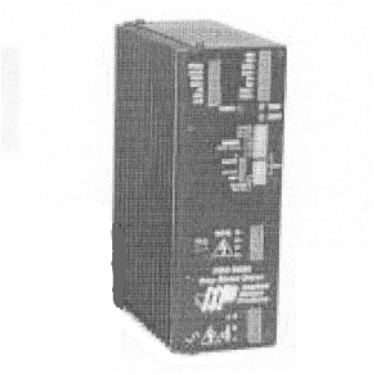
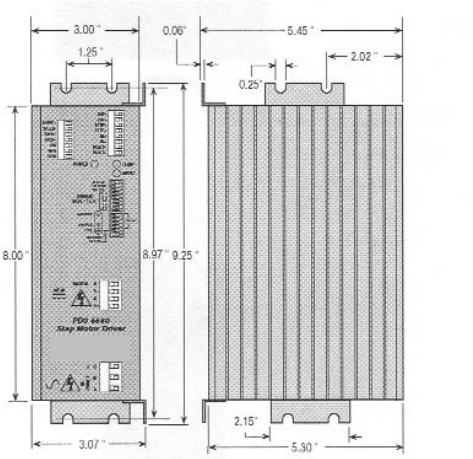
PROGRAMMABLE STEPPER MOTOR DRIVE WITH DIGITAL OSCILLATOR

SMD5580PDO
Packaged Pulse and Direction Step Motor Drive with Digital Oscillator



• Motors are sold seperately. See pages J11-J12.
• See page J17 for motor controls

Stock No. SMD5580PDO



Features:
- AC input 110V or 220V switch selectable, 50-60 Hz
- DC bus voltage 75 VDC full load, 80 VDC nominal
- Switch selectable motor current from 0.5-5.5 amps/phase
- Microstepping:
  - Pulse and Direction mode: selectable 200 to 50,800 steps/rev
  - Oscillator/Joystick mode: 12,800 steps/rev
- Switch selectable idle current reduction, 0 or 50%
- Optical isolated inputs/outputs:
  - Speed, Enable: optically isolated, differential 5-24 V logic
  - Step, Direction: optically isolated, differential 5-12 V logic
  - Wiper: 0-5 VDC analog signal
  - Tach output: isolated phototransistor, Tach output is 100 pulses per motor revolution,
    - 50% duty cycle.
- Internal Pot:
  - Low speed 0-5 rps
  - High speed 0-25 rps
  - Accel/decel 1-250 rev/sec/sec
- External Speed, Pot or Joystick 3 terminal type, 1k-10k ohms
- Self test, switch selectable
- 440 watts of usable power
- Screw terminal connectors
- Dual, MOSFET H-bridge, 3 state, pulse width modulated amplifier switching at 20-30 KHz
- Ideal for 4, 6 or 8 leaded step motors NEMA sizes 23 or 34
- CE and TUV compliant

Description

The SMD5580PDO is a stepper drive packaged in a rugged steel case printed black with white epoxy silkscreen. Integral heat sink, mounting brackets, switch covers and connectors are included with each drive. The drive has been matched with twelve recommended 23 and 34 motors in order to create a complete stepper motor solution.

The SMD5580PDO provides the user with four modes of operation to choose from, Self test, Pulse and Direction, Joystick or Oscillator. The specific operation mode desired is selected during set up via DIP switch. DIP switches are also provided for setting the drive's step resolution as well as the motor current.

Self Test Mode is used for troubleshooting. If you are unsure about the motor or signal connections to the drive you can use the self-test.

Pulse and Direction Mode allows the SMD5580PDO to receive step pulses from and indexer such as out Si-100 or Si-1 or from a PLC or any other external controller.

Joystick Mode allows speed and direction to be determined by an external analog voltage. STEP and DIR inputs can be used for limit switches. SPEED input selects speed range. LO SPEED and HI SPEED pots adjust the 2 speed ranges.

Oscillator Mode can control speed by on board potentiometers and/or by an external analog voltage. STEP input starts and stops the motor. DIR input controls direction of rotation. SPEED input selects the speed range.

The SMD5580PDO also provides a Tach Output and Enable input.

A Tach Out signal is provided for measuring the motor speed. It generates 100 pulses per revolution. If connected to a frequency counter, speed reads out in revs/second with 2 decimal places.

ENABLE allows the user to turn off the current to the motor by setting this signal to logic 0. The logic circuitry continues to operate, the drive "remembers" the step position even when the amplifiers is disabled.

Factory set to operate at 110-volt input; the SMD5580PDO can be reset by the user to operate at 220-volt input by a simple switch selection.

Pluggable screw terminal blocks are provided for the motor, AC input and 8-position signal input/output. Mating connectors are provided with the drive.

The SMD5580PDO is both CE and TUV compliant.

SMD5580PDO Technical Specifications - Power and Amplifier:

Amplifier Type - MOSFET, dual H-Bridge

Current Control - 3 State, pulse width, switching at 20-30 KHz

Output Current - 0.5-5.5 amps, DIP switch selectable in 0.2 increments

Power Supply - Linear, toroidal transformer based for high reliability and low noise. 110 or 220 VAC input, switch selectable. 50/60 Hz.

DC Bus Voltage - DC voltage at nominal line voltage: 75 VDC full load, 80 VDC no load.

AC Input Voltage - 110 or 220 VAC (switch selectable) 50/60 Hz.

Max. Output Power - 440 Watts.

Idle Current Reduction - 0% or 50% DIP switch selectable.

Motor Resolution - 16 resolutions 200, 400, 1000, 2000, 5000, 10000, 12800, 18000, 20000, 21600, 25000, 25400, 25600, 36000, 50000, 50800 steps per rev

Controller Selection:

Mode of Operation

Self Test: Used for troubleshooting to test motor and/or signal connections.

Pulse & Direction: Allows amplifier to receive step pulses from a controller such as Si-100 or Si-1, or any other pulse source PLC or controller.

Joystick: allows speed and direction to be determined by an external analog voltage. Step and Dir inputs can be used for limit switches. Speed input selects speed range. LO SPEED and HI SPEED pots adjust the 2 speed ranges.

Digital Oscillator: allows for precise speed control with automatic ramps between speeds. Accel/Decel rates are set by on board potentiometer and/or external analog voltage.

Step and Direction Input - Optically isolated: 5-12 VDC

Speed Range - LO speed range: 0-5 rev/sec
HI speed range: 0-25 rev/sec
Accel/Decel range: 1-250 rev/sec/sec

Tach Output - Optically isolated phototransistor. 30 VDC, 20mA max.

System Specifications:

Overall Size - 3.0" x 5.3" x 8.0"

Chassis Material - Aluminum, black anodized with integral heat sink.

Case - Steel with black paint and white epoxy silk screen. Includes switch covers.

Weight - 7.8 lbs.

Ambient Temperature - 0º to 70º C (32º to 158º F)

Humidity - Maximum of 90% non-condensing.

Connectors - Screw terminal connectors for input power and motor, and input/output signals

Motors - Can drive 4, 6, or 8 lead motors, NEMA sizes 23 and 34

Agency Approval - CE & TUV