

TA320 LINEAR DRIVE FOR BRUSHLESS SERVO MOTORS



SMART SOLUTIONS IN MOTION CONTROL

Features

- Very low electrical noise
- Minimizes Hall sensor torque ripple
- Zero crossover distortion
- Integral forced air cooling
- Sinusoidal or trapezoidal mode
- Digital on the fly gain control (DTS)

Applications

- High and Very High Resolution staging
- Linear motor stages
- High inertia mismatched stages
- Low inductance motors



Consistent Linear Voltage Output with no Voltage Deadband around Zero Point

The Trust Automation TA320 Linear Drive is a three-phase servo motor amplifier that allows OEMs to utilize the latest in sinusoidal motor control. Linear sinusoidal commutation of three-phase brushless servo motors eliminates the familiar cogging and torque-ripple problems that plague most trapezoidal amplifiers. Linear control is consistent and smooth at any velocity. Linear operation is desirable in applications utilizing noise sensitive circuitry (i.e. transducers, sensors, etc.). The linear power section eliminates common noise problems associated with PWM amplifiers.

Trust Automation is committed to designing products that are easy to install and use. Amplifier connections are made via ribbon cables, SMB coaxial connectors, or pluggable-terminal connectors. All connections are easily installed or removed, reducing hardware cost and assembly time. The TA320 is configurable, accepting two sinusoidal commutation signals separated by 120 degrees. The third-phase is derived by the amplifier. The TA320 can also be configured to operate in trapezoidal mode, commutating the motor using Hall-sensor feedback.

DTS control allows the application to change the amplifier transconductance (amps/input volt) on-the-fly, permitting high-resolution control without sacrificing power capability.

The TA320's housing reduces the risk of operator injury, and protects the amplifier ensuring longer life. The TA320 can also be configured as one, two, or three single-phase amplifiers.



205 Suburban Road. San Luis Obispo, CA 93401 ph/805.544.0761
www.trustautomation.com

Technical Specifications

- Electrical

- Supply Voltage
 - Bipolar $\pm 12V$ to $\pm 48V$
- Equivalent Motor Voltage Drive Input V - 5V
- Maximum Output Current See SOA chart
- Fault TTL Level 0 or 1
- /Enable TTL Level 0
- Command Input $\pm 10V$ ($\pm 12V$ max)
- Torque Gain 0.3 A/V to 1.2 A/V
- Bandwidth 5 kHz

- Storage -40° C to +70° C
- Heatsink +90° C Maximum
- Heat Dissipation (@ 25° C)
 - Continuous 500W
 - Peak See SOA Chart
- Airflow Internal fans
- Humidity
 - Operating 10% to 70%, non-condensing
 - Storage 10% to 95%, non-condensing
- Pollution Degree 2

- Mechanical

- Length 14.90 in. (37.85 cm)
- Width 7.69 in. (19.53 cm)
- Height 4.70 in. (11.94 cm)
- Weight 13.5 Lbs. (6.12 kg)

- Environmental

- Maximum Altitude 6,560ft (2000M)
- Temperature (ambient)
 - Normal operation 0° C to +40° C

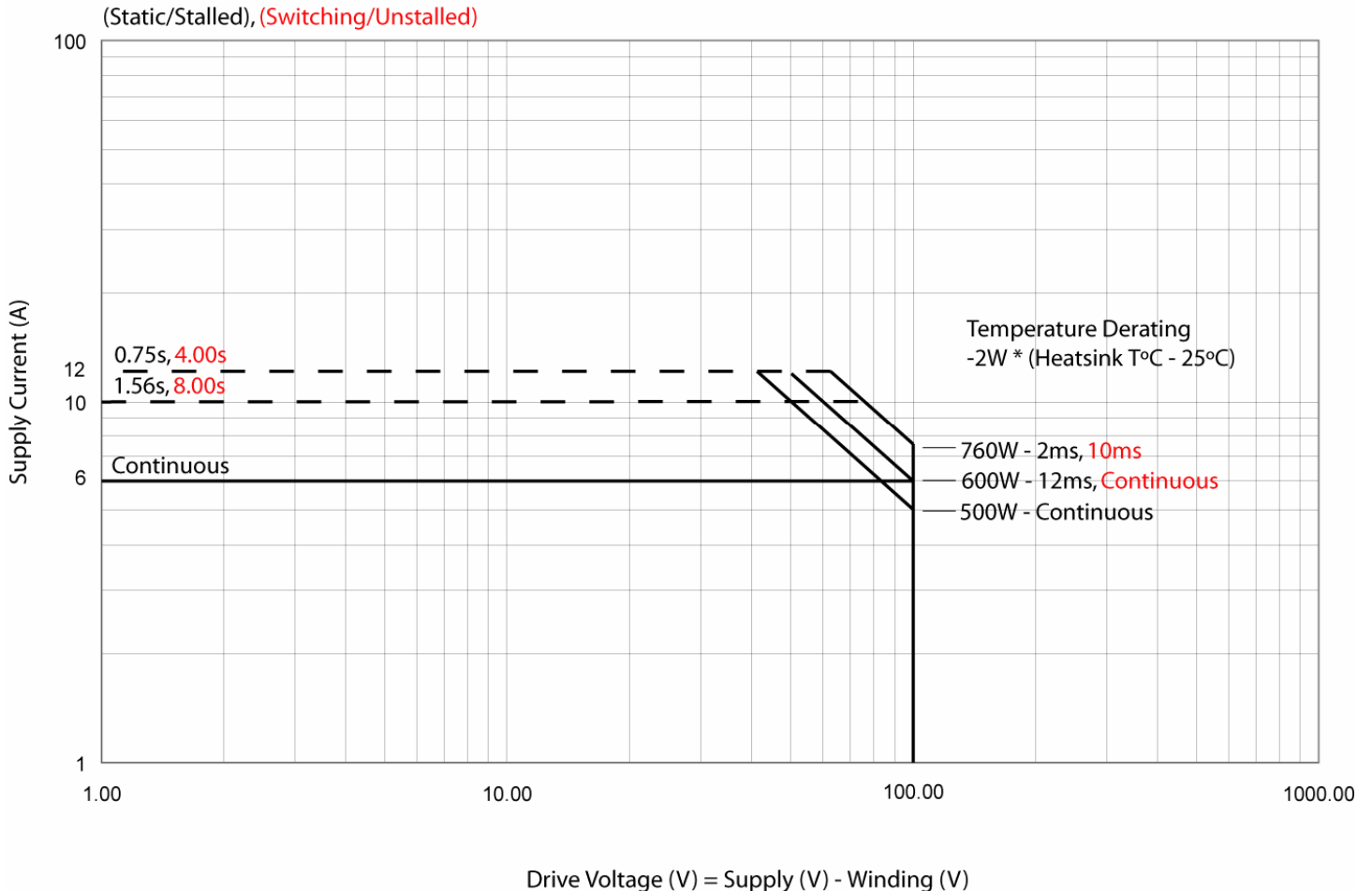
- Connections

- J1 (Command Signals), 26-pin Ribbon Cable Header, .1"
- J2 (Controller Signals), 12-pin Terminal Block, Plug
- J3 (Command Signals), 8-pin Terminal Block, Plug
- J5 (Command Signals, Differential), 14-pin Ribbon Cable Header, .1"
- J6-8 (Command Signals, Differential), Coaxial

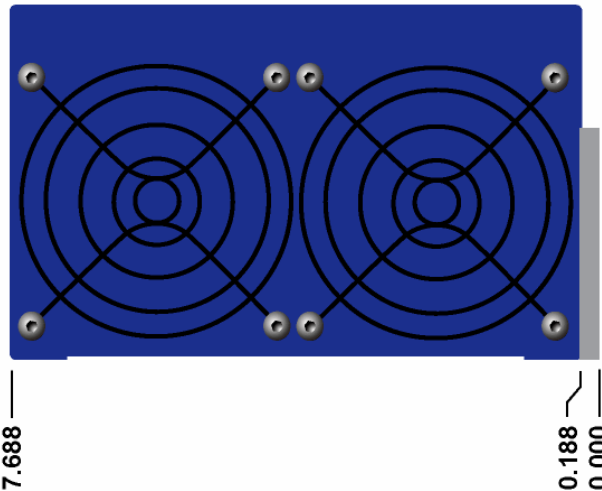
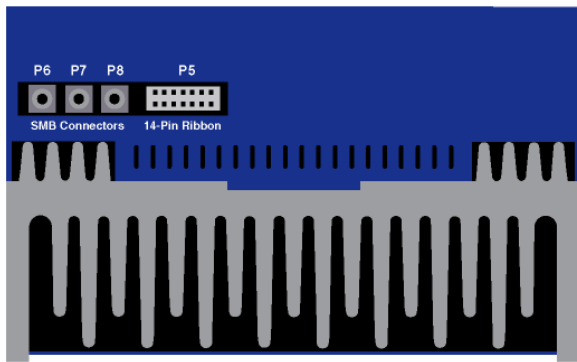
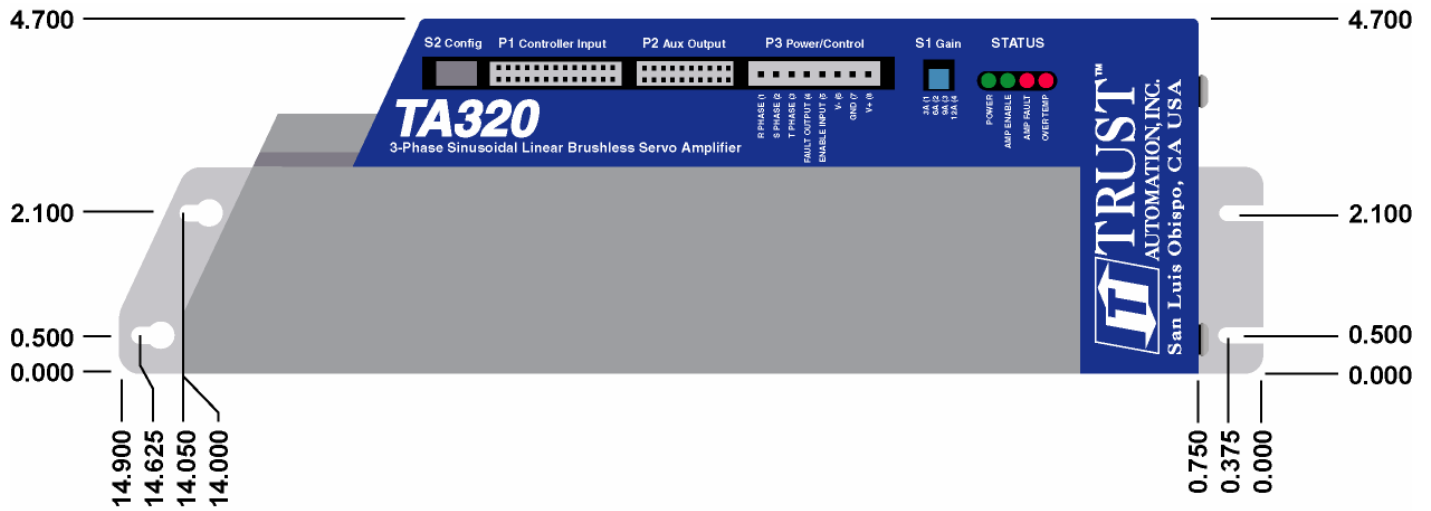
(J2 and J3 mating connectors supplied with drive)

Drive Electrical Characteristics

TA320 Safe Operating Area



Mechanical Dimensions



Note: All measurements are in inches.

Ordering Information

- Part Number TA320
- Description Medium Power 3-Phase Linear Drive for Brushless Servo Motors