

Rexroth EcoDrive

The intelligent servo drive solution

Universal, complete and economical



Rexroth EcoDrive – the intelligent solution for economical automation

EcoDrive is a compact and versatile servo drive system for virtually all areas of automation engineering in which motion sequences have to be controlled.

Integrated technology functions and outstanding performance provide you, as machine manufacturer or end user, with maximum economy – from project planning right through to everyday production.

Utilise the advantages of EcoDrive and safeguard your future by optimised machine design, simplified assembly and installation, reduced commissioning times and production with maximum economy.



EcoDrive increase productivity in your application with intelligent drive electronics, integrated technology functions and fast-response motors

Automation

Printing and Paper Converting

Conveying and Storage Technology

Glass Processing

Handling and Assembly Systems



Typical applications



Automation



Printing and paper converting machines



Conveying and storage technology



Glass processing machines



Handling and assembly systems



Woodworking machines



Plastics processing machines



Textile machines



Converting technology



Packaging and food processing machines



Machine tools

Convincing advantages

- integrated technology functions
- highest speed and positioning accuracy
- simple assembly and installation
- rapid commissioning
- convenient operation
- high reliability
- global application

Intelligent drive electronics

DKC compact controls contain all power supply, control and regulation electronics and are available in four power ratings. Standardised interfaces provide connections to various controls and allow different operating modes.

Fast-response motors

This system is completed by the wide range of synchronous and asynchronous motors for rotary and linear feed movements, and for main spindle applications:

- MKD synchronous motors for standard applications up to 72 Nm
- MHD synchronous motors for more demanding requirements up to 240 Nm
- IndraDyn A asynchronous motors for main spindle applications up to 20 kW
- Synchronous frameless motors IndraDyn H up to 4500 Nm
- Synchronous high-torque motors IndraDyn T up to 13800 Nm
- Synchronous linear motors IndraDyn L up to 21500 N

Woodworking

Plastics

Textiles

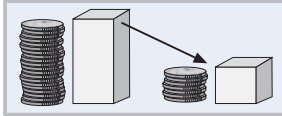
Converting Technology

Packaging and Foodstuffs

Machine Tools



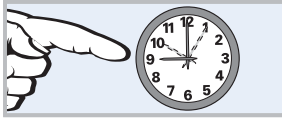
All advantages come as standard



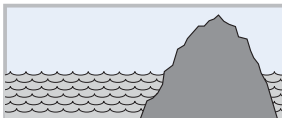
Integrated technology functions result in optimised costs



Highest speed and positioning accuracy



Simple operation, rapid commissioning



High availability, reliability



Global use under all conditions

- ✓ speed and angle synchronisation of several drives
- ✓ positioning block mode with teach-in function
- ✓ integrated single-axis motion control (ELC) with PLC function
- ✓ electronic cam discs
- ✓ virtual master axis generator
- ✓ dynamic cam switch group
- ✓ traverse to fixed stop
- ✓ print mark detection
- ✓ non-linearity compensation e.g. frictional torque etc.
- ✓ cubic spline interpolation built into drive
- ✓ measuring wheel mode, probe function
- ✓ encoder emulation (TTL and SSI)
- ✓ I/O expansion

- ✓ resolvers
- ✓ resolvers with integrated multi-turn absolute value encoders
- ✓ high-resolution single-turn or multi-turn absolute value encoders

- ✓ commissioning assistant, menu-driven interactive DriveTop program, integrated multi-channel oscilloscope function
- ✓ plain text display of operating and fault conditions in 5 languages
- ✓ integrated online help
- ✓ automatic motor identification via encoder data memory
- ✓ self-adaptation: automatic setting of motor data via default parameters tailored to motor/controller combinations
- ✓ autotuning: automatic control loop optimisation

- ✓ simple device replacement by means of removable programming module with data and firmware memory
- ✓ logbook function: fault memory and operating hours counter
- ✓ programmable reaction to faults
- ✓ built-in software limit switch
- ✓ electronic holding brake control

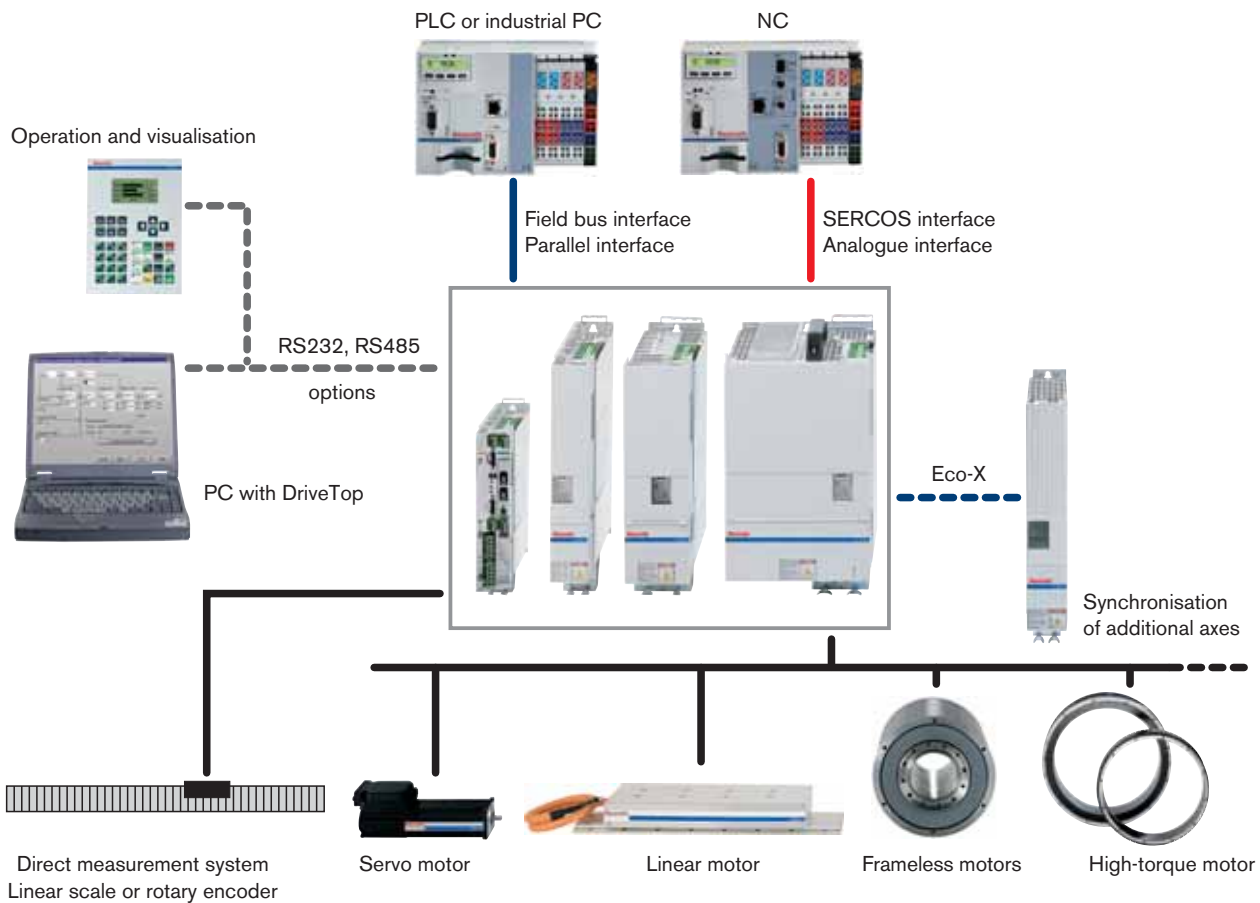
- ✓ direct 200 - 480 V single-phase and 3-phase AC mains input without the need for a transformer
- ✓ link circuit coupling allows energy exchange between drives
- ✓ meets all relevant standards (CE, UL/CSA)
- ✓ support for all popular interface standards
- ✓ range of motors for areas subject to explosion hazard (ATEX, UL/CSA)

The system solution – flexible, open and universal

From the simple single-axis application to the complex multi-axis application – EcoDrive offers you the optimum system components for every application.

In combination with our NC, PLC and motion control solutions, you control and regulate the complete production system with the universal system solution from just one competent partner. At the same time, the standard operating philosophy of our visualisation units shortens the learning time for machine operators and ensures a smooth production sequence.

Internationally approved interfaces and field bus systems ensure secure data exchange and at the same time allow you to employ the machines worldwide. The DriveTop program also shortens commissioning times, simplifies operation and assists you with diagnostics.



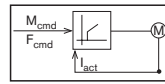
Whether you want to realise just a simple single-axis application or a complex multi-axis application – you can solve your problems quickly and reliably with components from Rexroth

The optimum function for your application

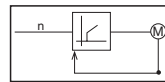
Technology functions

Predefined, application-optimised technology functions and operating modes are stored in the Eco-Drive drive system and can be easily selected.

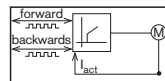
You are interactively guided through the commissioning procedure according to the selected operating mode. Only the data relevant to the application are requested. The values to be entered have a direct reference to the mechanical system. The input is made in internationally accepted units of measurement, such as mm, inches, etc.



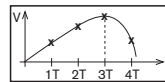
Torque or force control



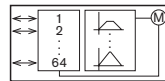
Speed control



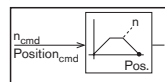
Stepping motor mode



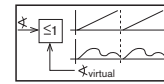
Position control with cyclical set-point internal to drive



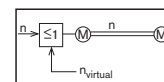
Positioning block mode with up to 64 blocks internal to drive



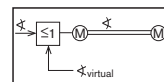
Relative or absolute positioning to the position target value (internal drive interpolation)



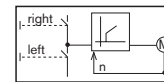
Electronic cam disc with real or virtual master axis



Speed synchronisation with real or virtual master axis (e.g. gantry axes or master/slave solutions)



Angle synchronisation with real or virtual master axis (e.g. gantry axes or master/slave solutions)



Jogging

Profiles and PLC function blocks

In field bus units, commissioning and operation are further simplified. Parameters and data are predefined by means of profiles:

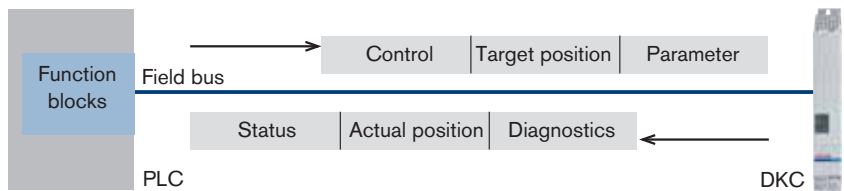
- Control and status word
- Contents of cyclical data (e.g. transmitting, target position and speed, receiving, actual position and actual speed)
- Operating modes

A fully definable profile can be used if the available profiles do not meet the requirements.

For optimum interface handling, we offer function blocks for all

popular PLC controls.

This reduces the amount of PLC programming to the transfer of the relevant drive data as a variable in a pre-assembled function.



Rapid commissioning and simple operation with DriveTop

The DriveTop commissioning assistant simplifies the use of EcoDrive in your machine in many respects.

Commissioning assistant

DriveTop guides the commissioning personnel interactively. The relevant data are interrogated automatically according to the operating mode. All values are input in common units of measurement (e.g. mm, inches) and therefore eliminate time-consuming conversions. The values to be input have a direct reference to the mechanical system (see Fig. 1). They can be selected from a number of graphically displayed positioning modes (see Fig. 2). All data can be stored in a file for backup. Data records can be uploaded and downloaded via RS232/RS485 or field bus.

Off-line mode

The operating modes and the associated parameters relevant to the system can be set in advance off-line.

Multi-channel oscilloscope

A multi-channel oscilloscope is available for checking the control unit settings on the system, for troubleshooting and for preventive maintenance (see Fig. 3).

All measurements plus the associated settings can be used as documentation in the form of a print-out or a data file.

Autotuning function

All controllers are already preset in the EcoDrive and matched to the respective connected motor. The autotuning function (see Fig. 4) can be used for controller optimisation if matching to the machine is required.

Matching DriveTop to your machine

DriveTop can be simply matched to the application or machine by means of the so-called AAI (application-dependent commissioning) files. So during commissioning only data selected for the corresponding application are interrogated.

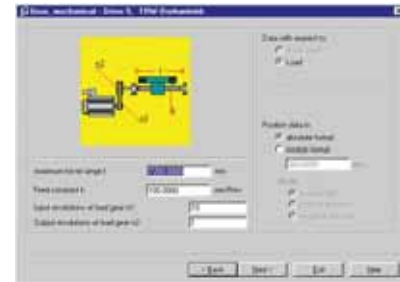


Fig. 1: Parameter input in common units of measurement



Fig. 2: Positioning data input with graphics support

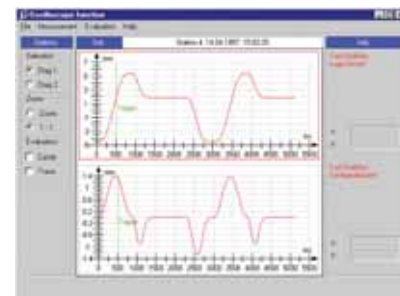


Fig. 3: Built-in multi-channel oscilloscope

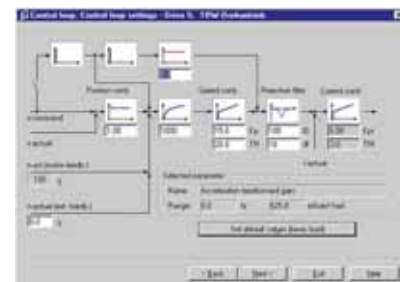
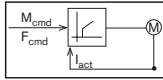


Fig. 4: Simple optimisation of the control loop setting

EcoDrive with analogue interface

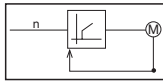
Technology functions

Torque and force control



± 10 V analogue setpoint input via the control

Speed control



± 10 V analogue setpoint input via the control

Properties

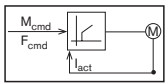
- encoder emulation (incremental or absolute) available as standard
- current rotor position provided as position actual value
- position actual value resolution can be set by parameters (1 - 65536 increments per revolution)
- drift-free standstill ensured via the “drive stop” function



EcoDrive with parallel interface

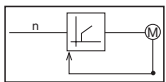
Technology functions

Torque or force control



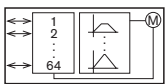
± 10 V analogue setpoint input via the control

Speed control



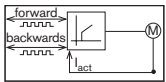
± 10 V analogue setpoint input via the control

Positioning block mode built into drive



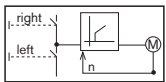
up to 64 blocks: Positioning block selection and start/stop command from control to parallel I/O at input of control unit

Stepping motor mode



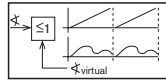
Forward/reverse control signal from control to control unit

Jogging



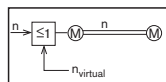
Input from control to digital inputs

Electronic cam discs



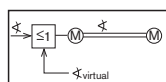
with real master axis or internal virtual master axis generator

Speed synchronisation



with real master axis or internal virtual master axis generator (e.g. gantry axis applications or master/slave solutions)

Angle synchronisation



with real master axis or internal virtual master axis generator (e.g. gantry axis applications or master/slave solutions)

Properties

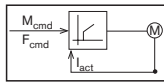
- input value per position block:
 - target position with absolute block or difference position with incremental blocks
 - speed
 - independently adjustable acceleration/deceleration
 - rate of change (acceleration change)
- positioning mode
 - absolute or relative positioning block mode
 - continuous traverse
 - subsequent block processing (depending on target position or external switching signal)
- integral cam switch group



EcoDrive with SERCOS interface

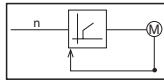
Technology functions

Torque or force control



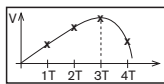
Digital setpoint input via the control

Speed control



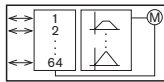
Digital setpoint input via the control

Cyclical position control internal to drive,



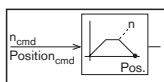
setpoint input from the control

Positioning block mode internal to drive,



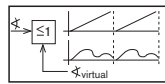
with up to 64 blocks: positioning block selection and start/stop command from the control via field bus interface

Positioning built into the drive



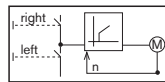
with position setpoint and speed input via the control (interpolation built into the drive). Mode can be set by parameters: relative or absolute

Electronic cam disc



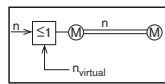
with real master axis or internal virtual master axis generator

Jogging



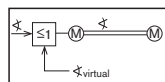
Input from control to digital inputs

Speed synchronisation



with real master axis or internal virtual master axis generator (e.g. gantry axis applications or master/slave solutions)

Angle synchronisation



with real master axis or internal virtual master axis generator (e.g. gantry axis applications or master/slave solutions)

Properties

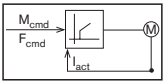
- simple installation
- secure, fast data transmission up to 16 megabits/second via optical waveguide
- internationally standardised interface to IEC/EN 61491



EcoDrive with field bus interface PROFIBUS, INTERBUS, CANopen, DeviceNet

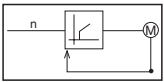
Technology functions

Torque or force control



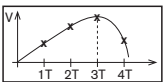
Digital setpoint input via the control

Speed control



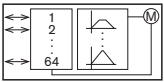
Digital setpoint input via the control

Cyclical position control internal to drive,



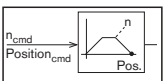
setpoint input from the control

Positioning block mode internal to drive,



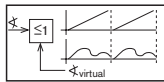
with up to 64 blocks: positioning block selection and start/stop command from the control via field bus interface

Positioning built into the drive



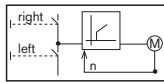
with position setpoint and speed input via the control (interpolation built into the drive). Mode can be set by parameters: relative or absolute

Electronic cam disc



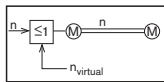
with real master axis or internal virtual master axis generator

Jogging



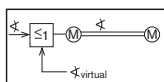
Input from control to digital inputs

Speed synchronisation



with real master axis or internal virtual master axis generator (e.g. gantry axis applications or master/slave solutions)

Angle synchronisation



with real master axis or internal virtual master axis generator (e.g. gantry axis applications or master/slave solutions)

Properties

- predefined profiles automatically specify the following settings and define the associated data in the drive:
 - control word and status word
 - contents of the cyclical data (e.g. transmit: target position/speed; receive: actual position/actual speed)
 - operating mode and secondary operating mode
- function modules for all popular PLC controls are available. The PLC programmer has only to transfer the relevant drive values into the program
 - simple installation
 - secure data transmission up to 12 MBit/s
 - rapid conversion to a different field bus system via standard firmware for all field buses



EcoDrive

with built-in ELC single-axis motion control

Motion control and PLC functionality for the machine control

The ELC is an intelligent single-axis positioning control with PLC function built into the control unit. This enables you fully program EcoDrive's wide range of functions via a standardised language. A special feature is the convenient parameter and program input. Commissioning can be carried out easily and rapidly via the drive's internal parameters, even without detailed knowledge. Three fast motion tasks and a PLC task, which handle the tasks of an external PLC, are available to the user.

Operation

The programming, visualisation and operation of the drive can be effected via our HMI panels. Communication between drive and operator control panel is automatically monitored. Motion-Manager NT, running under Windows, is used for more demanding applications.

Properties

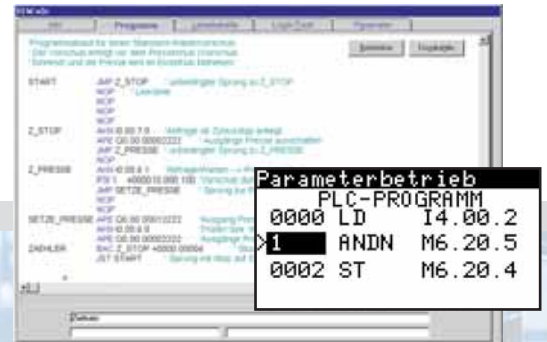
- 1000 NC program blocks for absolute and relative position, speed, jump instructions, sub routines, etc.
- markers and variables
- fully programmable outputs and 10 inputs
- cam switch group with processing of all 8 cams within 2 ms
- second external encoder can be connected
- integrated PLC function, such as AND, OR, LOAD, WAIT, for example.

Free programming via Windows PC editor or our HMI units



Preloaded interactive menu dialogue for programming, diagnostics and machine control

Motion control PLC functionality built into the drive



Accessories that leave nothing to be desired

Eco-X drive synchronisation

Eco-X is an expansion interface for the synchronisation of EcoDrive drives. The following types of couplings are possible:

- torque coupling (e.g. master/slave mode)
- position or angle synchronisation (e.g. gantry axes)
- speed synchronisation



BZM auxiliary bleeder module

- for applications with enhanced energy recovery: continuous/peak power from 1 kW/120 kW



CZM auxiliary capacitance module

- for energy storage in highly dynamic applications
- reducing heat dissipation in the control cabinet
- link circuit capacity: 2.4 mF



BTV HMI units

- for visualising, parameterising and operating the drive
- connection via RS232/RS485
- ready-made screens, including function key assignment, are supplied



NTM regulated power supply

- for providing 24 V DC, rated current $I_N = 2.1 \text{ A} - 5.5 \text{ A}$
- built-in inrush current limiting and overvoltage protection circuit



NFD/NFE mains filter

- for interference suppression when used in residential areas (class B, EN55011 and EN55014)



GLD 12 smoothing choke

- for increasing the continuous power of the link circuit



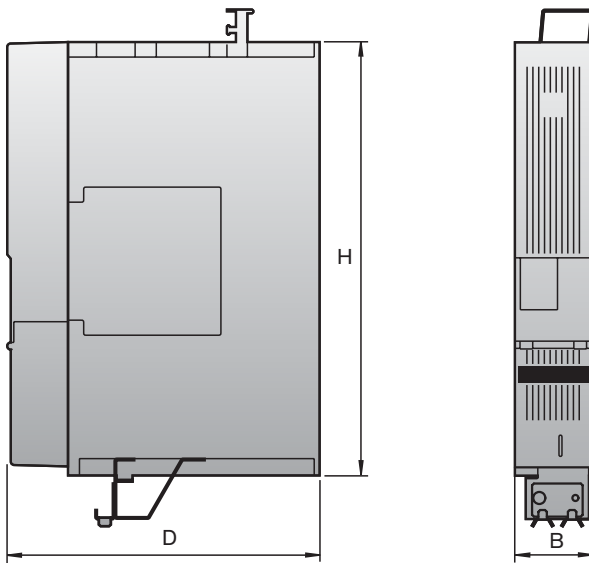
Control units – technical data and dimensions

Example of type code

DKC with parallel interface, 40 A peak current: DKC01.*-040

$\hat{I}_{\max} = 016 \text{ A}$	$\hat{I}_{\text{N}} = 6 \text{ A}$
$\hat{I}_{\max} = 040 \text{ A}$	$\hat{I}_{\text{N}} = 16 \text{ A}$
$\hat{I}_{\max} = 100 \text{ A}$	$\hat{I}_{\text{N}} = 40 \text{ A}$
$\hat{I}_{\max} = 200 \text{ A}$	$\hat{I}_{\text{N}} = 100 \text{ A}$

01 - Parallel interface
 21 - Parallel interface 2
 02 - SERCOS interface
 03 - PROFIBUS
 04 - INTERBUS
 05 - CANopen
 06 - DeviceNet
 11 - Analogue interface



Device type	B	H	D
DKC**.3-016	65	260	210
DKC**.3-040	65	360	261
DKC**.3-100	105	360	261
DKC**.3-200	230	360	261

Motors – fast-acting and optimised to the application

With EcoDrive we offer you a complete range of synchronous and asynchronous motors for linear and rotary feed movements, as well as for main spindle applications.

MKD



MKE



MHD



IndraDyn A



IndraDyn H



IndraDyn T



IndraDyn L



MKD

Synchronous motors for standard applications

- nominal torque values from 0.4 to 72 Nm
- natural convection and surface ventilated
- nominal speed up to 9000 min⁻¹
- resolver with data memory for motor parameters
- absolute value encoder (optional)
- holding brake (optional)

MKE

Synchronous motors for area subject to explosion hazard

- nominal torque values from 0.9 to 48 Nm
- natural convection
- nominal speed up to 9000 min⁻¹
- resolver with data memory
- high-resolution single-turn and absolute value encoders with data memory for motor parameters
- holding brake (optional)
- UL/CSA standard (optional)

MHD

Synchronous motors for the most demanding requirements

- nominal torque values from 1.2 to 240 Nm
- natural convection, surface ventilated and liquid cooled
- nominal speed up to 7500 min⁻¹
- high-resolution single-turn and absolute value encoders with data memory for motor parameters
- holding brake (optional)
- IP68 (optional)

IndraDyn A

Asynchronous motors for main spindle applications

- power range up to 20 kW
- maximum speed up to 11000 min⁻¹
- surface ventilated or liquid cooling
- high-resolution single-turn and absolute value encoders with data memory for motor parameters
- incremental encoder (optional)

IndraDyn H

Synchronous frameless motors for new machine concepts

- maximum torque values up to 4500 Nm
- nominal speeds up to 30000 min⁻¹
- liquid cooling (thermal encapsulation)

IndraDyn T

Synchronous high-torque motors for applications requiring high torque at low speeds

- maximum torques up to 13800 Nm
- maximum speeds up to 2000 min⁻¹
- liquid cooling (thermal encapsulation)

IndraDyn L

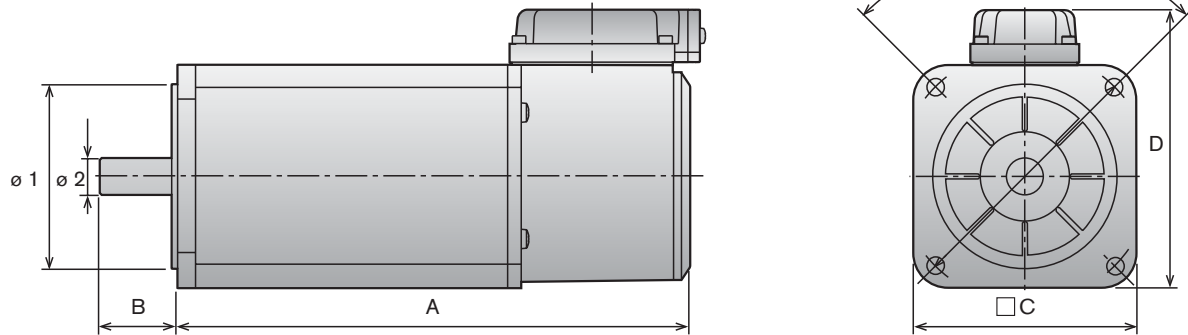
Synchronous linear motors for fast-response movements

- feed forces up to 21500 N
- speeds up to 600 m/min
- liquid cooling (thermal encapsulation)

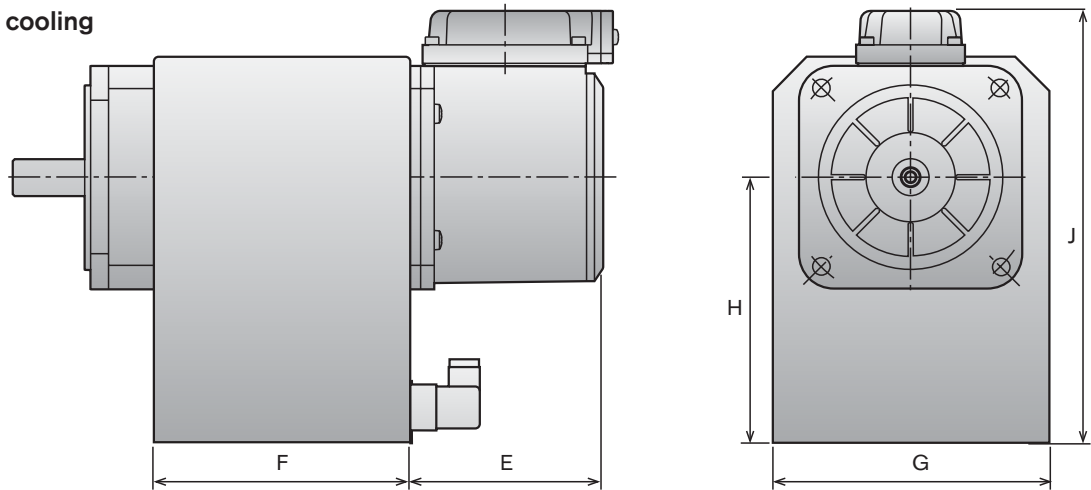
Motor data (3 x 400 V input)								Control units *5			
MKD	MKE	MHD	Type	M0 *3, *4 [Nm]	M _{max} *4 [Nm]	nN [min ⁻¹]	J _{rotor} [10 ⁻⁴ *kgm ²]	DKCxx.3 016 *7	DKCxx.3 040	DKCxx.3 100	DKCxx.3 200
■			025A	0,4	1,8	9000	0,19	✓	✓		
■	■		025B	0,9	4,0	9000	0,30	✓	✓		
		■	041A	1,3	5,6	7000	0,88		✓		
■	■	■	041B	2,7	11,3	6000	1,7	✓	✓	✓	
		■	071A	3,5	14,0	4500	4,4		✓		
■		■	071B	8,0	32,0	2500	8,7	✓	✓		
■		■	071B	8,0	32,0	4500	8,7		✓	✓	
■		■	090B	12,0	43,5	2500	43,0		✓	✓	
■	■	■	090B	12,0	43,5	3200	43,0		✓	✓	
■		■	090B	12,0	43,5	4000	43,0		✓	✓	✓
		■	093A	12,0	44,0	2000	17,3		✓	✓	
		■	093A	12,0	44,0	3000	17,3		✓	✓	
		■	093A	12,0	44,0	4000	17,3		✓	✓	
		■	093B	17,5	66,0	3000	25,5		✓	✓	
		■	093B	17,5	66,0	4000	25,5			✓	✓
		■	093C	23,0	88,0	3000	30,0		✓	✓	✓
		■	093C	23,0	88,0	4000	30,0			✓	✓
		■	095A	12,0	44,0	3000	35,2		✓	✓	
		■	095A	12,0	44,0	4000	35,2		✓	✓	
		■	095B	17,5	66,0	3000	49,0		✓	✓	
		■	095B	17,5	66,0	4000	49,0			✓	
		■	095C	23,0	88,0	3000	61,3			✓	✓
		■	095C	23,0	88,0	4000	61,3			✓	✓
■		■	112A	15,0	54,0	2000	110		✓	✓	
		■	112A	15,0	54,0	3000	110		✓	✓	
		■	112A	15,0	54,0	4000	110		✓	✓	
■	■	■	112B	28,0	102	9000	192			✓	✓
		■	112B	28,0	102	2000	192			✓	✓
■		■	112B	28,0	102	3000	192			✓	✓
■	■	■	112B	28,0	102	3500	192			✓	✓
■		■	112C	38,0	148	2000	273			✓	✓
		■	112C	38,0	148	3000	273			✓	✓
■		■	112C	38,0	148	4000	273				✓
■		■	112D	48,0	187	3000	350			✓	✓
		■	115A	32,0	110	2000	65			✓	✓
		■	115A	32,0	110	4000	65			✓	✓
		■	115B	50,0	160	2000	93			✓	✓
		■	115B	50,0	160	4000	93				✓
		■	115C	70,0	231	2000	138			✓	✓
		■	115C	70,0	231	4000	138				✓
		■	131B	85,0	220	2000	232			✓	✓
		■	131D	160,0	448	2000	382				✓

Motors – MKD motor dimensions

Standard cooling



Radial cooling

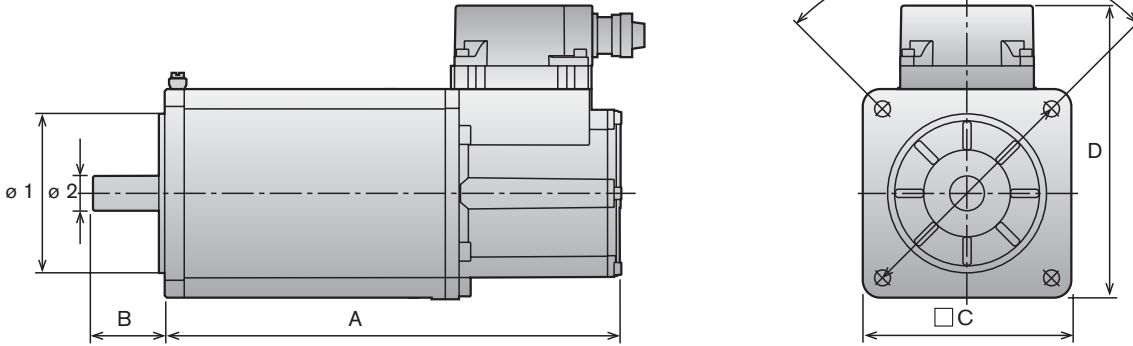


Size	Cooling	A	B	C	D	E	F	G	H	J	$\varnothing 1$	$\varnothing 2$
MKD 025A	standard	183	20	54	85	-	-	-	-	-	40	9
MKD 025B	standard	236	20	54	85	-	-	-	-	-	40	9
MKD 041B	standard	243	30	82	111	-	-	-	-	-	50	14
MKD 071B	standard	264	40	115	143	-	-	-	-	-	95	19
MKD 071B	radial	264	40	115	143	96	132	142	135	221	95	19
MKD 090B	standard	312,3	50	140	168	-	-	-	-	-	110	24
MKD 090B	radial	312,3	50	140	168	108	156	158	163	261	110	24
MKD 112A	standard	309	60	192	260	-	-	-	-	-	130	32
MKD 112B	standard	375	60	192	260	-	-	-	-	-	130	32
MKD 112B	radial	375	60	192	260	150	156	220	190	359	130	32
MKD 112C	standard	458	60	192	260	-	-	-	-	-	130	32
MKD 112C	radial	458	60	192	260	190	156	220	190	359	130	32
MKD 112D	standard	526	60	192	260	-	-	-	-	-	130	32
MKD 112D	radial	526	60	192	260	190	156	220	190	359	130	32

Size 112: plug connector instead of plug-in cards.

Motors – MKE motor dimensions

Standard cooling



MKE as per CE standard

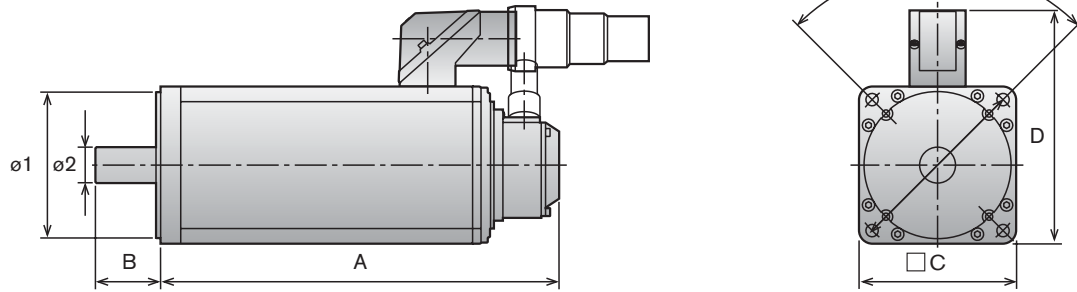
Size	Cooling	A	B	C	D	$\phi 1$	$\phi 2$
MKE 035B	standard	288	20	60	114	40	9
MKE 045B	standard	291	30	88	137	50	14
MKE 096B	standard	386	50	144	202	110	24
MKE 116B	standard	485	60	194	118	130	32
MKE 116C	standard	653	60	194	118	130	32

MKE as per UL/CSA standard

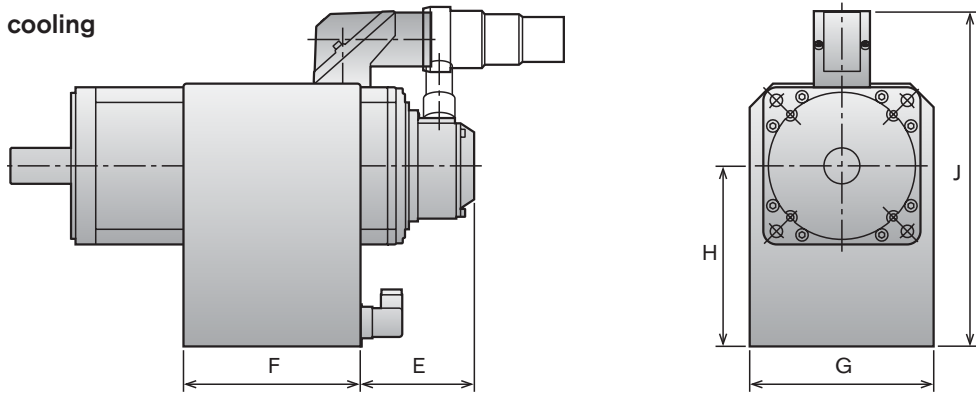
Size	Cooling	A	B	C	D	$\phi 1$	$\phi 2$
MKE 037B	standard	288	20	60	123	40	9
MKE 047B	standard	291	30	88	146	50	14
MKE 098B	standard	386	50	144	202	110	24

Motors – MHD motor dimensions

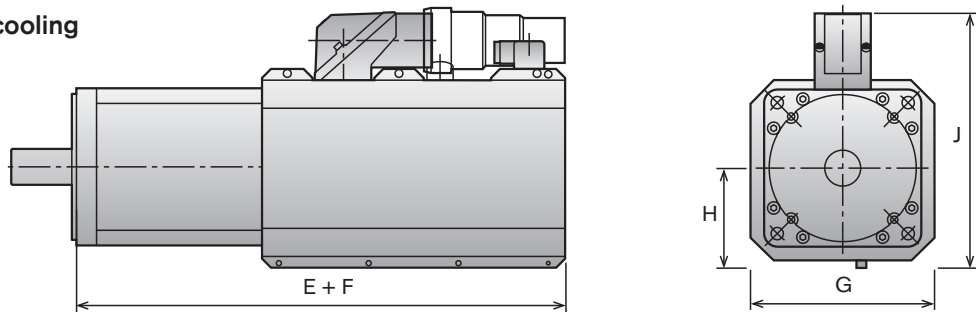
Standard cooling



Radial cooling



Axial cooling



Size	Cooling	A	B	C	D	E	F	G	H	J	$\phi 1$	$\phi 2$
MHD 041A	standard	170	30	82	137,5	-	-	-	-	-	50	14
MHD 041B	standard	243	30	82	137,5	-	-	-	-	-	50	14
MHD 071A	standard	205	40	115	169	-	-	-	-	-	95	19
MHD 071A	radial	205	40	115	169	96	140	145	135	247	95	19
MHD 071B	standard	264	40	115	169	-	-	-	-	-	95	19
MHD 071B	standard	264	40	115	169	-	-	-	-	-	95	19

Size	Cooling	A	B	C	D	E	F	G	H	J	ø 1	ø 2
MHD 090B	standard	312,3	50	140	194,5	-	-	-	-	-	110	24
MHD 090B	radial	312,3	50	140	194,5	108	156	158	163	288	110	24
MHD 093A	standard	316	58	140	208	-	-	-	-	-	130	32
MHD 093A	axial	316	58	140	208	403		-	-	227	130	32
MHD 093A	liquid	316	58	150	208	-	-	-	-	-	130	32
MHD 093B	standard	356	58	140	208	-	-	-	-	-	130	32
MHD 093B	radial	356	58	140	208	145,5	156	163	166	304	130	32
MHD 093B	axial	356	58	140	208	443		-	-	227	130	32
MHD 093B	liquid	356	58	150	208	-	-	-	-	-	130	32
MHD 093C	standard	396	58	140	208	-	-	-	-	-	130	32
MHD 093C	radial	396	58	140	208	167,5	156	163	166	304	130	32
MHD 093C	axial	396	58	140	208	485		-	-	227	130	32
MHD 093C	liquid	396	58	150	208	-	-	-	-	-	130	32
MHD 112A	standard	309	60	192	269	-	-	-	-	-	130	32
MHD 112A	axial	309	60	192	269	411		-	-	277	130	32
MHD 112B	standard	375	60	192	269	-	-	-	-	-	130	32
MHD 112B	radial	375	60	192	269	150	156	220	190	354	130	32
MHD 112B	axial	375	60	192	269	477		-	-	277	130	32
MHD 112C	standard	458	60	192	269	-	-	-	-	-	130	32
MHD 112C	radial	458	60	192	269	190	156	220	190	354/359	130	32
MHD 112C	axial	458	60	192	269	560		-	-	277/282	130	32
MHD 112D	standard	526	60	192	269	-	-	-	-	-	130	32
MHD 112D	radial	526	60	192	269	190	156	220	190	354	130	32
MHD 112D	axial	526	60	192	269	628		-	-	277	130	32
MHD 115A	standard	370	80	192	264	-	-	-	-	-	180	38
MHD 115A	radial	370	80	192	264	197	156	220	190	359	180	38
MHD 115A	axial	370	80	192	264	473		-	-	282	180	38
MHD 115A	liquid	359	80	192	264	-	-	-	-	-	180	38
MHD 115B	standard	431	80	192	264	-	-	-	-	-	180	38
MHD 115B	radial	431	80	192	264	197	156	220	190	359	180	38
MHD 115B	axial	431	80	192	264	534		-	-	282	180	38
MHD 115B	liquid	420	80	192	264	-	-	-	-	-	180	38
MHD 115C	standard	522	80	192	264	-	-	-	-	-	180	38
MHD 115C	radial	522	80	192	264	197	156	220	190	359	180	38
MHD 115C	axial	522	80	192	264	625		-	-	282	180	38
MHD 115C	liquid	511	80	192	264	-	-	-	-	-	180	38
MHD 131B	standard	470	110	260	338	-	-	-	-	-	250	48
MHD 131B	axial	470	110	260	338	755		-	-	339	250	48
MHD 131D	standard	610	110	260	338	-	-	-	-	-	250	48
MHD 131D	axial	610	110	260	338	755		-	-	339	250	48

EcoDrive

Versatile and universal

PAINTING PLANT

(Picture, top left)

The modular and compact construction of the control units minimises control cabinet dimensions in painting plants in the automotive industry. SERCOS interface and fibre optic cables also considerably reduce the amount of cabling. (Dürr Systems GmbH)

PACKAGING MACHINE

(Picture, top centre)

Thermoforming, filling and packaging machine line for the food industry. Synchronised single drives replace mechanical transmission elements and maximise the number of cycles. (GEA FINNAH)

HANDLING

(Picture, right)

Gantry loader with EcoDrive for handling letters in a postal sorting centre. The MKD motors are equipped with worm gears. (Deutsche Post)

GLASS PROCESSING

(Picture, bottom left)

Gantry type, 5-axis glass processing plant for coating removal and cutting glass sheets. EcoDrive with SERCOS interface allows path speeds of 180 m/min with an accuracy of 0.02 mm to be achieved. (HEGLA).

WOODWORKING

(Picture, bottom centre)

Woodworking machine with 56 main and secondary axes for flexible and precise complete machining of furniture components. The narrow profile of the control units provides a space-saving arrangement of the drive electronics in compact control cabinets. (WEEKE).





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Presented by:

