

# TA333 LINEAR DRIVE

## FOR BRUSHLESS SERVO MOTORS



### Consistent Linear Voltage Output with no Voltage Deadband around Zero Point

The Trust Automation TA333 Linear Drive is another fourth generation drive in Trust Automation Inc's continually expanding product line. This linear three-phase servo motor drive, as all Trust Automation Linear drives, is a true class AB amplifier and is the most up to date technology in the industry for sinusoidal motor control. Linear sinusoidal commutation of three-phase brushless servo motors eliminates the familiar cogging and torque-ripple problems that plague most trapezoidal digital drives. For ultra low noise applications, (i.e. transducers, sensors, etc.), the TA333 provides an optional external 24V Input which replaces the internal bias switching supply, further reducing electrical noise. The TA333 is a highly configurable device with four common configuration modes. The TA333 will drive one brushless motor using external sinusoidal commutation. It can also use Hall Effect sensor feedback for smooth internally commutated trapezoidal operation. The TA333 also supports one or two brush or voice coil type motors as well as driving two coil stepper motors under sinusoidal control.

### FEATURES

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



### APPLICATIONS

- High & very high resolution staging
- Linear motor stages
- High inertia mismatched stages
- Low inductance motors

### TECHNICAL SPECIFICATIONS

#### Electrical

**Supply Voltage**

Bipolar:  $\pm 24V$  to  $\pm 100V$

**Equivalent Motor Voltage**

Drive Input V – 8V

**Auxiliary 24V Supply**

24V  $\pm 5\%$  @ 1A max

**Maximum Output Current**

See SOA chart

**Fault**

TTL Level 0 or 1

**/Enable**

TTL Level 0 or 1

**Command Input**

$\pm 10V$  ( $\pm 12V$  Max)

**Torque Gain**

1.0 A/V to 2.5 A/V

**Bandwidth**

5.0 kHz

#### 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:  $5^{\circ}C$  to  $+40^{\circ}C$

Storage:  $-40^{\circ}C$  to  $+70^{\circ}C$

Heatsink:  $+70^{\circ}C$  Maximum

**Heat Dissipation:** See SOA Chart

**Airflow:** Internal fans, variable speed, thermally controlled

**Humidity:**

Operating: 10% to 70%, non-condensing

Storage: 10% to 95%, non-condensing

**Pollution Degree 2**

#### Connections

**Command Signals (J3)**

10-Pin Quick Connect

**Motor Signals (J5)**

4-Pin Plug, Terminal Block

**Hall Sensors (J4)**

5-Pin Quick Connect

**Auxiliary 24V Supply (J1)**

3-Pin Plug, Terminal Block

**Serial Monitor (J2)**

6-Pin, Plug

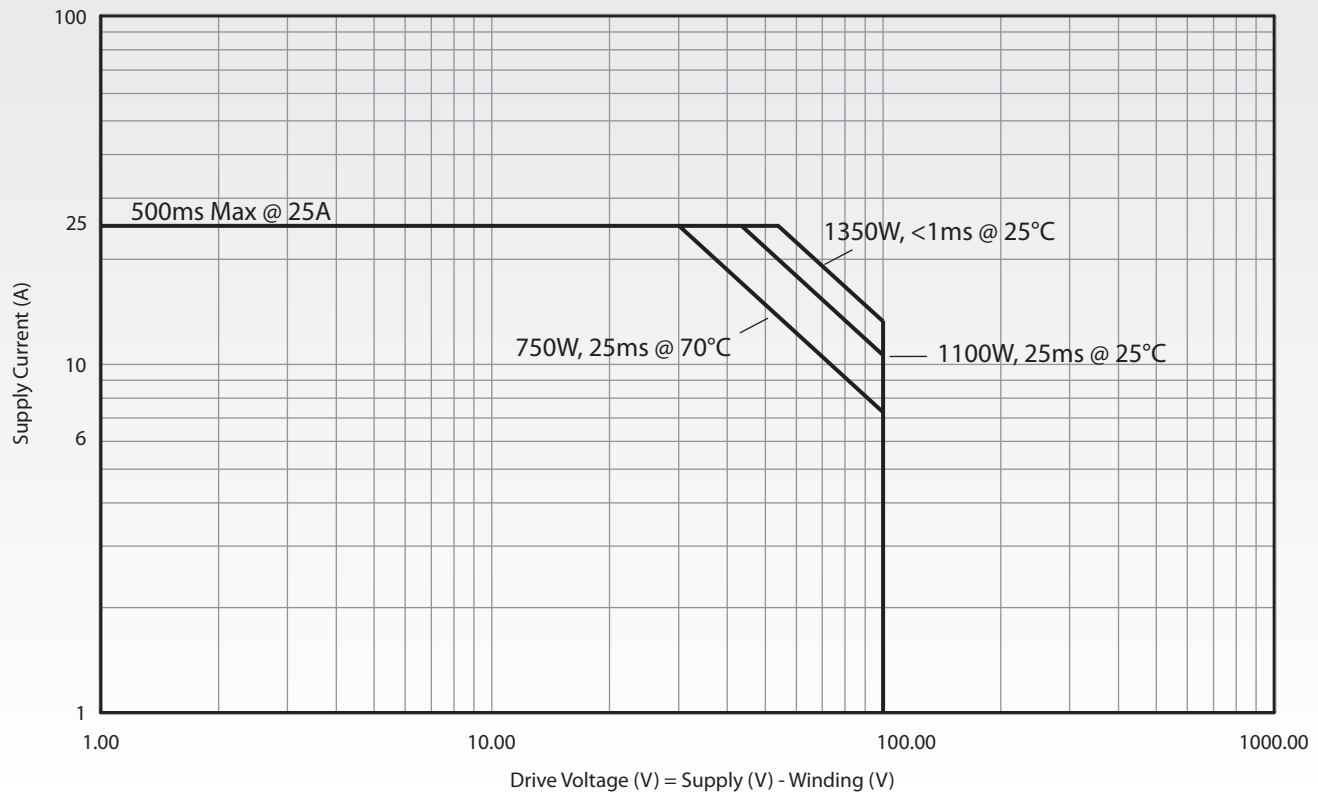
**Motor Power (J6)**

4-Pin Plug, Terminal Block

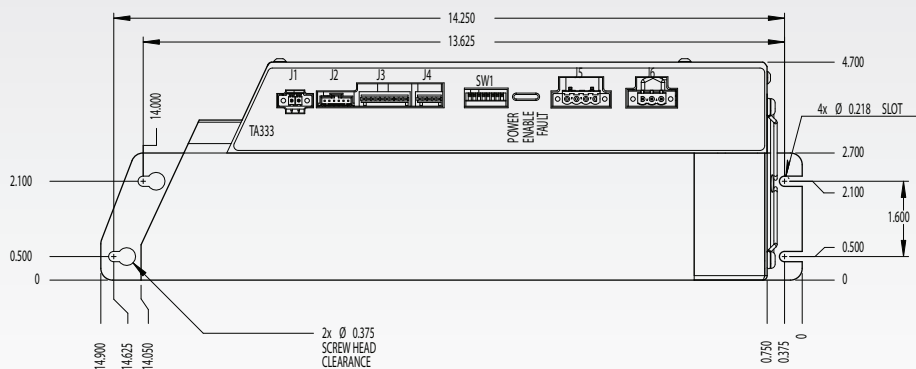
*(Mating connectors (J1, J3, J4, J5, J6) supplied with drive)  
(Serial Monitor Cable J2 sold separately)*



## SAFE OPERATING AREA



## MECHANICAL DRAWING



Note: All measurements are in inches.

