TRUST™ AUTOMATION, INC.

Motion & Motor Control Solutions

TA600 MOTION CONTROLLER

4 AXIS STANDALONE

BENEFITS

Dual processor for high throughput
4 high speed position capture inputs
USB 2.0 setup and diagnostics interface
24V DC power
Quadrature or ± 10V DC analog feedback
User I/O: 8 digital outputs, 14 digital inputs
Dual DAC's per axis for sinusoidal motor control
Trapezoidal, SCurve, velocity and custom moves
Integrated emergency stop circuitry
Brushed, brushless, stepper control with feedback, closed loop
Four servo control axes
Dedicated I/O: positive, negative and home sensors for each axis
Stepper control with or without feedback
Point to point, multi axis, interpolated, circular interpolated moves
Application specific parameters stored in EEPROM

APPLICATIONS

Semiconductor processing equipment
Material handling systems
Packaging equipment

TECHNICAL SPECIFICATIONS

ELECTRICAL

SUPPLY VOLTAGE
Minimum: 20VDC
Nominal: 24VDC
Maximum: 28VDC

SUPPLY CURRENT
Minimum: 0.5A
Maximum: 6.0A (fused)

5V SUPPLY CURRENT OUTPUT
800mA

12V SUPPLY CURRENT OUTPUT
50mA

-12V SUPPLY CURRENT OUTPUT
50mA

CONNECTIONS

AXIS 1-4 (J1, J2, J3, J4)
34-Pin IDC, 0.1 x 0.1 in ribbon

ANALOG I/O (J5)
16-Pin IDC, 0.1 x 0.1 in ribbon

DIGITAL I/O (J6)
26-Pin IDC, 0.1 x 0.1 in ribbon

POWER INPUT (J7)
2-Pin Phoenix Contact

FW DOWNLOAD (J8)
10-Pin IDC, 0.1 x 0.1 in ribbon

HOST COMM (J9)
4-Pin USB 2.0, Type B male

E-STOP (J10)
4-Pin Phoenix Contact

(cables and interface modules sold separately)

ENVIRONMENTAL

MAXIMUM ALTITUDE
6,560FT (2000M)

TEMPERATURE (ambient)
Normal operation: 0°C to +40°C
Storage: -20°C to +80°C

HUMIDITY
Operating: 10% to 70%, non-condensing
Storage: 10% to 90%, non-condensing

MECHANICAL

LENGTH: 7.375 in (18.73 cm)
WIDTH: 1.500 in (3.81 cm)
HEIGHT: 8.125 in (20.64 cm)
WEIGHT: 2 lbs (0.91 kg)
MOUNTING: Panel

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FOUR AXIS MOTION STANDALONE MOTION CONTROLLER

The Trust Automation TA600 standalone motion controller continues Trust Automation's tradition of motion control innovation. The TA600 is a four axis motion controller for any combination of brushed, brushless or stepper axis control. The advanced dual processor design optimizes performance by splitting the tasks between command execution and host communication and general I/O. This advanced design delivers peak performance while reducing your development time and shortening your time to market. This motion controller is flexible and feature rich, suitable for most medium to high end applications.

CONTROLLER SPECIFICATIONS

FEATURE	4-AXIS
ENCODER INPUT FREQUENCY	5.0 M counts / sec
MIN POSITION LOOP UPDATE RATE	0.1 kHz
MAX POSITION LOOP UPDATE RATE	4.9 kHz
MAX COMMUTATION RATE	10.0 kHz
STEP/DIRECTION, PULSE FREQUENCY	5.0 MHz
SINUSOIDAL COMMUTATION RATE	100 µS
ANALOG FEEDBACK RESOLUTION	14 Bits
DAC RESOLUTION	Min: 12 Bits Max: 16 Bits
DEDICATED DIGITAL INPUTS	20
DEDICATED DIGITAL OUTPUTS	8
USER ANALOG INPUTS	4
USER DIGITAL INPUTS	14
USER DIGITAL OUTPUTS	8

CONTROLLER FEATURES

POSITION RANGE
± 2,147,483,648 counts per move (32 bit)

VELOCITY RANGE
± 655,360,000 counts / sec

ACCELERATION RANGE
± 655,360,000 counts / sec

JERK RANGE
± 8,000,000,000,000 counts / sec

MOTION PROFILE MODES
Trapezoidal, Point to point & Interpolated
SCurve, Point to point
Velocity contouring
Electronic gearing
Custom contouring

POSITION ERROR SIZE
± 4,294,967,296 encoder counts

DEDICATED I/O, PER AXIS
Positive limit, negative limit
Home sensor
Drive enable
User input

USER I/O
8 Digital outputs
14 Digital inputs
4 Analog inputs (if not used for servo feedback)

DEDICATED EMERGENCY STOP CIRCUIT
1 E-Stop monitor input
1 E-Stop trigger output
Hardware disable of drive enables on E-Stop

FILTER GAIN TYPES
Home filter set
Stopped filter set
Motion filter set

FILTER TERMS
(Kp) Proportional, (Ki) Integral, (Kd) Derivative
(IL) Integral Limit, (TL) Torque Limit
(DS) Derivative Sub Sampling
(AF) Acceleration & (VF) Velocity Feed Forward
(PW) Position Window
(SH) Parameter Global Scale