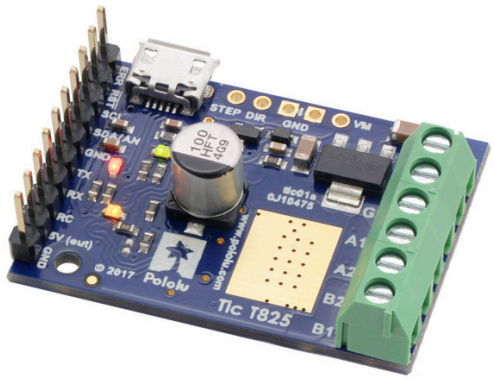
Tic T825 USB Multi-Interface Stepper Motor Controller (Connectors Soldered)



Pololu item #: 3130 **202** in stock
Brand: Pololu **supply outlook**
Status: Active and Preferred
✓RoHS 3
Free add-on shipping in USA
Free shipping in USA over $75

Price break	Unit price (US$)
1	41.95
5	38.59
25	35.51
100	32.67

Quantity: 1 Add to cart
backorders *allowed* Add to list

The Tic T825 USB Multi-Interface Stepper Motor Controller makes basic control of a stepper motor easy, with quick configuration over USB using our free software. The controller supports six control interfaces: USB, TTL serial, I²C, analog voltage (potentiometer), quadrature encoder, and hobby radio control (RC). This version incorporates a TI DRV8825 driver and ships with **soldered header pins and terminal blocks**. It can operate from **8.5 V to 45 V** and can deliver up to approximately 1.5 A per phase without a heat sink or forced air flow (or 2.5 A max with sufficient additional cooling).

Alternatives available with variations in these parameter(s): model connectors soldered? **Select variant…**

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Description **Specs (15)** **Pictures (8)** **Resources (16)** **FAQs (1)** **On the blog (6)** **Distributors (33)**

Overview

The Tic family of stepper motor controllers makes it easy to add basic control of a **bipolar stepper motor** to a variety of projects. These versatile, general-purpose modules support six different control interfaces: USB for direct connection to a computer, TTL serial and I²C for use with a microcontroller, RC hobby servo pulses for use in an RC system, analog voltages for use with a potentiometer or analog joystick, and quadrature encoder for use with a rotary encoder dial. They also offer many settings that can be configured using our free configuration utility

(for Windows, Linux, and macOS). This software simplifies initial setup of the device and allows for in-system testing and monitoring of the controller via USB (a **micro-B USB cable** is required to connect the Tic to a computer).

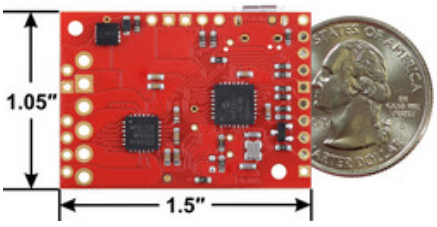
The table below lists the members of the Tic family and shows the key differences among them.

	 **Tic T500**	 **Tic T834**	 **Tic T825**	 **Tic T249**	 **Tic 36v4**
Operating voltage range:	4.5 V to 35 V(1)	2.5 V to 10.8 V	8.5 V to 45 V(1)	10 V to 47 V(1)	8 V to 50 V(1)
Max continuous current per phase (no additional cooling):	1.5 A	1.5 A	1.5 A	1.8 A	4 A
Peak current per phase (additional cooling required):	2.5 A	2 A	2.5 A	4.5 A	6 A
Microstep resolutions:	full half 1/4 1/8	full half 1/4 1/8 1/16 1/32	full half 1/4 1/8 1/16 1/32	full half 1/4 1/8 1/16 1/32	full half 1/4 1/8 1/16 1/32 1/64 1/128 1/256
Automatic decay selection:	✓			✓	✓
Automatic gain control (AGC):				✓	
Driver IC:	MP6500	DRV8834	DRV8825	TB67S249FTG	discrete MOSFETs
Price (connectors not soldered):	**$29.95**	**$39.95**	**$39.95**	**$49.95**	**$59.95**
Price (connectors soldered):	**$31.95**	**$41.95**	**$41.95**	**$51.95**	**$61.95**

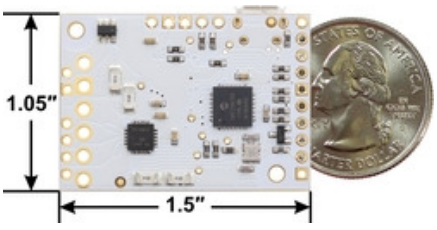
1 See product pages and user's guide for operating voltage limitations.

Features and specifications

- Open-loop speed or position control of one bipolar stepper motor
- A variety of control interfaces:
  - **USB** for direct connection to a computer
  - **TTL serial** operating at 5 V for use with a microcontroller
  - **I²C** for use with a microcontroller
  - **RC hobby servo pulses** for use in an RC system
  - **Analog voltage** for use with a potentiometer or analog joystick
  - **Quadrature encoder** input for use with a rotary encoder dial, allowing full rotation without limits (*not* for position feedback)
  - **STEP/DIR** inputs for compatibility with existing stepper motor control firmware
- Acceleration and deceleration limiting
- Maximum stepper speed: 50,000 steps per second

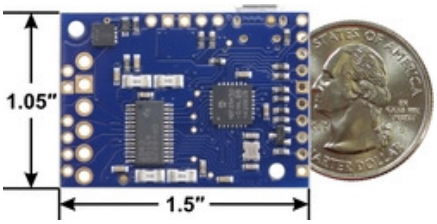


Tic T500 USB Multi-Interface Stepper Motor Controller, bottom view with dimensions.

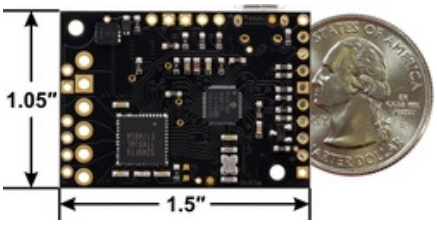


Tic T834 USB Multi-Interface Stepper Motor Controller, bottom view with dimensions.

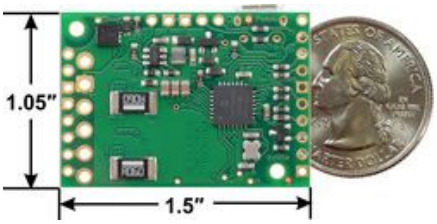
- Very slow speeds down to 1 step every 200 seconds (or 1 step every 1428 seconds with reduced resolution).
- Selectable microstep modes up to 1/256-step resolution:
  - The Tic 36v4 supports full-step to 1/256-step modes
  - The Tic T825, Tic T834, and T249 support full-step to 1/32-step modes
  - The Tic T500 supports full-step to 1/8-step modes
- Digitally adjustable current limit
- Optional safety controls to avoid unexpectedly powering the motor
- Input calibration (learning) and adjustable scaling degree for analog and RC signals
- 5 V regulator (no external logic voltage supply needed)
- Optional limit switch inputs with homing capabilities
- Optional kill switch inputs
- STEP/DIR outputs for controlling external stepper motor drivers
- Connects to a computer through USB via a **USB A to Micro-B cable** (not included)
- Free configuration software available for Windows, Linux, and macOS
- **Arduino library** makes it easy to get started using these controllers with an **Arduino** or compatible board
- Comprehensive **user's guide**



Tic T825 USB Multi-Interface Stepper Motor Controller, bottom view with dimensions.

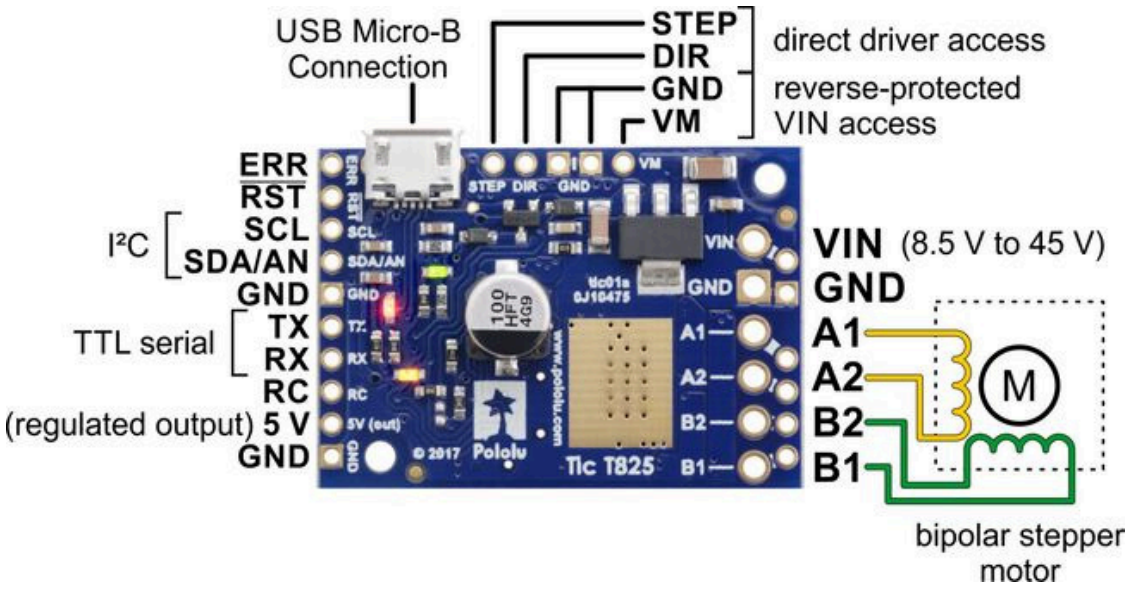


Tic T249 USB Multi-Interface Stepper Motor Controller, bottom view with dimensions.

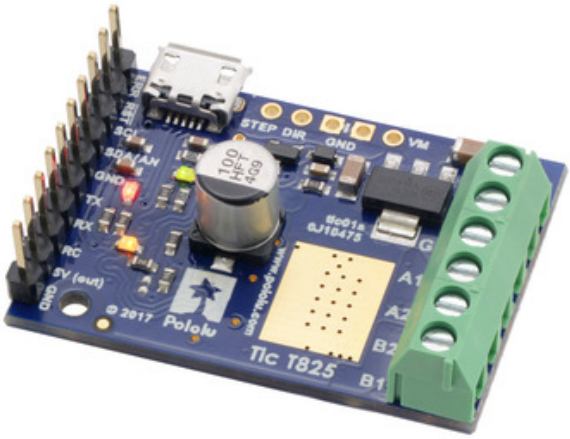


Tic 36v4 USB Multi-Interface High-Power Stepper Motor Controller, bottom view with dimensions.

Details for item #3130



The Tic T825 is based on the DRV8825 IC from Texas Instruments. It can operate from **8.5 V to 45 V** and can deliver up to approximately 1.5 A per phase without a heat sink or forced air flow (absolute maximum is 2.5 A per phase). It has reverse protection for motor power supplies up to 40 V. This version is sold with **connectors soldered** so no soldering is necessary to use it.



Tic T825 USB Multi-Interface Stepper Motor Controller (Connectors Soldered).

A version is also available with header pins and terminal blocks **included but not soldered**.

People often buy this product together with:

Pololu Stamped Aluminum L-Bracket for NEMA 17 Stepper Motors

Stepper Motor: Bipolar, 200 Steps/Rev, 42×38mm, 2.8V, 1.7 A/Phase

Tic T834 USB Multi-Interface Stepper Motor Controller (Connectors Soldered)