# SPS 25D

## HARDWARE INSTALLATION

## MANUAL

# ***SPS 25D***

## 1.0 Overview of SPS 25D

The SPS 25D is an open frame 48 volt unregulated switch mode power supply powered from 120 Vac input.

The SPS 25D has been designed specifically for supplying power to inductive loads found in stepping motors. Conventional switching supplies are designed for constant, unvarying loads of circuit broads and are not tolerant of current surges produced by rapid changes in power demand and the inductance of motor coils.

This supply is capable of delivering 4 amps continuous current and has the ability to absorb inductive current surges associated with stepping motors. That produces a more even output power which enables motors to operate at higher performance levels.

The light weight, compact packaging of the SPS 25D (4.40" x 4.00" x 1.60" height) permits easy integration of the power supply into OEM equipment.

The SPS 25D is well protected with designed in short circuit, over voltage and over temperature protection circuits. The protection circuits along with the LED's for fault and power are provided to aid in troubleshooting.

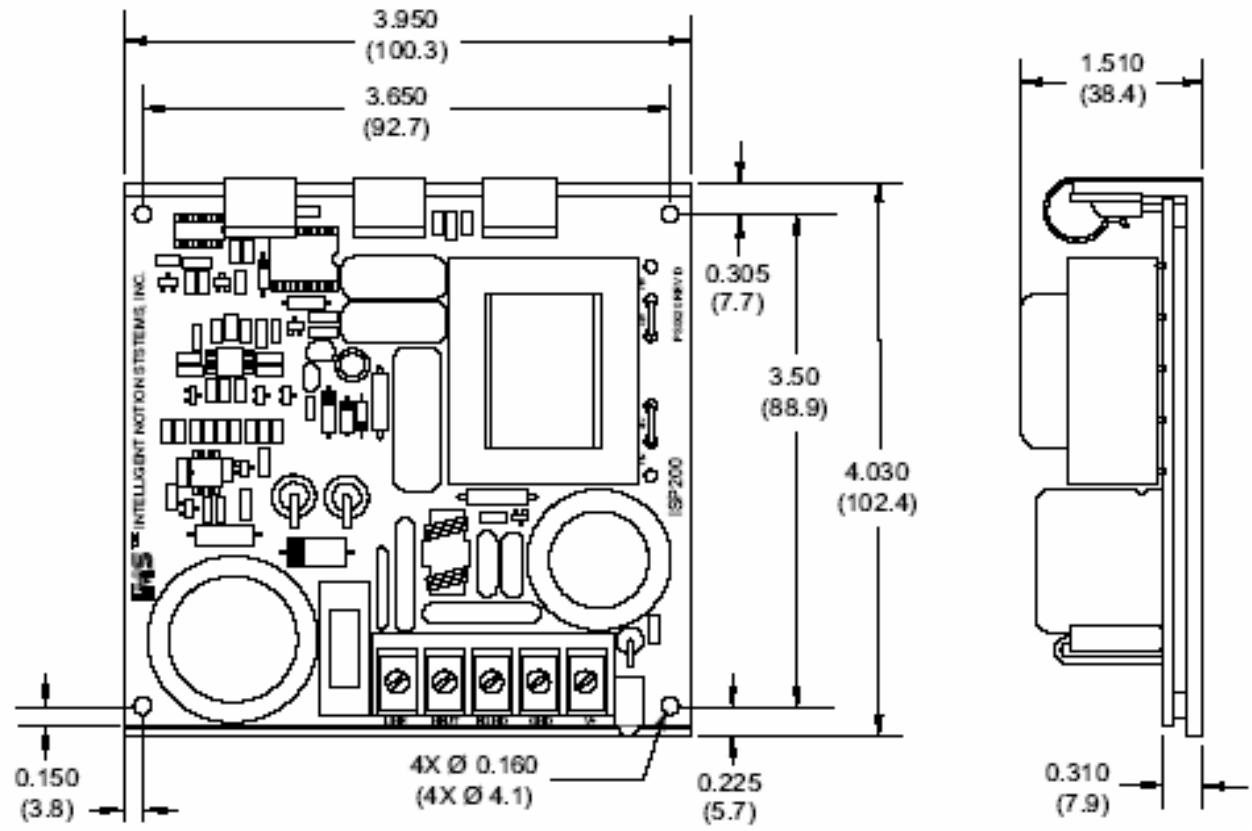
## 2.0 Features

- ***Soft Start*** - the SPS 25D circuitry to limit the surge current when AC power is applied. Operation of the power output circuit is delayed until the power supply input capacitor has reached a sufficient voltage level. The PWM soft start circuit then begins operation and full output voltage is developed after 100 - 200 msec.
- ***Short Circuit Protection*** - A short circuit or sever overload on the DC output will cause the SPS 25D to shutdown. The output voltage will be shut off and the red "FAULT" indicator will be lit. In order to clear the fault, the short circuit overload condition must be corrected and AC power must be cycled.
- ***Thermal Shut Down*** - An electronic sensor monitors the temperature of the transformer and will cause the SPS 25D to shut down should the temperature reaches 90 degrees C. The output voltage will shut off and the red "FAULT" indicator will be lit. The transformer must be allowed to cool by at least 10 degrees C. The fault can then be cleared by cycling AC power.
- ***Over Voltage*** - If the SPS 25D sense an input voltage above 132 Vac the over voltage protection circuit will generate a fault. The output voltage will be shut off and the red "FAULT" indicator will be lit. The fault can then be cleared by cycling AC power.

## 3.0 General Specifications

| | |
|---|---|
| AC Input Voltage Range | 102 - 132 Vac |
| Input Frequency | 50 / 60 Hz |
| No Load Output Voltage | 45 Vdc - nominal |
| Max. Continuous DC Output Current | 3 Amps |
| Peak Output Power | 150 watts |
| Fusing | 2 Amps Slow Blow 5 x 20 mm |
| Weight | 0.75 lbs. |
| Operating Temperature | -25 to +50 degrees C |
| Storage Temperature | -25 to + 125 degrees C |
| Max. Heat Sink Temperature | 70 degrees C |

## 4.0 Mechanical Installation - Dimensions in inches (mm)




***NOTES***

- Allow for adequate air circulation.
- Ensure the mounting hardware does not interface with the circuit
- The unit should be mounted to a flat surface that extends beyond the edge of the unit.

***WARNING***

***Ensure Power supply is mounted in suitable enclosures to make high voltage present inaccessible***

# 5.0 Electrical Installation

| Pin NO. | Functionality |
|---|---|
| 1 | V+, +45 Vdc output |
| 2 | GND, DC ground |
| 3 | EGND, Earth Ground |
| 4 | NEUT, AC Neutral |
| 5 | Line, AC Line |

- AC Power - Make AC power connections only after making all other connections.
- Verify that the power system voltage is correct for the SPS 25D

***WARNING***

***Correct AC line and neutral polarity must be observed or damage to the system components will occur***

***NOTE***

Earth Ground must be connected to terminal 3 in order for the internal noise filtering to work

- DC Output - Keep the distance between the power supply and the stepper driver as short as possible. If the distance exceeds 12 inches then an external capacitor is required at the driver. Refer to driver manual for more information

# 6.0 Defective Equipment

The SPS 25D is designed for minimum maintenance. The only maintenance is remove the superficial dust and dirt from the driver using a clean, dry and low pressure air.

If you can not correct the problem, or if it is defective, return it to MCG Inc. for repair or replacement. Call MCG Inc. or your local distributor to get an RMA # (Return Material Authorization Number)

***NOTE***

*Do not attempt to return the SPS 25D or any other equipment without a valid RMA#. Returns received without a valid RMA# will not be accepted and will be returned to the sender.*

Pack the unit in its original shipping carton. MCG Inc. is not responsible or liable for damage resulting from improper packaging shipment. Ship the drive to:

MCG Inc.
1500 Front Street
New Ulm MN 56073-0637