

## C-2271

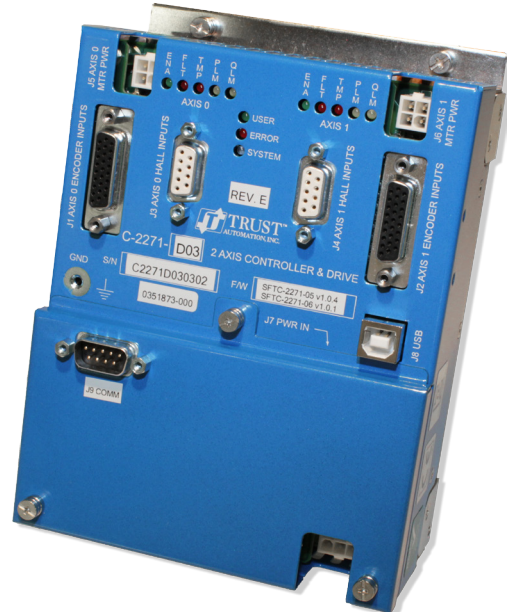
### DUAL AXIS DRIVE

#### BENEFITS

- Dual linear axis
- USB 2.0 setup and diagnostics interface
- Quadrature or +/- 10V DC analog feedback
- Brushed, brushless, stepper control
- Application specific parameters stored in EEPROM
- Sinusoidal or trapezoidal operation
- 50W continuous
- Passive cooling
- Overtemperature protection

#### APPLICATIONS

- Optics positioning
- Linear motor stages
- Laboratory test equipment
- Small brushless DC motors



## TECHNICAL SPECIFICATIONS

#### ELECTRICAL (DRIVES)

##### SUPPLY VOLTAGE

- Unipolar: 18V to 48V ( $\pm 10\%$ )
- Absolute max: 52V

##### EQUIVALENT MOTOR VOLTAGE

- Up to  $\pm 43V^*$

##### MAXIMUM OUTPUT CURRENT

- See SOA chart

##### COMMAND INPUT: $\pm 10V$

##### TORQUE GAIN: 0.05 A/V to 0.2 A/V

##### BANDWIDTH: 5 kHz\*\*

#### ELECTRICAL (CONTROLLER)

##### SUPPLY VOLTAGE

- Minimum: 20VDC
- Nominal: 24VDC
- Maximum: 28VDC

##### SUPPLY CURRENT: 0.5A

- Minimum: 0.5A
- Maximum: 1.0A

##### 5V SUPPLY CURRENT OUTPUT: 800mA

##### 12V SUPPLY CURRENT OUTPUT: 50mA

##### -12V SUPPLY CURRENT OUTPUT: 50mA

#### CONNECTIONS

##### AXIS (0,1) ENCODER INPUT (J1,J2)

- 26-Pin HD, female, vert, D Shell

##### AXIS (0,1) HALLS (J3, J4)

- 9-Pin female, vert, D Shell

##### AXIS (0,1) MOTOR (J5, J6)

- 4-Pin Mini Mate-n-Lock, vert, receptacle

##### DC POWER IN (J7)

- 6-Pin Mini Mate-n-Lock, vert, receptacle

##### USB (J8)

- Type B shielded, receptacle

##### DEBUG (J9)

- 9-Pin, male, vert, D Shell

#### MECHANICAL

##### LENGTH: 7.00 in (17.78 cm)

##### WIDTH: 5.00 in (12.70 cm)

##### HEIGHT: 2.00 in (10.16 cm)

##### WEIGHT: 3 lbs (1.36 kg)

##### MOUNTING: (4) 6-32 screws, captive

#### ENVIRONMENTAL

##### MAXIMUM ALTITUDE

- 6,560FT (2000M)

##### TEMPERATURE (ambient)

- Normal operation:  $+5^{\circ}C$  to  $+40^{\circ}C$
- Storage:  $-20^{\circ}C$  to  $+60^{\circ}C$
- Heatsink:  $+75^{\circ}C$  maximum

##### HEAT DISSIPATION (@ $25^{\circ}C$ )

- Continuous: 50W
- Peak: See SOA chart

##### AIRFLOW

- $35^{\circ}C$  ambient, measured at air inlet, to heatsink

##### HUMIDITY

- Operating: 10% to 70%, non-condensing
- Storage: 10% to 95%, non-condensing

##### POLLUTION DEGREE 2

\*dependent upon motor load

\*\*into a 2.5 mH load

## DUAL AXIS LINEAR DRIVE, PROVIDING SMOOTH POWER TO BRUSHLESS MOTORS

The Trust Automation C-2271 Dual Axis Linear Drive is an intelligent three phase servo motor amplifier designed to drive a brushless motor with up to 50W of power. This device is an excellent solution for small rotary or linear brushless motors in high precision positioning applications and systems where low electrical noise operation is essential. The C-2271 is optimized for both sinusoidal and trapezoidal output. Unlike standard PWM (switcher-type) amplifiers, the trapezoidal output is smoothed to minimize cogging. This flexibility enables the engineer to provide a clean linear solution for the most demanding motion control applications. The C-2271 uses a three-character programming language, providing over one hundred available commands to handle even the most demanding applications. The 104.2  $\mu$ s servo update rate is ideal for linear motor axes requiring fast settling times. The dual processor design optimizes performance by splitting the tasks between command execution, host communication and general I/O. This advanced design delivers peak performance while reducing your development time and shortening your time to market. The C-2271 is feature rich and flexible, suitable for most medium to high end applications.

## SPECIFICATIONS

### FEATURE

Encoder Input Frequency  
Min Position Loop Update Rate  
Max Position Loop Update Rate  
Max Communication Rate  
Step/Direction, Pulse Frequency  
Sinusoidal Communication Rate  
Analog Feedback Resolution  
DAC Resolutions, 2/Axis Optional  
Position Range  
Velocity Range  
Acceleration Range  
Jerk Range  
Motion Profile Modes

### DESCRIPTION

8.0 M counts/sec  
0.1 kHz  
1-Axis: 9.7 kHz, 2-Axis 6.5 kHz  
10.0 kHz  
5.0 MHz  
100  $\mu$ s  
14 Bits  
Min: 12 Bits Max: 16 Bits  
 $\pm 2,147,483,648$  counts per move (32 bit)  
 $\pm 655,360,000$  counts / sec  
 $\pm 655,360,000$  counts / sec<sup>2</sup>  
 $\pm 8,000,000,000,000$  counts / sec<sup>3</sup>  
Trapezoidal, Point to Point & Interpolated  
S-curve, Point to Point  
Velocity Contouring  
Electronic Gearing  
Custom Contouring  
Home Filter Set  
Stopped Filter Set  
Motion Filter Set  
(Kp) Proportional, (Ki) Integral, (Kd) Derivative  
(IL) Integral Limit, (TL) Torque Limit, (DS) Derivative Sub Sampling  
(AF) Acceleration and (VF) Velocity Feed Forward, (PW) Position Window  
(SH) Parameter Global Scale  
+ 2,147,483,647 to - 2,147,483,648 Encoder Counts  
Positive Limit, Negative Limit  
Home Sensor  
Drive Enable  
User Input

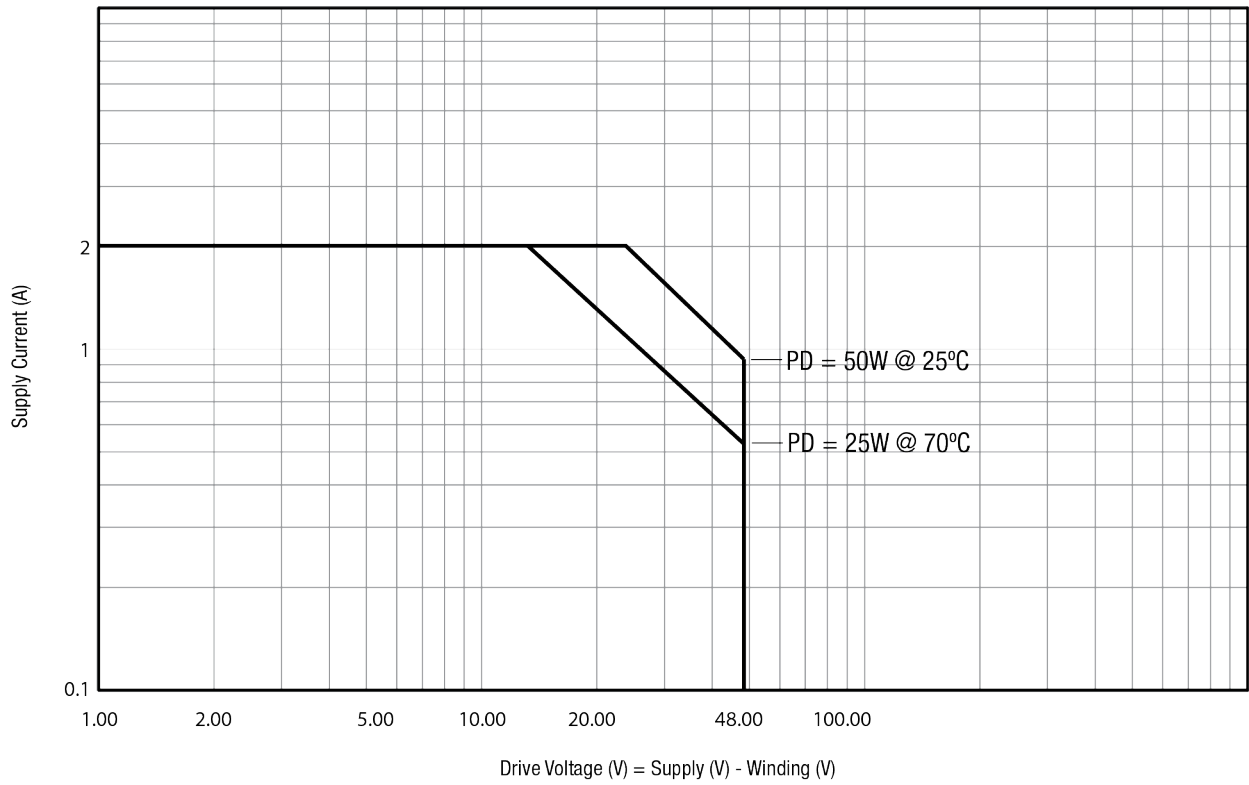
Filter Gain Types

Filter Terms

Position Error Size

Dedicated I/O, Per Axis

# SAFE OPERATING AREA



# MECHANICAL DRAWING

