

# Customer Presentation

## Function Modules

### FMS / FMB

1

Intern | DC-LT/SSY2 | 2018-06-12

Customer Presentation

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**rexroth**  
A Bosch Company

# Customer Presentation

## Function Module



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## Your Requirement:

- Linear axis with high cost-effectiveness
- Preloaded operation, good load capacity, high stiffness
- Precise positioning and repeatability with ball screw or toothed belt drive for travel speeds up to 3 m/s
- Ready-to-install linear axes in freely configurable stroke up to 3800 mm
- Analog accessories of standard mounting
- Complete delivery with motor and drive
- Low installation costs and therefore substantial cost savings
- Cost-effective maintenance through relubrication option

## Our Solution:

### Function Modules from Bosch Rexroth

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- Compact design  
good load capacity and stiffness by  
integrated, preloaded ball rail guide

- Two drive types:  
Ball Screw drive,  
Toothed Belt drive

- Good positioning and  
repeatability

- High travel speeds

- Two structure types:  
Single rail / Double rail

- Ready-to-install  
complete solutions

- Extensive accessories, such as motor  
attachments, mounting parts, sensors,  
etc.

- 3D-CAD configurator available online

- Module lengths freely configurable



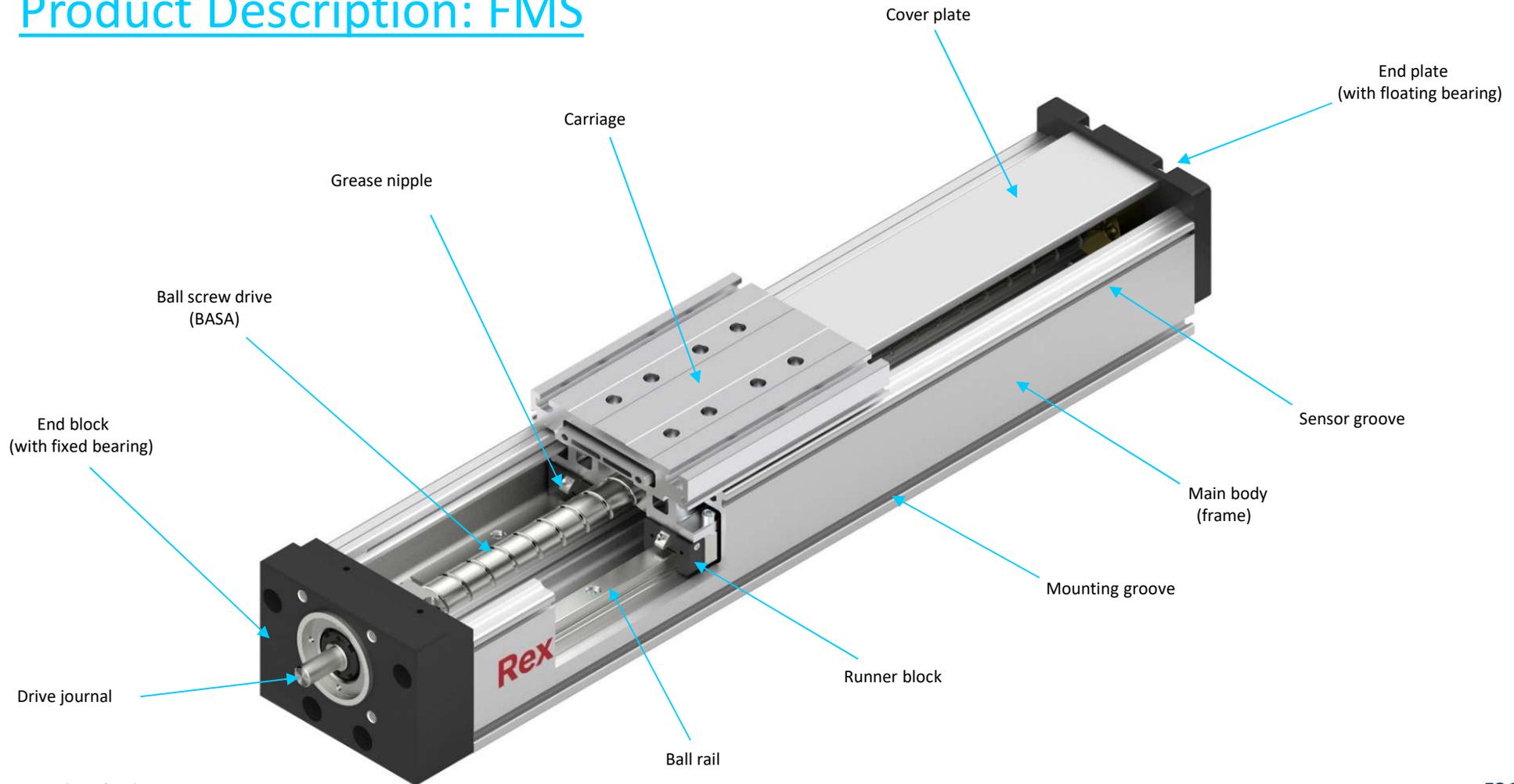
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## Product Short Description

- **FMS**: Function Module with Ball Screw Drive
- **FMB**: Function Module with Belt Drive

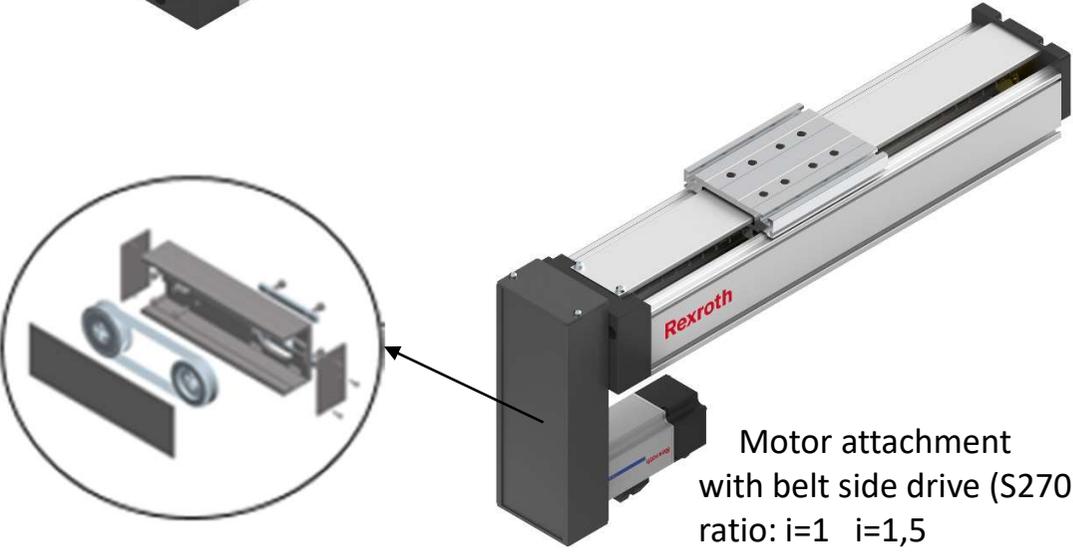
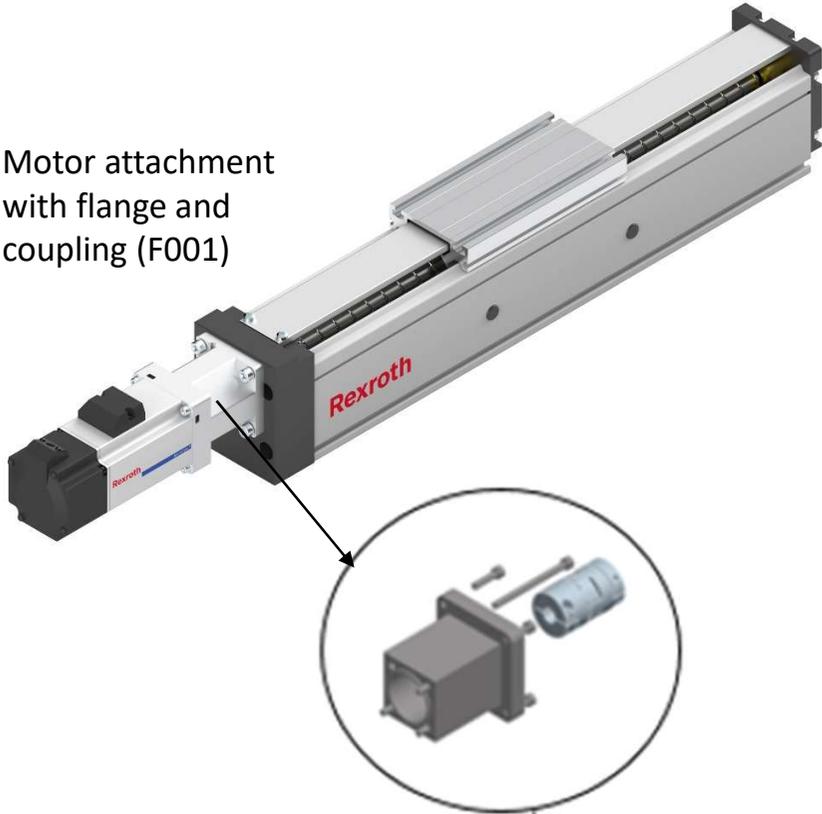
<b>Example</b>		<b>FM S - 110 - S N - 1</b>
<b>System</b>	=	<u>F</u> unction <u>M</u> odule
<b>Drive</b>	=	Ball <u>S</u> crew Drive Belt Drive
<b>Size</b>	=	080 / <u>110</u>
<b>Version</b>	=	<u>SN</u> <u>S</u> ingle rail <u>N</u> ormal version DN Double rail Normal version
<b>Generation</b>	=	Product generation <u>1</u>

# Product Description: FMS



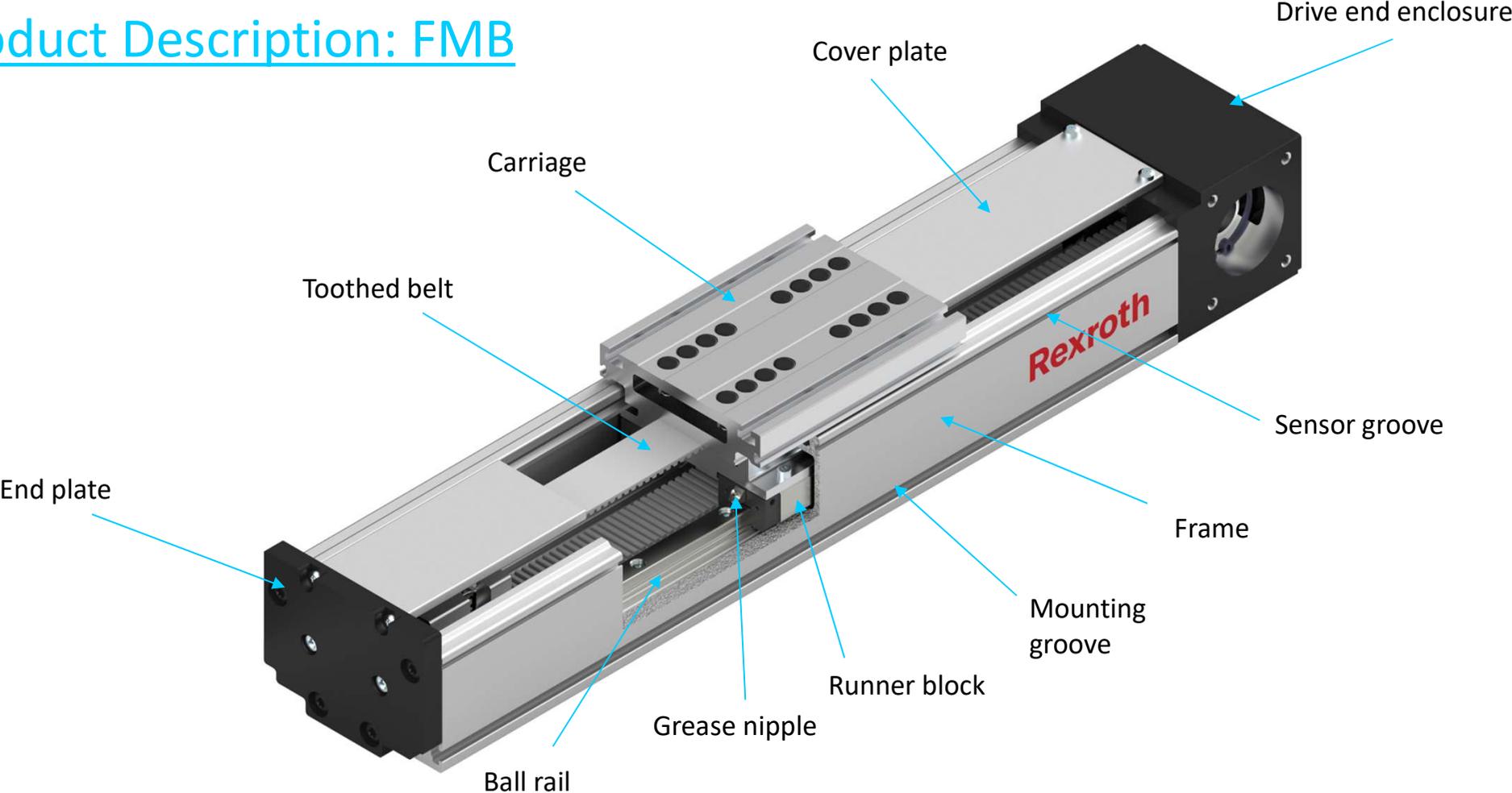
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## Drive and attachment options: FMS



# Customer Presentation

## Product Description: FMB



# Customer Presentation

## Drive and Motor options: FMB



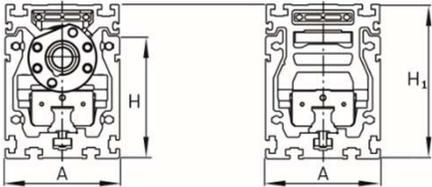
(Hollow shaft accessible on both sides)



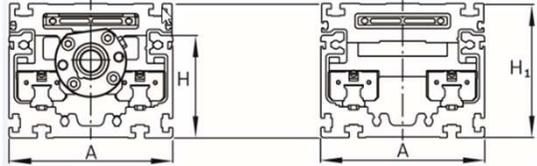
Motor attachment with gear  
(can be configured on both sides)

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## Dimensions



Single rail version

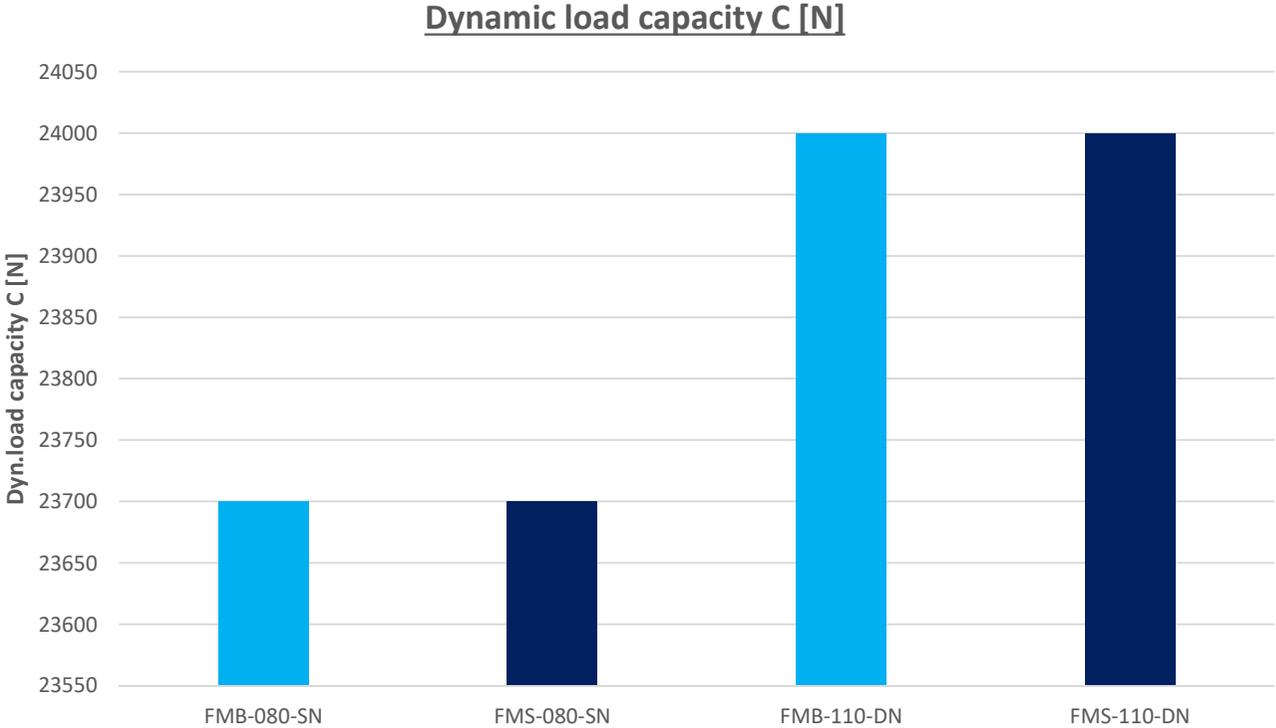


Double rail version

FMS FMB					
Size	-065-SN	-080-SN	-110-SN	-110-DN	-145-DN
Width A (Profile Width)	65	80	110	110	145
Height H		85		68	
Height H <sub>1</sub>		107		89	

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## Product description - Load capacities



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## Sensors



**Magnetic sensor**



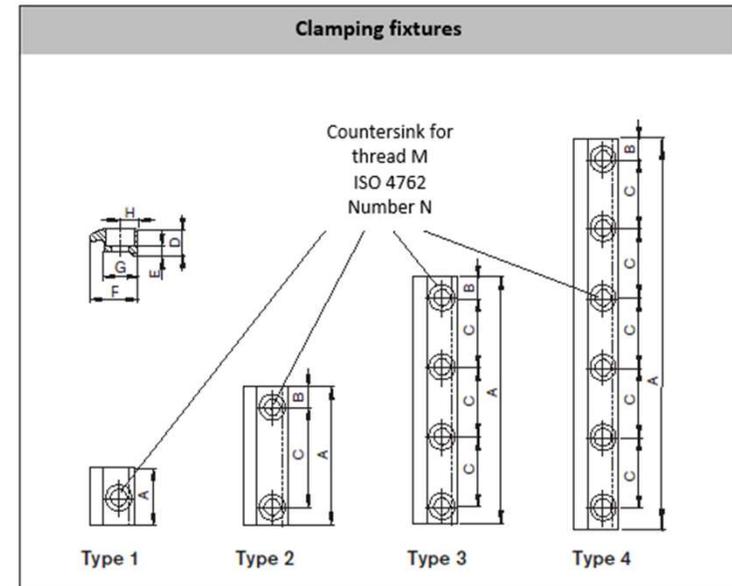
**Optical sensor**

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## Mounting Options

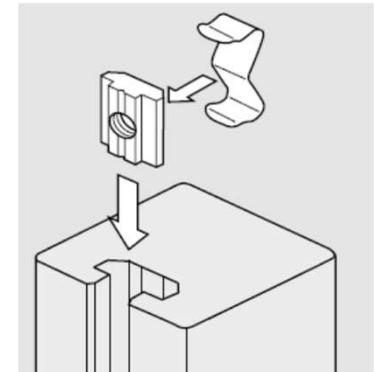
- **Clamping pieces as solid attachment**

- Attachment only on the main body;  
never on the end heads or traverses!
- 4 different types



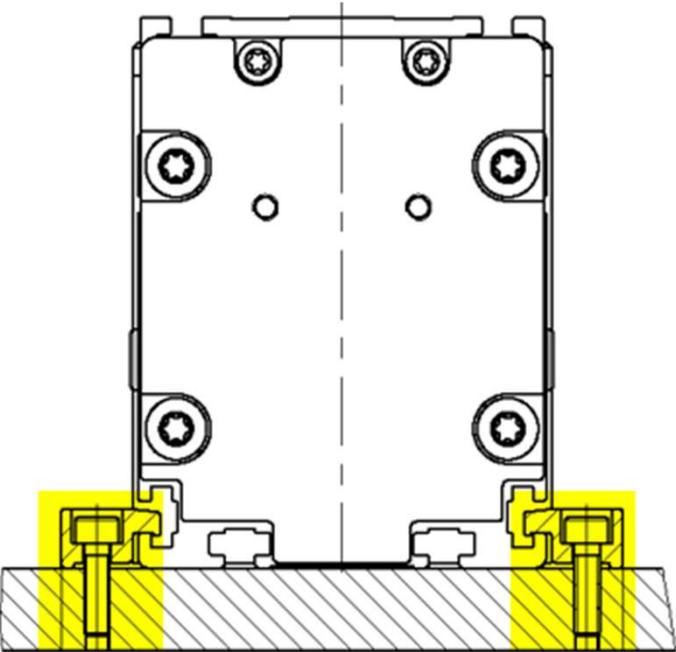
- **T-slot sliding blocks as solid attachment**

- For attachment of constructions on the carriage
- For mounting the main body profile to the substructure
- Optionally with spring, which serves as an assembly and positioning aid

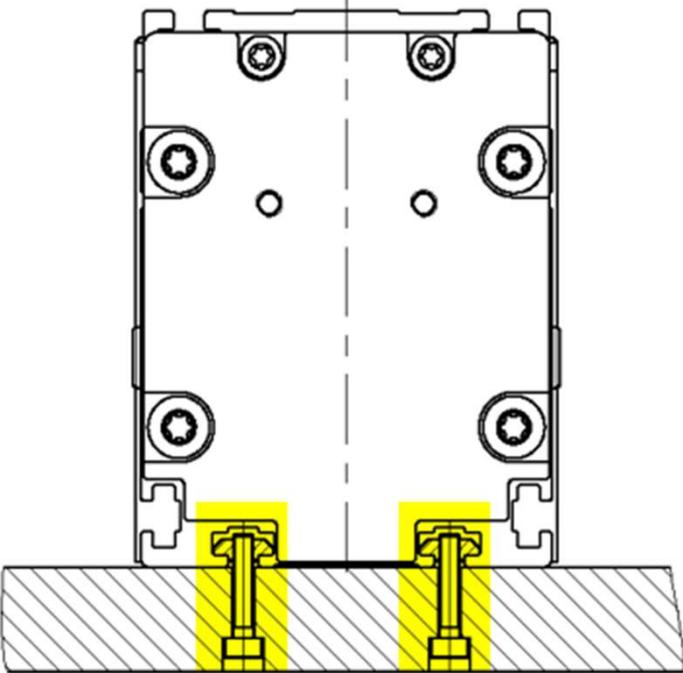


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## Mounting options on the substructure



Mounting with clamping fixtures



Mounting with sliding blocks

# Customer Presentation

## Motors und drive controllers



Servo motors / IndraDyn S MSM-series



Drive controller / IndraDrive Cs



Servo motors / ECMA-series

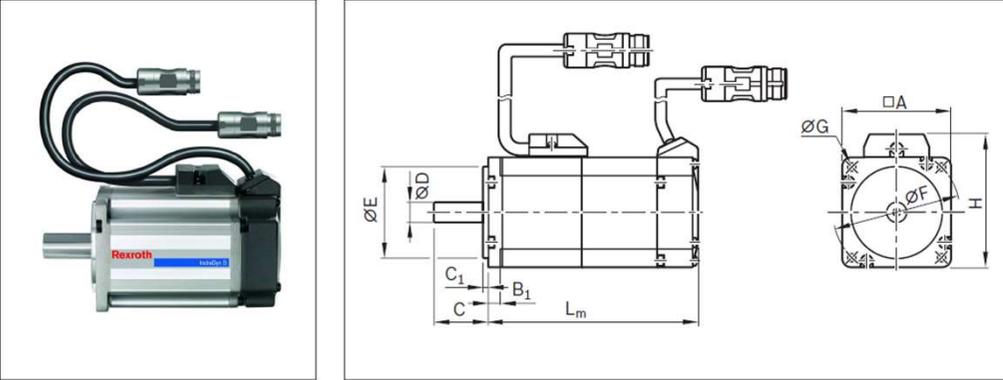


Pulse-Train- and Servo-drive controller / ASDA-series

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## Rexroth Servo Motors and Drives

IndraDyn S – Servo Motors MSM (with absolute encoder)



IndraDrive Cs – Drive Controller

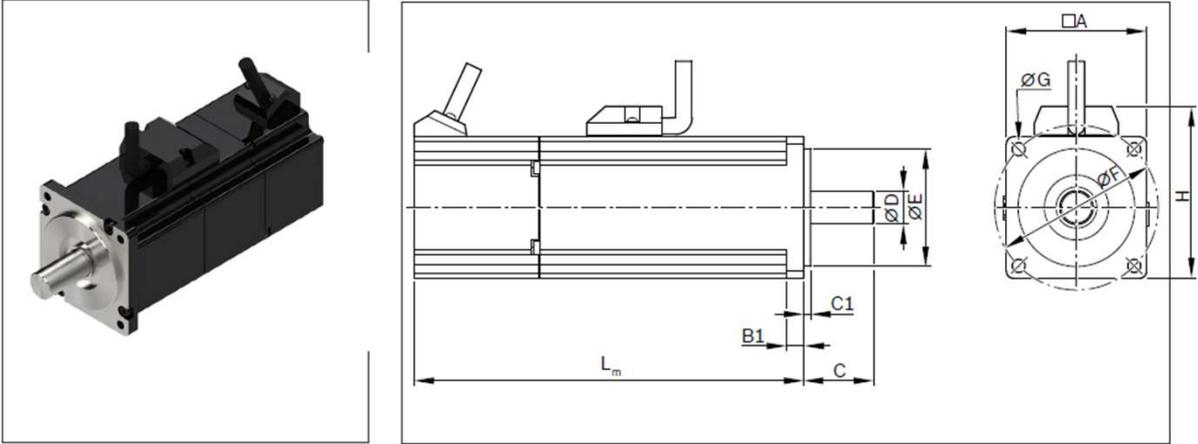


Motor code	Dimensions (mm)										L <sub>m</sub>	
	A	B <sub>1</sub>	C	C <sub>1</sub>	∅D h6	∅E h7	∅F	∅G	H	without holding break	with holding break	
MSM031C-0300	60	6,5	30	3	14	50	70	4,5	73	98,5	135,0	

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## Delta Servo Motors

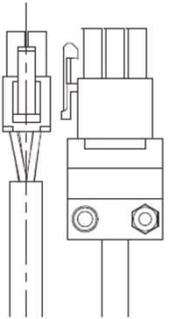
### ECMA – Servo motors (with incremental encoder)



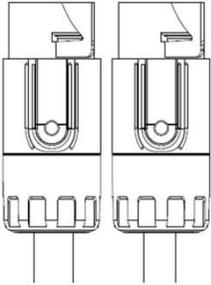
Motor code	Dimensions (mm)										without Holding break	with Holding break
	A	B <sub>1</sub>	C	C <sub>1</sub>	ØD h6	ØE h7	ØF	ØG	H	L <sub>m</sub>		
ECMA-C20604	60	7,5	30	3	14	50	70	5,5	72,9	130,7	166,8	
ECMA-C10604												

### Connector types

- Rectangular plug (17-bit encoder)
- Round plug IP67 (20-bit encoder)



Rectangular plug for Motor ECMA-C20604

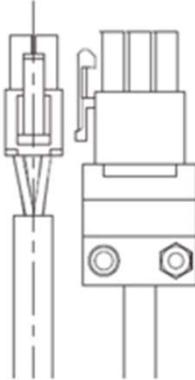


Round plug IP67 for Motor ECMA-C10604

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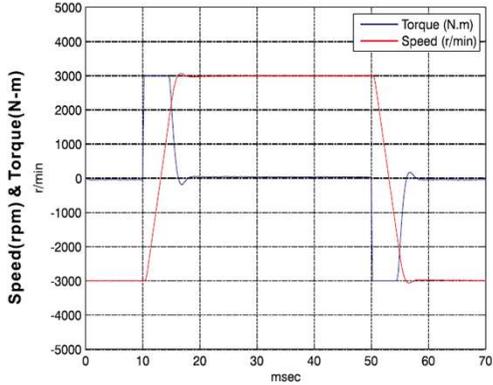
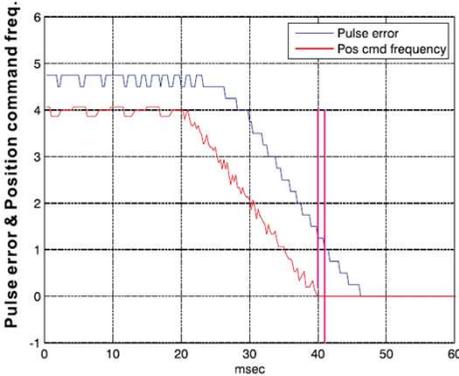
## Delta Drive Controller

ASDA-B2 series - with stepper motor (Pulse Train) interface for servomotors



### Features

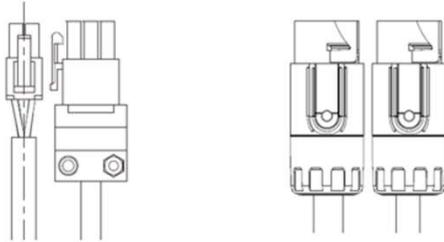
- Settling time below 1ms
- 10 ms acceleration time from -3000r/min to 3000 r/min when running without load
- 230V – 1-phase / 3-phase



Example: Frame size 60mm and 400W servo motor.

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## Delta Drive Controller

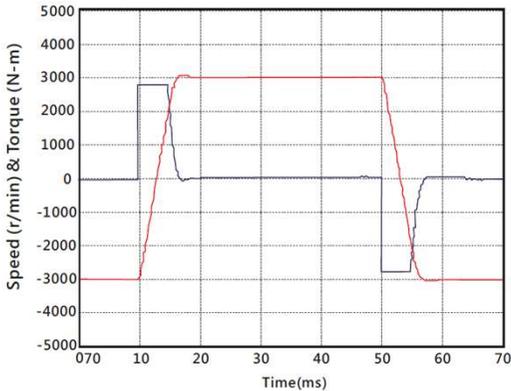
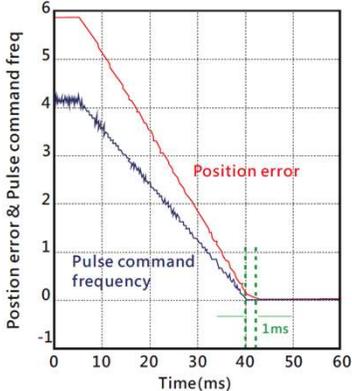


ASDA-A2 series – with EtherCAT or CANopen fieldbus interface for servomotors



### Features

- Settling time below 1ms
- 7 ms acceleration time for speeds from -3000r/min to 3000 r/min with an emoy load
- 230V – 1-phase / 3-phase



Example: Frame size 60mm and 400W servo motor.

# Customer Presentation

## Online-Tools

- From "[www.boschrexroth.com/linselect](http://www.boschrexroth.com/linselect)" the selection and sizing tool **LinSelect** can be downloaded
- With the online CAD configurator 2D drawings and / or 3D models can be created and downloaded in different formats

LinSelect  
Selection and Sizing Tool



Configurators and Tools



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## Industries and target groups

- Handling and assembly
- Electronics and semiconductor
- Automotive suppliers and manufacturers
- Robotics and automation
- Packaging technology
- Home automation
- Plastics Processing
- Special machine

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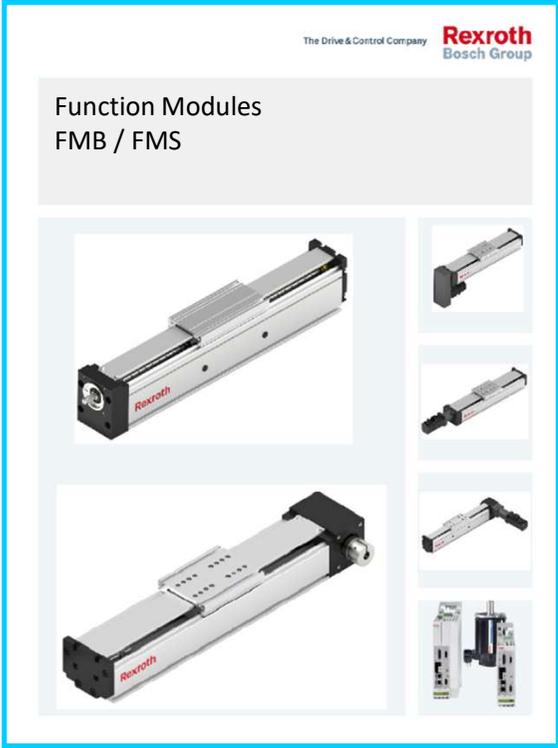
## Applications and target groups

- Pick and place, handling systems
- Mounter, Palletizers
- Feeding units for machine tools
- Testing and analysis systems
- Feed units in transfer lines
- Desktop Factories
- Displacement units
- Etc....

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## Print media

### Catalog FMS/FMB



### Instructions FMS/FMB



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## Function Modules from Bosch Rexroth

Economical, suitable, quick...



... with



**Function Modules from Bosch Rexroth**