



AX5118, AX5125, AX5140

AX51xx | Digital Compact Servo Drives (1-channel)

The AX5000 Servo Drive series is available in single- or multi-channel form and is optimised in terms of function and cost-effectiveness. Integrated control technology supports fast and highly dynamic positioning tasks. EtherCAT as a high-performance communication system enables ideal interfacing with PC-based control technology.

The AX51xx 1-channel Servo Drives are designed for rated currents up to 170 A (additional variants up to 315 A are in preparation).

The AX5000 system enables simple and fast connection of several AX5000 devices to form a multi-axis system through the "AX-Bridge" quick connection system. The pluggable supply and connection module combines power supply, DC-Link

and 24 V DC control and braking voltage.

A wide range of motor types can be connected to the AX5000. Motors of different size and type can be connected without additional measures. Examples include synchronous, linear, torque and asynchronous motors. The multi-feedback interface supports all common standards.

The AX5000 was developed specifically for use with the EtherCAT real-time Ethernet system. The outstanding features of EtherCAT are particularly beneficial for Drive Technology. They include short cycle time, synchronicity and simultaneity. EtherCAT enables very short cycle times, even in networks containing a large number of devices.

Features

- high-speed EtherCAT system communication
- rated current (1-channel Servo Drive): 1.5 A, 3 A, 6 A, 12 A, 18 A, 25 A, 40 A
- wide voltage range: 1 x 100 -10 %... 3 x 480 V AC +10 %
- active DC-Link and brake energy management
- multi-feedback interface
- flexible motor type selection
- scalable, wide range motor current measurement
- high-speed capture inputs
- diagnostic and parameter display
- integrated mains filter Cat. C3, according to EN 61800-3
- optional safety functions: restart lock, intelligent TwinSAFE safety functions
- compact design for simple control cabinet installation
- AX-Bridge – the quick connection system for power supply, DC-Link and control voltage
- optimised cooling

Technical data	AX5101	AX5103	AX5106	AX5112	AX5118	AX5125	AX5140
Rated output current at 50 °C (1-phase connection)	1 x 1.5 A	1 x 3 A	1 x 4.5 A	–	–	–	–
Rated output current at 50 °C (3-phase connection)	1 x 1.5 A	1 x 3 A	1 x 6 A	1 x 12 A	1 x 18 A	1 x 25 A	1 x 40 A
Minimum rated motor current at full current resolution	0.35 A	1 A	1 A	6 A	12 A	12 A	18 A
Rated supply voltage	3 x 100 V AC -10 %...3 x 480 V AC +10 % 1 x 100 V AC -10 %...1 x 240 V AC +10 %			3 x 100 V AC -10 %... 3 x 480 V AC +10 %		3 x 100 V AC -10 %... 3 x 480 V AC +10 %	
DC-Link voltage	max. 890 V DC						
Peak output current ⁽¹⁾	4.5 A	7.5 A	13 A	26 A	36 A	50 A	80 A
Rated apparent power for S1 operation (selection)							
120 V (1-/3-phase connection)	0.3 kVA	0.6 kVA	1.2 kVA	2.5 kVA	3.4 kVA	4.8 kVA	8.3 kVA
230 V (1-/3-phase connection)	0.6 kVA	1.2 kVA	2.4 kVA	4.8 kVA	7.2 kVA	10.0 kVA	16.0 kVA
400 V (only 3-phase connection)	1.0 kVA	2.1 kVA	4.2 kVA	8.3 kVA	12.5 kVA	17.3 kVA	28.0 kVA
480 V (only 3-phase connection)	1.2 kVA	2.5 kVA	5.0 kVA	10.0 kVA	15.0 kVA	20.8 kVA	33.0 kVA
Continuous braking power ⁽²⁾	50 W	50 W	150 W	90 W	200 W	200 W	200 W
Max. braking power ⁽²⁾	14 kW	14 kW	14 kW	14 kW	27 kW	27 kW	27 kW
Power loss ⁽³⁾	35 W	50 W	85 W	160 W	255 W	340 W	550 W
System bus	EtherCAT						
Weight	4.0 kg	4.0 kg	5.0 kg	5.0 kg	11.0 kg	11.0 kg	14.0 kg
Further information	www.beckhoff.com/AX51xx						

⁽¹⁾RMS for max. 7 seconds, ⁽²⁾internal brake resistor, ⁽³⁾S1 operation, incl. power supply, without brake chopper

Dimensions	AX5101	AX5103	AX5106	AX5112	AX5118	AX5125	AX5140
Height without connectors	274 mm	274 mm	274 mm	274 mm	274 mm	274 mm	300 mm
Width	92 mm	92 mm	92 mm	92 mm	185 mm	185 mm	185 mm
Depth without connectors	232 mm	232 mm	232 mm	232 mm	232 mm	232 mm	232 mm

Ordering information	AX51xx-0000-0x00
AX5101-0000-0x00	Digital Compact Servo Drive, 1-axis module, 100...480 V AC, rated output current 1.5 A, EtherCAT interface
AX5103-0000-0x00	Digital Compact Servo Drive, 1-axis module, 100...480 V AC, rated output current 3 A, EtherCAT interface
AX5106-0000-0x00	Digital Compact Servo Drive, 1-axis module, 100...480 V AC, rated output current 6 A, EtherCAT interface
AX5112-0000-0x00	Digital Compact Servo Drive, 1-axis module, 100...480 V AC, rated output current 12 A, EtherCAT interface
AX5118-0000-0x00	Digital Compact Servo Drive, 1-axis module, 100...480 V AC, rated output current 18 A, EtherCAT interface
AX5125-0000-0x00	Digital Compact Servo Drive, 1-axis module, 100...480 V AC, rated output current 25 A, EtherCAT interface
AX5140-0000-0200	Digital Compact Servo Drive, 1-axis module, 100...480 V AC, rated output current 40 A, EtherCAT interface

x = 0: HW version 1.0 (compatible with AX5801)

x = 2: HW version 2.0 (compatible with AX5805, AX57xx and AX5021)

Ordering information	AX5xxx Options
AX5021-0000	ballast unit with internal braking resistor and connection option for an external ballast resistor (up to 6 kW) as well as an additional DC link expansion capacity for storing of brake energy Only compatible with HW version 2.0 (AX5xxx-0000-0200)