



AMK KW-EC1 AE-ETC-1.01

EtherCAT Option Card

Product scope

- Adds synchronized EtherCAT communication to compatible AMK drive modules.
- Supports SoE cyclic control for position, velocity and torque operating classes.
- Provides line topology through separate RJ45 input and output ports.

Manufacturer source

Exact-model technical record

Verified model-specific overview, function, operating principle, applications and technical data.

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AMK KW-EC1 AE-ETC-1.01

EtherCAT Option Card

Product overview

AMK KW-EC1 AE-ETC-1.01 is an EtherCAT slave option card for compatible KW and KU drive modules. It exchanges cyclic drive data through Servo Drive Profile over EtherCAT and routes communication to the AMK ACC bus.

KW-EC1 AE-ETC-1.01 adds two RJ45 EtherCAT ports and distributed-clock-capable synchronization to an AMK drive. The board operates as a slave and supports SoE functions for position, speed and torque control classes.

Cyclic telegrams carry command and actual values while parameter access is routed between the EtherCAT master and the native ACC-bus drive node. Six board LEDs report EtherCAT state, error and port link activity.

Installation requires the correct KW slot, a compatible KW-R03 controller revision and the matching XML device-description file. Both node addressing and the master's distributed-clock configuration must be restored before enabling coordinated motion.

Technical specifications

Network role	EtherCAT slave
Drive profile	Servo Drive Profile over EtherCAT (SoE)
EtherCAT ports	2
Connector type	RJ45
Input port	X85
Output port	X86
Cable category	CAT 5e
Maximum segment length	100 m
Minimum cycle time	0.5 ms
Cycle-time steps	0.5 ms
Distributed clocks	Supported
Motion classes	Class B and Class C
Supported controls	Position, speed and torque
Drive-side network	AMK ACC bus
Status indicators	6 LEDs, 4 active for state/error/link/activity
Node-address setting	Rotary switches S1/S2 or parameter ID 34023
Required master services	Distributed clock and SoE
New-unit order reference	O804
Replacement order reference	O753
Minimum KW-R03 hardware	2.03
Required documented KW-R03 software	AER3_512_0620_201330

KW-EC1 AE-ETC-1.01 function and operating principle

Ordered configuration

This option-card configuration is identified by the KW-EC1 assembly name and the AE-ETC-1.01 board marking.

System role

It transfers real-time commands, actual values and parameter traffic between the EtherCAT master and the ACC-bus drive.

Selection and installation

Controller-card revision, XML description, node address and clock settings must all agree before network operation.

Functional path

- Adds synchronized EtherCAT communication to compatible AMK drive modules.
- Supports SoE cyclic control for position, velocity and torque operating classes.
- Provides line topology through separate RJ45 input and output ports.

Application scenarios

- Multi-axis packaging machines use distributed clocks to align drive sampling across several AMK nodes.
- Material-handling systems can replace proprietary master wiring with an EtherCAT line while retaining compatible KW power modules.
- Commissioning stations use SoE parameter access to diagnose and configure the connected servo drive from the controller network.

KW-EC1 AE-ETC-1.01 engineering checks

Communication

- The board acts as an EtherCAT slave and uses SoE for drive-oriented cyclic and parameter data.
- X85 and X86 form the incoming and outgoing RJ45 connections for a line topology.
- The card bridges master telegrams to the native AMK ACC-bus drive node.

Diagnostics & Protection

- The EtherCAT state and error LEDs distinguish protocol state from network faults.
- Port LEDs separately show link and activity for the incoming and outgoing connections.
- Master diagnostics can identify missing cyclic data or an unsupported operational transition before axis enable.

Installation & Integration

- The option card fits the approved slot of a compatible KW or KU drive module.
- A CAT 5e segment is limited to 100 m between EtherCAT nodes.
- The controller card must meet the documented KW-R03 hardware and software baseline.

Critical technical note

Do not enable a KW-EC1 AE-ETC-1.01 axis until the EtherCAT XML revision, distributed clock and KW-R03 compatibility have been confirmed.

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