Rexroth
Bosch Group

Rexroth IndraMotion for Printing
Automation system for printing and converting machines

Versatile, accurate and future-proof

Rexroth IndraMotion for Printing – the future-proof automation solution

IndraMotion for Printing by Rexroth, pioneer of the electronic shaft, is the automation solution for all printing and converting industry applications.
Faster changes of format and greater accuracy with less maculature: uncompromising ongoing development enables IndraMotion for Printing to fulfill these requirements to perfection and provides for easier, more versatile, and faster process automation.
Its international software standards and scalable control platforms provide all the freedom you need to realize your high precision printing machine or versatile inline production plant.

IndraMotion for Printing makes uncompromising use of recognized worldwide standards and unlocks the door to complete, open system solutions which are based on standardized hardware and software platforms.
The key feature of the system is the fusion of highly developed motion control technology with standardized PLC functionality and industry-specific technology functions.
Certified safety technology, user-friendly visualization, dynamic drives and motors, plus high performance engineering round off the IndraMotion for Printing portfolio perfectly.

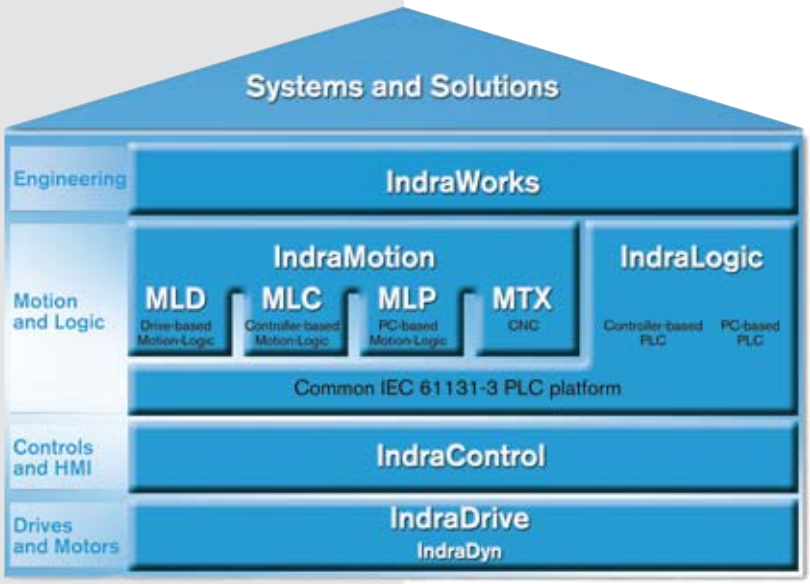
IndraWorks
The integrated engineering tool for project planning, programming, visualization, and diagnosis.

IndraMotion
The scalable system software for high-volume motion control applications.

IndraLogic
The IEC-compliant PLC solution for intelligent automation.

IndraControl
The scalable control platform for increased transparency in production.

IndraDrive and IndraDyn
The intelligent drive solution and comprehensive range of motors for superb dynamics.



IndraMotion for Printing is the versatile and intelligent industry solution for printing and converting machines from Rexroth's Automation House. This modular system accommodates all the components required for successful automation concepts. From drive and control system through to the high performance framework for standardized engineering and user-friendly operation.

Greater versatility for printing and converting machines

The automation solutions used on today's production systems are becoming increasingly sophisticated: increased productivity, greater flexibility, and simpler integration – and all at lower cost. Rexroth is your expert partner: we know your industry in detail and offer perfectly tailored solutions. Our experienced industry specialists are continually driving on the development of our globally recognized systems; the result is our Automation House, a modular system which accommodates all the components required for successful automation concepts.

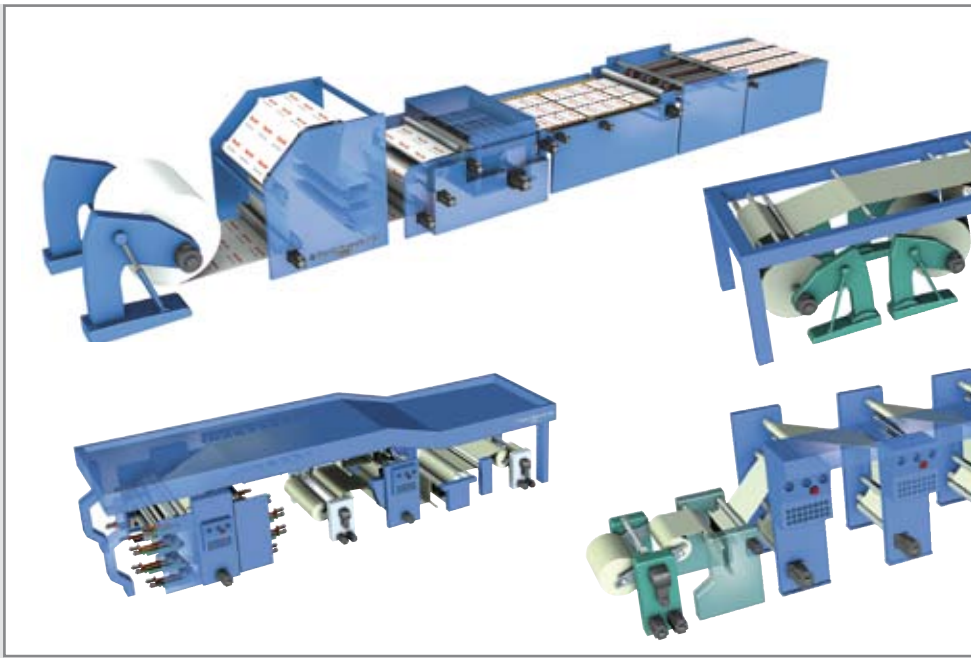
With IndraMotion for Printing, you will profit from:

- tailored automation solutions with built-in motion control, PLC, visualization, I/O, and drive technology
- expert advice from a global market leader for the configuration and startup of your equipment and for service calls
- open and modular system architecture for fast installation of new equipment as well as effortless upgrades and retrofits for existing equipment
- industry-wide expertise in robotic and packaging applications for "Total Line Automation" with material feed and packaging of the end product

IndraMotion for Printing – the open and scalable total solution for successful automation concepts in the printing and converting industry

Our experience – for your benefit

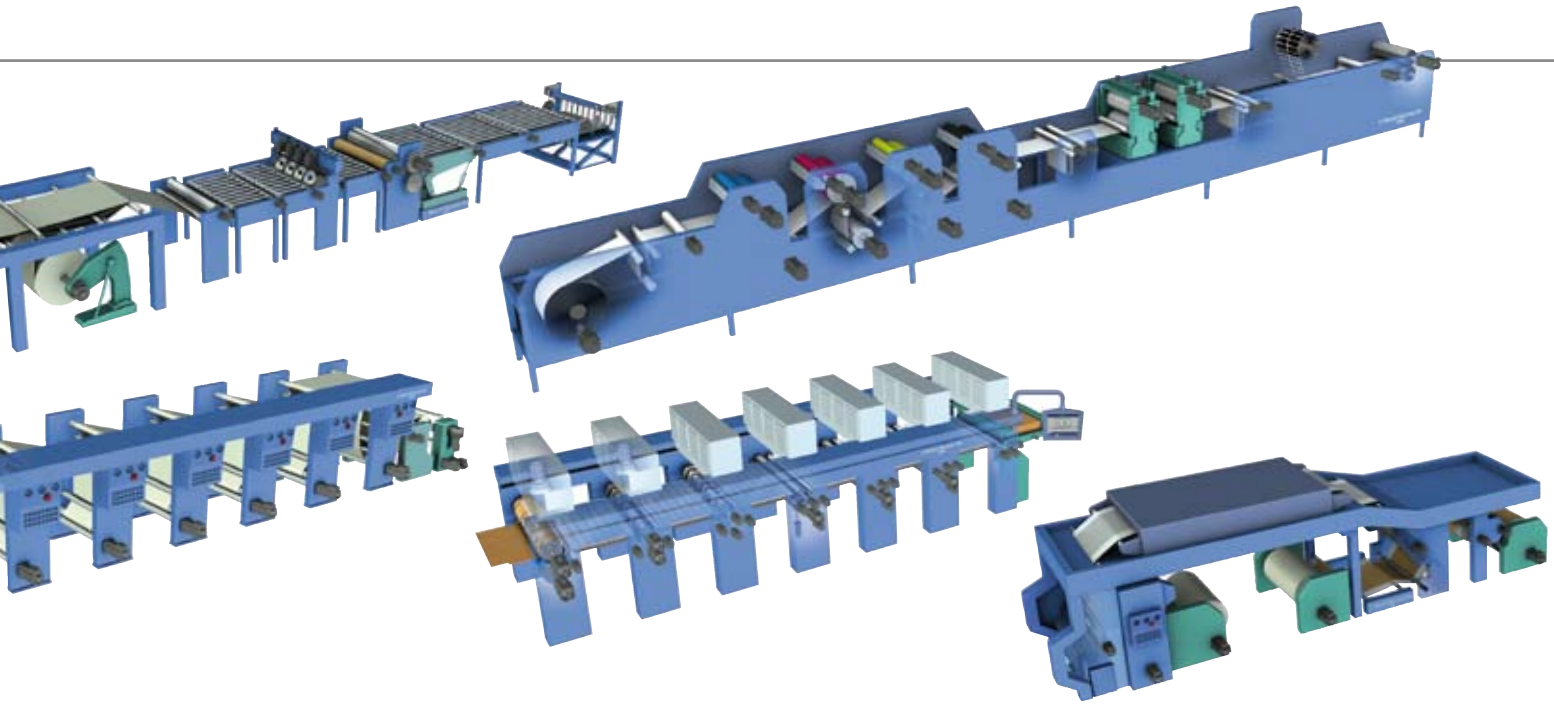
With IndraMotion for Printing, Rexroth has brought together years of industry expertise in high-volume printing and converting machines in one innovative solution.
With highly developed motion control technology, standardized PLC, end-to-end communication, industry-specific technology functions, and comprehensive function libraries, the system provides all the components required for successful automation.



Extreme accuracy
Precise synchronization of shaftless printing machines is assured by the consistent use of the Ethernet-based communications standard SERCOS III – for example, for:
- commercial printing
- corrugated printing
- digital printing
- flexo printing
- label printing
- package printing
- newspaper printing
- rotogravure printing
- screen printing
- sheet-fed printing

Increased flexibility
The optimal integration of ready-to-go technology functions and function libraries into the latest IndraLogic PLC system results in a considerable increase in flexibility for machines producing:
- bags, sacks, paper bags
- book-bindings
- cartons
- envelopes
- folding boxes
- hygiene products
- tissues
- writing pads

Less maculature
With IndraMotion for Printing, you will achieve the highest quality in printing and converting, as Rexroth's modern direct drive technology guarantees minimal torsion elasticity in the drive train. When changing production speeds, rapid register control provides for maximum product quality and minimal maculature.



Modular mechanical engineering
The decentralized architecture of IndraMotion for Printing helps machinery manufacturers to reduce significantly the times required for engineering, fitting, and startup. An easy upgrade of existing machines with additional units is never a problem due to the modular system design. And with SERCOS III there is virtually unlimited capacity for extending cross communication between controls, machines, and lines.

Total functionality
IndraMotion for Printing provides all your requirements for the automation of a modern printing and converting machine:

- electronic synchronization of phases and speeds
- electronic cams with FlexProfile
- intelligent master axis management for as many master axes as required, master axis cascading and online switching
- positioning of gantry applications
- event-driven process functions
- industry-specific technology functions

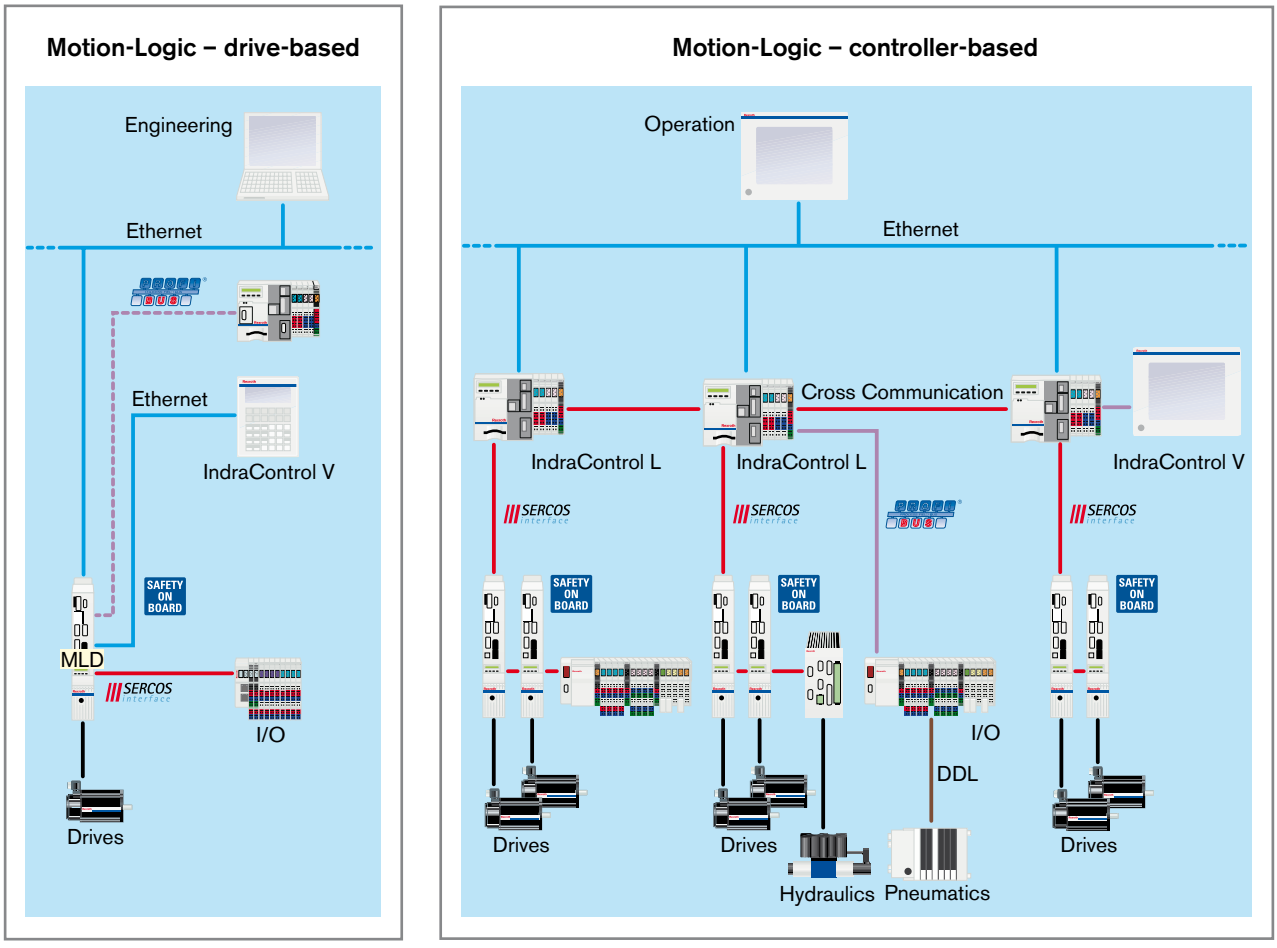
Maximum availability
The innovative software tool, "Productivity Agent", is used for preventive maintenance, while comprehensive on-site and remote diagnosis guarantee maximum equipment availability and rapid replacement of equipment on service calls.

Top quality
All Rexroth electrical control and drive components are certified according to QS-9000 TE and DIN EN ISO 9001:2000 and guarantee the highest standards in quality and reliability.

Scalable hardware architecture for printing and converting machines

IndraMotion MLD
Cost-effective solution
for single units

IndraMotion MLC
Standard solution
for machines and converting lines



Complete automation system – from single-axis to complex automation architectures

Open communications standards and standardized IEC 61131-3 compliant PLC platform

End-to-end SERCOS III system bus for controllers, drives, I/O and safety devices

Standardized IndraWorks engineering framework for motion, logic, HMI and drives

Function libraries and technology functions specific to printing and converting

Protect your investment with open standards at all levels

Openness is the key to protecting investments and future-proofing operations for the automation of modern printing and converting machines. IndraMotion for Printing has standardized communication interfaces, open programming standards, and modular system design – for maximum flexibility when configuring machines and controls.

Ethernet-based
SERCOS III, the open and IEC-compliant universal bus for Ethernet-based real-time communication, fulfils all modern automation technology requirements

Inexpensive
- networking with standard Ethernet components
- no switches or hubs

Versatile
- universal bus for peripheral, drive, safety, and standard IP communication
- improved control station integration – from office level to field level

Open
- real Ethernet communication via any IP protocol
- compatible with SERCOS 2 applications, such as drivers, applications, and hardware
- multiprotocol-compatible Ethernet communication

Easy
- simple configuration, startup, diagnosis and maintenance
- fault-tolerant cabling
- clear protocol structure diagnoses precise location of fault

High performance
- recognized protocol for real-time requirements
- sets the standards for motion control applications
- direct cross communication between controls (C2C) and between peripheral units (S2S)

Safe
- safety functions up to SIL 3
- application of globally recognized CIP Safety mechanisms for protocol safety

Simple engineering with integrated technology functions

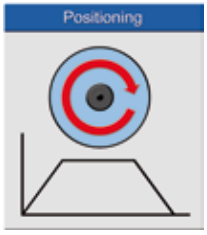
Large-scale and sophisticated applications can be handled with particular ease with our ready-to-use function libraries and predefined technology functions. You then use the IndraWorks engineering framework to add these functions to your applications program and speed up configuration and parameterization of the entire system.

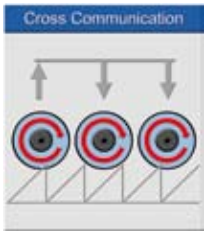
Advantages

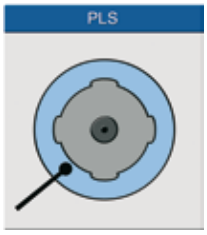
- rapid reaction to market and customer requirements
- ready-to-use function libraries and pre-defined technology functions make easy work of complex processes
- efficient modifications for new machine modules and system designs
- simplified implementation of modular machine control designs

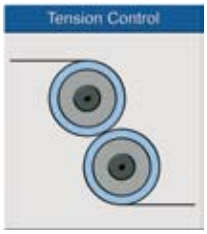
Portfolio

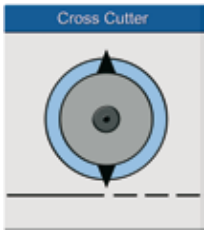
- cams (controller and drive based)
- cam control (dynamic)
- cross cutter
- extended slotting
- feeders
- FlexProfile
- gantry axes
- jogging
- measuring wheel
- PID control
- preventive diagnosis
- real master axis encoder
- register control (printing marks, color register)
- robotic kinematics
- roll changer
- sag control
- tension control
- temperature control
- touch probe function
- winders/unwinder

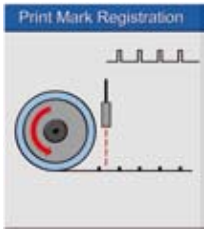


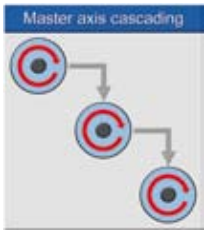




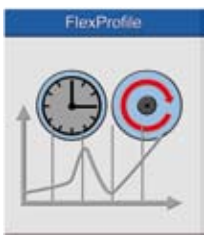


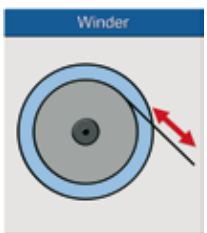


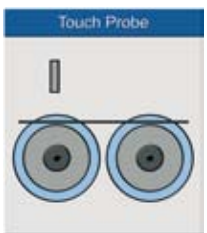


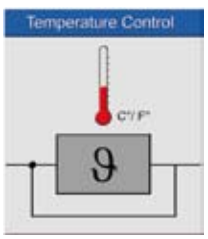


Turn-key technology functions for all processes









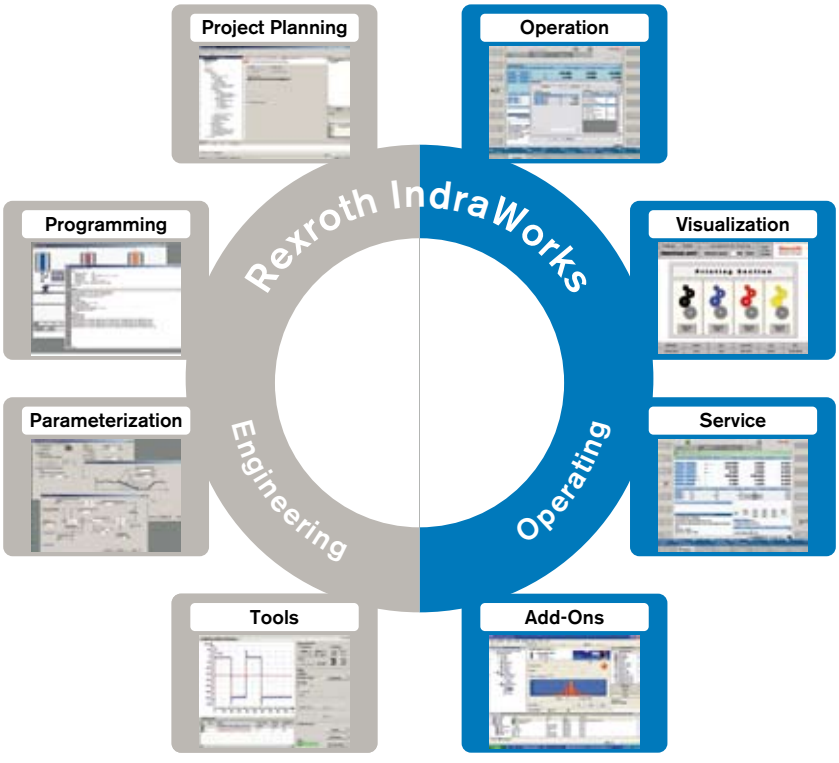
Efficient engineering with IndraWorks

A new era in engineering has begun. With IndraWorks from Rexroth, you can now cover all tasks in a common software environment – from configuration and programming through visualization and diagnosis.

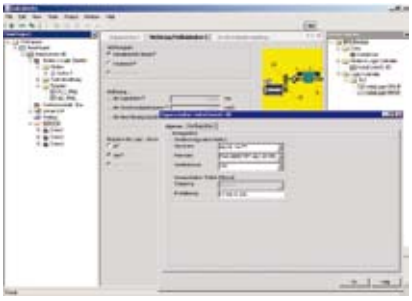
Innovation
IndraWorks is available as a standard engineering framework right across the board in all our systems – for IndraMotion, IndraLogic, or IndraDrive.
As a user, you profit from fast and transparent access to all functions and systems data across the entire range of components.

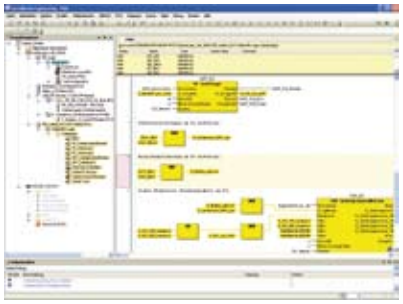
Distributed engineering
For fast startup, with IndraWorks several operators can work as multi-users at the same time on various parts of a multi-device automation project.

Easy process monitoring
Open communications interfaces facilitate data access right down to the drive parameter level, enabling all relevant data to be dynamically adapted to the process.



With Rexroth's IndraWorks, you cover all engineering tasks centrally with a single software product – and that for all industry applications





Scalable system components for flexible automation

IndraDrive –
The intelligent drive platform

IndraDrive C und M
High performance drives of 1 to 120 kW for servo and frequency converter applications

IndraDrive Mi
Motor-integrated servo drives for decentralized, modular machine concepts

IndraDrive Cs
Compact drives of 0.1 to 3 kW for servo and frequency converter applications

Safety on Board
Drive-integrated safety technology conforming to EN 954-1, Cat. 3

IndraMotion MLD
Built-in motion control using IEC 61131-3 compliant PLC

IndraDyn S und A –
The comprehensive motor range

IndraDyn S
Synchronous motors with torques of up to 495 Nm

IndraDyn A
Asynchronous motors with capacities of up to 120 kW

IndraDyn T –
The dynamic direct drives

Torque motors with high torque density and extreme rigidity
- torques of up to 13,800 Nm
- speeds of up to 4,000 min^{-1}

IndraDyn –
Safe Ex version motors

With our complete series of explosion-protected servo motors, Rexroth provides a system solution for areas where solvents are used, for example, in rotogravure and flexographic printing machines.

Our ATEX-compliant motors are available in the following versions, according to requirements:
- for zone 1 (EEx d and EEx p)
- for zone 2 (EEx nA)

EEx d motors in the MKE series are available in the following designs:
- European ATEX Standard
- American UL/CSA Standard

IndraControl L –
The controller-based control system

- central assembly for DIN rail mounting
- maximum performance in ultra-compact terminal format
- 8 rapid I/Os on board
- communications interfaces SERCOS III, PROFIBUS, PROFINET IO, EtherNet/IP, DeviceNet, Ethernet TCP/IP, and RS232
- direct connection of local inline I/Os
- easy to upgrade using function modules for communication and technologies
- scalable performance for 16, 32 and 64 axes

IndraControl V –
Cutting-edge visualization units and industrial PCs

- economic HMI solutions for all applications
- broad portfolio of controller-based IndraControl VCP terminals – from text-oriented push-button unit through touch screen with full graphic displays
- IndraControl VEP embedded PC terminals with 8.4“, 12.1” or 15“ touch screen
- IndraControl VEH embedded PC-based handheld operator control unit for mobile use
- IndraControl VSP, VPP, VSB and VPB the wide range of panel PCs and control cabinet PCs with remote displays as well as complete PC HMIs
- interfaces for fieldbus, RS232, and Ethernet connection
- ergonomic software tools for the rapid creation of screen masks

Inline –
The flexible I/O system in IP20

- scalable I/O system for centralized or decentralized connection
- maximum selectivity of digital modules with 2, 3 or 4-wire connection technology
- wide-ranging portfolio with analog, function, relay, and feeder terminals
- fieldbus couplers for SERCOS III, PROFIBUS and DeviceNet

Fieldline –
The robust I/O system in IP67

- scalable I/O system for decentralized connection
- maximum reliability under tough conditions of use
- rapid assembly with ready-made fieldbus cables
- detailed diagnosis of all modules
- fieldbus link for PROFIBUS and DeviceNet

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Presented by

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