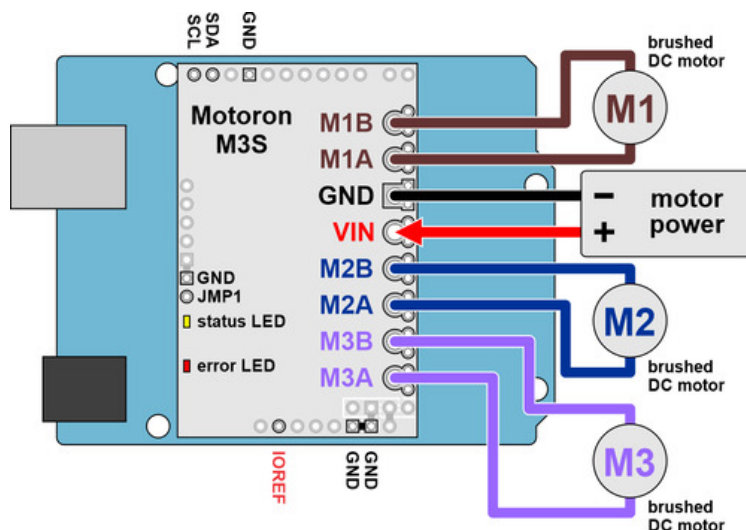
[Add to list](#)

The Motoron M3S256 Triple Motor Controller Shield for Arduino makes it easy to control DC motors from an Arduino or Arduino-compatible board through an I²C interface. Each module can independently control up to three motors, and multiple shields can be stacked on top of the same Arduino for projects that need to control even more motors. The M3S256 supports motor supply voltages from **4.5 V to 48 V** and can deliver continuous output currents up to **2 A per motor**. This version is just the **motor controller by itself**, without any header pins or terminal blocks included.

[Description](#) [Specs \(15\)](#) [Pictures \(13\)](#) [Resources \(5\)](#) [FAQs \(0\)](#) [On the blog \(1\)](#) [Distributors \(0\)](#)

Overview

The Motoron M3S256 shield makes it easy to control up to three bidirectional, brushed DC [motors](#) with an [Arduino](#) or compatible board, such as the [A-Star 32U4 Prime](#). It supports motor supply voltages from 4.5 V to 48 V and can deliver continuous output currents up to 2 A per motor. Multiple Motoron controllers can be stacked on top of each other, allowing independent control of many motors. Unlike most of our [motor drivers](#) and motor driver [shields](#), the Motoron does not require any PWM outputs or timers on your Arduino. Instead, the Arduino communicates with the Motoron using I²C, so only two I/O lines are needed regardless of how many Motorons you connect.

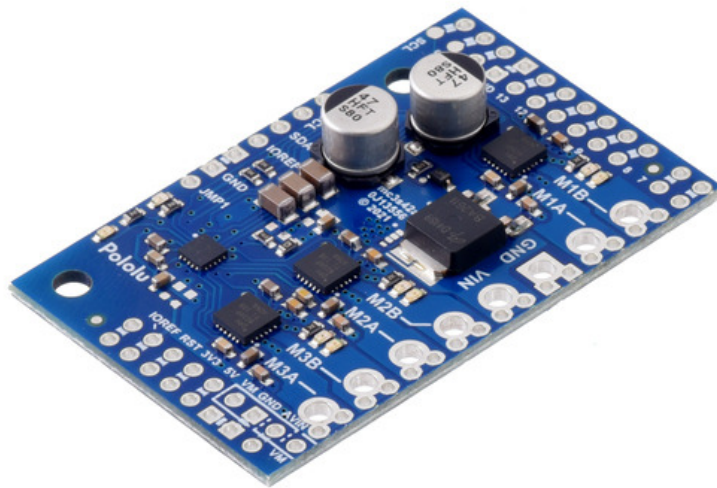


Three M3S256 versions are available to provide different options for the through-hole connectors:

- [Motoron M3S256 with soldered stackable headers and terminal blocks](#)
- [Motoron M3S256 with headers and terminal blocks included but not soldered in](#)
- [Motoron M3S256 without any headers or terminal blocks included](#)

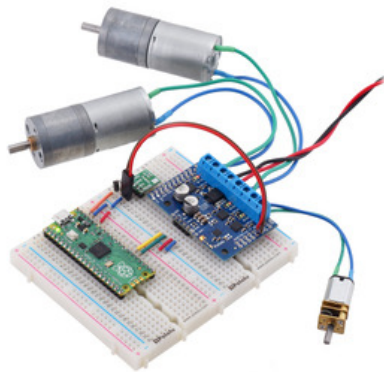
For applications using a Raspberry Pi, consider the [Motoron M3H256](#) instead (also available with different connector options).

Details for item #5032



Motoron M3S256 Triple Motor Controller Shield for Arduino (No Connectors).

This Motoron version is just the assembled PCB module as shown above, with no connectors included. This version is intended for those who mostly want to solder wires directly to the board or use different connectors from those included with other versions. We have a variety of [connectors](#) available separately.



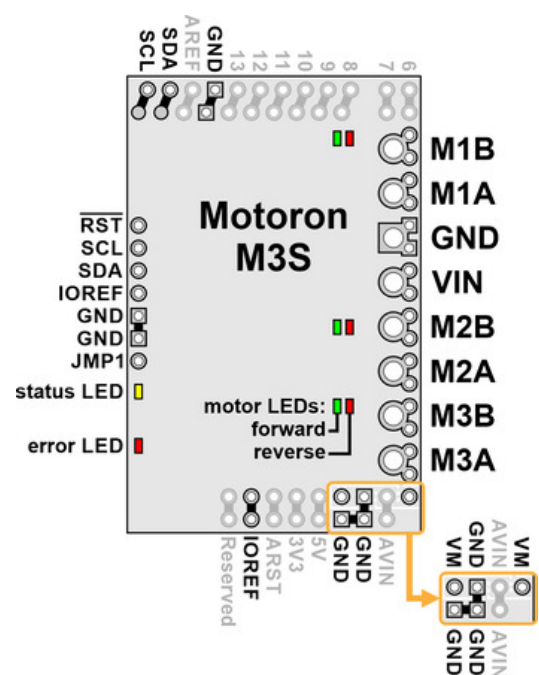
A Raspberry Pi Pico on a breadboard using a Motoron M3S256 shield to control three motors.



Motoron M3S256 shield being controlled by an Arduino Uno.

Features and specifications

- Three motor control channels allow for independent control of up to three bidirectional brushed DC motors per Motoron
- Wide motor supply voltage range: 4.5 V to 48 V (absolute maximum)
 - Recommended maximum nominal battery voltage is approximately 36 V
- Maximum output current per motor: 2.0 A continuous, 6.4 A peak for <1 second
- Reverse-voltage protection on motor power supply (down to -40 V)
- Logic voltage range: 3.0 V to 5.5 V
- Control interface: I²C
- I²C clock speed: up to 400 kHz
- Optional cyclic redundancy checking (CRC)
- Configurable motion parameters:
 - Max acceleration/deceleration forward/reverse
 - Starting speed forward/reverse
 - Direction change delay forward/reverse











Motoron M3S256 or M3S550 Triple Motor Controller Shield pinout.













- PWM frequency: eight options available from 1 kHz to 80 kHz
- Command timeout feature stops motors if the Arduino stops functioning
- Configurable automatic error response
- Motor power supply (VIN) voltage measurement
- Optional pins make it easy to power the Arduino from reverse-protected m
[regulator](#) (not included)
- Two status LEDs
- Motor direction indicator LEDs
- [Motoron Arduino library](#) simplifies getting started using the Motoron with
- Comprehensive [user's guide](#)

The Motoron family

The tables below list the members of the Motoron family and show the key differences among them. Each type is available in several versions to provide different options for the through-hole connectors: they can be purchased as an assembled product with connectors soldered in, as a kit with connectors included but not soldered in, or (for Arduino and Raspberry Pi expansions) as a standalone board without connectors.

Motoron motor controllers micro versions				
	 M1T550	 M2T550	 M1T256	 M2T256
	 M1U550	 M2U550	 M1U256	 M2U256
Control interface:	I ² C or UART serial			
Motor channels:	1 (single)	2 (dual)	1 (single)	2 (dual)
Minimum motor supply voltage:	1.8 V		4.5 V	
Absolute max motor supply voltage:	22 V		48 V	
Recommended max nominal battery voltage:	16 V		36 V	
Max continuous current per channel:	1.8 A	1.6 A	2.2 A	1.8 A
Logic voltage range:	3.0 V to 4.9 V ⁽¹⁾		3.0 V to 5.5 V	
Current sensing/limiting:	–	–	–	–
Available versions with I²C:	<ul style="list-style-type: none"> • headers soldered • headers included 	<ul style="list-style-type: none"> • headers soldered • headers included 	<ul style="list-style-type: none"> • headers soldered • headers included 	<ul style="list-style-type: none"> • headers soldered • headers included
Available versions with UART serial:	<ul style="list-style-type: none"> • headers soldered • headers included 	<ul style="list-style-type: none"> • headers soldered • headers included 	<ul style="list-style-type: none"> • headers soldered • headers included 	<ul style="list-style-type: none"> • headers soldered • headers included
Price:	\$12.49 – \$14.49	\$15.95 – \$17.95	\$16.95 – \$18.95	\$23.95 – \$25.95

¹ The M1x550 and M2x550 are not recommended for use with 5V nominal logic.

Motoron motor controllers Arduino and Raspberry Pi form factor versions						
	 M3S550	 M3S256	 M2S24v14	 M2S24v16	 M2S18v18	 M2S18v20
	 M3H550	 M3H256	 M2H24v14	 M2H24v16	 M2H18v18	 M2H18v20
Control interface:	I ² C					
Motor channels:	3 (triple)		2 (dual)			

Minimum motor supply voltage:	1.8 V	4.5 V	6.5 V			
Absolute max motor supply voltage:	22 V	48 V	40 V		30 V	
Recommended max nominal battery voltage:	16 V	36 V	28 V		18 V	
Max continuous current per channel:	1.7 A	2 A	14 A	16 A	18 A	20 A
Logic voltage range:	M3S550 3.1 V to 5.5 V	3.0 V to 5.5 V	3.0 V to 5.5 V			
	M3H550 3.0 V to 4.9 V ⁽¹⁾					
Current sensing/limiting:	–	–	✓	✓	✓	✓
Available versions for Arduino:	M3S550 <ul style="list-style-type: none"> • assembled • kit • board only 	M3S256 <ul style="list-style-type: none"> • assembled • kit • board only 	M2S24v14 <ul style="list-style-type: none"> • assembled • kit • board only 	M2S24v16 <ul style="list-style-type: none"> • assembled • kit • board only 	M2S18v18 <ul style="list-style-type: none"> • assembled • kit • board only 	M2S18v20 <ul style="list-style-type: none"> • assembled • kit • board only
Available versions for Raspberry Pi:	M3H550 <ul style="list-style-type: none"> • assembled • kit • board only 	M3H256 <ul style="list-style-type: none"> • assembled • kit • board only 	M2H24v14 <ul style="list-style-type: none"> • assembled • kit • board only 	M2H24v16 <ul style="list-style-type: none"> • assembled • kit • board only 	M2H18v18 <ul style="list-style-type: none"> • assembled • kit • board only 	M2H18v20 <ul style="list-style-type: none"> • assembled • kit • board only
Price:	\$20.95 – \$30.95	\$34.95 – \$44.95	\$59.95 – \$69.95	\$79.95 – \$89.95	\$59.95 – \$69.95	\$95.95 – \$104.95

¹ The M3H550 is not recommended for use with 5V nominal logic.