

Beckhoff — M Parallel IO Modules

M2400



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The **M2400** is a parallel I/O module produced by Beckhoff within the M Parallel I/O Modules series. The device aggregates analog and digital field signals and forwards them to a higher-level controller, allowing precise measurement and actuation tasks in distributed industrial automation nodes. Serving as a compact interface block, it conditions sensor voltages, drives output devices, and synchronizes these channels with the real-time control network through a dedicated backplane bus. Its architecture combines high channel density with deterministic transfer timing, making it suitable for packaging lines, assembly equipment, and process skids that require cycle-accurate sequencing.

Each module provides **4** independent analog outputs that source or sink voltages up to **±10 V**. These outputs settle in 10 μ s, and linearity stays within ± 1 LSB for accurate drive setpoints. A scan of all channels finishes within a bus cycle of **25 μ s**, so updated values reach the PLC quickly. The same housing contains **16** digital points, and every output line can deliver up to **500 mA** to coils, relays, or indicator lamps. The module draws only 0.1 A of input current from the internal rail. This combination of fast analog timing, high-current drive capability, and dense digital points reduces the required number of I/O slices in the cabinet.

Operation is powered by a stabilized **24 V DC** feeder, and process data leave the module over a backplane link running at **2.5 Mbaud**. Internal converters operate with a **12-bit** resolution, limiting quantization error while keeping computational latency low. For edge detection, the digital input path has a 0.7 ms delay and stores states for 6.8 ms before the controller samples them. A 100 ms watchdog forces the outputs into a predetermined safe

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state if bus traffic is lost. The housing measures 270 × 76 × 68 mm and weighs **1100 g**, including the terminals. These dimensions and weight allow direct DIN-rail mounting without additional supports.

Specifications

Analog Current Range:	0 to 20 mA	Analog Output Channels:	4	Analog Outputs:	4 max
Analog Voltage Output:	±10 V	Analog Voltage Range:	±10 V	Bus Cycle Time:	25 µs
Data Connection:	Fiber optic I/O system	Digital I/o Count:	16	Digital Output Current:	500 mA
Error Linearity:	+/- 1 LSB	Input Current:	0.1 A	Input Delay:	0.7 ms
Input Latch Interval:	6.8 ms	Input Specifications:	24 V DC, 10 mA with digital filter	Input Switching Voltages:	0 - 8 V = LOW, 15 - 24 V = HIGH
Inputs/outputs:	16, configurable with LED state indicators	Linearity Error:	±1 LSB	Output Specifications:	24 V DC, max. 500 mA, short-circuit proof
Overall Size:	270 × 76 × 68 mm	Physical Dimensions:	270 mm x 76 mm x 68 mm	Power Supply Voltage:	24 V DC (±10%)
Resolution:	12 Bit	Rise Time:	10 µs	Supply Voltage:	24 V DC
Transmission Rate:	2.5 MBaud	Watchdog Time:	100 ms	Weight:	1100 g
Last Verified:	10/24/2026 11:14 AM				

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