

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. No middleware. No multi-vendor integration. No glue code.

MOTION

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

LOGIC

AutoCode — patent-pending 27-command human-auditable language. PLC-grade ladder & structured text. AI-assisted recipe generation. Built as the AI interface between humans and machines.

SAFETY

PLe / Cat 4 / SIL3. Integrated 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

10.1" capacitive touchscreen pendant with integrated E-stop, USB, and VNC remote connectivity. Web HMI delivers full machine control and remote support from any browser. HMI Hub option runs AutoBlocks software on any 1280×800 display.

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.

AXES

6 + 4

Primary + auxiliary

SAFETY

PLe

Cat 4 · SIL3

HMI

Web HMI

Remote support built-in

AUTOCODE

27

Commands · 1 language

Specifications / Connectivity / Devices

CONTROL BLOCK
REV 7 · 2026

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 — Teach 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

COMMUNICATION & SOFTWARE

- ▶ **AutoBus™** — universal plug-and-play bus for Modbus TCP devices
- ▶ **AutoCode** — 27-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
- ▶ MODBUS TCP · IO-Link · VNC · FTP · SQL client · Web server · Email/SMS

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 — preloaded, preconfigured, ready to run.