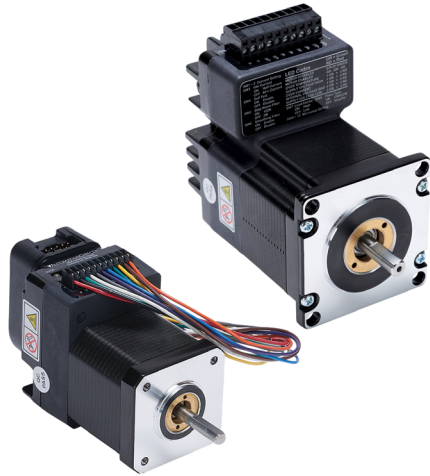


Standard Integrated Microstepping Motor and Drive (Non-SCL)
Quick Start Guide



Requirements:

Each model accepts the following DC voltages:

- STP-MTRD-17x: 12-48 VDC
- STP-MTRD-23x: 12-70 VDC

If using an external fuse, the following slow blow fuses are recommended:

- STP-MTRD-17x: 2 amp
- STP-MTRD-23x: 4 amp

Control wiring connections:

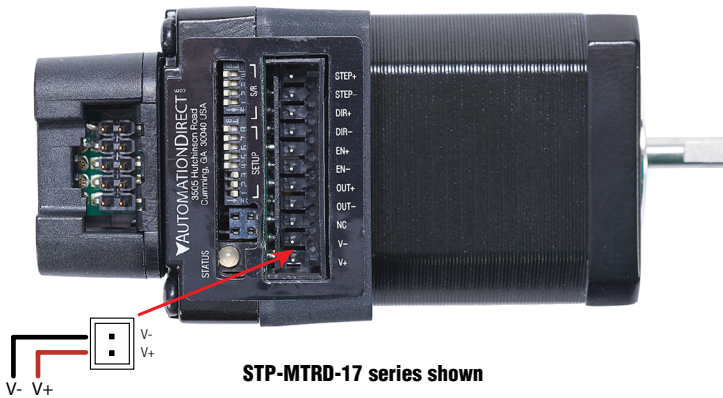
- STP-MTRD-17x: Includes a removable 11-pin IDC connector with 12" leads. Long pre-made control cables are available (STP-CLB-CAx)
- STP-MTRD-23x: Includes a removable 10-pin field wireable connector (screw terminals).

Step 1:



Do not apply power until all connections to the drive have been made.

Per the diagrams below, connect fused DC power to the V+ terminal on the STP-MTRD, and DC Common to the V- terminal on the STP-MTRD. Note that the NEMA 23 V+ and V- connector locations are the same as the NEMA 17 (pictured).



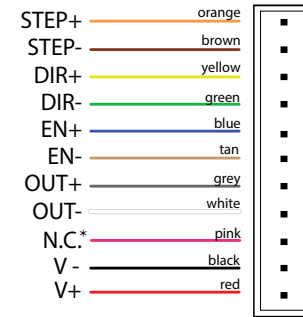
Step 2:

Connect input signals to the drive. STEP and DIR are required, EN and OUT are optional.

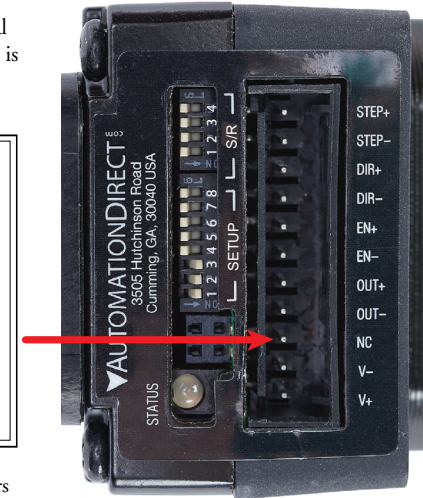
See the User Manual for circuit connection details and examples (<https://cdn.automationdirect.com/static/manuals/surestepmanual/surestepmanual.html>).

STP-MTRD-17x: 11-pin connector. Color code is for 12" IDC cable (included w/motor) and optional STP-CBL-CAxx cables.

STP-MTRD-23x: 10-pin screw terminal. Pinout is identical to NEMA 17 version, except the "N.C." is not present.

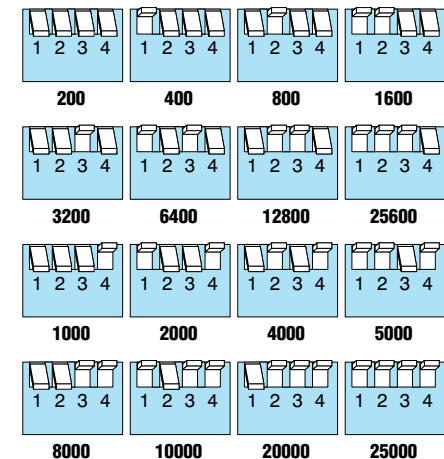


* Not present on NEMA 23 motors



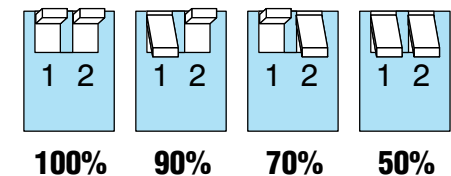
Step 3:

In the "S/R" (Steps/Revolution) DIP switch bank, select the desired step resolution (steps/rev) using switches 1-4, located on the upper block of four switches (pictured above).



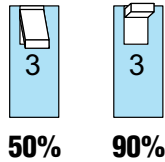
Step 4:

In the "SETUP" DIP switch bank, set the motor's running current using switches 1 and 2. This is the percentage of full current that the motor will use when the shaft is rotating.



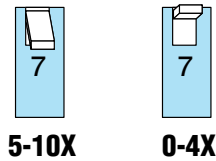
Step 5:

In the "SETUP" DIP switch bank, set the motor's idle current using switch 3. This is the percentage of running current that the motor will use when the shaft is not rotating. Choose 90% for maximum holding torque or 50% to reduce motor heating.



Step 6:

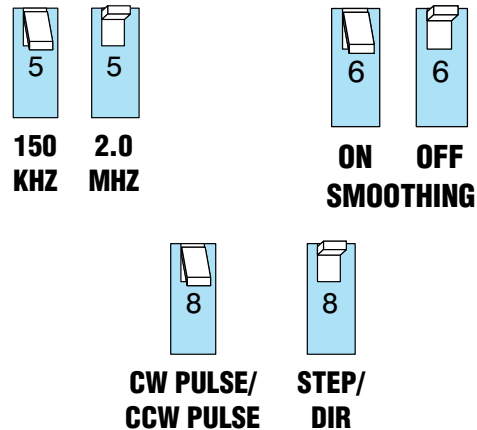
In the "SETUP" DIP switch bank, select the load-to-motor ratio category using switch 7. This is the ratio of the effective load inertia to the motor's own rotor inertia. For high inertia loads choose 5-10X, and for low inertia loads choose 0-4X. Setting the proper range for the load will improve motor smoothness.



Step 7:

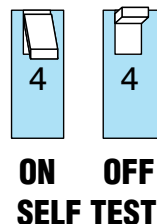
Optional settings in the "SETUP" DIP switch bank—the default settings for these switches are typically sufficient. See the User Manual for details on these functions.

- A. [Switch 5] Step Pulse Noise Filter
- B. [Switch 6] Step Smoothing Filter
- C. [Switch 8] Step Pulse Type (Step/Direction is default)



Step 8:

Optionally, you can test motor operation by activating switch 4 in the "SETUP" DIP switch bank to initiate a self test. The self test continually rotates the motor forward and backward 2 1/2 revolutions.

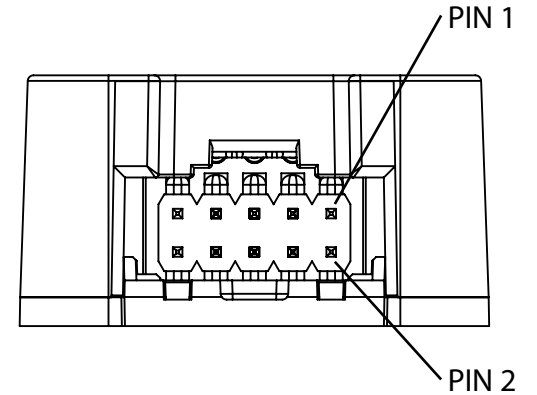


Optional Encoder:

An optional encoder is available pre-mounted on "E" models. The standard encoder is a 1000ppr, Differential line driver encoder. See below for pinouts and wire colors for the replacement cable (STP-CBL-EAxx) and included cable with the STP-MTRD.

For more information on the encoder, please see the Sure Step User Manual. Replacement encoder part number is STP-MTRA-ENC1.

CONNECTION TABLE		
CONN	LEAD COLOR	SIGNAL
2	GREEN/WHITE	GROUND
7	GREEN	POWER+
3	ORANGE/WHITE	Z-
4	ORANGE	Z+
5	BLUE/WHITE	A-
6	BLUE	A+
9	BROWN/WHITE	B-
10	BROWN	B+
1	N/C	GROUND
8	N/C	POWER+



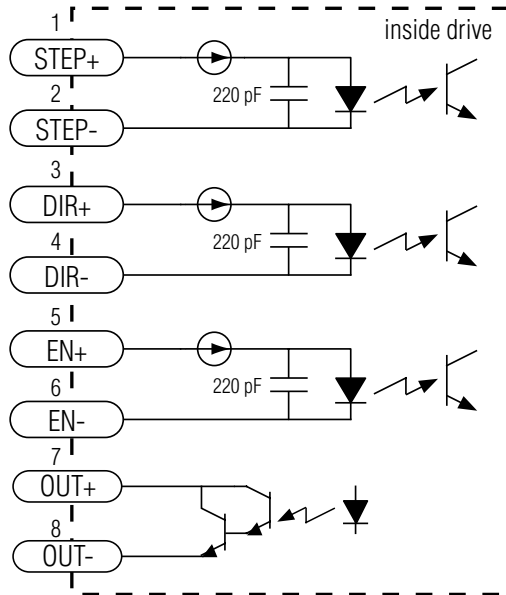
NOTE: PIN 1 AND PIN 2 ARE INTERNALLY CONNECTED. PIN 7 AND PIN 8 ARE INTERNALLY CONNECTED INSIDE THE ENCODER.



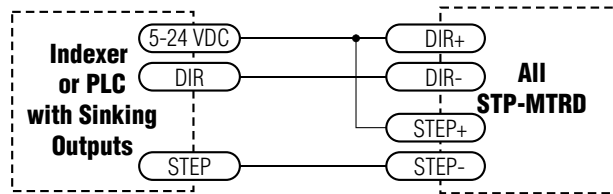
Additional Help and Support

- For product support, specifications, pricing and installation troubleshooting, a Hardware User Manual can be downloaded from the Online Documentation area of the AutomationDirect web site.
- For additional technical support and questions, call our Technical Support team @ 1-800-633-0405 or 770-844-4200.

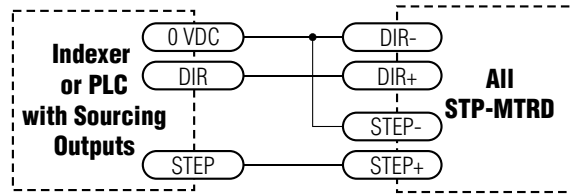
IO Connector



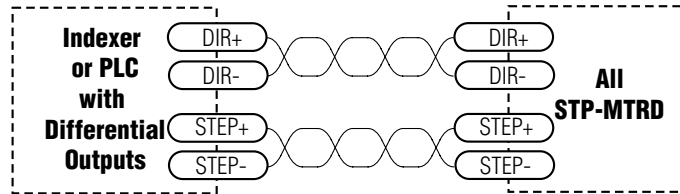
Digital Inputs



Connecting to indexer with Sinking Outputs

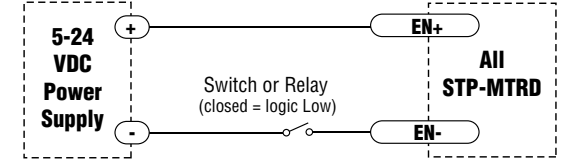


Connecting to indexer with Sourcing Outputs

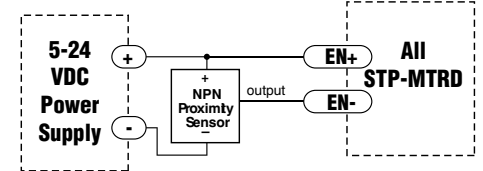


Connecting to indexer with Differential Outputs

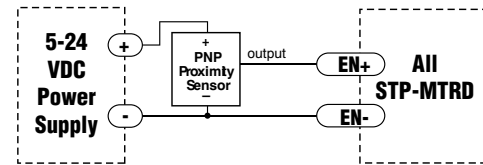
EN Input



Connecting the Input to a Switch or Relay

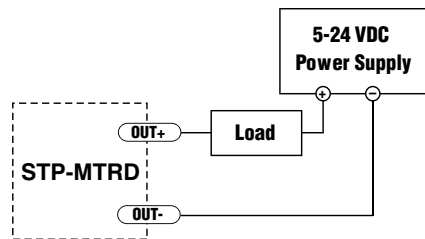


Connecting an NPN Type Proximity Sensor to an input
(When proximity sensor activates, input goes low).

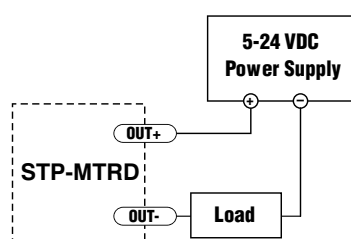


Connecting a PNP Type Proximity Sensor to an input
(When prox sensor activates, input goes low).

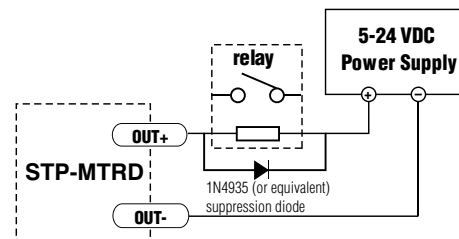
Digital Outputs



Connecting as a Sinking Output



Connecting as a Sourcing Output



Driving a Relay