

Dual axis stepper module

STEPPER

M1-50A

2 axes microstepping controller

- ▶ High-speed 32-bit motion processor
- ▶ Step rates up to 1 million steps/sec
- ▶ Eight general purpose inputs

General specifications

Number of axes	2
Number of inputs	8
Connector	Removable
Connection type	Screw terminal
Terminal wire size	14 – 22 AWG
Test point	All connections
Status indicator	Step, dir, inputs
Module size	2 controller bays

Isolation rating	500 VDC
Operating temperature	
Horizontal installation ¹	0 - 50°C
Vertical installation ¹	0 - 45°C
Storage temperature	-25 – 85°C
Humidity	5 – 95% non-condensing
5100 equivalent part number	TT

1. Refer to the applicable controller datasheet for proper mounting instructions.

Performance specifications

Motion

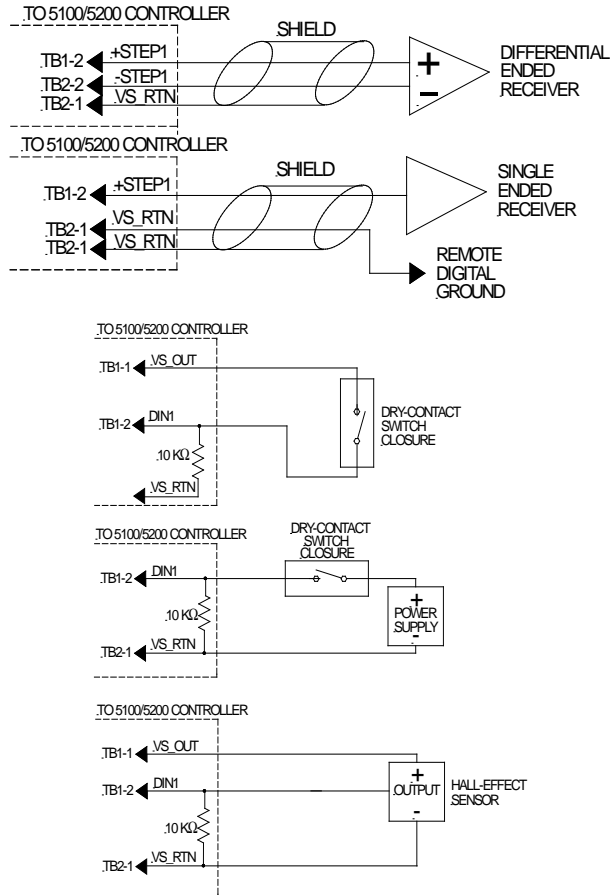
Parameter	Value
Position range	±2,147,483,647 steps
Position resolution	±1 step
Velocity range	±1M steps/sec
Velocity resolution	±1 step/sec
Max acceleration	130 M steps/sec ²
Position loop update	500 µsec/2 axes
Command type	Step/directions
Command signal voltage ¹	
Open circuit (0 mA)	±5 V differential
Full load (±20 mA)	±200 mV
Leakage current	100 µA

1. RS-485 compliant.

Inputs

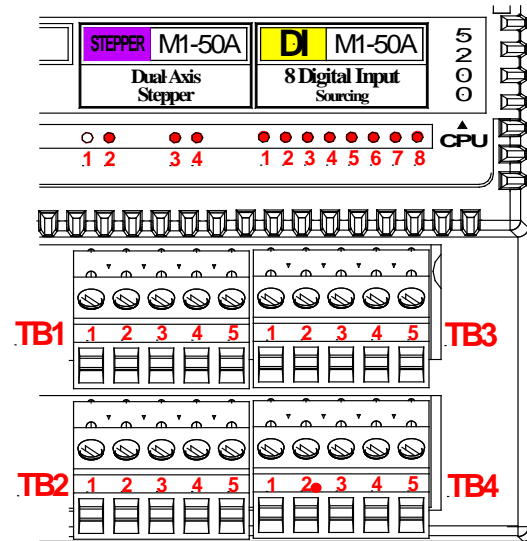
Parameter	Value
Minimal voltage (VN)	24 VDC
Turn ON threshold	0.73 * VS
Turn OFF threshold	0.61 * VS
Maximum current	1.2 mADC @ 24 VDC
Input resistance	20 KΩ ±10%
Hardware filter	1 mSec

Typical Application



	5100	5200
Minimum hardware revision	B, C	B, C
Minimum firmware revision	4.18	4.18
Minimum operating system revision	4.04	5.06
Document number: 950-515002-0003		

Connections



I/O Terminations

TB1-1		VS_OUT	TB3-1		VS_OUT
TB1-2	LED1	+STEP1	TB3-2	LED1	Din #1
TB1-3	LED2	+DIR1	TB3-3	LED3	Din #3
TB1-4	LED3	+STEP2	TB3-4	LED5	Din #5
TB1-5	LED4	+DIR2	TB3-5	LED7	Din #7
TB2-1		VS_RTIN	TB4-1		VS_RTIN
TB2-2		-STEP1	TB4-2	LED2	Din #2
TB2-3		-DIR1	TB4-3	LED4	Din #4
TB2-4		-STEP2	TB4-4	LED6	Din #6
TB2-5		-DIR2	TB4-5	LED8	Din #8

Notes

- This is a double wide module, where TB1 and TB2 handle the stepper motion connections. TB3 and TB4 provide general purpose inputs.
- If an output is used to drive transistor loads, proper current limiting must be observed.
- When a digital device is powered via an external power source, it may be necessary to tie the ground of this power source to the controller's voltage supply return (VS_RTIN).
- For register and programming information, refer to the appropriate controller Applications Guide.
- The information and illustrations contained herein are the property of Control Technology Corporation and are subject to change without notice. Data based on VS = 24VDC @ 25°C unless otherwise noted. For additional information and/or updates visit www.ctc-control.com.
- VS refers to the voltage supply of the controller.