WARNING

To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call us at 770-844-4200.

This publication is based on information that was available at the time it was printed. At AutomationDirect.com® we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without obligation. This publication may also discuss features that may not be available in certain revisions of the product.

Connecting the Power Supply

The STP-PWR-3204 power supply from AutomationDirect is the best choice to power the step motor drive. If the power supply you choose does not have a fuse on the output, you will need to install a 4 amp fast acting fuse on the “+” power supply lead as shown in the above diagram.

WARNING: Be careful not to reverse the polarity from the power supply to the drive. Reverse connection will destroy your drive and void the warranty.

Connecting to an Indexer with Sourcing Outputs

Connecting to an Indexer with Differential Outputs

Connecting to an Indexer with Sourcing Outputs

Connecting to an Indexer with Differential Outputs

For a complete user manual, please visit www.automationdirect.com
Using Logic That is Not 5 Volt TTL Level
Some step and direction signals, especially those of some PLCs, do not use 5 volt logic. In these cases, a signal as high as 24 VDC can be used with the step motor drive by adding an external dropping resistor to the STEP, DIR and EN input logic terminals.

12-24 VDC equal to 1,000, 2,000 or 10,000 steps per revolution. DIP switch controlling the amount of current in each phase at each step position ability is referred to as microstepping. It is accomplished by precisely the normal full and half step resolutions found in other drives. This

add to the base current, slide the appropriate switches current. There is always a base current of 0.4 A. To

setting the DIP switch positions to match what is shown in the table or skipping to the Current Setting Table shown to the top right and

achieved by either following the simple formula that follows below

for the current.

Example: 2.2 Amps = 0.4 (base current) + 1.6 + 0.2

Microstepping
The microstepping drive has the ability to be set up for more than just the normal full and half step resolutions found in other drives. This ability is referred to as microstepping. It is accomplished by precisely controlling the amount of current in each phase at each step position and allows the steps to be electronically subdivided even further. The drive can be set up for either half step or three microstep resolutions, 1/5, 1/10 or 1/50 microsteps. In a typical 1.8° step motor, this will equate to 1,000, 2,000 or 10,000 steps per revolution. DIP switch positions 2 and 3 are used to set the resolution as shown below:

Idle Current Reduction
The microstepping drive has a built-in feature that will reduce the motor current by 50% anytime the motor is not moving. Drive heating is reduced by about 50% and the feature lowers motor heating by 75%. Slide DIP switch position 4 toward the label marked “50% Idle” to enable this feature. Please be aware that when this feature is used, holding torque is reduced.

Self Test
The microstepping drive includes a self test feature. This feature can be used for trouble shooting your system. Slide DIP switch position 1 toward the label marked “TEST” and the step motor will slowly rotate 1/2 revolution forward and then 1/2 revolution backward. This motion will repeat until the DIP switch is returned to the off position.

The self test will use half step mode and ignore any input signals on the STEP and DIR terminals. The ENABLE input will continue to function normally.

Dimensions

Mounting the Drive
The microstepping drive can be mounted on either the wide or the narrow side of the chassis using #4 screws. The wide side requires four screws, while the narrow side requires two screws.

WARNING: Never use the drive in a space where there is no air flow or the surrounding air temperature is greater than 70 °C.