

AX51xx

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 40 A.

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 EtherCAT. 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: 1.5 A, 3 A, 6 A, 12 A, 18 A, 25 A, 40 A
- wide voltage range: 1 x 100...240 V AC $\pm 10\%$ and 3 x 100...480 V AC $\pm 10\%$
- 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 concept

| Technical data | AX5101 | AX5103 | AX5106 | AX5112 |
|---|--|---------|-----------|-------------------------------|
| 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 |
| Minimum rated motor current at full current resolution | 0.35 A | 1 A | 1 A | 6 A |
| Rated supply voltage | 3 x 100...480 V AC $\pm 10\%$ 1 x 100...240 V AC $\pm 10\%$ | | | 3 x 400...480 V AC $\pm 10\%$ |
| DC-Link voltage | max. 890 V DC | | | |
| Peak output current (1) | 4.5 A | 7.5 A | 13 A | 26 A |
| Rated apparent power for S1 operation (selection) | 0.3 kVA | 0.6 kVA | 1.2 kVA | 2.5 kVA |

| | | | | |
|--|----------|---------|---------|----------|
| 120 V (1-/3-phase connection) | 0.6 kVA | 1.2 kVA | 2.4 kVA | 4.8 kVA |
| 230 V (1-/3-phase connection) | 1.0 kVA | 2.1 kVA | 4.2 kVA | 8.3 kVA |
| 400 V (only 3-phase connection) | 1.2 kVA | 2.5 kVA | 5.0 kVA | 10.0 kVA |
| 480 V (only 3-phase connection) | | | | |
| Continuous braking power (2) | 50 W | 50 W | 150 W | 90 W |
| Max. braking power (3) | 14 kW | | | |
| Power loss (4) | 35 W | 50 W | 85 W | 160 W |
| System bus | EtherCAT | | | |
| Weight | 4.0 kg | 4.0 kg | 5.0 kg | 5.0 kg |

(1)RMS for max. 7 seconds, (2)internal brake resistor, (3)internal brake resistor, (4)S1 operation, incl. power supply, without brake chopper

| Technical data | AX5118 | AX5125 | AX5140 |
|---|--------------------------|----------|----------|
| Rated output current at 50 °C (1-phase connection) | – | | |
| Rated output current at 50 °C (3-phase connection) | 1 x 18 A | 1 x 25 A | 1 x 40 A |
| Minimum rated motor current at full current resolution | 12 A | 12 A | 18 A |
| Rated supply voltage | 3 x 400...480 V AC ±10 % | | |
| DC-Link voltage | max. 890 V DC | | |
| Peak output current (1) | 36 A | 50 A | 80 A |
| Rated apparent power for S1 operation (selection) | | | |
| 120 V (1-/3-phase connection) | 3.4 kVA | 4.8 kVA | 8.3 kVA |
| 230 V (1-/3-phase connection) | 7.2 kVA | 10.0 kVA | 16.0 kVA |
| 400 V (only 3-phase connection) | 12.5 kVA | 17.3 kVA | 28.0 kVA |
| 480 V (only 3-phase connection) | 15.0 kVA | 20.8 kVA | 33.0 kVA |
| Continuous braking power (2) | 200 W | | |
| Max. braking power (3) | 27 kW | | |
| Power loss (4) | 255 W | 340 W | 550 W |
| System bus | EtherCAT | | |
| Weight | 11.0 kg | 11.0 kg | 14.0 kg |

(1)RMS for max. 7 seconds, (2)internal brake resistor, (3)internal brake resistor, (4)S1 operation, incl. power supply, without brake chopper

| Dimensions | AX5101 | AX5103 | AX5106 | AX5112 |
|----------------------------------|--------|--------|--------|--------|
| Height without connectors | 274 mm | | | |
| Width | 92 mm | | | |
| Depth without connectors | 232 mm | | | |

| Dimensions | AX5118 | AX5125 | AX5140 |
|----------------------------------|--------|--------|--------|
| Height without connectors | 274 mm | 274 mm | 300 mm |
| Width | 185 mm | | |
| Depth without connectors | 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 AX5801-0000)

x = 2: HW version 2.0 (compatible with AX5805, AX57xx, AX5021 and AX5801-0200)

| 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 2) |