TMC-USB Series Stepper Motion Controllers, 2 or 4 Axes, USB, 4 MHz Pulse Output

Model TMC-USB Series · waveqvanta.com/products/tmc-usb-series-stepper-motion-controllers

USB stepper-motor controllers for 2 or 4 axes with interpolation and LabVIEW-based control software.



The TMC-USB series are USB-connected pulse controllers for two or four stepping-motor axes. The LabVIEW-based control software is easy to operate and supports secondary development for integration into existing systems; parameters for compatible stages are stored in the controller, so a stage can be run as soon as its model is selected. Axes can be driven individually or together, and the controller can take the place of a PLC in automated production lines and experimental setups.

Key features

- 2- or 4-channel stepping-motor pulse output, optocoupler isolated, up to 4 MHz
- Linear interpolation on any 2 to 3 axes, circular interpolation on any 2 axes, continuous interpolation
- Speed can be changed during motion; logic position, real position, speed and acceleration readable in real time
- Per-axis inputs for left/right limit and origin sensors, plus A/B-phase encoder inputs
- Up to 8 optocoupler inputs and 8 open-collector outputs per axis
- Software displays the parameters of all axes on one screen
- Front-panel emergency stop (halts all axes), power indicator and USB port

Specifications

Axes	2 or 4 stepping-motor axes, pulse output, optocoupler isolated
Max Output Frequency	4 MHz
Interpolation	Linear on any 2–3 axes; circular on any 2 axes
Continuous Interpolation	Yes
Acceleration / Deceleration	Linear
Position Counter	32-bit
Speed Change During Motion	Yes
Readable During Motion	Logic position, real position, drive speed, acceleration
Position Detection	Independent left/right limit and origin sensor inputs per axis
Digital Inputs	Up to 8 optocoupler inputs per axis
Encoder Inputs	A/B-phase pulse inputs, optocoupler isolated
Digital Outputs	Up to 8 open-collector optocoupler outputs per axis
PC Interface	USB
Software	LabVIEW-based control software; supports secondary development
Power Supply	220 V AC ±10%, 45–65 Hz
Operating Temperature	0–50 °C
Storage Temperature	−20 to 80 °C
Operating Humidity	20–95%
Storage Humidity	0–95%

Front Panel	Emergency stop switch, power indicator

Typical applications

- Automated production lines
- Automated experimental equipment
- Multi-axis motorized stage systems
- Scanning and positioning in optical setups