On-Machine™ Motor Control Solutions for Your Most Demanding Applications

Armor™ PowerFlex® motor control solutions — designed to be smart, safe, secure and simple

Allen-Bradley

by ROCKWELL AUTOMATION

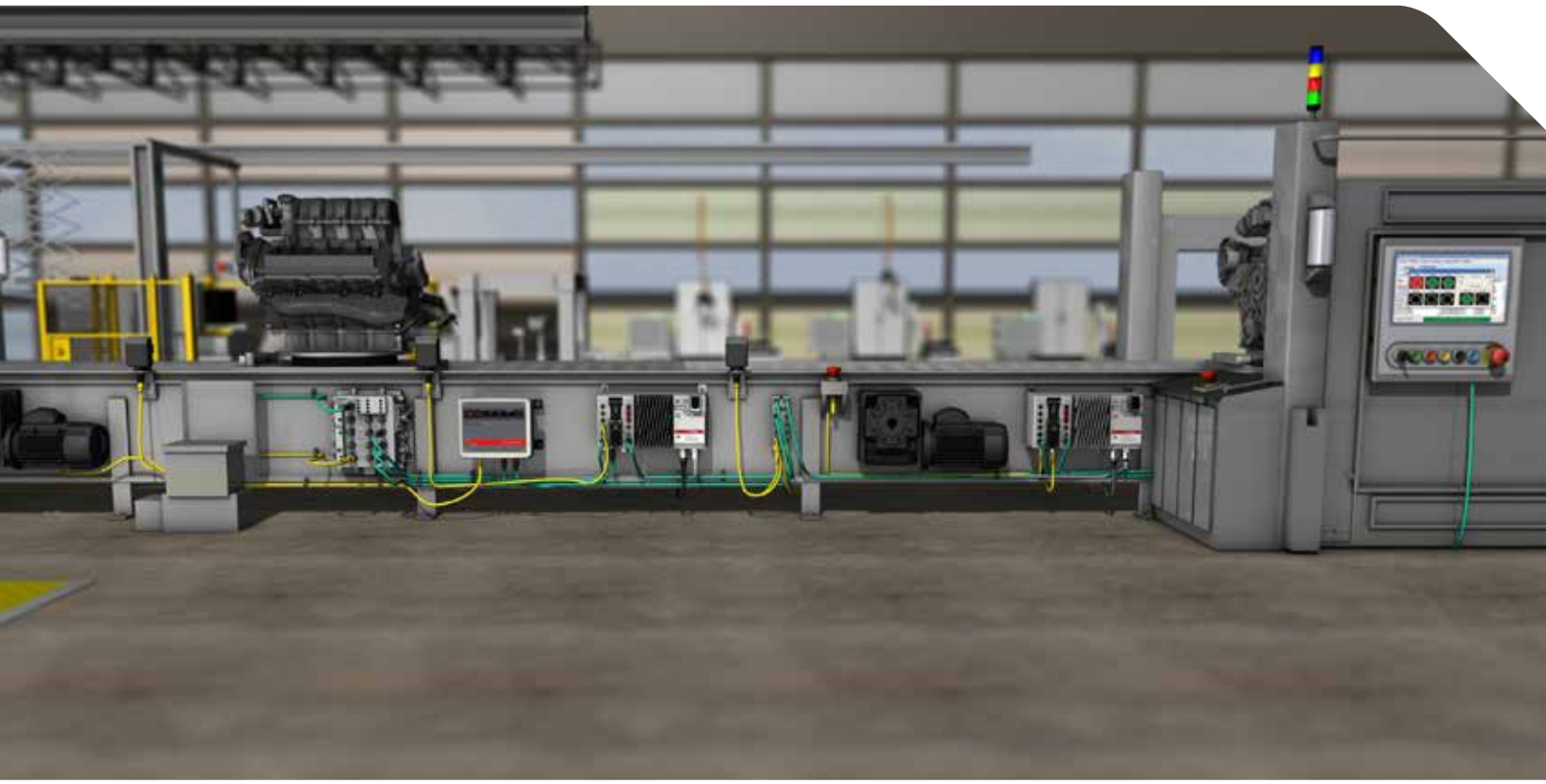
ON-MACHINE SOLUTIONS

Pack a Big Punch in Tight Spaces

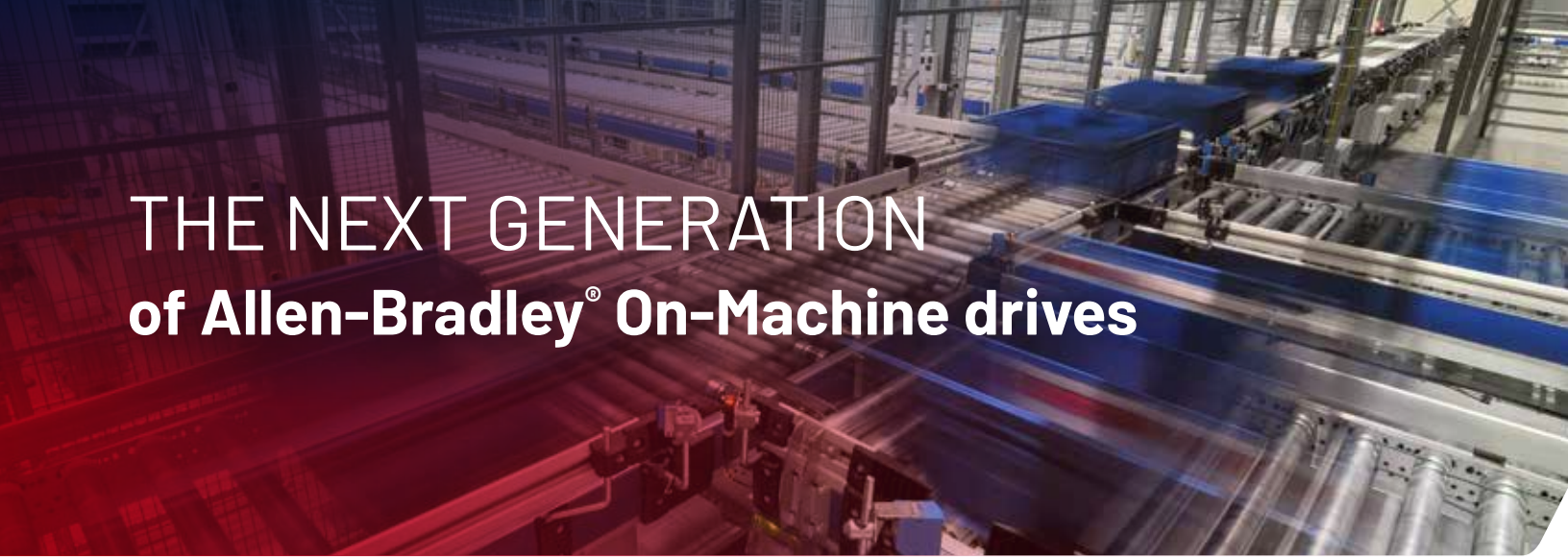
Why do you need an On-Machine solution? Several reasons. If reducing installation and downtime is what you need, an On-Machine solution might be right for you. Is your floor space a little tight? Could a fast recovery from an unplanned downtime improve your bottom line? If so, give an On-Machine solution a try.

On-Machine solutions support industry trends toward zero-cabinet architectures. These solutions can reduce your installation costs and decrease your machine **size**. On-Machine solutions help provide a more **scalable** and **flexible** design solution. In addition, On-Machine solutions help enable easier and faster changeover as your needs evolve.

On-Machine functionality can help you build more machines faster, and in less time. This functionality frees up your resources to keep your production running. It also allows you to work on your next-generation market solutions. Building more machines faster could help you increase revenue and decrease leads times. The end result? Happier customers.



Armor PowerFlex Enables a Zero Cabinet Design



THE NEXT GENERATION
of Allen-Bradley® On-Machine drives

We have taken On-Machine motor control to the next level with Armor PowerFlex motor control solutions. Smart, safe, secure, and simple – Armor PowerFlex drives are a scalable solution designed to help meet your application needs.

ARMOR POWERFLEX DOES THE HEAVY LIFTING SO YOU DON'T HAVE TO

If getting operations up and running quickly is what matters to you, an Armor PowerFlex motor control solution can help. Whether you are an OEM or an end user, your time is valuable. Armor PowerFlex drives and our Logix control platform share one user-friendly software environment. Having the shared platform can make designing, integrating and maintaining a unified system simpler and faster. How does more-efficient commissioning sound? Built-in startup wizard, flexible mounting options and quick connect cables can help you speed that installation time.

5...10 Hp

SMART. SAFE. SECURE. SIMPLE.

WHAT COULD YOU DO WITH MORE DATA?

Your company depends on you to help keep systems running reliably. With predictive maintenance, you can stay ahead of device failure. Predictive maintenance monitors component life within your Armor PowerFlex drive. It lets you predict and schedule maintenance that helps you avoid costly unplanned downtime. If a failure occurs, you can depend on faster restarts after downtime events with Automatic Device Configuration.

DURABILITY AND SAFETY IS BUILT INTO THE DESIGN

Keeping your equipment clean is a must. Armor PowerFlex drives are designed to withstand water wash down, so it's appropriate for your environment. And we don't stop there. Integrated networked safety in Armor PowerFlex drives helps simplify your machine design and minimize component redundancies.

Help protect your personnel and your investment by choosing Armor PowerFlex motor control solutions.

customer value:

COST

speed time to market

lower total cost

- An integrated solution that combines several control functions — such as local disconnect and dynamic braking — into a cohesive result. This functionality speeds up design, installation, and integration.

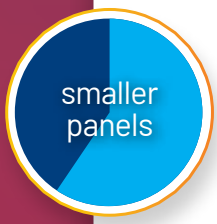
- Quick-disconnect cables for all field connections minimizes test failure due to inherent manual wiring mistakes.

INSTALLATION

faster to install

faster to setup and commission

purposely designed



- Quicker on-premises installation and design changes by eliminating custom panels with On-Machine.

- Premier Integration provides a consistent user experience—from design, setup, operation and maintenance and enables data to be accessed across the enterprise.
- Bringing the ease-of-use to life with a common, simplified workflow across the entire Armor PowerFlex portfolio.

- Networked safety enables cost-effective machine safety implementation, using a common software and hardware experience that reduces complexity and training.

DOWNTIME PREVENTION

predictive maintenance

reduced mean time to repair

ease of troubleshooting

- Real-time device data for predictive maintenance and accessible to higher-level analytical models.
- Resilient, fault tolerant gigabit EtherNet/IP™ network using built-in Device Level Ring capability.
- Automatic Device Configuration enables quick recovery and replacement.

ARMOR POWERFLEX FEATURES

1..3 HP
0.75...2.2 kW Frame

HOA Keypad for local control when PLC is not available. Buttons are user-programmable for more flexible local control.

Simplify machine design with embedded user inputs and outputs.

Dual-port EtherNet/IP gigabyte switch allows for a high speed network.

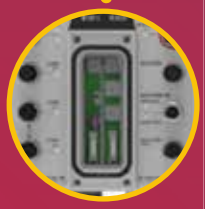
Local status diagnostic information helps the operator quickly know the status and troubleshoot issues when they arise.

Embedded safety inputs and outputs let you easily connect safety devices to their safety automation system.

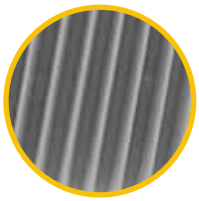
The local, lockable maintenance disconnect lets you safely maintain the motor with minimal disruptions.

Feed-through 24V DC auxiliary power supply lets you configure the device even when 3-phase power is off. Optional internal power supply.

1..3 HP
0.75...2.2 kW Frame

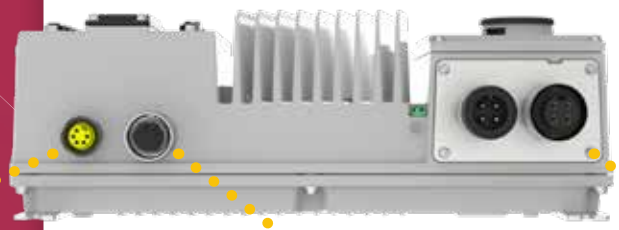


Set your static IP address from five private address groups.



Design allows for easy wash-down and less chance to collect debris.

Test points let you safely verify DC bus and motor voltage status before maintenance actions.



Dynamic brake quick disconnect integrates resistor over temperature internally for protection.

Standardized quick disconnect motor cable assembly eliminates installation complexity.

Feed-through 3-phase and auxiliary power enables cost reduction and faster installation.

ARMOR POWERFLEX FEATURES

Models	Standard 35E and Safety 35S
Power Range	0.75...7.5 kW/1...10 Hp (11...14 kW/15...20 Hp future release)
VFD Control	V/Hz, Sensorless Vector Control (SVC), Economizer SVC motor, Closed Loop Velocity Vector Control, Position Control*
Motor Type Support	Induction motors (IM), Surface Mount and Interior Permanent Magnet Motor (SPM and IPM), Synchronous reluctance motor* (SynRM)
Encoder	Incremental encoder, AqB, sine-cosine, hyperface
Motor Overload	Class 10, I^2t with power loss retention
Maintenance Disconnect	Status ON/OFF with locking provision (with Network Status)
Hight Fault SCCR	Up to 100 kA
Network	Star, Linear, and ring topology ; Dual Port ; 1000 Gbps per port ; Static & Dynamic IP addressing
Communications	EtherNet/IP, Internal switch, Device Level Ring (DLR), CIP™
Security	CIP Security ; IEC 62443-4-2 Secure Industrial Automation*
Configuration	Studio 5000® Add-On Profile, support for Automatic Device Configuration, mains free configuration
DeviceLogix™ *	Discrete I/O, analog, computation, macro functions
Functional Safety	Hardwired safety (STO, SS1(t)) Network safety (STO, SS1, Safe I/O, and SBC) Advance safety (SLS, SDI, SPC) Capability: SIL2....3, Category 3...4, Performance level (PL) Pld...PLe based on safety performance and risk assessment.
Functional Safety Performance	SIL CL2, PLd, CAT3 encoder based safety SIL CL3, PLE, CAT4 STO, SS1(t) SIL CL3, PLE Safety I/O
Safety I/O	2-dual CH input or 4-single CH input, 1 Safety Bi-polar output
Discrete I/O	4 Inputs and 2 configurable points Maximum of 10 standard inputs when safety inputs are used
Quick Connections (QC)	QC are standard. Support for conduit available. 3-phase and auxiliary power come equipped as feed-through.
Environment	-25 C...+55 °C (-22...+131 °F) ambient temperature IP54...IP66, Type 4/12, hygenic-friendly design
Device Status Information	Comprehensive local and network status. Detailed fault information, predictive maintenance, time-stamped event log, process-variable monitor
Reduced Installation Cost	Power efficient, compact footprint, quick connections, integrated safety and security, selectable dual-motor profile, integrated dynamic brake protection, local control mode, configurable keypad, integrated motor and EM brake, integrated encoder support, motor agnostic, internal power supply, and local disconnect
Insallation/Mounting	Horizontal: 0°, 90°, and 180° Rotation: Along horizontal axis: +/-60°
Global Rating	• UL listed • cULus Listed for Group Motor Installation • CE Marked • RCM • EN61508 • IEC 62443-4-2, security • ATEX, Group II Category (3) GD Applications with ATEX-Approved Motors • KCC • EAC • SEMI F47 • EU RoHS, BSMI RoHS (Taiwan) China RoHS • Designed to meet NFPA 70 • Designed to meet NFPA 79 • NEMA ICS 7.1 • EN61800-3 Category C2 and C3 • EN61000-6-4 CISPR11 Group 1 Class A • ODVA
Availability	Reference Armor PowerFlex Drives Specifications, publication 35-TD001

*future release

The right expertise, at the right time.

We empower your lifecycle and digital transformation journey with our expansive domain knowledge.

CONSULTING SERVICES

Digital transformation & The Connected Enterprise

Data science & analytics

Enterprise technology

Automation FEED / FEL

Safety & risk management

PROFESSIONAL SERVICES

Main Automation Contractor (MAC)

Modernization & migration engineering

Program and project management & implementation

Global rollouts

CONNECTED SERVICES

OT networks & cybersecurity

Managed services

OT infrastructure as a service

Remote support

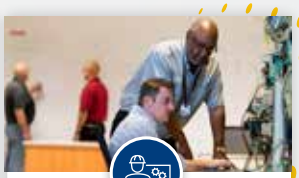
Predictive/prescriptive analytics

FIELD SERVICES

Asset repair, remanufacturing and management

Safety assessment and remediation

On-site technical support



WORKFORCE SERVICES

E-learning

Instructor-led & virtual training

Workforce assessments

Virtual reality / augmented reality

To learn how we can help you solve your unique business challenges, contact your local authorized Allen-Bradley® distributor or Rockwell Automation sales office, or visit: **rok.auto/lifecycle.**

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