SERVOTRONIX
always in motion

Standard Servo Drives
Custom Servo Solutions

Performance

Experience

Value

Experts In Motion

Experience

SERVOTRONIX
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Celebrating 25 Years of Motion Innovation

Servotronix Motion Control develops, manufactures, and markets motion electronics solutions.
The company brings over 25 years of experience in the development of state-of-the-art servo solutions for the industry's leading machine builders and automation system suppliers. It provides optimized, cost-effective standard and custom motion systems that are tailored to customers' applications and designed to meet customers' form, fit, functionality, and cost specifications.

Performance

High-Performance and Cost-Efficient Product Lines

Servotronix prides itself in a range of products, including four generations of highly featured servo drive families, harsh environment solutions, and a host of support capabilities to a wide range of applications and requirements.
Our flagship CDHD servo drive family features innovative technologies that deliver high performance, advanced functionality, and seamless commissioning, packed in a cost-efficient high power density package.

Flexible Customizations

As global experts in the development of motion systems, Servotronix is the perfect partner to take on any challenge. Our extensive experience is translated into a wide range of ready-to-use software and hardware elements that form the building blocks for the development of your motion solution.
This building blocks approach, combined with our advanced technological innovations, offers higher performance, reduced risk, space and cost savings, seamless integration and a faster time to market.

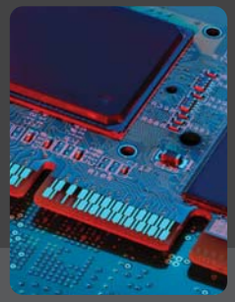
Value

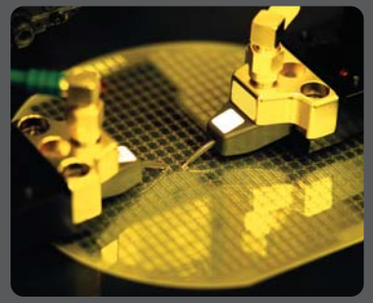
Vertical Markets Experience

CNC, Wire-Bonding, Robotics, Semiconductors, Electronics Assembly, Medical Equipment, Glass Mold Manufacturing, Textiles, Printing, Solar Cell Manufacturing and many more.

Every vertical market has its specific characteristics and regulatory requirements. Throughout our 25 years of experience we have developed motion solutions for almost every vertical market. This accumulated experience helps us expedite the development process, while using building blocks that have been tried and tested for the specific industry requirements.






Experience

Extensive Experience

- Over 25 years of experience in the development of motion systems
- More than 500,000 delivered axes
- 1,000 man years of motion control knowledge
- Globally leading customer base in diverse vertical markets

Performance

Innovative Technologies

- Technology driven, with industry-leading performance
- Innovative control and tuning algorithms
- 4 generations of successful product families

Value

Outstanding Value

- Affordable prices
- 30 months warranty on our flagship CDHD drive family
- Fast Customizations

Watch Movie

CDHD - High-Performance Servo Drive Family

Description

CDHD, the next-generation high performance servo drive, features innovative technologies that deliver high performance, extensive versatility, and seamless commissioning, packed in a cost effective high power-density drive. Based on over 25 years of research and field experience, CDHD's innovative algorithms and heat sink design provide Industry leading frequency response in one of the industry's smallest footprint drives, with current loop bandwidth of up to 3.0 KHz. Its fast control loop sample rates and flexible filtering options offer faster response rates and ensure that machine accuracy and throughput are maximized. The drive features eleven digital inputs and six digital outputs, conveniently located on separated controller and machine I/O connectors, supporting any I/O requirement.

CDHD offers seamless commissioning through its GUI-based ServoStudio software or through direct terminal access, allowing an all in one access to Current, Velocity, and Position control loops.

Key Benefits

- Advanced technologies, superb reliability and seamless commissioning
- Supports a wide range of applications, and can be coupled with any third party-motor including rotary and linear brushless DC motors, as well as DC brush motors
- High power density in one of the smallest footprints in the market
- Minimized position error and settling time
- CANopen®, Analog command or Pulse & Direction communications interfaces, with upcoming connectivity through EtherCAT and SERCOS III
- High I/O count for enhanced flexibility
- Safe-Torque-Off (STO)
- Advanced Auto-tune function to tune Velocity and Position loops

Customization options: Drive's firmware can be customized to address special application requirements

Dimensions

CDHD 200 V	Height (mm)	Width (mm)	Depth (mm)
CDHD-1D5, 003	152.4	43.2	143.7
CDHD-4D5, 006	149.7	53.7	167.2
CDHD-008, 010, 013	170	61.6	182
CDHD 400 V	**Height (mm)**	**Width (mm)**	**Depth (mm)**
CDHD-003, 006	164	106	186

Ratings

Ratings	CDHD	1D5	003	4D51	006	008	010	012	013	020	024
Input Power Main Circuit	200 V	1 Phase	1 Phase	1 Phase or *3 Phase	1 Phase or *3 Phase	1 Phase or *3 Phase	*3 Phase	-	*3 Phase	*3 Phase	*3 Phase
	400 V	-	3 Phase	-	3 Phase	-	-	3 Phase	-	-	3 Phase
Motor Output											
Continuous Output Current(Arms)		1.5	3	4.5	6	8	10	12	13	20	24
Peak Output Current (Arms) for 2 sec		4.5	9	18	18	28	28	30	28	48	48

200 V Main Input: 115-230 VAC +10% to -15% (* 3 Phase 115-208 VAC) **200 V Logic Input Power:** 115-230 VAC +10% to -15% 1 Phase **400 V Main Input:** 380/480 VAC +10% to -15%

Product Features

Servo Control

- Control, Velocity and Position modes of operation
- 31.25µsec Current loop. 125µsec Velocity loop, 250µsec Position loop enable high control loop bandwidth
- DQ torque loop control, torque loop bandwidth of up to 3 KHz
- Switching among five Speed control loops, Sophisticated Speed loop filters
- Auto-tuning function

Reference Command

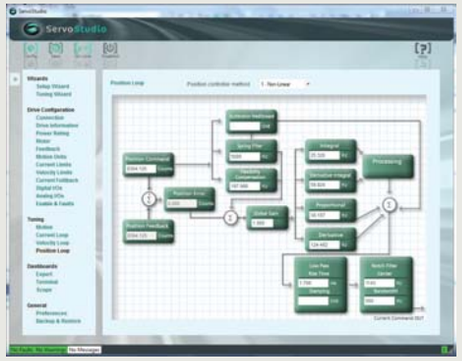
- Very high resolution of 16 bit analog-to-digital conversion for ±10 VDC operation in Current or Velocity mode
- Pulse & Direction • CANopen® – CiA 301 and CiA 402
- USB or RS232 ASCII-based serial communications

Communications

- CANopen®, supporting the CiA 301 application layer and the CiA 402 device profile for drives and motion control
- USB or RS232, with daisy-chain connection between drives
- Ethernet and SERCOS III communications (upcoming connectivity)

Primary Motor Feedback

All feedback types are on the same connectors and supported by the same product type, saving the need for special part numbers, or special extension devices.



- Incremental quadrature or sine encoder, with or without marker, with or without halls
- Tamagawa • Resolver
- EnDat 2.1 sine encoder, 2.2 SSI encoder • BiSS-C encoder • Support for other SSI encoders upon request • Halls only • Motor temperature

Secondary Feedback

- Incremental A-quad-B encoder
- Function, dual-loop applications

Motion Options

- Homing functions
- Point-to-point, incremental and absolute
- Motion indexing based on digital input selection

Configurable Input and Output

- Digital Inputs opto-isolated, **8** digital inputs, **3** fast digital inputs. **Function:** Enable, Clear faults, Limits, execute script file, trigger motion, homing etc.
- Digital Outputs opto-isolated, **4** opto-isolated digital outputs, **2** fast opto-isolated digital outputs. **Functions:** Brake, alarm, Status etc.
- Equivalent encoder output with programmable resolution
- Fault relay • Optional second analog input • 0-10V analog output Conformance
- CE (EMC and Safety) • UL 508C • RoHS

Ordering Information

CDHD - 006 2 A AF 1 - XX

CD Servo Drive
HD Series

Rating
Cont/Peak [Arms]

200 VAC (300 VDC)

1D5	1.5/4.5
003	3/9
4D5	4.5/18
006	6/18
008	8/28
010	10/28
013	13/28
020	20/48
024	24/48

400 VAC (600 VDC)

003	3/9
006	6/18
012	12/30
024	24/48

AC Power Supply
2- 200 VAC
Input Single Phase 115 VAC +10% -15% 50/60 Hz
Input Three Phase 115 VAC +10% -15% 50/60 Hz
Input Single Phase 230 VAC +10% -15% 50/60 Hz
4- 400 VAC
Input Three Phase 380, 480 VAC +10% -15% 50/60 Hz

Control Power Supply
D - 24 VDC control power supply. For 400 V drive only
A - AC control power supply. For 200 V drive only

Interface Options
AP- Analog Voltage/ Pulse Train Ref & RS232
AC- Analog Voltage/ Pulse Train Ref & CANopen®
AF- Analog Voltage/ Pulse Train Ref & CANopen® & RS232
EC- EtherCAT

Analog Input
1- One Analog input, 16 bit
2- Two Analog inputs, 14 bit (Optional)

Special Specification
(If applicable)

** Please contact us at info@servotronix.com for product availability.*

LVD - High Performance CANopen® Servo Drive in a Miniature Package

Description

The LVD is a High Performance servo drive in a miniature package. Measuring only 117 x 83.5 x 21.5mm and weighing only 250g, this fully digital amplifier is ideal for driving Brushed or Brushless DC motors. Communication is via RS-232 or CANopen® and can be operated in Current, Velocity or Position mode. The LVD supports the DS402 CANopen® device profile.The LVD is powered from a supply voltage of 12-48VDC, and is capable of sourcing 7Amps RMS continuous current, and 12Amps RMS peak current. The PWM switching frequency of up to 100kHz combined with state-of-the art space-vector modulation enables operation with low inductance motors while minimizing current ripple and eliminating acoustic noise. Drive configuration is fast and easy with our complimentary *Axis Manager* software.

Key Benefits

- Compact, high-current servo drive
- Drives Brush or Brushless DC motors
- High PWM frequency for low inductance motors
- Single-ended or Differential encoder feedback
- Logic power supply is separate from the bus power supply

Dimensions

Height (mm)	Width (mm)	Depth (mm)
21.5	117	83.5

Ratings

Logic Voltage (VDC)	Main Input Voltage (VDC)	Continuous Output Current per Phase (Amps RMS)	Peak Output Current per Phase (Amps RMS)
10-36	12-48	7	12

Product Features

Feedback

- Incremental Encoder (TTL single-ended or RS-422 differential)
  - With Halls for Brushless DC motors
  - HALLS-only operation in current or velocity mode will be available upon special request

Servo Control

- Advanced Space-vector modulation to maximize motor performance
- Current, velocity and position modes of operation
- Configurable PWM switching frequency at 16kHz or at 100KHz

Reference Command

- CANopen® DS402 motion profile
- Serial command
- ±10VDC analog input with 12-bit resolution for Current or Velocity mode of operation

Motion Options

- Point-to-point, incremental or absolute, with Trapezoidal profile
  - S-curve profile will be available upon special request
- Configurable homing based on Index, digital input or both

I/O

- 6 opto-isolated digital inputs that can be configured as dedicated inputs (over-travel limits and Home)
- 2 opto-isolated digital output, controllable over the CAN bus
- 2 configurable ±10VDC analog inputs
- Remote Enable
- Encoder Strobe

Robust Design

- Full protection against: short circuit, drive over-temperature, over-current, over-voltage, under voltage and feedback loss

Indicators (two LEDs)

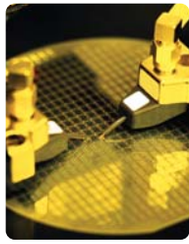
- BUS Power indication • Drive status

Conformance

- CE • RoHS

Ordering Information

For ordering the standard LVD, please use the following part number:
LVD48701



PicoDAD - Dual-Axis Low-Voltage Drive

Description

The PicoDAD is a low-voltage dual-axis drive. Incorporating two independent servo drives, this revolutionary product saves space on your machine and lowers the system cost by utilizing shared components. The PicoDAD operates on 48VDC for the Bus power, and separate 24VDC for Logic power. Separation of Bus and Logic power allows bus power control to be incorporated into the machine safety chain, while not losing application information or real-time monitoring data during E-stop events. Each axis is capable of individually sourcing 10A RMS continuous and 20A RMS peak to the motor.

Key Benefits

- Two independent servo drives in one compact package
- Customizable to accommodate different communication and control interfaces
- Extensive I/O support is provided via separate Machine- and Controller-oriented I/O
- Supports Encoder feedback, with or without commutation (Interface to additional feedback devices will be customized per request)

Dimensions

Height (mm)	Width (mm)	Depth (mm)
205	71.5	120.7

Ratings

DC Bus Voltage	Continuous Output Current per Phase (Amps RMS)	Peak Output Current per Phase (Amps RMS)
48 VDC	10	10
28 A	10	20

Product Features

Feedback
- Incremental encoder
- Commutation initialization without halls is achieved with minimal motion

Servo Control
- Fully digital current loop, running at 32KHz
- Fully digital velocity loop
- Advanced sine wave commutation provides smooth, precise low-speed control as well as high-speed performance
- Patented torque angle control enhances motor performance

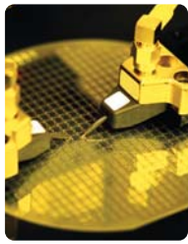
Machine I/O (individual for each axis)
- Home
- Over-travel limits
- Brake control dry-contact relay

Command Modes
- Individual +/-10 VDC analog command to each axis
- RS232

Controller I/O
- 8 general purpose opto-isolated inputs
- 4 general purpose opto-isolated outputs
- Remote Enable Input (individual for each axis)
- Encoder simulation (encoder equivalent) outputs for A,B and Index pulses
- 2 general-purpose analog inputs: ± 10VDC, 12-bit resolution
- Dry-contact fault relay

Real-Time data monitoring
Real-time data monitoring allows for on-line diagnostics and preventative maintenance
- Bus voltage
- Drive temperature
- Analog inputs
- Phase currents and overall torque

Electrical Specification
- Bus Voltage: 48VDC
- Logic Power: 24VDC
- Two Motor Power Options: 10A RMS continuous / 20A RMS peak per axis
  10A RMS continuous / 10A RMS peak per axis



Ordering Information

For ordering the standard LVD, please use the following part number:

PDD 04 xx 160

xx referes to the output current rating.
- 10: 10 Amps RMS continuous and 10 Amps RMS peak
- 20: 10 Amps RMS continuous and 20 Amps RMS peak

PPB - PMAC Power Block

PPB

Description

The Servotronix PMAC Power Block is designed to interface to the Delta Tau PMAC2/UMAC motion controller, where the controller is generating PWM signals. The smart power stage is available in five power ratings, with the 3 and 6 amp model providing a 1:3 ratio of continuous to peak current, and the other models providing a 1:2 ratio of continuous to peak current. The intelligent interface card features extensive protection mechanisms, over-current protection, drive over-temperature indications, and over- and under-voltage protection.
A 7-segment display shows faults.

Key Benefits

- Common interface over a wide power range
- Simple architecture for easy interface to Delta Tau controllers
- High performance power stage provides exceptional performance in demanding applications
- Superior cost & quality compared to alternate solutions

Dimensions

Product	Height (mm)	Width (mm)	Depth (mm)
CP303250	256	67.4	163
CP306250	256	81.4	163
CP310250	256	99	163
CP320260	280	110	185.5
CP335260	322	150	250

Ratings

Product	AC Line Input Voltage	Continuous Output Current per Phase	Peak Output Current per Phase(Amps RMS)
CP3032x0	1phase, 115VAC 1phase, 230VAC 3 phase, 190-230 VAC_{L-L}	3	9 (0.5 seconds)
CP3062x0	1phase, 115VAC 1phase, 230VAC 3 phase, 190-230 VAC_{L-L}	6	18 (1 second)
CP3102x0	3 phase, 190-230 VAC_{L-L}	10	20 (2 seconds)
CP320260	3 phase, 190-230 VAC_{L-L}	20	40 (2 seconds)
CP335260	3 phase, 190-230 VAC_{L-L}	35	70 (2 seconds)

Product Features

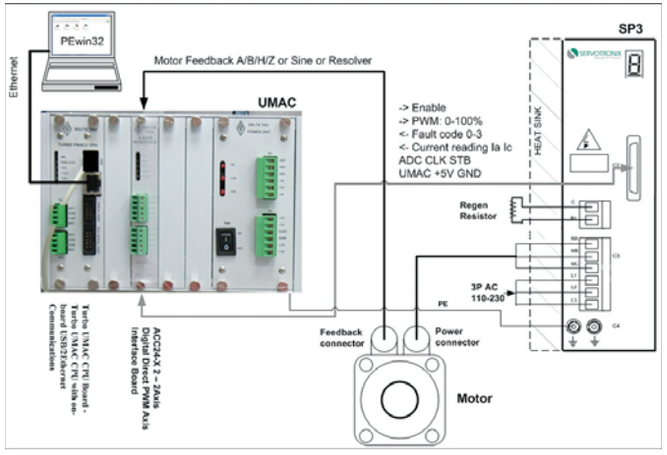
Rugged Power Stage

At the heart of the PPB is a rugged Servotronix CD based power stage featuring:

- Fully isolated electronics
- Self-protection for over voltage, under voltage, over temperature, short circuit, excessive switching frequencies, and cross firing
- Internal dead-time protection

PMAC Interface

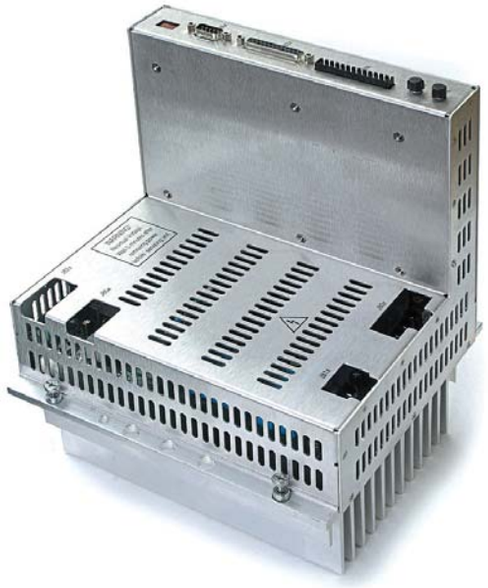
- The PPB interfaces to the Delta Tau UMAC controller via a standard mini D 36 pin cable
- The PPB receives PWM commands, and returns current measurement and fault indications to the controller
- The Motor Feedback device connects directly to a suitable interface card on the UMAC system



Ordering Information

The PPB model number is built as follows. Note: Not all combinations are available. Specifically, the 20 and 35Amp products are available only with external 24VDC logic power. The 3, 6 and 10Amp models are normally available only with logic power generated internally. Check with Customer Service before ordering.

For ordering the standard PPB, please use the following part number:	
CP3 zz 2y0	
zz: Current (Continuous/Peak, Amps RMS)	**y: Logic power**
03: 3/9, **06:** 6/18, **10:** 10/20, **20:** 20/40, **35:** 35/70	**5:** Internal, **6:** External 24VDC



Description

The RX260 is a high-performance custom servo amplifier, developed according to the requirements of a specific customer in the Robotics market.

This amplifier was designed as part of a robot servo system that included a power supply that provides DC voltage to up to 6 servo amplifiers. It utilizes the Servotronix CD Series 5 control board, thus providing a full-featured digital drive with the rich CD Series 5 feature set.

Key Benefits

- High power drives for extending existing robotics product line
- Customer-specific mechanical shape to meet the space constraints of the customer's cabinet
- Six high voltage DC voltage amplifiers per system, and one high voltage power supply
- Short development cycle by using existing servo drive control board
- SERCOS Communication
- Range of power options, to efficiently meet the requirements of the different axes of the robot

Dimensions

Height (mm)	Width (mm)	Depth (mm)
275	214	206

Ratings

Model	DC Input Voltage (nominal)	Continuous Output Current per Phase (Amps RMS)	Peak Output Current per Phase (Amps RMS)
15/32	565	15	32 (2 seconds)
25/65	565	25	65 (2 seconds)
30/84	565	30	84 (2 seconds)

Product Features

Feedback
- Hiperface Sine Encoder
- Other options available with small modifications:
  - Resolver, Incremental Encoder, EnDat 2.1 and halls- only operation
  - Commutation initialization without motion
- Auxiliary encoder feedback, used for Dual loop or Master / Slave operation

Servo Control
- Fully digital current, velocity and position loops
- Accurate torque control due to precision balanced current loops with closed loop sensors
- Patented torque angle control enhances motor performance
- Self-tuning velocity loop algorithm

Reference Command
- SERCOS or Serial (RS232) command
- Other options available with small modifications:
  - 14 bit Analog-to-Digital conversion for ±10Vdc operation
  - Pulse following control, configured as an encoder follower, up/down counter, or Pulse & Direction counter

Configurable Input and Output
- 6 digital inputs and 1 digital output, configurable to a variety of functions
- Analog output for monitoring various parameters
- Homing functions

Robust Design
- Self-protecting power modules
- Full protection against short circuit, over-voltage, under-voltage, motor and drive over-temperature, over-current and feedback loss
- Flexible current foldback protection

Ordering Information
The RX260 is a custom product, and can be used as a “Jump-off Platform” for your servo system solution.
Please contact Servotronix at info@servotronix.com for more information.

MCM HPM

Description

The MCM and HPM are brushless digital servo drives supporting the CANOpen DS301 and DSP402 communications protocol. Originally designed for a specific application in the Medical Industry, these products comply with the medical EMI standard: IEC 60601-1-Rev 3.

An auxiliary CAN bus is available for common CAN functions as well as for customer-specific communication functions. This communications channel can be utilized by writing customer-specific code for the drive.

These are customized products, and are presented here to show Servotronix's capabilities in Custom Servo Drive development. All customized products can serve as a starting point for new designs, thus minimizing development risk for our customers.

Key Benefits

- Combining six separate requirements into a single Motion Control Module
- Reduction in system components
- Durable brushless DC technology
- Compatible with all different axes of the system
- CANopen® communication interface
- Dual loop feedback
- Conformity to EMC/EMI standards
- Continuous scan capabilities due to high performance and low ripple

Dimensions

Product	Height (mm)	Width (mm)	Depth (mm)
MCM	71	127	155
HPM	108	205	200

Ratings

Product	Logic Voltage (VDC)	Main Input Voltage (VDC)	Continuous Output Current per Phase(Amps RMS)	Peak Output Current per Phase(Amps RMS)
MCM	24VDC @ 0.5A	160VDC	5	10
HPM	24VDC @ 0.5A	230VAC, single-phase	12	22

Product Features

Feedback
• Primary motor feedback: A-quad-B incremental encoder with Hall sensors.
• Secondary Feedback used for dual-loop operation: The products support either an absolute encoder with BiSS protocol, or an A-quad-B incremental encoder.

Communications
• CANopen , supporting DS301 and DSP402
• CAN bus: Auxiliary CAN bus link, supporting customer-specific communications
• The CAN address is set using 4 digital inputs
• RS232 Serial Communications with ASCII protocol

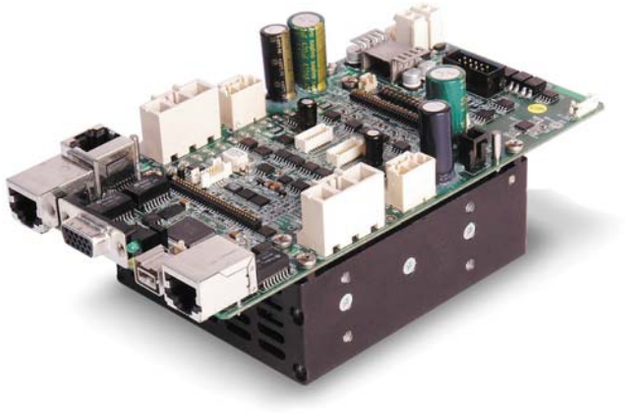
Motion Options
• Homing
• Point-to-point position-based moves, with blending, S-Curve
• Constant velocity

Motor Brake Control
• Brake control circuit rated for 24Vdc @ 0.5Amps.
• Includes feedback to detect short-circuit or open-circuit on the brake coil

Input and Output
• 8 TTL digital inputs
  - CW and CCW over-travel limits, or general-purpose inputs
  - Home, or general-purpose input
  - 5 general-purpose inputs
• 1 opto-isolated input, used to detect short-circuit or open-circuit on the clutch or brake coil
• 1 opto-isolated output, used for Clutch or Brake control (in addition to the dedicated Brake control)
• 1 differential (RS422) output, triggered when the target position is reached
• 1 analog input, 0-5V

Special Features
Complies with the medical EMI standard: IEC 60601-1-Rev 3

Ordering Information
The MCM and HPM are custom products, and can be used as a “Jump-off Platform” for your servo system solution.
Please contact Servotronix at info@servotronix.com for more information.



Description

The DAFA is a Custom amplifier, developed according to the requirements of a specific customer in the Semiconductor market. It is a compact, low-voltage, dual-axis drive, supporting FireWire communications. The product features a flexible architecture that allows the upper PCBA (the Personality Module) to be modified for different applications, while keeping the lower Power and Control PCBAs common for all applications.

This is a customized product, and is presented here to show Servotronix's capabilities in Custom Servo Drive development. All customized products can serve as a starting point for new designs, thus minimizing development risk for our customers.

Key Benefits

- Low profile, compact product
- Application-specific connectors & communication board
- High precision servo performance
- Customer-specific algorithms embedded in the product

Dimensions

Product	Height (mm)	Width (mm)	Depth (mm)
Power stage only	39.7	104	88.6
With Personality Module Option 1	67.7	142.2	90.2
With Personality Module Option 2	67.7	177	90.2

Ratings

Logic Voltage (VDC)	Main Input Voltage (VDC)	Continuous Output Current per Phase (Amps RMS)	Peak Output Current per Phase (Amps RMS)
24	20-60	5	10
24	20-60	10	20

Product Features

Application-Specific Personality Module

- Feedback type circuitry
- Connectors
- Communication circuitry
- I/Os circuitry

CPU Board

- Servo Control Fully digital current, velocity and position loops
- Programmable parameters to enable application- and motor-specific interfacing

Feedback

Primary motor feedback: Heidenhain or Stegmann absolute encoder
Ordering

Communications

- FireWire, with proprietary protocol
- RS232 Serial Communications with ASCII protocol

Motor Options

- Homing
- Point-to-point incremental or absolute
- PVT (position-velocity-time) profile

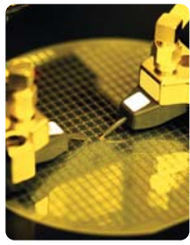
Robust Design

- Self- protecting power modules
- Full protection against short circuit, over-voltage, under- voltage, motor and drive over- temperature, over- current and feedback loss
- Flexible current foldback protection

Customer Specific Board

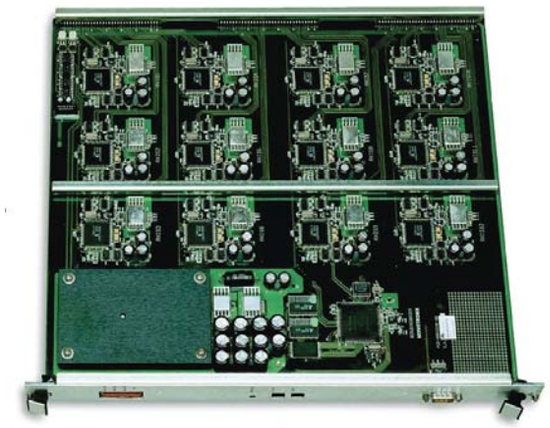
DSP Control Board

Dual-Axis Power Stage



Ordering Information

The DAFA is a custom product, and can be used as a "Jump-off Platform" for your servo system solution.
Please contact Servotronix at info@servotronix.com for more information.



Description

Designed for a custom application in the Carpet Tufting industry, this Multi-Drive Unit (MDU) consists of 12 independent servo drives assembled on a 9U PCB. Depending on the end-user's requirements, anywhere from 100 to 200 of these MDUs may be in use in a single machine. A central CPU provides a dual CAN bus interface for the MDU, and this CPU communicates information over an SSI bus between the CAN bus and the servo drives. A CAN Communications Processor controls the process and communicates with the MDUs.
The servo drives operate in a Gear Mode, following a Master Encoder value that comes from an encoder mounted on main shaft of the machine. This value is broadcast every 1 milli-second over one of the CAN channels to all motors.
The other CAN channel is used to transmit gear values independently to each servo drive, and to get status information back from the MDUs.
A debug channel on the 1msec bus enables the CAN Communications Processor to retrieve periodic data from the servo drives, to be used for data recording and trend analysis.

The motivating factor behind the development effort was the need to have easy, faster setup and programming flexibility in controlling up to 2200 axes per machine, replacing a mechanical CAM shaft.

This is a customized product, and is presented here to show Servotronix's capabilities in Custom Servo Drive development. All customized products can serve as a starting point for new designs, thus minimizing development risk for our customers.

Key Benefits

- Allows customer to have multiple pile-height capability at every needle
- Individual yarn control allows the customer to create free-flowing patterns and textures
- Enables simple creation of multi-color patterns
- Compact optimal arrangement of 12 axes per module and 8 modules in a rack
- Centralized CAN processor for each module Customized Solution

Dimensions

Height (mm)	Width (mm)	Depth (mm)
395	30	352

Product Features

Operation Modes

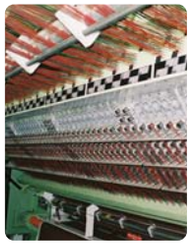
- Gearing mode: the servo drives follow a master encoder. Each servo drive has its own independent gear ratio

Motor Feedback

- Differential incremental encoder

Ordering Information

The MDU is a custom product, and can be used as a "Jump-off Platform" for your servo system solution.
Please contact Servotronix at info@servotronix.com for more information.



Ratings

Logic Voltage (VDC)	Main Input Voltage (VAC)	Continuous Output Current per Phase (Amps RMS)	Peak Output Current per Phase (Amps RMS)
28, derived internally from the main input voltage	20, 3-phase	1.4	2.0

Customized Solution

Description

The Modular Servo Control System is a high power control chassis used to drive up to 8 linear variable reluctance motors. The chassis includes cooling fans, and a control signals distribution board for easy connection to the machine controller. Space is provided for the system power supply and the chassis is shipped with power distribution wiring in place.

The system is modular since it is designed to serve machines that have 3, 4, 6 or 8 axes. The servo drives are independent of each other. They perform current control of the motor's three independent phases, and receive a commutated analog current command from the machine controller.

This is a customized product, and is presented here to show Servotronix's capabilities in Custom Servo Drive development. All customized products can serve as a starting point for new designs, thus minimizing development risk for our customers.

Key Benefits

- Modular system serves different machines
- Chassis with signal distribution panel
- Special algorithms for controlling variable reluctance motors
- High sampling rate digital controller
- Solves customer's unique safety requirements Customized Solution

Dimensions

Height (mm)	Width (mm)	Depth (mm)
482.6	457.2	541

Ratings

Logic Voltage (VDC)	Main Input Voltage (VDC)	Continuous Output Current per Phase (Amps RMS)	Peak Output Current per Phase (Amps RMS)
24	350	10	30

Product Features

Current Loop

- Current loop mode, externally commutated
- Sampling time 25 micro seconds
- Current loop bandwidth in excess of 3 kHz
- PWM frequency: 20 kHz

Communications

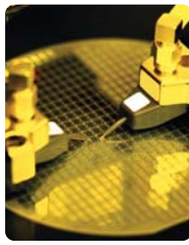
- RS232, ASCII protocol
- Designed for future FireWire communications

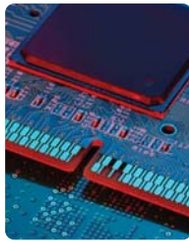
Input and Output

- Analog input
- 3 dedicated inputs
- Fault output

Special Features

- Special breaking algorithm in feedback sensor absence





Ordering Information

The Modular Servo Control System is a custom product, and can be used as a "Jump-off Platform" for your servo system solution. Please contact Servotronix at info@servotronix.com for more information.

Description

The Pitch Perfect Drive is designed to be installed in sets of three, within a wind turbine hub in order to control the pitch of the blades. The drive operates in position, velocity or torque mode. The drive can receive Analog commands or CANopen® commands from the Pitch Control system. The product interfaces two feedback devices (dual-feedback) to enhance control accuracy due to motor's gearing. During its normal operation the drive monitors and charges the external (to the drive) capacitor's bank which is used during shut-down scenarios to perform a controlled move of the blade to its neutral position. The proposed Pitch Perfect Drive is very cost effective.

Key Benefits

- High performance, full featured ruggedized servo drive
- Designed to comply with CE and UL
- IEC61800-2 chapter 4.3 vibration/ Shock/ Free fall compliance
- Operates from -20° to 55°C, 90% Humidity
- Operates at its rated current at altitudes of up to 1000m and at air pressure conditions within the range of 80 -110 kPa
- Designed to work in harsh environment
- IP54

Dimensions

Height (mm)	Width (mm)	Depth (mm)
370	240	300

Ratings

AC LineInput Voltage	Continuous Output Current per Phase (Amps RMS)	Peak Output Current per Phase (Amps RMS)
3-Phase, 380VAC	30	90

Product Features

General
- 24V Logic power supply
- Charging and voltage monitoring of external capacitors bank (Super-Cap) to enable safe and proper shut down
- Special Emergency trajectory profile

Feedback
- Dual or single feedback modes Resolver and SSI. SW command switching between modes

Servo Control
- Phase control or DQ control algorithms
- Precision analog referencing of current & speed control, with auto-zero calibration
- Fully programmable parameters, including control gains, reference gains and offsets, current and speed limits, etc.
- PWM frequency 8 kHz
- Tuning, setup, and performance monitoring by serial communication or CANopen®
- Protections for under-voltage, over-voltage automatic shut down, short circuit, thermal limits for both drive and motor.
- Ability to dissipate regenerating energy of the motor by using external regenerative resistors

Reference Command
- 12 bit Analog-to-Digital conversion for ±10Vdc operation
- Serial command
- Support CANopen® communication

Motion Options
- Position mode command
- Serial and analog Velocity command
- Serial and analog Torque command

Configurable Input and Output
- 16 digital inputs and 6 digital outputs, configurable to a variety of functions
- Motor brake relay
- Fault relay output
- 3 PT100 Thermal Sensor Inputs
- 1 Analog Command
- External Capacitor Bank charging relay command

Robust Design
- Software error handling
- Full protection against excessive temperature, under/over voltage, loss of feedback signal and output short circuit
- Loss of commutation signals, Recovery from communication errors

Ordering information
The Pitch Perfect Drive is a custom product, and can be used as a "Jump-off Platform" for your servo system solution.Please contact Servotronix at *info@servotronix.com* for more information.

Experience. Perf

Reaching Machine Builders Worldwide

DOC-STXCAPAB-EN Ver.2 Mordi Franco **Visual Communication**

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