Beckhoff — AX Digital Servo Drives

AX2070-B110



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The **AX2070-B110** servo drive belongs to the AX Digital Servo Drives series from Beckhoff. It is a three-phase inverter stage that interfaces directly with EtherCAT motion controllers to regulate motor torque, speed, and position in automated machinery such as packaging lines, gantries, and material handling stations. By combining a power stage, regeneration circuit, and high-speed fieldbus interface in one housing, the unit provides closed-loop control without requiring separate communication or regeneration modules.

The power electronics operate at an internal control frequency of **8 kHz**, so the current loops are updated every 125 microseconds. With a 480 V DC link, the module delivers a continuous output current of **70 A RMS** and can supply up to **140 A RMS** during brief acceleration peaks. Motor currents remain highly sinusoidal because the output current form factor is 1.01. Thermal losses at the rated load are limited to **700 W**, while idle operation draws only 40 W. The installed apparent power is 50 kVA, which must be considered when sizing the cabinet power distribution system. An external braking resistor with a resistance of 10 ohms can be connected, allowing the drive to absorb 70 kW of pulse energy during rapid stops.

For longer deceleration cycles, the internal circuit handles a continuous regeneration load of **6 kW**. Network integration is provided by **two RJ-45 EtherCAT ports**, which support line-topology wiring without additional hubs. The housing measures 250 mm in width and extends **325 mm** into the cabinet when the connectors are fitted. Its overall mass is **21 kg**, so the mounting surface and fasteners must provide adequate support. The output bridge has a residual voltage drop of no more than **5 V**. This limited voltage drop helps the output stage maintain motor

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torque when the DC-link voltage decreases temporarily.

Specifications

Ambient Operational Temperature:	0 to +45°C at rated data	**Auxiliary Power Supply Voltage:**	24 VDC (-0% +15%)	**Clock Frequency:**	8 kHz
Clock Frequency Of The Output Stage:	8 kHz	**Continuous Current At 480v:**	70 Arms	**Continuous Regen Power:**	6 kW
Control Capabilities:	Digital speed controller, 62.5 µs updates	**Depth With Connectors:**	325 mm	**Digital Current Controller Bandwidth:**	> 1.2 kHz
Digital Inputs:	4, programmable, 12...36 V (High)	**Dimensions (hxwxd):**	484mm x 250mm x 325mm	**Dissipation At Rated Current:**	700 W
Enclosure Protection:	IP 20	**Ethercat Ports:**	2 x RJ-45	**External Regen Resistor:**	10 Ohm
Fieldbus Interface:	EtherCAT	**Humidity In Operation:**	85%, no condensation	**Installed Load (s1):**	50 kVA
Noise Emission:	max 45 dB(A)	**Output Current Form Factor:**	1.01	**Peak Current At 480v:**	140 Arms
Peak Output Current At 480v:	140 Arms (max ca. 5s)	**Quiescent Dissipation:**	40 W	**Rated Dc Bus Link Voltage:**	290...675 V
Rated Output Current At 480v:	70 Arms	**Rated-supply Voltage:**	3 x 230V-10% ... 480V+10%, 50/60 Hz	**Regen Pulse Power At 480v:**	70 kW
Residual Voltage Drop:	5 V	**Weight:**	21 kg	**Width:**	250 mm
Last Verified:	11/10/2026 12:05 AM				

Contact Us

1620 Old Apex Road, Cary, NC 27513, USA

Toll Free: 1-888-551-3082

International: 1-919-443-0207

Fax: 1-919-867-6204

Email: sales@wakeindustrial.com

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