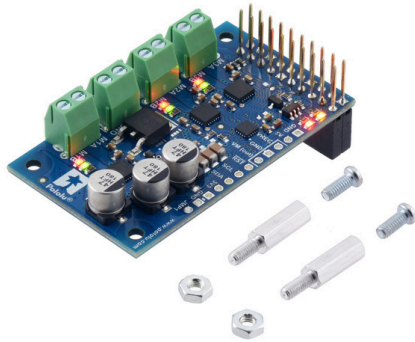# Motoron M3H256 Triple Motor Controller for Raspberry Pi (Connectors Soldered)

Pololu item #: 5033
Brand: **Pololu**   **supply outlook**
Status: Active and Preferred ❓

✓ **RoHS 3**

Price break	Unit price (US$)
1	44.95
5	41.35
25	38.05
100	35.00

Quantity: [1]   Add to cart

backorders *allowed*   Add to list

The Motoron M3H256 Triple Motor Controller makes it easy to control DC motors from a Raspberry Pi (Model B+ or newer) through an I²C interface. Each module can independently control up to three motors, and multiple Motoron boards can be stacked on top of the same Raspberry Pi for projects that need to control even more motors. The M3H256 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**.

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Description   **Specs (15)**   **Pictures (8)**   **Resources (5)**   FAQs (0)   **On the blog (2)**   **Distributors (26)**

Overview

The Motoron M3H256 add-on board makes it easy to control up to three bidirectional, brushed DC **motors** with a compatible Raspberry Pi (Model B+ or newer). It supports motor supply voltages from 4.5 V to 48 V and can deliver continuous output currents up to 2 A per motor. The M3H256 is designed to stack on top of a Raspberry Pi (Model B+ or newer), similar to a HAT (Hardware Attached on Top), and 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 **expansion boards for Raspberry Pi**, the Motoron does not require any PWM outputs on your Raspberry Pi. Instead, the Raspberry Pi communicates with the Motoron using I²C, so only two GPIO pins are needed regardless of how many Motorons you connect.
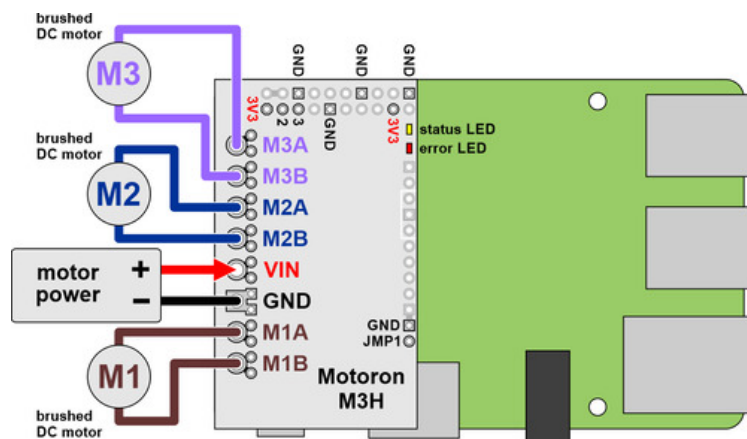

Three M3H256 versions are available to provide different options for the through-hole connectors:

- **Motoron M3H256 with soldered stackable headers and terminal blocks**

- **Motoron M3H256 with headers and terminal blocks included but not soldered in**

- **Motoron M3H256 without any headers, terminal blocks, or mounting hardware included**

For applications using an Arduino or compatible controller, consider the **Motoron M3S256** instead (also available with different connector options).
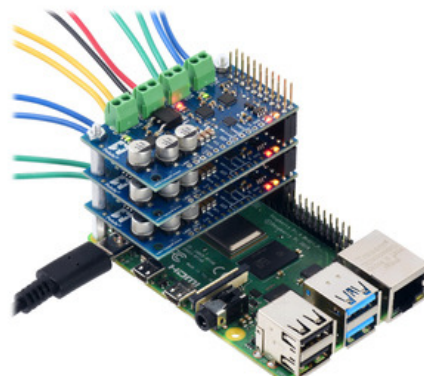
Details for item #5033
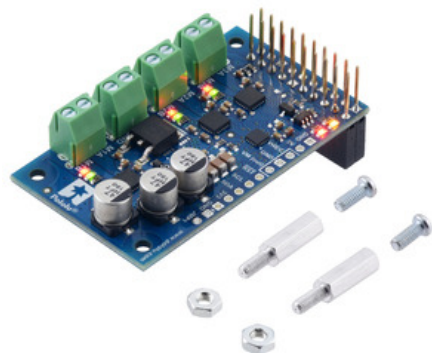
Motoron M3H256 Triple Motor Controller for Raspberry Pi (Connectors Soldered).

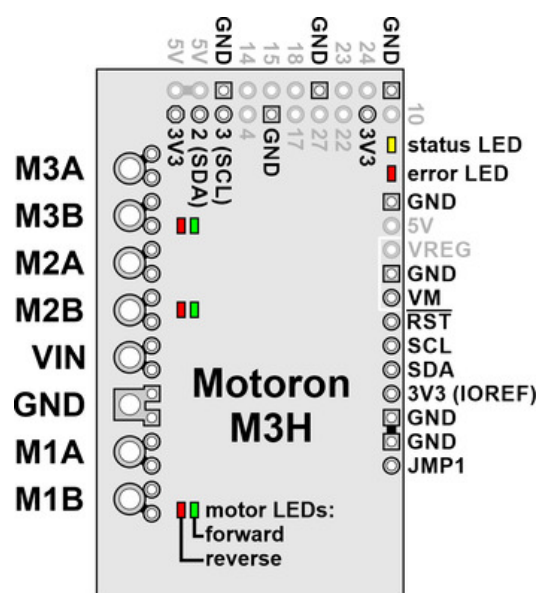**A Motoron M3H256 being controlled by a Raspberry Pi.**

Three Motoron M3H256 controllers being controlled by a Raspberry Pi.

This version of the Motoron M3H256 ships **with soldered stackable headers and terminal blocks**. It includes a set of two **M2.5 standoffs** (11 mm length), **screws**, and **nuts** that can be used to secure the board at the proper height for the GPIO connector.

Features and specifications

Motoron M3H256 or M3H550 Triple Motor Controller for Raspberry Pi pinout.

- 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

- PWM frequency: eight options available from 1 kHz to 80 kHz

- Command timeout feature stops motors if the Raspberry Pi stops communicating

- Configurable automatic error response

- Motor power supply (VIN) voltage measurement

- Optional pins make it easy to power the Raspberry Pi from reverse-protected motor power through an **external regulator** (not included)

- Two status LEDs

- Motor direction indicator LEDs

- **Motoron Python library** simplifies using the Motoron with Python or MicroPython

- 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 **M1U550**	**M2T550** **M2U550**	**M1T256** **M1U256**	**M2T256** **M2U256**
Control interface:	I²C 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:	• **headers soldered** • **headers included**	• **headers soldered** • **headers included**	• **headers soldered** • **headers included**	• **headers soldered** • **headers included**
Available verions with UART serial:	• **headers soldered** • **headers included**	• **headers soldered** • **headers included**	• **headers soldered** • **headers included**	• **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 <u>not</u> recommended for use with 5V nominal logic.

Motoron motor controllers Arduino and Raspberry Pi form factor versions						
	M3S550 **M3H550**	**M3S256** **M3H256**	**M2S24v14** **M2H24v14**	**M2S24v16** **M2H24v16**	**M2S18v18** **M2H18v18**	**M2S18v20** **M2H18v20**
Control interface:	I²C					
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 **M3H550** 3.0 V to 4.9 V[1]	3.0 V to 5.5 V	3.0 V to 5.5 V			
Current sensing/limiting:	–	–	✔	✔	✔	✔
Available versions for Arduino:	**M3S550** • **assembled** • **kit** • **board only**	**M3S256** • **assembled** • **kit** • **board only**	**M2S24v14** • **assembled** • **kit** • **board only**	**M2S24v16** • **assembled** • **kit** • **board only**	**M2S18v18** • **assembled** • **kit** • **board only**	**M2S18v20** • **assembled** • **kit** • **board only**

Available versions for Raspberry Pi:	M3H550	M3H256	M2H24v14	M2H24v16	M2H18v18	M2H18v20
	• **assembled** • **kit** • **board only**	• **assembled** • **kit** • **board only**	• **assembled** • **kit** • **board only**	• **assembled** • **kit** • **board only**	• **assembled** • **kit** • **board only**	• **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 <u>not</u> recommended for use with 5V nominal logic.