

Servo Axis Simulator



Version 3.1

The Servo Axis Simulator was developed to assist integrators and OEM in application development for projects with servo drives with an analog command signal and incremental encoder feedback. It allows motion application debugging in the lab environment, virtually on the table, with PLC or CNC only and without actual running motors and drives.

Servo simulator was originally developed to debug a motion controller project when drives were not available during development. With the help of the Servo Simulator, a motion controller program was developed and tested before the actual machine and drives were available. This reduced installation time from weeks to hours.

Servo simulator uses an advanced microcontroller that allows high-speed move simulation and fast response. It simulates a servo axis with a servomotor and encoder. Simulator can generate a maximum 16250 pulses per second (65000 in "A Quad B" or x4 mode) that is equivalent to about a 3800rpm motor.

Default encoder settings are 256 pulses per revolution.

It effectively provides 1024 positions per revolution if the CNC or motion controller uses x4 mode.

Specification

Power Supply 24V DC +/- 15%
 Current Consumption 40mA max (load dependent)

Encoder Signal Output

Encoder Signals A+, A-, B+, B-, Z+, Z-
 Output Type Push/Pull 5V TTL Signal
 Max Output Current 25mA per channel
 Encoder Output Isolation None
 Max Output Frequency 16.250 kHz per channel
 Pulses Per Revolution 256 per channel,
 1024 all channels

Analog Input

Command Signal +/-10V GND referenced
 Input Isolation None
 Input Resolution 10-Bit over +/-10V range
 Max Input Current 2mA

Drive Enable Input

Input Signal 16...26VDC GND referenced
 Input Isolation None
 Max Input Current 2mA

Note: All signals referenced to the GND terminal and Common of the external power supply.

Currently the device does not carry any agency approvals and is not compliant with RoHS.

Terminals

A Encoder Output Channel A+
A - Encoder Output Channel A-
B Encoder Output Channel B+
B- Encoder Output Channel B-
Z Encoder Output Channel Z+
Z- Encoder Output Channel Z-
EN Simulator (Drive) Enable Input
AN Simulator Analog Input
GND External Power Supply Common
+24V External Power Supply Positive

LED Indicator

Both LEDs OFF	Simulator Enable is OFF
Both LEDs Blinking Fast	Simulator enabled and axis holding position
One LED ON	Servo enabled and simulated axis moving in Positive or Negative direction

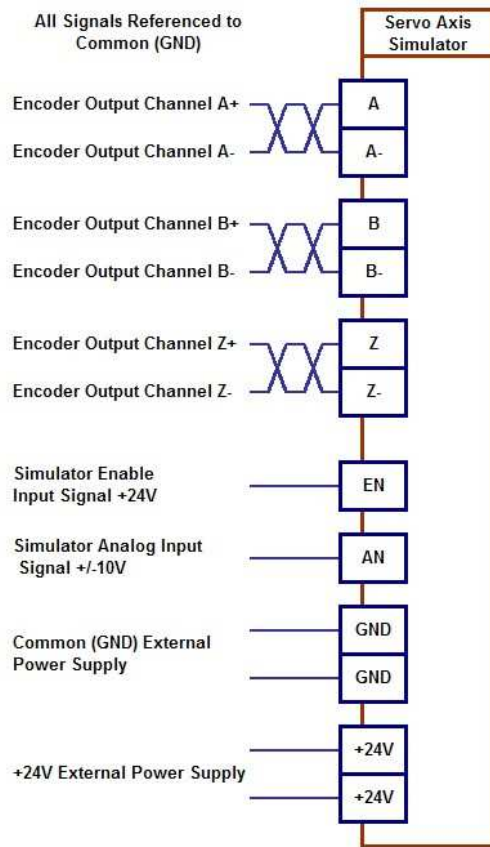
DISCLAIMER

This device is intended to provide general assistance with application development and debugging and can't be used in live production systems. Accordingly, production system must be tested and commissioned with real servo systems and drives to ensure safe and reliable operation.

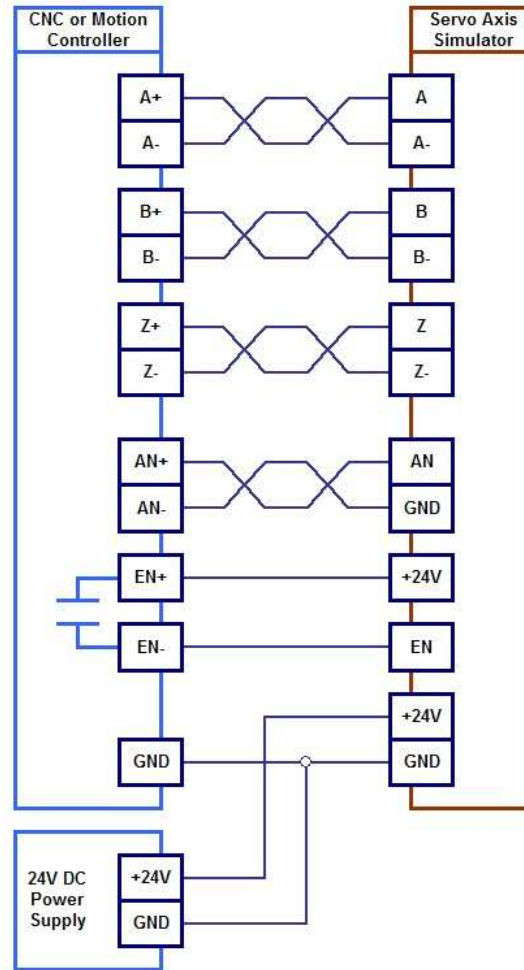
IN NO EVENT SHALL THE DEVICE MANUFACTURER BE LIABLE FOR ANY DAMAGES OF ANY KIND INCLUDING DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOSS OF PROFIT OR DAMAGE.

The examples and diagrams in this manual are included for illustrative purposes only. Because of the many variables and requirements associated with any particular installation, the device manufacturer cannot assume responsibility or liability for actual use based on the examples and diagrams. Before making any decision or taking any action which might affect your equipment, you should consult a qualified professional advisor.

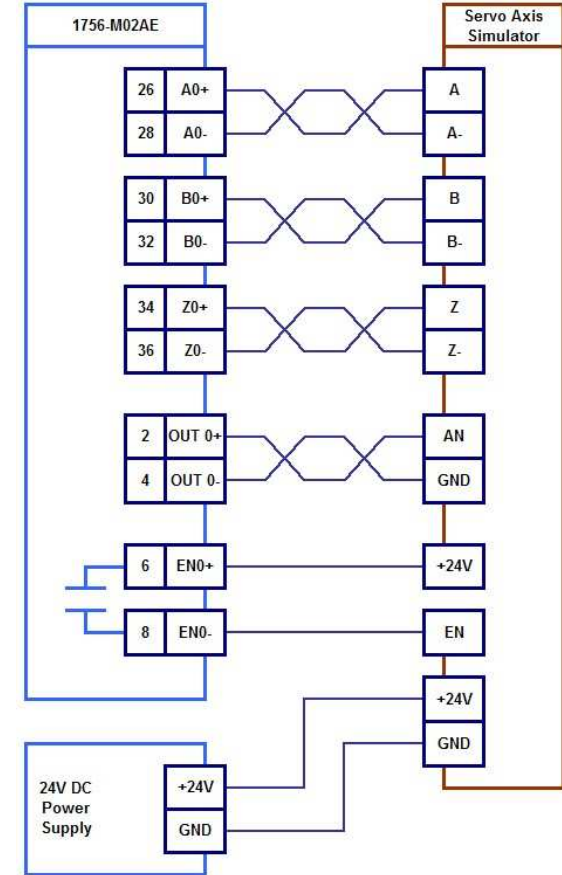
Servo Axis Simulator Signals



CNC or Motion Controller Connection



CNC or Motion Controller Connection



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