

BDHD2 PRHD2

High-Performance Servo Drives and Motor Bundle

The BDHD2 drive is bundled with PRHD2 high performance brushless servo motor, and designed for light payload applications using EtherCAT fieldbus. Drive and motor pairing ensure optimal performance, machine efficiency, and high throughput for machine builders.

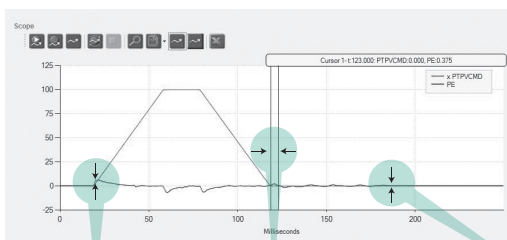


Bundled drive, motor and encoder ensure smooth and accurate motion

Motor feedback in BDHD2 bundles is provided by the sensAR 20-bit magnetic absolute encoder developed by Servotronic, or a Tamagawa 17-bit or 23-bit optical absolute encoder, in either single turn or multi-turn configurations. All motor-encoder units have drive and motor parameters stored on an electronic motor nameplate (MTP) in the encoder's EEPROM, which allows simple and reliable commissioning. The combination of drive, motor and encoder in the BDHD2 servo bundle achieves the accuracy and smoothness of motion required for automated processes in precision manufacturing and assembly.

HD control loop optimizing servo control

An adaptive non-linear control algorithm was developed to optimize servo performance in high precision motion applications. This proprietary algorithm uses a parallel configuration, in which position and velocity branches are on the same level and executed in each sampling period. A variable gain parameter is introduced and automatically optimized for high gain and stability. As a result, position error and settling time are minimized to levels far superior to those of other controllers.



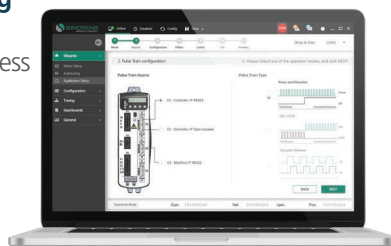
Minimum position error Settling time of almost zero No oscillations at stand-still

High bandwidth current loop achieves and industry-leading frequency response

The current loop design achieves an outstanding frequency response of 3-5 kHz. High sampling rates and flexible filtering options provide a faster response and ensure maximum machine accuracy and throughput.

ServoStudio™ wizard for simple commissioning

- Step-by-step guidance through the motor setup, application configuration and tuning process
- Innovative and self explanatory user interface
- Excellent results for novice users within minutes
- Real-time data recording and plotting
- Easy integration of servo axes
- Plug-and-play motor library



Key benefits

- Cost-effective drive based on Servotronic CDHD2
- Drive bundled with Servotronic PRHD2 motor
- Motor encoder with electronic motor plate (MTP) for plug-and-play
- High performance with HD and HDM control loops
- 3-5 kHz high current loop bandwidth
- Optional pulse train reference command
- Simple commissioning using ServoStudio™ GUI
- CE compliance
- EtherCAT (CoE) fieldbus communication, supporting:
 - Profile position, torque and speed modes
 - Synchronous position, torque and speed modes
 - Operation mode change on-the-fly while drive enabled
 - Touch probe
 - File over EtherCAT for firmware and parameter download
 - More than 40 homing types

Offered with matched PRHD2 servo motor for optimal performance



PRHD2 Series
50 W – 3 kW
0.16 Nm – 14.3 Nm

Rating and dimensions

BDHD2	Units	Model 1.5A	Model 3A	Model 4.5A	Model 6A
Input Voltage Nominal +/- 10%	VAC	240, 1 phase			
Control Input Power +/- 10%	VAC	240, 1 phase			
Line Frequency (Hz)	Hz	50/60			
Nominal Output Current	Arms	1.5	3	4.5	6
Peak Output Current	Arms	4.5	9	13.5	18
Peak Current Duration	seconds	2			
PWM Frequency	Hz	16 kHz			
Operational Temperature	°C	55			
Under-Voltage Trip (nominal)	VDC	User-defined			
Over-Voltage Trip	VDC	420			
Measurements	cm	166*49*169			

Communication

EtherCAT®*
USB*
RS232

Motor feedback

sensAR Absolute Encoder
SSI Encoder (e.g. Tamagawa®)
Motor Temperature

I/Os*

Digital: 4 x Input, 2 x Output
Pulse & Direction

*Fan is only available for models 4D5 and 006

Ordering Information

BDHD2 - 006 2A EC - 000	
BDHD2 Bundle Drive – HD Series	
Rating	
	120 / 240 VAC
	Cont. [A rms] Peak [A rms]
1D5	1.5 4.5
003	3 9
4D5	4.5 13.5
006	6 18
Input Power Supply	
2A	Medium Voltage Input Power Supply • Single Phase 120 L-N VAC +10% -15% 50/60 Hz • Single Phase 240 L-N VAC +10% -15% 50/60 Hz
Communication Interfaces	
EC	EtherCAT, USB.
Special Options	
[blank]	Standard

PH2 - M 04 A 2 30 0 5 S3 0 D											
PRHD2 Servo Motor											
Inertia											
L – low inertia M – medium inertia H – high inertia											
Frame size											
04 - 40mm 06 - 60mm 08 - 80 mm 10 - 100mm 13 - 130mm 18 - 180mm											
Length											
A – Shortest B - C -											
AC bus voltage											
2 – 230VAC 4 – 400VAC											
Rated speed											
10 – 1000 RPM 15 – 1500 RPM 20 – 2000 RPM 30 – 3000 RPM											
Shaft & Oil seal											
0 – Smooth 1 – Smooth and oil seal 2 – Keyed 3 - Keyed and oil seal											
IP rating											
5 – IP65											
Feedback device											
S3 – sensAR abs ST 20bit M3 – sensAR abs MT 20bit T1 – Tamagawa ST 17bit T2 – Tamagawa MT 17bit T3 – Tamagawa ST 23bit T4 – Tamagawa MT 23bit E0 - 2500C/T INC											
Brake											
0 – No brake 1 – with brake											
Connector											
D - Amp connector A – MIL connector											



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