SERVO DRIVE FEATURES:

- **High Dynamics.** Digital control loops with high bandwidth response and advanced signal processing algorithms enable even greater peak torque out of Moog's high power density motors. You'll be challenged to find any servo system offering an equivalent level of performance.

- **Flexible System Solutions.** Integral motion control and programmable I/O support cam profiling, electronic gearing and pinpoint positioning to eliminate separate motion control hardware in a variety of applications. CAN fieldbus interface simplifies coordinated multi-axis motion control solutions.

- **Quick and Easy Setup.** The W inDrive, Windows® based user interface, provides automated self tuning, a virtual oscilloscope, data logging, and system diagnostics to expedite system setup and commissioning.

- **Simplified Installation and Wiring.** The highly integrated design offers high voltage and logic power supplies, servo amplifier, motion control platform, and EMC filters all within a compact enclosure to reduce wiring runs and free-up valuable cabinet real estate.

- **Robust Thermal Design.** Conservative thermal management approach with integral cooling fans and multi-tiered fault protection provides for years of reliable operation in demanding industrial environments. Fully rated performance available with ambient temperatures up to 55° C.

- **Superior Control.** High PWM switching frequency and reduced ripple current combines with Moog's high pole count, low cogging, motors to provide smooth slow speed operation.

OPERATING MODES

- **Current (Torque) Mode.** Motor current (torque) controlled by +/- 10 VDC command reference.

- **Velocity Mode.** Motor speed controlled by +/- 10 VDC command reference.

- **Programmable Speed Mode.** Motor operates at one of four preprogrammed speeds based on the state of two discrete inputs.

- **Incremental Position Mode.** Motor is positioned based on step and direction or up and down count format inputs from external signal source. Link multiple drives together as electronic gearing.

- **CAN Position Mode.** Provides multi-axis position control via high speed serial bus. Complex coordinated motion control profiles can be controlled via separate motion control hardware.

- **Simple POINT Position Mode.** Supports point-to-point motion, via predefined control templates. Motion trajectories can be defined at design or run time and initiated via combinations of discrete and serial interfaces. Supports both simple and complex motion profiles with homing, jogging, absolute and relative positioning.

- **Custom POINT Position Mode.** Provides motion control via internal user defined motion program. Discrete, analog and serial interfaces allow sense and control of external devices. Stand-alone or multi-axis motion control.

DRIVE SPECIFICATIONS

Communications/Field Bus
- Software configurable RS232/RS485
- CAN Fieldbus

Position/Transducer Interfaces
- Resolver Input
- Encoder Input (Motion Control, Electronic Gearing,... etc)
- Encoder Simulation Output (programmable 128-8192)

Analog Inputs (2)
- Velocity or Torque Mode Reference Input
- Torque Limit Analog Input
- Both User Defined in Position Mode
- Differential Inputs (20 KΩ Input Impedance)

Analog Outputs (2)
- Both User Defined (for Motion Control or Diagnostics)

Digital Inputs (10), Expandable to 26
- Supply Voltage Range 12 - 36 VDC
- Polarity Current Activated (Configurable as Source/Sink)
- Isolated Inputs (2.5 KΩ Input Impedance)

Digital Inputs (5), Expandable to 15
- Supply Voltage Range 0-36 VDC, 50 mA Max
- Isolated O utput

Relay Outputs (2)
- System/Power Ready 0-36 VDC, 100 mA Max
- Brake Relay 0-36 VDC, 3A Max
### DRIVE SPECIFICATIONS (cont.)

<table>
<thead>
<tr>
<th>Model</th>
<th>Output Current (Arms)</th>
<th>Output Power (KW)</th>
<th>Internal Regeneration Power</th>
<th>External Regeneration Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>T200-310</td>
<td>5</td>
<td>7.5</td>
<td>40</td>
<td>14K</td>
</tr>
<tr>
<td>T200-410</td>
<td>10</td>
<td>7.5</td>
<td>40</td>
<td>2.8K 600 14K</td>
</tr>
<tr>
<td>T200-510</td>
<td>20</td>
<td>7.5</td>
<td>40</td>
<td>2.8K 600 14K</td>
</tr>
<tr>
<td>T200-610</td>
<td>40</td>
<td>15</td>
<td>40</td>
<td>Not Available 2500 35K</td>
</tr>
<tr>
<td>T200-710</td>
<td>60</td>
<td>15</td>
<td>30</td>
<td>Not Available 2500 35K</td>
</tr>
</tbody>
</table>

Servo Drive with Integral Power Supply

Servo Drive Only

<table>
<thead>
<tr>
<th>Model</th>
<th>Output Current (Arms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T200-300</td>
<td>5</td>
</tr>
<tr>
<td>T200-400</td>
<td>10</td>
</tr>
<tr>
<td>T200-500</td>
<td>20</td>
</tr>
</tbody>
</table>

To minimize system costs, the T200 servo drive is available with or without integral high voltage power supplies. Units with the integral power supply provide an unregulated 325 VDC (nominal) output capable of powering several units without supplies.

All T200 servo drives come with internal logic power supplies. The logic voltages are derived from either the AC Mains or DC Mains input. A backup logic power input source (AC or DC voltages) can also be connected to ensure logic power continuity if AC or DC Mains are interrupted.

#### Environmental Conditions
- Operating Temperature Range: 0 - 55°C ambient
- Humidity: 5% - 95% non-condensing
- Altitude: 3300 feet (derate output 2%/1000 feet above 3300 feet)

#### Diagnostics
- LEDs for AC Mains, DC Bus and Regen Status
- Seven Segment Display for Warnings/Faults
- Fault History Log

#### Fault Protection
- Overvoltage
- Undervoltage
- Output phase to phase short circuit
- Drive Overtemperature
- Motor Overtemperature
- Over Current Foldback
- Feedback Loss

#### Weight
- 5.6 kg (-31X, -41X, -51X)
- 9.1 kg (-610)
- 10.4 kg (-710)

#### Digital I/O (functionality dependent on control module)

<table>
<thead>
<tr>
<th>I/O Type</th>
<th>Current/Velocit Mode</th>
<th>Custom POINT Mode</th>
<th>CAN Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input (1)</td>
<td>Drive Enabled</td>
<td>Drive Enabled</td>
<td>Drive Enabled</td>
</tr>
<tr>
<td>Input (2)</td>
<td>Power Ready</td>
<td>Power Ready</td>
<td>Power Ready</td>
</tr>
<tr>
<td>Input (3)</td>
<td>Auto/Manual Select</td>
<td>Auto/Manual Select</td>
<td>Auto/Manual Select</td>
</tr>
<tr>
<td>Input (4)</td>
<td>Torque/Vel OC Select</td>
<td>User Defined</td>
<td>Home-Switch</td>
</tr>
<tr>
<td>Input (5)</td>
<td>CW Limit</td>
<td>User Defined</td>
<td>CW Limit</td>
</tr>
<tr>
<td>Input (6)</td>
<td>CCW Limit</td>
<td>User Defined</td>
<td>CCW Limit</td>
</tr>
<tr>
<td>Input (7)</td>
<td>Brake Control</td>
<td>User Defined</td>
<td>Brake Control</td>
</tr>
<tr>
<td>Input (8)</td>
<td>Rotation Direction</td>
<td>User Defined</td>
<td>User Defined</td>
</tr>
<tr>
<td>Input (9)</td>
<td>Programmable Speed Input</td>
<td>User Defined</td>
<td>Emergency Stop</td>
</tr>
<tr>
<td>Fast Input (10)</td>
<td>Programmable Speed Input</td>
<td>User Defined or Position Latch</td>
<td>User Defined or Position Latch</td>
</tr>
<tr>
<td>Output (1)</td>
<td>Limit Active</td>
<td>Limit Active</td>
<td>Limit Active</td>
</tr>
<tr>
<td>Output (2)</td>
<td>Drive Enabled</td>
<td>User Defined</td>
<td>Drive Enabled</td>
</tr>
<tr>
<td>Output (3)</td>
<td>Speed/Torque Achieved</td>
<td>User Defined</td>
<td>User Defined</td>
</tr>
<tr>
<td>Output (4)</td>
<td>Fault Status</td>
<td>User Defined</td>
<td>User Defined</td>
</tr>
<tr>
<td>Output (5)</td>
<td>Fault Status</td>
<td>User Defined</td>
<td>User Defined</td>
</tr>
<tr>
<td>Output (6)</td>
<td>System Ready</td>
<td>System Ready</td>
<td>System Ready</td>
</tr>
<tr>
<td>Output (7)</td>
<td>Brake Control</td>
<td>User Defined or Brake Control</td>
<td>User Defined or Brake Control</td>
</tr>
</tbody>
</table>
MECHANICAL DATA

T200-3XX Through -5XX

T200-6XX Through -7XX

ALL DIMENSION ARE IN MILLIMETERS [INCHES]

<table>
<thead>
<tr>
<th>Model (T200)</th>
<th>Dimension “A”</th>
</tr>
</thead>
<tbody>
<tr>
<td>-610</td>
<td>335 [13.2]</td>
</tr>
<tr>
<td>-710</td>
<td>365 [14.4]</td>
</tr>
</tbody>
</table>

Recommended Mounting Envelope
Height: 430mm, Depth: 300mm

Recommended Mounting Envelope
610 Height: 455mm, Depth: 300mm
710 Height: 485mm, Depth: 300mm

T200-31X Through -51X*

T200-610 and -710

* Connectors for units without integral power supplies (T200-X0X) vary as shown below.

<table>
<thead>
<tr>
<th>Connector Designation</th>
<th>Function</th>
<th>T200-X1X</th>
<th>T200-X0X</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB1</td>
<td>External Regen</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>TB2</td>
<td>AC Mains In</td>
<td>D C Mains In</td>
<td></td>
</tr>
<tr>
<td>TB4</td>
<td>Power Ready</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Recommended Mounting Envelope
Height: 430mm, Depth: 300mm

Front Left Side

(IN) (OUT)

REMOVE ALL INPUT
POWER AND WAIT 5 MINUTES BEFORE SERVICING.

WARNING

PWR RDY
TB4

L
PEPE
N
L
N

TB5 24V DC LOGIC POWER

TB6 120V AC LOGIC POWER

MOTOR BRAKE

TB7

EXT 24V DC
BRAKE +
BRAKE -
EXT 24V DC RET

TB8 MOTOR POWER

W      V      U     PE

J6
R
E
S
O
L
V
E
R

J7
E
S
M
O
T

S
E
R
I
A
L
P
R
O
T

J4
E
N
C
D
R

J5
C
A
N
I
N
C
A
N
O
U
T

J2 J3
1
A
X
S
I
S
I
G
N
A
L
S

14 28

J1
15

STATUS
AXIS ID

Remove all input
power and wait
5 minutes before servicing.

WARNING

IN
OUT

1

2

1

2

PE

GEN+

GEN+

GEN-

GEN-

DC+

DC-

PE

EXT REGEN/

AC LINE IN

DC BUS OUT

DC BUS OUT

DC+

DC-

PE

BUS ACTIVE

MAINS APPLIED

REGEN ACTIVE

1

2

PE

TB1

TB2

TB3

TB4

TB5

TB6

TB7

TB8

W

V

U

PE

R

E

S

O

L

V

E

R

S

E

R

I

A

L

P

R

T

J4

J5

J6

J7

J1

J2

J3

J1

J2

J3