



## AX8108 | Axis modules 1-channel

An axis module contains the DC-Link and the inverter for supplying the motor. Depending on the required number of axes, the axis modules are attached to the supply module to form the multi-axis servo system. Axis modules with different ratings can be combined in order to enable an optimised design of the individual axes.

Supporting a wide supply voltage range from 100 to 480 V AC, the axis modules can be operated without limitation with any of the supply modules. This flexibility simplifies the implementation of machine configurations for any type of mains supply. The electrical connection is established without tools via the already integrated AX-Bridge: it automatically connects DC-Link, 24 V DC control voltage and communication via EtherCAT between the linked modules. The DC-Link connection enables the exchange of energy during acceleration and braking procedures, where the regenerative brake energy is primarily stored in the common DC-Link. If the energy exceeds the DC-Link capacitance, utilize the brake resistor of the AX881x capacitor module to suppress the DC-Link voltage. The AX8000 multi-axis servo drive system encompasses new functions of safe drive technology with TwinSAFE: the AX8108, AX8118 and AX8206 axis modules include a programmable TwinSAFE Logic corresponding to an EL6910 and enable the direct implementation of a safety application in the servo drive. The user enjoys greater degrees of freedom in the implementation of safety applications in drive technology systems, and the flexibility in programming facilitates individual design of safe drive technology to suit the specific system. The safety functions STO and SS1 can be implemented with the TwinSAFE axis modules with the ordering option -0100 (STO/SS1). These functions can be initiated both via hard wiring and via FSoE. For TwinSAFE axis modules with the ordering option -0200 (Safe Motion), various internal and external drive signals are available for implementing an application-specific safety function. As usual, these can be interconnected with the typical EL6910 pre-certified function blocks to form complex, safe drive functions such as SLS, SLP, etc. Depending on the application, the safety-oriented information can be pre-processed directly in the drive so that the central TwinSAFE logic need only process the information that is aggregated there.

The optional multi-feedback interface supports the digital encoder systems EnDat 2.2 and BiSS C. Two further D-sub 15-pin connectors can be found behind the front cover. Therefore, one or two EnDat or BiSS encoders can be connected to a single-axis module. With a dual-axis module, an encoder interface is assigned to each axis.

These encoder systems can be used as primary or secondary feedback interfaces. Primary feedback means that these encoders are used as commutation encoders. This is the case with third-party motors or if a Beckhoff linear motor is operated with this feedback. Example of secondary feedback: An AM8000 servomotor with OCT drives a spindle axis that is additionally equipped with a linear encoder to increase the accuracy.

Technical data	AX8108-0000-0000	AX8108-0100-0000
Function	axis module	axis module with TwinSAFE Logic
Number of channels	1	
TwinSAFE safe drive technology	–	STO/SS1
Feedback system	OCT	
Rated output current (axis)	8 A	
Peak output current (axis)	20 A	
DC-Link voltage	max. 875 V DC	
DC-Link capacitance	135 µF	
Power loss	23 W	
System bus	EtherCAT	
Drive profile	CiA402 according to IEC 61800-7-201 (CoE)	
Protection class	IP 20	
Ambient temperature (operation)	0...+55 °C (see documentation)	
Approvals/markings	CE, cULus	<a href="#">Overview of TwinSAFE Certifications (PDF)</a>
Realisation STO		by local TwinSAFE Logic, via FSoE or hard-wired via safe inputs
Safety standard		EN ISO 13849-1:2015 (Cat 4, PL e), EN 61508:2010 (SIL3) and EN 62061:2005 + A1:2013/A2:2015 (SIL CL3)

Technical data	AX8108-0110-0000	AX8108-0200-0000
Function	axis module with TwinSAFE Logic and multi-feedback interface	axis module with TwinSAFE Logic
Number of channels	1	
TwinSAFE safe drive technology	STO/SS1	Safe Motion
Feedback system	OCT, BiSS C, EnDat 2.2	OCT
Rated output current (axis)	8 A	
Peak output current (axis)	20 A	
DC-Link voltage	max. 875 V DC	
DC-Link capacitance	135 µF	
Power loss	23 W	
System bus	EtherCAT	
Drive profile	CiA402 according to IEC 61800-7-201 (CoE)	
Protection class	IP 20	
Ambient temperature (operation)	0...+55 °C (see documentation)	
Approvals/markings	<a href="#">Overview of TwinSAFE Certifications (PDF)</a>	
Realisation STO	by local TwinSAFE Logic, via FSoE or hard-wired via safe inputs	
Safe stop functions		Safe Torque Off (STO), Safe Operating Stop (SOS), Safe Stop 1 (SS1), Safe Stop 2 (SS2)
Safe direction functions		Safe Direction positive (SDIp), Safe Direction negative (SDIn)
Safe position functions		Safely Limited Position (SLP), Safe CAM (SCA), Safely Limited Increment (SLI)
Safe acceleration functions		Safe Maximum Acceleration (SMA), Safe Acceleration Range (SAR)
Safe speed functions		Safely Limited Speed (SLS), Safe Speed Range (SSR), Safe Speed Monitor (SSM), Safe Maximum Speed (SMS)
Safe braking functions		Safe Brake Control (SBC)
Safety standard	EN ISO 13849-1:2015 (Cat 4, PL e), EN 61508:2010 (SIL3) and EN 62061:2005 + A1:2013/A2:2015 (SIL CL3)	

<b>i</b> <b>Product announcement</b>	<b>AX8108-0000-0000, AX8108-0100-0000: available</b> AX8108-0110-0000: estimated market release 3rd quarter 2019 AX8108-0200-0000: estimated market release 4th quarter 2019
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