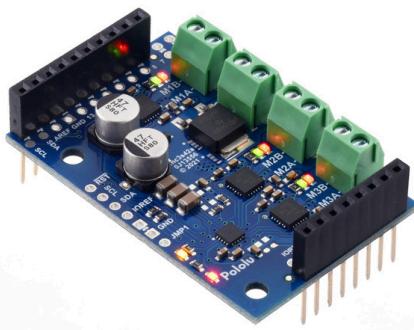


## Motoron M3S256 Triple Motor Controller Shield for Arduino (Connectors Soldered)



Pololu item #: 5030  
 Brand: [Pololu](#) [supply outlook](#)  
 Status: Active and Preferred [?](#)  
 ✓ RoHS3

Price break Unit price (US\$)

1	44.95
5	41.35
25	38.05
100	35.00

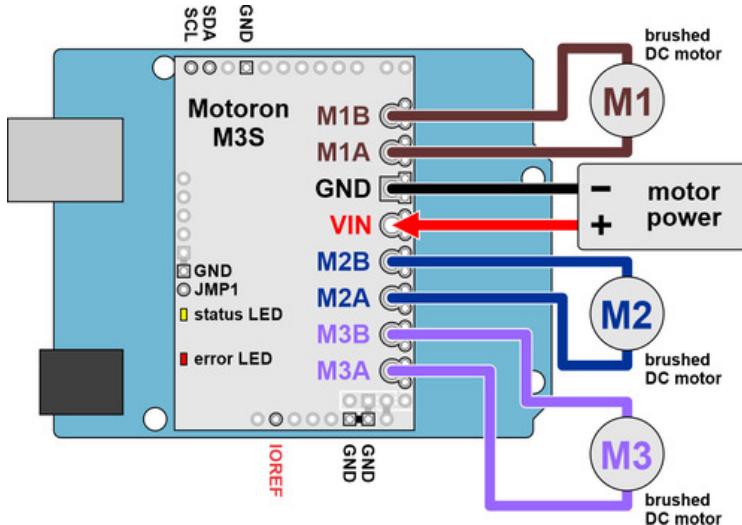
Quantity:  Add to cart  
[backorders allowed](#) [Add to list](#)

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 I<sup>2</sup>C 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 ships **with soldered stackable headers and terminal blocks**.

[Description](#) [Specs \(15\)](#) [Pictures \(9\)](#) [Resources \(5\)](#) [FAQs \(0\)](#) [On the blog \(2\)](#) [Distributors \(29\)](#)

### 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 I<sup>2</sup>C, so only two I/O lines are needed regardless of how many Motorons you connect.

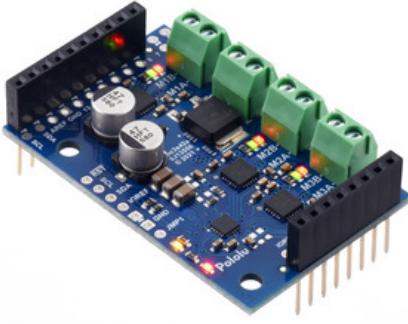


Three M3S256 versions are available to provide different options for the through-hole connectors:

- [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 #5030



**Motoron M3S256 Triple Motor Controller Shield for Arduino (Connectors Soldered).**



**Motoron M3S256 shield being controlled by an Arduino Uno.**



**Three Motoron M3S256 shields being controlled by an Arduino Uno.**

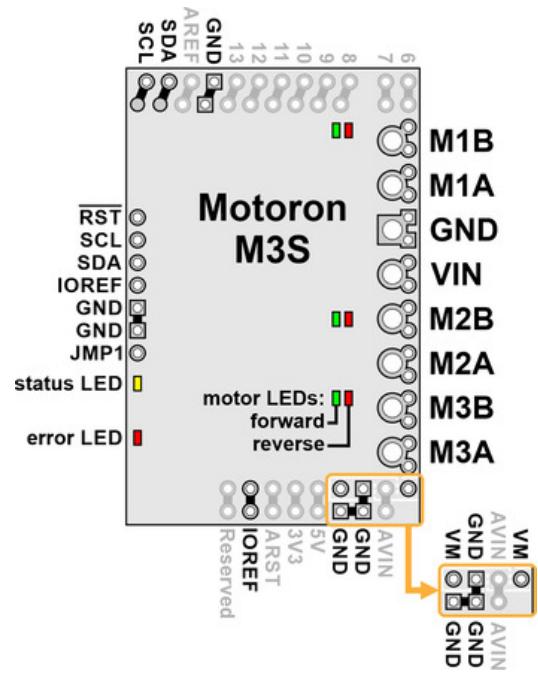
This version of the Motoron M3S256 ships with **soldered stackable headers and terminal blocks**.

## 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: I<sup>2</sup>C
- I<sup>2</sup>C 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
- 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 motor power, either directly or through an [external regulator](#) (not included)
- Two status LEDs
- Motor direction indicator LEDs
- [Motoron Arduino library](#)** simplifies getting started using the Motoron with an Arduino or compatible controller
- 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 M3S256 or M3S550 Triple Motor Controller Shield pinout.**

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

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

Motoron motor controllers Arduino and Raspberry Pi form factor versions						
						
	<b>M3S550</b>	<b>M3S256</b>	<b>M2S24v14</b>	<b>M2S24v16</b>	<b>M2S18v18</b>	<b>M2S18v20</b>
<b>Control interface:</b>	I <sup>2</sup> C					
<b>Motor channels:</b>	3 (triple)		2 (dual)			
<b>Minimum motor supply voltage:</b>	1.8 V	4.5 V	6.5 V			
<b>Absolute max motor supply voltage:</b>	22 V	48 V	40 V		30 V	
<b>Recommended max nominal battery voltage:</b>	16 V	36 V	28 V		18 V	
<b>Max continuous current per channel:</b>	1.7 A	2 A	14 A	16 A	18 A	20 A
<b>Logic voltage range:</b>	M3S550 3.1 V to 5.5 V M3H550 3.0 V to 4.9 V <sup>(1)</sup>	3.0 V to 5.5 V	3.0 V to 5.5 V			
<b>Current sensing/limiting:</b>	-	-	✓	✓	✓	✓
<b>Available versions for Arduino:</b>	M3S550 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> <li>• <a href="#">board only</a></li> </ul>	M3S256 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> <li>• <a href="#">board only</a></li> </ul>	M2S24v14 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> <li>• <a href="#">board only</a></li> </ul>	M2S24v16 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> <li>• <a href="#">board only</a></li> </ul>	M2S18v18 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> <li>• <a href="#">board only</a></li> </ul>	M2S18v20 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> <li>• <a href="#">board only</a></li> </ul>
<b>Available versions for Raspberry Pi:</b>	M3H550 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> </ul>	M3H256 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> </ul>	M2H24v14 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> </ul>	M2H24v16 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> </ul>	M2H18v18 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> </ul>	M2H18v20 <ul style="list-style-type: none"> <li>• <a href="#">assembled</a></li> <li>• <a href="#">kit</a></li> </ul>

	• <u>board only</u>					
<b>Price:</b>	\$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.