

Brushless Servo Motor Drives xDrive Series

All-Digital, AC-Input, Velocity or Torque Control

Allied Motion's xDrive servo drives are precision, all-digital DSP-based servo drive amplifiers capable of supplying up to 16 A peak continuous, 32 A peak current at up to 230 VAC.

The xDrive is designed to accurately control the torque, velocity or position of a wide range of servo motors, including our Megaflux series of brushless torque motors, requiring up to 4.8 kW of continuous power.

This next generation servo motor drive is a compact, modular unit with all connections made at the front panel using standard pluggable connectors, making the xDrive easy to integrate and service.

The all-digital xDrive design simplifies setup and commissioning. The supplied set-up software requires little more than the setting of software switches to configure the xDrive.

Options

- Connectorized mating cables for feedback and motor power
- Connector mates kit



Features & Benefits

- Brushless servo drive series delivers up to 16 A peak cont., 32 A peak and 4800 W
- All-digital design for accurate motor control and easy commissioning
- Configurable digital I/O to meet various application requirements Three models (4, 8, and 16 A peak continuous) cover a majority of servo application requirements
- All-digital design eliminates analog drift and simplifies drive setup and tuning
- Line-operated, 115 - 240 VAC, 50/60 Hz, single-phase or three phase
- ± 10 VDC analog command, or digital commands using Allied Motion's ALL NET and RS232
- Programmable digital I/O
- Full fault protection
- PC-based graphical user interface for commissioning and monitoring connected to the drive via an optically isolated USB port
- Integrated regenerative energy control circuit




QuickShip Products

Some of the part number configurations for this product are in stock and available for **immediate delivery!**

Look for the QuickShip symbol next to available part numbers. Then, click on the part number to go directly to our online store.

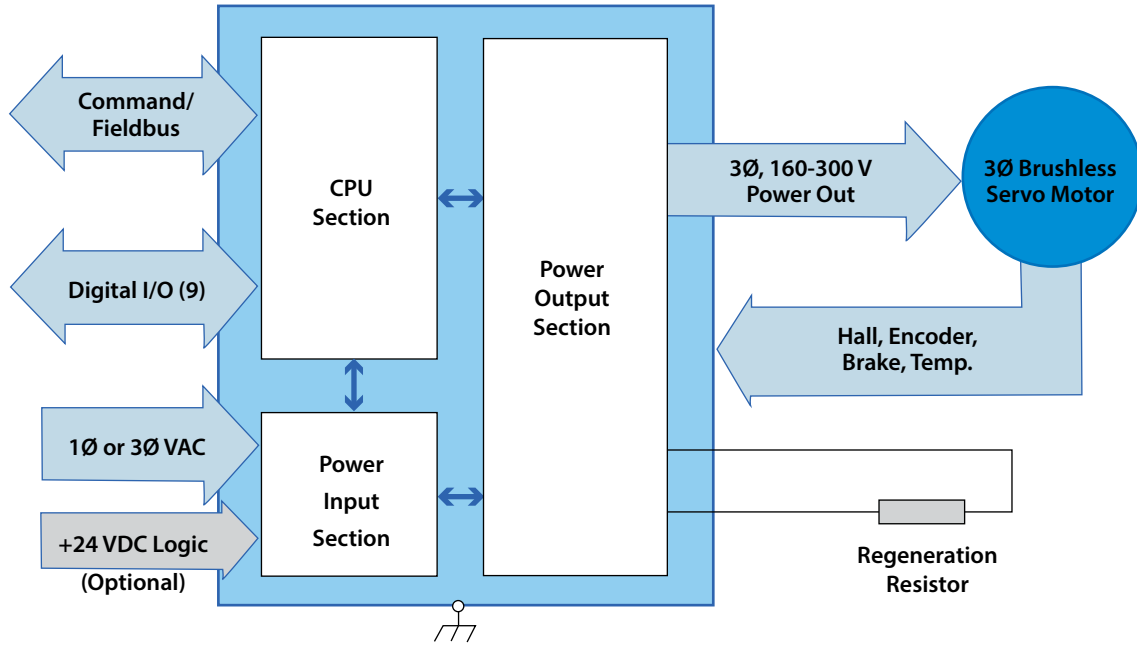


xDrive– Specifications

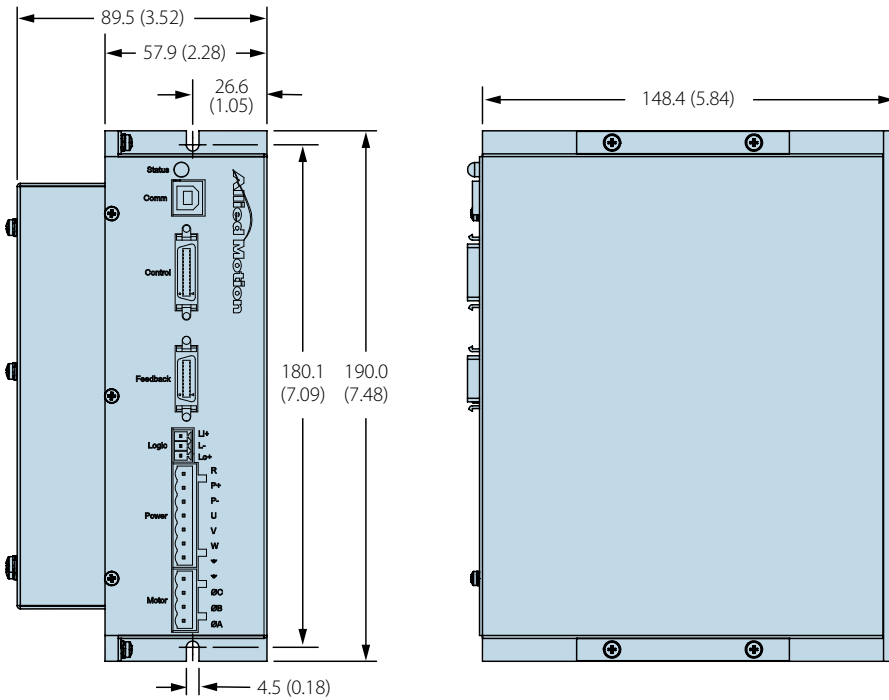
Model	 XDA-04000000	 XDA-08000000	 XDA-16000000
Continuous Current ⁽¹⁾	4 A peak / 2.8 A RMS	8 A peak / 5.6 A RMS	16 A peak / 11.2 A RMS
Peak Output Current (2 sec)	8 A peak / 5.6 A RMS	16 A peak / 11.2 A RMS	32 A peak / 22.4 A RMS
Continuous Output Power	1200 W	2400 W	4800 W
AC Input	115 - 230VAC, 50/60 Hz, single- or three-phase		
Regeneration Absorption	External resistor connection port; up to 200 W continuous absorption		
Logic Power	<ul style="list-style-type: none"> • 24 V Logic Power Keep Live Input • 24VDC @ 0.25A available for user applications if separate “keep alive” input is not used 		
Communication Interface	USB optically isolated, 12 Mbit		
Motor Feedback Types	Hall, encoder + commutation, high speed serial encoder, resolver		
Encoder Signal Compatibility	Up to 10 MHz, 3.3 to 5 V		
Amplifier Type	PWM (10 kHz) 4-quadrant control		
Current Loop	DQ PI current loop, 100 µsec update time		
Velocity Loop	PID / PDF 100 µsec update tim		
Position Loop	Proportional with feed forward, 200 µsec update time		
Digital I/O (programmable)	<ul style="list-style-type: none"> • 4 optically isolated inputs: programmable for end-of-travel limits, home, enable • 2 high speed inputs: usable as programmable inputs, auxiliary encoder input, or step/dir command input • 2 optically isolated outputs: programmable for fault, at-home, zero-speed, at-speed • 3 high speed outputs: encoder feedback (only) 		
Analog Output	0 - 5 VDC scalable to velocity, current, or other programmable parameters		
Analog I/O	2 inputs: ±10VDC, 12-bit resolution		
Motor Temperature Monitor	Detection for NTC thermistor, 1 kΩ to 100 kΩ		
Status Indicators (LED)	<ul style="list-style-type: none"> • Green, slow-blink: Disabled, no faults • Green, fast-blink: Enabled • Red: Fault 		
Protection Features	<ul style="list-style-type: none"> • Over voltage detection (390 VDC threshold) • Under voltage detection (60 VDC threshold) • Over current detection (110% of peak rated current) • Over temperature detection (100 °C threshold) • Full short-circuit protection • Encoder loss detection • I²T current foldback 		
Regenerated Energy Management	External resistor connection port; up to 200 W continuous absorption; external components: DCM-8 8 A fuse (Cooper-Bussmann), L225J10 RE 10 Ω power resistor (Ohmite)		
Weight			
Ambient Operating Temperature	0 - 45 °C (32 - 113 °F)		
Ambient Storage Temperature	-40 to +100 °C		

⁽¹⁾ Derate continuous current values for single-phase operation: 33% at 115 VAC; 50% at 230 VAC

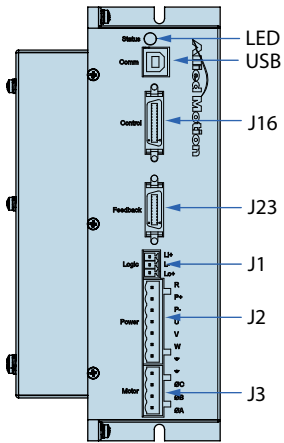
xDrive I/O Schematic



xDrive Dimensions — mm (in)



SXD Electrical Connections



Logic Power (J1)

Pin	Function
1	Aux 24V Input
2	Logic Power Common
3	User 24V Output (250ma max)

Mate: OSTTJ0311530, On-Shore

Power (J2)

Pin	Function
1	Ext Regen Resistor -
2	Ext Regen Resistor +
3	DC Bus Return
4	AC Phase 3
5	AC Phase 2
6	AC Phase 1
7	Chassis

Mate: OSTTJ077150, On-Shore

Motor Power (J3)

Pin	Function
1	Chassis
2	Motor Phase C
3	Motor Phase B
4	Motor Phase A

Mate: OSTTJ047150, On-Shore

Motor Feedback (J23)

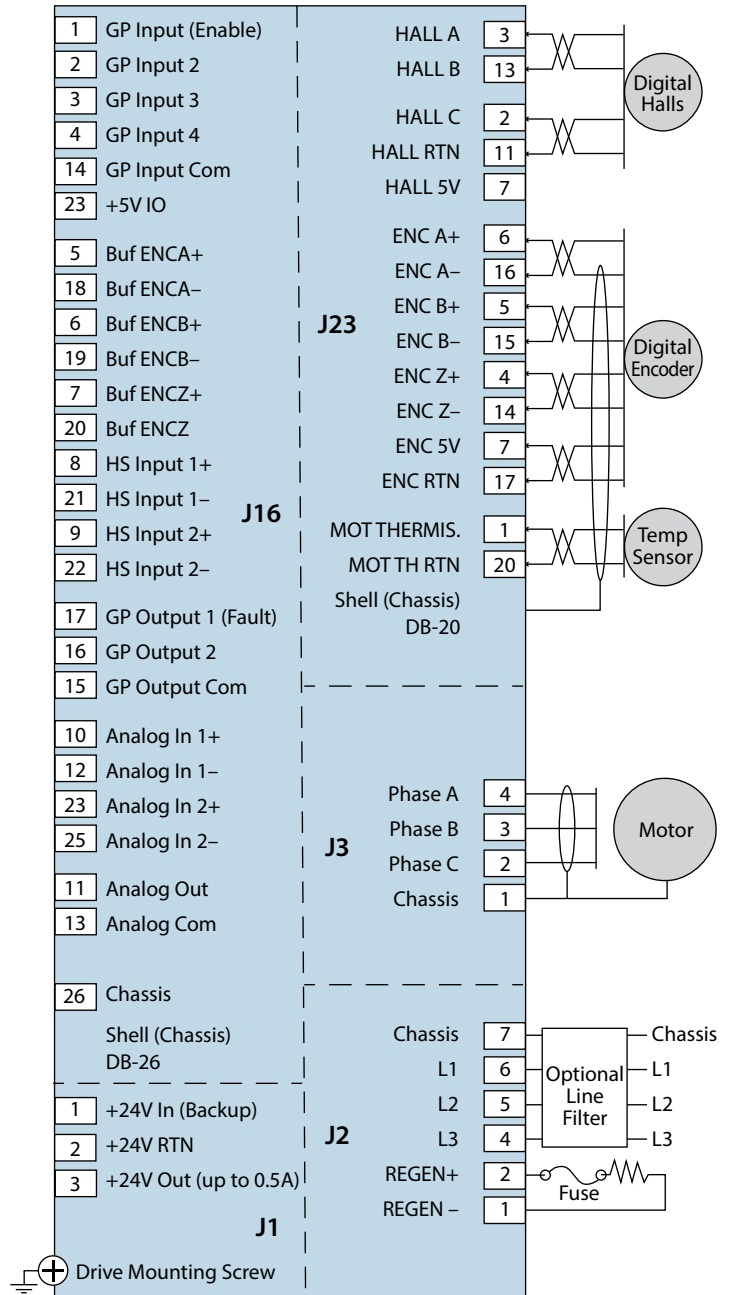
Pin	Function
1	Motor Temp
2	Hall C
3	Hall A
4	Encoder Z +
5	Encoder B +
6	Encoder A +
7	+5V Hall/Enc
8	N/C
9	N/C
10	N/C
11	Hall Return
12	N/C
13	Hall B
14	Encoder Z -
15	Encoder B -
16	Encoder A -
17	Motor thermistor input
18	N/C
19	N/C
20	Motor Temp Return

Mate: 10120-3000PE /
10320-3210-000 (cvr), 3M

Control (J16)

Pin	Function
1	Discrete Opto IN 1
2	Discrete Opto IN 2
3	Discrete Opto IN 3
4	Discrete Opto IN 4
5	Encoder A+ (buffered)
6	Encoder B+ (buffered)
7	Encoder Z+ (buffered)
8	High Speed 1 IN +
9	High Speed 2 IN +
10	Analog 1 IN +
11	Analog OUT
12	Analog 1 IN -
13	Analog Common
14	Opto IN Common
15	Opto OUT Common
16	Discrete Opto OUT 2
17	Discrete Opto OUT 1
18	Encoder A- (buffered)
19	Encoder B- (buffered)
20	Encoder Z- (buffered)
21	High Speed 1 IN -
22	High Speed 2 IN -
23	+5V External
24	Analog 2 IN +
25	Analog 2 IN -
26	Chassis

Mate: 10126-3000PE /
10326-3210-000 (cvr), 3M



xDrive Cable & Connector Kit Accessories

	Description	Part Number
Cables w/Connectors	xDrive Control and Feedback Cables Kit (3 m), including motor, power, logic power mating connectors (p/n: DA-XDACBLKIT-10)	AC-CB-100115
	xDrive Control and Feedback Cables Kit (7.5 m), including motor, power, logic power mating connectors (p/n: DA-XDACBLKIT-25)	AC-CB-100116
Connectors Only	xDrive mating Connectors Kit (p/n: DA-XDAKIT)	AC-CK-100115

Documents & Software

Documentation and most software are available for download from the Allied Motion website (www.alliedmotion.com)

34-2100	Hardware Manual: Wiring and Installation
34-2200	Software Manual: <i>IN Control</i> User Guide
34-2202	Software Manual: Parameters and Control Structure
—	ALLNET .NET Framework software

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- Logistics assistance

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