

Beckhoff — EPP EtherCAT P Box Modules

EPP2349-0021

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The **EPP2349-0021** is a distributed I/O unit from Beckhoff that belongs to the EPP EtherCAT P Box Modules series. It integrates communication and 24 VDC power on a single hybrid network, allowing digital input and output points to be mounted directly on tooling, protective fences, or conveyor frames without local cabinets. In an automation cell, the module serves as a field-level extension of the controller by translating process signals received through molded M8 connectors into EtherCAT P telegrams.

This model provides **16 configurable digital channels** that can each operate as an input or output through the PLC. Two **4-pin, P-coded M8 ports** carry the EtherCAT P bus and provide a daisy-chain connection to additional nodes. Each output supports a maximum of **0.5 A per channel**, allowing direct actuation of small solenoids or indicator lamps. The enclosure has an **IP65/IP66/IP67 rating**, protecting the electronics against dust and water exposure. Typical energizing latency is **60 µs**, while a 10 µs input filter debounces sensor transitions before they reach the network. Sixteen separate M8 sockets provide the signal connections, and the internal power rail for connected sensors can supply 0.5 A in total.

An upstream supply of **6 mA at 24 VDC** is sufficient for the module's logic circuits. The power domain that drives the outputs is protected against wiring faults by a short-circuit threshold of up to **1.5 A per channel**. The I_{sum} current has an aggregate limit of **3.0 A** for the 24 VDC actuator supply. The typical de-energizing delay is **300 µs**, allowing outputs to release promptly when the controller removes a command. Separate I_{up} and I_{us} feeds operate at 24 VDC, allowing control power to be isolated from inductive load surges while keeping module wiring compact. The

combined communication and power connection also reduces the number of separate field cables required around the machine.

Specifications

Aoe0A Signal Voltage:	-3A-+5 V	Aoe1A Signal Voltage:	11A-30 V, 6 mA input current (EN 61131-2, type 3)	Bus Interface:	2 x M8 socket, P-coded, shielded
Digital Channels:	16	Ethercat P Ports:	2 x M8, 4-pin, P-coded	Input Current:	6 mA at 24 VDC
Input Filter:	10 µs	Input/output Connections:	M8 x 1, 3-pin, a-coded	Load Type:	ohmic, inductive, lamp load
Max. Output Current:	0.5 A per channel, individually short-circuit proof, A [^] 3 A	Number Of Channels:	16 digital inputs or outputs	Operating Temperature:	-25A-+60AC
Output Current:	0.5 A max/channel	Protection Class:	IP65/IP66/IP67	Protection Rating:	IP65/66/67 (conforms to EN 60529)
Protocol:	EtherCAT	Rated Load Voltage:	24 V DC (-15%/+20%)	Sensor Supply:	from load supply voltage, max. 0.5 A, short-circuit proof in total
Sensor Supply Current:	0.5 A max	Short Circuit Current:	1.5 A max/channel	Signal Connection:	16 x M8 socket
Specification:	EN 61131-2, type 1/3	Storage Temperature:	-40A-+85AC	Total Output Current:	3.0 A max
Turn-off Time:	300 µs typ	Turn-on Time:	60 µs typ	Up Rated Voltage:	24 VDC
Us Nominal Voltage:	24 VDC	Us Sum Current:	3 A max	Last Verified:	10/23/2026 3:49 PM

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