Beckhoff — AX Digital Servo Drives

AX5901-0000



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The **AX5901-0000** is a **single-axis drive module** in the **AX Digital Servo Drives** series from Beckhoff, built for cabinet installation alongside AX5000 power stages. It receives DC-link energy and converts it into phase-controlled output for synchronous and asynchronous servomotors. Within an automation cell, the module closes the speed and torque loops directly at the drive, reducing bus latency and supporting deterministic motion sequences. Typical applications include coordinated conveyor sections, pick-and-place gantries, and indexing tables that require compact, high-current amplification.

Auxiliary electronics inside the unit operate from a control supply of **24 V DC**, separating logic power from the main three-phase feed. The motor winding current can reach **85 A**, so the drive suits mid-range rotary axes that require rapid acceleration. The stated current threshold for the three-phase supply is **>9 A**, ensuring that the AX5901 is supervised by the appropriate protective devices. Power terminals accept large copper conductors, and each clamping screw must be tightened to **2.2 Nm** to maintain low contact resistance. The device integrates with the Beckhoff diagnostic framework, allowing current, voltage, and temperature data to be monitored in real time. This diagnostic access helps operators identify abnormal electrical or thermal behavior while the module remains connected to the control system.

Phase conductors fitted with ferrules may have a cross section of up to **16 mm²**, while solid copper conductors are limited to **10 mm²**. Stranded conductors with suitable lugs or compression sleeves may have a maximum cross section of **25 mm²**. These conductor limits support the current capacity of the motor output while providing secure

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connections at the power terminals. The Us, Up, and GND terminals for the 24 V auxiliary bus accept appropriately sized control wiring that keeps auxiliary power separate from the motor circuit. Circuit breakers, contactors, and terminal blocks must be selected for the applicable conductor type, current level, and terminal capacity. Proper tightening and conductor preparation help prevent excessive resistance, localized heating, and unreliable power delivery inside the cabinet.

Specifications

Axis balancing:	Intelligent use of braking resistors per axis	**Control Voltage:**	24 V DC	**Current Capacity:**	85 A
Energy management:	Active DC link and brake energy management	**Installation type:**	Tool-less installation and disassembly	**Integrated supply voltage:**	Mains input and 24 V DC control/brake
L1-l3/pe Ferruled Wire:	16 mm²	**L1-l3/pe Solid Wire:**	10 mm²	**L1-l3/pe Stranded Wire:**	25 mm²
Max Conductor Cross-section:	25 mm²	**Max current:**	85 A (power rail system)	**Quick connection system:**	Snap-in & pluggable power/connection modules
Short-circuit protection:	Short-circuit proof	**Three-phase Threshold:**	>9 A	**Tightening Torque:**	2.2 Nm
Us/up/gnd Cross-section:	16 mm²	**Visual contacting:**	Visible, safe electrical connections	**Last Verified:**	11/10/2026 4:16 PM

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