



## EJ7211-9414 | Servomotor module with OCT, STO and TwinSAFE SC, 50 V DC, 4.5 A ( $I_{rms}$ )

The EJ7211-9414 servomotor output stage with OCT, STO and TwinSAFE SC offers high servo performance in a very compact design for the AM8100 series of motors up to 4.5 A ( $I_{rms}$ ). The One Cable Technology (OCT) combines a motor cable and a feedback cable for an absolute feedback system in a single cable. The integrated electronic type plate of the AM8100 motors can be read in automatically by the servo modul and configures the motor parameters automatically. This reduces wiring expenditure and commissioning to a minimum.

The fast control technology, based on field-orientated current and PI speed control, supports fast and highly dynamic positioning tasks. The monitoring of numerous parameters, such as overvoltage and undervoltage, overcurrent, modul temperature or motor load via the calculation of a I<sup>2</sup>T model, offers maximum operational reliability. EtherCAT, as a high-performance system communication, and CAN-over-EtherCAT (CoE), as the application layer, enable ideal interfacing with PC-based control technology. The latest power semiconductors guarantee minimum power loss and enable feedback into the DC link when braking. LEDs indicate status, warning and error messages as well as possibly active limitations.

The EJ7211-9414 enables the user to implement the STO safety function (Safe Torque Off), which corresponds to a safety level Cat. 3, PL d according to EN ISO 13849-1:2015. In addition, the module supports the TwinSAFE SC technology.

The TwinSAFE SC (Single Channel) technology enables the use of standard signals for safety tasks in any network or fieldbus system. The standard functionalities and features of the I/Os are retained. The data from the TwinSAFE SC I/Os are fed to the TwinSAFE Logic, where they undergo safety-related multi-channel processing. In the safety logic the data originating from different sources are analysed, checked for plausibility and submitted to a "voting". Certified function blocks such as Scale, Compare/Voting (1oo2, 2oo3, 3oo5), Limit etc. are used for this purpose. For safety reasons, however, at least one of the data sources must be a TwinSAFE SC component. The remainder of the data can originate from other standard I/Os, drive controllers or measuring transducers.

Technical data	EJ7211-9414
Technology	Compact Drive Technology
Load type	permanent magnet-excited three-phase synchronous motor
Number of channels	1
Number of outputs	1 x servo motor, 1 x motor brake
Number of inputs	2 x end position, 1 x feedback, 1 x STO
Connection method	direct motor connection with OCT
Supply voltage electronics	24 V DC (via distribution board)
Supply voltage power	8...50 V DC (via distribution board)
Output current (rms)	4.5 A
Peak current (rms)	max. 9.0 A for 1 s
Frequency range	0...599 Hz
PWM clock frequency	16 kHz
Current controller frequency	32 kHz
Rated speed controller frequency	16 kHz
Output voltage motor brake	24 V DC
Output current motor brake	max. 0.5 A
Auxiliary power current	typ. 100 mA + holding current motor brake
Current consumption E-bus	typ. 130 mA
Distributed clocks	yes
Special features	compact and system-integrated, absolute feedback, One Cable Technology (OCT), plug and play, STO (Safe Torque Off), TwinSAFE SC

Electrical isolation	500 V (E-bus/field potential)
Weight	approx. 95 g
Operating/storage temperature	0...+55 °C/-25...+85 °C
Relative humidity	95 %, no condensation
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Protect. class/installation pos.	IP 20/see documentation
Approvals	CE, UL, TÜV SÜD (certification in preparation)

Accessories	
EJ9576	EtherCAT plug-in module, brake chopper module
AM811x	Servomotor 0.20...0.52 Nm for servo I/Os (EL72xx, EP72xx)
AM812x	Servomotor 0.50...0.80 Nm for servo I/Os (EL72xx, EP72xx)
AM813x	Servomotor 1.35...2.37 Nm for servo I/Os (EL72xx, EP72xx)
AM814x	Servomotor 2.40 Nm for servo I/Os (EL72xx, EP72xx)
AG2250	Planetary gear units for Compact Drive Technology
ZK4701-04x1-2xxx	Supply cables for Compact Drive Technology

Related products	
EJ7211-0010	EtherCAT plug-in module, servomotor module for OCT, 50 V DC, 4.5 A ( $I_{rms}$ )
EL7201-9014	EtherCAT servo terminal for OCT, with STO input, 50 V DC, $I_{rms} = 2.8$ A
EL7211-9014	EtherCAT servo terminal for OCT, with STO input, 50 V DC, $I_{rms} = 4.5$ A
EL7221-9014	EtherCAT servo terminal for OCT, with STO input, 50 V DC, $I_{rms} = 7...8$ A with ZB8610
EL7201	servomotor terminal for resolver 50 V DC, $I_{rms} = 2.8$ A