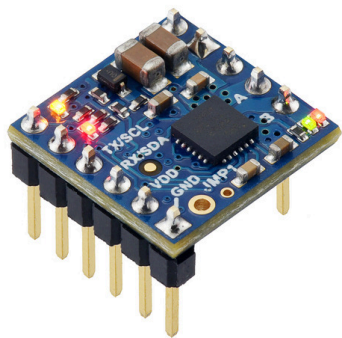# Motoron M1T256 Single I²C Motor Controller (Header Pins Soldered)

Pololu item #: 5060
Brand: Pololu   **supply outlook**
Status: Active and Preferred ❓
✔ **RoHS 3**

Price break	Unit price (US$)
1	18.95
5	17.43
25	16.04
100	14.76

Quantity: [1]   Add to cart

backorders allowed   Add to list

The Motoron M1T256 Single I²C Motor Controller offers a compact solution for controlling one DC motor using an **I²C interface**. Multiple Motoron controllers can be connected to the same I²C bus, making it easy to expand a system with additional motors. The M1T256 supports motor supply voltages from 4.5 V to 48 V and can deliver continuous output currents up to 2.2 A. This version ships **with soldered headers**.

Alternatives available with variations in these parameter(s):   control interface   header pins soldered?   **Select variant…**

.

Description   **Specs (15)**   **Pictures (8)**   **Resources (6)**   FAQs (0)   On the blog (0)   **Distributors (23)**

Overview

The Motoron M1T256 and M1U256 controllers make it easy to control a single bidirectional, brushed DC **motor** using an I²C or TTL serial (UART) interface, respectively. These compact (0.6″ × 0.6″) boards support motor supply voltages from 4.5 V to 48 V and can deliver continuous output currents up to 2.2 A. Multiple Motoron controllers can be configured to work on a single I²C or serial bus, allowing independent control of many motors. Unlike most of our **motor drivers**, the Motoron does not require any PWM outputs or timers on your microcontroller. Instead, only a single I²C or UART interface is needed regardless of how many Motorons you connect.
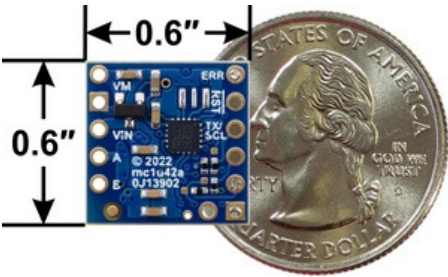
These Motoron controllers are available in several versions with different combinations of communication interfaces and connector options:

- M1**T**256 (I²C):
  - **headers soldered**
  - **headers included but not soldered in**
- M1**U**256 (TTL serial):
  - **headers soldered**
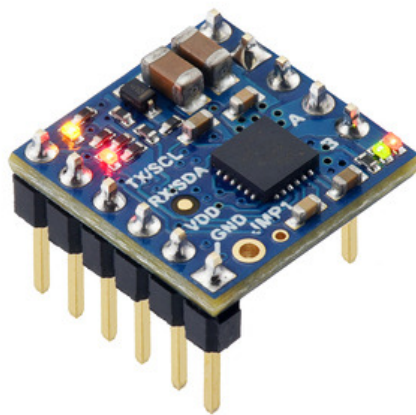 - **headers included but not soldered in**

For dual-channel alternatives, consider the Motoron **M2T256** and **M2U256**.

Details for item #5060
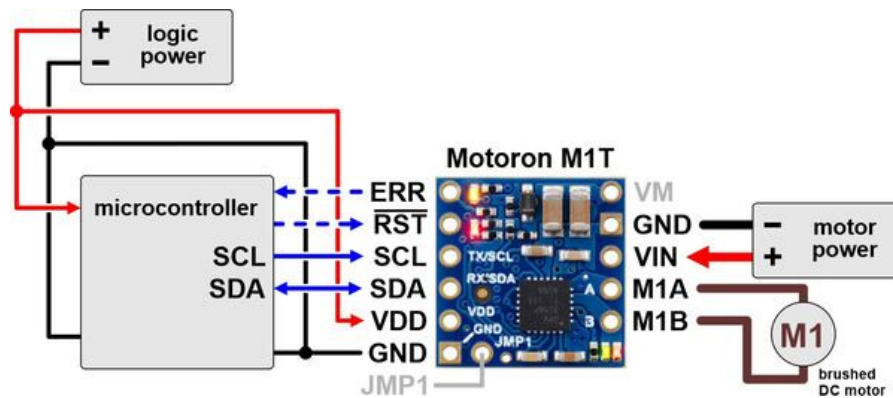
Typical wiring diagram for connecting a microcontroller to a Motoron M1T256/M1T550 Single I²C Motor Controller.

The **M1T256** has an **I²C** interface, and this version ships **with soldered headers**.

Motoron M1T256/M1U256 Single Motor Controller (Header Pins Soldered).
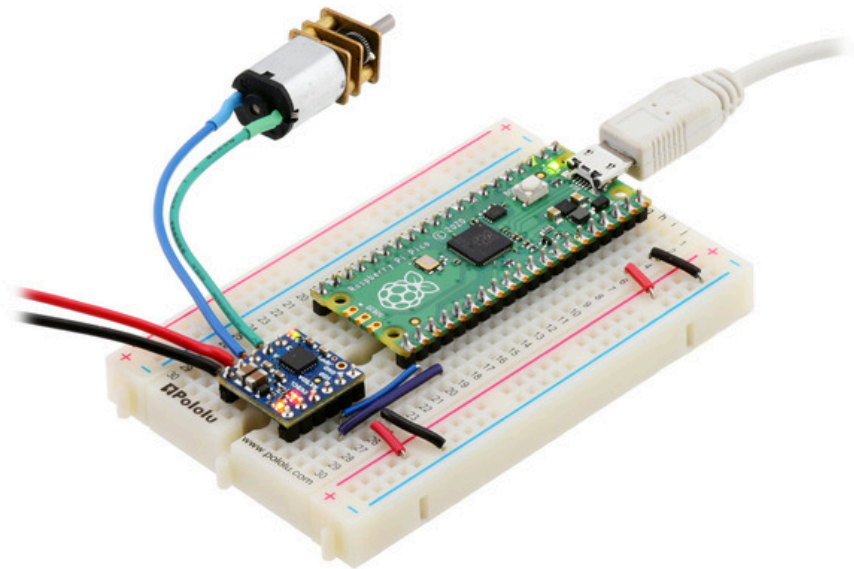

Motoron M1T256 Single I²C Motor Controller, bottom view.

Features and specifications

- One motor control channel allows for control of one bidirectional brushed DC motor 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: 2.2 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:
  - M1T256: I²C (up to 400 kHz)
  - M1U256: non-inverted TTL serial (up to 250 kbps)

- 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 the motor if the Motoron stops receiving commands

- Configurable automatic error response

- Motor power supply (VIN) voltage measurement

- Two status LEDs

- Motor direction indicator LEDs

- Error output for easier detection of error conditions
- **Motoron Arduino library** simplifies using the Motoron with an Arduino or compatible controller
- **Motoron Python library** simplifies using the Motoron with Python or MicroPython
- Comprehensive **user's guide**
- Compact 0.6″ × 0.6″ size

A Raspberry Pi Pico on a breadboard using a Motoron M1T256/M1U256 Motor Controller to control a motor.

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	**M3S256**	**M2S24v14**	**M2S24v16**	**M2S18v18**	**M2S18v20**
	M3H550	**M3H256**	**M2H24v14**	**M2H24v16**	**M2H18v18**	**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 • **assembled** • **kit** • **board only**	M3H256 • **assembled** • **kit** • **board only**	M2H24v14 • **assembled** • **kit** • **board only**	M2H24v16 • **assembled** • **kit** • **board only**	M2H18v18 • **assembled** • **kit** • **board only**	M2H18v20 • **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.