Beckhoff — EK EtherCAT Couplers

EK1960-0000



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The **EK1960-0000** is a safety-oriented EtherCAT coupler produced by Beckhoff within the EK EtherCAT Couplers series. The unit links local terminal blocks to an EtherCAT network and allows a controller to process standard and safety signals through a single fieldbus interface in industrial automation systems. Its enclosure measures 230.5 mm in width, 100 mm in height, and 58.6 mm in depth, mounts horizontally on the DIN rail, and carries an IP20 protection rating for cabinet environments.

Operation begins with a nominal supply of **24 V DC**, which powers the internal logic, safety relay circuitry, and attached terminal segment. The upstream interface presents an EtherCAT port with an **RJ45** plug, making network wiring identical to standard Ethernet infrastructure. Along the internal E-bus, the coupler supplies up to **500 mA**, establishing the power budget for additional terminal slices before an external feeder is required. On the input side, **20** safety-rated one-wire channels can accept switches, sensors, or light grids that require reliable disconnection monitoring. The output section provides **24** safety digital channels; each is monitored for short circuits and wiring faults and can switch loads directly under the real-time control task without sacrificing response time.

System size is scaled by mapping as many as **128** safe connections, allowing the coupler to supervise larger cells without adding separate safety PLCs. Each output can drive up to **2 A**, supporting direct energization of contactor coils or low-power brakes while staying within conductor limits. A configurable watchdog reaches **60,000 ms**, so installation procedures or slow machine restarts do not inadvertently trigger a safety trip. All diagnostics, cyclic data, and safety telegrams are encapsulated in **Safety over EtherCAT**, enabling mixed standard and safe traffic

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on the same cable while maintaining separate data paths at the protocol layer.

Specifications

Connection Technology:	1-wire	**Depth:**	58.6 mm	**Ethercat Connector:**	RJ45
Height:	100 mm	**Installation Position:**	Horizontal	**Maximum E-bus Supply Current:**	500 mA
Maximum Output Current Per Channel:	2 A	**Maximum Safe Connections:**	128	**Maximum Watchdog Time:**	60000 ms
Nominal Supply Voltage:	24 V DC	**Protection Rating:**	IP20	**Safe Digital Inputs:**	20
Safe Digital Outputs:	24	**Safety Protocol:**	Safety over EtherCAT	**Width:**	230.5 mm
Last Verified:	11/22/2026 1:15 AM				

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