

Rexroth IndraMotion MTX

The CNC system solution for perfect cutting and forming



Rexroth IndraMotion MTX – High-speed CNC machining

Today, the market for CNC machine tools is characterized by high variability and demand for control and drive solutions which meet user expectations in job shops and in automated, large-scale production environments. We have created one of the most advanced CNC platforms: Rexroth IndraMotion MTX, completely covering a wide range of applications.

Regardless of whether you want to automate a production machine for cutting or forming applications or control a networked system for large-scale production, the IndraMotion MTX will provide you with a customized solution.

▼ **IndraMotion MTX is a high-productivity CNC system solution for leading-edge cutting and forming applications, as part of Control City – your control technology capital.**



Outstanding features of the system include:

- ▶ scalable performance and functionality
- ▶ open system architecture
- ▶ a full-featured engineering framework
- ▶ simple operation and programming

Thanks to the modular design of hardware and software, the IndraMotion MTX is excellently suited for integration into a wide range of machine designs. It ensures high-end efficiency and flexibility in the processing of materials such as:

- ▶ metal
- ▶ wood
- ▶ glass
- ▶ plastic

A wide range of technology functions and excellent performance characteristics open up new possibilities in the areas of:

- ▶ turning
- ▶ milling
- ▶ boring
- ▶ grinding
- ▶ bending
- ▶ nibbling
- ▶ punching
- ▶ shape cutting
- ▶ handling



Versatile platform

An innovative CNC kernel, comprehensive libraries and technology packages provide flexibility for applications ranging from standard machines to fully-automated production systems.

High-precision machining

A high performance CPU, in conjunction with the intelligence of Rexroth's IndraDrive system, delivers very high precision in all of your applications, extending down to the nanometer range.

A complete solution with integrated cycles and high-end technology functions ensure standardization of your machines and allow you to implement special, machine-specific functions.

Outstanding performance

Shortest CNC cycle times and minimum PLC processing times permit high-speed, dynamic machining and reduced non-productive times for significant increases in productivity.

Easy-to-use

A full-featured engineering framework, user-friendly operating software and integrated web technology simplifies programming, operation and diagnostics.

Open architecture

The open system platform utilizes international industry standards such as Fieldbus, SERCOS, Ethernet, OPC and XML, facilitating integration into higher-level ERP systems like SAP.



Outstanding performance for faster production

You can use the IndraMotion MTX to perform simple, effective control of machines for turning, cutting, boring, grinding, nibbling, punching, bending and shape cutting operations.

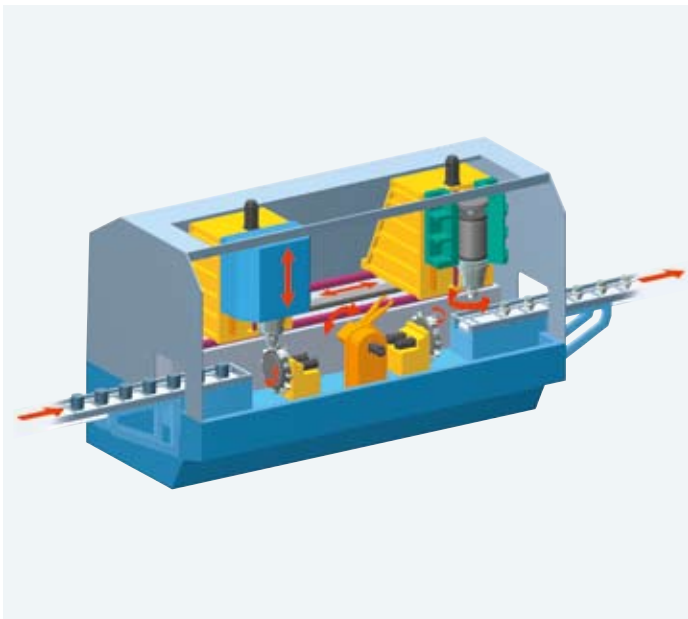
You can make use of a complete, full-featured software package that takes you from project planning and startup right through to part programming. User interfaces, designed with practical application in mind, increase productivity and simplify troubleshooting – providing greater transparency in your systems and processes.

- ▶ DIN 66025 compliant CNC programming
- ▶ up to 64 servo axes
- ▶ up to 32 spindles using SERCOS
- ▶ up to 12 independent CNC channels
- ▶ integrated IEC 61131-3 compliant PLC



Turning – precise and complete

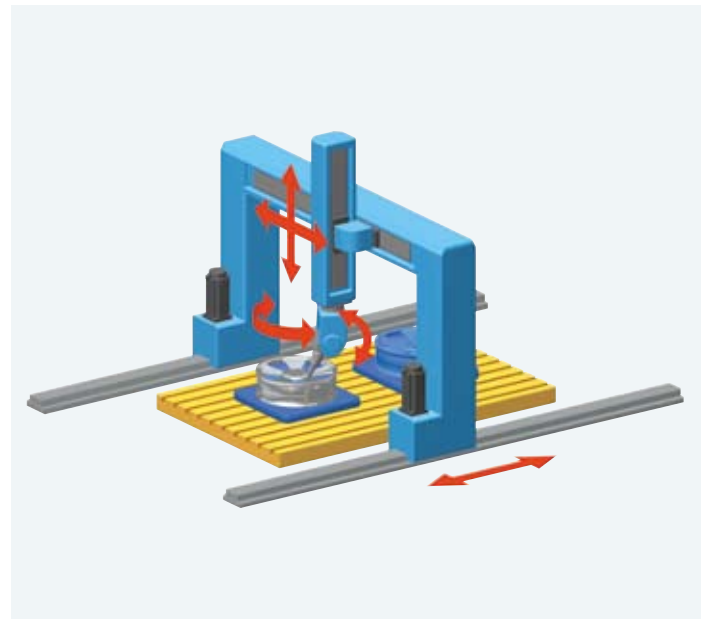
IndraMotion MTX offers you all the functions and capabilities of cross-technology multi-axis machining. The combination of turning, cutting, and boring in one process lets you perform complete machining operations with a single clamping. Multi-channel capability and unrestricted axis allocation allow you to perform complete part machining with workpiece transfer on multi spindle lathe centers.



- ▶ C-axis machining and live tool machining
- ▶ multi-channel processing
- ▶ unrestricted axis transfer between the channels
- ▶ spindle synchronization
- ▶ unrestricted positioning and rotation for the workpiece coordinate system in space
- ▶ integrated technology cycles
- ▶ graphic program support
- ▶ 3D machining simulation

Milling – fast and effective

The CNC functions of the IndraMotion MTX, which have a proven track record in practical applications, cover the entire spectrum ranging from standard milling machines to HSC centers for free-form machining. Open system architecture allows you to integrate supplier-specific software packages to create part programs. With the high CNC processing speed you can execute large programs, without delay, directly from hard disk or from the network.

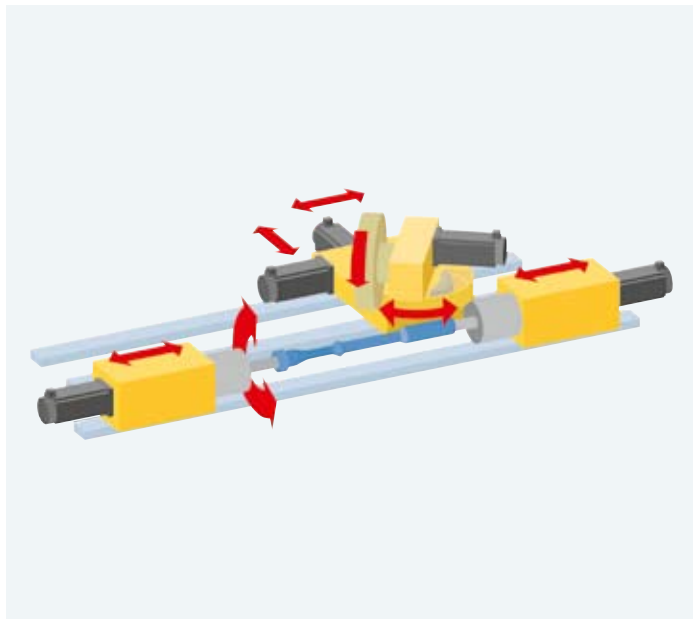


- ▶ 5/6-axis transformation
- ▶ spline and NURBS interpolation
- ▶ compressor function
- ▶ axis-specific jerk limitation
- ▶ 3D cutter radius correction
- ▶ look-ahead function
- ▶ electronic transmission
- ▶ Ethernet for DNC

Combining more technology for highest precision and production

Grinding – highly-dynamic with nanometer accuracy

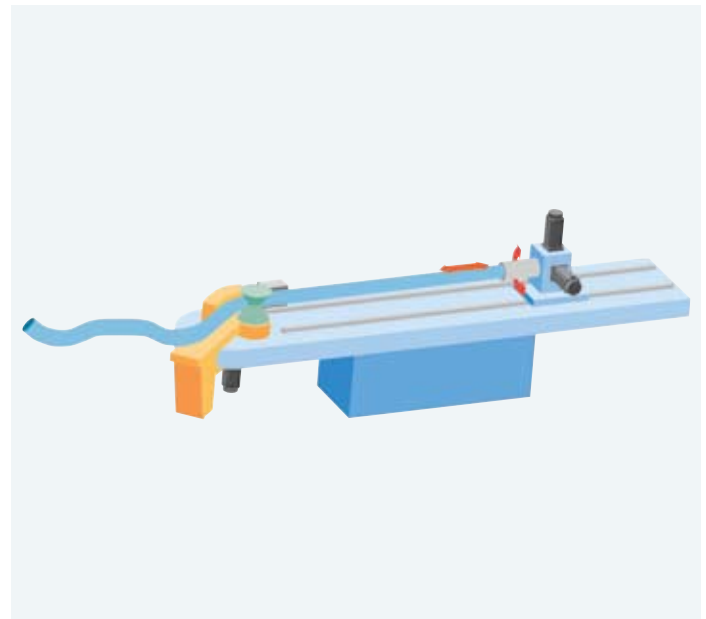
IndraMotion MTX in combination with Rexroth's intelligent IndraDrive digital drive units and the IndraDyn motors are the ideal solution for your demanding grinding applications, offering precision in the nanometer range. The individually scalable CNC platform with integrated PLC provides reduced non-productive times and extremely quick reaction to process events.



- ▶ integrated transformation for inclined axes
- ▶ minimum CNC interpolation time of 0.25 ms
- ▶ linear and rotary direct drives with excellent dynamic characteristics
- ▶ integrated IEC 61131-3 compliant PLC
- ▶ high-speed I/O in the interpolation cycle
- ▶ standard user interface can be adapted to suit customer needs
- ▶ nanometer resolution

Bending – coordination of high precision

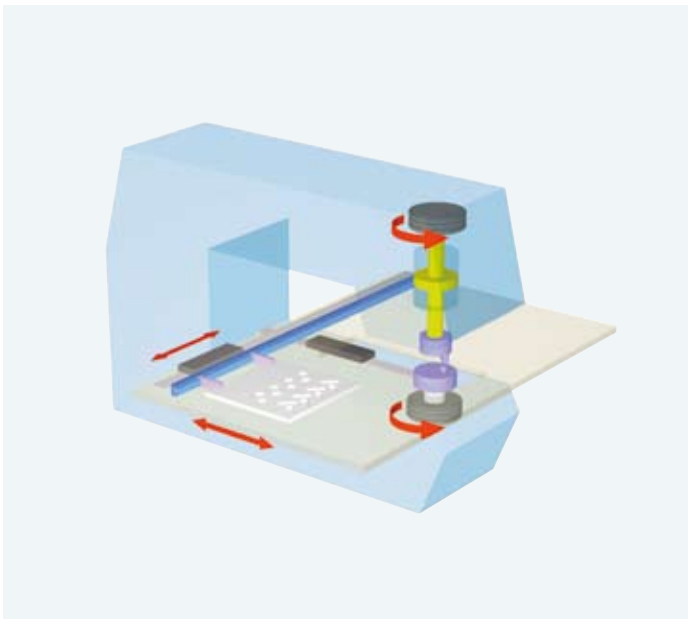
The IndraMotion MTX consistently bends sheet metal, pipe, profiles or wire with a high degree of geometrical precision. You can use axis interpolation with up to 8 axes on one CNC channel to achieve perfect operations such as 3D bending. You can combine Rexroth's hydraulic and electro-mechanical CNC axes any way you like using the SERCOS to achieve optimal process adaptation.



- ▶ exact motion coordination in space
- ▶ intelligent, hydraulic-axis control
- ▶ interpolation between hydraulic and electrical axes
- ▶ high performance digital drives
- ▶ integrated safety functions to protect man and machine

Nibbling, punching and shape cutting – fast and accurate

By taking advantage of the process optimized control functions and the dynamics of our intelligent digital drives, you increase the number of strokes on your machine and consequently your productivity. A process optimized user interface combined with special punching and nibbling functions in the CNC kernel reduce your process engineering workload.



- ▶ speed stroke activation from the NC kernel
- ▶ tangential tool guidance
- ▶ laser power control
- ▶ retrace function
- ▶ auto-height control
- ▶ robust control hardware designed for industrial environments
- ▶ electro-hydraulic punch axis
- ▶ high-torque motors for direct tool drive

Individual solutions with open standards

IndraMotion MTX is a complete system platform from which we configure tailored CNC solutions for your application – whether you want to automate a single standard machine or a complex high-production system.



IndraMotion MTX compact – space-saving rack version for distributed control technology

With all interfaces, including 8 digital fast I/O, it has all the necessary functionality for simple CNC stations or standard machines with up to 8 axes. With a high-speed Ethernet interface for HMI devices and programmable PCs, along with integrated interfaces for add-on modules and local I/O elements, the standard version alone offers optimum connection capability. For use in modular systems using distributed control equipment, the IndraMotion MTX compact offers a fast Ethernet communication for data and control networking. The system also features a PROFIBUS interface for connection of distributed I/O devices, machine user panels or compact HMI devices.



IndraMotion MTX standard – PC-based CNC control

The CNC and PLC functions are packaged as a plug-in controller in an industrial PC. Even the basic version offers outstanding performance for 8 axes, of which 2 can be used for spindle functions. Two independent CNC channels are available for process automation. IndraControl VS industrial PCs can be integrated seamlessly into the IT network landscape in modern production environments – including a complete package for operation and programming and fast communications ports.

IndraMotion MTX is individually scalable in power and functionality using uniform hardware and software. These variants satisfy all needs: IndraMotion MTX compact, IndraMotion MTX standard, IndraMotion MTX performance and IndraMotion MTX advanced



IndraMotion MTX performance – high-performance CNC controller

IndraMotion MTX performance, packaged in a compact industrial PC with matching operating features, is the system solution of choice for demanding machine tools in harsh industrial environments. The controller delivers excellent performance and offers a wide range of technology functions for special requirements. 12 independent CNC channels can handle up to 64 axes, of which 32 can have a spindle function. A whole series of functions is available for performing complex interpolation, axis coupling, special kinematics, fast I/O coupling and much more. IndraMotion MTX performance can be upgraded to handle future requirements. For example, you can add additional interfaces or fieldbus connections.



IndraMotion MTX advanced – CNC controller for demanding requirements

Greater computing power, masses of memory and the combination of high-performance, compact industrial PCs make IndraMotion MTX advanced the ideal system solution for particularly demanding applications. 12 independent CNC channels can handle up to 64 axes, of which 32 can have a spindle function. The new high-performance CPU delivers minimal PLC and CNC processing times for outstanding productivity with no compromise on absolute precision. IndraMotion MTX performance can be upgraded to handle future requirements. For example, you can add additional interfaces or fieldbus connections.

Simple operation and convenient diagnostics for more efficient production

The CNC user interface of the IndraMotion MTX can be precisely adapted to the requirements of your machine.

The software offers standard screens for all areas of operation. With the HMI editor WinStudio, application-specific displays can be easily integrated in the standard screens. The state-of-the-art software architecture of the user interface makes it easy to plug in readily-available ActiveX and .NET controls for 3rd party software.

The screen header area shows the user the status of the machine and manufacturing process. Icon-based convenient and clear diagnostics and an automatic "message ticker" ensure that the right information is always supplied. The "Diagnostics" area provides an overview of active messages and access to the message log book. Detailed descriptions of faults and troubleshooting hints are displayed along with the diagnostic messages.



▲ Complete operating and programming user interface



▲ 2-channel display



▲ Integration of system-specific special images



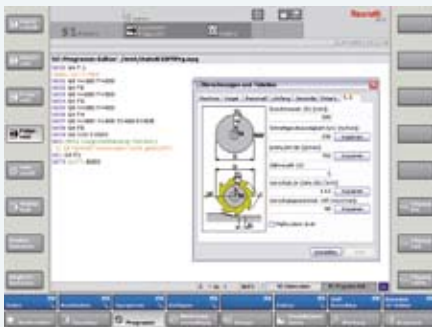
▲ Integrated visualization for tools and NC data

Easy programming for rapid workpiece development

The integrated programming tools give you a simple, easy to understand method of creating part programs.

The NC editor features syntax highlighting of key words or programming errors to help you with the creation of part programs. DIN code, high-level language elements and flexible subroutine techniques allow you to create well-organized program structures that are easy to understand. A wide range of technology cycles are available for the efficient execution of repetitive machining sequences.

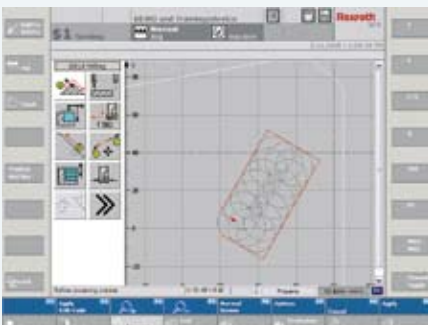
The graphic CNC programming assistant for turning and milling shows the programmer the fast track route from the drawing to the finished part. The integrated 3D simulation function allows you to simulate a part program in source text in parallel with the machining time, which enables you to identify and easily eliminate programming errors in good time. This initial quality check reduces rejects and down-times.



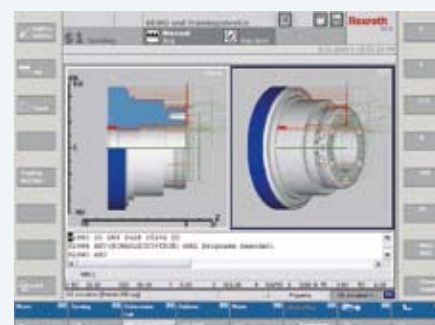
▲ NC editor with technology computer



▲ Integrated technology cycles



▲ Contour path programming



▲ Perfect 3D simulation

Straightforward engineering cuts time to production

Rexroth's IndraWorks engineering framework combines design planning tools for initial operation and troubleshooting.

You can take advantage of cross-system project management and data storage to organize large-scale automation projects in an efficient format that is easy to understand. Commissioning functions for the parameterization and optimization of IndraMotion MTX systems are started centrally from IndraWorks.

User-specific custom screens can be created with the integrated HMI editor WinStudio and can easily be integrated into the standard user interface. The integrated IEC 61131-3 compliant PLC lets you program using instruction lists, function block diagrams, ladder diagrams, structured text, sequential language or CFC. Multi-programming and multi-tasking technology give you new ways of achieving the best possible representation of the process. Oscilloscope function, circular shape test and the comfortable status indication of the NC/PLC interface provide valuable support during startup and troubleshooting. You can use the integrated configurator to set up fieldbus systems and the distributed I/O devices that you have connected.



▲ **PLC programming and start-up**



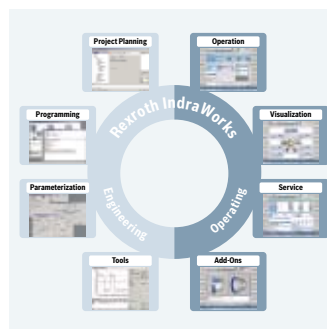
▲ **Configurable user interface**



▲ **Drive unit parameterization and optimization**



▲ **Integrated HMI editor**



◀ **IndraWorks – task-oriented operation and visualization**

Uniform communication at all levels

Host computer level

Our industrial PCs provide a simple and cost-effective communications path to host computer systems. The system is based on standard industrial hardware and software such as Ethernet TCP/IP and OPC.

HMI level

PC-based operating devices simplify data exchange using standard networking such as the Microsoft network.

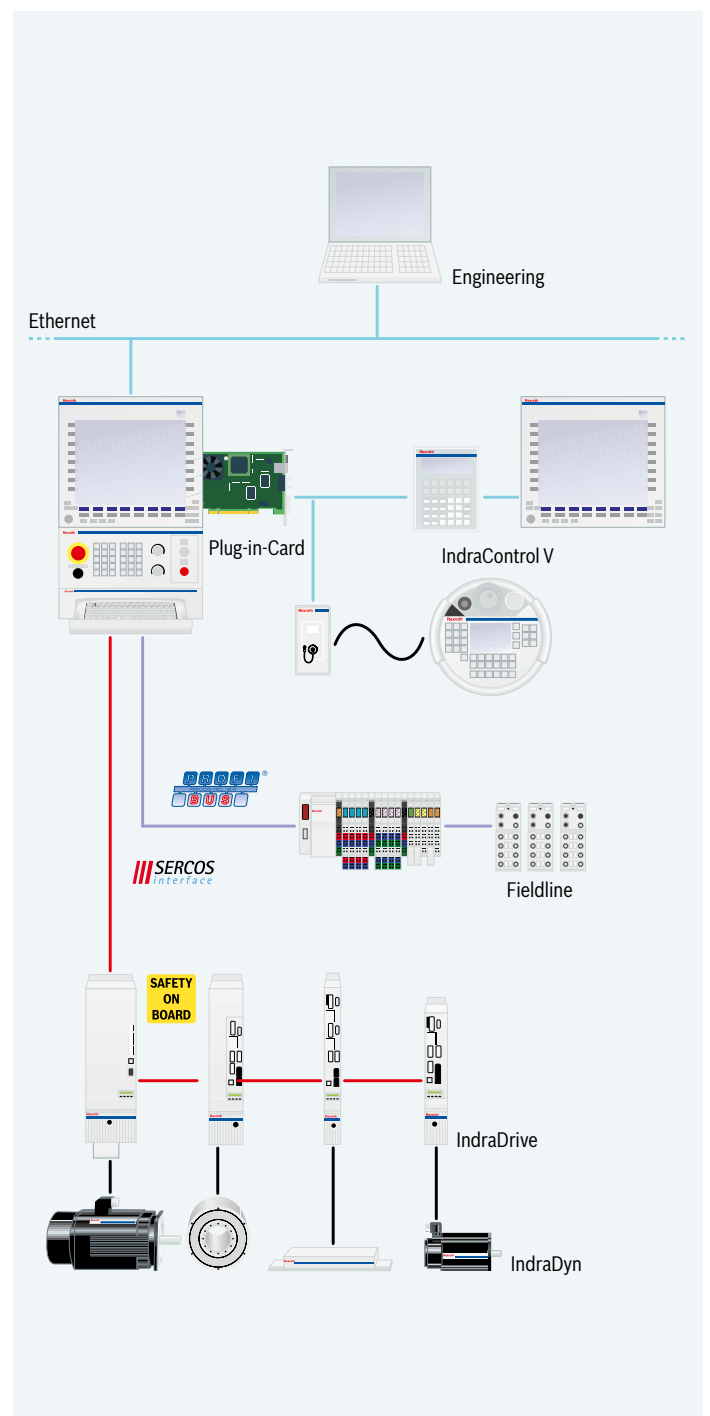
I/O level

To communicate with the sensor/actuator level, we use worldwide standards such as PROFIBUS, DeviceNet or CANopen.

Drive level

The internationally standardized SERCOS is used to achieve the highest level of dynamics and precision. IndraMotion MTX and IndraDrive fully exploit the advantages of SERCOS interface with data transfer rates up to 16 MBaud.

- ▶ **IndraMotion MTX incorporates a modular system design, open controller structure and standard international interfaces to solve all of your machining tasks in the field of CNC technology with the highest level of dynamics and precision**

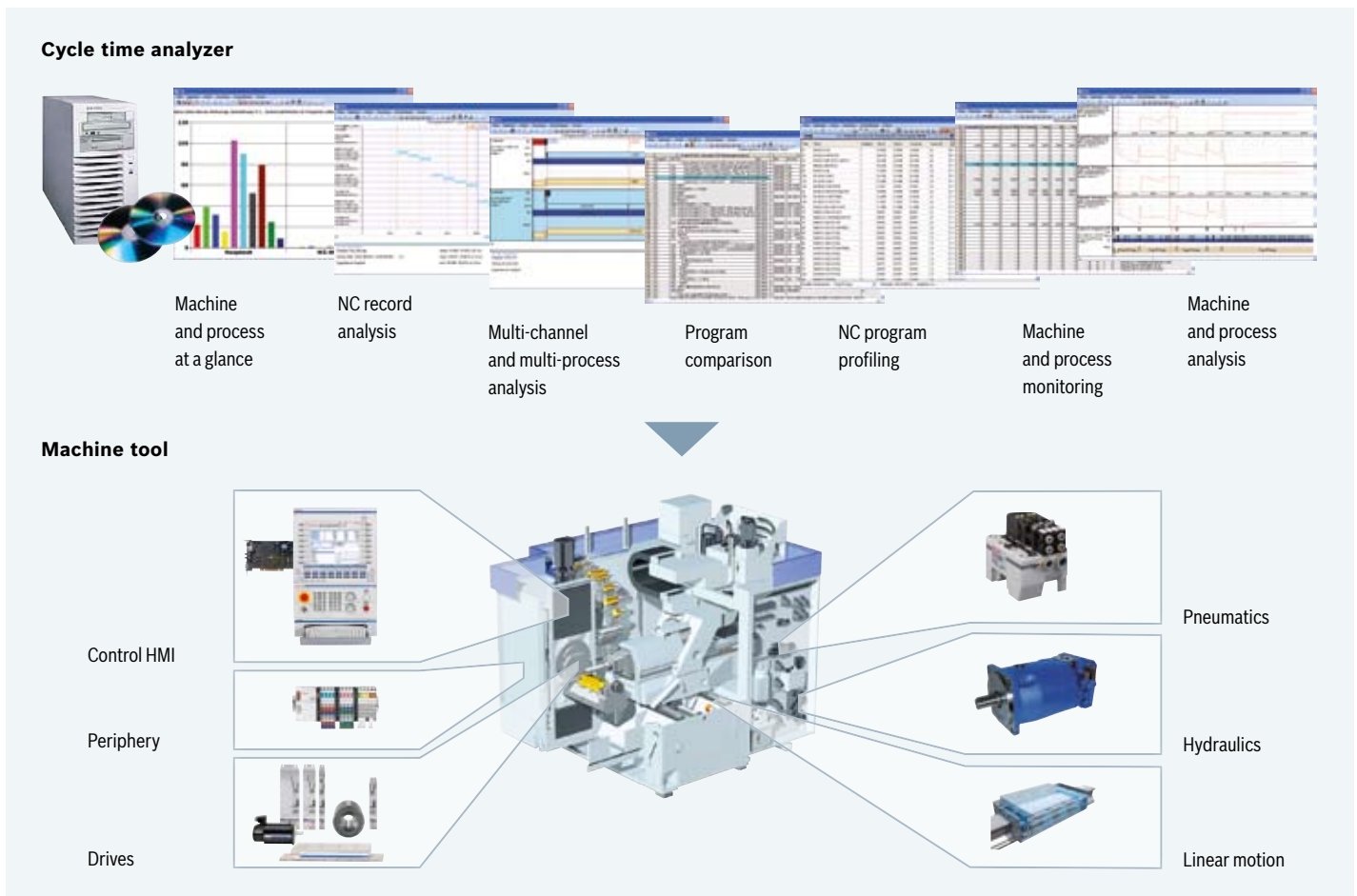


Increased productivity with IndraMotion MTX cta

The cycle time analyzer IndraMotion MTX cta is a universal tool for the CNC systems IndraMotion MTX to achieve a selective and effective optimization of machine cycle times.

In order to optimize productivity, each of the different parts of the automation system has to be examined. IndraMotion MTX cta logs all the relevant data in real-time – in several CNC channels simultaneously as well, if required. All the data are logged with temporal reference to the control program and can be displayed in either graphic or table form.

Calculation tables, diagrams and NC record analyses provide the user with a quick overview of the workflows of the machine. As a provider of engineering services, Rexroth Service is available to help with all your requirements for the undertaking of IndraMotion MTX cta measurements, data evaluation and the optimization of process workflows.

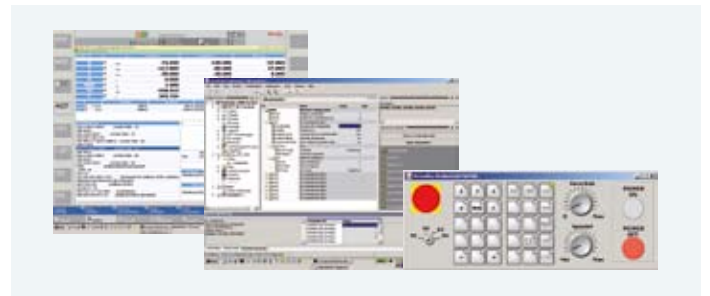


Simulation first, construction later

Simulation tools help programmers to program systems more efficiently and to test and optimize automation projects before they even leave the office.

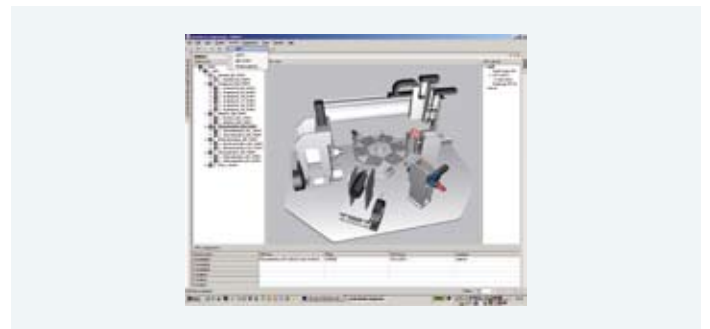
IndraMotion MTX simulator

The IndraMotion MTX simulator software tool offers the complete project planning environment and operator interface of an IndraMotion MTX system. A complete package for standard PCs comprised of a virtual CNC and PLC core, original CNC screens and the virtual machine control panel VAM simulator, which can be used both as an engineering workstation and as a training system.



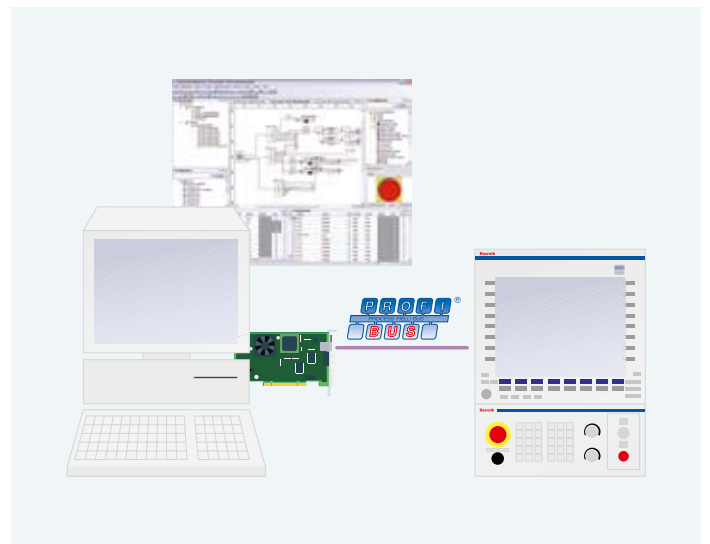
IndraWorks view 3D

An optimum supplement to the IndraWorks engineering environment, the IndraWorks view 3D simulation tool provides you with the means of visualizing machine components. Using existing CAD data you can use the drag-and-drop function to create a 3D animation which shows parts performing exactly in accordance with assigned process variables.



IndraWorks machine simulator

With the IndraWorks machine simulator, available as optional add-on software, IndraWorks can simulate the machine's peripherals – such as sensors and actuators – on PROFIBUS. This therefore makes it possible to create models of plant components or even complete machines and archive them in a virtual modular system. The reuse of IndraWorks project planning data helps to cut out redundancy and potential errors while simplifying the work process at the same time.



Scalable system components for flexible automation

IndraControl V – high-performance visualization devices

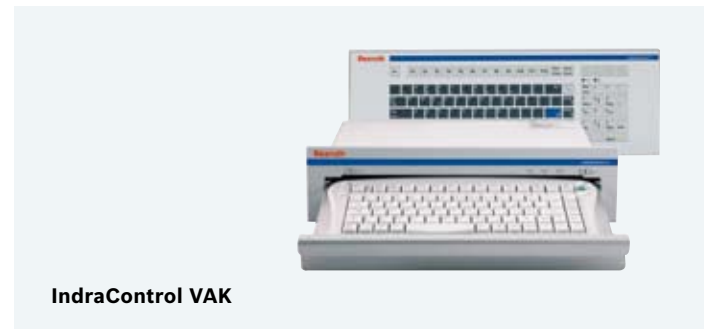
If you are looking for a complete solution for control, operation and visualization, we can offer you powerful industrial PCs. As a panel PC or as a separated PC and display to minimize enclosure installation in a control cabinet, the IndraControl V series is suitable for various systems configurations. The IndraControl VEP series provides cost-effective, rugged and compact embedded PCs for use as additional user panels or visualization devices for IndraMotion MTX compact systems. The IndraControl VP series is suitable for the toughest requirements. Solid state disks for shock-resistant and vibration-resistant mass storage, compact design, integrated temperature monitoring, and UPS are just some of the standard features of these rugged devices.



IndraControl V

IndraControl VAK – ergonomic industrial keyboards

These IP65 keyboards are compact and easy to install. The retractable keyboard offers the convenience of a standard PC keyboard with integrated mouse. The membrane keyboard has a minimum mounting depth while offering complete MF2 functionality and IP65 protection.



IndraControl VAK

IndraControl VCP and VCH – compact operating and visualization devices

The compact IndraControl VCP control terminals are a cost-effective solution for visualization and troubleshooting. They are available with a monochrome or color display with keys or touch-screen. They offer simple connectivity using Ethernet or fieldbus interface. The hand-held IndraControl VCH control device gives you a fast and convenient way of operating a machine, setting parameters and running diagnostics. An Ethernet interface, a three-stage live man switch with occupational safety certification and a Stop button are all standard equipment. An electronic handwheel and an override switch are available as options.



IndraControl VCP and VCH

IndraControl VAM – convenient machine control panels

All control panels are designed for use with our operating and visualization devices. A PROFIBUS interface is used to connect them to the controller.

IndraControl L40 – a complete CNC in a DIN rail-mount format

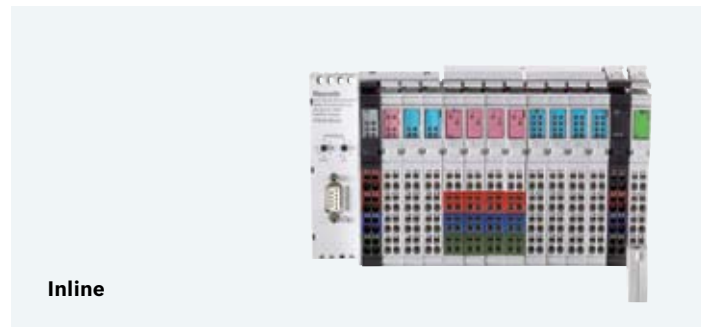
This central assembly, designed for DIN rail mounting, combines CNC performance with PLC functions in an ultra-compact terminal format. 8 integrated I/O ports, a PROFIBUS interface, a SERCOS for intelligent drives and Ethernet for communications with peripheral devices are included as standard equipment. The standard I/O ports can be expanded using Rexroth Inline modules. Functionality modules with a high-speed interface facilitate the addition of the field-buses as EtherNet/IP and other interfaces.

Inline – a flexible I/O system

Inline is a scalable I/O system with very fine granularity. There is a choice of PROFIBUS and DeviceNet as interfaces. Digital and analog I/O ports plus the corresponding supply modules are available for connection of sensors/actuators.

Fieldline – I/O modules with IP67 protection

You can use our compact Fieldline I/O units to bring I/O peripherals close to the sensors and actuators on your machine to reduce wiring costs and installation time. We offer input, output and combination modules for PROFIBUS and DeviceNet.



Efficient production with intelligent drive technology

You can use IndraDrive digital drive technology to turn IndraMotion MTX into a perfect automation system. The combination of three features makes IndraDrive unique and innovative: a full-featured platform, integrated intelligence and an innovative safety concept.

In conjunction with IndraDyn highly-dynamic motors, IndraDrive offers you a host of advantages:

- ▶ Safety on Board complying with ISO EN 13849-1/Cat. 3 and PLe, SIL2 EN 62061 respectively, for Safe Stop and Safe Motion
- ▶ a wide power range from 1 kW to 120 kW
- ▶ integrated motion logic with IEC 61131-3-compliant PLC
- ▶ international standardized interfaces
- ▶ highest performance and precision
- ▶ scalable performance and functionality
- ▶ converters and inverters on a unique platform
- ▶ a comprehensive range of motors with excellent performance

Safety on Board

Safety technology makes sure that people are protected to the greatest extent. Power contactors and speed monitors are no longer needed.

Integrated motion logic with IEC 61131-3-compliant PLC

Integrated motion logic with IEC 61131-3-compliant PLC is fully committed to open standards and makes it easier to implement customer know-how.

Integrated technology functions

Technology functions can be parameterized on the basis of the motion logic to perform the most diverse process-oriented tasks.

Open interfaces

There is a choice of SERCOS, PROFIBUS and DeviceNet for communicating with the CNC and the PLC.

One engineering tool for all tasks

The IndraWorks engineering tool guides you through all steps of the design phase, programming, parameter setting, operation and diagnostics.



◀ **IndraDrive and IndraDyn are Rexroth's application-optimized drive solution with integrated safety features, PLC and highly-dynamic motors**

1	Machining technologies	MTX compact	MTX standard	MTX performance	MTX advanced
1.1	Turning	●	●	●	●
1.2	Milling	●	●	●	●
1.3	Drilling	●	●	●	●
1.4	Grinding	●	●	●	●
1.5	Nibbling, shape cutting	●	●	●	●
1.6	Reforming	●	●	●	●
2	Axis control	MTX compact	MTX standard	MTX performance	MTX advanced
2.1	Default number of axes	8	● 8	● 8	● 8
2.2	Max. number of axes	8	● 8	● 64	○ 64
2.3	Max. number of spindles thereof	2	● 2	● 32	○ 32
2.4	Default number of independent channels	2	● 2	● 3	● 3
2.5	Max. number of independent channels	2	● 2	● 12	○ 12
2.6	Default number of interpolating axes per channel	4	● 4	● 4	● 4
2.7	Max. number of interpolating axes per channel	4	● 4	● 8*	○ 8*
2.8	Linear axes	●	●	●	●
2.9	Rotary axes	●	●	●	●
2.10	Endlessly turning rotary axis	●	●	●	●
2.11	Hirth axes	●	●	●	●
2.12	Spindle/C-axis switching	●	●	●	●
2.13	Max. number of gantry groups per channel	4 ②	○ 4 ②	○ 8 ② ③	○ 8 ② ③
2.14	Channel-crossing axis transfer	●	●	●	●
2.15	Electronic cam	●	●	●	●
2.16	Spindle coupling via electronic transmission	⑦	○ ⑦	○ ⑦	○ ⑦
2.17	Software limit	●	●	●	●
2.18	Main spindle synchronization	① ②	○ ① ②	○ ① ② ③	○ ① ② ③
2.19	Axis-specific jerk limitation	●	●	●	●
2.20	Integrated safety functions ISO EN 13849-1/Cat. 3 and PLe, SIL2 EN 62061 respectively (Safe Stop, Safe Motion)	□	□	□	□
3	Interpolation functions	MTX compact	MTX standard	MTX performance	MTX advanced
3.1	Linear interpolation	●	●	●	●
3.2	Linear interpolation with/without exact stop	●	●	●	●
3.3	Circular interpolation with radius and center-point programming, helical interpolation	●	●	●	●
3.4	Circular interpolation with tangential entry	●	●	●	●
3.5	Rigid tapping cycle	●	●	●	●
3.6	Thread cutting	●	●	●	●
3.7	Cylinder surface transformation	① ⑥	① ⑥	① ⑥	① ⑥
3.8	C-axis transformation	①	①	①	①
3.9	NC block preview, look-ahead with jerk limitation	max. 30 blocks	● max. 30 blocks	● max. 1,000 blocks	○ max. 1,000 blocks
3.10	5/6 axis transformation with TCP programming	–	–	③	○ ③
3.11	Jogging with active transformation	–	–	③	○ ③
3.12	Spline interpolation, C1 + C2, continuous cubic splines, B-splines, NURBS	① ②	○ ① ②	○ ① ② ③	○ ① ② ③
3.13	Nanometer resolution	●	●	●	●

● Default

○ Optional

■ Optional in connection with a PC

□ Optional with IndraDrive

① “Turning 1” technology package

② “Milling 1” technology package

③ “Milling 2” technology package

④ “Turning” shop programming

⑤ “Milling” shop programming

⑥ “Shape cutting” technology package

⑦ “Electronic transmission” technology package

* An export license is required for this option. Per part I C of the export list (EC Regulation) item 2D002

4	Feed functions	MTX compact		MTX standard		MTX performance		MTX advanced	
4.1	Feed in mm/min or inch/min		●		●		●		●
4.2	Time programming		●		●		●		●
4.3	Feedrate per revolution		●		●		●		●
4.4	Constant cutting speed	①	○	①	○	①	○	①	○
4.5	Feed on positive stop		●		●		●		●
4.6	Torque reduction		●		●		●		●
5	Shifts and compensations	MTX compact		MTX standard		MTX performance		MTX advanced	
5.1	Mirroring, scaling, rotating		●		●		●		●
5.2	Zero point offset		●		●		●		●
5.3	Compensations and zero offsets programmable through CPL		●		●		●		●
5.4	Placements (FRAMES)	②	○	②	○	② ③	○	② ③	○
5.5	2D compensation		●		●		●		●
5.6	3D cutter radius compensation		–		–	③	○	③	○
5.7	Compensation with plane switching		●		●		●		●
5.8	Tangential tool guidance		●		●		●		●
6	Tool management	MTX compact		MTX standard		MTX performance		MTX advanced	
6.1	Integrated flexible tool management		●		●		●		●
6.2	Configurable tool database		●		●		●		●
6.3	Freely definable tool compensation (length, radius, cutting position compensation, user data)		●		●		●		●
6.4	Additive tool compensations (D compensations)		●		●		●		●
6.5	Access to tool data from PLC		●		●		●		●
6.6	Access to tool data from CNC		●		●		●		●
7	CNC-Programmierung	MTX compact		MTX standard		MTX performance		MTX advanced	
7.1	Parts program development	DIN ISO 66025/ RS 274	●	DIN ISO 66025/ RS 274	●	DIN ISO 66025/ RS 274	●	DIN ISO 66025/ RS 274	●
7.2	High-level language programming, CPL (customer programming language)		●		●		●		●
7.3	Graphical NC programming	④ ⑤	■	④ ⑤	○	④ ⑤	○	④ ⑤	○
7.4	Graphical NC simulation	④ ⑤	■	④ ⑤	○	④ ⑤	○	④ ⑤	○
7.5	CNC memory	64 MB		64 MB		64 MB		256 MB	
7.6	Static memory	8 MB		8 MB		8 MB		16 MB	
7.7	Max. size of parts program	8 MB, PC hard disk (network file system)	■	PC hard disk (network file system)	●	PC hard disk (network file system)	●	PC hard disk (network file system)	●
8	Technology cycles	MTX compact		MTX standard		MTX performance		MTX advanced	
8.1	Drilling	① ②	■	① ②	○	① ② ③	○	① ② ③	○
8.2	Turning	① ④	■	① ④	○	① ④	○	① ④	○
8.3	Milling	② ⑤	■	② ⑤	○	② ③ ⑤	○	② ③ ⑤	○

● Default

○ Optional

■ Optional in connection with a PC

□ Optional with IndraDrive

① “Turning 1” technology package

② “Milling 1” technology package

③ “Milling 2” technology package

④ “Turning” shop programming

⑤ “Milling” shop programming

⑥ “Shape cutting” technology package

⑦ “Electronic transmission” technology package

9	Functions	MTX compact	MTX standard	MTX performance	MTX advanced
9.1	Dwell time in seconds	●	●	●	●
9.2	Acceleration programming, loop gain programming	●	●	●	●
9.3	Homing through NC program	●	●	●	●
9.4	Absolute dimension, relative dimension	●	●	●	●
9.5	Switching between inch and mm	●	●	●	●
9.6	Probe, static/on-the-fly measurement	●	●	●	●
9.7	Read process and drive data through SERCOS 2	●	●	●	●
9.8	Roundings and chamfers	●	●	●	●
9.9	Corner rounding with splines				
9.10	Laser power control	●	●	●	●
9.11	Digitizing	●	●	●	●
9.12	NC block defined by PLC	●	●	●	●
10	Support for control elements	MTX compact	MTX standard	MTX performance	MTX advanced
10.1	Configurable operator screens	■	■	■	■
10.2	Cycle header/input support, OEM cycles	■	■	■	■
10.3	NC program restart/block search	●	●	●	●
10.4	Dry Run	●	●	●	●
10.5	Retracting from and returning to the contour	●	●	●	●
10.6	Retrace function: Reversing over the contour	⑥ ○	⑥ ○	⑥ ○	⑥ ○
11	PLC programming	MTX compact	MTX standard	MTX performance	MTX advanced
11.1	Integrated PLC: IndraLogic	●	●	●	●
11.2	Programming languages according to IEC 61131-3 (IL, LD, CFC, ST, SFC, FBD)	●	●	●	●
11.3	PLC program memory	8 MB	8 MB	8 MB	16 MB
11.4	Number of high-speed inputs/outputs	–	8/8 ○	8/8 ○	8/8 ○
11.5	Number of fieldbus inputs/outputs in bytes	8.192/8.192	8.192/8.192	8.192/8.192	8.192/8.192
11.6	Multitasking	●	●	●	●
11.7	Max. number of PLC tasks	16	16	16	16
12	Diagnostic and start up tools	MTX compact	MTX standard	MTX performance	MTX advanced
12.1	Integrated, system-crossing engineering framework IndraWorks	■	●	●	●
12.2	Automatic system monitoring units	●	●	●	●
12.3	Status and error messages in plaintext	■	●	●	●
12.4	Integrated drive setup tools	■	●	●	●
12.5	Drive oscilloscope	■	●	●	●
12.6	Integrated PLC setup tools	■	●	●	●
12.7	Logic analyzer	■	●	●	●
12.8	Circle form test	■	●	●	●
12.9	NC analyzer	■	●	●	●
12.10	Action recorder MTX acr	○	○	○	○
12.11	Cycle time analyzer MTX cta	○	○	○	○
12.12	Remote diagnostics I-Remote	○	○	○	○
12.13	Software IndraMotion MTX simulator	○	○	○	○
12.14	IndraWorks view 3D	○	○	○	○
12.15	IndraWorks machine simulator	○	○	○	○

13	Open architecture	MTX compact	MTX standard	MTX performance	MTX advanced
13.1	Configurable standard user interface with all standard functions	■	●	●	●
13.2	Projectable, user-specific operator graphics	■	●	●	●
13.3	Adaptation and integration via standardized interfaces (OPC, XML, ActiveX, .NET)	■	●	●	●
14	Control hardware and interfaces	MTX compact	MTX standard	MTX performance	MTX advanced
14.1	CPU	IndraControl L40	IndraControl P40	IndraControl P60	IndraControl P70
14.2	Digital drive interface SERCOS 2	2 to 16 MBaud ●	2 to 16 MBaud ●	2 to 16 MBaud ●	2 to 16 MBaud ●
14.3	PROFIBUS Master	12 MBaud ●	12 MBaud ●	12 MBaud ●	12 MBaud ●
14.4	Ethernet TCP/IP	10/100 MBit ●	10/100 MBit ●	10/100 MBit ●	10/100 MBit ●
14.5	EtherNet/IP-Adapter (Slave)	○	○	○	○
14.6	DeviceNet-Master	–	–	○	○
15	Software and hardware	MTX compact	MTX standard	MTX performance	MTX advanced
15.1	Operating system Windows XP	●	●	●	●
15.2	Panel PC IndraControl VSP 16/40 – CPU: Celeron 440, 2 GHz – TFT display: 12"/15" – 16 machine function keys For details, see the product catalog "Automation systems and control components", IndraControl V	○	○	○	○
15.3	Panel PC IndraControl VPP 16/40 – CPU: Intel Core Duo, 1,66 GHz oder Intel Core 2 Duo, 2,16 GHz – TFT display: 12"/15" – 16 machine function keys For details, see the product catalog "Automation systems and control components", IndraControl V	○	–	○	○
15.4	Industrial PC IndraControl VSB 40 – CPU: Intel Celeron 440, 2 GHz For details, see the product catalog "Automation systems and control components", IndraControl V	○	○	○	○
15.5	Industrial PC IndraControl VPB 40 – CPU: Intel Core Duo, 1,66 GHz or Intel Core 2 Duo, 2,16 GHz For details, see the product catalog "Automation systems and control components", IndraControl V	○	–	○	○
15.6	Embedded-PC IndraControl VEP 40/50 – CPU: Intel Celeron 600 MHz – TFT display: 12"/15" – 16 machine function keys For details, see the product catalog "Automation systems and control components", IndraControl V	○	Additional user panel	○	Additional user panel

● Default

○ Optional

■ Optional in connection with a PC

□ Optional with IndraDrive

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