Manuals+ — User Manuals Simplified.

Applied Motion Products ST5-10-C Stepper Motor Driver User Guide

Contents

 Applied Motion Products ST5-10-C Stepper Motor Driver

Requirements

To begin, make sure you have the following equipment:

- A small flat blade screwdriver for tightening the connectors (included).
- A personal computer running Microsoft Windows 98, 2000, ME, NT, XP, Vista, 7/8/10/11.
- ST Configurator™ software (available at www.applied-motion.com).
- An RS-232 Applied Motion programming cable (included)
- 4 pin spring connector (included) for connecting to the CAN network.
- A compatible stepper motor
- For more detailed information, please download and read the ST-QSiC Hardware Manual, available at **www.applied-motion.com/support/manuals**.

Wiring

- Wire the drive to the DC power source.(Do not apply power.)
  Note, the ST5-C accepts DC voltages from 24-48V, while the ST10-C accepts DC voltages from 24-80V.
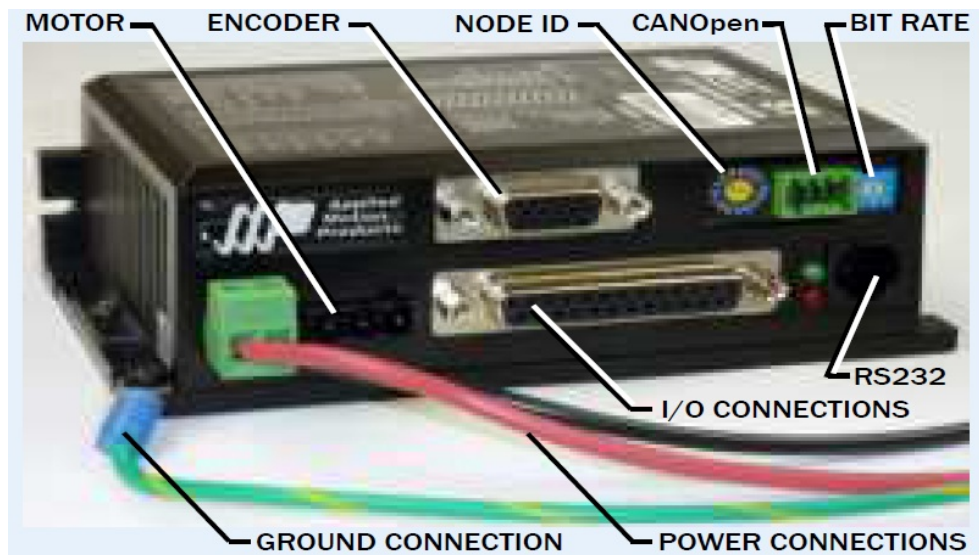
  If using an external fuse, we recommend the following:

  ST5-C: 7 amp fast acting

  ST10-C: 7 amp fast acting

  See the hardware manual for information about power supply selection.

  Ensure a proper earth ground connection by using the screw on the left side of the chassis.
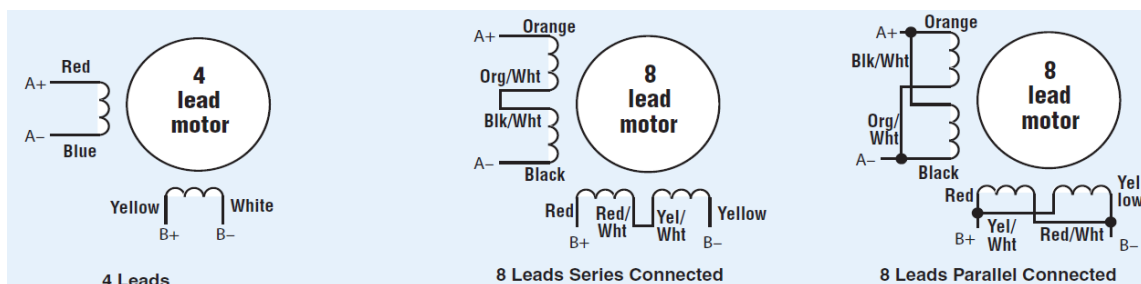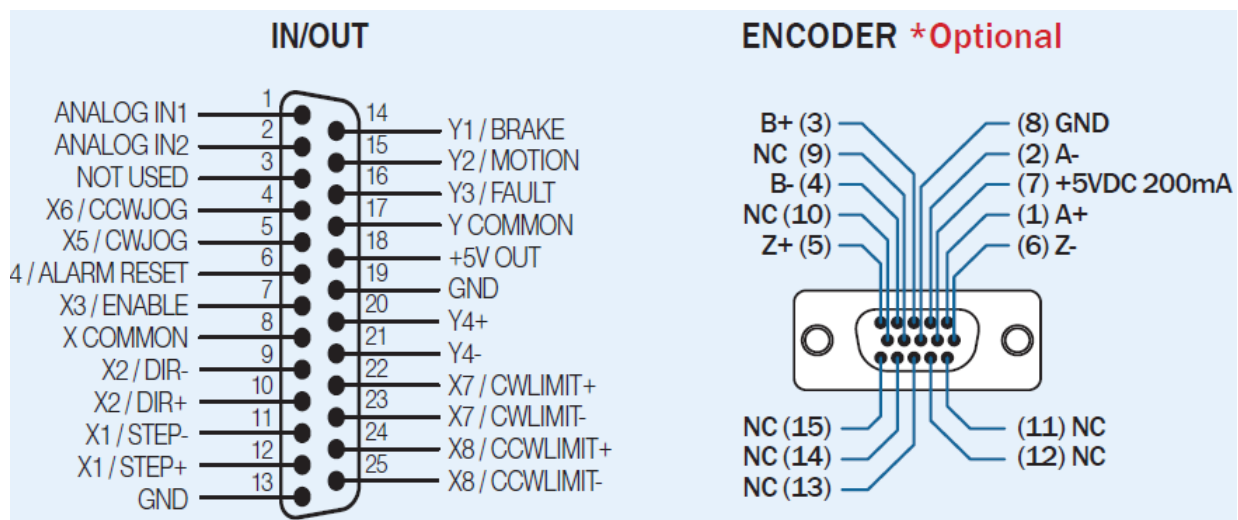
MOTOR — ENCODER — NODE ID — CANOpen — BIT RATE

RS232
I/O CONNECTIONS
GROUND CONNECTION — POWER CONNECTIONS

- Connect the drive to the motor.

  Warning – If you are using a non-Applied Motion motor, do not connect the motor until you have configured the drive for your motor.

  Refer to the wiring diagrams below. For details and recommended motors, see the ST-QSiC Hardware Manual.
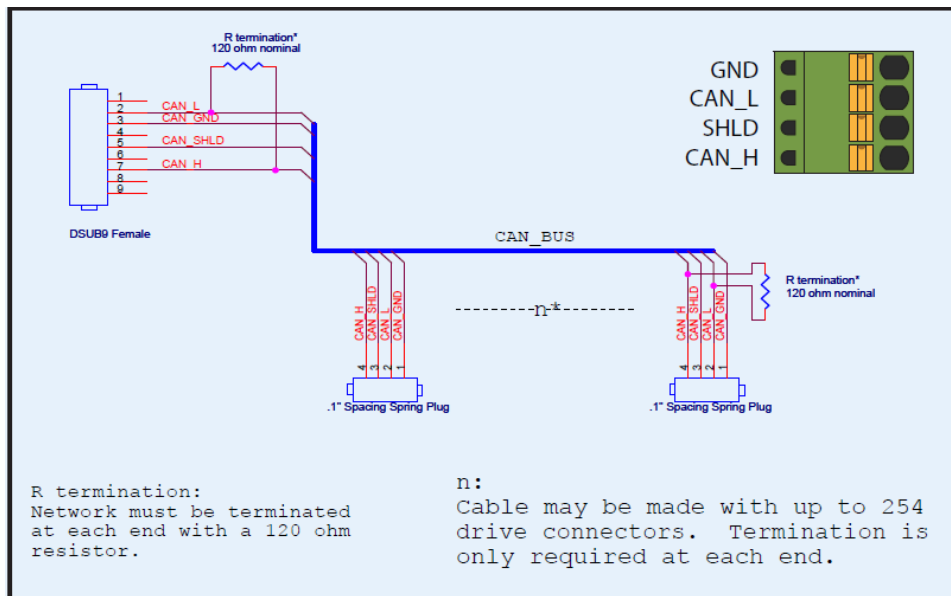
- Connect the I/O

- Connect the Encoder (optional)

IN/OUT

ANALOG IN1	1	14	Y1 / BRAKE
ANALOG IN2	2	15	Y2 / MOTION
NOT USED	3	16	Y3 / FAULT
X6 / CCWJOG	4	17	Y COMMON
X5 / CWJOG	5	18	+5V OUT
4 / ALARM RESET	6	19	GND
X3 / ENABLE	7	20	Y4+
X COMMON	8	21	Y4-
X2 / DIR-	9	22	X7 / CWLIMIT+
X2 / DIR+	10	23	X7 / CWLIMIT-
X1 / STEP-	11	24	X8 / CCWLIMIT+
X1 / STEP+	12	25	X8 / CCWLIMIT-
GND	13		

ENCODER *Optional

B+ (3)	(8) GND
NC (9)	(2) A-
B- (4)	(7) +5VDC 200mA
NC (10)	(1) A+
Z+ (5)	(6) Z-
NC (15)	(11) NC
NC (14)	(12) NC
NC (13)	

4 Leads — 4 lead motor: A+ Red, A− Blue, B+ Yellow, B− White

8 Leads Series Connected — 8 lead motor: A+ Orange, Org/Wht, Blk/Wht, A− Black, Red, Red/Wht B+, Yel/Wht, Yellow B−

8 Leads Parallel Connected — 8 lead motor: A+ Orange, Blk/Wht, Org/Wht, A− Black, Red, Yel/Wht B+, Red/Wht, Yellow B−

CAN Open Setup

- **Connect to CAN network.**

  Applied Motion Products ST5/10-C drives use a four-pin spring connector, that conforms to the DR303 specification. The connector should be wired in a daisy-chain configuration with a 120 Ohm resistor used to terminate each end.

R termination:
Network must be terminated at each end with a 120 ohm resistor.

n:
Cable may be made with up to 254 drive connectors. Termination is only required at each end.

- **Set Bitrate, Node ID**

CANopen Bitrate – AMP CANopen drives have three settings, one for Bit Rate and two for Node ID. The Bit Rate is configured using an eight-position switch. See Bit Rate table for the Bit Rate settings. The Node ID is configured using a sixteen position switch to set up the lower four bits of the Node ID. The upper three bits of the Node ID are set using an additional 8 position switch located under the cover on the CANopen motherboard. Valid ranges for the Node ID are 0x01 through 0x7F. Node ID 0x00 is reserved in accordance with the DS301 specification.

Note: The Node ID and Bit Rate are captured only after a power cycle, or after a network reset command has been sent. Changing the switches while the drive is powered on will NOT change the Node ID or Bit Rate until one of these conditions has been met.

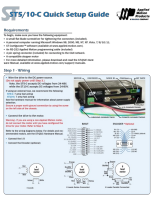| Switch Setting	Resultant Bit Rate
0	1 Mbps
1	800kbps
2	500 kbps
3	250 kbps
4	125 kbps
5	50 kbps
6	20 kbps
7	12.5 kbps
8	n/a

Bit Rate Table

Configuration

- Connect the drive to your PC using the RS-232 programming cable.
- Download and install ST Configurator™ software, available at **www.applied-motion.com**.
- Launch the software by clicking Start/Programs/Applied Motion Products/ST Configurator
- Apply power to the drive.
- Use the ST Configurator™ to set up the motor current, load iner- tia, limit switches and encoder functionality (if applicable).
- The ST Configurator™ includes a self test option (under the Drive menu) to verify that the ST5/10-C and motor are correctly wired and configured.

- When configuration is complete, exit ST Configurator™. The drive will automatically switch to CANopen Mode.

Documents / Resources

Applied Motion Products ST5-10-C Stepper Motor Driver [pdf] User Guide
ST5-10-C Stepper Motor Driver, ST5-10-C, Stepper Motor Driver, Motor Driver, Driver

References

- **Applied Motion**
- **Product Manuals by Type | Applied Motion**