▼AutomationDirect.com

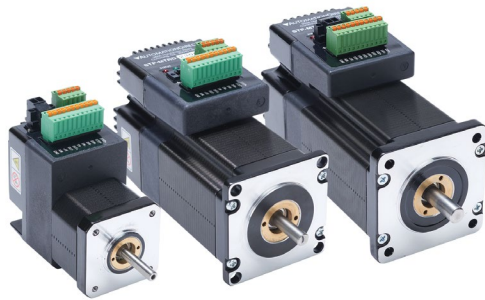### Sure step — Stepping Systems — STP-MTRD-xR(E)

Advanced Integrated Microstepping Motor and Drive
Quick Start Guide

Requirements:

Each model accepts the following DC voltages:

- STP-MTRD-17x: 12-48 VDC
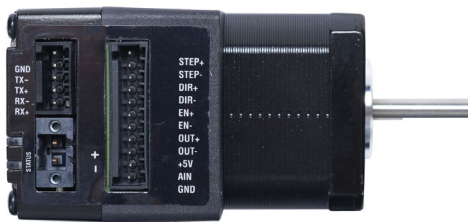- STP-MTRD-23x and 24x: 12-70 VDC

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

- STP-MTRD-17x: 2 amp
- STP-MTRD-23x: 4 amp
- STP-MTRD-24x: 5 amp

Step 1:

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

Connect fused DC power to the V+ terminal on the STP-MTRD, and DC Common to the V- terminal on the STP-MTRD.

Step 2:

A. Install the SureMotion Pro software (www.automationdirect.com/pn/SM-PRO).

B. Launch the SM-PRO software: Programs -> AutomationDirect -> SureMotion Pro.

C. Connect the drive to your PC using the RS-485 adapter (see below Step 3) and select the correct comm port in the drop down list. The default baud rate for STP-MTRD drives is 9600.

Step 3:

A. Apply power to the drive.

B. Follow the configuration instructions in the SureMotion Pro help screens. The SureMotion Pro software can be used to set up your drive to operate in several different modes such as Pulse & Direction, Analog Velocity, and SCL.

C. SureMotion Pro includes a self test option (under the Drive menu) to verify that the drive and power supply are correctly wired and configured. The motor shaft will rotate during self test if wired correctly.
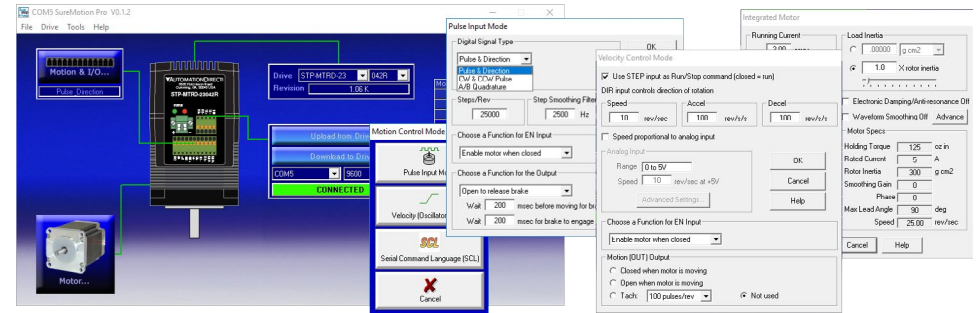
## Required USB to RS485 (4 wire) adapter and cable:

Available at AutomationDirect.com, STP-USB485-4W and STP-485DB9-CBL-2 are both required for connecting the STP-MTRD motor to SureMotion Pro. For further configuration options including internal jumper options, please see the STP-USB485-4W quick start guide.

For four wire RS-485, set dip switch SW2 to OFF and SW1,3,4 to ON. The switches are configured for four wire communications by default.

If the STP-485DB9-CBL-2 cable is not used you can alternately use the screw terminals. On the STP-USB485-4W adapter connections are shown below.

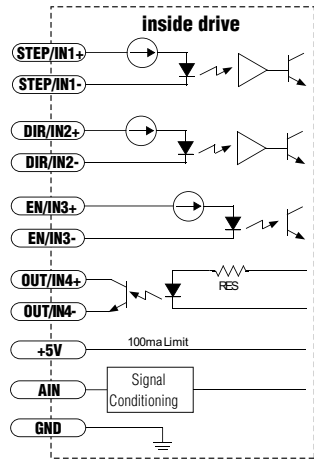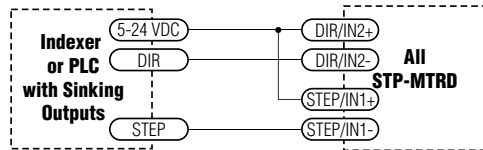| STP-USB485-4W	STP-MTRD Drive
Pin 1 (TX-)	RX-
Pin 2 (TX+)	RX+
Pin 3 (RX+)	TX+
Pin 4 (RX-)	TX-
Pin 5 (n/c)	n/c
Pin 6 (GND)	GND
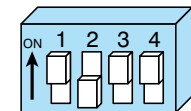
ON 1 2 3 4 — **4 Wire RS-485**

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.
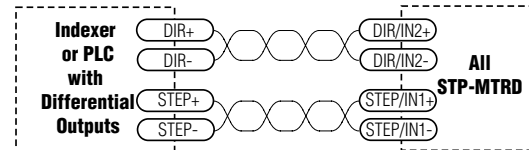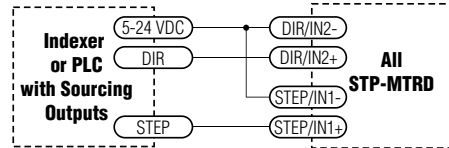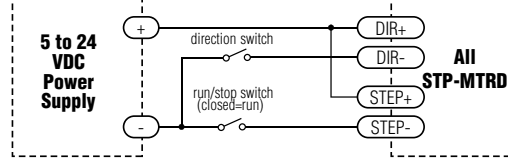
IO Connector

STEP/IN1+
STEP/IN1-
inside drive
DIR/IN2+
DIR/IN2-
EN/IN3+
EN/IN3-
OUT/IN4+   RES
OUT/IN4-
+5V   100ma Limit
AIN   Signal Conditioning
GND

Digital Inputs

Indexer or PLC with Sinking Outputs
5-24 VDC
DIR
STEP
DIR/IN2+
DIR/IN2-
STEP/IN1+
STEP/IN1-
All STP-MTRD

Connecting to indexer with Sinking Outputs

Indexer or PLC with Differential Outputs
DIR+
DIR-
STEP+
STEP-
DIR/IN2+
DIR/IN2-
STEP/IN1+
STEP/IN1-
All STP-MTRD

Connecting to indexer with Differential Outputs

Indexer or PLC with Sourcing Outputs
5-24 VDC
DIR
STEP
DIR/IN2-
DIR/IN2+
STEP/IN1-
STEP/IN1+
All STP-MTRD

Connecting to indexer with Sourcing Outputs

5 to 24 VDC Power Supply
+
direction switch
run/stop switch (closed=run)
-
DIR+
DIR-
STEP+
STEP-
All STP-MTRD

Using Mechanical Switches
(the switches can also be placed on the + line)

EN Input

5-24 VDC Power Supply
+
-
Switch or Relay
(closed = logic Low)
EN+
EN-
All STP-MTRD
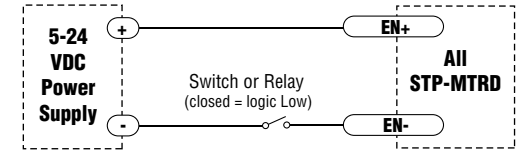
Connecting the Input to a Switch or Relay

5-24 VDC Power Supply
+
-
NPN Proximity Sensor   output
EN+
EN-
All STP-MTRD
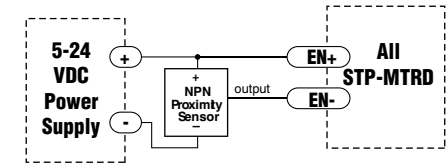
Connecting an NPN Type Proximity Sensor to an input
(When prox sensor activates, input goes low).

5-24 VDC Power Supply
+
-
PNP Proximity Sensor   output
EN+
EN-
All STP-MTRD

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

Analog Input

+5V OUT
1-10k Ω pot   cw   AIN   ccw
GND

Master Encoder
A+   STEP+
A-   STEP-
B+   DIR+
B-   DIR-
Advanced STP-MTRD Only
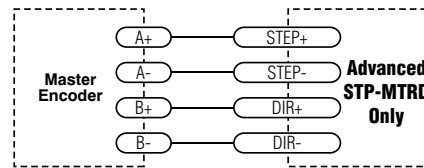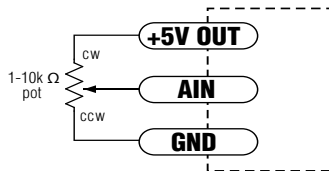
Wiring for Encoder Following
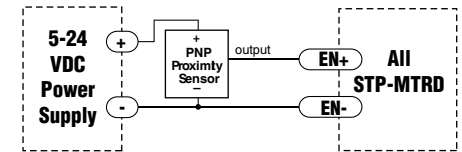
Digital Outputs

STP-MTRD
OUT+   Load   5-24 VDC Power Supply   +   -
OUT-
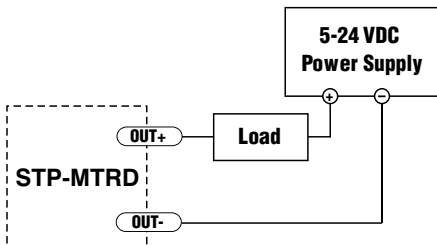
Connecting as a Sinking Output

STP-MTRD
OUT+   5-24 VDC Power Supply   +   -
OUT-   Load
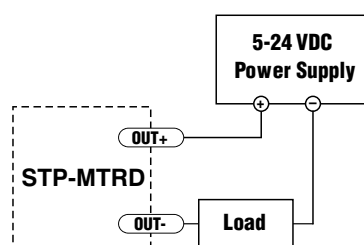
Connecting as a Sourcing Output

STP-MTRD
OUT+   relay   5-24 VDC Power Supply   +   -
OUT-   1N4935 (or equivalent) suppression diode

Driving a Relay