

INDUSTRIAL AUTOMATION PLATFORM

# CONTROL BLOCK

**Motion. Logic. Safety. HMI.** — One Platform.  
THE CORE OF EVERY INTELLIGENT MACHINE.



**Four systems. One controller. The Control Block replaces the traditional stack of PLCs, servo drives, motion controllers, HMIs, and safety systems with a single precisely engineered platform.**

## — MOTION

**6 primary + 4 auxiliary axes.**  
Single M12 cable per motor. Closed-loop multi-turn absolute encoders. Integrated brakes. Real-time coordinated trajectory planning. ±0.005 mm repeatability on AB+ ball screws.

## — LOGIC

**AutoCode — 31-command human-auditable language.** AI-assisted recipe generation. Built as the AI interface between humans and machines.

## — SAFETY

**PLe / Cat 4 / SIL3.** Programmable safety controller. Plug-in light curtains, door interlocks, remote E-stop, and light tower via single M12 cables. Real-time fault detection & audit logging.

## — HMI

**Integrated 10.1" capacitive Pendant + Web HMI.** Integrated E-stop, USB, and remote support built-in. Same interface in any browser. Studio Kiosk Mode runs on any PC + 1080P monitor.

## One unified platform. Built for integrators.

Traditional machine architecture means separate PLCs, safety controllers, servo drives, and HMI panels — each from a different vendor, each with its own programming environment, wiring scheme, and support contract. The Control Block eliminates that entirely. AI-assisted AutoCode, plug-in device architecture, AutoBus™ universal plug-and-play for Modbus TCP devices, and a unified wiring standard mean your team deploys faster, commissions with confidence, and supports customers remotely.

UNIFIED PLATFORM

**ONE**

Motion · Logic · Safety · HMI

AXES

**UP TO 10**

6 coordinated + 4 auxiliary

SAFETY

**PLe**

Category 4 · SIL3

WEB HMI

**ANY BROWSER**

Remote support built-in

## HARDWARE

Dimensions	24" L × 20" W × 8" H
Weight	~25 lbs
Chassis	Industrial-grade aluminum, black anodized
Ingress Protection	IP54 — dust-protected, splash-resistant
Voltage input	120 VAC (15A max) or 240 VAC (8A max), selectable
Total power output	834 W
Motor power output	24 VDC / 4A per motor (up to 6 motors)
PoE output	PoE+ / IEEE 802.3at / 25.5 W per port / 90 W total
Operating Temp	0°C to 40°C
Safety rating	PLe · Category 4 · SIL3

## MOTION ARCHITECTURE

Primary axes	6 (X, Y, Z, A, B, C) closed-loop absolute
Auxiliary axes	4 additional, daisy-chain expandable
Motor compatibility	NEMA 8 – NEMA 34 closed-loop steppers
Encoders	Absolute multi-turn, integrated brakes
Repeatability	±0.005 mm (ball screw) · ±0.05 mm (belt)
Cabling	Single M12 per motor

## I/O CAPACITY

Digital I/O	300 (system capacity)
Data channels	150
Safety I/O	54
Onboard — Standard	10 DI · 2 AI · 10 transistor out · 2 relay out
Onboard — Analog	8 DI · 4 AI · 6 transistor out · 2 relay out · 3 AO
Expansion	IO-Link master & hubs

## EXTERNAL PORTS

- ▶ (3) RJ45 PoE+ Gigabit Ethernet — 10/100/1000BASE-T
- ▶ (1) DB15 — Pendant / HMI with integrated E-stop
- ▶ (1) USB 2.0 — file management
- ▶ (1) M12 — remote E-stop
- ▶ (1) M12 — light curtain transmitter + (1) receiver
- ▶ (1) M12 — 3-color light tower
- ▶ (1) M12 — door interlock, daisy-chain up to 8
- ▶ (4) M12 — motor ports (rear, daisy-chain or home-run)

## COMMUNICATION & SOFTWARE

- ▶ **AutoBus™** — universal plug-and-play bus for Modbus TCP devices
- ▶ **AutoCode** — 31-command human-auditable language with AI-assisted generation
- ▶ **Web HMI** — browser-based machine control & remote support built-in
- ▶ **Autoblocks Studio** — remote programming, diagnostics, machine vision, Kiosk Mode
- ▶ **Protocol** — MODBUS TCP

## SUPPORTED DEVICES — PLUG & CONFIGURE

### ROBOTS

EPSON · Universal Robots — native, prebuilt handshake & error handling

### VISION SYSTEMS

Keyence IV3/IV4 · Keyence VS · Zebra FS/VS · Cognex

### SAFETY DEVICES

Keyence GS Door Interlocks · Keyence Light Curtains · Banner Light Towers · custom devices supported

### MOTION

AB+ Smart Motors (NEMA 8–34) · Ball Screw Actuators ±0.005 mm · Belt Drive Actuators ±0.05 mm · Precision Planetary Gearboxes · AB Smart Servo Drives & VFDs · 3rd-party servos & VFDs supported

### CONFIGURATION OPTIONS

Voltage: 120 VAC or 240 VAC · I/O: Standard or Analog config.  
Configure on [autoblocks.co](https://autoblocks.co) — preloaded, preconfigured, ready to run.



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