Rexroth
Bosch Group

CNC
IndraMotion MTX micro
Up to 12 axes

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IndraMotion MTX micro cost-effectiveness with a full scope of functions

IndraMotion MTX micro is the compact, high-performance and cost-effective CNC complete system solution for standard lathes and milling machines. All the functions required by small CNC machines are provided. Up to 12 axes can be controlled in 2 CNC channels with minimal commissioning.

Technical data

		IndraMotion MTX micro
Machining technologies		
Turning		●
Milling		●
Drilling		●
Grinding		●
Nibbling, shape cutting		●
Axis control		
Default number of axes		3/4 ●
Max. number of axes		12 ○
Max. number of spindles thereof		4 ●
Default number of independent channels		2 ●
Max. number of independent channels		2 ●
Default number of interpolating axes per channel		4 ●
Max. number of interpolating axes per channel		5 ○
Linear axes		●
Rotary axes		●
Endlessly turning rotary axis		●
Hirth axes		●
Spindle/C-axis switching		●
Max. number of gantry groups per channel		1
Cross-channel axis transfer		●
Cam plate		●

CNC
IndraMotion MTX micro ■ Up to 12 axes

Spindle coupling via electr. gears		●
Software limits		●
Main spindle synchronization		●
Axis-specific jerk limitation		●
Interpolation functions		
Linear interpolation		●
Linear interpolation with/without exact stop		●
Circular interpolation with radius and center-point programming, helical interpolation		●
Circular interpolation with tangential entry		●
Rigid tapping cycle		●
Thread cutting		●
Cylinder surface transformation		●
C-axis transformation		●
NC block preview, look-ahead		Max. 1000 blocks ●
Spline interpolation C1 + C2 continuous cubic splines, B-splines, NURBS		●
Nanometer resolution		●
Feed function		
Feed in mm/min or inch/min		●
Time programming		●
Feed rate per revolution		●
Constant cutting speed		●
Travel to fixed stop		●
Torque reduction		●
Shifts and compensations		
Mirroring, scaling, rotating		●
Zero offsets		●
Compensations and zero offsets programmable through CPL		●
Placements (FRAMES)		●
2D compensation		●
Compensation with plane switching		●
Tangential tool guidance		●
Tool management		
Integrated flexible tool management		●
Configurable tool database		●
Freely definable tool compensation (length, radius, cutting position compensation, user data)		●
Additive tool compensations (D compensations)		●
Access to tool data from PLC		●
Access to tool data from CNC		●
CNC programming		
Part program development (DIN ISO 66025, RS 274)		●
High-level language programming, CPL (customer programming language)		●
CNC user memory	MB	64
Static memory	MB	4

CNC
IndraMotion MTX micro ■ Up to 12 axes

Max. size of parts program	MB	8
Max. size of parts program		Standard
CompactFlash data memory		●
Technology cycles		
Turning		●
Milling		●
Drilling		●
Functions		
Dwell time in seconds		●
Acceleration programming, loop gain programming		●
Homing through NC program		●
Absolute dimension, relative dimension		●
Switching between inch and mm		●
Probe, static/on-the-fly measurement		●
Read process and drive data through Sercos		●
Roundings and chamfers		●
Corner rounding with splines		●
Laser power control		●
Digitizing		●
NC block defined by PLC		●
Support for control elements		
NC program restart/block search		●
Dry run		●
Retracting from and returning to the contour		●
Retrace function: reversing over the contour		●
PLC programming		
Integrated PLC: IndraLogic		●
Programming languages according to IEC 61131-3 (IL, LD, CFC, ST, SFC, FBD)		●
PLC program memory	MB	2
Number of local/on-board I/Os		32 / 16 ●
Max. number of local/on-board I/Os		96 I/48 O ○
Number of high-speed inputs/outputs		8/8 ●
Number of fieldbus inputs/outputs in bytes		8,192/8,192
Multitasking		●
Max. number of PLC tasks		2
Diagnosis and start-up tool		
Integrated, cross-system IndraWorks engineering framework		○
Instructions and error messages in plain text		●
Integrated drive project planning		●
Drive oscilloscope		○
Integrated PLC project planning		○
Logic analyzer		○
Circular shape test		○
Cycle time analysis IndraMotion MTX cta		○

CNC
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Energy analyzer IndraMotion MTX ega		○
IndraMotion MTX micro trainer		○

● Standard
○ Option
■
□
¹) Technology package Turning 1
²) Technology package Milling 1

³) Technology package Milling 2
⁴) "Turning" CNC simulation
⁵) "Milling" CNC simulation
⁶) Optional "shape cutting" technology package
⁷) "Electronic transmission" technology package

Components

Engineering and operation

Description	Page
Engineering	Software tools

Servo motors

Description	Page	Details
Motors	Synchronous servo motors	IndraDyn S
Motors	Asynchronous servo motors	IndraDyn A

Ordering information

Firmware

Type code	Description	Material number:
FWA-MICRO*-MTX-13VRS-NN	Firmware IndraMotion MTX micro	R911337488
CFM01.1-01G0-N-LBA-01-NW	CompactFlash memory module 128 MB	R911172190

Software

Type code	Description	Material number:
SWA-IWORKS-MTX-13VRS-D0-DVD**	IndraWorks 13VRS installation DVD for IndraMotion MTX	R911337416
SWL-IWORKS-MTX-NNVRS-D0-MICRO	Single user license – IndraWorks Engineering MTX micro - cross-version[1]	R911331698
SWL-IWORKS-MTX-NNVRS-D0-MI-CRO-M25	25 single user licenses – IndraWorks Engineering MTX micro - cross-version[1]	R911334478
SWL-IWORKS-MTX-NNVRS-D0-EN-CRYPT	Single user license – IndraWorks Engineering MTX micro - cross-version[1]	R911339214

Hardware

CNC
IndraMotion MTX micro ■ Up to 12 axes

Type code	Description	Material number:
HCQ02.1E-W0025-A-03-B-L8-1N-NN-NN-NN-FW	Basic device 4-axes, 32I/16O	R911322825
HCQ02.1E-W0025-A-03-B-L8-1N-D1-NN-NN-FW	Basic device 4-axes, 64I/32O	R911326229
HCQ02.1E-W0025-A-03-B-L8-1N-D1-D1-NN-FW	Basic device 4-axes, 96I/48O	R911326230
HCT02.1E-W0025-A-03-B-L8-2S-NN-NN-NN-FW	Basic device 3-axes, 32I/16O	R911329657
HCT02.1E-W0020-A-03-B-L8-2N-D1-NN-NN-FW	Basic device 3-axes, 64I/32O	R911326232
HCT02.1E-W0020-A-03-B-L8-2N-D1-D1-NN-FW	Basic device 3-axes, 96I/48O	R911326233
VDP80.1FGN-C1-NN-EN	Turning control panel, graphite gray	R911172168
VDP80.1FHN-C1-NN-EN	Milling control panel, graphite gray	R911172169
VDP80.1FKN-C1-NN-EN	Universal control panel, graphite gray	R911172321
VCH02.1	Handwheel box with cable and connector for control panels	R911328584
VDP81.1FKN-C1-NN-EN	HMI panel, horizontal, 10" display, graphite gray	R912005308
VDP82.1FKN-C1-NN-EN	HMI panel, vertical, 10" display, graphite gray	R912005309
VAM81.1-USB-NF-TA-TA-VE-MA-NNNN	Machine operator panel, horizontal, graphite gray	R912005310
VAM82.1-USB-NF-TA-TA-VE-MA-NNNN	Machine operator panel, vertical, graphite gray	R912005311
VAC06.1S-MU1-NNNN	I/O extension module for VDP81, VDP82	R912005312
HNL01.1E-0400-N0051-A-480-NNNN	Line reactor 400 μH, 51 A	R911306580
HLR01.1N-0470-N11R7-A-007-NNNN	Brake resistor 470 W	R911305932
HLR01.1N-02K0-N15R0-A-007-NNNN	Brake resistor 2000 W	R911306870
HLR01.1N-05K0-N15R0-A-007-NNNN	Brake resistor 5000 W	R911306881
GDS02.1-2048-14V-H12,0	Single-turn absolute encoder (e.g. spindle encoder)	R911323378
GDM02.1-2048-14V-H12,0	Multi-turn absolute encoder (e.g. for use as a spindle encoder)	R911323380
QSK061B-0300-NN-M5-UG0-NNNN	QSK servo motor 4 Nm, 3000 rpm, absolute encoder, without brake	R911325033
QSK061B-0300-NN-M5-UG1-NNNN	QSK servo motor 4 Nm, 3000 rpm, absolute encoder, with brake	R911325035
QSK061C-0300-NN-M5-UG0-NNNN	QSK servo motor 8 Nm, 3000 rpm, absolute encoder, without brake	R911325037
QSK061C-0300-NN-M5-UG1-NNNN	QSK servo motor 8 Nm, 3000 rpm, absolute encoder, with brake	R911325038
QSK075C-0300-NN-M5-UG0-NNNN	QSK servo motor 12 Nm, 3000 rpm, absolute encoder, without brake	R911325043
QSK075C-0300-NN-M5-UG1-NNNN	QSK servo motor 12 Nm, 3000 rpm, absolute encoder, with brake	R911325044
QSK075D-0200-NN-M5-UG0-NNNN	QSK servo motor 17 Nm, 2000 rpm, absolute encoder, without brake	R911335231
QSK075D-0200-NN-M5-UG1-NNNN	QSK servo motor 17 Nm, 2000 rpm, absolute encoder, with brake	R911335232
QSK075D-0300-NN-M5-UG0-NNNN	QSK servo motor 17 Nm, 3000 rpm, absolute encoder, without brake	R911325046
QSK075D-0300-NN-M5-UG1-NNNN	QSK servo motor 17 Nm, 3000 rpm, absolute encoder, with brake	R911325047
QSK075E-0200-NN-M5-UG0-NNNN	QSK servo motor 21 Nm, 2000 rpm, absolute encoder, without brake	R911335233
QSK075E-0200-NN-M5-UG1-NNNN	QSK servo motor 21 Nm, 2000 rpm, absolute encoder, with brake	R911335234
QSK100B-0200-NN-M5-AG0-NNNN	QSK servo motor, 28 Nm, 2000 rpm, absolute encoder, no brake	R911338140
QSK100B-0200-NN-M5-AG1-NNNN	QSK servo motor, 28 Nm, 2000 rpm, absolute encoder, brake	R911338142
QSK100B-0200-NN-M5-BG0-NNNN	QSK servo motor, 28 Nm, 2000 rpm, absolute encoder, no brake	R911338143
QSK100B-0200-NN-M5-BG1-NNNN	QSK servo motor, 28 Nm, 2000 rpm, absolute encoder, brake	R911338144
RKB0030/005,0	Basic device control panel connecting cable	R911327086
QKB0028/000.0	Connection cable basic device (HCT/HCQ) to I/O extension (VAC)	R911344410

CNC
IndraMotion MTX micro ■ Up to 12 axes

Type code	Description	Material number:
QKB0029/000.5	Connection cable HMI panel (VDP) to machine operator panel (VAM) or I/O extension (VAC)	R912005313
RKG4200/005,0	Motor encoder cable for QSK	R911310645
RKL0020/005,0	Power cable 1 mm² (QSK061)	R911325487
RKL0022/005,0	Power cable 1.5 mm² (QSK075)	R911325488
RKL0023/005,0	Power cable 2.5 mm² (QSK100)	R911326472
RKL0024/005,0	Power cable 1.5 mm² (MAD100B)	R911326473
RKL0025/005,0	Power cable 2.5 mm² (MAD100C)	R911326474
RKL0026/005,0	Power cable 4.0 mm² (MAD100D)	R911326475
RKL0031/005,0	Power cable 4.0 mm² (MAD130B-0100)	R911326479
RKL0032/005,0	Power cable 6.0 mm² (MAD130B-0150)	R911326480

Bosch Rexroth AG
Postfach 13 57
97803 Lohr, Germany
Bgm.-Dr.-Nebel-Str. 2
97816 Lohr, Germany
Tel. +49 9352 18-0
Fax +49 9352 18-8400
www.boschrexroth.com/electrics

Local contact information can be found at:
www.boschrexroth.com/adressen

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