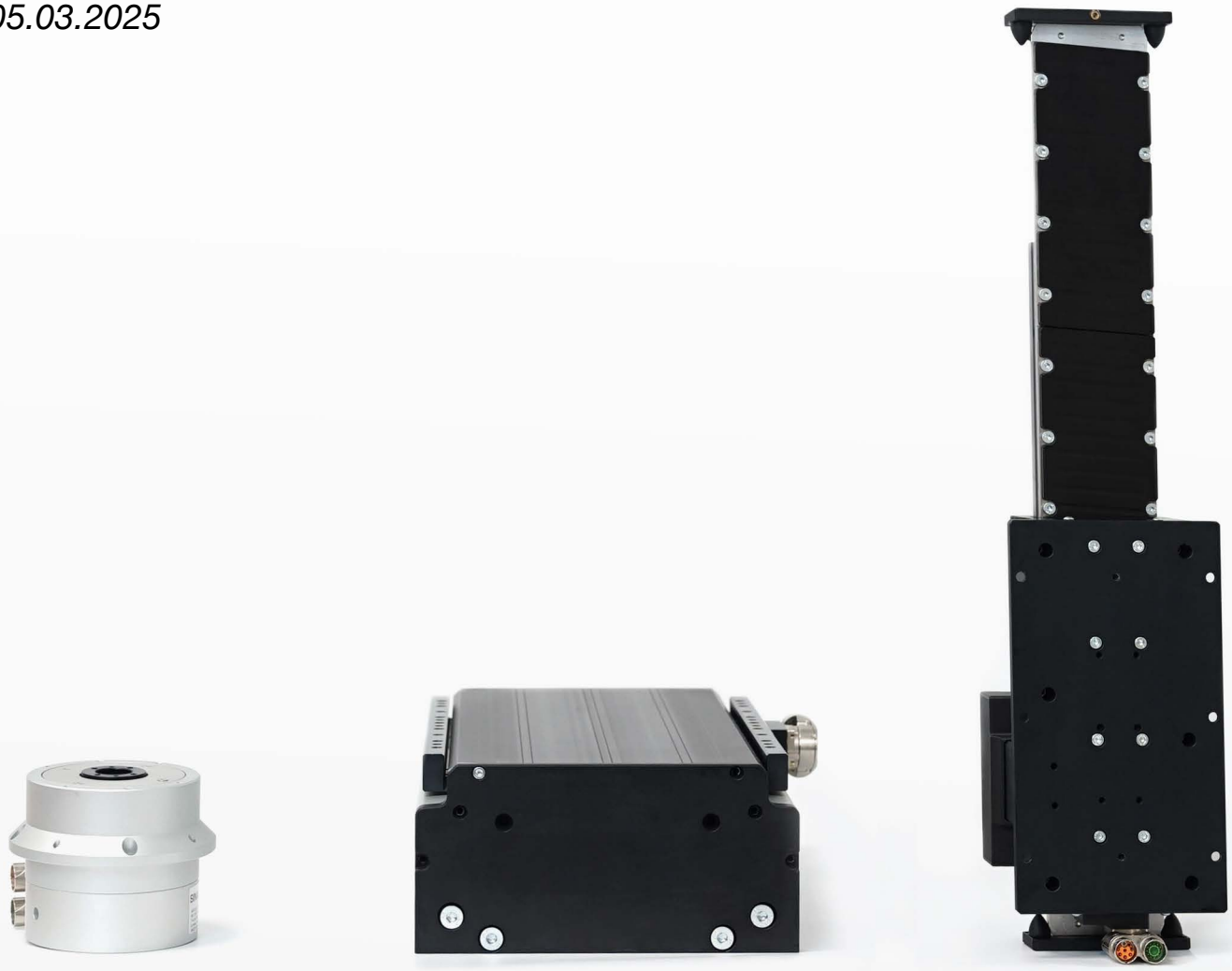
# PRODUCT CATALOGUE

*DIRECT DRIVE EXPERTS*

*05.03.2025*



SINADRIVES®
DIRECT DRIVE EXPERTS

# Index
## Innovation & Excellence

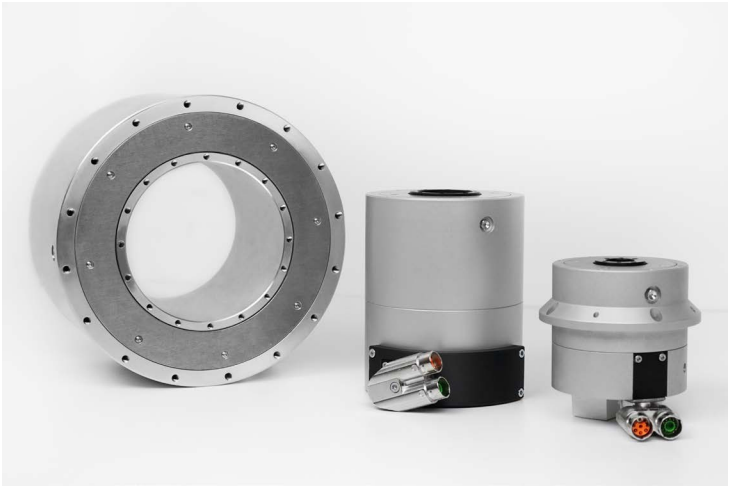


## WE'RE DIRECT DRIVE EXPERTS

The ever-growing needs of machines for automatic assembly, demand high quality and reliance for all components, especially those that perform to make millions of cycles.

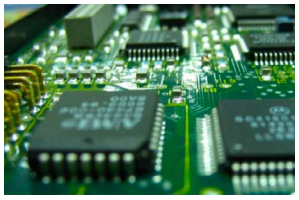
As a competent partner in **electromechanical solutions**, SINADRIVES provides innovative products for fast and precise positioning.

Thanks to Standard Plug & Play linear units and our **direct drive technology**, we can offer **customized and flexible solutions**.



## Range of sectors

| | | | | |
|---|---|---|---|---|
| AUTOMATION | PRINTING INDUSTRY | LASER CUTTING | PRESS TECHNOLOGY | PACKAGING |
| AUTOMOTIVE | SEMICONDUCTOR | FOOD INDUSTRY | TEST EQUIPMENT | PHARMA |

## Where I can get more information?

Do you need more information about solutions or applications that work through linear motion?

**Contact with Direct Drive Experts here!**

**Our facilities in GERMANY**
Mergenthaler Allee 15-21, 2nd floor,
Eschborn, 65760, Germany
Phone: +49 69 71047300
Email: info@sinadrives.com

**Our headquarters in SPAIN**
Av. Mas Pins, 164. Unit 6
17457 Riudellots de la Selva (Girona), Spain
Phone: +34 972 44 24 52
Email: info@sinadrives.com

**Get more information on our website**

**www.sinadrives.com**

**Do you want to see how it works?**

**@sinadrives**

## PRODUCT RANGES

# Designed for Excellence

Experience the power of Direct Drive Technology.
Our cutting-edge motion solutions provide the speed, precision, and performance you need to outperform the competition.

**Linear motor stages**

Hortizontal stages
Peak force from 100 to 6750N

**Linear motor stages**

Vertical stages
Peak force from 900 to 1350N

**Rotary tables (Direct Drive)**

Rotary movements
Peak torque from 0.77 to 183Nm

**Linear motors, Iron core**

Peak force from 100 to 12600N

**Linear motors, Ironless**

Peak force from 20 to 5000N

# Designed for Innovation

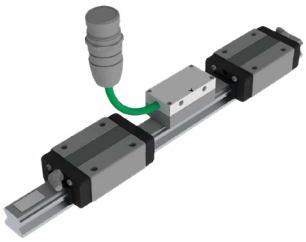
With products designed to boost productivity and reduce operational costs, SINADRIVES enables you to achieve greater results faster and efficiently. From start to finish, we're here to optimize your path to enhance your machine.

**Torque motors, Iron core**

Peak torque from 0.77 to 800Nm

**Torque motors, Ironless**

Peak torque from 0.28 to 60Nm



**Linear guides & Linear encoders**

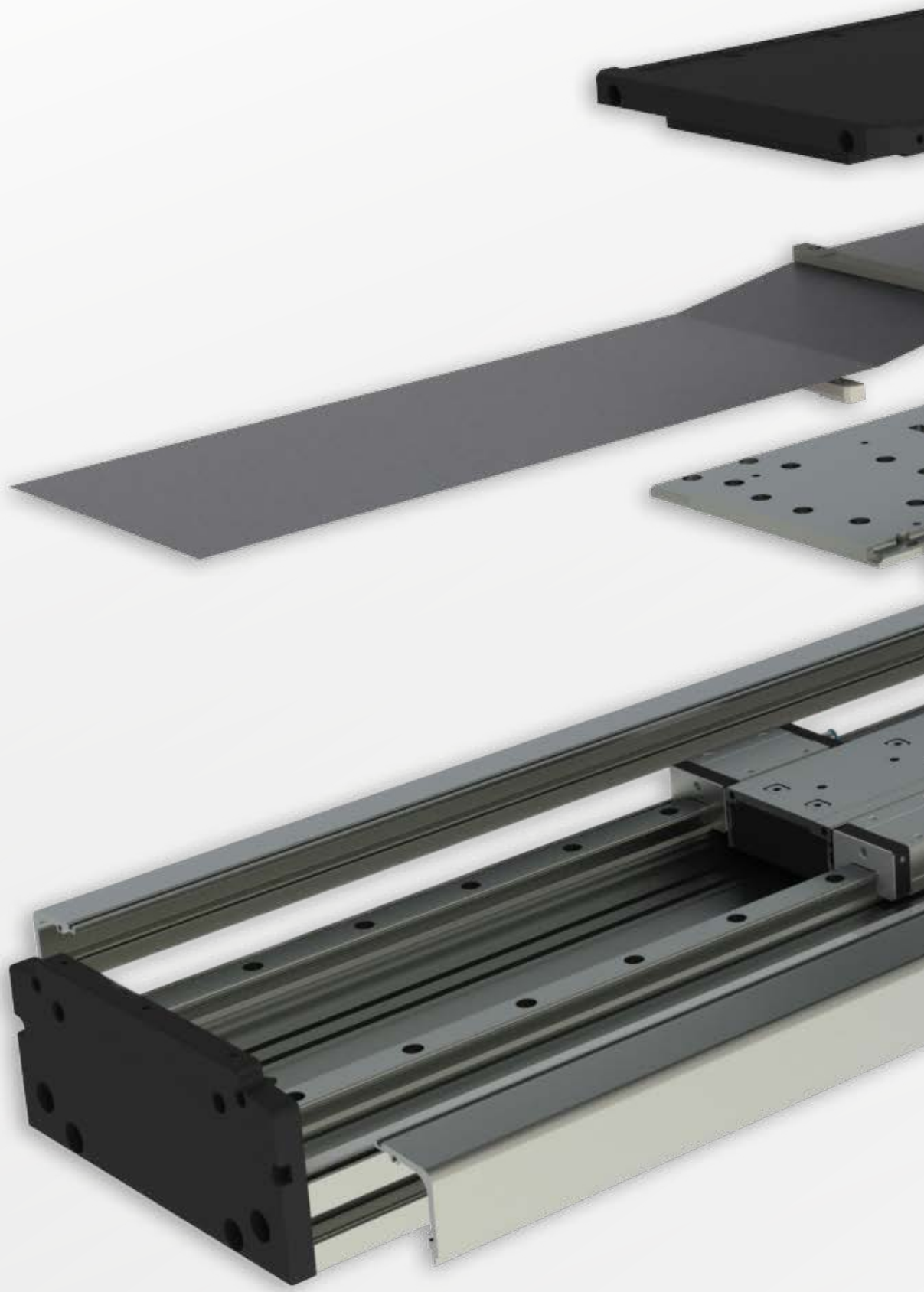
Two options of linear guides
Incremental & Absolute encoders
Sizes from 15 to 45

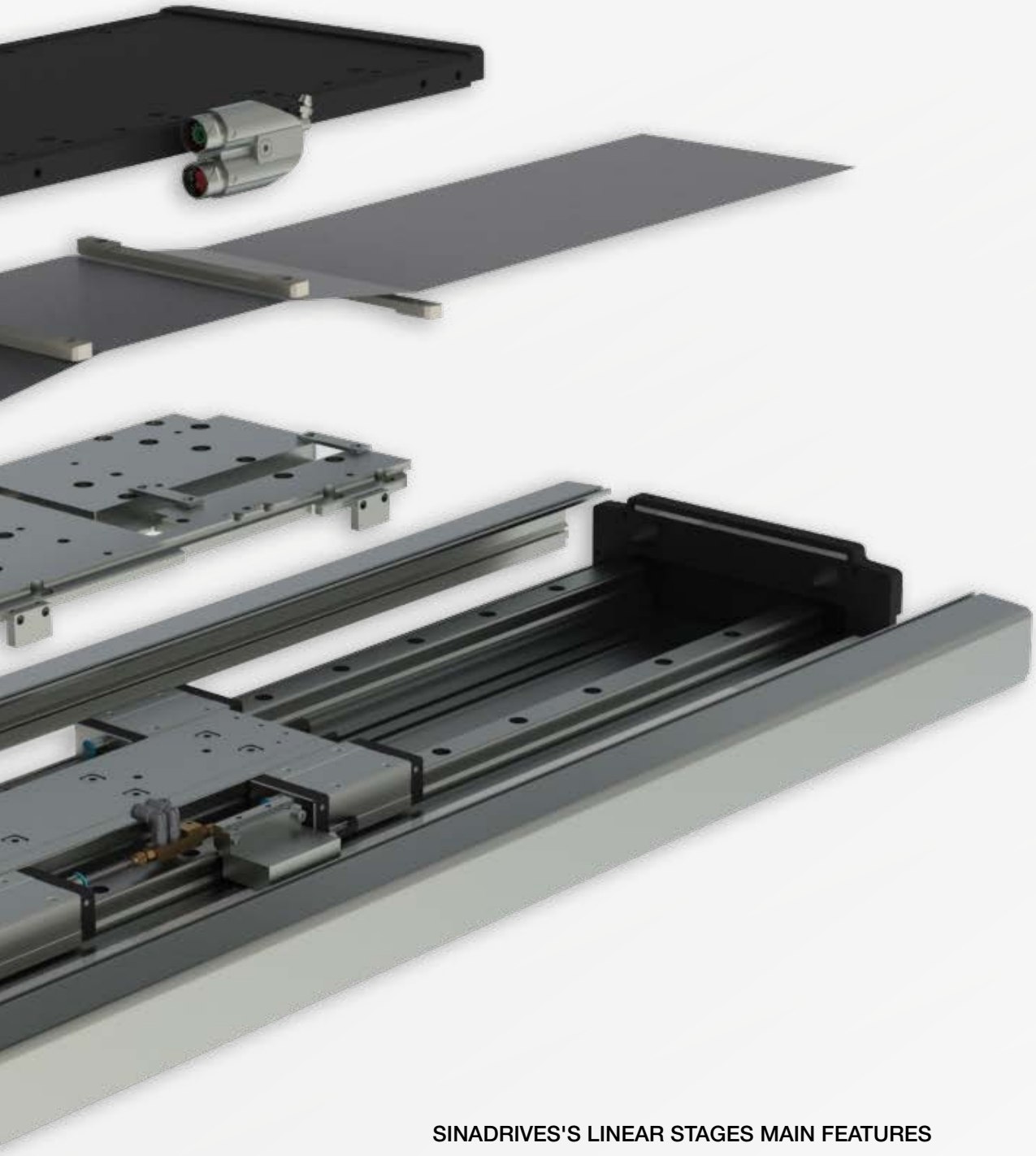
**Servo drivers**

Interchangable bus adapters
Flexible power supply
Rated current up to 18A

## Introduction

Discover our advanced range of linear motor stages, featuring the latest module technology. We offer vertical and horizontal configurations, customizable to meet the unique requirements of any machine.





## SINADRIVES'S LINEAR STAGES MAIN FEATURES

High stiffness thanks to the **linear ball bearings** (available with ball chain)

Integrated energy chains and mounting plates available for **complete solutions.**

Operating voltage **24-600Vdc**, brake voltage up to 900Vdc.

**3 encoder** technologies (inductive, magnetic or optical). Absolute or incremental with up to 50nm resolution.*

** Supported protocols: 1 Vpp (sin/cos), TTL, Endat 2.2, DriveCliq, BISS/C, SSI, Hiperface, Hiperface DSL, Panasonic, Fanuc, Mitsubishi & Yaskawa.*

# APPLICATION MAP
## SINADRIVES PRODUCT RANGE

### MLS 5 - *Open linear stage with linear motor*

p.16

- Double guide design
- Forces range of 900N, 1125N and 1800N
- Optimized for serial applications
- Incremental or absolute encoder (optical or magnetic)

*Maximum length without joints:* ***up to 6000 mm***
*Maximum speed:* ***8 m/s***
*Maximum acceleration:* ***180 m/s²***

### MLC 5 - *Covered linear stage with linear motor*

p.22

- ISO 3 Clean Room certified
- Forces range of 900N, 1125N and 1800N
- One point lubrication
- Incremental or absolute encoder (optical or magnetic)

*Maximum length without joints:* ***up to 6000 mm***
*Maximum speed:* ***8 m/s***
*Maximum acceleration:* ***145 m/s²***


### MLE 2 - *Open linear stage with linear motor*

p.28

- ISO 3 Clean Room certified
- Forces range of 240N, 480N and 720N
- Single-guide design
- Incremental or absolute encoder (inductive)

*Maximum length with joints:* ***up to 40000 mm***
*Maximum speed:* ***30 m/s***
*Maximum acceleration:* ***120 m/s²***


### MLE 3 - *Open linear stage with linear motor*

p.34

- Flat design
- Forces range of 240N, 480N and 720N
- Incremental encoder (inductive)

*Maximum length without joints:* ***up to 6000 mm***
*Maximum speed:* ***30 m/s***
*Maximum acceleration:* ***120 m/s²***

# APPLICATION MAP
## SINADRIVES PRODUCT RANGE

### MLE 5 - *Open linear stage with linear motor*

p.40

- Flat design
- Forces range of 900N, 1125N, 1350N and 1800N
- Incremental or absolute encoder (inductive)

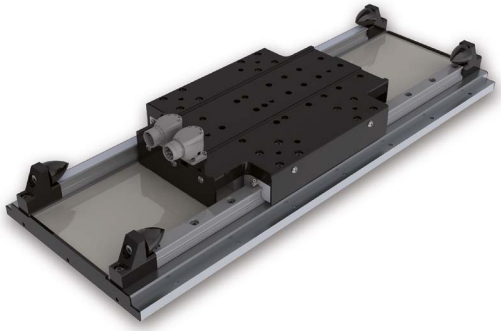
*Maximum length without joints:* ***up to 6000 mm***
*Maximum speed:* ***8 m/s***
*Maximum acceleration:* ***128 m/s²***

### MLE 7 - *Open linear stage with linear motor*

p.46

- Extreme flat design
- Forces range of 1800N, 2250N and 4500N
- Incremental or absolute encoder (inductive)

*Maximum length without joints:* ***up to 6000 mm***
*Maximum speed:* ***4 m/s***
*Maximum acceleration:* ***209 m/s²***

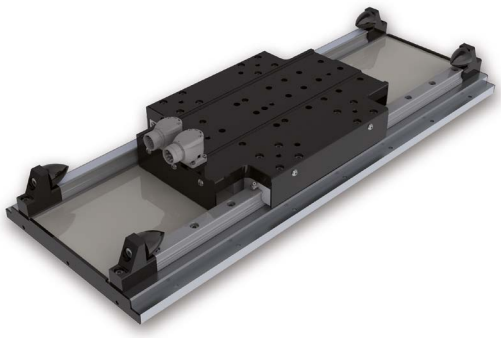


### MLE 8 - *Open linear stage with linear motor*

soon

- Extreme flat design and water cooling
- Forces range of 2700N, 4500N and 6750N
- Incremental or absolute encoder (inductive)

*Maximum length without joints:* ***up to 6000 mm***
*Maximum speed:* ***4 m/s***
*Maximum acceleration:* ***186 m/s²***



# APPLICATION MAP
## SINADRIVES PRODUCT RANGE

### MLZ 2 - *Linear actuator (moving magnets) for vertical applications*

p.52

- Double guide design
- Force range of 240N
- For vertical and horizontal applications
- Incremental or absolute encoder (optical, magnetic or inductive)

*Maximum length without joints:* ***up to 454 mm***
*Maximum speed:* ***9 m/s***
*Maximum acceleration:* ***203 m/s²***

### MLZ 5 - *Linear actuator (moving magnets) for vertical applications*

p.56

- Double guide design
- Forces range of 900N and 1350N
- For vertical and horizontal applications
- Incremental or absolute encoder (optical, magnetic or inductive)

*Maximum length without joints:* ***up to 824 mm***
*Maximum speed:* ***8 m/s***
*Maximum acceleration:* ***380 m/s²***

### MRT020001 - *Flat rotary table*

p.62

- Flat design
- Cross roller bearing
- Incremental or absolute encoder

*Ultimate torque:* ***1.22 Nm***
*Maximum speed:* ***6000 rpm***
*Power supply:* ***24-600 Vdc***

### MRT020005 - *Hollow shaft rotary table*

p.62

- Hollow shaft design
- Cross roller bearing
- Incremental or absolute encoder

*Ultimate torque:* ***4.54 Nm***
*Maximum speed:* ***6000 rpm***
*Power supply:* ***24-600 Vdc***

# APPLICATION MAP
## SINADRIVES PRODUCT RANGE

### MRT030028 - *Hollow shaft rotary table*

p.62

- Hollow shaft design
- Cross roller bearing
- Incremental or absolute encoder

*Ultimate torque:* ***28.4 Nm***
*Maximum speed:* ***267 rpm***
*Power supply:* ***up to 600 Vdc***

### MRT040056 - *Hollow shaft rotary table*

p.62

- Hollow shaft design
- Cross roller bearing
- Incremental or absolute encoder

*Ultimate torque:* ***55.5 Nm***
*Maximum speed:* ***200 rpm***
*Power supply:* ***up to 600 Vdc***

### MRT060173 - *Hollow shaft rotary table*

p.62

- Hollow shaft design
- Cross roller bearing
- Incremental or absolute encoder

*Ultimate torque:* ***173 Nm***
*Maximum speed:* ***175 rpm***
*Power supply:* ***up to 600 Vdc***
*Water cooling:* ***Optional***

## Compatible Servo amplifiers

rexroth A Bosch Company · CONTROL TECHNIQUES · MITSUBISHI ELECTRIC · promicon SYSTEMS · BAUMÜLLER · Elmo · TECHNOSOFT
SIGMATEK · KEBA · Lenze · JAT · Panasonic · BECKHOFF · AMK
ESR · copley controls powered by analogic · INGENIA · Parker · INFRANOR · SIEMENS
B&R · Schneider Electric · metroniX servo drives · OMRON · SEW EURODRIVE · ACS MOTION CONTROL

# LINEAR STAGES COMBINATIONS

## INNOVATION & EXCELLENCE

### 001

### 002

### 003

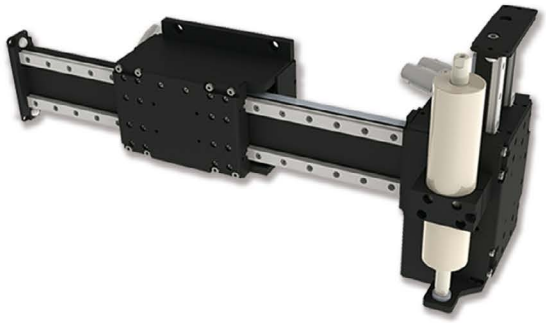
### 004

### 005

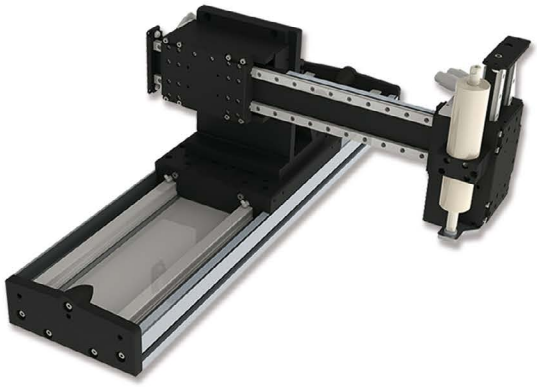
# LINEAR STAGES COMBINATIONS

## INNOVATION & EXCELLENCE

### 006



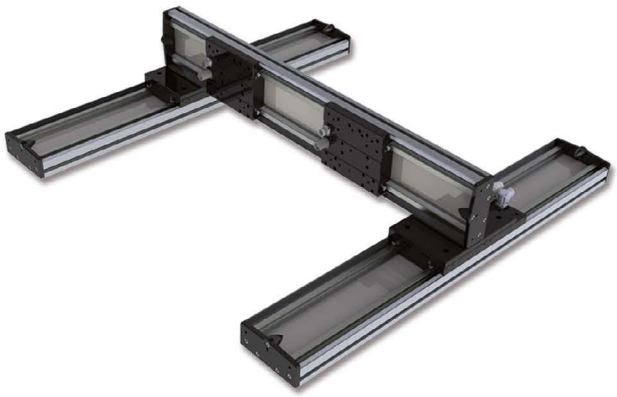
### 007



### 008

### 009

### 010



# LINEAR STAGES COMBINATIONS

## INNOVATION & EXCELLENCE

### XY & XZ SYSTEMS

XY and XZ systems, built using standard linear motor axes, are motion control systems employed in a variety of automation applications.






### XYZ GANTRY SYSTEMS

These systems are named after their ability to control motion in three spatial axes: X (horizontal), Y (vertical), and Z (depth or height).



### MULTI-CARRIAGE LINEAR MOTOR AXIS

These systems are machinery and automation configurations designed to enable multiple movements or functions along a single axis.



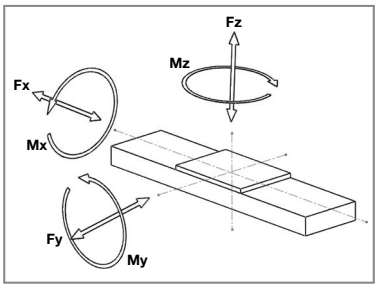
# LINEAR STAGES COMBINATIONS
## INNOVATION & EXCELLENCE

### AXES WITH ROTARY TABLES

The linear motor ensures smooth and precise movement along an axis, while the rotary table adds essential rotational functionality, allowing for complex movements and manipulation of parts with precision.

# MLS 5
## LINEAR MOTOR STAGE

Maximum speed: 8 m/s
Maximum acceleration: 180 m/s²
Maximum length without joints: up to 6000 mm
Operating voltage: 600 Vdc, max. 900 Vdc

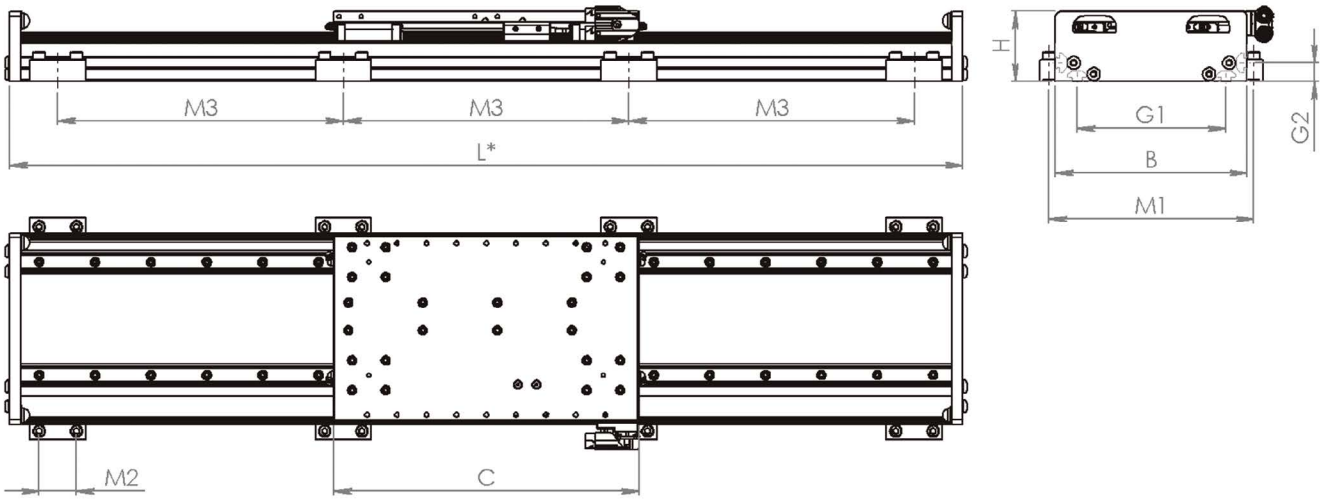



## Mechanical specifications

| *Carriage model* | | **IT09** | **IT13** | **IT18** |
|---|---|---|---|---|
| *C - Carriage length* | mm | 282 | 380 | 508 |
| *B - Width* | mm | 206 | 206 | 206 |
| *H - Height* | mm | 76 | 76 | 76 |
| *G1 - Distance between profile base grooves* | mm | 160 | 160 | 160 |
| *G2 - Height of profile lateral grooves* | mm | 20 | 20 | 20 |
| *M1 - Distance between fixation clamps boreholes* [3] | mm | 220 | 220 | 220 |
| *M2 - Distance between fixation clamp boreholes* [3] | mm | 40 | 40 | 40 |
| *M3 - Max. distance between fixation clamps* [3] | mm | 500 | 500 | 500 |
| **Linear motor features** | | | | |
| *Maximum speed at 560Vdc* | m/s | 8 | 8 | 8 |
| *Recommended speed* [1] | m/s | 3 | 3 | 3 |
| *Continuous force aircooled* [2] | N | 400 | 600 | 800 |
| *Peak force* | N | 900 | 1350 | 1800 |
| *Nominal current* | Arms | 4,5 | 6,8 | 9,0 |
| *Peak current* | Arms | 13,1 | 19,6 | 26,2 |
| **Guidance features (max.)** | | | | |
| *Fy* | N | 2700 | 2700 | 4000 |
| *Fz* | N | 1800 | 1800 | 2700 |
| *Mx* | Nm | 400 | 400 | 675 |
| *My* | Nm | 630 | 900 | 1350 |
| *Mz* | Nm | 630 | 900 | 1350 |
| For the sum of all forces and moments: $\frac{Fye}{Fy} + \frac{Fze}{Fz} + \frac{Mxe}{Mx} + \frac{Mye}{My} + \frac{Mze}{Mz} < 1$ (Xxe = calculated value) (Xx = max. catalogue value) | | | | |
| **Structure profile features** | | | | |
| *Geometrical moments of inertia Lx* | $mm^4$ | $4,1x10^5$ | $4,1x10^5$ | $4,1x10^5$ |
| *Geometrical moments of inertia Ly* | $mm^4$ | $14,4x10^6$ | $14,4x10^6$ | $14,4x10^6$ |
| *Elastic module* | $N/mm^2$ | 70000 | 70000 | 70000 |
| **Weight** | | | | |
| *Weight of carriage* | kg | 5,4 | 7,2 | 10 |
| *Weight of 100mm* | kg | 1,8 | 1,8 | 1,8 |

[1] *Recommended speed for a lifetime >30000 km*
[2] *Depending on the application and ambient temperature*
[3] *Sinadrives's accessory*

# MLS 5
## TECHNICAL DESCRIPTION




*Drawing for reference only. Please ask for ready 3D files.*

# MLS 5
## PRECISION & ACCURACY DATA

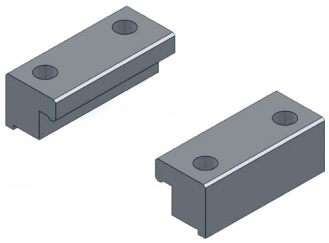
Straightness and flatness: ± 0.05 mm / 300 mm (fixed with mounting set) [4)]
Repeatability of measuring system: ± 0.5 µm
Repeatability of linear unit: ± 3 µm
Standard accuracy absolute: ± 15 µm / 1000 mm (in the movement direction)
High accuracy absolute: ± 5 µm / 1000 mm (in the movement direction)

*[4)] Can be improved with leveling plates*

### Mounting set (2 un.)

Ref. AC03-0501

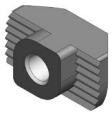
Tightening torque 14 Nm (for steel)
Tightening torque 20 Nm (for aluminum)



### T-slot nuts set (10 un.)

Ref. KTM0X

**KTM05**

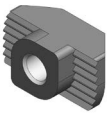


M5

**KTM06**

M6

**KTM08**

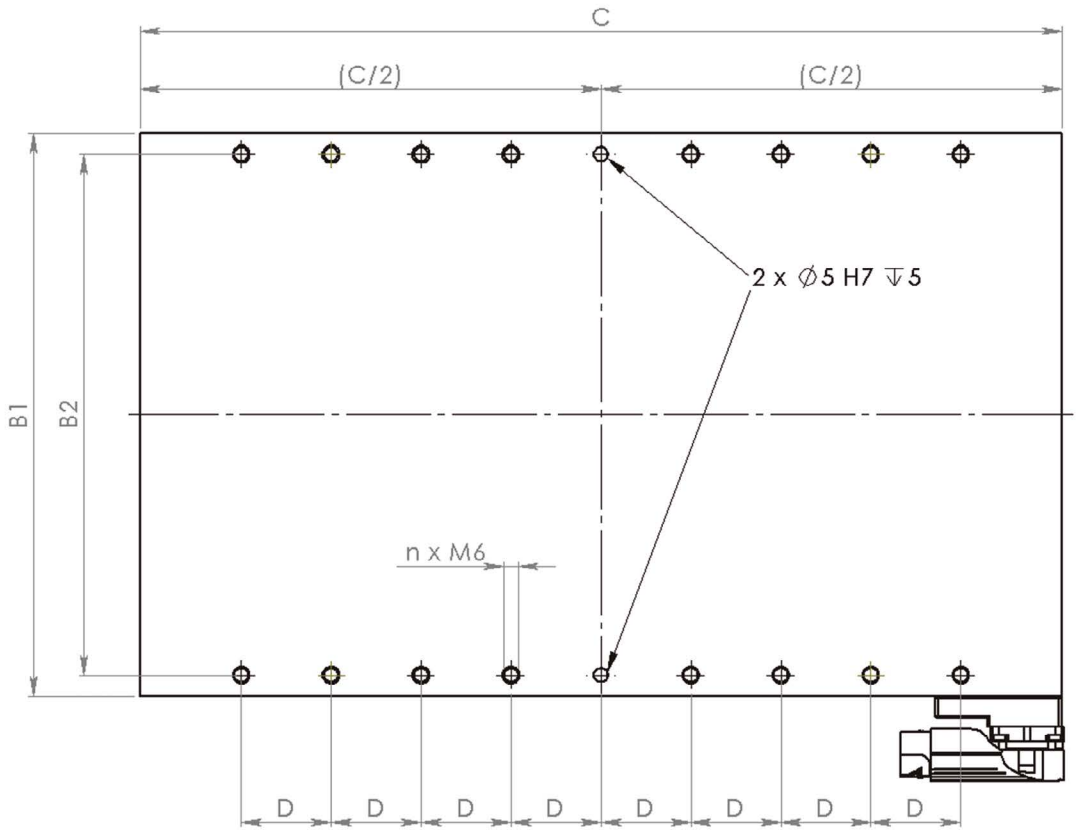


M8

# MLS 5
## CHOICE OF STROKE

| Linear motor stage | | MLS55 | |
|---|---|---|---|
| **Carriage model** | **900** | **1350** | **1800** |
| **Length, L (mm)** | | **Stroke** | |
| 00270 | - | - | - |
| 00366 | 40 | - | - |
| 00462 | 136 | 38 | - |
| 00558 | 232 | 134 | - |
| 00654 | 328 | 230 | 102 |
| 00750 | 424 | 326 | 198 |
| 00846 | 520 | 422 | 294 |
| 00942 | 616 | 518 | 390 |
| 01038 | 712 | 614 | 486 |
| 01134 | 808 | 710 | 582 |
| 01230 | 904 | 806 | 678 |
| 01326 | 1000 | 902 | 774 |
| 01422 | 1096 | 998 | 870 |
| 01518 | 1192 | 1094 | 966 |
| 01614 | 1288 | 1190 | 1062 |
| 01710 | 1384 | 1286 | 1158 |
| 01806 | 1480 | 1382 | 1254 |
| 01902 | 1576 | 1478 | 1350 |
| 01998 | 1672 | 1574 | 1446 |
| 02094 | 1768 | 1670 | 1542 |
| 02190 | 1864 | 1766 | 1638 |
| 02286 | 1960 | 1862 | 1734 |
| 02382 | 2056 | 1958 | 1830 |
| 02478 | 2152 | 2054 | 1926 |
| 02574 | 2248 | 2150 | 2022 |
| 02670 | 2344 | 2246 | 2118 |
| 02766 | 2440 | 2342 | 2214 |
| 02862 | 2536 | 2438 | 2310 |
| 02958 | 2632 | 2534 | 2406 |
| 03054 | 2728 | 2630 | 2502 |
| 03150 | 2824 | 2726 | 2598 |
| 03246 | 2920 | 2822 | 2694 |
| 03342 | 3016 | 2918 | 2790 |
| 03438 | 3112 | 3014 | 2886 |
| 03534 | 3208 | 3110 | 2982 |
| 03630 | 3304 | 3206 | 3078 |
| 03726 | 3400 | 3302 | 3174 |
| 03822 | 3496 | 3398 | 3270 |
| 03918 | 3592 | 3494 | 3366 |
| 04014 | 3688 | 3590 | 3462 |
| 04110 | 3784 | 3686 | 3558 |
| 04206 | 3880 | 3782 | 3654 |
| 04302 | 3976 | 3878 | 3750 |
| 04398 | 4072 | 3974 | 3846 |
| 04494 | 4168 | 4070 | 3942 |
| 04590 | 4264 | 4166 | 4038 |
| 04686 | 4360 | 4262 | 4134 |
| 04782 | 4456 | 4358 | 4230 |
| 04878 | 4552 | 4454 | 4326 |
| 04974 | 4648 | 4550 | 4422 |
| 05070 | 4744 | 4646 | 4518 |
| 05166 | 4840 | 4742 | 4614 |
| 05262 | 4936 | 4838 | 4710 |
| 05358 | 5032 | 4934 | 4806 |
| 05454 | 5128 | 5030 | 4902 |
| 05550 | 5224 | 5126 | 4998 |
| 05646 | 5320 | 5222 | 5094 |
| 05742 | 5416 | 5318 | 5190 |
| 05838 | 5512 | 5414 | 5286 |
| 05934 | 5608 | 5510 | 5382 |
| 06030 | 5704 | 5606 | 5478 |

# MLS 5
## MOUNTING INTERFACE




| Carriage model | B1 (mm) | B2 (mm) | C (mm) | D (mm) | n / row | Borehole |
|---|---|---|---|---|---|---|
| 0900 | 200 | 185 ± 0.025 | 282 | 32 | 6 | M6 |
| 1125 | | | 328 | | 8 | |
| 1800 | | | 508 | | 14 | |

# MLS 5
## CONNECTORS OPTIONS

- **Side connectors Y-TEC base (00)**

- **Side connectors M23 (01)**

# MLS 5
## ORDER CODE

### Axis model
MLS 5 - Linear unit with iron core linear motor, covered model.

**MLS5S - IT□□□ - □□□□□ - □□A - T20□B - □ - SXX - □□□□□**

### Motor / Carriage model
**Motor type:**
**IT** - Iron core motor
**XX** - Without motor

□□ **Peak force, N (aircooled) [1]:**
MLS 5
- **09** - 900N
- **13** - 1350N
- **18** - 1800N

□ **Motor winding:**
**N** - Standard motor
**H** - High-speed motor

### Encoder
□□□□□
**Incremental:**
**1R04C** - Optical incremental 1Vpp 40 µm
**1R45G** - Optical incremental TTL 50 nm
**2R02M** - Magnetic incremental 1Vpp 2000 µm
**2R41U** - Magnetic incremental TTL 1 µm

**Absolute:**
**4HE1H** - Optical absolute EnDat2.2, 0.1 µm
**4HE1S** - Optical absolute EnDat2.2, 0.1 µm + Safety
**4HD1S** - Optical absolute Drivecliq 0.1 µm + Safety
**5SH1U** - Magnetic absolute Hiperface 40 µm
**5LP1U** - Magnetic absolute Panasonic 1 µm

### Connectors
□□ **Typ:**
**00A** - Side connectors Y-TEC base [3]
**01A** - Side connectors M23

### Guiding
□ **Number of blocks:**
**4** - 4 Blocks
**6** - 6 Blocks (only IT18X)

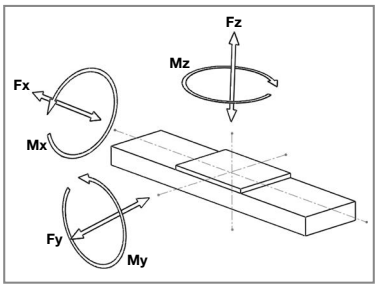
### Lubrication
□ **Grease type:**
**S** - Standard
**C** - Clean room
**F** - Food grade
**L** - Low temperature

### Length (mm) [2]

[1] *Depending on the application and ambient temperature*
[2] *Length on page 16*
[3] *Not available for motors IT13X and IT18X*

# MLC 5
## LINEAR MOTOR STAGE

Maximum speed: 8 m/s
Maximum acceleration: 145 m/s$^2$
Maximum length without joints: up to 6000 mm
Operating voltage: 600 Vdc, max. 900 Vdc



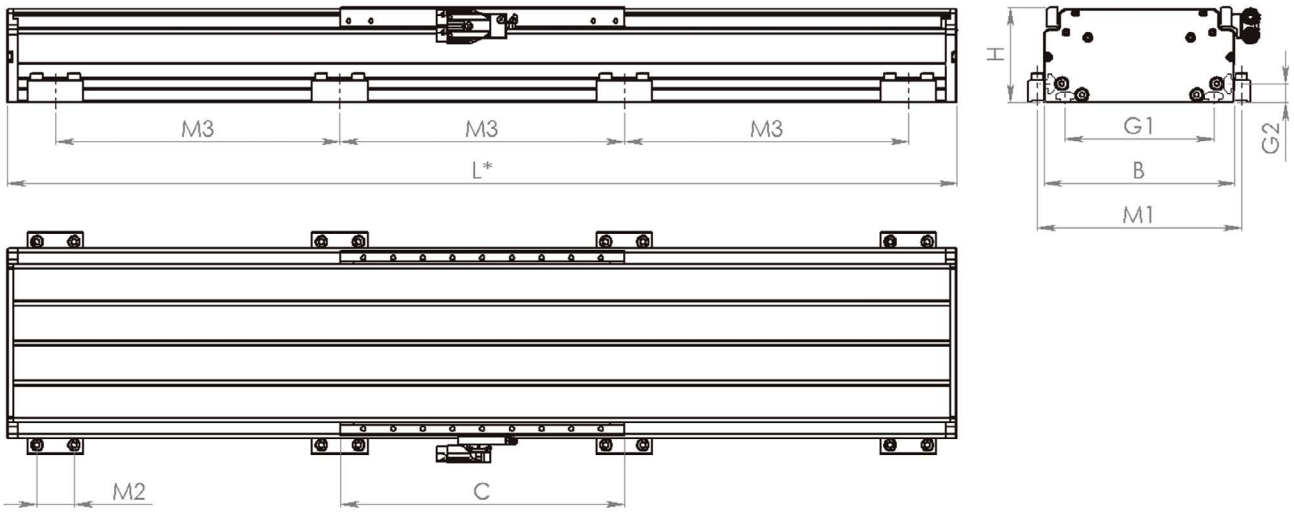


## Mechanical specifications

| *Carriage model* | | **IT09** | **IT13** | **IT18** |
|---|---|---|---|---|
| *C - Carriage length* | mm | 260 | 352 | 484 |
| *B - Width* | mm | 206 | 206 | 206 |
| *H - Height* | mm | 103 | 103 | 103 |
| *G1 - Distance between profile base grooves* | mm | 160 | 160 | 160 |
| *G2 - Height of profile lateral grooves* | mm | 20 | 20 | 20 |
| *M1 - Distance between fixation clamps boreholes* [3] | mm | 220 | 220 | 220 |
| *M2 - Distance between fixation clamp boreholes* [3] | mm | 40 | 40 | 40 |
| *M3 - Max. distance between fixation clamps* [3] | mm | 500 | 500 | 500 |
| **Linear motor features** | | | | |
| *Maximum speed at 560Vdc* | m/s | 8 | 8 | 8 |
| *Recommended speed* [1] | m/s | 3 | 3 | 3 |
| *Continuous force aircooled* [2] | N | 400 | 600 | 800 |
| *Peak force* | N | 900 | 1350 | 1800 |
| *Nominal current* | Arms | 4,5 | 6,8 | 9,0 |
| *Peak current* | Arms | 13,1 | 19,6 | 26,2 |
| **Guidance features (max.)** | | | | |
| *Fy* | N | 2000 | 2000 | 3000 |
| *Fz* | N | 1500 | 1500 | 1750 |
| *Mx* | Nm | 450 | 450 | 750 |
| *My* | Nm | 700 | 1000 | 1500 |
| *Mz* | Nm | 700 | 1000 | 1500 |
| For the sum of all forces and moments: $\frac{Fye}{Fy} + \frac{Fze}{Fz} + \frac{Mxe}{Mx} + \frac{Mye}{My} + \frac{Mze}{Mz} < 1$ (Xxe = calculated value) (Xx = max. catalogue value) | | | | |
| **Structure profile features** | | | | |
| *Geometrical moments of inertia Lx* | mm$^4$ | 4,5x10$^5$ | 4,5x10$^5$ | 4,5x10$^5$ |
| *Geometrical moments of inertia Ly* | mm$^4$ | 20,5x10$^6$ | 20,5x10$^6$ | 20,5x10$^6$ |
| *Elastic module* | N/mm$^2$ | 70000 | 70000 | 70000 |
| **Weight** | | | | |
| *Weight of carriage* | kg | 6,8 | 8,9 | 12,4 |
| *Weight of 100mm* | kg | 2,1 | 2,1 | 2,1 |

[1] *Recommended speed for a lifetime >30000 km*
[2] *Depending on the application and ambient temperature*
[3] *Sinadrives's accessory*

# MLC 5
## TECHNICAL DESCRIPTION




*Drawing for reference only. Please ask for ready 3D files.*

# MLC 5
## PRECISION & ACCURACY INFORMATION

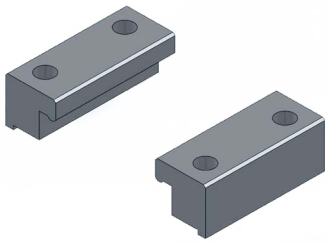
Straightness and flatness: ± 0.05 mm / 300 mm (fixed with mounting set) [4)]
Repeatability of measuring system: ± 0.5 µm
Repeatability of linear unit: ± 3 µm
Standard accuracy absolute: ± 15 µm / 1000 mm (in the movement direction)
High accuracy absolute: ± 5 µm / 1000 mm (in the movement direction)

*[4)] Can be improved with leveling plates*

### Mounting set (2 un.)

Ref. AC03-0501

Tightening torque 14 Nm (steel)
Tightening torque 20 Nm (aluminum)



### T-slot nuts set (10 un.)

Ref. KTM0X

**KTM05**

**M5**

**KTM06**

**M6**

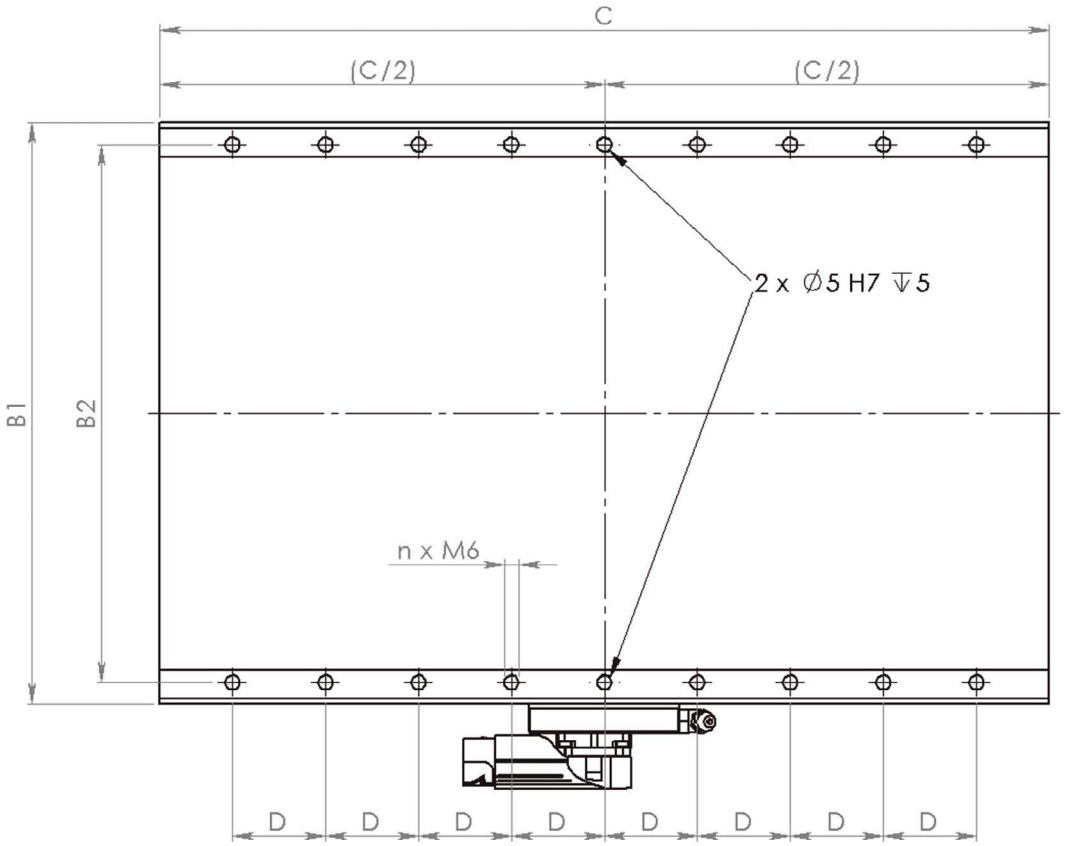
**KTM08**

**M8**

# MLC 5
## CHOICE OF STROKE

| Linear motor stage | | MLC55 | |
|---|---|---|---|
| **Carriage model** | **900** | **1350** | **1800** |
| **Length, L (mm)** | | **Stroke** | |
| 00270 | - | - | - |
| 00366 | 52 | - | - |
| 00462 | 148 | 56 | - |
| 00558 | 244 | 152 | 20 |
| 00654 | 340 | 248 | 116 |
| 00750 | 436 | 344 | 212 |
| 00846 | 532 | 440 | 308 |
| 00942 | 628 | 536 | 404 |
| 01038 | 724 | 632 | 500 |
| 01134 | 820 | 728 | 596 |
| 01230 | 916 | 824 | 692 |
| 01326 | 1012 | 920 | 788 |
| 01422 | 1108 | 1016 | 884 |
| 01518 | 1204 | 1112 | 980 |
| 01614 | 1300 | 1208 | 1076 |
| 01710 | 1396 | 1304 | 1172 |
| 01806 | 1492 | 1400 | 1268 |
| 01902 | 1588 | 1496 | 1364 |
| 01998 | 1684 | 1592 | 1460 |
| 02094 | 1780 | 1688 | 1556 |
| 02190 | 1876 | 1784 | 1652 |
| 02286 | 1972 | 1880 | 1748 |
| 02382 | 2068 | 1976 | 1844 |
| 02478 | 2164 | 2072 | 1940 |
| 02574 | 2260 | 2168 | 2036 |
| 02670 | 2356 | 2264 | 2132 |
| 02766 | 2452 | 2360 | 2228 |
| 02862 | 2548 | 2456 | 2324 |
| 02958 | 2644 | 2552 | 2420 |
| 03054 | 2740 | 2648 | 2516 |
| 03150 | 2836 | 2744 | 2612 |
| 03246 | 2932 | 2840 | 2708 |
| 03342 | 3028 | 2936 | 2804 |
| 03438 | 3124 | 3032 | 2900 |
| 03534 | 3220 | 3128 | 2996 |
| 03630 | 3316 | 3224 | 3092 |
| 03726 | 3412 | 3320 | 3188 |
| 03822 | 3508 | 3416 | 3284 |
| 03918 | 3604 | 3512 | 3380 |
| 04014 | 3700 | 3608 | 3476 |
| 04110 | 3796 | 3704 | 3572 |
| 04206 | 3892 | 3800 | 3668 |
| 04302 | 3988 | 3896 | 3764 |
| 04398 | 4084 | 3992 | 3860 |
| 04494 | 4180 | 4088 | 3956 |
| 04590 | 4276 | 4184 | 4052 |
| 04686 | 4372 | 4280 | 4148 |
| 04782 | 4468 | 4376 | 4244 |
| 04878 | 4564 | 4472 | 4340 |
| 04974 | 4660 | 4568 | 4436 |
| 05070 | 4756 | 4664 | 4532 |
| 05166 | 4852 | 4760 | 4628 |
| 05262 | 4948 | 4856 | 4724 |
| 05358 | 5044 | 4952 | 4820 |
| 05454 | 5140 | 5048 | 4916 |
| 05550 | 5236 | 5144 | 5012 |
| 05646 | 5332 | 5240 | 5108 |
| 05742 | 5428 | 5336 | 5204 |
| 05838 | 5524 | 5432 | 5300 |
| 05934 | 5620 | 5528 | 5396 |
| 06030 | 5716 | 5624 | 5492 |

# MLC 5
## MOUNTING INTERFACE




| Carriage model | B1 (mm) | B2 (mm) | C (mm) | D (mm) | n / row | Borehole |
|---|---|---|---|---|---|---|
| 0900 | 200 | 185 ± 0.025 | 260 | 32 | 6 | M6 |
| 1350 | | | 352 | | 10 | |
| 1800 | | | 484 | | 12 | |

# MLC 5
## CONNECTORS OPTIONS

- **Side connectors Y-TEC base (00)**

- **Side connectors M23 (01)**

# MLC 5
## ORDER CODE

### Axis model
MLC 5 - Linear unit with iron core linear motor, covered model.

**MLC5S - IT□□ - □□□□□ - □□A - T20□□ - □ - □XX - □□□□□**

### Motor / Carriage model
**Motor type:**
**IT** - Iron core motor
**XX** - Without motor

□□ **Peak force, N (aircooled) [1]:**
MLC 5
- **09** - 900N
- **13** - 1350N
- **18** - 1800N

□ **Motor winding:**
**N** - Standard motor
**H** - High-speed motor

### Encoder
□□□□□
**Incremental:**
**1R04C** - Optical incremental 1Vpp 40 µm
**1R45G** - Optical incremental TTL 50 nm
**2R02M** - Magnetic incremental 1Vpp 2000 µm
**2R41U** - Magnetic incremental TTL 1 µm

**Absolute:**
**4HE1H** - Optical absolute EnDat2.2, 0.1 µm
**4HE1S** - Optical absolute EnDat2.2, 0.1 µm + Safety
**4HD1S** - Optical absolute Drivecliq 0.1 µm + Safety
**5SH1U** - Magnetic absolute Hiperface 40 µm
**5LP1U** - Magnetic absolute Panasonic 1 µm

### Connectors
□□ **Typ:**
**00A** - Side connectors Y-TEC base [3]
**01A** - Side connectors M23

### Guiding
□ **Number of blocks:**
**4** - 4 Blocks
**6** - 6 Blocks (only IT18X)

□ **Block type:**
**A** - With caged balls
**B** - Without caged balls

### Lubrication
□ **Grease type:**
**S** - Standard
**C** - Clean room
**F** - Food grade
**L** - Low temperature

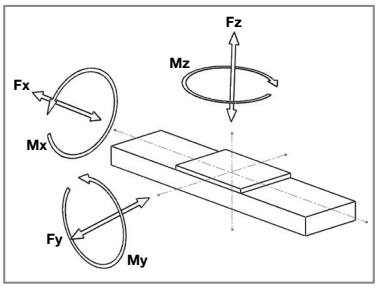
### Upgrades
□ **Version:**
**S** - Standard
**C** - Clean room

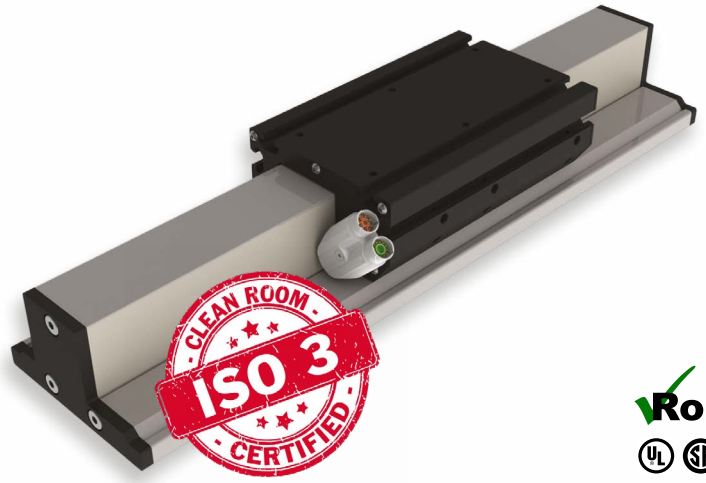
### Length (mm) [2]

*[1] Depending on the application and ambient temperature*
*[2] Length on page 22*
*[3] Not available for motors IT13X and IT18X*

# MLE 2
## LINEAR MOTOR STAGE

Maximum speed: 36 m/s
Maximum acceleration: 116 m/s²
Maximum length without joints: up to 6000 mm
Operating voltage: 600 Vdc, max. 900 Vdc




## Mechanical specifications

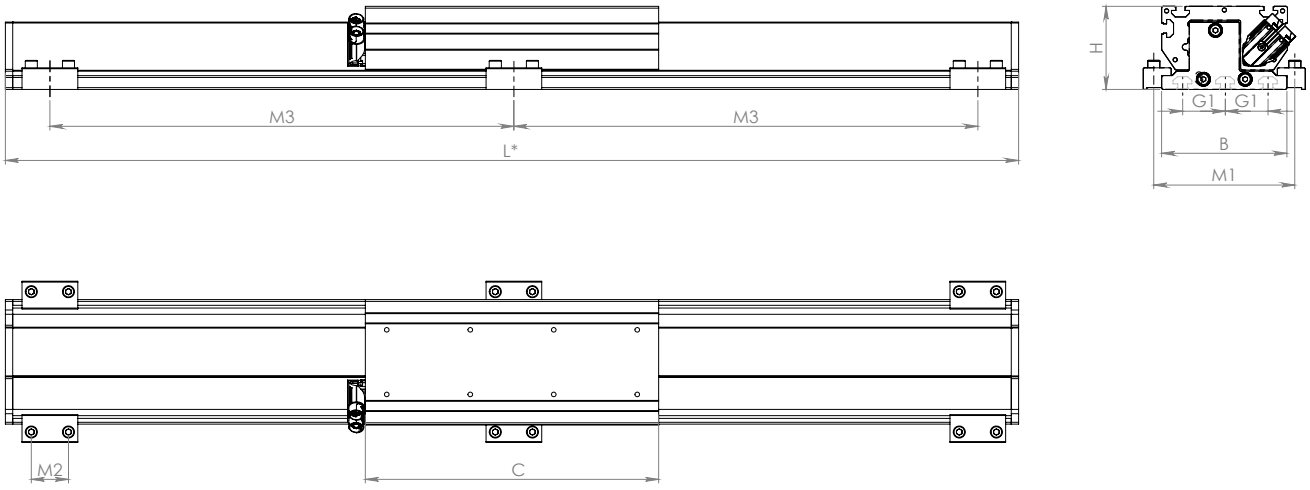
| *Carriage type (standard or reinforced)* | | S | R | S | R | S |
|---|---|---|---|---|---|---|
| *Carriage model* | | **IT02X** | | **IT05X** | | **IT07X** |
| *C - Carriage length* | mm | 218 | 316 | 316 | 411 | 411 |
| *B - Width* | mm | 135 | | 135 | | 135 |
| *H - Height* | mm | 90 | | 90 | | 90 |
| *G1 - Distance between profile base grooves* | mm | 45 | | 45 | | 45 |
| *M1 - Distance between fixation clamps boreholes* [3] | mm | 152 | | 152 | | 152 |
| *M2 - Distance between fixation clamp boreholes* [3] | mm | 40 | | 40 | | 40 |
| *M3 - Max. distance between fixation clamps* [3] | mm | 500 | | 500 | | 500 |
| **Linear motor features** | | | | | | |
| *Maximum speed at 560Vdc* | m/s | 36 | | 36 | | 36 |
| *Recommended speed* [1] | m/s | 3 | | 3 | | 3 |
| *Continuous force aircooled* [2] | N | 105 | | 210 | 315 | 315 |
| *Peak force* | N | 240 | | 480 | | 720 |
| *Nominal current* | Arms | 3,0 | | 6,2 | | 4,5 |
| *Peak current* | Arms | 8,2 | | 16,4 | | 12,3 |
| **Guidance features (max.)** | | | | | | |
| *Fy* | N | 900 | | 900 | | 900 |
| *Fz* | N | 900 | | 900 | | 900 |
| *Mx* | Nm | 70 | | 70 | 85 | 85 |
| *My* | Nm | 200 | | 300 | 350 | 350 |
| *Mz* | Nm | 200 | | 300 | 350 | 350 |

For the sum of all forces and moments: $\frac{Fye}{Fy} + \frac{Fze}{Fz} + \frac{Mxe}{Mx} + \frac{Mye}{My} + \frac{Mze}{Mz} < 1$ (Xxe = calculated value) (Xx = max. catalogue value)

| **Structure profile features** | | | | | | |
|---|---|---|---|---|---|---|
| *Geometrical moments of inertia Lx* | $mm^4$ | $13,43x10^5$ | | $13,43x10^5$ | | $13,43x10^5$ |
| *Geometrical moments of inertia Ly* | $mm^4$ | $27,75x10^5$ | | $27,75x10^5$ | | $27,75x10^5$ |
| *Elastic module* | $N/mm^2$ | 70000 | | 70000 | | 70000 |
| **Weight** | | | | | | |
| *Weight of carriage* | kg | 3,2 | 3,8 | 4,5 | | 6,2 |
| *Weight of 100mm* | kg | 1,25 | | 1,25 | | 1,25 |

[1] *Recommended speed for a lifetime >30000 km*
[2] *Depending on the application and ambient temperature*
[3] *Sinadrives's accessory*

# MLE 2
## TECHNICAL DESCRIPTION




*Drawing for reference only. Please ask for ready 3D files.*

# MLE 2
## PRECISION & ACCURACY INFORMATION

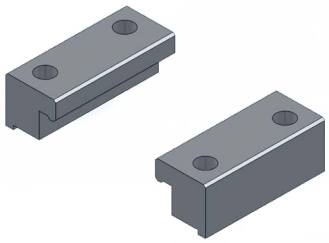
Straightness and flatness: ± 0.1 mm / 300 mm (fixed with mounting set) [4)]
Repeatability of measuring system: ± 1 µm
Repeatability of linear unit: ± 5 µm
Standard accuracy absolute: ± 15 µm / 1000 mm (in the movement direction)
High accuracy absolute: ± 5 µm / 1000 mm (in the movement direction)

*[4)] Can be improved with leveling plates*

### Mounting set (2 un.)

Ref. AC03-0501

Tightening torque 14 Nm (steel)
Tightening torque 20 Nm (aluminum)



### T-slot nuts set (10 un.)

Ref. KTM0X

**KTM05**

**M5**

**KTM06**

**M6**

**KTM08**

**M8**

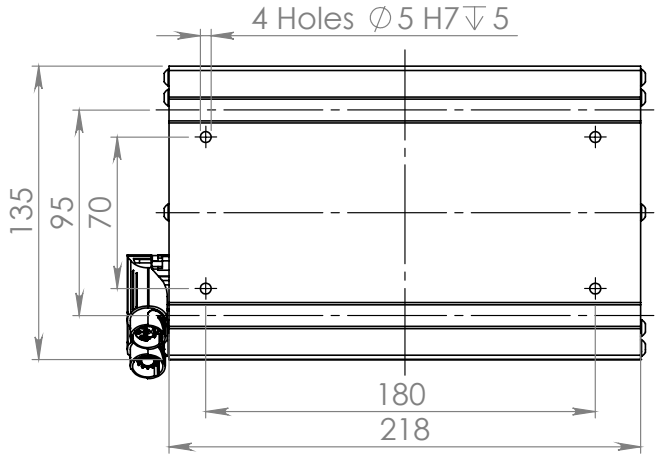
# MLE 2
## CHOICE OF STROKE

| Size | 2S | 2R | 2S | 2R | 2S |
|---|---|---|---|---|---|
| Carriage model | IT02X | | IT05X | | IT07X |
| Length, L (mm) | Stroke | | | | |
| 00324 | 70 | - | - | - | - |
| 00420 | 166 | 68 | 68 | - | - |
| 00516 | 262 | 164 | 164 | 69 | 69 |
| 00564 | 310 | 212 | 212 | 117 | 117 |
| 00612 | 358 | 260 | 260 | 165 | 165 |
| 00660 | 406 | 308 | 308 | 213 | 213 |
| 00708 | 454 | 356 | 356 | 261 | 261 |
| 00804 | 550 | 452 | 452 | 357 | 357 |
| 00900 | 646 | 548 | 548 | 453 | 453 |
| 00948 | 694 | 596 | 596 | 501 | 501 |
| 00996 | 742 | 644 | 644 | 549 | 549 |
| 01044 | 790 | 692 | 692 | 597 | 597 |
| 01092 | 838 | 740 | 740 | 645 | 645 |
| 01188 | 934 | 836 | 836 | 741 | 741 |
| 01284 | 1030 | 932 | 932 | 837 | 837 |
| 01332 | 1078 | 980 | 980 | 885 | 885 |
| 01380 | 1126 | 1028 | 1028 | 933 | 933 |
| 01428 | 1174 | 1076 | 1076 | 981 | 981 |
| 01476 | 1222 | 1124 | 1124 | 1029 | 1029 |
| 01572 | 1318 | 1220 | 1220 | 1125 | 1125 |
| 01668 | 1414 | 1316 | 1316 | 1221 | 1221 |
| 01716 | 1462 | 1364 | 1364 | 1269 | 1269 |
| 01764 | 1510 | 1412 | 1412 | 1317 | 1317 |
| 01812 | 1558 | 1460 | 1460 | 1365 | 1365 |
| 01860 | 1606 | 1508 | 1508 | 1413 | 1413 |
| 01956 | 1702 | 1604 | 1604 | 1509 | 1509 |
| 02052 | 1798 | 1700 | 1700 | 1605 | 1605 |
| 02100 | 1846 | 1748 | 1748 | 1653 | 1653 |
| 02148 | 1894 | 1796 | 1796 | 1701 | 1701 |
| 02196 | 1942 | 1844 | 1844 | 1749 | 1749 |
| 02244 | 1990 | 1892 | 1892 | 1797 | 1797 |
| 02340 | 2086 | 1988 | 1988 | 1893 | 1893 |
| 02436 | 2182 | 2084 | 2084 | 1989 | 1989 |
| 02484 | 2230 | 2132 | 2132 | 2037 | 2037 |
| 02532 | 2278 | 2180 | 2180 | 2085 | 2085 |
| 02580 | 2326 | 2228 | 2228 | 2133 | 2133 |
| 02628 | 2374 | 2276 | 2276 | 2181 | 2181 |
| 02724 | 2470 | 2372 | 2372 | 2277 | 2277 |
| 02820 | 2566 | 2468 | 2468 | 2373 | 2373 |
| 02868 | 2614 | 2516 | 2516 | 2421 | 2421 |
| 02916 | 2662 | 2564 | 2564 | 2469 | 2469 |
| 02964 | 2710 | 2612 | 2612 | 2517 | 2517 |
| 03012 | 2758 | 2660 | 2660 | 2565 | 2565 |
| 03108 | 2854 | 2756 | 2756 | 2661 | 2661 |
| 03204 | 2950 | 2852 | 2852 | 2757 | 2757 |

| Size | 2S | 2R | 2S | 2R | 2S |
|---|---|---|---|---|---|
| Carriage model | IT02X | | IT05X | | IT07X |
| Length, L (mm) | Stroke | | | | |
| 03252 | 2998 | 2900 | 2900 | 2805 | 2805 |
| 03300 | 3046 | 2948 | 2948 | 2853 | 2853 |
| 03348 | 3094 | 2996 | 2996 | 2901 | 2901 |
| 03396 | 3142 | 3044 | 3044 | 2949 | 2949 |
| 03492 | 3238 | 3140 | 3140 | 3045 | 3045 |
| 03588 | 3334 | 3236 | 3236 | 3141 | 3141 |
| 03636 | 3382 | 3284 | 3284 | 3189 | 3189 |
| 03684 | 3430 | 3332 | 3332 | 3237 | 3237 |
| 03732 | 3478 | 3380 | 3380 | 3285 | 3285 |
| 03780 | 3526 | 3428 | 3428 | 3333 | 3333 |
| 03876 | 3622 | 3524 | 3524 | 3429 | 3429 |
| 03972 | 3718 | 3620 | 3620 | 3525 | 3525 |
| 04020 | 3766 | 3668 | 3668 | 3573 | 3573 |
| 04068 | 3814 | 3716 | 3716 | 3621 | 3621 |
| 04116 | 3862 | 3764 | 3764 | 3669 | 3669 |
| 04164 | 3910 | 3812 | 3812 | 3717 | 3717 |
| 04260 | 4006 | 3908 | 3908 | 3813 | 3813 |
| 04356 | 4102 | 4004 | 4004 | 3909 | 3909 |
| 04404 | 4150 | 4052 | 4052 | 3957 | 3957 |
| 04452 | 4198 | 4100 | 4100 | 4005 | 4005 |
| 04500 | 4246 | 4148 | 4148 | 4053 | 4053 |
| 04548 | 4294 | 4196 | 4196 | 4101 | 4101 |
| 04644 | 4390 | 4292 | 4292 | 4197 | 4197 |
| 04740 | 4486 | 4388 | 4388 | 4293 | 4293 |
| 04788 | 4534 | 4436 | 4436 | 4341 | 4341 |
| 04836 | 4582 | 4484 | 4484 | 4389 | 4389 |
| 04884 | 4630 | 4532 | 4532 | 4437 | 4437 |
| 04932 | 4678 | 4580 | 4580 | 4485 | 4485 |
| 05028 | 4774 | 4676 | 4676 | 4581 | 4581 |
| 05124 | 4870 | 4772 | 4772 | 4677 | 4677 |
| 05172 | 4918 | 4820 | 4820 | 4725 | 4725 |
| 05220 | 4966 | 4868 | 4868 | 4773 | 4773 |
| 05268 | 5014 | 4916 | 4916 | 4821 | 4821 |
| 05316 | 5062 | 4964 | 4964 | 4869 | 4869 |
| 05412 | 5158 | 5060 | 5060 | 4965 | 4965 |
| 05508 | 5254 | 5156 | 5156 | 5061 | 5061 |
| 05556 | 5302 | 5204 | 5204 | 5109 | 5109 |
| 05604 | 5350 | 5252 | 5252 | 5157 | 5157 |
| 05652 | 5398 | 5300 | 5300 | 5205 | 5205 |
| 05700 | 5446 | 5348 | 5348 | 5253 | 5253 |
| 05796 | 5542 | 5444 | 5444 | 5349 | 5349 |
| 05892 | 5638 | 5540 | 5540 | 5445 | 5445 |
| 05940 | 5686 | 5588 | 5588 | 5493 | 5493 |
| 05988 | 5734 | 5636 | 5636 | 5541 | 5541 |

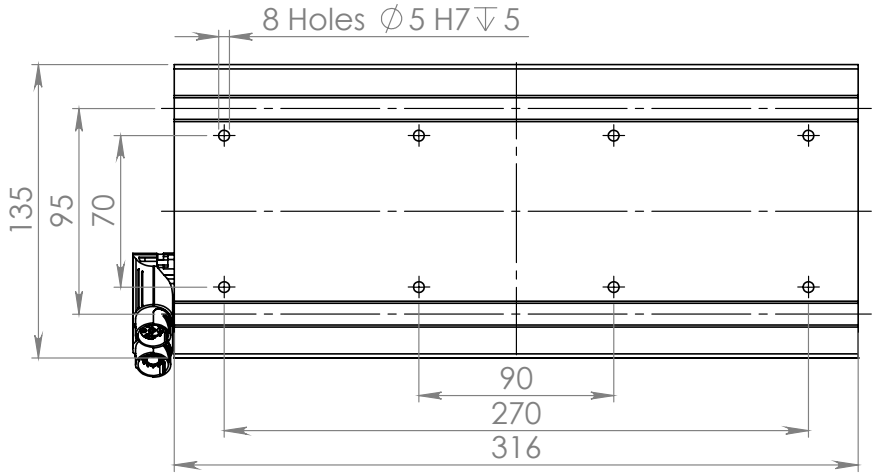
# MLE 2
## MOUNTING INTERFACE

### MLE 2S - IT02X



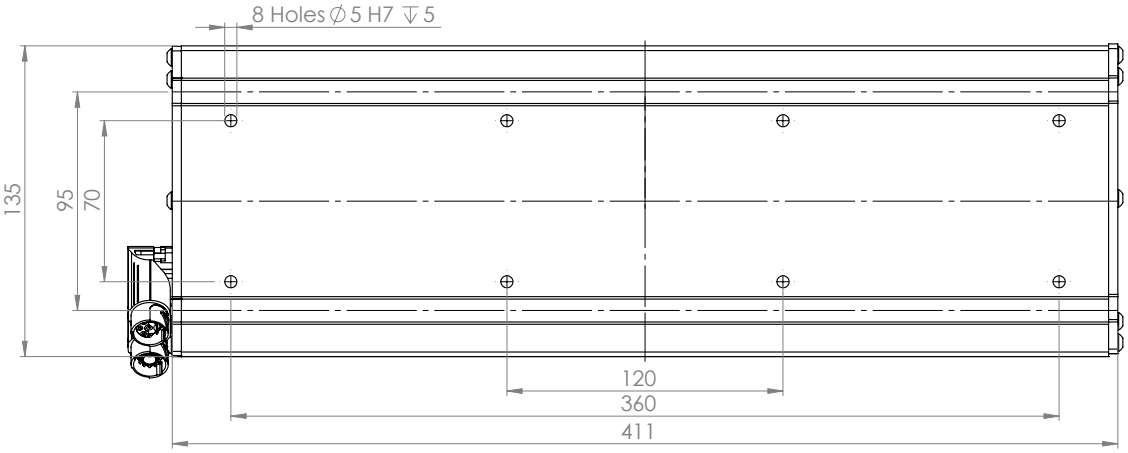

Tolerances for the dimension 70 mm and 180 mm is ± 0.025 mm

### MLE 2R - IT02X / MLE 2S - IT05X




Tolerances for the dimension 70 mm, 90 mm and 270 mm is ± 0.025 mm

### MLE 2R - IT05X / MLE 2S - IT07X




Tolerances for the dimension 70 mm, 120 mm and 360 mm is ± 0.025 mm

# MLE 2
## CONNECTORS OPTIONS

**Side connectors Y-TEC base (00)**

**Side connectors hybrid M23 (09)**

### *Cleanroom Option*

**Note! 40mm less stroke**

# MLE 2
## ORDER CODE

### Axis model
MLE 2 - Linear unit with iron core linear motor.

**MLE2□ - IT□□□ - □□□□□ - □□A - T20□B - □ - □XX - □□□□□**

### Axis size
□
**Size:**
**S** - Standard carrige
**R** - Reinforced carrige

### Motor / Carriage model
**Motor type:**
**IT** - Iron core motor
**XX** - Without motor

□□ **Peak force, N (aircooled) [1]:**
MLE2
- **02** - 240N
- **05** - 480N
- **07** - 720N

□ **Motor winding:**
**N** - Standard motor
**H** - High-speed motor
**I** - Low voltage motor

### Encoder
□□□□□
**Incremental:**
**0A04C** - Inductive incremental 1Vpp 40 µm
**0A41U** - Inductive incremental TTL 1 µm

**Absolute:**
**3AE2H** - Inductive absolute EnDat2.2, 0.25 µm
**3AE1S** - Inductive absolute EnDat2.2, 0.1 µm + Safety
**3AD1S** - Inductive absolute DriveCliq 0.1 µm + Safety

### Connectors
□□
**Typ:**
**00A** - Side connectors Y-TEC base
**09A** - Side connectors hybrid M23

### Guiding
□
**Number of blocks:**
**2** - 2 Blocks
**3** - 3 Blocks (only IT07X)

### Lubrication
□
**Grease type:**
**S** - Standard
**C** - Clean room
**F** - Food grade
**L** - Low temperature

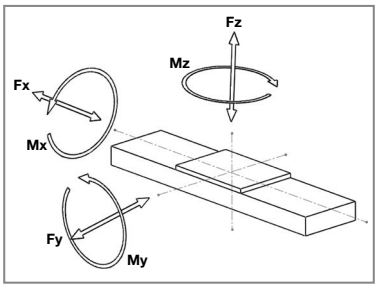
### Upgrades
□
**Version:**
**S** - Standard
**C** - Clean room

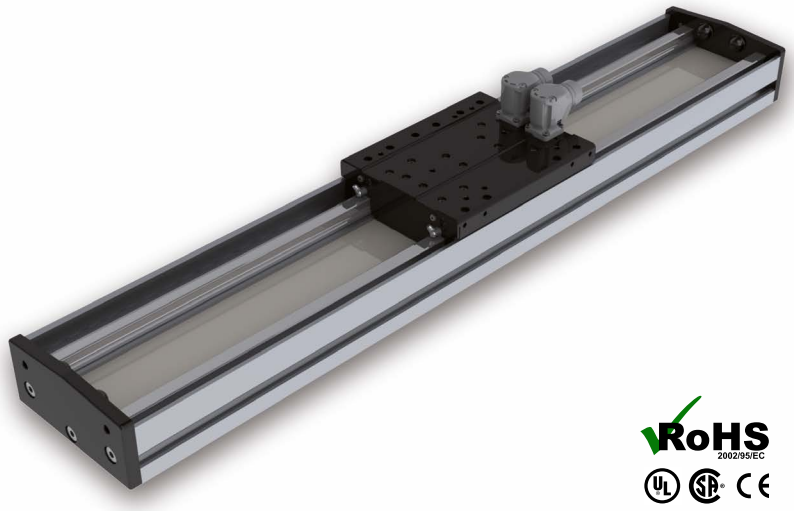
### Length (mm) [2]

*[1] Depending on the application and ambient temperature*
*[2] Length on page 28*

# MLE 3
## LINEAR MOTOR STAGE

Maximum speed: 36 m/s
Maximum acceleration: 95 m/s$^2$
Maximum length without joints: up to 6000 mm
Operating voltage: 600 Vdc, max. 900 Vdc



## Mechanical specifications

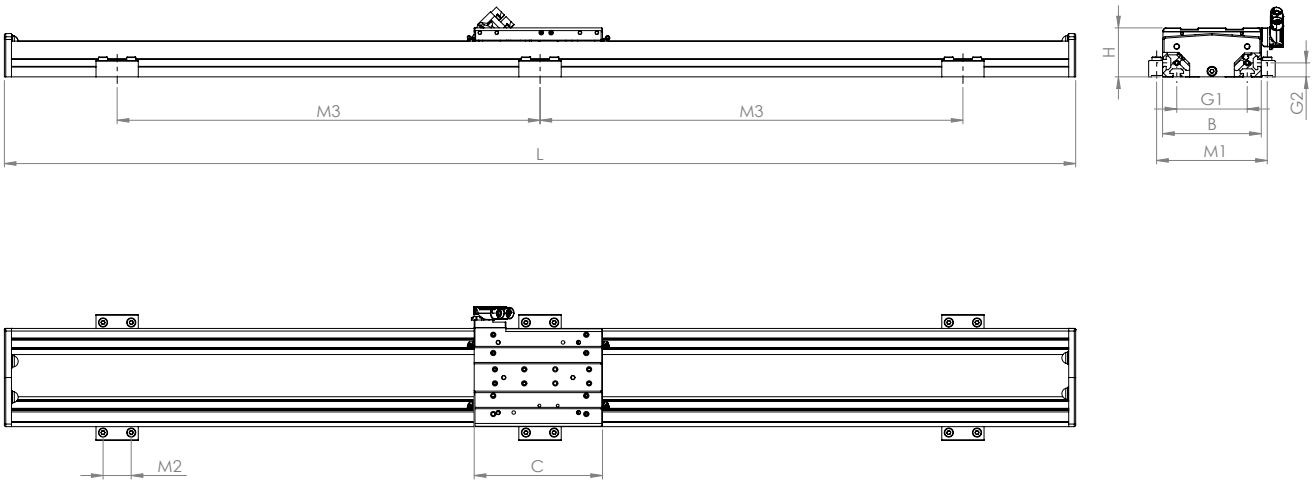
| *Size* | | S | R | S | S |
|---|---|---|---|---|---|
| *Carriage model* | | **IT02X** | | **IT05X** | **IT07X** |
| *C - Carriage length* | mm | 182 | 272 | 272 | 368 |
| *B - Width* | mm | 140 | | 140 | 140 |
| *H - Height* | mm | 70 | | 70 | 70 |
| *G1 - Distance between profile base grooves* | mm | 100 | | 100 | 100 |
| *G2 - Height of profile lateral grooves* | mm | 20 | | 20 | 20 |
| *M1 - Distance between fixation clamps boreholes* [3] | mm | 157 | | 157 | 157 |
| *M2 - Distance between fixation clamp boreholes* [3] | mm | 40 | | 40 | 40 |
| *M3 - Max. distance between fixation clamps* [3] | mm | 500 | | 500 | 500 |
| **Linear motor features** | | | | | |
| *Maximum speed at 560Vdc* | m/s | 36 | | 36 | 36 |
| *Recommended speed* [1] | m/s | 3 | | 3 | 3 |
| *Continuous force aircooled* [2] | N | 105 | | 210 | 360 |
| *Peak force* | N | 240 | | 480 | 720 |
| *Nominal current* | Arms | 3,0 | | 6,0 | 4,5 |
| *Peak current* | Arms | 6,2 | | 12,4 | 12,3 |
| **Guidance features (max.)** | | | | | |
| *Fy* | N | 1500 | | 1500 | 2250 |
| *Fz* | N | 1000 | | 1000 | 1500 |
| *Mx* | Nm | 180 | | 180 | 270 |
| *My* | Nm | 280 | 320 | 320 | 480 |
| *Mz* | Nm | 280 | 320 | 320 | 480 |

For the sum of all forces and moments: $\frac{Fye}{Fy} + \frac{Fze}{Fz} + \frac{Mxe}{Mx} + \frac{Mye}{My} + \frac{Mze}{Mz} < 1$ (Xxe = calculated value) (Xx = max. catalogue value)

| **Structure profile features** | | | | | |
|---|---|---|---|---|---|
| *Geometrical moments of inertia Lx* | mm$^4$ | 3,72x10$^5$ | | 3,72x10$^5$ | 3,72x10$^5$ |
| *Geometrical moments of inertia Ly* | mm$^4$ | 55,58x10$^5$ | | 55,58x10$^5$ | 55,58x10$^5$ |
| *Elastic module* | N/mm$^2$ | 70000 | | 70000 | 70000 |
| **Weight** | | | | | |
| *Weight of carriage* | kg | 2,6 | 3,0 | 3,7 | 3,7 |
| *Weight of 100mm* | kg | 1,2 | | 1,2 | 1,2 |

[1] *Recommended speed for a lifetime >30000 km*
[2] *Depending on the application and ambient temperature*
[3] *Sinadrives's accessory*

# MLE 3
## TECHNICAL DESCRIPTION




*Drawing for reference only. Please ask for ready 3D files.*

# MLE 3
## PRECISION & ACCURACY INFORMATION

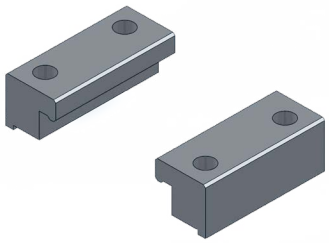
Straightness and flatness: ± 0.05 mm / 300 mm (fixed with mounting set) [4)]
Repeatability of measuring system: ± 1 µm
Repeatability of linear unit: ± 5 µm
Standard accuracy absolute: ± 15 µm / 1000 mm (in the movement direction)
High accuracy absolute: ± 5 µm / 1000 mm (in the movement direction)

*[4)] Can be improved with leveling plates*

### Mounting set (2 un.)

Ref. AC03-0501

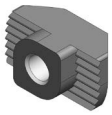
Tightening torque 14 Nm (steel)
Tightening torque 20 Nm (aluminum)



### T-slot nuts set (10 un.)

Ref. KTM0X

**KTM05**

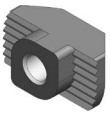


**M5**

**KTM06**

**M6**

**KTM08**



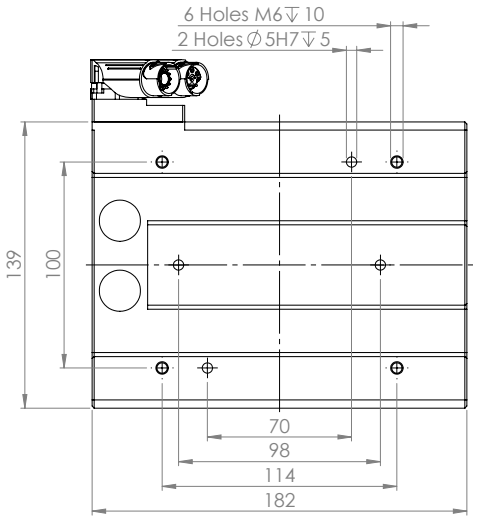
**M8**

# MLE 3
## CHOICE OF STROKE

| Size | 3S | 3R | 3S | 3S |
|---|---|---|---|---|
| Carriage model | IT02X | | IT05X | IT07X |
| Length, L (mm) | Stroke | | | |
| 224 | 2 | - | - | - |
| 272 | 50 | - | - | - |
| 320 | 98 | 8 | 8 | - |
| 368 | 146 | 56 | 56 | - |
| 416 | 194 | 104 | 104 | 8 |
| 512 | 290 | 200 | 200 | 104 |
| 560 | 338 | 248 | 248 | 152 |
| 608 | 386 | 296 | 296 | 200 |
| 656 | 434 | 344 | 344 | 248 |
| 704 | 482 | 392 | 392 | 296 |
| 752 | 530 | 440 | 440 | 344 |
| 800 | 578 | 488 | 488 | 392 |
| 896 | 674 | 584 | 584 | 488 |
| 944 | 722 | 632 | 632 | 536 |
| 992 | 770 | 680 | 680 | 584 |
| 1040 | 818 | 728 | 728 | 632 |
| 1088 | 866 | 776 | 776 | 680 |
| 1136 | 914 | 824 | 824 | 728 |
| 1184 | 962 | 872 | 872 | 776 |
| 1280 | 1058 | 968 | 968 | 872 |
| 1328 | 1106 | 1016 | 1016 | 920 |
| 1376 | 1154 | 1064 | 1064 | 968 |
| 1424 | 1202 | 1112 | 1112 | 1016 |
| 1472 | 1250 | 1160 | 1160 | 1064 |
| 1520 | 1298 | 1208 | 1208 | 1112 |
| 1568 | 1346 | 1256 | 1256 | 1160 |
| 1664 | 1442 | 1352 | 1352 | 1256 |
| 1712 | 1490 | 1400 | 1400 | 1304 |
| 1760 | 1538 | 1448 | 1448 | 1352 |
| 1808 | 1586 | 1496 | 1496 | 1400 |
| 1856 | 1634 | 1544 | 1544 | 1448 |
| 1904 | 1682 | 1592 | 1592 | 1496 |
| 1952 | 1730 | 1640 | 1640 | 1544 |
| 2048 | 1826 | 1736 | 1736 | 1640 |
| 2096 | 1874 | 1784 | 1784 | 1688 |
| 2144 | 1922 | 1832 | 1832 | 1736 |
| 2192 | 1970 | 1880 | 1880 | 1784 |
| 2240 | 2018 | 1928 | 1928 | 1832 |
| 2288 | 2066 | 1976 | 1976 | 1880 |
| 2336 | 2114 | 2024 | 2024 | 1928 |
| 2432 | 2210 | 2120 | 2120 | 2024 |
| 2480 | 2258 | 2168 | 2168 | 2072 |
| 2528 | 2306 | 2216 | 2216 | 2120 |
| 2576 | 2354 | 2264 | 2264 | 2168 |
| 2624 | 2402 | 2312 | 2312 | 2216 |
| 2672 | 2450 | 2360 | 2360 | 2264 |
| 2720 | 2498 | 2408 | 2408 | 2312 |
| 2816 | 2594 | 2504 | 2504 | 2408 |
| 2864 | 2642 | 2552 | 2552 | 2456 |
| 2912 | 2690 | 2600 | 2600 | 2504 |
| 2960 | 2738 | 2648 | 2648 | 2552 |
| 3008 | 2786 | 2696 | 2696 | 2600 |
| 3056 | 2834 | 2744 | 2744 | 2648 |
| 3104 | 2882 | 2792 | 2792 | 2696 |
| 3200 | 2978 | 2888 | 2888 | 2792 |
| 3248 | 3026 | 2936 | 2936 | 2840 |
| 3296 | 3074 | 2984 | 2984 | 2888 |
| 3344 | 3122 | 3032 | 3032 | 2936 |
| 3392 | 3170 | 3080 | 3080 | 2984 |
| 3440 | 3218 | 3128 | 3128 | 3032 |
| 3488 | 3266 | 3176 | 3176 | 3080 |
| 3584 | 3362 | 3272 | 3272 | 3176 |

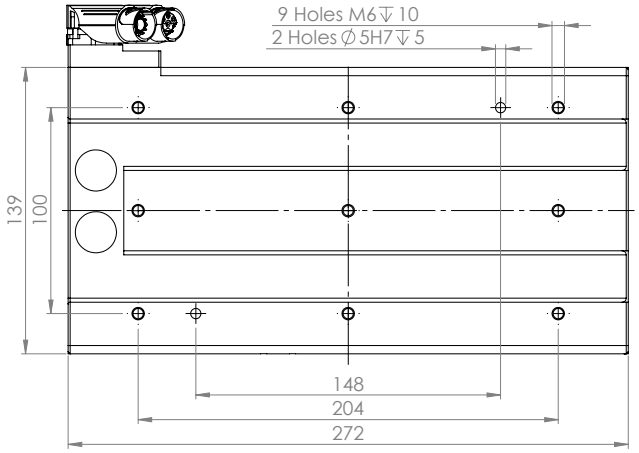
# MLE 3
## MOUNTING INTERFACE

### MLE 3S - IT02X



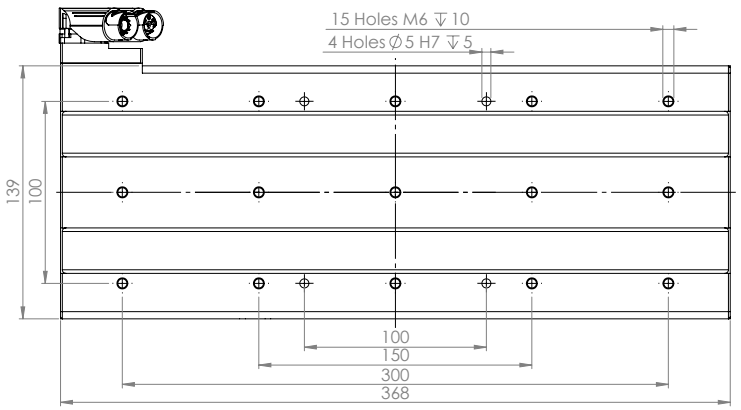

Tolerances for the dimension 70 mm and 100 mm is ± 0.025 mm

### MLE 3R - IT02X / MLE 3S - IT05X




Tolerances for the dimension 100 mm and 146 mm is ± 0.025 mm

### MLE 3R - IT05X / MLE 3S - IT07X




Tolerance for the dimension 100 mm is ± 0.025 mm

# MLE 3
## CONNECTORS OPTIONS

- **Side connectors Y-TEC base (00)**

- **Side connectors M23 (01)**

# MLE 3
## ORDER CODE

### Axis model
MLE 3 - Linear unit with iron core linear motor.

**MLE3□ - IT□□□ - □□□□□ - □□A - T154B - □ - SXX - □□□□□**

### Axis size
□
**Size:**
**S** - Standard carrige
**R** - Reinforced carrige

### Motor / Carriage model
**Motor type:**
**IT** - Iron core motor
**XX** - Without motor

□□
**Peak force, N (aircooled) [1]:**
MLE3
- **02** - 240N
- **05** - 480N
- **07** - 720N

□
**Motor winding:**
**N** - Standard motor
**H** - High-speed motor
**I** - Low voltage motor

### Encoder
□□□□□
**Incremental:**
**0A04C** - Inductive incremental 1Vpp 40 µm
**0A41U** - Inductive incremental TTL 1 µm

### Connectors
□□
**Typ:**
**00A** - Side connectors Y-TEC base
**01A** - Side connectors M23

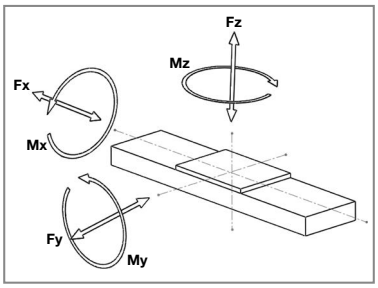
### Lubrication
□
**Grease type:**
**S** - Standard
**C** - Clean room
**F** - Food grade
**L** - Low temperature

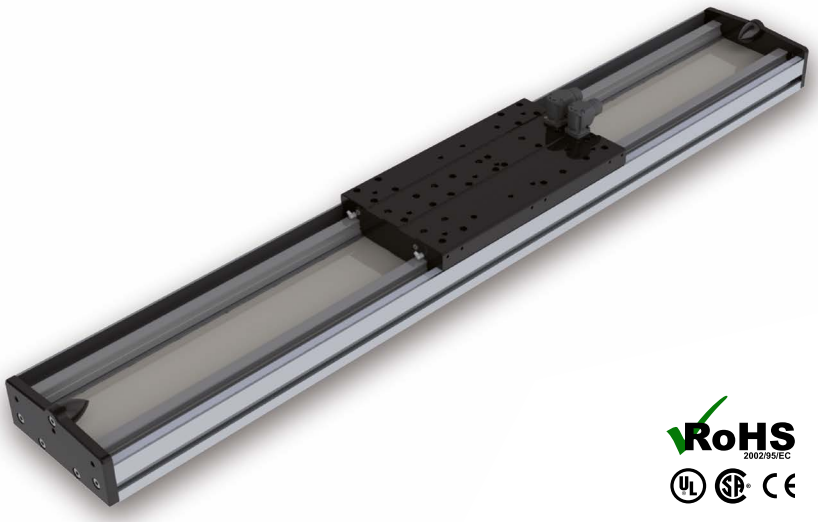
### Length (mm) [2]

[1] *Depending on the application and ambient temperature*
[2] *Length on page 34*

# MLE 5
## LINEAR MOTOR STAGE

Maximum speed: 8 m/s
Maximum acceleration: 157 m/s$^2$
Maximum length without joints: up to 6000 mm
Operating voltage: 600 Vdc, max. 900 Vdc



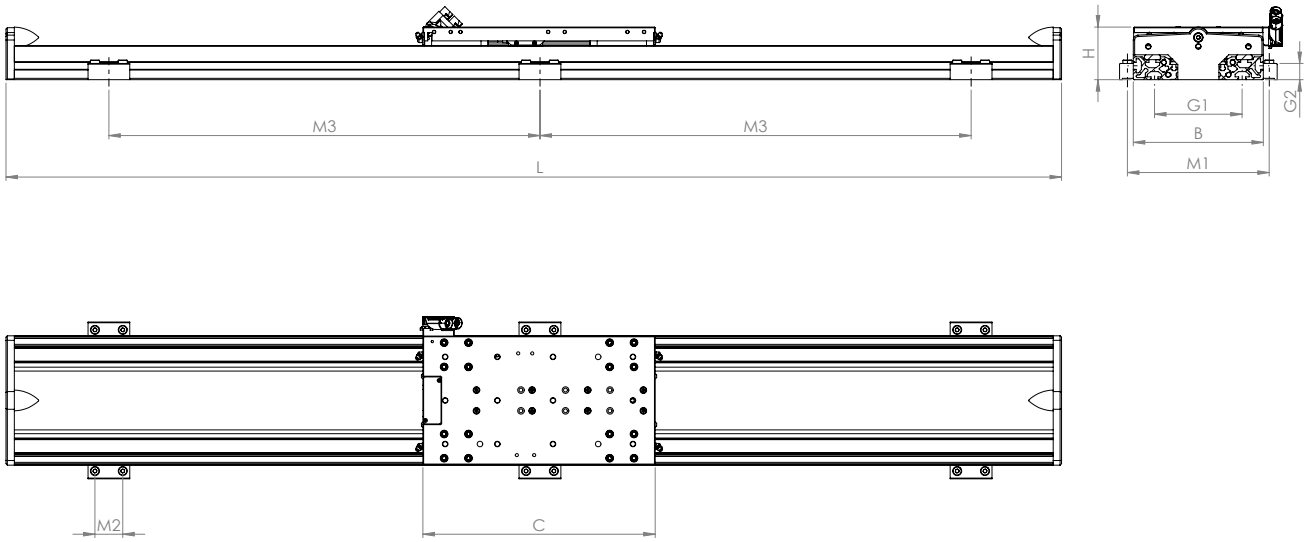



## Mechanical specifications

| *Size* | | S | R | S | R | S | R | S |
|---|---|---|---|---|---|---|---|---|
| *Carriage model* | | **IT09X** | | **IT11X** | | **IT13X** | | **IT18X** |
| *C - Carriage length* | mm | 284 | 334 | 334 | 376 | 376 | 508 | 508 |
| *B - Width* | mm | 187 | | 187 | | 187 | | 187 |
| *H - Height* | mm | 76 | | 76 | | 76 | | 76 |
| *G1 - Distance between profile base grooves* | mm | 126 | | 126 | | 126 | | 126 |
| *G2 - Height of profile lateral grooves* | mm | 20 | | 20 | | 20 | | 20 |
| *M1 - Distance between fixation clamps boreholes* [3] | mm | 204 | | 204 | | 204 | | 204 |
| *M2 - Distance between fixation clamp boreholes* [3] | mm | 40 | | 40 | | 40 | | 40 |
| *M3 - Max. distance between fixation clamps* [3] | mm | 500 | | 500 | | 500 | | 500 |
| **Linear motor features** | | | | | | | | |
| *Maximum speed at 560Vdc* | m/s | 8 | | 8 | | 8 | | 8 |
| *Recommended speed* [1] | m/s | 3 | | 3 | | 3 | | 3 |
| *Continuous force aircooled* [2] | N | 400 | | 500 | | 600 | | 800 |
| *Peak force* | N | 900 | | 1125 | | 1350 | | 1800 |
| *Nominal current* | Arms | 4,5 | | 4,7 | | 6,8 | | 9,0 |
| *Peak current* | Arms | 10,0 | | 10,4 | | 15,0 | | 20,0 |
| **Guidance features (max.)** | | | | | | | | |
| *Fy* | N | 3000 | | 3000 | 4500 | 4500 | | 4500 |
| *Fz* | N | 2000 | | 2000 | 3000 | 3000 | | 3000 |
| *Mx* | Nm | 450 | | 450 | 750 | 750 | | 750 |
| *My* | Nm | 700 | 750 | 750 | 1000 | 1000 | 1500 | 1500 |
| *Mz* | Nm | 700 | 750 | 750 | 1000 | 1000 | 1500 | 1500 |
| For the sum of all forces and moments: $\frac{Fye}{Fy} + \frac{Fze}{Fz} + \frac{Mxe}{Mx} + \frac{Mye}{My} + \frac{Mze}{Mz} < 1$ (Xxe = calculated value) (Xx = max. catalogue value) | | | | | | | | |
| **Structure profile features** | | | | | | | | |
| *Geometrical moments of inertia Lx* | mm$^4$ | 2,7x10$^5$ | | 2,7x10$^5$ | | 2,7x10$^5$ | | 2,7x10$^5$ |
| *Geometrical moments of inertia Ly* | mm$^4$ | 86,82x10$^5$ | | 86,82x10$^5$ | | 86,82x10$^5$ | | 86,82x10$^5$ |
| *Elastic module* | N/mm$^2$ | 70000 | | 70000 | | 70000 | | 70000 |
| **Weight** | | | | | | | | |
| *Weight of carriage* | kg | 6,4 | 6,8 | 7,4 | 8,5 | 9,1 | 10,0 | 11,4 |
| *Weight of 100mm* | kg | 1,7 | | 1,7 | | 1,7 | | 1,7 |

[1] *Recommended speed for a lifetime >30000 km*
[2] *Depending on the application and ambient temperature*
[3] *Sinadrives's accessory*

# MLE 5
## TECHNICAL DESCRIPTION




*Drawing for reference only. Please ask for ready 3D files.*

# MLE 5
## PRECISION & ACCURACY INFORMATION

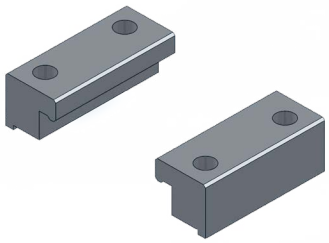
Straightness and flatness: ± 0.05 mm / 300 mm (fixed with mounting set) [4)]
Repeatability of measuring system: ± 1 µm
Repeatability of linear unit: ± 5 µm
Standard accuracy absolute: ± 15 µm / 1000 mm (in the movement direction)
High accuracy absolute: ± 5 µm / 1000 mm (in the movement direction)

*[4)] Can be improved with leveling plates*

### Mounting set (2 un.)

Ref. AC03-0501

Tightening torque 14 Nm (steel)
Tightening torque 20 Nm (aluminum)



### T-slot nuts set (10 un.)

Ref. KTM0X

**KTM05**

**M5**

**KTM06**

**M6**

**KTM08**

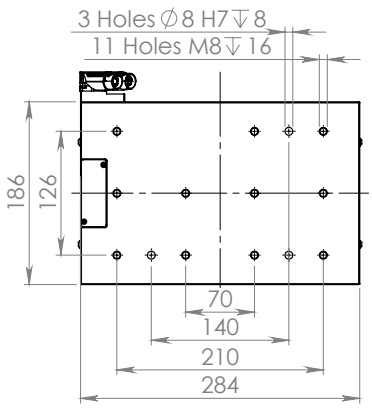
**M8**

# MLE 5
## CHOICE OF STROKE

| Size | 5S | 5R | 5S | 5R | 5S | 5R | 5S |
|---|---|---|---|---|---|---|---|
| Carriage model | IT09X | | IT11X | | IT13X | | IT18X |
| Length, L (mm) | Stroke | | | | | | |
| 00462 | 84 | 34 | 34 | - | - | - | - |
| 00558 | 180 | 130 | 130 | 88 | 88 | - | - |
| 00654 | 276 | 226 | 226 | 184 | 184 | 52 | 52 |
| 00750 | 372 | 322 | 322 | 280 | 280 | 148 | 148 |
| 00846 | 468 | 418 | 418 | 376 | 376 | 244 | 244 |
| 00942 | 564 | 514 | 514 | 472 | 472 | 340 | 340 |
| 01038 | 660 | 610 | 610 | 568 | 568 | 436 | 436 |
| 01134 | 756 | 706 | 706 | 664 | 664 | 532 | 532 |
| 01230 | 852 | 802 | 802 | 760 | 760 | 628 | 628 |
| 01326 | 948 | 898 | 898 | 856 | 856 | 724 | 724 |
| 01422 | 1044 | 994 | 994 | 952 | 952 | 820 | 820 |
| 01518 | 1140 | 1090 | 1090 | 1048 | 1048 | 916 | 916 |
| 01614 | 1236 | 1186 | 1186 | 1144 | 1144 | 1012 | 1012 |
| 01710 | 1332 | 1282 | 1282 | 1240 | 1240 | 1108 | 1108 |
| 01806 | 1428 | 1378 | 1378 | 1336 | 1336 | 1204 | 1204 |
| 01902 | 1524 | 1474 | 1474 | 1432 | 1432 | 1300 | 1300 |
| 01998 | 1620 | 1570 | 1570 | 1528 | 1528 | 1396 | 1396 |
| 02094 | 1716 | 1666 | 1666 | 1624 | 1624 | 1492 | 1492 |
| 02190 | 1812 | 1762 | 1762 | 1720 | 1720 | 1588 | 1588 |
| 02286 | 1908 | 1858 | 1858 | 1816 | 1816 | 1684 | 1684 |
| 02382 | 2004 | 1954 | 1954 | 1912 | 1912 | 1780 | 1780 |
| 02478 | 2100 | 2050 | 2050 | 2008 | 2008 | 1876 | 1876 |
| 02574 | 2196 | 2146 | 2146 | 2104 | 2104 | 1972 | 1972 |
| 02670 | 2292 | 2242 | 2242 | 2200 | 2200 | 2068 | 2068 |
| 02766 | 2388 | 2338 | 2338 | 2296 | 2296 | 2164 | 2164 |
| 02862 | 2484 | 2434 | 2434 | 2392 | 2392 | 2260 | 2260 |
| 02958 | 2580 | 2530 | 2530 | 2488 | 2488 | 2356 | 2356 |
| 03054 | 2676 | 2626 | 2626 | 2584 | 2584 | 2452 | 2452 |
| 03150 | 2772 | 2722 | 2722 | 2680 | 2680 | 2548 | 2548 |
| 03246 | 2868 | 2818 | 2818 | 2776 | 2776 | 2644 | 2644 |
| 03342 | 2964 | 2914 | 2914 | 2872 | 2872 | 2740 | 2740 |
| 03438 | 3060 | 3010 | 3010 | 2968 | 2968 | 2836 | 2836 |
| 03534 | 3156 | 3106 | 3106 | 3064 | 3064 | 2932 | 2932 |
| 3630 | 3252 | 3202 | 3202 | 3160 | 3160 | 3028 | 3028 |
| 3726 | 3348 | 3298 | 3298 | 3256 | 3256 | 3124 | 3124 |
| 3822 | 3444 | 3394 | 3394 | 3352 | 3352 | 3220 | 3220 |
| 3918 | 3540 | 3490 | 3490 | 3448 | 3448 | 3316 | 3316 |
| 4014 | 3636 | 3586 | 3586 | 3544 | 3544 | 3412 | 3412 |
| 4110 | 3732 | 3682 | 3682 | 3640 | 3640 | 3508 | 3508 |
| 4206 | 3828 | 3778 | 3778 | 3736 | 3736 | 3604 | 3604 |
| 4302 | 3924 | 3874 | 3874 | 3832 | 3832 | 3700 | 3700 |
| 4398 | 4020 | 3970 | 3970 | 3928 | 3928 | 3796 | 3796 |
| 4494 | 4116 | 4066 | 4066 | 4024 | 4024 | 3892 | 3892 |
| 4590 | 4212 | 4162 | 4162 | 4120 | 4120 | 3988 | 3988 |
| 4686 | 4308 | 4258 | 4258 | 4216 | 4216 | 4084 | 4084 |
| 4782 | 4404 | 4354 | 4354 | 4312 | 4312 | 4180 | 4180 |
| 4878 | 4500 | 4450 | 4450 | 4408 | 4408 | 4276 | 4276 |
| 4974 | 4596 | 4546 | 4546 | 4504 | 4504 | 4372 | 4372 |
| 5070 | 4692 | 4642 | 4642 | 4600 | 4600 | 4468 | 4468 |
| 5166 | 4788 | 4738 | 4738 | 4696 | 4696 | 4564 | 4564 |
| 5262 | 4884 | 4834 | 4834 | 4792 | 4792 | 4660 | 4660 |
| 5358 | 4980 | 4930 | 4930 | 4888 | 4888 | 4756 | 4756 |
| 5454 | 5076 | 5026 | 5026 | 4984 | 4984 | 4852 | 4852 |
| 5550 | 5172 | 5122 | 5122 | 5080 | 5080 | 4948 | 4948 |
| 5646 | 5268 | 5218 | 5218 | 5176 | 5176 | 5044 | 5044 |
| 5742 | 5364 | 5314 | 5314 | 5272 | 5272 | 5140 | 5140 |
| 5838 | 5460 | 5410 | 5410 | 5368 | 5368 | 5236 | 5236 |
| 5934 | 5556 | 5506 | 5506 | 5464 | 5464 | 5332 | 5332 |
| 6030 | 5652 | 5602 | 5602 | 5560 | 5560 | 5428 | 5428 |

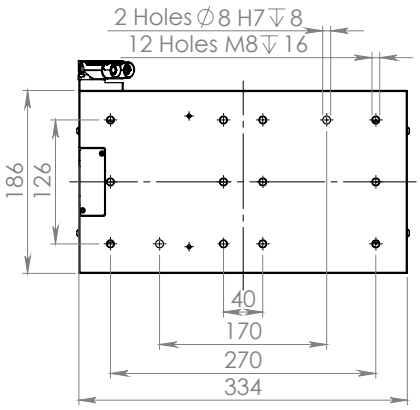
# MLE 5
## MOUNTING INTERFACE

### MLE 5S - IT09X



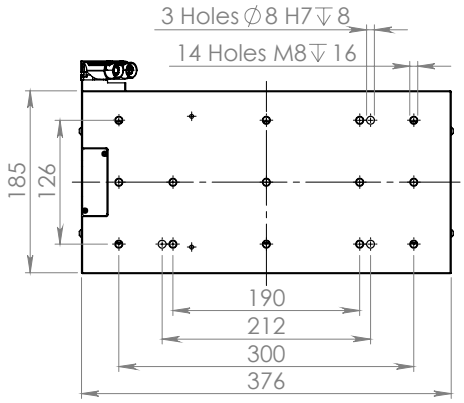

Tolerances for the dimension 126 mm and 140 mm is ± 0.025 mm

### MLE 5S - IT11X / MLE5R - IT09X



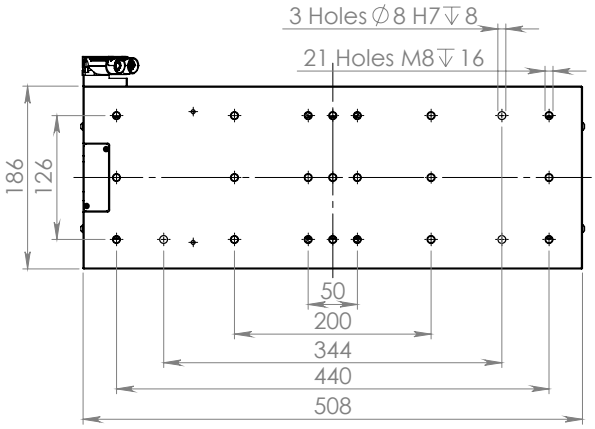

Tolerances for the dimension 126 mm and 170 mm is ± 0.025 mm

### MLE 5S - IT13X / MLE5R - IT11X




Tolerances for the dimension 126 mm and 212 mm is ± 0.025 mm

### MLE 5S - IT18X / MLE5R - IT13X

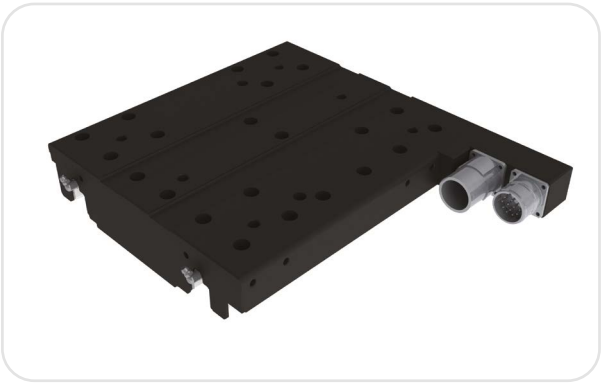



Tolerances for the dimension 126 mm and 344 mm is ± 0.025 mm

# MLE 5
## CONNECTORS OPTIONS

- **Side connectors Y-TEC base (00)**

- **Side connectors M23 (01)**



- **Straight connectors M23 up (07)**

# MLE 5
## ORDER CODE

### Axis model
MLE 5 - Linear unit with iron core linear motor.

**MLE5□ - IT□□□ - □□□□□ - □□A - T25□B - □ - SXX - □□□□□**

### Axis size
□
**Size:**
**S** - Standard carrige
**R** - Reinforced carrige

### Motor / Carriage model
**Motor type:**
**IT** - Ironcore motor
**XX** - Without motor

□□ **Peak force, N (aircooled) [1]:**
**MLE 5**
- **09** - 900N
- **11** - 1150N
- **13** - 1350N
- **18** - 1800N

□ **Motor winding:**
**N** - Standard motor
**H** - High-speed motor

### Encoder
□□□□□
**Incremental:**
**0A04C** - Inductive incremental 1Vpp 40 µm
**0A41U** - Inductive incremental TTL 1 µm

**Absolute:**
**3AE2H** - Inductive absolute EnDat2.2, 0.25 µm
**3AE1S** - Inductive absolute EnDat2.2, 0.1 µm + Safety
**3AD1S** - Inductive absolute DriveCliq 0.1 µm + Safety

### Connectors
□□
**Typ:**
**00A** - Side connectors Y-TEC base [3]
**01A** - Side connectors M23
**07A** - Straight connectors M23 up

### Guiding
□
**Number of blocks:**
**4** - 4 Blocks
**6** - 6 Blocks (only IT13X and IT18X)

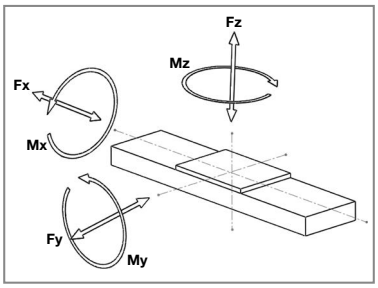
### Lubrication
□
**Grease type:**
**S** - Standard
**C** - Clean room
**F** - Food grade
**L** - Low temperature

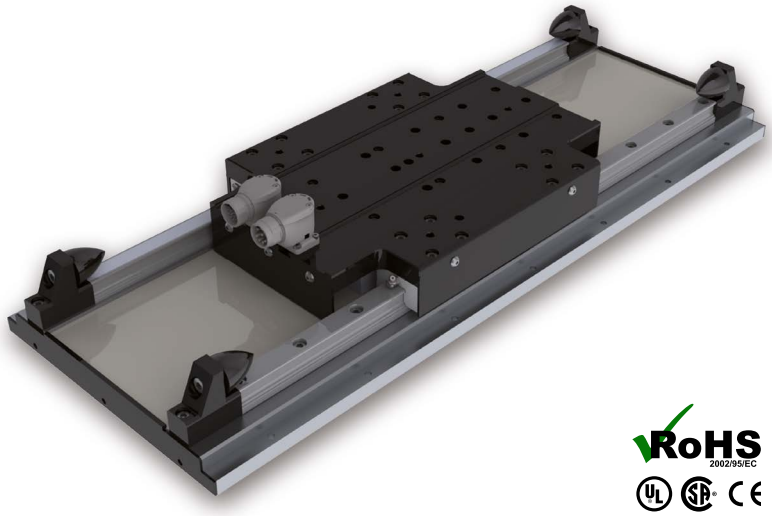
### Length (mm) [2]

*[1] Depending on the application and ambient temperature*
*[2] Lenght on page 40*
*[3] Not avaible for motors IT13X and IT18X*

# MLE 7
## LINEAR MOTOR STAGE

Repeatability of measuring system: ± 1 µm
Repeatability of linear unit: ± 5 µm
Maximum speed: 6 m/s
Maximum acceleration: 186 m/s$^2$
Maximum length without joints: up to 6000 mm
Operating voltage: 600 Vdc, max. 900 Vdc



## Mechanical specifications

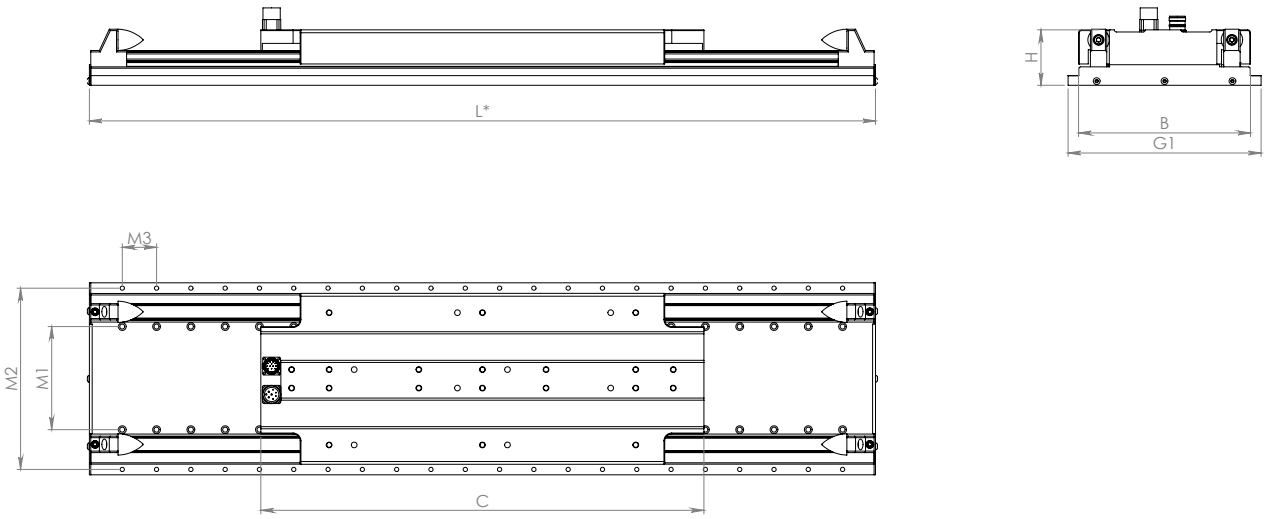
| *Size* | | R | S | R | S |
|---|---|---|---|---|---|
| *Carriage model* | | **IT18X** | **IT22X** | | **IT45X** |
| *C - Carriage length* | mm | 342 | 342 | 620 | 620 |
| *H - Height* | mm | 78 | 78 | | 78 |
| *G1 - Width* | mm | 270 | 270 | | 270 |
| *M1 - Distance between fixation holes* [3] | mm | 145 | 145 | | 145 |
| *M2 - Distance between fixation holes* [3] | mm | 255 | 255 | | 255 |
| *M3 - Distance between fixation holes* [3] | mm | 100 | 100 | | 100 |
| **Linear motor features** | | | | | |
| *Maximum speed at 560Vdc* | m/s | 6 | 6 | | 6 |
| *Recommended speed* [1] | m/s | 3 | 3 | | 3 |
| *Continuous force aircooled* [2] | N | 400 | 500 | 1000 | 1000 |
| *Peak force* | N | 1800 | 2250 | | 4500 |
| *Nominal current* | Arms | 4,1 | 4,2 | 8,5 | 8,5 |
| *Peak current* | Arms | 10 | 10 | 20 | 20 |
| **Guidance features (max.)** | | | | | |
| *Fy* | N | 5000 | 5000 | 7000 | 7000 |
| *Fz* | N | 3000 | 3000 | 5000 | 5000 |
| *Mx* | Nm | 800 | 800 | 1100 | 1100 |
| *My* | Nm | 900 | 900 | 1300 | 1300 |
| *Mz* | Nm | 900 | 900 | 1300 | 1300 |

For the sum of all forces and moments: $\frac{Fye}{Fy} + \frac{Fze}{Fz} + \frac{Mxe}{Mx} + \frac{Mye}{My} + \frac{Mze}{Mz} < 1$ (Xxe = calculated value) (Xx = max. catalogue value)

| **Structure profile features** | | | | | |
|---|---|---|---|---|---|
| *Geometrical moments of inertia Lx* | mm$^4$ | 2,30x10$^5$ | 2,30x10$^5$ | | 2,30x10$^5$ |
| *Geometrical moments of inertia Ly* | mm$^4$ | 338,14x10$^5$ | 338,14x10$^5$ | | 338,14x10$^5$ |
| *Elastic module* | N/mm$^2$ | 70000 | 70000 | | 70000 |
| **Weight** | | | | | |
| *Weight of carriage* | kg | 9,8 | 11,1 | 14,2 | 19,9 |
| *Weight of 100mm* | kg | 3,0 | 3,0 | | 3,0 |

[1] *Recommended speed for a lifetime >30000 km*
[2] *Depending on the application and ambient temperature*
[3] *Sinadrives's accessory*

# MLE 7
## TECHNICAL DESCRIPTION




*Drawing for reference only. Please ask for ready 3D files.*

# MLE 7
## PRECISION & ACCURACY DATA

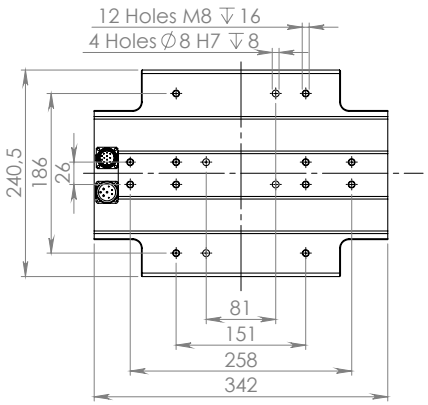
Straightness and flatness: ± 0.025 mm / 300 mm
Repeatability of measuring system: ± 0.5 µm
Repeatability of linear unit: ± 3 µm
Standard accuracy absolute: ± 15 µm / 1000 mm (in the movement direction)
High accuracy absolute: ± 5 µm / 1000 mm (in the movement direction)

# MLE 7
## CHOICE OF STROKE

| Size | 7R | 7S | 7R | 7S |
|---|---|---|---|---|
| Carriage model | IT18X | | IT22X | IT45X |
| Length, L (mm) | | Stroke | | |
| 00534 | 146 | 146 | - | - |
| 00726 | 338 | 338 | 60 | 60 |
| 00822 | 434 | 434 | 156 | 156 |
| 00918 | 530 | 530 | 252 | 252 |
| 01014 | 626 | 626 | 348 | 348 |
| 01110 | 722 | 722 | 444 | 444 |
| 01206 | 818 | 818 | 540 | 540 |
| 01302 | 914 | 914 | 636 | 636 |
| 01398 | 1010 | 1010 | 732 | 732 |
| 01494 | 1106 | 1106 | 828 | 828 |
| 01590 | 1202 | 1202 | 924 | 924 |
| 01686 | 1298 | 1298 | 1020 | 1020 |
| 01782 | 1394 | 1394 | 1116 | 1116 |
| 01878 | 1490 | 1490 | 1212 | 1212 |
| 01974 | 1586 | 1586 | 1308 | 1308 |
| 02070 | 1682 | 1682 | 1404 | 1404 |
| 02166 | 1778 | 1778 | 1500 | 1500 |
| 02262 | 1874 | 1874 | 1596 | 1596 |
| 02358 | 1970 | 1970 | 1692 | 1692 |
| 02454 | 2066 | 2066 | 1788 | 1788 |
| 02646 | 2258 | 2258 | 1980 | 1980 |
| 02742 | 2354 | 2354 | 2076 | 2076 |
| 02838 | 2450 | 2450 | 2172 | 2172 |
| 02934 | 2546 | 2546 | 2268 | 2268 |
| 03030 | 2642 | 2642 | 2364 | 2364 |
| 03126 | 2738 | 2738 | 2460 | 2460 |
| 03222 | 2834 | 2834 | 2556 | 2556 |
| 03318 | 2930 | 2930 | 2652 | 2652 |
| 03414 | 3026 | 3026 | 2748 | 2748 |
| 03510 | 3122 | 3122 | 2844 | 2844 |
| 03606 | 3218 | 3218 | 2940 | 2940 |
| 03702 | 3314 | 3314 | 3036 | 3036 |
| 03798 | 3410 | 3410 | 3132 | 3132 |
| 03894 | 3506 | 3506 | 3228 | 3228 |
| 03990 | 3602 | 3602 | 3324 | 3324 |
| 04086 | 3698 | 3698 | 3420 | 3420 |
| 04182 | 3794 | 3794 | 3516 | 3516 |
| 04278 | 3890 | 3890 | 3612 | 3612 |

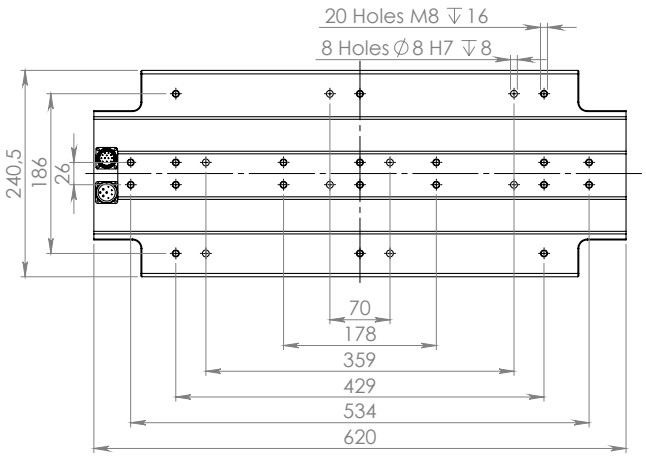
# MLE 7
## MOUNTING INTERFACE

### MLE 7R - IT18X / MLE 7S - IT22X




Tolerances for the dimension 81 mm and 186 mm is ± 0.025 mm

### MLE 7R - IT22X / MLE 7S - IT45X




Tolerances for the dimension 26 mm, 70 mm, 186 mm and 359 mm is ± 0.025 mm

# MLE 7
## CONNECTORS OPTIONS

- **BackSide connectors M23 (01)**

- **Straight connectors M23 up (07)**

# MLE 7
## ORDER CODE

### Axis model
MLE 7 - Linear unit with iron core linear motor.

**MLE7□ - IT□□□ - □□□□□ - □□A - T25□□ - □ - SXX - □□□□□**

### Axis size
□
**Size:**
**S** - Standard carrige
**R** - Reinforced carrige

### Motor / Carriage model
**Motor type:**
**IT** - Ironcore motor
**XX** - Without motor

□□ **Peak force, N (aircooled) [1]:**
**MLE 7**
- **18** - 1800N
- **22** - 2250N
- **45** - 4500N

□ **Motor winding:**
**N** - Standard motor
**H** - High-speed motor

### Encoder
□□□□□
**Incremental:**
**0A04C** - Inductive incremental 1Vpp 40 µm
**0A41U** - Inductive incremental TTL 1 µm

**Absolute:**
**3AE2H** - Inductive absolute EnDat2.2, 0.25 µm
**3AE1S** - Inductive absolute EnDat2.2, 0.1 µm + Safety
**3AD1S** - Inductive absolute DriveCliq 0.1 µm + Safety

### Connectors
□□
**Typ:**
**01A** - BackSide connectors M23
**07A** - Straight connectors M23 up

### Guiding
□ **Number of blocks:**
**4** - 4 Blocks
**6** - 6 Blocks (only IT45X)

□ **Block type:**
**A** - With caged balls
**B** - Without caged balls

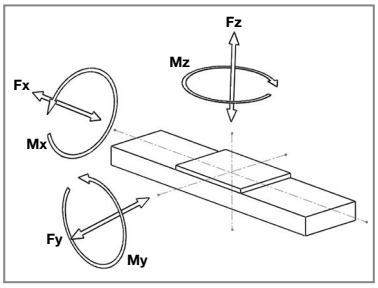
### Lubrication
□
**Grease type:**
**S** - Standard
**C** - Clean room
**F** - Food grade
**L** - Low temperature

### Length (mm) [2]

[1] *Depending on the application and ambient temperature*
[2] *Length on page 46*

# MLZ 2
## LINEAR MOTOR STAGE

Maximum speed: 36 m/s
Maximum acceleration: 203 m/s$^2$
Maximum stroke: up to 286 mm
Maximum length without joints: up to 696 mm
Operating voltage: 600 Vdc, max. 900 Vdc

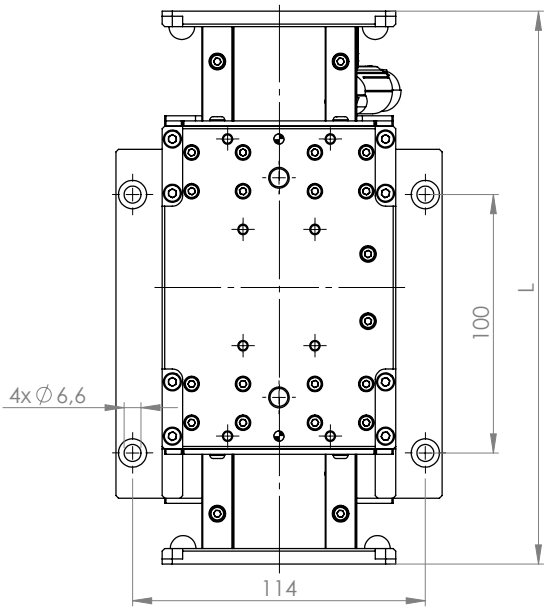


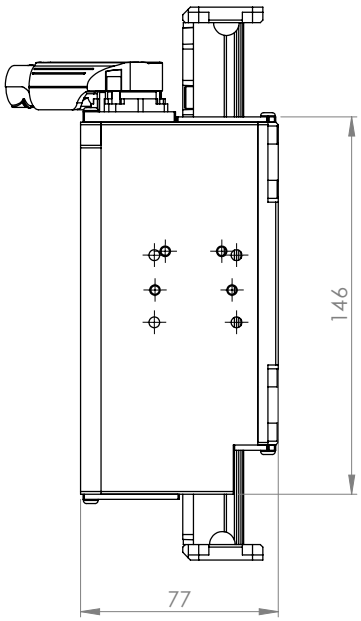

## Mechanical specifications

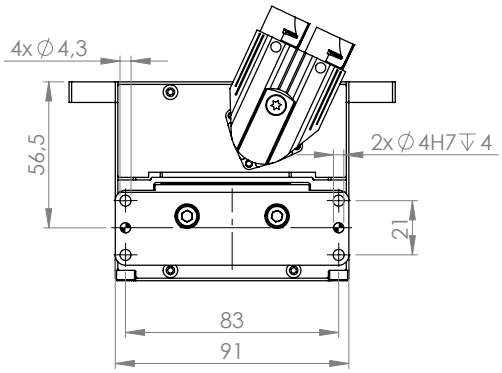
| *Size* | | R | S |
|---|---|---|---|
| *Carriage model* | | **IT01X** | **IT02X** |
| **Linear motor features** | | | |
| *Maximum speed at 560Vdc* | m/s | 36 | 36 |
| *Recommended speed* [1] | m/s | 3 | 3 |
| *Continuous force aircooled* [2] | N | 55 | 105 |
| *Peak force Fxp* | N | 120 | 240 |
| *Nominal current* | Arms | 1,5 | 3,0 |
| *Peak current* | Arms | 3,1 | 6,2 |
| **Guidance features** | | | |
| *Fy* | N | 300 | 300 |
| *Fz* | N | 150 | 150 |
| *Mx* | Nm | 95 | 95 |
| *My* | Nm | 160 | 160 |
| *Mz* | Nm | 160 | 160 |
| For the sum of all forces and moments: $\frac{Fye}{Fy} + \frac{Fze}{Fz} + \frac{Mxe}{Mx} + \frac{Mye}{My} + \frac{Mze}{Mz} < 1$ (Xxe = calculated value) (Xx = max. catalogue value) | | | |
| **Structure profile features** | | | |
| *Geometrical moments of inertia Lx* | mm$^4$ | 0,55x10$^4$ | 0,55x10$^4$ |
| *Geometrical moments of inertia Ly* | mm$^4$ | 16,27x10$^4$ | 16,27x10$^4$ |
| *Elastic module* | N/mm$^2$ | 70000 | 70000 |

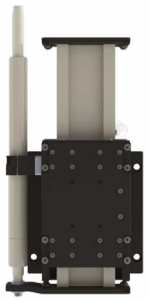
[1] *Recommended speed for a lifetime > 30.000 Km*
[2] *Depending on the application and ambient temperature*

# MLZ 2
## TECHNICAL DESCRIPTION



**Weight Compensation**
*Magnetic*

*Drawing for reference only. Please ask for ready 3D files.*

## Choice of stroke

| **Linear motor stage** | | **MLZ2R-II01X / MLZ2S-II02X** | | | | | |
|---|---|---|---|---|---|---|---|
| *Length* | mm | 00214 | 00262 | 00310 | 00358 | 00406 | 00454 |
| *Stroke* [1] | mm | 46 | 94 | 142 | 190 | 238 | 286 |
| *Carriage length, C* | mm | | | 156 | | | |

## Weight

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Carriage weight* | kg | | | 2,5 | | | |
| *Runner Weight* | kg | 1,03 | 1,27 | 1,50 | 1,73 | 1,96 | 2,19 |
| *Total weight* | kg | 3,53 | 3,77 | 4 | 4,23 | 4,46 | 4,69 |
| *Magnetic weight compensation 03* | kg | 0,08 | 0,18 | 0,29 | 0,29 | - | - |
| *Magnetic weight compensation 04, 05, 06* | kg | 0,44 | 0,88 | 1,32 | 1,32 | 1,75 | 1,75 |

## Weight compensation

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Magnetic* | Typ | D22050 | D22130 | D22210 | D22210 | - | - |
| *Maximum Force* | N | 12 | 9 | 7 | 3 | - | - |
| *Order Code* | D22 | -00214 | -00262 | -00310 | -00358 | - | - |
| *Magnetic* | Typ | D40050 | D40130 | D40200 | D40200 | D40275 | D40275 |
| *Maximum Force* | N | 30 | 27 | 25 | 22 | 20 | 17 |
| *Order Code* | D40 | -00214 | -00262 | -00310 | -00358 | -00406 | -00454 |
| *Magnetic* | Typ | D50050 | D50130 | D50200 | D50200 | D50275 | D50275 |
| *Maximum Force* | N | 40 | 37 | 35 | 32 | 30 | 27 |
| *Order Code* | D50 | -00214 | -00262 | -00310 | -00358 | -00406 | -00454 |
| *Magnetic* | Typ | D60050 | D60130 | D60200 | D60200 | D60275 | D60275 |
| *Maximum Force* | N | 50 | 47 | 45 | 42 | 40 | 37 |
| *Order Code* | D60 | -00214 | -00262 | -00310 | -00358 | -00406 | -00454 |

[1] *Other stroke lengths are available under request*

# MLZ 2
## CONNECTORS OPTIONS

- **Side connectors 90º Y-TEC (00)**

- **Side connectors M23 upwards (03)**

# MLZ 2
## PRECISION & ACCURACY DATA

Straightness and flatness: ± 0.1 mm / 300 mm
Repeatability of measuring system: ± 0.5 µm
Repeatability of linear unit: ± 3 µm
Standard accuracy absolute: ± 15 µm / 1000 mm (in the movement direction)
High accuracy absolute: ± 5 µm / 1000 mm (in the movement direction)

# MLZ 2
## ORDER CODE

### Axis model
MLZ 2 - Linear unit with iron core linear motor.

**MLZ 2 - IT□□□ - □□□□□ - □□A - T124A - □ - □□□ - □□□□□**

### Motor / Carriage model
□□
**Peak force, N (aircooled) [1]:**
MLZ 2
- **01** - 120N
- **02** - 240N

□
**Motor winding:**
**N** - Standard motor
**H** - High-speed motor

### Encoder
□□□□□
**Incremental:**
**0A04C** - Inductive incremental 1Vpp 40 µm
**0A41U** - Inductive incremental TTL 1 µm
**1R04C** - Optical incremental 1Vpp 40 µm
**1R45G** - Optical incremental TTL 50 nm
**2R02M** - Magnetic incremental 1Vpp 2000 µm
**2R41U** - Magnetic incremental TTL 1 µm

**Absolute:**
**3AE2H** - Inductive absolute EnDat2.2, 0.25 µm
**3AE1S** - Inductive absolute EnDat2.2, 0.1 µm + Safety
**3AD1S** - Inductive absolute DriveCliq 0.1 µm + Safety
**4HE1H** - Optical absolute EnDat2.2, 0.1 µm
**4HE1S** - Optical absolute EnDat2.2, 0.1 µm + Safety
**4HD1S** - Optical absolute Drivecliq 0.1 µm + Safety
**5SH1U** - Magnetic absolute Hiperface 40 µm
**5LP1U** - Magnetic absolute Panasonic 1 µm

### Connectors
□□
**Typ:**
**00A** - Side connectors Y-TEC base
**03A** - Side connectors M23 upwards

### Lubrication
□
**Grease type:**
**S** - Standard
**C** - Clean room
**F** - Food grade
**L** - Low temperature

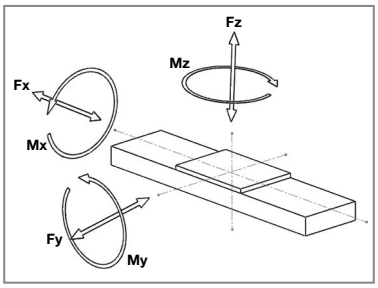
### Upgrades
□□□
**Options:**
**SXX** - Standard
**DXX** - Magspring

### Length (mm) [2]

[1] *Depending on the application and ambient temperature*
[2] *Length on page 51*

# MLZ 5
## LINEAR MOTOR STAGE

Maximum speed: 7 m/s
Maximum acceleration: 380 m/s$^2$
Maximum length without joints: up to 1016 mm
Operating voltage: 600 Vdc, max. 900 Vdc




## Mechanical specifications

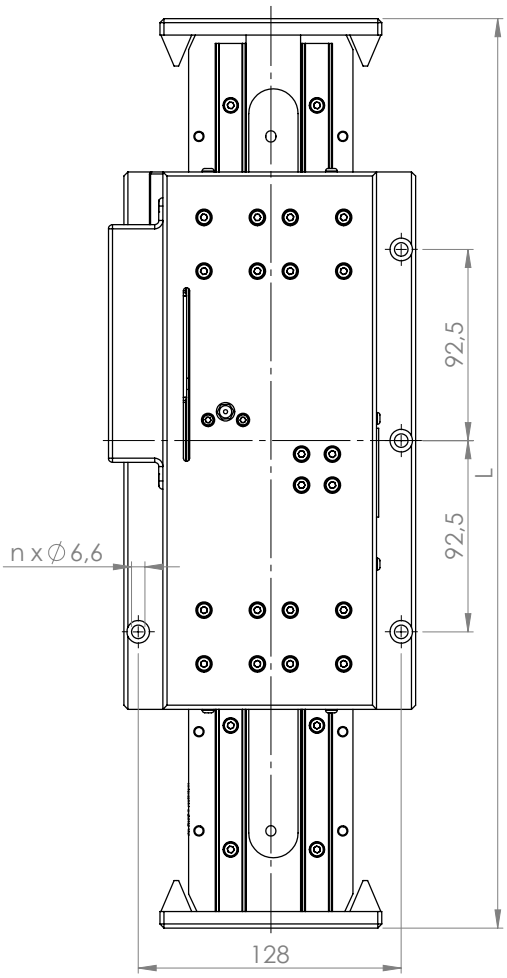
| *Size* | | Z5 | |
|---|---|---|---|
| *Carriage model* | | **IT09X** | **IT13X** |
| *C - Carriage length (mm)* | mm | 00260 | 00352 |
| **Linear motor** | | | |
| *Maximum speed at 560Vdc* | m/s | 8 | 8 |
| *Recommended speed* [1] | m/s | 3 | 3 |
| *Continuous force aircooled* [2] | N | 400 | 600 |
| *Peak force* | N | 900 | 1350 |
| *Nominal current* | Arms | 4,5 | 6,8 |
| *Peak current* | Arms | 13,1 | 19,6 |
| **Guidance features (max.)** | | | |
| *Fy* | N | 2250 | 2250 |
| *Fz* | N | 1500 | 1500 |
| *Mx* | Nm | 100 | 100 |
| *My* | Nm | 720 | 1180 |
| *Mz* | Nm | 215 | 360 |

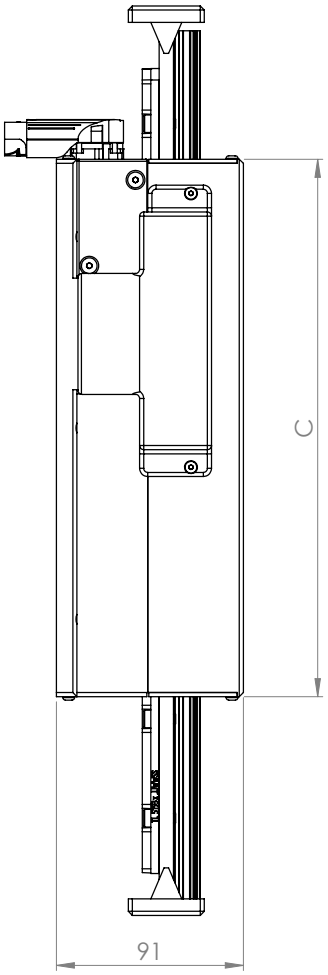
For the sum of all forces and moments: $\frac{Fye}{Fy} + \frac{Fze}{Fz} + \frac{Mxe}{Mx} + \frac{Mye}{My} + \frac{Mze}{Mz} < 1$ (Xxe = calculated value) (Xx = max. catalogue value)

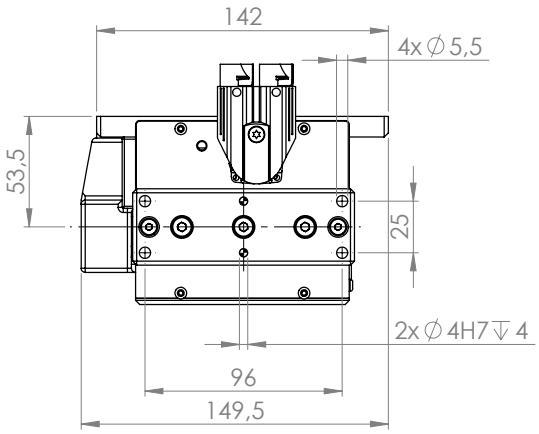
| **Structure profile features** | | | |
|---|---|---|---|
| *Geometrical moments of inertia Lx* | mm$^4$ | 3,15x10$^3$ | 3,15x10$^3$ |
| *Geometrical moments of inertia Ly* | mm$^4$ | 26x10$^4$ | 26x10$^4$ |
| *Elastic module* | N/mm$^2$ | 70000 | 70000 |
| **Weight** | | | |
| *Weight of carriage* | kg | 6,1 | 8,3 |
| *Weight of 100mm* | kg | 0,8 | 0,8 |

[1] *Recommended speed for a lifetime >30.000 km*
[2] *Depending on the application and ambient temperature*

# MLZ 5
## TECHNICAL DESCRIPTION




### Clamping

Electric Clamping

Pneumatic Clamping

*Drawing for reference only. Please ask for ready 3D files.*

## Available strokes

| **Length, L (mm)** | | |
|---|---|---|
| **Linear motor stage** | **MLZ5-IT09X** | **MLZ5-IT13X** |
| 344 | 38 | - |
| 440 | 134 | 42 |
| 536 | 230 | 138 |
| 632 | 326 | 234 |
| 728 | 422 | 330 |
| 824 | 518 | 426 |

## Mounting interface

| **Linear motor stage** | **MLZ5-IT09X** | **MLZ5-IT13X** |
|---|---|---|
| *n - Quantity of holes* | 6 | 8 |

## Clamping

| **Clamping** | **Kg** | **Additional weight Kg/100mm** |
|---|---|---|
| *Pneumatic Clamping (400 N)* | 0,35 | 0 |
| *Electric Clamping 1 (500 N)* | 1,75 | 0,6 |
| *Electric Clamping 2 (1300 N)* | 4,2 | 0,6 |

# MLZ 5
## CONNECTORS OPTIONS

**Angled connectors ± 90º Y-TEC (00)**

**Side connectors M23 (03)**

# MLZ 5
## PRECISION & ACCURACY DATA

Straightness and flatness: ± 0.1 mm / 300 mm
Repeatability of measuring system: ± 0.5 µm
Repeatability of linear unit: ± 3 µm
Standard accuracy absolute: ± 15 µm / 1000 mm (in the movement direction)
High accuracy absolute: ± 5 µm / 1000 mm (in the movement direction)

# MLZ 5
## ORDER CODE

### Axis model
MLZ 5 - Linear unit with iron core linear motor.

**MLZ 5 - IT□□□ - □□□□□ - □□A - T154□ - 00□ - □□□ - □□□□□**

### Motor / Carriage model
□□

**Peak force, N (aircooled) [1]:**

MLZ 5
- **09** - 900N
- **13** - 1350N

□

**Motor winding:**
- **N** - Standard motor
- **H** - High-speed motor

### Encoder
□□□□□

**Incremental:**
- **0A04C** - Inductive incremental 1Vpp 40 µm
- **0A41U** - Inductive incremental TTL 1 µm
- **1R04C** - Optical incremental 1Vpp 40 µm
- **1R45G** - Optical incremental TTL 50 nm
- **2R02M** - Magnetic incremental 1Vpp 2000 µm
- **2R41U** - Magnetic incremental TTL 1 µm

**Absolute:**
- **3AE2H** - Inductive absolute EnDat2.2, 0.25 µm
- **3AE1S** - Inductive absolute EnDat2.2, 0.1 µm + Safety
- **3AD1S** - Inductive absolute DriveCliq 0.1 µm + Safety
- **4HE1H** - Optical absolute EnDat2.2, 0.1 µm
- **4HE1S** - Optical absolute EnDat2.2, 0.1 µm + Safety
- **4HD1S** - Optical absolute Drivecliq 0.1 µm + Safety
- **5SH1U** - Magnetic absolute Hiperface 40 µm
- **5LP1U** - Magnetic absolute Panasonic 1 µm

### Connectors
□□

**Typ:**
- **00A** - Side connectors Y-TEC base [3]
- **03A** - Side connectors M23

### Guiding
□

**Block type:**
- **A** - With caged balls
- **B** - Without caged balls

### Lubrication
□

**Grease type:**
- **S** - Standard
- **C** - Clean room
- **F** - Food grade
- **L** - Low temperature

### Upgrades
□□□

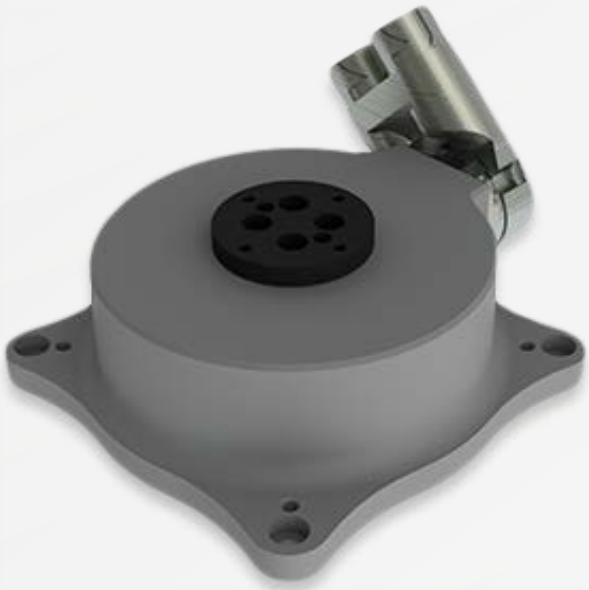
**Options:**
- **SXX** - Standard
- **FXX** - Pneumatic Clamping
- **E20** - Electric Clamping 550N
- **E40** - Electric Clamping 1300N

### Length (mm) [2]

[1] *Depending on the application and ambient temperature*
[2] *Length on page 55*
[3] *Not avaible for motor IT13X*

## Introduction

Explore our rotary table systems, designed with a direct-drive motor enclosed in durable aluminum. These systems include crossed-roller bearings, a high-precision encoder, and connectors. This complete assembly is ready for immediate connection to a servo drive, ensuring optimal performance.



## SINADRIVES'S ROTARY TABLE SYSTEMS MAIN FEATURES

**Reduced lead time**
of up to 2 weeks.

Reliable power and encoder cables for your **servodrive.**

Operating voltage **24-600Vdc**, brake voltage up to 900Vdc.

**3 encoder** technologies (inductive, magnetic or optical). Absolute or incremental with up to 50nm resolution.*

** Supported protocols: 1 Vpp (sin/cos), TTL, Endat 2.2, DriveCliq, BISS/C, SSI, Hiperface, Hiperface DSL, Panasonic, Fanuc, Mitsubishi & Yaskawa.*

# MRT
## ROTARY TABLE SYSTEMS

MRT020001

MRT020005

MRT030028

MRT040056

MRT060173

RoHS 2002/95/EC

CE

## Mechanical specifications

| *Size* | | MRT020001 | MRT020005 | MRT030028 | MRT040056 | MRT060173 |
|---|---|---|---|---|---|---|
| **Torque motor data** | | | | | | |
| *Maximum speed* | rpm | 2000 | 875 | 650 | 465 | 290 |
| *Ultimate torque* | Nm | 1.2 | 4.5 | 28.4 | 55.5 | 173 |
| *Continuous torque* | Nm | 0.5 | 2 | 10.8 | 19.7 | 58.5 |
| *Ultimate current* | Arms | 13.8 | 27.9 | 13.5 | 13.5 | 22 |
| *Continuous current* | Arms | 4.8 | 11 | 4.2 | 3.9 | 7.4 |
| *Power supply* | Vdc | 560 | 560 | 325 | 560 | 560 |
| *Height* | mm | 40 | 90 | 153 | 131 | 138 |
| **Mechanical specifications** | | | | | | |
| *Max. axial load* | N | 159 | 817 | 1100 | 1575 | 5100 |
| *Max. radial load* | N | 70 | 355 | 490 | 695 | 2245 |
| *Max. moment load* | Nm | 17.29 | 145 | 230 | 382 | 2003 |
| *Inertia of rotor* | kg·cm² | 0.14 | 1.96 | 22.1 | 26.6 | 185.0 |
| *Total weight* | kg | 0.8 | 1.9 | 4.5 | 6.2 | 11.9 |
| *External diameter* | mm | 102 | 112 | 122 | 152 | 230 |
| *Though-hole diameter* | mm | - | 20 | 42 | 60 | 125 |
| *Height* | mm | 40 | 90 | 153 | 131 | 138 |

# MRT
## ORDER CODE

### Type model
MRT - Compact rotary table with torque motor and hollow shaft.

**MRT□□S - II□□□□ - □□□□□ - □□A - T□□ - □ - 000**

### Size
□□

**Size model:**
**02** - 020001
**02** - 020005
**03** - 030028
**04** - 040056
**06** - 060173

### Motor / Carriage model
□□□

**Peak torque, Nm (aircooled):**

MRT
- 1.20Nm - **001**
- 4.50Nm - **005**
- 28.4Nm - **028**
- 55.5Nm - **056**
- 173Nm - **173**

### Winding
□

**Motor winding:**
**N** - Standard motor (N/A)
**H** - High-speed motor
**X** - Ohne Motor

### Encoder
**Incremental:**
**0A04C** - Inductive incremental 1Vpp 40 µm
**0A41U** - Inductive incremental TTL 1 µm
**1R04C** - Optical incremental 1Vpp 40 µm
**1R45G** - Optical incremental TTL 50 nm
**2R02M** - Magnetic incremental 1Vpp 2000 µm
**2R41U** - Magnetic incremental TTL 1 µm

**Absolute:**
**3AE2H** - Inductive absolute EnDat2.2, 0.25 µm
**3AE1S** - Inductive absolute EnDat2.2, 0.1 µm + Safety
**3AD1S** - Inductive absolute DriveCliq 0.1 µm + Safety
**4HE1H** - Optical absolute EnDat2.2, 0.1 µm
**4HE1S** - Optical absolute EnDat2.2, 0.1 µm + Safety
**4HD1S** - Optical absolute Drivecliq 0.1 µm + Safety
**5SH1U** - Magnetic absolute Hiperface 40 µm
**5LP1U** - Magnetic absolute Panasonic 1 µm

### Connectors
□□

**Typ [2]:**
**00A** - Side connector Y-TEC base

### Bearing
□□

**Typ:**
**01** - Cross roller bearing

### Lubrication
□

**Grease type:**
**S** - Standard
**C** - Clean room
**F** - Food grade
**L** - Low temperature

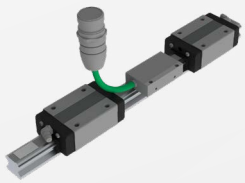
## Introduction

Explore our automation components, including custom linear motor and torque motor kits. Our solutions offer maximum flexibility, precision, and advanced performance for automation and specialized machinery.

## Automation components

Linear motor

Encoder

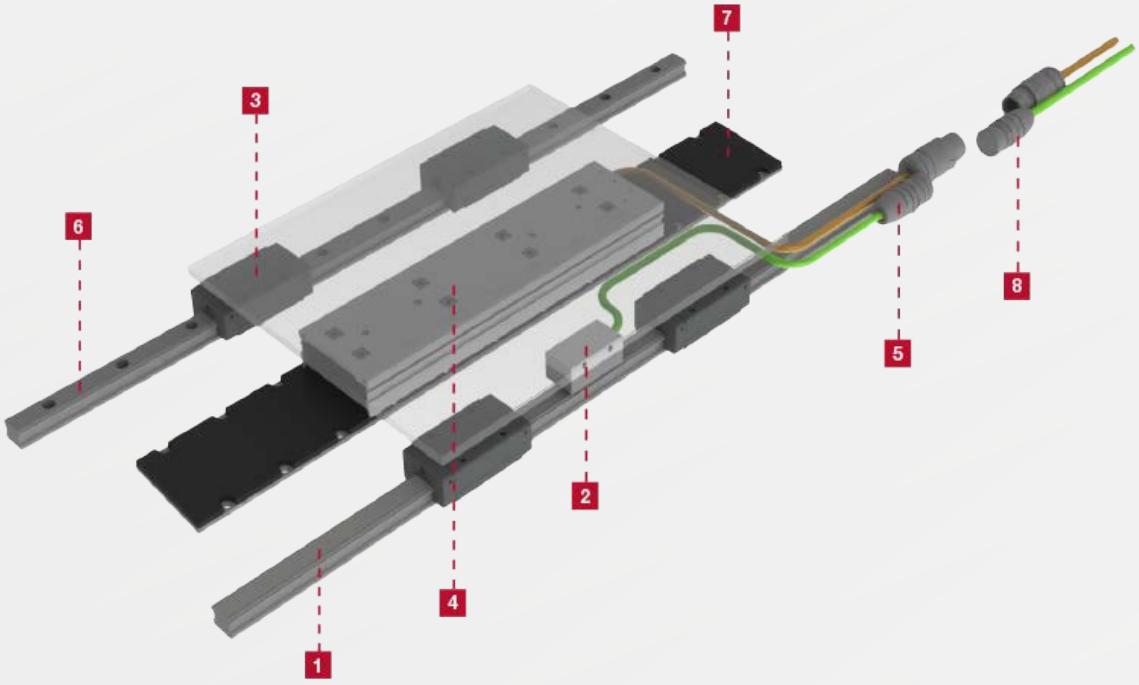


Linear guides

Torque motor

## Components of linear motor kit

1. Integrated measurement system (scale) into the linear guide.
2. Encoder head inductive/magnetic
3. Linear block with ball chain
4. Linear motor iron core/ironless
5. Connectors for power and encoder
6. Linear guides
7. Linear motor magnet
8. Connection cables for power and encoder



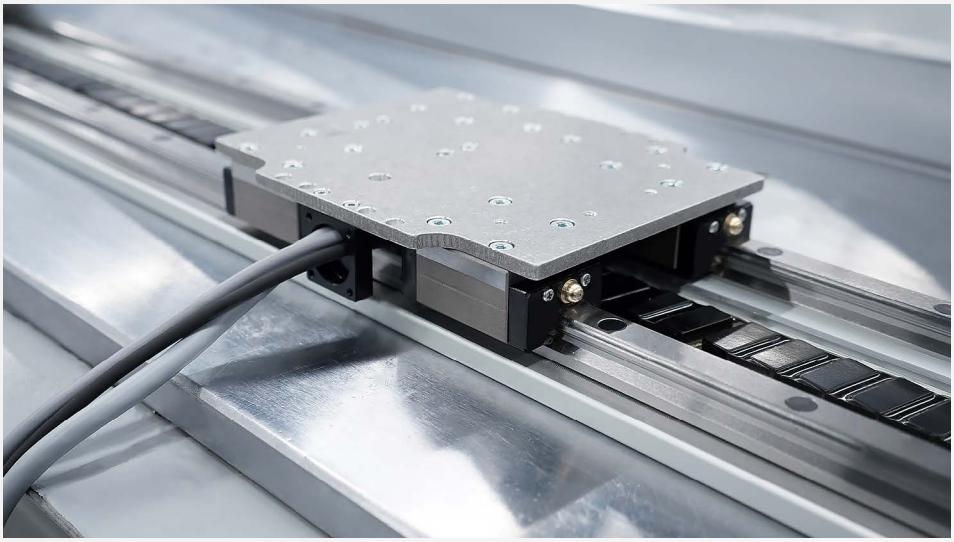
# WHICH SOLUTION MEETS MY NEEDS BETTER: A LINEAR MOTOR KIT OR LINEAR AXIS WITH LINEAR MOTOR?

### *Advantages of a completely linear axis*

- **Short delivery time:** complete motion solution available in 4 weeks.
- **Transparent costs:** avoid surprises and additional costs during design and testing.
- **Fast and safe commissioning:** Plug&Play solution with technical support and data set for your servo controller.
- **Short development and construction time:** 3D available for downloading.
- **Functional and operational reliability:** proven solution and 15 years of experience.
- **Flexible and scalable solution:** more than 12 available sizes within the product range.

### *Advantages of a linear motor kit*

- **Flexible and scalable solution:** any size, any stroke and any configuration possible.
- **Reduce development time:** kit with compatible and mutually verified products.
- **Short delivery time:** delivery of kit immediately available.
- **Technical support at all times:** an experienced partner at your Side.
- **Flexibility:** can be integrated into the machine structure directly.
- **Reduced assembly costs:** wiring and customied connectors



# KMC71S SERIES - IRON CORE LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM710064** | **KMM710128** |
| **Le (mm)** | 64 | 128 |
| **M5 bolts** | 4 | 8 |
| **Mass (kg/m)** | 1.6 | |
| *Magnet plates can be butted together.* | | |

**FLEX Cable**

The KMC-Serie comes standard with a 3m long FLEX power cable.

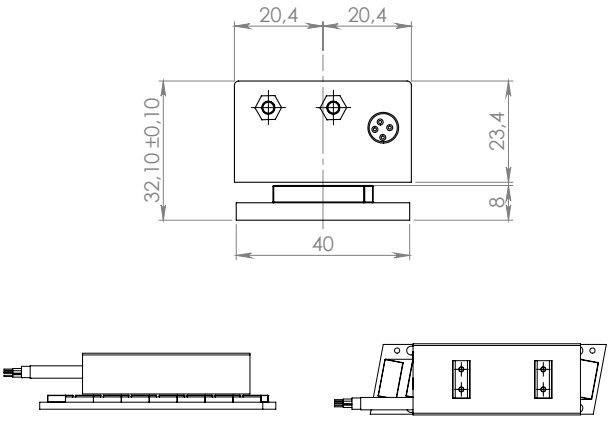
| | Parameter | Remarks | Sym | Unit | KMC71S | | | |
|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II01H | II01I | II02H | II02I |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 230V $_{ac\ rms}$ (320V$_{dc}$) | | | |
| | **Ultimate force @ 10°C/s increase** | Magnet @ 25°C | $F_u$ | N | 110 | | 220 | |
| | **Peak force @ 6°C/s increase** | Magnet @ 25°C | $F_p$ | N | 95 | | 190 | |
| | **Continuous force*** | Coils @ 110°C | $F_c$ | N | 45 | | 90 | |
| | **Maximum speed**** | @ 320 V | $V_{max}$ | m/s | 6 | 21 | 6 | 21 |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | N/$A_{rms}$ | 30 | 9 | 30 | 9 |
| | **Motor constant** | Coils @ 25°C | S | N²/W | 40 | 40 | 80 | 80 |
| Electrical | **Ultimate current** | Magnet @ 25°C | $I_u$ | $A_{rms}$ | 5 | 14.2 | 9.9 | 28.4 |
| | **Peak current** | Magnet @ 25°C | $i_p$ | $A_{rms}$ | 3.7 | 12.3 | 7.3 | 24.6 |
| | **Maximum continuous current*** | Coils @ 110°C | $I_c$ | $A_{rms}$ | 1.5 | 5 | 3 | 10 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 24 | 7.7 | 24 | 7.7 |
| | **Resistance per phase** | Coils @ 25°C ex. cable | $R_{ph}$ | Ω | 5 | 0.63 | 2.5 | 0.31 |
| | **Induction per phase** | I < 0.6 Ip | $I_{ph}$ | mH | 30 | 2.92 | 15 | 1.46 |
| | **Electrical time constant** | Coils @ 25°C | $T_e$ | ms | 6 | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 66 | | 132 | |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 1.85 | | 0.94 | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / KTY 83-122 | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.4 | | 0.7 | |
| | **Coil unit length** | ex. cables | L | mm | 96 | | 160 | |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 220 | | 500 | |
| | **Magnet pitch NN** | | t | mm | 32 | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 6.6 (21) | | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 5.000.000 cycles | | | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

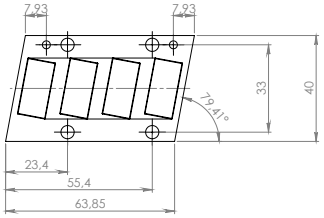
# KMC71S SERIES - IRON CORE LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

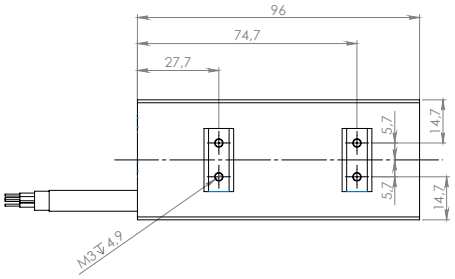
### MAGNET PLATES



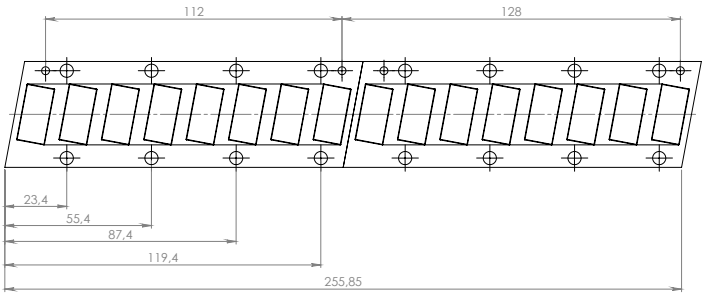

KMM710064



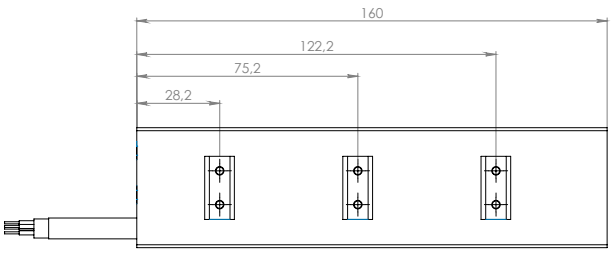

KMC71S-II01H




KMM710128



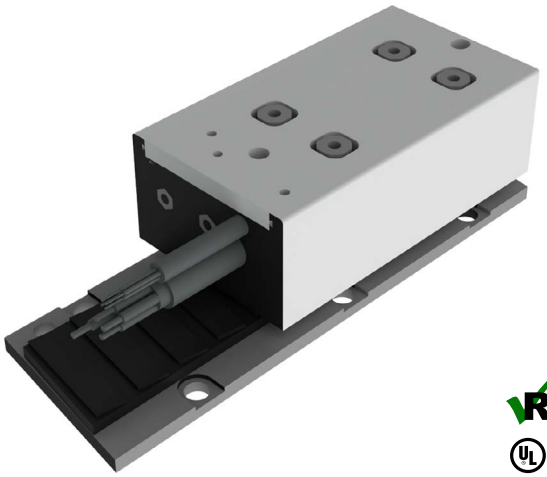

KMC71S-II02H




*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website. * All sizes are in mm*

# KMC73S SERIES - IRON CORE LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS



| Magnet plate dimensions | | | |
|---|---|---|---|
| **Code** | **KMM730096** | **KMM730144** | **KMM730384** |
| **Le (mm)** | 96 | 144 | 384 |
| **M5 bolts** | 4 | 6 | 16 |
| **Mass (kg/m)** | 2,1 | | |
| *Magnet plates can be butted together.* | | | |

**FLEX Cable**

The KMC-Serie comes standard with a 3m long FLEX power cable.

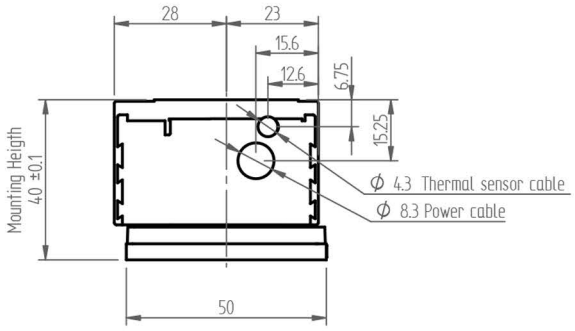
| | Parameter | Remarks | Sym | Unit | KMC73S | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II01H | II01I | II02H | II02I | II05H | II05I | II07N | II07H | II07I | II09N |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 400 $V_{ac\ rms}$ (max. 900 $V_{dc}$) | | | | | | | | | |
| | **Ultimate force @ 10°C/s increase** | Magnet @ 25°C | $F_u$ | N | 135 | | 270 | | 540 | | 810 | | | 960 |
| | **Peak force @ 6°C/s increase** | Magnet @ 25°C | $F_p$ | N | 116 | | 232 | | 464 | | 696 | | | 840 |
| | **Continuous force*** | Coils @ 100°C | $F_c$ | N | 60 | | 120 | | 240 | | 360 | | | 480 |
| | **Maximum speed**** | @ 560 $V_{dc}$ | $V_{max}$ | m/s | 12 | 36 | 12 | 36 | 12 | 36 | 4,5 | 10,0 | 36 | 3.8 |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | $N/A_{rms}$ | 39 | 12,9 | 39 | 12,9 | 39 | 12,9 | 79 | 39 | 12,9 | 103 |
| | **Motor constant** | Coils @ 25°C | S | $N^2/W$ | 95 | | 190 | | 380 | | 570 | | | 760 |
| Electrical | **Ultimate current** | Magnet @ 25°C | $I_u$ | $A_{rms}$ | 4,1 | 12,6 | 8,2 | 25,1 | 16,4 | 56,1 | 12,3 | 25,1 | 42,1 | 12.6 |
| | **Peak current** | Magnet @ 25°C | $i_p$ | $A_{rms}$ | 3,1 | 9,5 | 6,2 | 18,9 | 12,4 | 41,5 | 9,2 | 18,9 | 31,1 | 9.5 |
| | **Maximum continuous current*** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 1,5 | 4,7 | 3 | 9,3 | 6 | 20,3 | 4,5 | 9,3 | 15,2 | 4.7 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 32 | 11 | 32 | 11 | 32 | 11 | 65 | 32 | 11 | 84 |
| | **Resistance per phase** | Coils @ 25°C ex. cable | $R_{ph}$ | Ω | 5,4 | 0,56 | 2,7 | 0,28 | 1,35 | 0,14 | 3,6 | 0,85 | 0,4 | 4.5 |
| | **Induction per phase** | I < 0.6 Ip | $I_{ph}$ | mH | 35 | 3,75 | 17 | 1,83 | 9 | 0,9 | 23 | 5,5 | 2,6 | 29 |
| | **Electrical time constant** | Coils @ 25°C | $T_e$ | ms | 6,5 | | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 49 | | 99 | | 197 | | 296 | | | 394 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 1,5 | | 0,75 | | 0,38 | | 0,25 | | | 0.19 |
| | **Thermal time constant*** | up to 63% max. coiltemp. | $T_{th}$ | s | 75 | | | | | | | | | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / KTY 83-122 | | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0,6 | | 0,9 | | 1,6 | | 2,3 | | | 3.0 |
| | **Coil unit length** | ex. cables | L | mm | 93 | | 143 | 93 | 241 | | 336 | | | 434 |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 300 | | 500 | | 900 | | 1300 | | | 1700 |
| | **Magnet pitch NN** | | t | mm | 24 | | | | | | | | | |
| | **Cable mass** | | m | kg/m | 0.18 | | | | | | | | | |
| | **Cable Type (power FLEX)** | Length 3 m | d | mm (AWG) | 8,3 (>18) | | | | | | | | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4,3 (26) | | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | | 5,000,000 cycles | | | | | | | | | |
| | **Bending Radius Static** | Minimum | | | 4x cable diameter | | | | | | | | | |
| | **Bending Radius Dynamic** | Minimum | | | 10x cable diameter | | | | | | | | | |

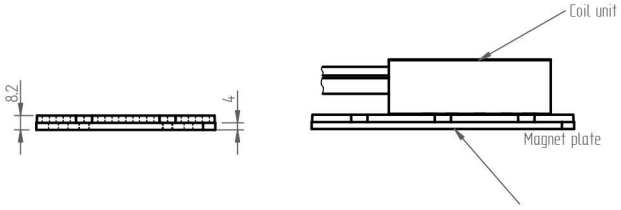
** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

# KMC73S SERIES - IRON CORE LINEAR MOTOR

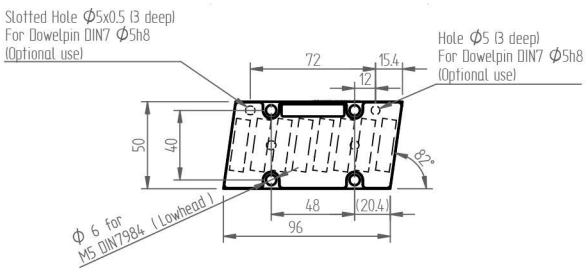
## DIMENSIONS AND SPECIFICATIONS

### MAGNET PLATES

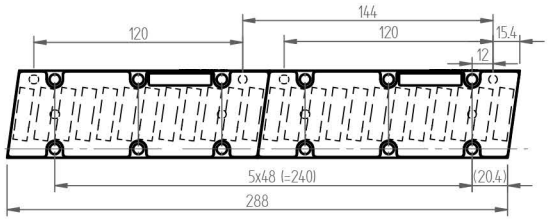


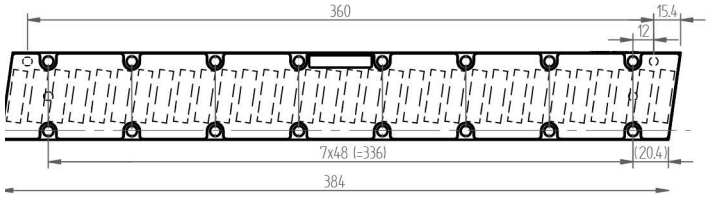

KMM730096



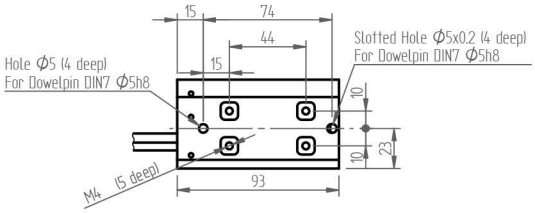

KMM730144



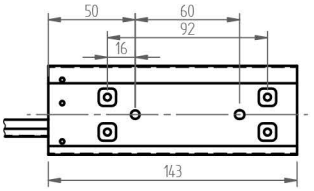

KMM730384



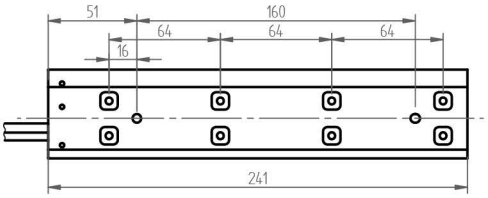

KMC73S-II01H



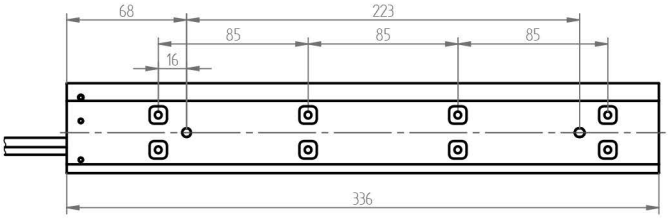

KMC73S-II02H




KMC73S-II05H




KMC73S-II07H / II07N / II07I




*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website. * All sizes are in mm*

# KMC75S SERIES - IRON CORE LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM750192** | **KMM750288** |
| **Le (mm)** | 192 | 288 |
| **M5 bolts** | 8 | 12 |
| **Mass (kg/m)** | 3,8 | |
| *Magnet plates can be butted together.* | | |

### FLEX Cable

The KMC-Serie comes standard with a 3m long FLEX power cable.

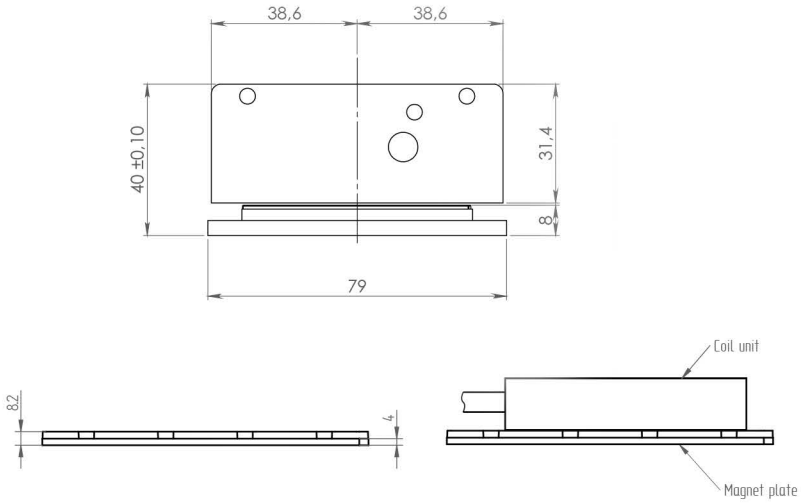
| | Parameter | Remarks | Sym | Unit | KMC75S | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II04N | II04H | II06N | II06H | II09N | II09H | II11N | II11H | II13N | II13H | II18N | II18H | II25N | II25H | II36Q |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 400 $V_{ac\ rms}$ (max. 900 $V_{dc}$) | | | | | | | | | | | | | | |
| | **Ultimate force @ 10°C/s increase** | Magnet @ 25°C | $F_u$ | N | 496 | | 744 | | 992 | | 1240 | | 1488 | | 1984 | | 2480 | | 3600 |
| | **Peak force @ 6°C/s increase** | Magnet @ 25°C | $F_p$ | N | 440 | | 660 | | 890 | | 1100 | | 1320 | | 1760 | | 2200 | | 3200 |
| | **Continuous force aircooled*** | Coils @ 100°C | $F_c$ | N | 200 | | 300 | | 400 | | 500 | | 600 | | 800 | | 1100 | | 1680 |
| | **Maximum speed**** | @ 560 $V_{dc}$ | $V_{max}$ | m/s | 3.5 | 7 | 2.5 | 7 | 3.5 | 7 | 3.5 | 7 | 3.5 | 7 | 3.5 | 7 | 4 | 8 | 1.7 |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | $N/A_{rms}$ | 93 | 46.5 | 140 | 46.5 | 93 | 46.5 | 112 | 46.5 | 93 | 44.9 | 93 | 46.5 | 112.5 | 46.5 | 180 |
| | **Motor constant** | Coils @ 25°C | S | $N^2/W$ | 380 | | 570 | | 760 | | 950 | | 1140 | | 1520 | | 1900 | | 3040 |
| Electrical | **Ultimate current** | Magnet @ 25°C | $i_u$ | $A_{rms}$ | 6.5 | 13.1 | 6.5 | 19.6 | 13.1 | 26.2 | 13.5 | 32.7 | 19.6 | 41 | 26.2 | 52 | 29.8 | 72.1 | 27.1 |
| | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 5.0 | 10.0 | 5.0 | 15.0 | 10.0 | 20.0 | 10.4 | 25.0 | 15.0 | 31.0 | 20.0 | 40.0 | 22.7 | 55.0 | 20.7 |
| | **Continuous current watercooled*** | Coils @ 100°C | $I_{cw}$ | $A_{rms}$ | 2.26 | 4.5 | 2.26 | 6.8 | 4.5 | 9.0 | 4.7 | 11.3 | 6.8 | 14.0 | 9.0 | 18.1 | 9.8 | 23.7 | 9.4 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 76 | 38 | 114 | 38 | 76 | 38 | 92 | 38 | 76 | 38 | 76 | 38 | 92 | 38 | 147 |
| | **Resistance per phase** | Coils @ 25°C ex. cable | $R_{ph}$ | Ω | 7.2 | 1.80 | 10.8 | 1.21 | 3.6 | 0.90 | 4.3 | 0.72 | 2.41 | 0.59 | 1.81 | 0.46 | 2.17 | 0.37 | 3.45 |
| | **Induction per phase** | I < 0.6 Ip | $L_{ph}$ | mH | 54.0 | 14.0 | 81.0 | 9.0 | 27.0 | 7.0 | 32.0 | 5.4 | 18.0 | 4.4 | 14 | 3.4 | 16.3 | 2.8 | 25.9 |
| | **Electrical time constant** | Coils @ 25°C | $t_e$ | ms | 7.5 | | | | | | | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 150 | | 225 | | 300 | | 375 | | 450 | | 600 | | 853 | | 1200 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.48 | | 0.32 | | 0.24 | | 0.19 | | 0.16 | | 0.12 | | 0.1 | | 0.06 |
| | **Thermal time constant*** | up to 63% max. coiltemp. | $t_{th}$ | s | 77 | | | | | | | | | | | | | | |
| | **Watercooling flow** | For ΔT=3K | Ow | l/min | 0.7 | | 1.1 | | 1.4 | | 1.8 | | 2.2 | | 2.9 | | 3.2 | | 5.7 |
| | **Watercooling pressure-drop** | Order of magnitude | $\Delta P_w$ | bar | 1 | | 1 | | 2 | | 2 | | 2 | | 3 | | 3 | | 7 |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / KTY 83-122 | | | | | | | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | M | kg | 1.5 | | 2.0 | | 2.6 | | 3.2 | | 3.8 | | 5.2 | | 6 | | 9.75 |
| | **Coil unit length** | ex. cables | L | mm | 146 | | 194 | | 244 | | 290 | | 336 | | 468 | | 562 | | 855 |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 950 | | 1325 | | 1700 | | 2075 | | 2450 | | 3400 | | 4150 | | 6400 |
| | **Magnet pitch NN** | | t | mm | 24 | | | | | | | | | | | | | | |
| | **Cable mass** | | m | kg/m | 0.18 | | | | | | | | | | | | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 7.4 (18) | | | | | | | | | | 11.9 (14) | | | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.3 (26) | | | | | | | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 5.000.000 cycles | | | | | | | | | | | | | | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | | | | | | | | | | | | | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | | | | | | | | | | | | | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

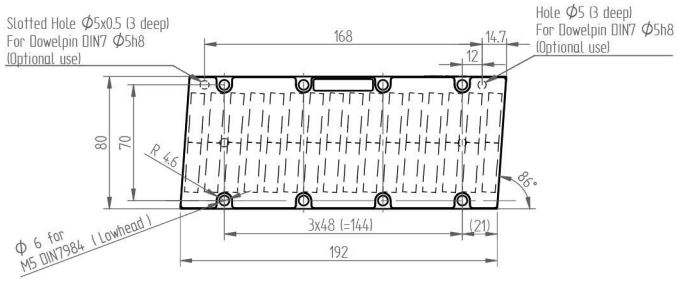
# KMC75S SERIES - IRON CORE LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

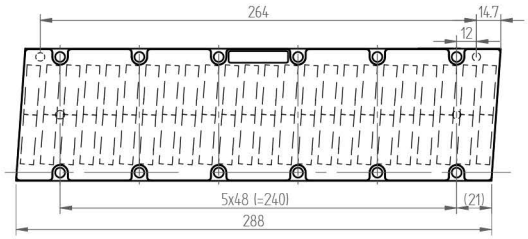
### MAGNET PLATES



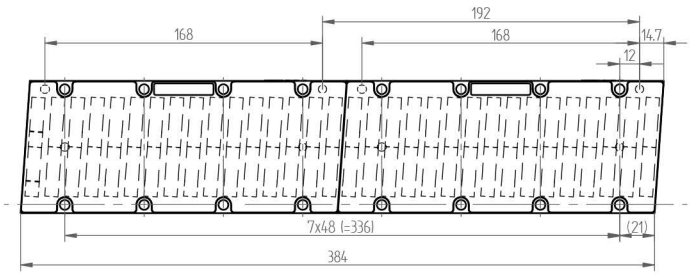

KMM750192




KMM750288

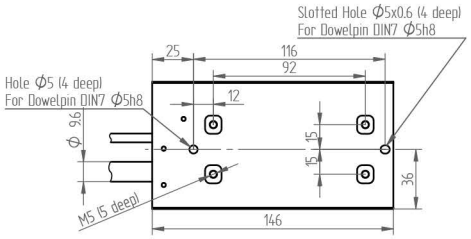



KMM750192 x 2

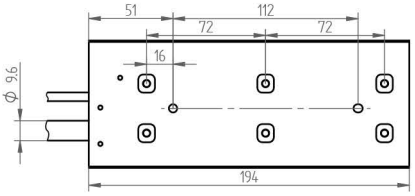



*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

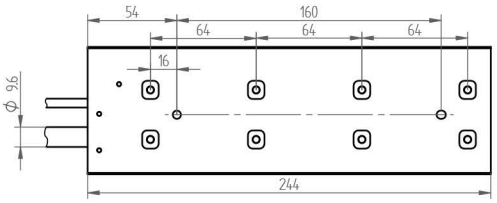
KMC75S-II04N / II04H



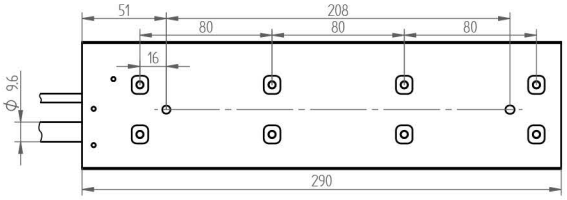

KMC75S-II06N / II06H



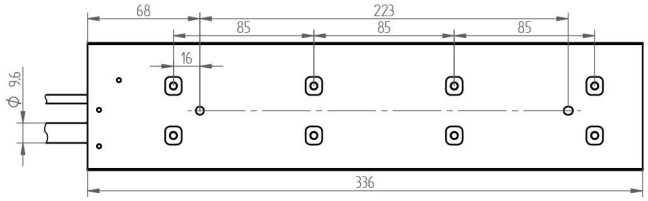

KMC75S-II09N / II09H



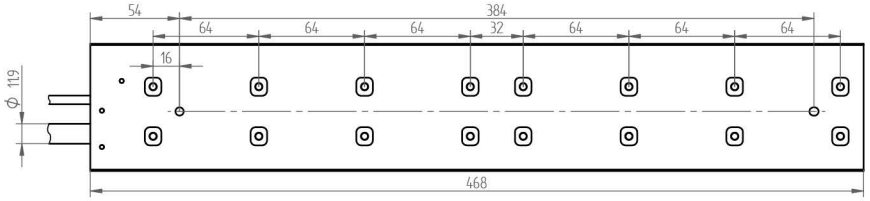

KMC75S-II11N / II11H




KMC75S-II13N / II13H




KMC75S-II18N / II18H



# KMC77S SERIES - IRON CORE LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM770192** | **KMM770288** |
| **Le (mm)** | 192 | 288 |
| **M5 bolts** | 8 | 12 |
| **Mass (kg/m)** | 10,5 | |
| *Magnet plates can be butted together.* | | |

**FLEX Cable**

The KMC-Serie comes standard with a 3m long FLEX power cable.

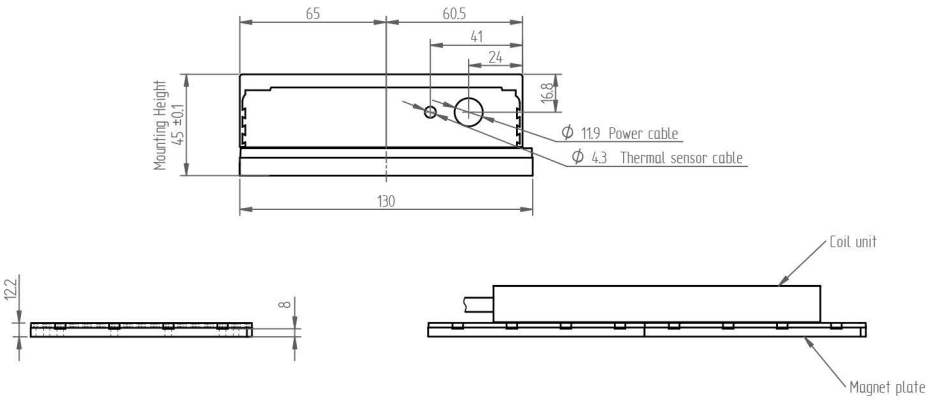
| | Parameter | Remarks | Sym | Unit | KMC77S | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II18N | II18H | II22N | II22H | II28N | II28H | II38N | II38H | II47N | II47H | II71N | II71H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 400 $V_{ac\ rms}$ (max. 900 $V_{dc}$) | | | | | | | | | | | |
| | **Ultimate force @ 10°C/s increase** | Magnet @ 25ºC | $F_u$ | N | 1900 | | 2375 | | 2850 | | 3800 | | 4750 | | 7125 | |
| | **Peak force @ 6°C/s increase** | Magnet @ 25ºC | $F_p$ | N | 1680 | | 2100 | | 2520 | | 3360 | | 4200 | | 6300 | |
| | **Continuous force*** | Coils @ 100ºC | $F_c$ | N | 760 | | 950 | | 1200 | | 1600 | | 2000 | | 3000 | |
| | **Maximum speed**** | @ 560 $V_{dc}$ | $V_{max}$ | m/s | 3 | 6 | 2.5 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 |
| | **Motor force constant** | Mount. sfc. @ 20ºC | K | $N/A_{rms}$ | 186 | 93 | 225 | 93 | 186 | 89.9 | 186 | 93 | 224.5 | 93 | 224.5 | 93 |
| | **Motor constant** | Coils @ 25ºC | S | $N^2/W$ | 1750 | | 2150 | | 2640 | | 3520 | | 4400 | | 6600 | |
| Electrical | **Ultimate current** | Magnet @ 25ºC | $I_u$ | $A_{rms}$ | 13.0 | 26 | 13.5 | 33 | 21 | 43 | 28 | 56 | 29 | 69 | 43 | 104 |
| | **Peak current** | Magnet @ 25ºC | $i_p$ | $A_{rms}$ | 10 | 20 | 10 | 25 | 16 | 33 | 21 | 42 | 22 | 53 | 33 | 79 |
| | **Maximum continuous current*** | Coils @ 100ºC | $I_c$ | $A_{rms}$ | 4.1 | 8.2 | 4.2 | 10.2 | 6 | 13 | 9 | 18 | 9 | 22 | 13 | 32 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 152 | 76 | 183 | 76 | 152 | 73 | 152 | 76 | 183 | 76 | 183 | 76 |
| | **Resistance per phase** | Coils @ 25ºC ex. cable | $R_{ph}$ | Ω | 6.3 | 1.6 | 7.6 | 1.3 | 4.24 | 1.02 | 3.2 | 0.8 | 3.78 | 0.64 | 253 | 0.43 |
| | **Induction per phase** | I < 0.6 Ip | $I_{ph}$ | mH | 51 | 13 | 60 | 10 | 34 | 8 | 25.4 | 6.4 | 30 | 5 | 20 | 3 |
| | **Electrical time constant** | Coils @ 25ºC | $T_e$ | ms | 8 | | | | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 430 | | 530 | | 731 | | 853 | | 1218 | | 1827 | |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 0.15 | | 0.12 | | 0.11 | | 0.08 | | 0.07 | | 0.04 | |
| | **Thermal time constant*** | up to 63% max. coiltemp. | $T_{th}$ | s | 90 | | | | | | | | | | | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / KTY 83-122 | | | | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 4.9 | | 5.9 | | 6.5 | | 9 | | 11 | | 16.5 | |
| | **Coil unit length** | ex. cables | L | mm | 248 | | 290 | | 336 | | 468 | | 562 | | 834 | |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 3400 | | 4150 | | 4900 | | 6800 | | 8300 | | 12450 | |
| | **Magnet pitch NN** | | t | mm | 24 | | | | | | | | | | | |
| | **Cable Type (power FLEX)****** | Length 3 m | d | mm (AWG) | 8.4 (16) | | | | | | 10.1 (14) | | | | 12.1 (6) | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.3 (26) | | | | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 5.000.000 cycles | | | | | | | | | | | 3.5m |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | | | | | | | | | | 4x |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | | | | | | | | | | 10x |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

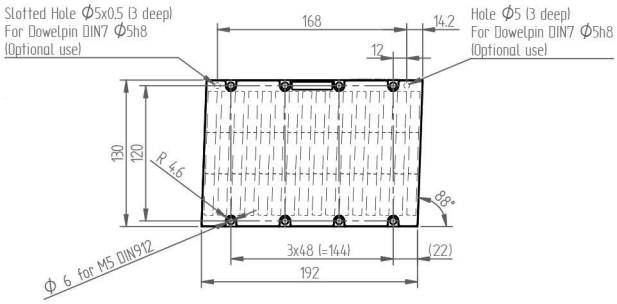
# KMC77S SERIES - IRON CORE LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

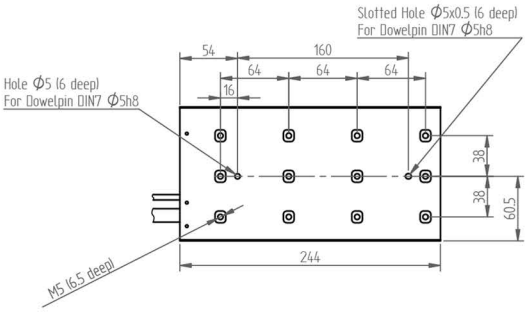
### MAGNET PLATES



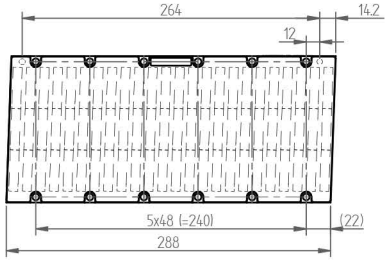

KMM770192



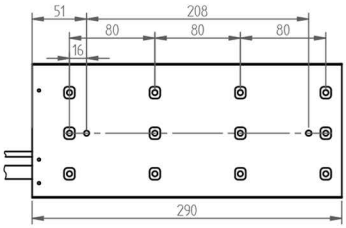

KMC77S-II18N / II18H



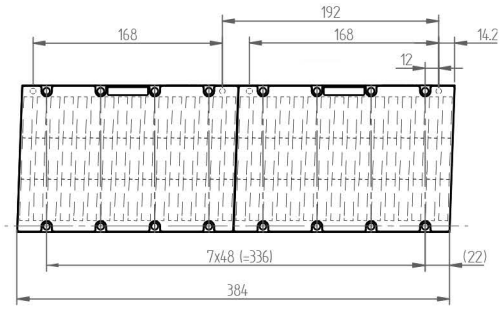

KMM770288



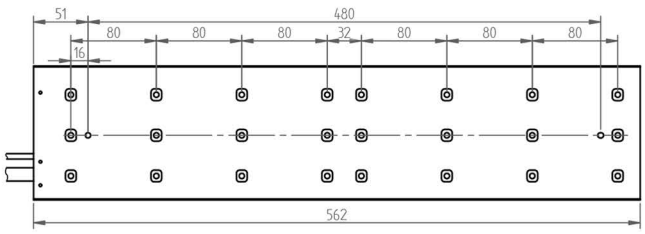

KMC77S-II22N / II22H



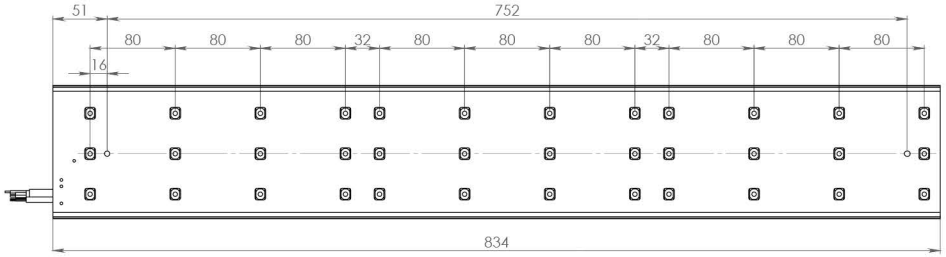

KMM770192 x 2




KMC77S-II45N / II45H




KMC77S-II71N / II71H



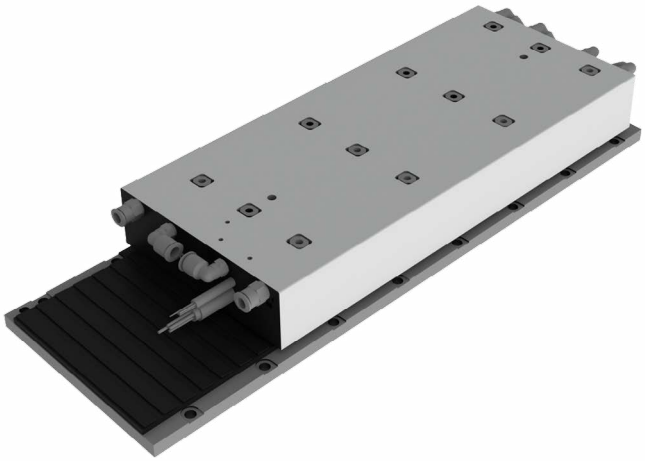

*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC78S SERIES - IRON CORE LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM770192** | **KMM770288** |
| **Le (mm)** | 192 | 288 |
| **M5 bolts** | 8 | 12 |
| **Mass (kg/m)** | 10.5 | |
| *Magnet plates can be butted together.* | | |

**Water cooling**

All KMC78S motors feature integrated cooling channels that allow for the easy setup of a liquid cooled system, at no additional cost.



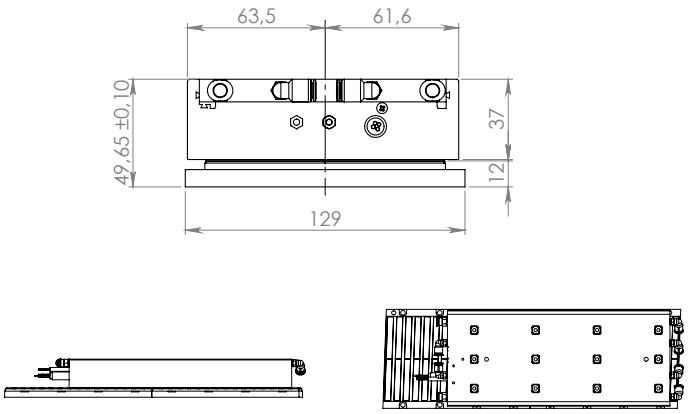
| | Parameter | Remarks | Sym | Unit | KMC78S | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II19N | II19H | II23N | II23H | II28N | II28H | II47N | II47H | II71N | II71H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 380 $V_{ac\ rms}$ (600$V_{dc}$) | | | | | | | | | |
| | **Ultimate force @ 10°C/s increase** | Magnet @ 25°C | $F_u$ | N | 1900 | | 2375 | | 2850 | | 4750 | | 7125 | |
| | **Peak force @ 6°C/s increase** | Magnet @ 25°C | $F_p$ | N | 1680 | | 2100 | | 2520 | | 4200 | | 6300 | |
| | **Continuous force watercooled**** | Coils @ 100°C | $F_{cw}$ | N | 1040 | | 1300 | | 1560 | | 2600 | | 3900 | |
| | **Maximum speed**** | @ 560 V | $V_{max}$ | m/s | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | $N/A_{rms}$ | 186 | 93 | 224.5 | 93 | 186 | 90 | 224.5 | 93 | 224.5 | 93 |
| | **Motor constant** | Coils @ 25°C | S | $N^2/W$ | 1760 | | 2200 | | 2640 | | 4400 | | 6600 | |
| Electrical | **Ultimate current** | Magnet @ 25°C | $I_u$ | $A_{rms}$ | 14 | 28 | 14 | 35 | 21 | 43 | 29 | 69 | 43 | 104 |
| | **Peak current** | Magnet @ 25°C | $i_p$ | $A_{rms}$ | 11 | 21 | 11 | 26 | 16 | 33 | 22 | 53 | 33 | 79 |
| | **Maximum continuous current*** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 6 | 11 | 6 | 14 | 8 | 17 | 12 | 28 | 17 | 42 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 152 | 76 | 183 | 76 | 152 | 73 | 183 | 76 | 183 | 76 |
| | **Resistance per phase** | Coils @ 25°C ex. cable | $R_{ph}$ | Ω | 6.35 | 1.59 | 7.55 | 1.27 | 4.24 | 1.02 | 3.78 | 0.64 | 2.53 | 0.43 |
| | **Induction per phase** | I < 0.6 Ip | $I_{ph}$ | mH | 51 | 13 | 60 | 10 | 34 | 8 | 30 | 5 | 20 | 3 |
| | **Electrical time constant** | Coils @ 25°C | $T_e$ | ms | 8 | | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 487 | | 609 | | 731 | | 1218 | | 1827 | |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.17 | | 0.13 | | 0.11 | | 0.07 | | 0.04 | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 4.8 | | 6 | | 7.2 | | 12 | | 18 | |
| | **Coil unit length** | ex. cables | L | mm | 224 | | 290 | | 338 | | 568 | | 847 | |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 3400 | | 4150 | | 4900 | | 8300 | | 12450 | |
| | **Magnet pitch NN** | | t | mm | 24 | | | | | | | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 8.4 (16) | | | | | | 10.1 (14) | | 12.1 (11) | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 5.000.000 cycles | | | | | | | 3-5millions cycles | | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | | | | | | 5x cable diameter | | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | | | | | | 10x cable diameter | | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

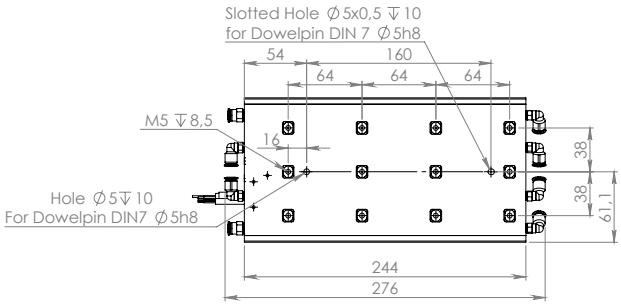
# KMC78S SERIES - IRON CORE LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

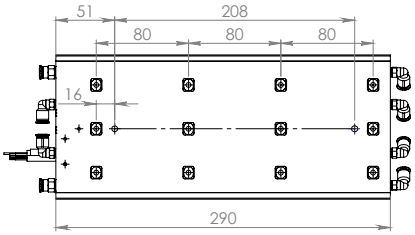
### MAGNET PLATES



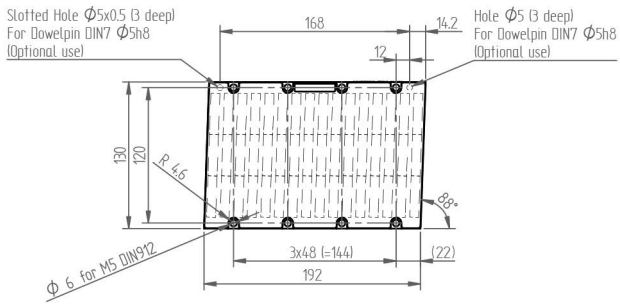

### KMC78S-II19N / II19H



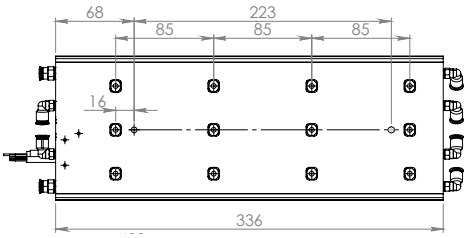

### KMC78S-II23N / II23H



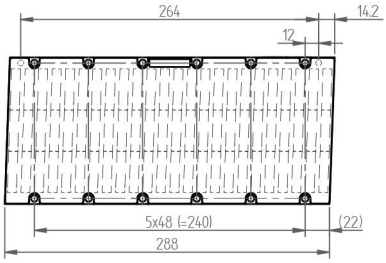

### KMM770192



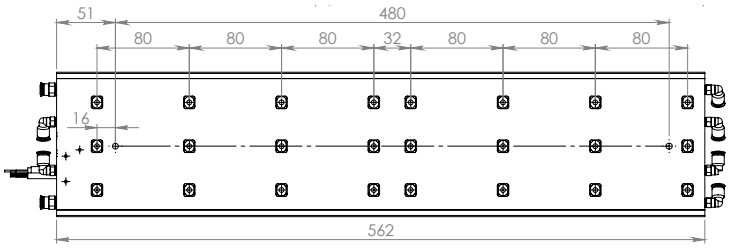

### KMC78S-II28N / II28H



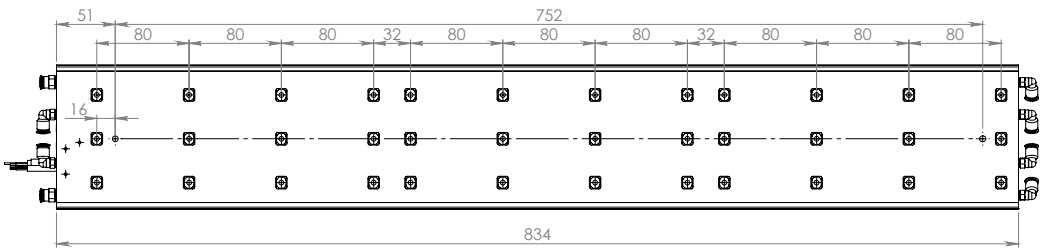

### KMM770288




### KMC78S-II47N / II47H




### KMC78S-II71N / II71H



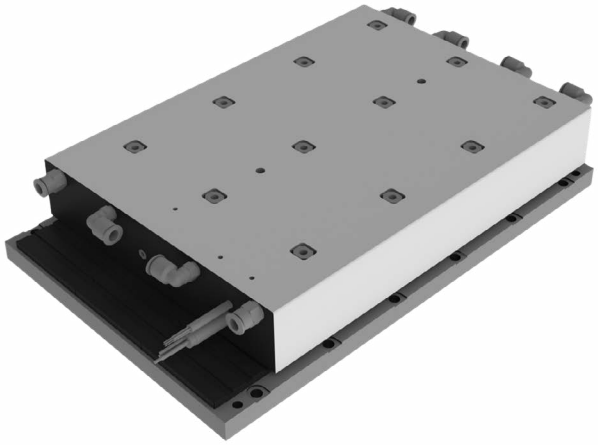

*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website. * All sizes are in mm*

# KMC79S SERIES - IRON CORE LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM790192** | **KMM790288** |
| **Le (mm)** | 192 | 288 |
| **M5 bolts** | 8 | 12 |
| **Mass (kg/m)** | 12 | |
| *Magnet plates can be butted together.* | | |

**Water cooling**

All KMC79S motors feature integrated cooling channels that allow for the easy setup of a liquid cooled system, at no additional cost.



WATER COOLING

RoHS 2002/95/EC

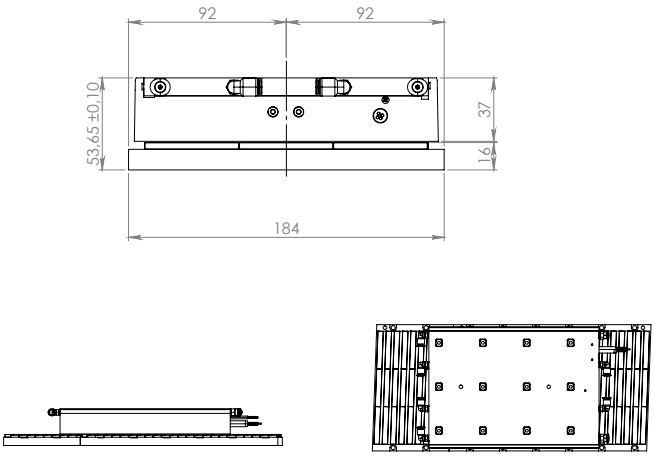
| | Parameter | Remarks | Sym | Unit | KMC79S | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II27N | II27H | II34N | II34H | II41N | II41H | II54N | II54H | II68N | II68H | II10N | II10H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 380 $V_{ac\ rms}$ ($600V_{dc}$) | | | | | | | | | | | |
| | **Ultimate force @ 10°C/s increase** | Magnet @ 25°C | $F_u$ | N | 2700 | | 3375 | | 4050 | | 5400 | | 6750 | | 10125 | |
| | **Peak force @ 6°C/s increase** | Magnet @ 25°C | $F_p$ | N | 2400 | | 3000 | | 3600 | | 4800 | | 6000 | | 9000 | |
| | **Continuous force watercooled**** | Coils @ 110°C | $F_{cw}$ | N | 1500 | | 1950 | | 2340 | | 3000 | | 3900 | | 5850 | |
| | **Continuous force aircooled*** | Coils @ 110°C | $F_c$ | N | 1200 | | 1500 | | 1800 | | 2400 | | 3000 | | 4500 | |
| | **Maximum speed**** | @ 600V | $V_{max}$ | m/s | 2 | 4 | 1.5 | 4 | 2 | 4 | 2 | 4 | 1.5 | 4 | 1.5 | 4 |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | $N/A_{rms}$ | 279 | 139.5 | 336 | 139.5 | 279 | 135 | 279 | 139.5 | 336 | 139.5 | 336 | 139.5 |
| | **Motor constant** | Coils @ 25°C | S | $N^2/W$ | 2864 | | 3580 | | 4296 | | 5728 | | 7160 | | 10740 | |
| Electrical | **Ultimate current** | Magnet @ 25°C | $i_u$ | $A_{rms}$ | 13.1 | 26 | 13.5 | 33 | 20 | 41 | 27 | 52 | 28 | 66 | 41 | 98 |
| | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 10 | 20 | 11 | 25 | 15 | 31 | 20 | 40 | 21 | 50 | 31 | 75 |
| | **Continuous current water cooled** | Coils @ 110°C | $I_{cw}$ | $A_{rms}$ | 5.5 | 11 | 6 | 14 | 8 | 17 | 11 | 22 | 12 | 29 | 18 | 42 |
| | **Continuous current air cooled** | Coils @ 110°C | $I_c$ | $A_{rms}$ | 4.3 | 9 | 4.3 | 11 | 6.5 | 13.4 | 9 | 18 | 9 | 22 | 13.4 | 32 |
| | **Back EMF Phase-Phase$_{peak}$** | Phase-Phase peak | $B_{emf}$ | V/m/s | 228 | 114 | 274 | 114 | 228 | 110 | 228 | 114 | 274 | 114 | 274 | 114 |
| | **Resistance per phase** | Coils @ 25°C | $R_{ph}$ | Ω | 9.1 | 2.27 | 10.8 | 1.82 | 6.06 | 1.45 | 4.54 | 1.14 | 5.4 | 0.91 | 3.61 | 0.61 |
| | **Induction per phase** | I < 0.63 Ip | $L_{ph}$ | mH | 77.35 | 19 | 92 | 15 | 52 | 12 | 39 | 10 | 46 | 8 | 31 | 5 |
| | **Electrical time constant** | Coils @ 25°C | $t_e$ | ms | 8.5 | | | | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 713 | | 891 | | 1011 | | 1347 | | 1684 | | 2527 | |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.13 | | 0.12 | | 0.11 | | 0.09 | | 0.07 | | 0.03 | |
| | **Watercooling flow** | for ΔT=3K | Ow | l/min | 3.1 | | 4 | | 4.8 | | 6.2 | | 8 | | 12 | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / KTY 83-122 | | | | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | M | kg | 7 | | 9 | | 12 | | 16 | | 18 | | 27 | |
| | **Coil unit length** | ex. cables | L | mm | 248 | | 296 | | 336 | | 440 | | 568 | | 840 | |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 5100 | | 6225 | | 7350 | | 6800 | | 12450 | | 18675 | |
| | **Magnet pitch NN** | | t | mm | 24 | | | | | | | | | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm(AWG) | 10.1 (14) | | | | | | | | | 12.1 (11) | | 14.7(9) |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | | | | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | d | Cycles | 5.000.000 cycles | | | | | | | | | 3-5millions cycles | | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | | | | | | | | 5x cable diameter | | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | | | | | | | | 10x cable diameter | | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

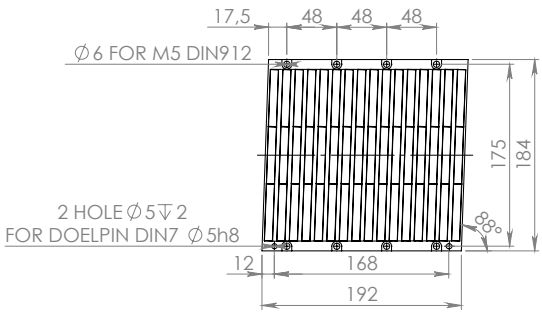
# KMC79S SERIES - IRON CORE LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

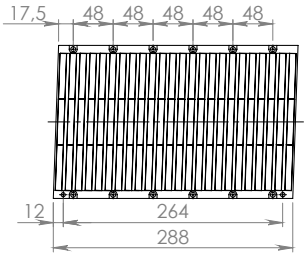
### MAGNET PLATES



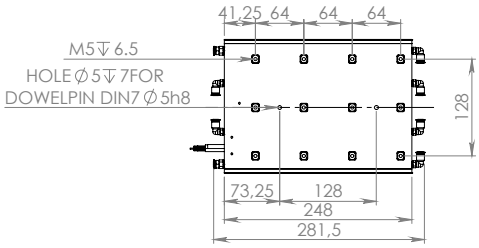

KMM790192



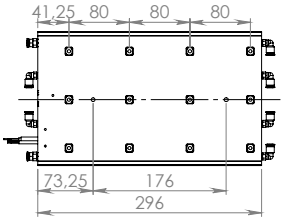

KMM790288



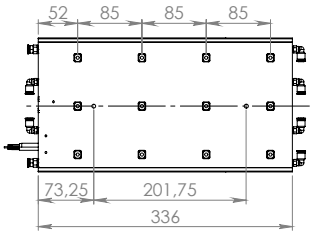

### KMC79S-II27N / II27H



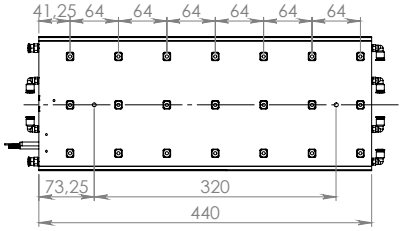

### KMC79S-II34N / II34H



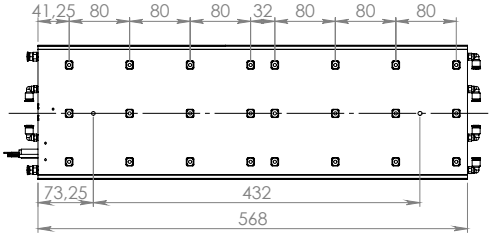

### KMC79S-II41N / II41H



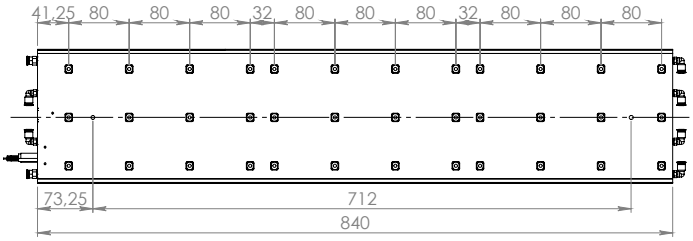

### KMC79S-II54N / II54H




### KMC79S-II68N / II68H




### KMC79S-II10N / II10H




*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC80S SERIES - IRON CORE LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | | |
|---|---|---|---|
| **Code** | **KMM800192** | **KMM800288** | **KMM800384** |
| **Le (mm)** | 192 | 288 | 384 |
| **M5 bolts** | 8 | 12 | 16 |
| **Mass (kg/m)** | 34 | | |
| *Magnet plates can be butted together.* | | | |

### Water cooling

All KMC80S motors feature integrated cooling channels that allow for the easy setup of a liquid cooled system, at no additional cost.

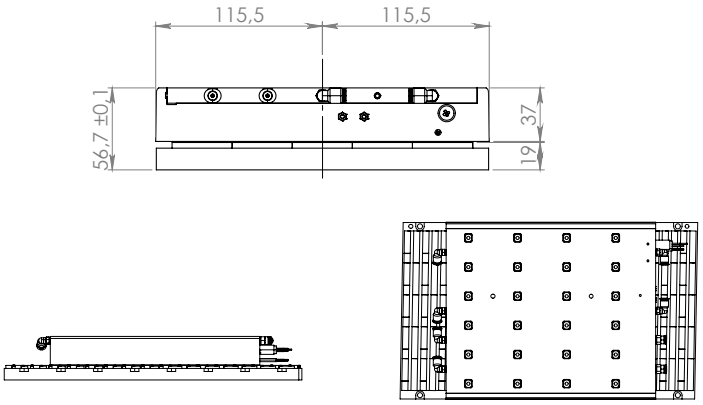
| | Parameter | Remarks | Sym | Unit | KMC80S | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II34H | II42H | II50H | II67N | II84H | II12H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 380 $V_{ac\ rms}$ ($600V_{dc}$) | | | | | |
| | **Ultimate force @ 10°C/s increase** | Magnet @ 25ºC | $F_u$ | N | 3360 | 4200 | 5040 | 6720 | 8400 | 12600 |
| | **Peak force @ 6°C/s increase** | Magnet @ 25ºC | $F_p$ | N | 3200 | 4000 | 4800 | 6400 | 8000 | 12000 |
| | **Continuous force watercooled**** | Coils @ 110ºC | $F_{cw}$ | N | 2080 | 2600 | 3120 | 4160 | 5200 | 7800 |
| | **Continuous force aircooled*** | Coils @ 110ºC | $F_c$ | N | 1600 | 2000 | 2400 | 3200 | 4000 | 6000 |
| | **Maximum speed**** | @ 600 V | $V_{max}$ | m/s | 3 | | | | | |
| | **Motor force constant** | Mount. sfc. @ 20ºC | K | $N/A_{rms}$ | 174 | | | | | |
| | **Motor constant** | Coils @ 25ºC | S | $N^2/W$ | 1802 | 2243 | 2883 | 3604 | 4485 | 12615 |
| Electrical | **Ultimate current** | Magnet @ 25ºC | $I_u$ | $A_{rms}$ | 26 | 34 | 40 | 52 | 65 | 98 |
| | **Peak current** | Magnet @ 25ºC | $i_p$ | $A_{rms}$ | 21 | 27 | 32 | 43 | 53 | 80 |
| | **Continuous current water cooled** | Coils @ 110ºC | $I_{cw}$ | $A_{rms}$ | 12 | 15 | 18 | 24 | 30 | 45 |
| | **Continuous current air cooled** | Coils @ 110ºC | $I_c$ | $A_{rms}$ | 9.2 | 12 | 14 | 18.5 | 23 | 35 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 142 | | | | | |
| | **Resistance per phase** | Coils @ 25ºC ex. cable | $R_{ph}$ | Ω | 2.8 | 2.25 | 1.75 | 1.4 | 1.125 | 0.8 |
| | **Induction per phase** | I < 0.6 Ip | $I_{ph}$ | mH | 28 | 22.5 | 17.5 | 14 | 11.3 | 8 |
| | **Electrical time constant** | Coils @ 25ºC | $T_e$ | ms | 10 | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 1847 | 2319 | 2597 | 3693 | 4638 | 6957 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 0.08 | 0.06 | 0.05 | 0.04 | 0.03 | 0.01 |
| | **Watercooling flow** | for ΔT=3K | Ow | l/min | 4.1 | 5.2 | 6.2 | 8.2 | 10.4 | 15.5 |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 9 | 12 | 15 | 20 | 25 | 38 |
| | **Coil unit length** | ex. cables | L | mm | 273 | 321 | 336 | 465 | 593 | 865 |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 7200 | 9000 | 10800 | 14400 | 18000 | 27000 |
| | **Magnet pitch NN** | | t | mm | 24 | | | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 10.1 (14) | | 12.1 (11) | | | 14.7(9) |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | | | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 5.000.000 cycles | | 3-5 milliones cycles | | | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | 5x cable diameter | | | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | 10x cable diameter | | | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

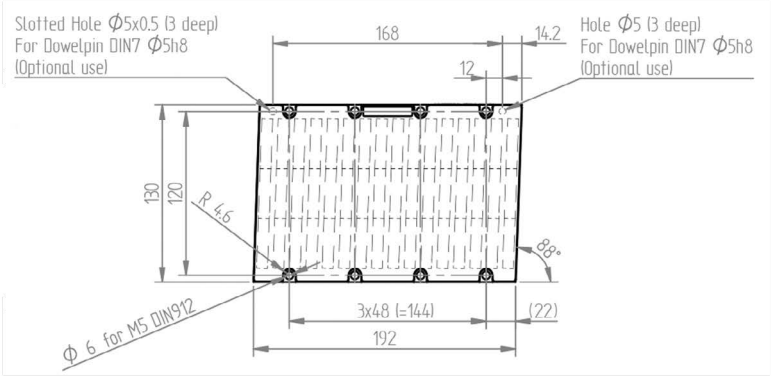
# KMC80S SERIES - IRON CORE LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

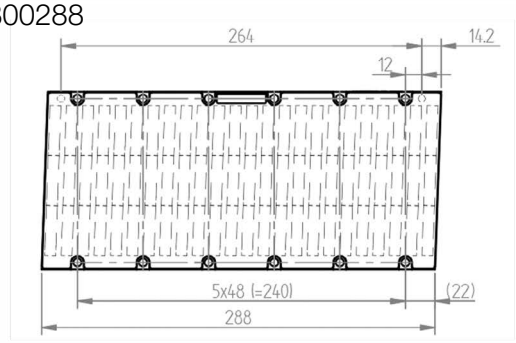
### MAGNET PLATES



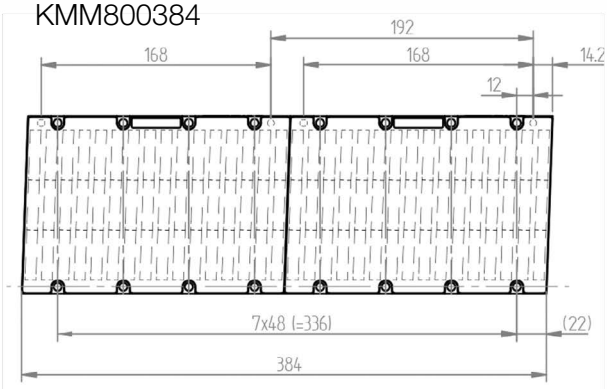

KMM800192




KMM800288

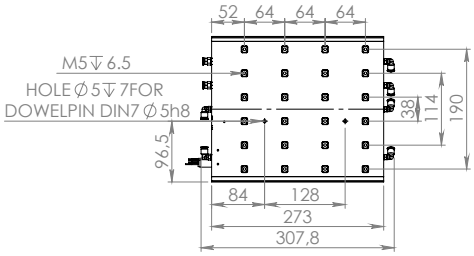



KMM800384

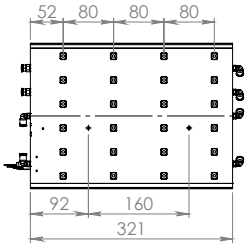



*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

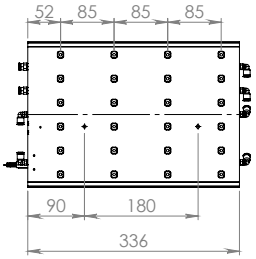
KMC80S-II34H



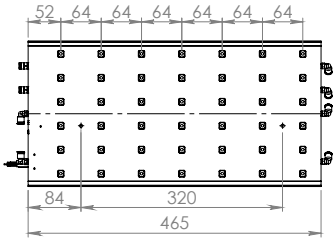

KMC80S-II42H



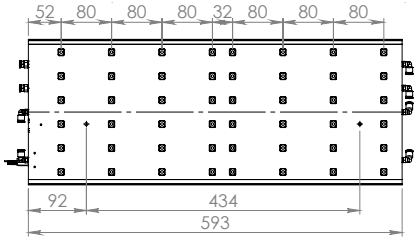

KMC80S-II50H



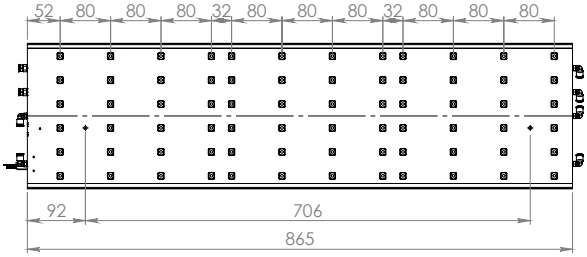

KMC80S-II67N




KMC80S-II84H



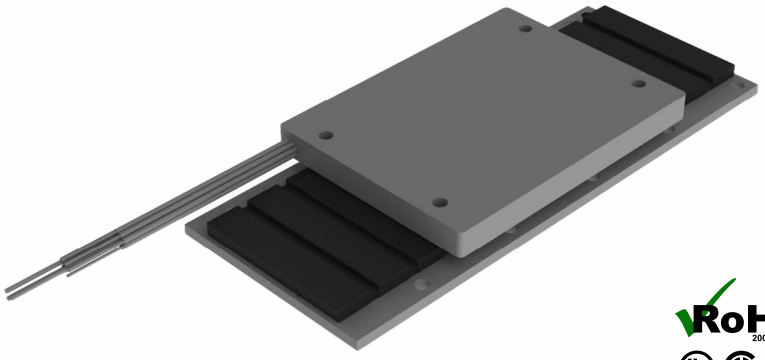

KMC80S-II13H



# KMC89S SERIES - IRONLESS LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM890066** | **KMM890099** |
| **Le (mm)** | 66 | 99 |
| **M5 bolts** | 8 | 10 |
| **Mass (kg/m)** | 1,06 | |
| *Magnet yokes can be butted together.* | | |

| | | |
|---|---|---|
| **Code** | **KMM890115** | **KMM890264** |
| **Le (mm)** | 115 | 264 |
| **M5 bolts** | 12 | 26 |
| **Mass (kg/m)** | 1,06 | |
| *Magnet yokes can be butted together.* | | |



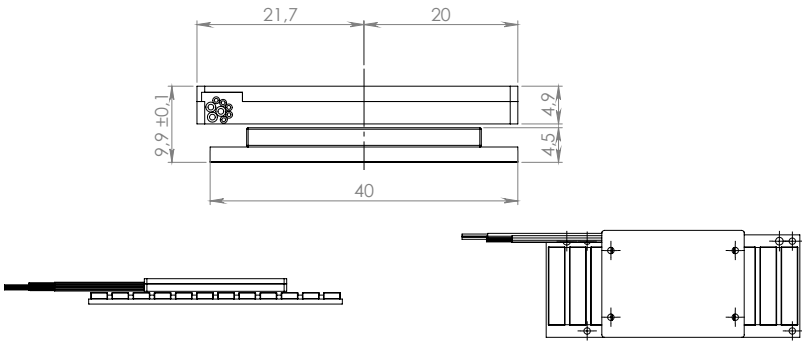
| | Parameter | Remarks | Sym | Unit | KMC89S | | |
|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI02H | UI04H | UI06H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 45V $_{ac\ rms}$ (60V$_{dc}$) | | |
| | **Peak force @ 6°C/s increase** | Magnet @ 25°C | $F_p$ | N | 20 | 40 | 60 |
| | **Continuous force*** | Coils @ 110°C | $F_c$ | N | 5 | 10 | 15 |
| | **Maximum speed**** | @ 60 V | $V_{max}$ | m/s | 6 | | |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | N/A$_{rms}$ | 6 | | |
| | **Motor constant** | Coils @ 25°C | S | N²/W | 3 | 6 | 9 |
| Electrical | **Peak current** | Magnet @ 25°C | $i_p$ | A$_{rms}$ | 3.3 | 6.7 | 10 |
| | **Continuous current air cooled** | Coils @ 110°C | $I_c$ | A$_{rms}$ | 0.8 | 1.7 | 2.5 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 5 | | |
| | **Resistance per phase** | Coils @ 25°C ex. cable | $R_{ph}$ | Ω | 4.75 | 2.38 | 1.58 |
| | **Induction per phase** | I < 0.6 Ip | $I_{ph}$ | mH | 0.8 | 0.4 | 0.3 |
| | **Electrical time constant** | Coils @ 25°C | $T_e$ | ms | 0.16 | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 11.2 | 22.4 | 33.6 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 1.6 | 0.8 | 0.53 |
| | **Temperature cut-off / sensor** | | | | None | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.03 | 0.05 | 0.08 |
| | **Coil unit length** | ex. cables | L | mm | 45 | 78 | 111 |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 0 | | |
| | **Magnet pitch NN** | | t | mm | 16.5 | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | Leadwires 3*0.3mm² | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | NA | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 12.000.000 | | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

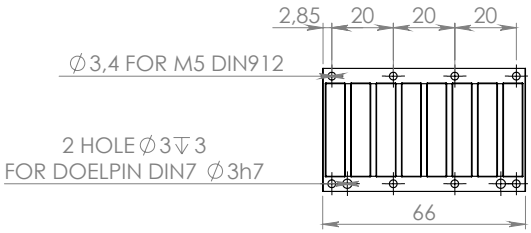
# KMC89S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

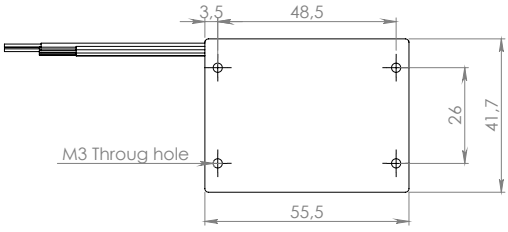
### MAGNET PLATES



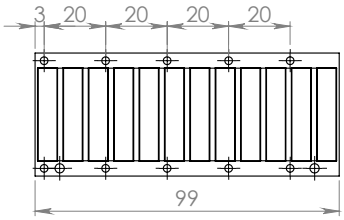

KMM890066




KMC89S-UI02N




KMM890099

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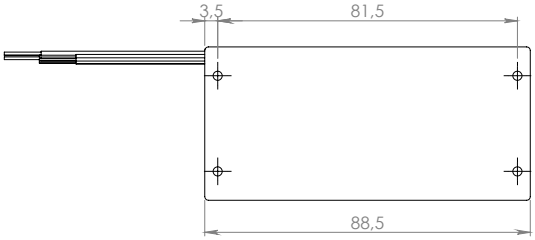
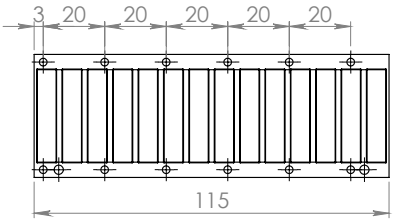
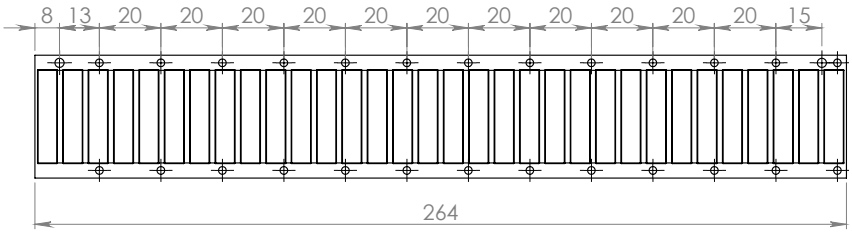



KMM890115




KMM890264

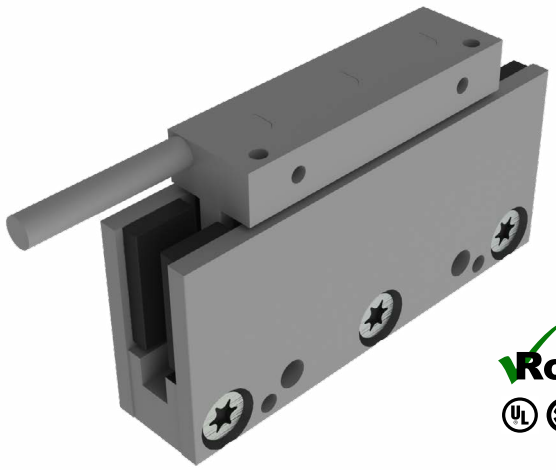



*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC90S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | | |
|---|---|---|---|
| **Code** | **KMM900072** | **KMM900096** | **KMM900144** |
| **Le (mm)** | 72 | 96 | 144 |
| **M5 bolts** | 2 | 3 | 4 |
| **Mass (kg/m)** | 2.3 | | |
| *Magnet plates can be butted together.* | | | |



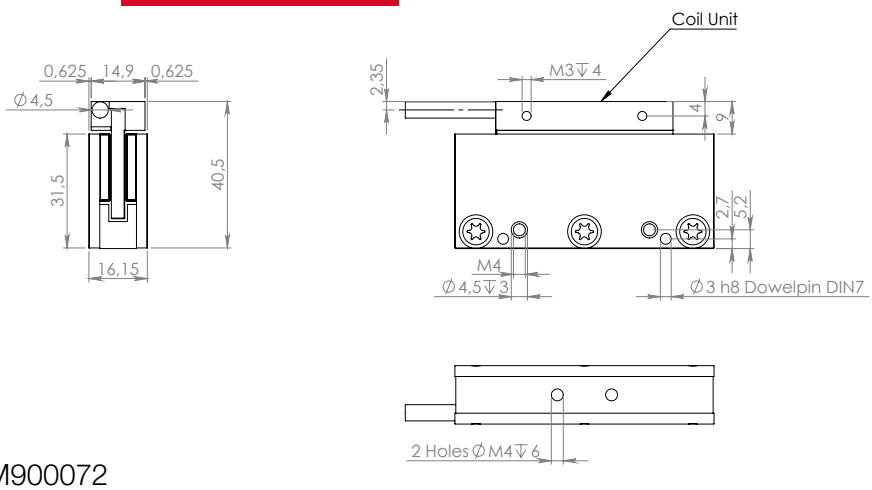
| | Parameter | Remarks | Sym | Unit | KMC90S | |
|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI04H | UI09H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 45V $_{ac\ rms}$ (60V$_{dc}$) | |
| | **Peak force @ 6°C/s increase** | Magnet @ 25°C | $F_p$ | N | 46 | 92 |
| | **Continuous force*** | Coils @ 110°C | $F_c$ | N | 11.5 | 23 |
| | **Maximum speed**** | @ 600 V | $V_{max}$ | m/s | 5 | |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | N/A$_{rms}$ | 7.3 | |
| | **Motor constant** | Coils @ 25°C | S | N$^2$/W | 7.5 | 15 |
| Electrical | **Peak current** | Magnet @ 25°C | $i_p$ | A$_{rms}$ | 6.3 | 12.6 |
| | **Continuous current air cooled** | Coils @ 110°C | $I_c$ | A$_{rms}$ | 1.6 | 3.2 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 6 | |
| | **Resistance per phase** | Coils @ 25°C ex. cable | $R_{ph}$ | Ω | 2.4 | 1.175 |
| | **Induction per phase** | I < 0.6 Ip | $I_{ph}$ | mH | 0.8 | 0.4 |
| | **Electrical time constant** | Coils @ 25°C | $T_e$ | ms | 0.355 | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 24 | 47 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 3.2 | 1.6 |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.038 | 0.075 |
| | **Coil unit length** | ex. cables | L | mm | 49 | 97 |
| | **Motor attraction force** | rms @ 0 A | $F_a$ | N | 0 | |
| | **Magnet pitch NN** | | t | mm | 24 | |
| | **Cable mass** | | m | kg/m | 0.065 | |
| | **Cable Type (power FLEX)***** | | d | mm (AWG) | 4.5 (24) | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 4.5 (22) | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 12.000.000 cycles | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

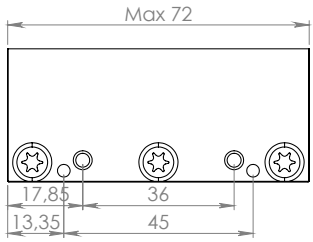
# KMC90S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

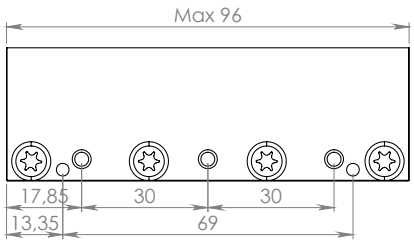
### MAGNET PLATES



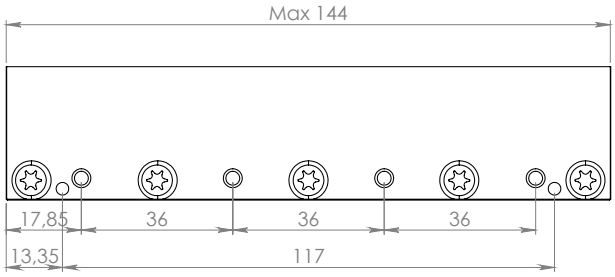

KMM900072



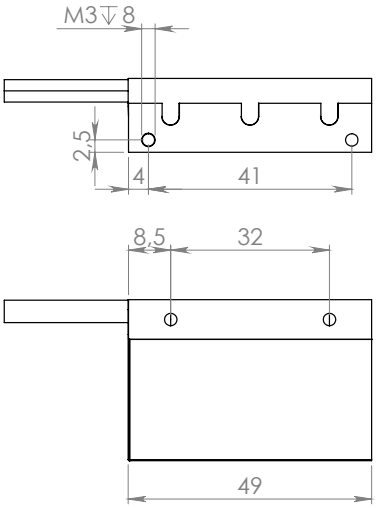

KMM900096



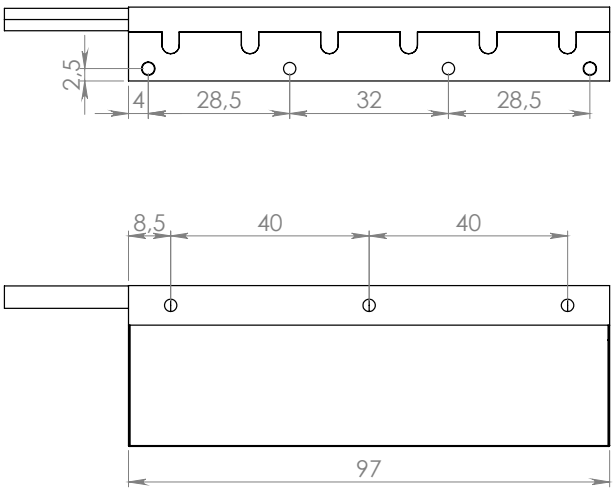

KMM900144




KMC90S-UI04N



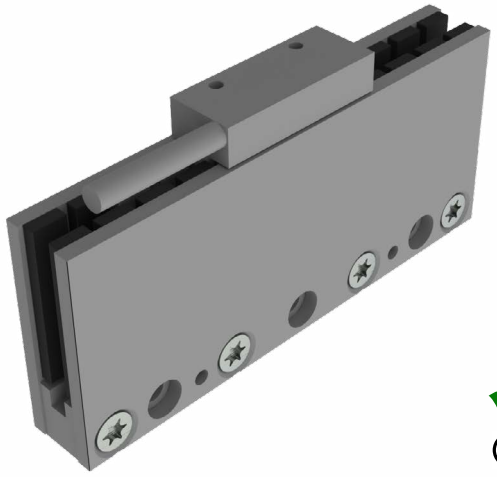

KMC90S-UI09H




*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC91S SERIES - IRONLESS LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | | |
|---|---|---|---|
| **Code** | **KMM910066** | **KMM910099** | **KMM910264** |
| **Le (mm)** | 66 | 99 | 264 |
| **M5 bolts** | 2 | 3 | 8 |
| **Mass (kg/m)** | 3.2 | | |
| *Magnet plates can be butted together.* | | | |



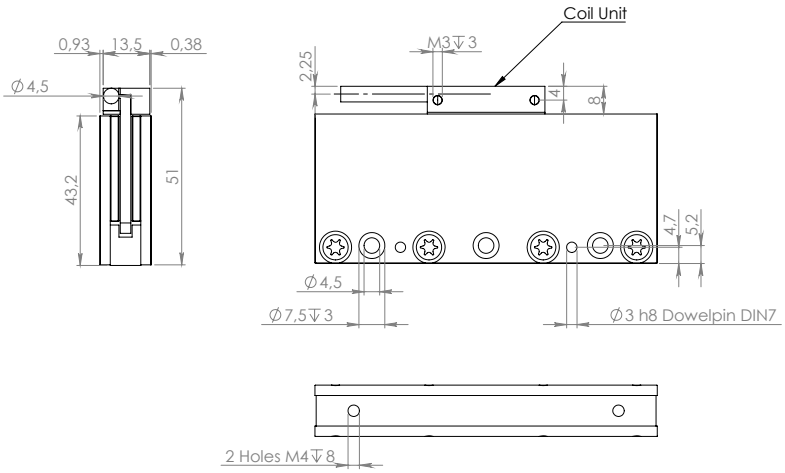
| | Parameter | Remarks | Sym | Unit | KMC91S | |
|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI03H | UI07H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 45V $_{ac\ rms}$ (60V$_{dc}$) | |
| | **Peak force @ 20°C/s increase** | Magnet @ 25ºC | $F_u$ | N | 37 | 75 |
| | **Continuous force*** | Coils @ 80ºC | $F_c$ | N | 10 | 20 |
| | **Maximum speed**** | @ 60 V | $V_{max}$ | m/s | 5.4 | |
| | **Motor force constant** | Mount. sfc. @ 20ºC | K | N/A$_{rms}$ | 11.5 | |
| | **Motor constant** | Coils @ 25ºC | S | N²/W | 9 | 19 |
| Electrical | **Peak current** | Magnet @ 25ºC | $I_p$ | $A_{rms}$ | 3.2 | 6.5 |
| | **Maximum continuous current** | Coils @ 80ºC | $I_c$ | $A_{rms}$ | 0.88 | 1.76 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 9 | |
| | **Resistance per phase*** | Coils @ 25ºC ex. cable | $R_{ph}$ | Ω | 4.75 | 2.37 |
| | **Induction per phase** | | $I_{ph}$ | mH | 0.8 | 0.4 |
| | **Electrical time constant*** | Coils @ 25ºC | $T_e$ | ms | 0.16 | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 14.8 | 29.6 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 3.58 | 1.79 |
| | **Thermal time constant*** | up to 63% max. coiltemp. | $T_{th}$ | s | 25 | 25 |
| | **Temperature sensor** | | | | none | none |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.03 | 0.06 |
| | **Coil unit length** | ex. cables | L | mm | 34 | 67 |
| | **Motor attraction force** | | $F_a$ | N | 0 | |
| | **Magnet pitch NN** | | t | mm | 16.5 | |
| | **Cable mass** | | m | kg/m | 0.07 | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 4.5 (22) | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | Customizable | |
| | **Cable life (Power FLEX)***** | minimum | | Cycles | 12.000.000 cycles | |
| | **Bending Radius Static** | minimum | | mm | 4x cable diameter | |
| | **Bending Radius Dynamic** | minimum | | mm | 7.5x cable diameter | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

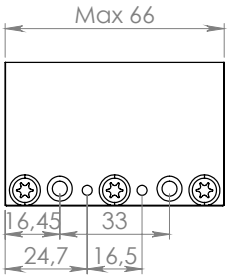
# KMC91S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

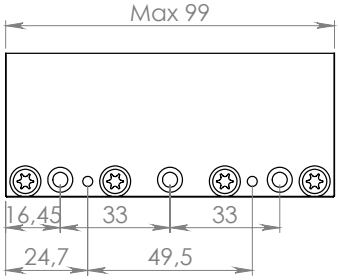
### MAGNET PLATES



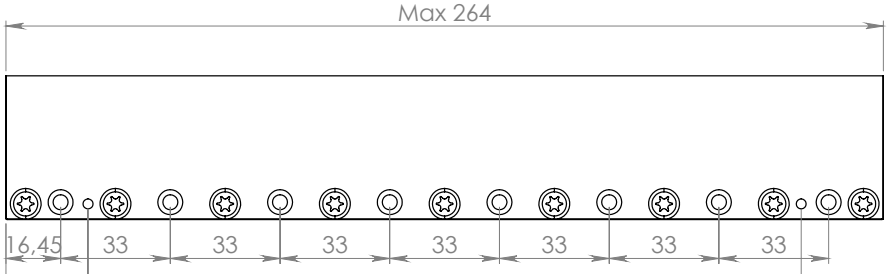

KMM910066



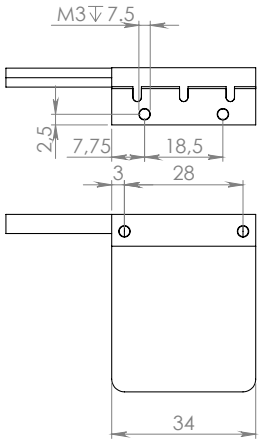

KMM910099



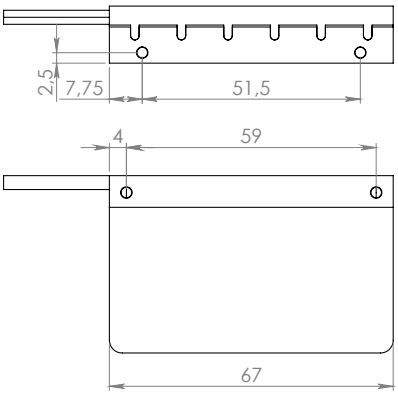

KMM910264




KMC91S-UI03H




KMC91S-UI07H

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** All sizes are in mm*

# KMC92S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM920072** | **KMM920120** |
| **Le (mm)** | 72 | 120 |
| **M5 bolts** | 2 | 3 |
| **Mass (kg/m)** | 3.2 | |
| *Magnet plates can be butted together.* | | |

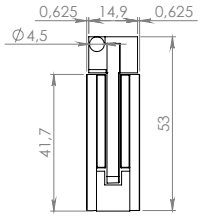
| | Parameter | Remarks | Sym | Unit | KMC92S | | |
|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI04H | UI08H | UI01H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 45V $_{ac\ rms}$ (60V$_{dc}$) | | |
| | **Peak force @ 20°C/s increase** | Magnet @ 25°C | $F_u$ | N | 45 | 90 | 135 |
| | **Continuous force*** | Coils @ 110°C | $F_c$ | N | 20 | 40 | 60 |
| | **Maximum speed**** | @ 60 V | $V_{max}$ | m/s | 5 | | |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | N/A$_{rms}$ | 12.4 | | |
| | **Motor constant** | Coils @ 25°C | S | N$^2$/W | 15 | 29 | 44 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 3.6 | 7.3 | 11 |
| | **Maximum continuous current** | Coils @ 110°C | $I_c$ | $A_{rms}$ | 1.6 | 3.2 | 4.8 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 10 | | |
| | **Resistance per phase** | Coils @ 25°C ex. cable | $R_{ph}$ | Ω | 3.5 | 1.75 | 1.17 |
| | **Induction per phase** | | $I_{ph}$ | mH | 1.2 | 0.6 | 0.4 |
| | **Electrical time constant*** | Coils @ 25°C | $T_e$ | ms | 0.35 | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 37 | 74 | 74 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 2.35 | 1.17 | 0.58 |
| | **Thermal time constant*** | up to 63% max. coiltemp. | $T_{th}$ | s | 34 | | |
| | **Temperature sensor** | | | | NTC | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.05 | 0.1 | 0.15 |
| | **Coil unit length** | ex. cables | L | mm | 49 | 97 | 145 |
| | **Motor attraction force** | | $F_a$ | N | 0 | | |
| | **Magnet pitch NN** | | t | mm | 24 | | |
| | **Cable mass** | | m | kg/m | 0.07 | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 4.5 (22) | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | Customizable | | |
| | **Cable Life Time (FLEX)***** | minimum | | Cycles | 12.000.000 cycles | | |
| | **Bending Radius Static** | minimum | | mm | 4x cable diameter | | |
| | **Bending Radius Dynamic** | minimum | | mm | 7.5x cable diameter | | |

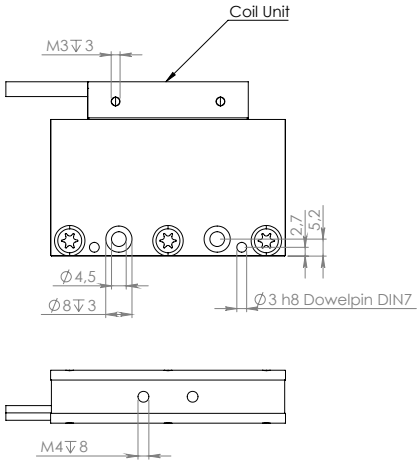
** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

# KMC92S SERIES - IRONLESS LINEAR MOTOR

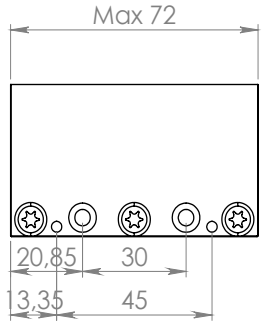
## DIMENSIONS AND SPECIFICATIONS

### MAGNET PLATES

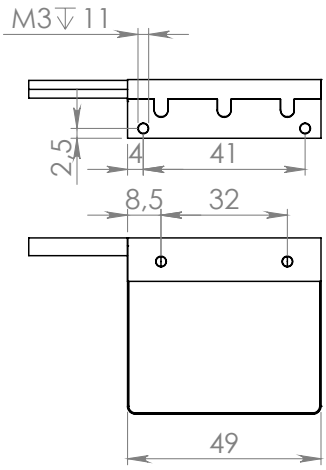


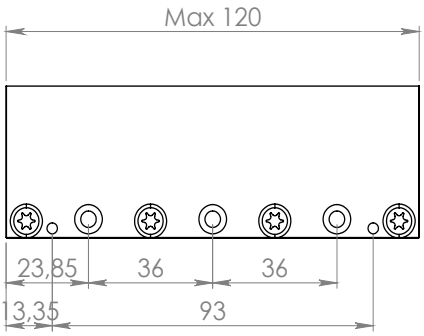

KMM920072



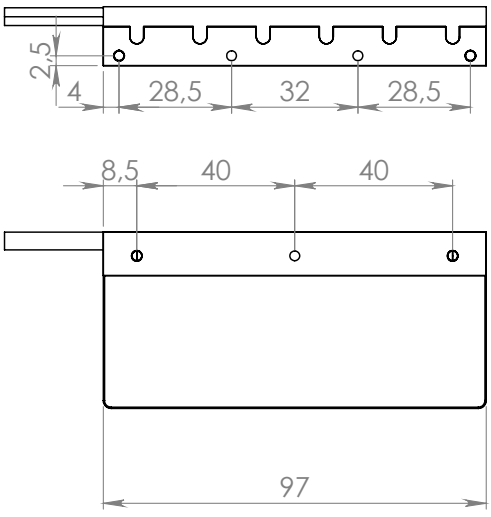

KMC92S-UI04H




KMM920120




KMC92S-UI08H

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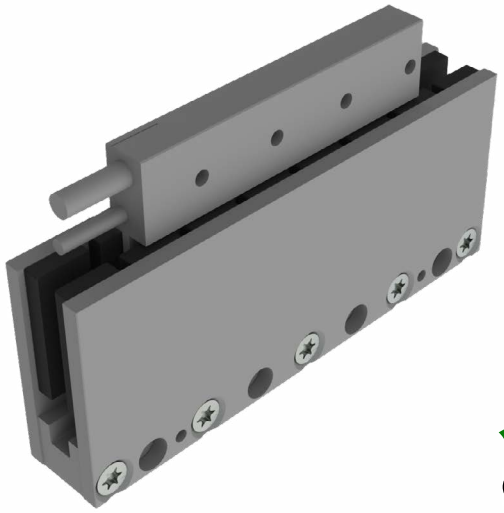
** All sizes are in mm*

# KMC93S SERIES - IRONLESS LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM930090** | **KMM930120** |
| **Le (mm)** | 90 | 120 |
| **M5 bolts** | 3 | 4 |
| **Mass (kg/m)** | 4.8 | |
| *Magnet yokes can be butted together.* | | |

| | | |
|---|---|---|
| **Code** | **KMM930150** | **KMM930390** |
| **Le (mm)** | 150 | 390 |
| **M5 bolts** | 6 | 13 |
| **Mass (kg/m)** | 4.8 | |
| *Magnet yokes can be butted together.* | | |



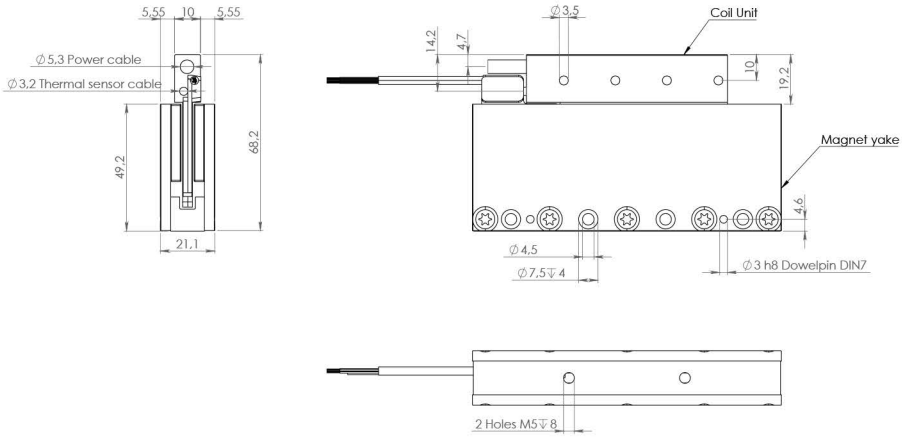
| | Parameter | Remarks | Sym | Unit | KMC93S | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI01N | UI01H | UI02N | UI02H | UI03N | UI03H | UI04N | UI04H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 230 $V_{ac\ rms}$ ($320V_{dc}$) | | | | | | | |
| | **Ultimate force @ 20°C/s increase** | Magnet @ 25ºC | $F_u$ | N | 105 | | 210 | | 315 | | 420 | |
| | **Continuous force*** | Coils @ 110ºC | $F_c$ | N | 30 | | 60 | | 90 | | 120 | |
| | **Maximum speed**** | @ 300 V | $V_{max}$ | m/s | 9.2 | 16.7 | 9.2 | 16.7 | 9.2 | 16.7 | 9.2 | 16.7 |
| | **Motor force constant** | Mount. sfc. @ 20ºC | K | $N/A_{rms}$ | 36.3 | 20 | 36.3 | 20 | 36.3 | 20 | 36.3 | 20 |
| | **Motor constant** | Coils @ 25ºC | S | $N^2/W$ | 24 | | 47 | | 71 | | 95 | |
| Electrical | **Peak current** | Magnet @ 25ºC | $i_p$ | $A_{rms}$ | 2.9 | 5.3 | 5.8 | 10.5 | 8.7 | 15.8 | 11.6 | 21 |
| | **Maximum continuous current** | Coils @ 110ºC | $I_c$ | $A_{rms}$ | 0.8 | 1.5 | 1.7 | 3 | 2.5 | 4.5 | 3.3 | 6 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 30 | 16 | 30 | 16 | 30 | 16 | 30 | 16 |
| | **Resistance per phase*** | Coils @ 25ºC ex. cable | $R_{ph}$ | Ω | 18.5 | 5.5 | 9.3 | 2.8 | 6.2 | 1.8 | 4.6 | 1.4 |
| | **Induction per phase** | | $I_{ph}$ | mH | 6.5 | 1.9 | 3.3 | 1 | 2.2 | 0.6 | 1.6 | 0.5 |
| | **Electrical time constant*** | Coils @ 25ºC | $T_e$ | ms | 0.35 | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 51 | | 102 | | 153 | | 240 | |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 1.79 | | 0.9 | | 0.59 | | 0.44 | |
| | **Thermal time constant*** | up to 63% max. coiltemp. | $T_{th}$ | s | 36 | | | | | | | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.082 | | 0.16 | | 0.24 | | 0.32 | |
| | **Coil unit length** | ex. cables | L | mm | 78 | | 138 | | 198 | | 258 | |
| | **Motor attraction force** | | $F_a$ | N | 0 | | | | | | | |
| | **Magnet pitch NN** | | t | mm | 30 | | | | | | | |
| | **Cable mass** | | m | kg/m | 0.08 | | | | | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 6.6 (21) | | | | | | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 3.2 (26) | | | | | | | |
| | **Cable Life Time (power FLEX)** | minimum | | Cycles | 5.000.000 cycles | | | | | | | |
| | **Bending Radius Static** | minimum | | mm | 4x cable diameter | | | | | | | |
| | **Bending Radius Dynamic** | minimum | | mm | 7.5x cable diameter | | | | | | | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

# KMC93S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

### MAGNET PLATES

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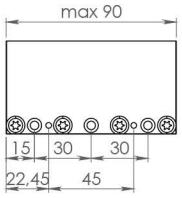
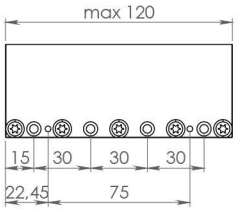



KMM930120

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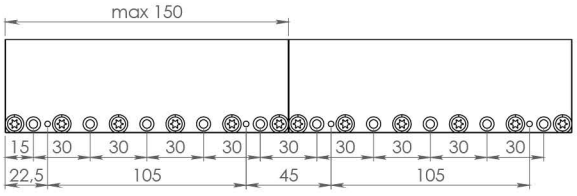
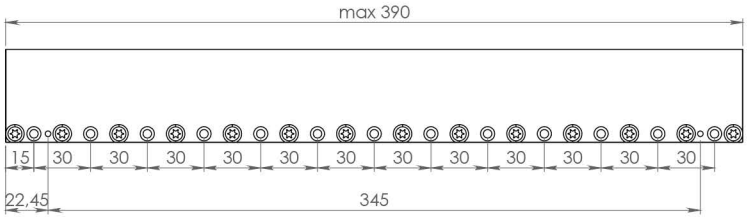
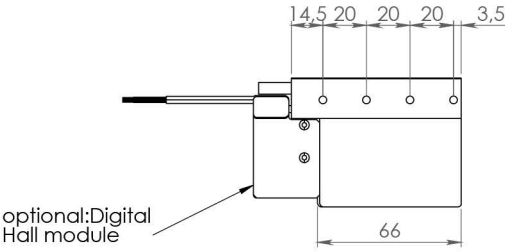


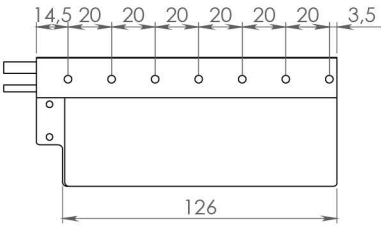

KMM930390



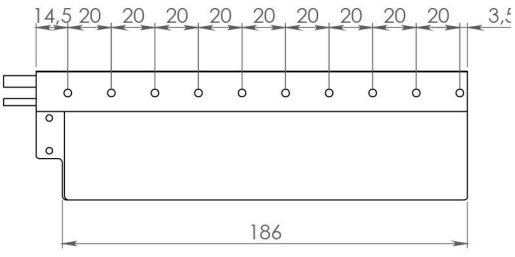

KMC93S-UI01N / UI01H



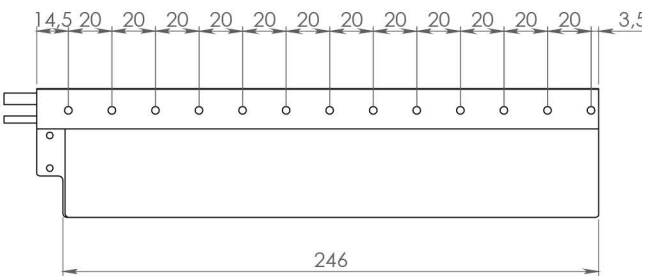

KMC93S-UI02N / UI02H




KMC93S-UI03N / UI03H




KMC93S-UI04N / UI04H

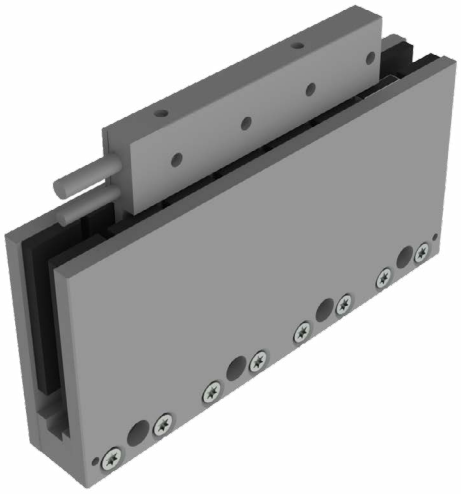



*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC95S SERIES - IRONLESS LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | |
|---|---|---|
| **Code** | **KMM950126** | **KMM950168** |
| **Le (mm)** | 126 | 168 |
| **M5 bolts** | 3 | 4 |
| **Mass (kg/m)** | 11.2 | |
| *Magnet yokes can be butted together.* | | |

| | | |
|---|---|---|
| **Code** | **KMM950210** | **KMM950546** |
| **Le (mm)** | 210 | 546 |
| **M5 bolts** | 5 | 13 |
| **Mass (kg/m)** | 11.2 | |
| *Magnet yokes can be butted together.* | | |



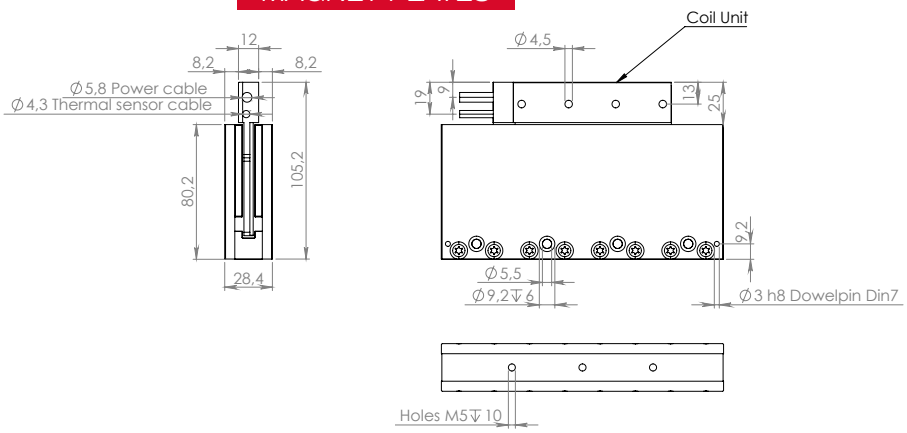
| | Parameter | Remarks | Sym | Unit | KMC95S | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI02N | UI02H | UI05N | UI05H | UI07N | UI07H | UI10N | UI10H | UI12N | UI12H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 230V $_{ac\ rms}$ (325V$_{dc}$) | | | | | | | | | |
| | **Peak force @ 20°C/s increase** | Magnet @ 25ºC | $F_p$ | N | 250 | | 480 | | 720 | | 960 | | 1200 | |
| | **Continuous force*** | Coils @ 110ºC | $F_c$ | N | 73 | | 140 | | 210 | | 280 | | 350 | |
| | **Maximum speed**** | @ 300 V | $V_{max}$ | m/s | 5 | 12.3 | 5 | 12 | 5 | 12 | 5 | 12 | 5 | 12 |
| | **Motor force constant** | Mount. sfc. @ 20ºC | K | N/$A_{rms}$ | 67.5 | 27.1 | 68 | 27.5 | 68 | 27.5 | 68 | 27.5 | 68 | 27.5 |
| | **Motor constant** | Coils @ 25ºC | S | N$^2$/W | 93 | | 195 | | 290 | | 390 | | 485 | |
| Electrical | **Peak current** | Magnet @ 25ºC | $I_p$ | $A_{rms}$ | 3.7 | 9.2 | 7 | 17.5 | 10.5 | 26.2 | 14.1 | 35 | 17.8 | 44 |
| | **Maximum continuous current** | Coils @ 110ºC | $I_c$ | $A_{rms}$ | 1.1 | 2.7 | 2.1 | 5.1 | 3.1 | 7.6 | 4.2 | 10.2 | 5.2 | 12.9 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 54.7 | 22.1 | 55.5 | 22.5 | 55.5 | 22.5 | 55.5 | 22.5 | 55.5 | 22.5 |
| | **Resistance per phase** | Coils @ 25ºC ex. cable | $R_{ph}$ | Ω | 15.9 | 2.64 | 8.0 | 1.28 | 5.3 | 0.85 | 4.0 | 0.64 | 3.3 | 0.53 |
| | **Induction per phase** | | $L_{ph}$ | mH | 12.7 | 2.1 | 6.5 | 1.0 | 4.2 | 0.7 | 3.2 | 0.5 | 3 | 0.4 |
| | **Electrical time constant*** | Coils @ 25ºC | $t_e$ | ms | 0.8 | | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 77 | | 134 | | 200 | | 270 | | 335 | |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 1.2 | | 0.6 | | 0.43 | | 0.32 | | 0.26 | |
| | **Thermal time constant*** | up to 63% max. coiltemp. | $t_{th}$ | s | 72 | | | | | | | | | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.25 | | 0.47 | | 0.69 | | 0.91 | | 1.13 | |
| | **Coil unit length** | ex. cables | L | mm | 106 | | 190 | | 274 | | 358 | | 442 | |
| | **Motor attraction force** | | $F_a$ | N | 0 | | | | | | | | | |
| | **Magnet pitch NN** | | t | mm | 42 | | | | | | | | | |
| | **Cable mass** | | m | kg/m | 0.09 | | 0.09 | | 0.09 | | 0.105 | | 0.105 | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 7.2 (19) | | | | | | | | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | minimum | | Cycles | 5.000.000 cycles | | | | | | | | | |
| | **Bending Radius Static** | minimum | | mm | 4x cable diameter | | | | | | | | | |
| | **Bending Radius Dynamic** | minimum | | mm | 7.5x cable diameter | | | | | | | | | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

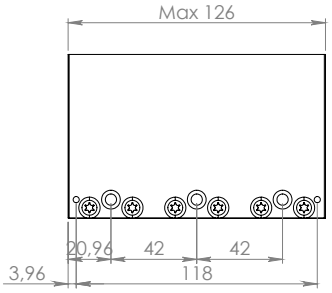
# KMC95S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

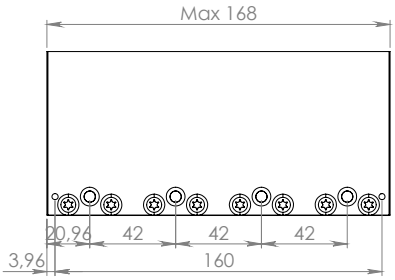
### MAGNET PLATES



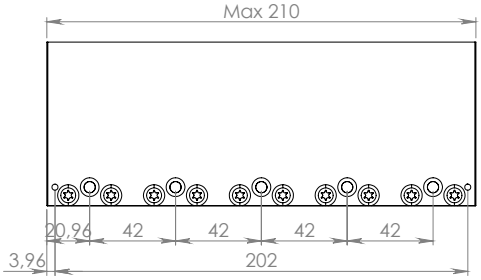

KMM950126



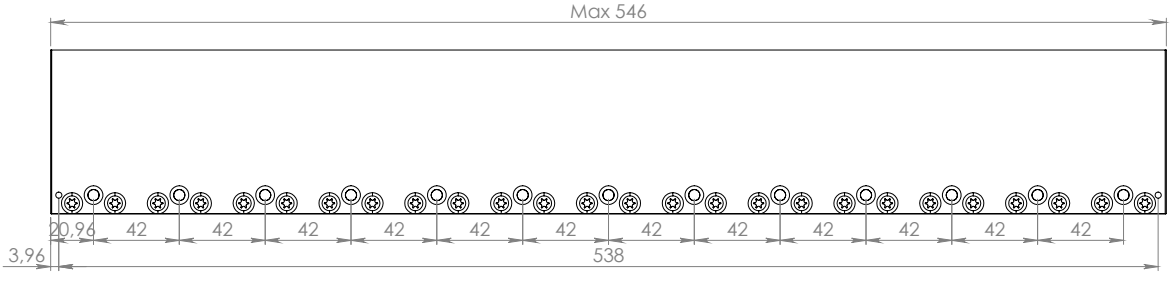

KMM950168



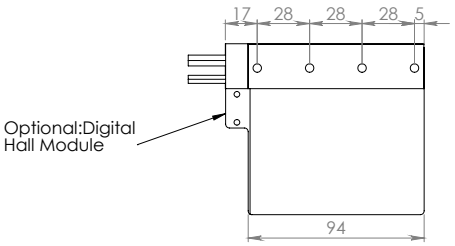

KMM950210




KMM950546




### KMC95S-UI02N / UI02H

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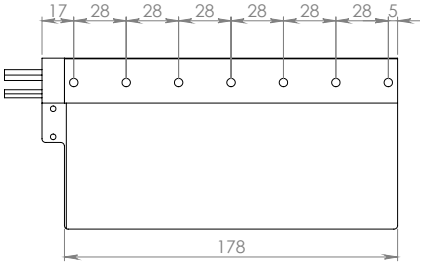


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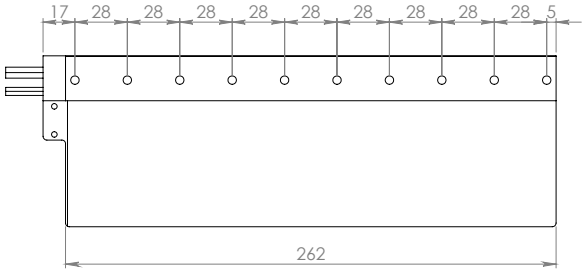


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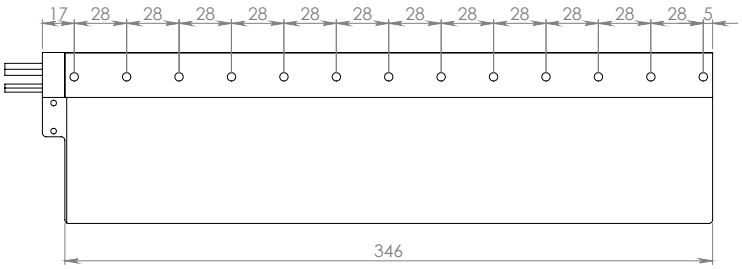
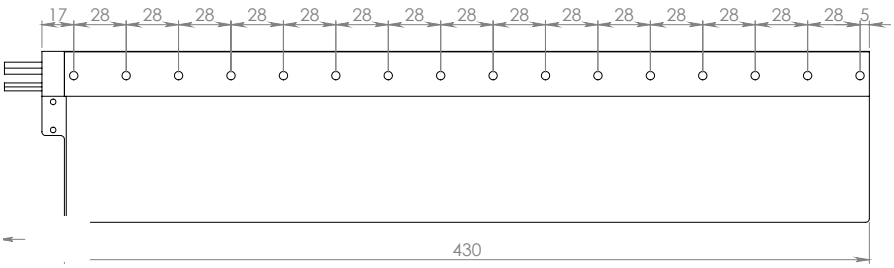



### KMC95S-UI12N / UI12H

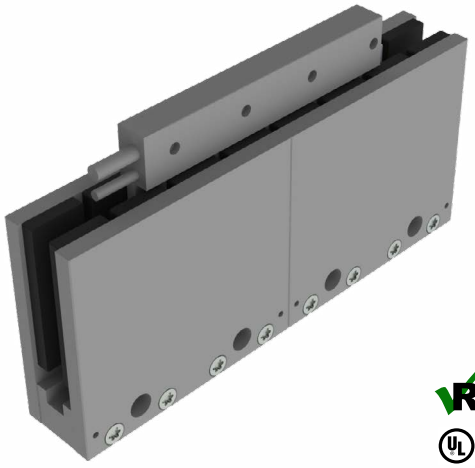



*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC97S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

| Magnet plate dimensions | | | |
|---|---|---|---|
| **Code** | **KMM970144** | **KMM970171** | **KMM970456** |
| **Le (mm)** | 144 | 171 | 456 |
| **M5 bolts** | 2 | 3 | 8 |
| **Mass (kg/m)** | 19,1 | | |
| *Magnet plates can be butted together.* | | | |



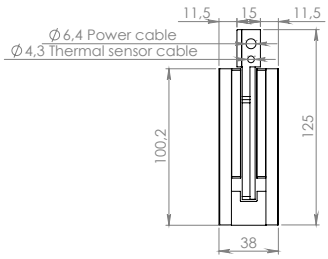
| | Parameter | Remarks | Sym | Unit | KMC97S | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI06N | UI06H | UI13N | UI13H | UI19N | UI19H | UI26N | UI26H | UI39N | UI39H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 230V $_{ac\ rms}$ (320V$_{dc}$) | | | | | | | | | |
| | **Peak force @ 20°C/s increase** | Magnet @ 25ºC | $F_p$ | N | 645 | | 1290 | | 1935 | | 2580 | | 3870 | |
| | **Continuous force*** | Coils @ 110ºC | $F_c$ | N | 125 | | 250 | | 375 | | 500 | | 750 | |
| | **Maximum speed**** | @ 300 V | $V_{max}$ | m/s | 3.1 | 7.7 | 3.1 | 7.7 | 3.1 | 7.7 | 3.1 | 7.7 | 3.1 | 7.7 |
| | **Motor force constant** | Mount. sfc. @ 20ºC | K | N/A$_{rms}$ | 107 | 43.4 | 107 | 43.4 | 107 | 43.4 | 107 | 43.4 | 107 | 43.4 |
| | **Motor constant** | Coils @ 25ºC | S | N²/W | 242 | | 483 | | 725 | | 966 | | 1449 | |
| Electrical | **Peak current** | Magnet @ 25ºC | $I_p$ | $A_{rms}$ | 6.0 | 14.9 | 12.1 | 29.7 | 18.1 | 44.6 | 24.1 | 59.4 | 36.2 | 89.2 |
| | **Maximum continuous current** | Coils @ 110ºC | $I_c$ | $A_{rms}$ | 1.2 | 2.9 | 2.3 | 5.8 | 3.5 | 8.6 | 4.7 | 11.5 | 7.0 | 17.3 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 87 | 35 | 87 | 35 | 87 | 35 | 87 | 35 | 87 | 35 |
| | **Resistance per phase** | Coils @ 25ºC ex. cable | $R_{ph}$ | Ω | 15.8 | 2.6 | 7.9 | 1.29 | 5.3 | 0.86 | 3.95 | 0.65 | 2.6 | 0.43 |
| | **Induction per phase** | | $L_{ph}$ | mH | 28.4 | 4.7 | 14.2 | 2.3 | 9.5 | 1.5 | 7.1 | 1.2 | 4.7 | 0.8 |
| | **Electrical time constant*** | Coils @ 25ºC | $t_e$ | ms | 1.8 | | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 88 | | 176 | | 264 | | 352 | | 528 | |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 1.03 | | 0.52 | | 0.34 | | 0.25 | | 0.18 | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.54 | | 0.94 | | 1.34 | | 1.74 | | 2.54 | |
| | **Coil unit length** | ex. cables | L | mm | 134 | | 248 | | 362 | | 476 | | 704 | |
| | **Motor attraction force** | | $F_a$ | N | 0 | | | | | | | | | |
| | **Magnet pitch NN** | | t | mm | 57 | | | | | | | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 7.4 (18) | | | | | | | | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | minimum | | Cycles | 5.000.000 cycles | | | | | | | | | |
| | **Bending Radius Static** | minimum | | mm | 4x cable diameter | | | | | | | | | |
| | **Bending Radius Dynamic** | minimum | | mm | 7.5x cable diameter | | | | | | | | | |

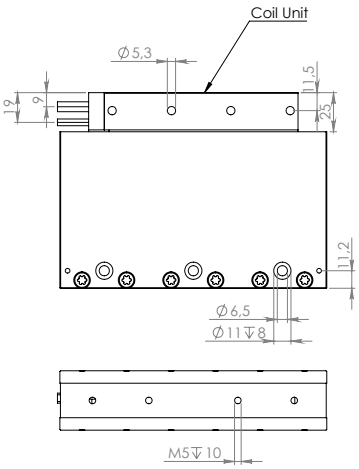
** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

# KMC97S SERIES - IRONLESS LINEAR MOTOR

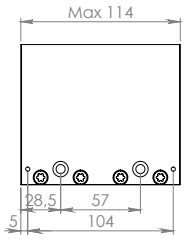
## DIMENSIONS AND SPECIFICATIONS

### MAGNET PLATES

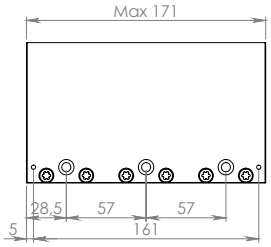


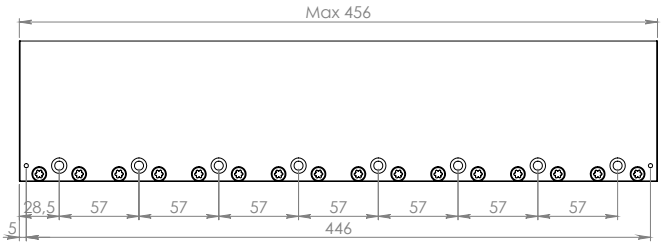

KMM970144



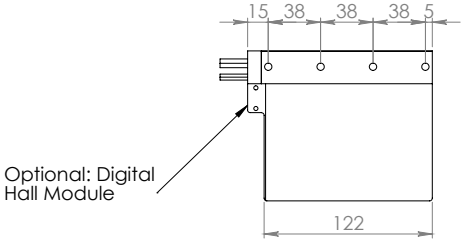

KMM970171



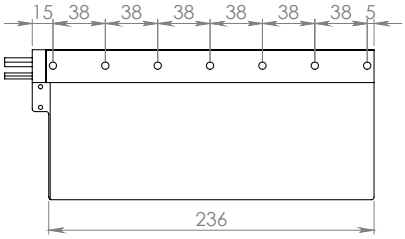

KMM970456



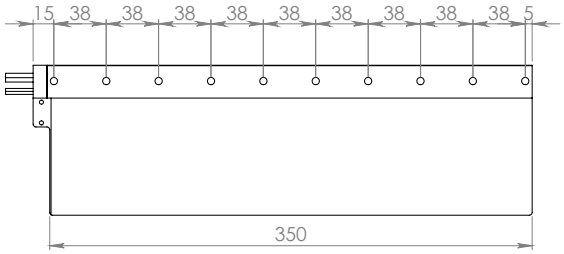

KMC97S-UI64N / UI64H



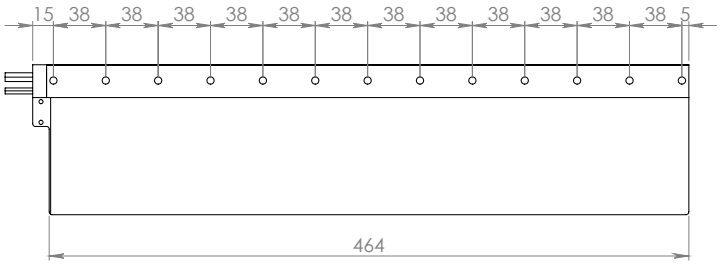

KMC97S-UI13N / UI13H



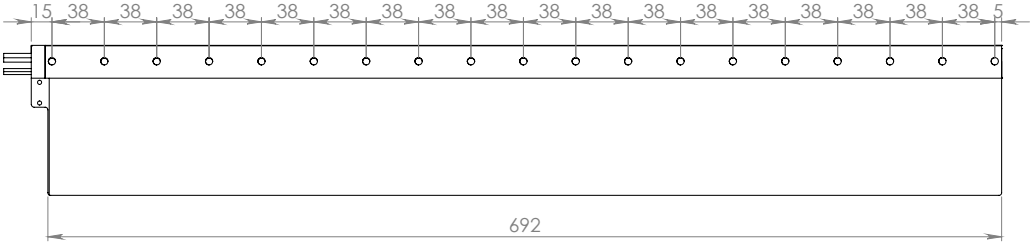

KMC97S-UI19N / UI19H




KMC97S-UI26N / UI26H



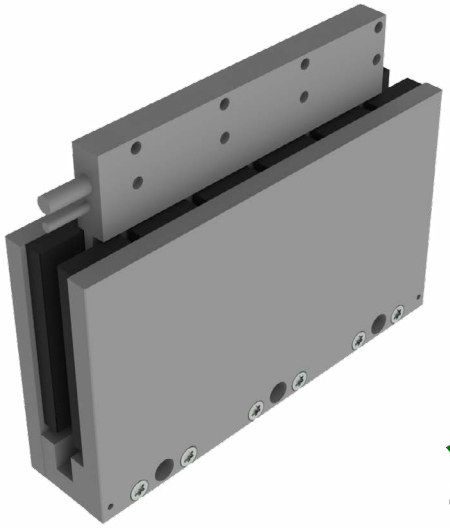

KMC97S-UI39N / UI39H




*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC98S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS



| Magnet plate dimensions | | | |
|---|---|---|---|
| **Code** | **KMM980140** | **KMM980210** | **KMM980420** |
| **Le (mm)** | 140 | 210 | 420 |
| **M5 bolts** | 2 | 3 | 6 |
| **Mass (kg/m)** | 32 | | |
| *Magnet plates can be butted together.* | | | |

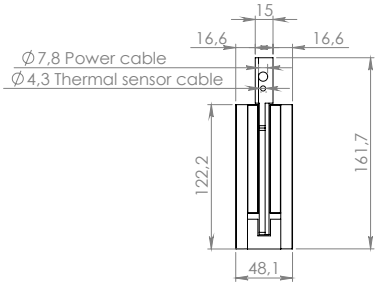
| | Parameter | Remarks | Sym | Unit | KMC98S | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI10N | UI10H | UI20N | UI20H | UI30N | UI30H | UI40N | UI40H | UI50N |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 230V $_{ac\ rms}$ (320V$_{dc}$) | | | | | | | | |
| | **Peak force @ 20°C/s increase** | Magnet @ 25°C | $F_p$ | N | 1000 | | 2000 | | 3000 | | 4000 | | 5000 |
| | **Continuous force*** | Coils @ 110°C | $F_c$ | N | 250 | | 500 | | 750 | | 1000 | | 1250 |
| | **Maximum speed**** | @ 300 V | $V_{max}$ | m/s | 1.6 | 3.2 | 1.6 | 3.2 | 1.6 | 3.2 | 1.6 | 3.2 | 1.6 |
| | **Motor force constant** | Mount. sfc. @ 20°C | K | N/$A_{rms}$ | 177 | 84 | 177 | 84 | 177 | 84 | 177 | 84 | 177 |
| | **Motor constant** | Coils @ 25°C | S | N²/W | 913 | | 1826 | | 2739 | | 3652 | | 4565 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 5.6 | 11.9 | 11.3 | 23.8 | 16.9 | 35.7 | 22.6 | 47.6 | 28.2 |
| | **Maximum continuous current** | Coils @ 110°C | $I_c$ | $A_{rms}$ | 1.5 | 3.0 | 3.0 | 6.0 | 4.5 | 6.0 | 12.0 | 7.0 | - |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 145 | 69 | 126 | 60 | 145 | 69 | 126 | 60 | 145 |
| | **Resistance per phase** | Coils @ 25°C ex. cable | $R_{ph}$ | Ω | 11.5 | 2.84 | 5.75 | 1.45 | 3.80 | 0.95 | 2.90 | 0.75 | 2.30 |
| | **Induction per phase** | | $L_{ph}$ | mH | 34.5 | 8.50 | 17.3 | 4.40 | 11.4 | 2.90 | 8.70 | 2.30 | 6.90 |
| | **Electrical time constant*** | Coils @ 25°C | $t_e$ | ms | 3 | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 92 | | 183 | | 275 | | 367 | | 459 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.8 | | 0.4 | | 0.3 | | 0.2 | | 0.15 |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.9 | | 1.8 | | 2.7 | | 3.6 | | 4.5 |
| | **Coil unit length** | ex. cables | L | mm | 163 | | 302.5 | | 442 | | 581.5 | | 721 |
| | **Motor attraction force** | | $F_a$ | N | 0 | | | | | | | | |
| | **Magnet pitch NN** | | t | mm | 70 | | | | | | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 7.4 (18) | | | | | | | | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 5.000.000 cycles | | | | | | | | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | | | | | | | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | | | | | | | |

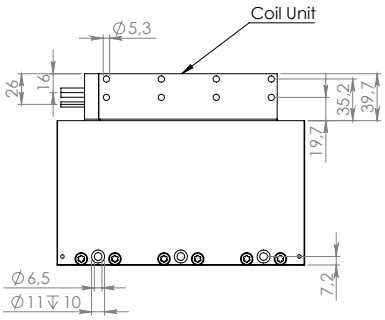
** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

# KMC98S SERIES - IRONLESS LINEAR MOTOR

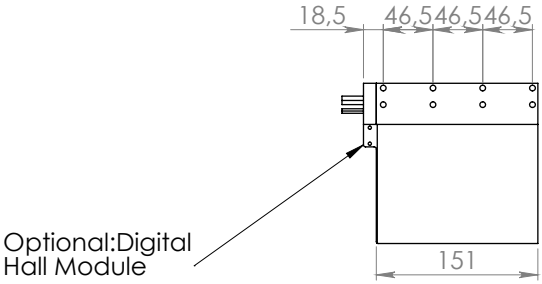
## DIMENSIONS AND SPECIFICATIONS

### MAGNET PLATES

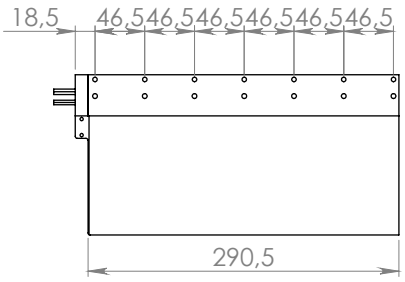


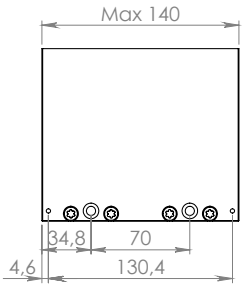

### KMC98S-UI10N / UI10H



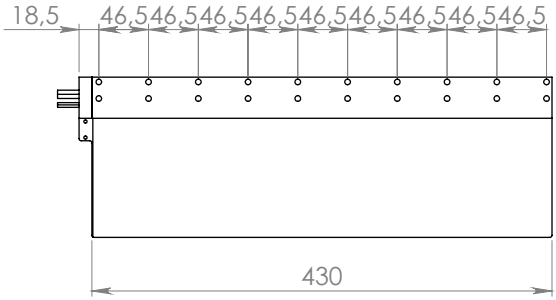

### KMC98S-UI20N / UI20H



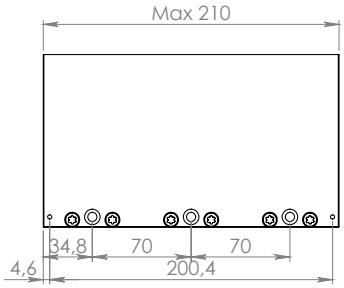

### KMM980140



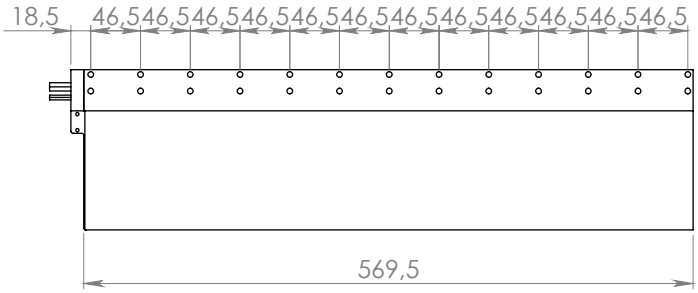

### KMC98S-UI30N / UI30H



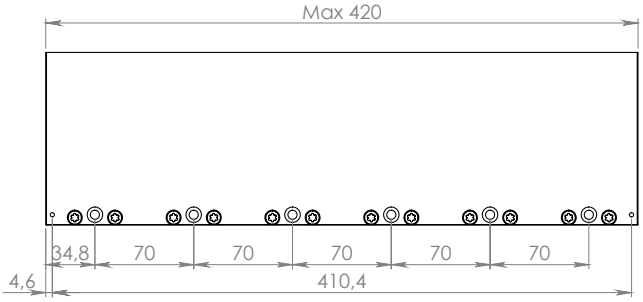

### KMM980210



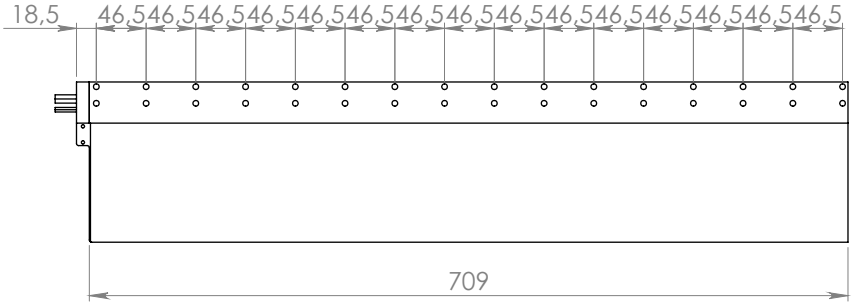

### KMC98S-UI40N / UI40H




### KMM980420

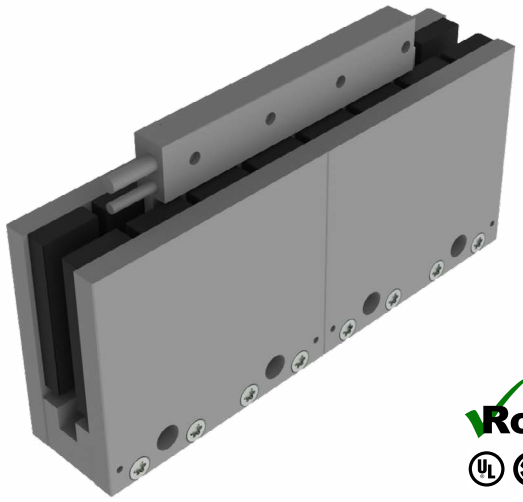



### KMC98S-UI50N




*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC99S SERIES - IRONLESS LINEAR MOTOR
## DIMENSIONS AND SPECIFICATIONS



| Magnet plate dimensions | | | |
|---|---|---|---|
| **Code** | **KMM990114** | **KMM990171** | **KMM990456** |
| **Le (mm)** | 114 | 171 | 456 |
| **M5 bolts** | 2 | 3 | 8 |
| **Mass (kg/m)** | 13,5 | | |
| *Magnet plates can be butted together.* | | | |

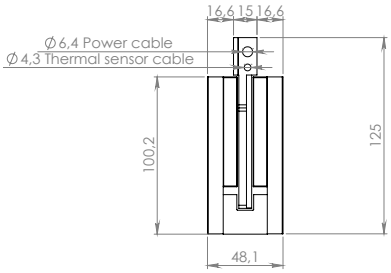
| | Parameter | Remarks | Sym | Unit | KMC99S | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI07N | UI07H | UI15N | UI15H | UI22N | UI22H | UI29N | UI29H | UI44N | UI44H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 230V $_{ac\ rms}$ (320V$_{dc}$) | | | | | | | | | |
| | **Peak force @ 20°C/s increase** | Magnet @ 25ºC | $F_p$ | N | 730 | | 1460 | | 2190 | | 2920 | | 4380 | |
| | **Continuous force*** | Coils @ 110ºC | $F_c$ | N | 145 | | 290 | | 435 | | 580 | | 870 | |
| | **Maximum speed**** | @ 300 V | $V_{max}$ | m/s | 2.6 | 6.8 | 2.6 | 6.8 | 2.6 | 6.8 | 2.6 | 6.8 | 2.6 | 6.8 |
| | **Motor force constant** | Mount. sfc. @ 20ºC | K | N/$A_{rms}$ | 127 | 49 | 127 | 49 | 127 | 49 | 127 | 49 | 127 | 49 |
| | **Motor constant** | Coils @ 25ºC | S | N²/W | 340 | | 680 | | 1020 | | 1359 | | 2039 | |
| Electrical | **Peak current** | Magnet @ 25ºC | $I_p$ | $A_{rms}$ | 5.7 | 14.9 | 11.5 | 29.8 | 17.2 | 44.7 | 23.0 | 59.6 | 34.5 | 89.4 |
| | **Maximum continuous current** | Coils @ 110ºC | $I_c$ | $A_{rms}$ | 1.1 | 3.0 | 2.3 | 5.9 | 3.4 | 8.9 | 4.6 | 11.8 | 6.9 | 17.8 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 104 | 40 | 104 | 40 | 104 | 40 | 104 | 40 | 104 | 40 |
| | **Resistance per phase** | Coils @ 25ºC ex. cable | $R_{ph}$ | Ω | 15.82 | 2.6 | 7.9 | 1.29 | 5.3 | 0.86 | 3.95 | 0.65 | 2.6 | 0.43 |
| | **Induction per phase** | | $L_{ph}$ | mH | 28.5 | 4.7 | 14.2 | 2.3 | 9.5 | 1.5 | 7.1 | 1.2 | 4.7 | 0.8 |
| | **Electrical time constant*** | Coils @ 25ºC | $t_e$ | ms | 1.8 | | | | | | | | | |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 119 | | 238 | | 357 | | 476 | | 713 | |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 1.03 | | 0.52 | | 0.34 | | 0.25 | | 0.18 | |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | | | | | |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0.54 | | 0.94 | | 1.34 | | 1.74 | | 2.54 | |
| | **Coil unit length** | ex. cables | L | mm | 134 | | 248 | | 362 | | 476 | | 704 | |
| | **Motor attraction force** | | $F_a$ | N | 0 | | | | | | | | | |
| | **Magnet pitch NN** | | t | mm | 57 | | | | | | | | | |
| | **Cable Type (power FLEX)***** | Length 3 m | d | mm (AWG) | 7.4 (18) | | | | | | | | 8.4 (16) | |
| | **Cable Type (sensor)** | Length 3 m | d | mm (AWG) | 4.9 (26) | | | | | | | | | |
| | **Cable Life Time (power FLEX)***** | Minimum | | Cycles | 5.000.000 cycles | | | | | | | | | |
| | **Bending Radius Static** | Minimum | | mm | 4x cable diameter | | | | | | | | | |
| | **Bending Radius Dynamic** | Minimum | | mm | 7.5x cable diameter | | | | | | | | | |

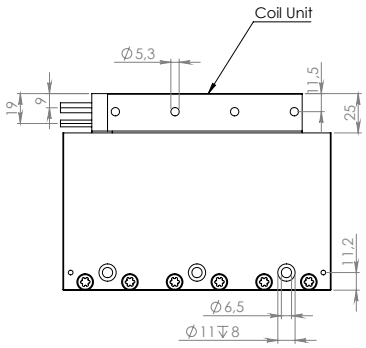
** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

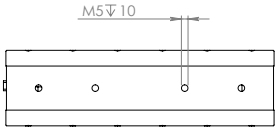
# KMC99S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

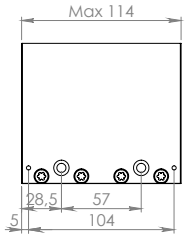
### MAGNET PLATES



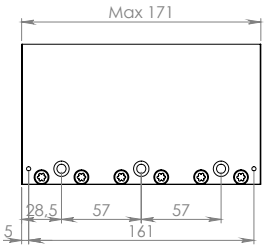



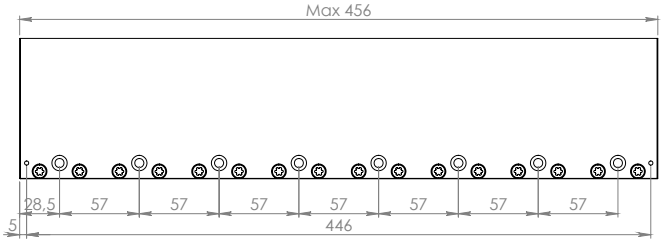

KMM990114



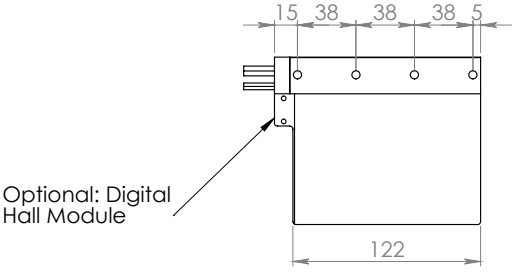

KMM990171



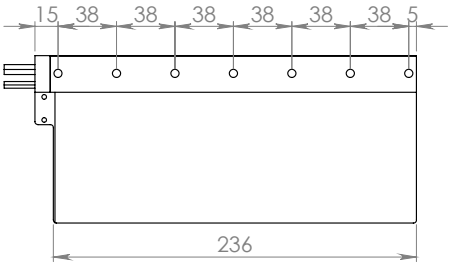

KMM990456



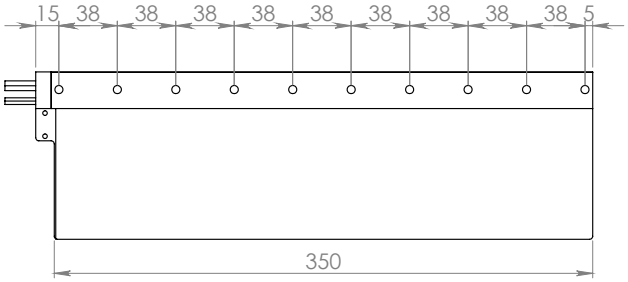

KMC99S-UI73N / UI73H



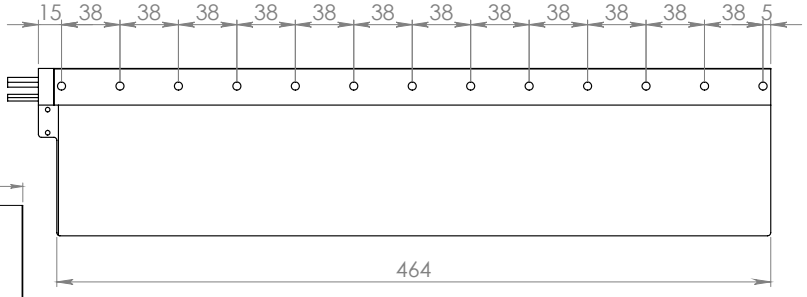

KMC99S-UI15N / UI15H



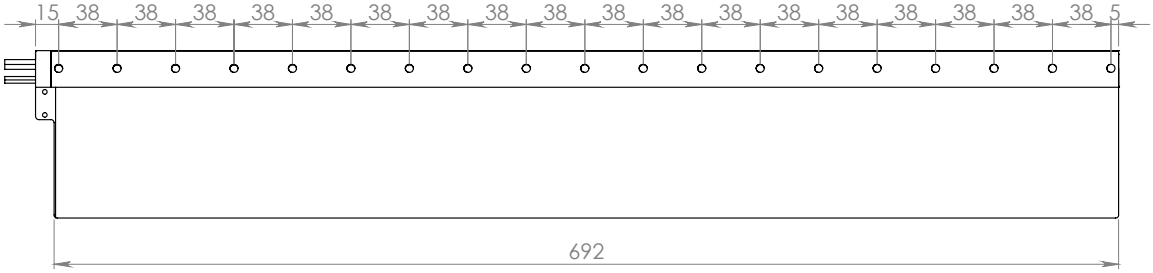

KMC99S-UI22N / UI22H




KMC99S-UI29N / UI29H




KMC99S-UI44N / UI44H




*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*

# KMC LINEAR MOTOR COIL
## ORDER CODE

### Type
KMC - Linear motor winding

**KMC□□S - □□□□□ - □□□ - □□**

### □□ Motor size
**Size:**
**71** - KMC71S
**73** - KMC73S
**75** - KMC75S
**77** - KMC77S
**78** - KMC78S
**79** - KMC79S
**80** - KMC80S
**89** - KMC89S
**90** - KMC90S
**91** - KMC91S
**92** - KMC92S
**93** - KMC93S
**95** - KMC95S
**97** - KMC97S
**98** - KMC98S
**99** - KMC99S

### □□ Motor
**Motor technology:**
**II** - Iron core motor
**UI** - Ironless motor

### □ Winding
**Motor winding:**
**N** - Standard winding
**H** - High-speed winding
**I** - Low voltage winding

### □□ Peak force, N (aircooled) [1]:

**KMC71S**
- **01** - 110N
- **02** - 220N

**KMC73S**
- **01** - 135N
- **02** - 270N
- **05** - 540N
- **07** - 810N
- **09** - 960N

**KMC75S**
- **04** - 496N
- **06** - 744N
- **09** - 992N
- **11** - 1240N
- **13** - 1488N
- **18** - 1984N
- **25** - 2480N
- **36** - 3600N

**KMC77S**
- **18** - 1900N
- **22** - 2375N
- **28** - 2850N
- **38** - 3800N
- **47** - 4750N
- **71** - 7125N

**KMC78S**
- **23** - 2375N
- **28** - 2850N
- **47** - 4750N
- **71** - 7125N

**KMC79S**
- **27** - 2700N
- **34** - 3375N
- **41** - 4050N
- **54** - 5400N
- **68** - 6750N
- **10** - 10125N

**KMC80S**
- **34** - 3360N
- **42** - 4200N
- **50** - 5040N
- **67** - 6720N
- **84** - 8400N
- **12** - 12600N

**KMC89S**
- **02** - 20N
- **04** - 40N
- **06** - 60N

**KMC90S**
- **04** - 46N
- **09** - 92N

**KMC91S**
- **03** - 37N
- **07** - 75N

**KMC92S**
- **04** - 45N
- **08** - 90N
- **01** - 135N

**KMC93S**
- **01** - 105N
- **02** - 210N
- **03** - 315N
- **04** - 420N

**KMC95S**
- **02** - 250N
- **05** - 480N
- **07** - 720N
- **10** - 960N
- **12** - 1200N

**KMC97S**
- **06** - 645N
- **13** - 1290N
- **19** - 1935N
- **26** - 2580N
- **39** - 3870N

**KMC98S**
- **10** - 1000N
- **20** - 2000N
- **30** - 3000N
- **40** - 4000N
- **50** - 5000N

**KMC99S**
- **07** - 730N
- **15** - 1460N
- **22** - 2190N
- **29** - 2920N
- **44** - 4380N

### □□□ Connectors
**Typ [2]:**
**00A** - Side connector Y-TEC base
**00M** - Side connector AMP
**01A** - Side connector M23 base
**04A** - Cable with connector M23
**05A** - Cable without connector
**06A** - Cable with connector Y-TEC

### □□ Cable
**Cable length in cm**
Max. cable lenght 300 cm

# KMM LINEAR MOTOR MAGNETS

## ORDER CODE

### Type

KMM - Linear motor magnet

**KMM□□S - □□□□**

### □□ Magnet size

**Size:**

**71** - KMM71S
**73** - KMM73S
**75** - KMM75S
**77** - KMM77S
**78** - KMM78S
**79** - KMM79S
**80** - KMM80S
**89** - KMM89S
**90** - KMM90S
**91** - KMM91S
**92** - KMM92S
**93** - KMM93S
**95** - KMM95S
**97** - KMM97S
**98** - KMM98S
**99** - KMM99S

### □□□□ Magnet lenght

**Lenght:**

**KMM71S**
- **0064** - 64mm
- **0128** - 128mm

**KMM73S**
- **0096** - 96mm
- **0144** - 144mm
- **0384** - 384mm

**KMM75S**
- **0192** - 192mm
- **0288** - 288mm

**KMM77S**
- **0192** - 192mm
- **0288** - 288mm

**KMM78S**
- **0192** - 192mm
- **0288** - 288mm

**KMM79S**
- **0192** - 192mm
- **0288** - 288mm

**KMM80S**
- **0192** - 192mm
- **0288** - 288mm
- **0384** - 384mm

**KMM89S**
- **0066** - 66mm
- **0099** - 99mm
- **0115** - 115mm
- **0264** - 264mm

**KMM90S**
- **0072** - 72mm
- **0096** - 96mm
- **0144** - 144mm

**KMM91S**
- **0066** - 66mm
- **0099** - 99mm
- **0264** - 264mm

**KMM92S**
- **0072** - 72mm
- **0120** - 120mm

**KMM93S**
- **0090** - 90mm
- **0120** - 120mm
- **0150** - 150mm
- **0390** - 390mm

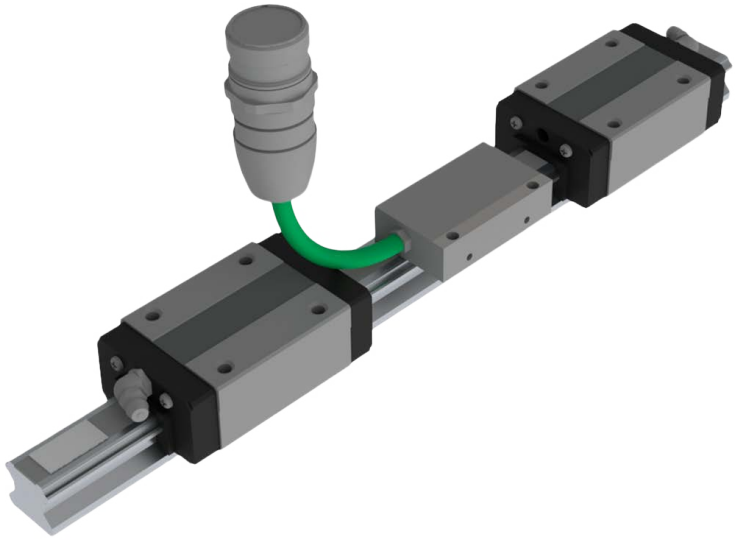
**KMM95S**
- **0126** - 126mm
- **0168** - 168mm
- **0210** - 210mm
- **0546** - 546mm

**KMM97S**
- **0144** - 144mm
- **0171** - 171mm
- **0456** - 456mm

**KMM98S**
- **0140** - 140mm
- **0210** - 210mm
- **0420** - 420mm

**KMM99S**
- **0114** - 114mm
- **0171** - 171mm
- **0456** - 456mm

# KEC00S INCREMENTAL ENCODER
## TECHNICAL SPECIFICATIONS



### Inductive measuring systems

Inductive measuring systems are particularly suitable for applications with linear axes.
Due to its inductive measuring system, this system offers great reliability and resistance to dust, oils, and even wood chips.
The electromagnetic fields do not affect correct operation of the measuring system.
The special properties of these measuring systems are therefore very suitable for use with direct drives and linear motors.

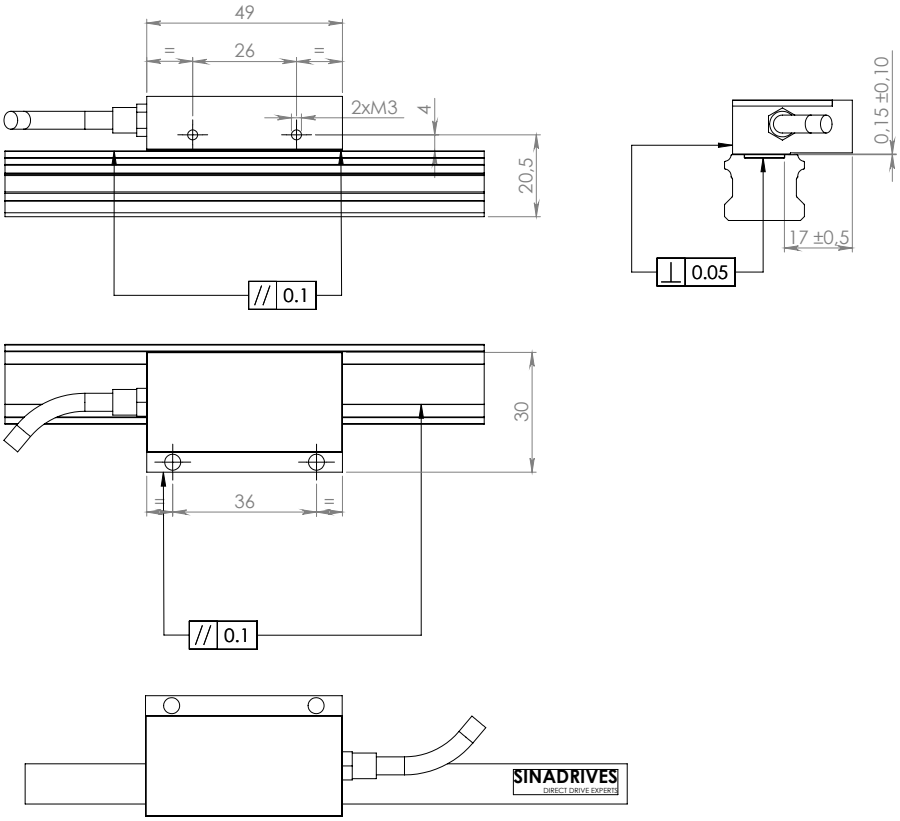
### Magnetic measuring systems

Magnetic encoders provide excellent performance in dusty and contaminated environments. Due to the greater tolerance between encoder and measuring tape, this encoder is particularly suitable for long measurements.

| | KEC00S - 0A | KEC00S - 2R |
|---|---|---|
| **Measuring principle** | Inductive | Magnetic |
| **Maximum length** | Up to 100 m | Up to 100 m |
| **Resistance to** dirt, oil, water, coolant and swarf | Very high | Very high |
| **Resistance to** electromagnetic interference and magnetic fields | Very high | Low |
| **Repeatability of the measuring system** | +/- 5 µm | +/- 20 µm |
| **Reading head output / Measuring system** | 1 Vss / 40 µm (SIN/COS)<br>TTL / 1 µm | 1 Vss / 2000 µm (SIN/COS)<br>TTL / 1 µm |

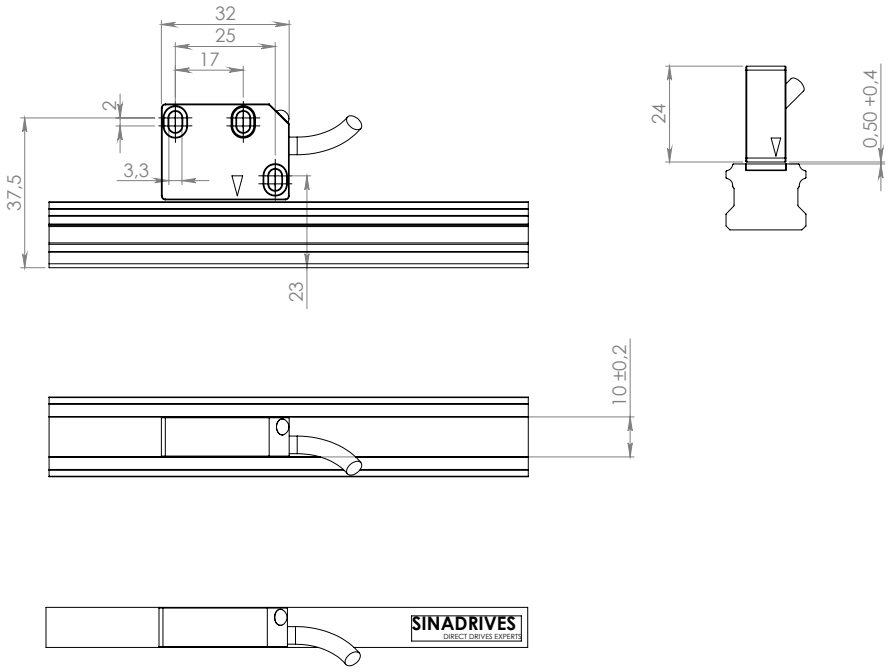
# KEC - 0A INCREMENTAL ENCODER

## TECHNICAL SPECIFICATIONS

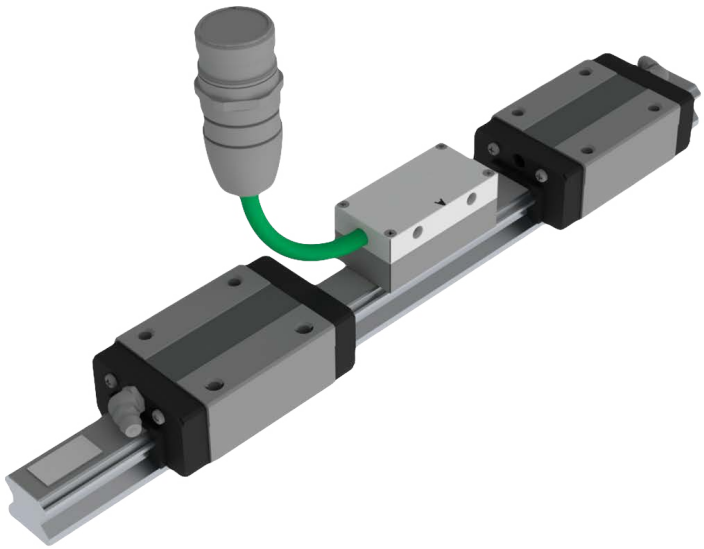



# KEC - 2R INCREMENTAL ENCODER

## TECHNICAL SPECIFICATIONS



# KEC03S ABSOLUTE ENCODER
## TECHNICAL SPECIFICATIONS



### Inductive measuring systems

Inductive measuring systems are particularly suitable for applications with linear axes.
Due to its inductive measuring system, this system offers great reliability and resistance to dust, oils, and even wood chips.
The electromagnetic fields do not affect correct operation of the measuring system.
The special properties of these measuring systems are therefore very suitable for use with direct drives and linear motors.

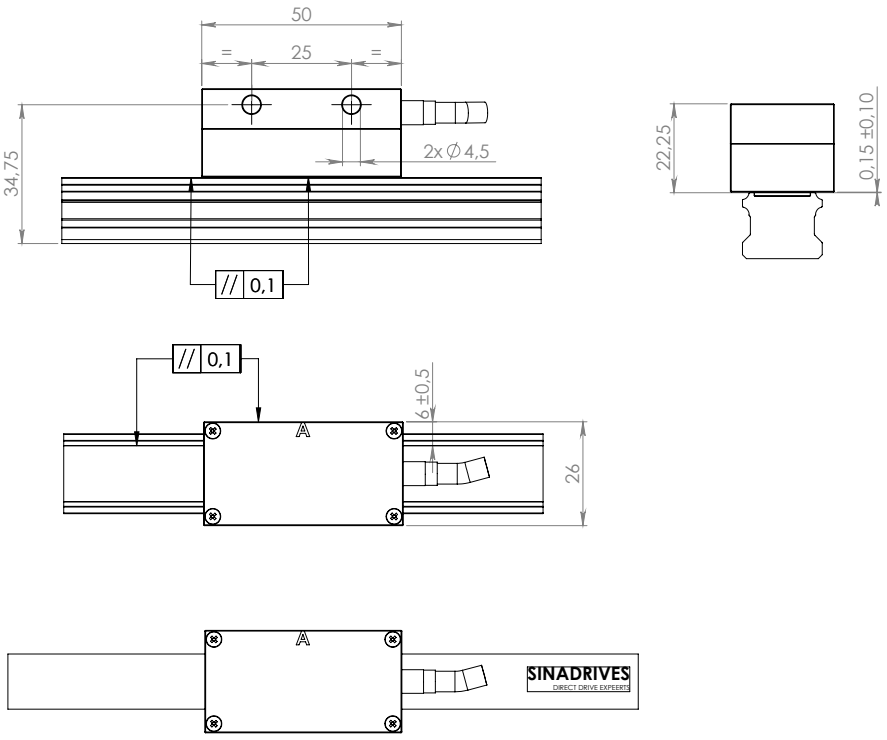
### Magnetic measuring systems

Magnetic encoders provide excellent performance in dusty and contaminated environments. Due to the greater tolerance between encoder and measuring tape, this encoder is particularly suitable for long measurements.

| | KEC03S - 3A | KEC03S - 5S |
|---|---|---|
| **Measuring principle** | Inductive | Magnetic |
| **Maximum length** | Up to 32 m | Up to 16 m |
| **Resistance to** dirt, oil, water, coolant and swarf | Very high | Very high |
| **Resistance to** electromagnetic interference and magnetic fields | Very high | Low |
| **Repeatability of the measuring system** | +/- 5 µm o +/- 10 µm | +/- 20 µm |
| **Resolution of the measuring system** | Until 100 nm | Until 1 µm |
| **Reading head output / Measuring system** | EnDat 2.2<br>EnDat 2.2 + Safety<br>DriveCliq + Safety<br>SSI + 1 Vss<br>Fanuc<br>Mitsubishi<br>Biss/C | Hiperface<br>Hiperface DSL |

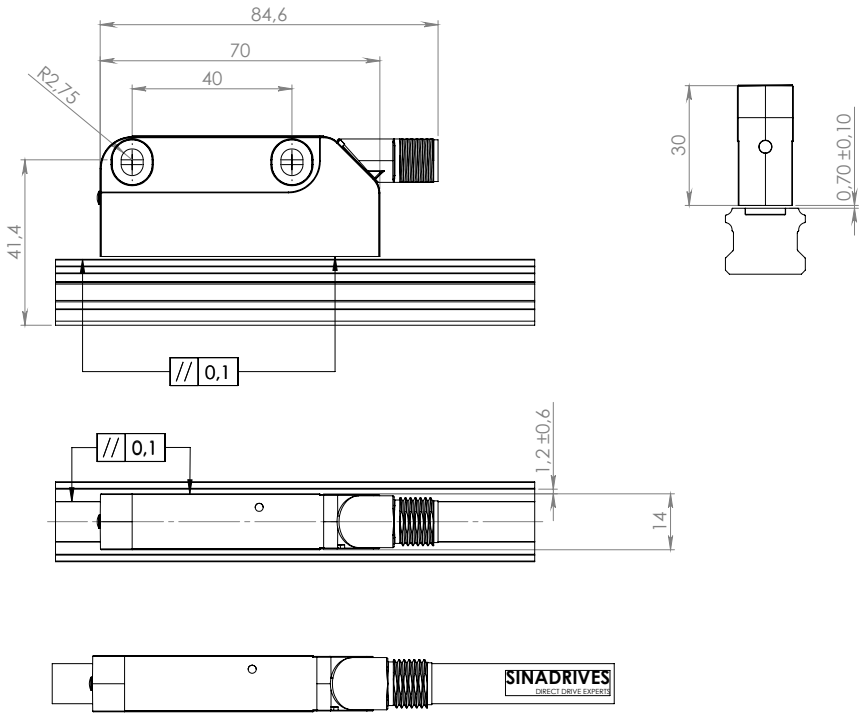
# KEC - 3A ABSOLUTE ENCODER

## TECHNICAL SPECIFICATIONS




# KEC - 5S ABSOLUTE ENCODER

## TECHNICAL SPECIFICATIONS



# KEC
## ORDER CODE

### Type
KEC - Measuring systems read head.

**KEC - □□□□□ - □□ - □□□**

### Encoder
□□

**Technology:**
**0A** - Inductive incremental
**2R** - Magnetic incremental
**3A** - Inductive absolute
**5S** - Magnetic absolute
**XXXXX** - Without encoder

□

**Reading head output:**
* Incremental:
**0** - 1 Vpp
**4** - TTL
* Absolute:
**E** - Endat 2.2
**B** - Biss/C
**D** - Drivecliq
**F** - Fanuc
**H** - Hiperface
**L** - DSL
**M** - Mitsubishi
**P** - Panasonic
**S** - SSI

□□

**Measuring system:**
**4C** - 40 µm
**1U** - 1 µm
**2M** - 2 mm
**2H** - 0,25 µm
**1H** - 0,1 µm
**1S** - 0,1 µm + Functional safety
**1Y** - 1 µm + Functional safety

### Connectors
□□

**Typ [2]:**
**00A** - Side connector Y-TEC base
**00M** - Side connector AMP
**00H** - Stecker M12 Hiperface
**01A** - Side connector M23
**04A** - Cable with connector M23
**05A** - Cable without connector
**06A** - Cable with connector Y-TEC
**42S** - Side connectors SUB - D 9/2 (only for 2R)

### Cable
□□□

**Cable length in cm**
Max. cable lenght 100 cm

*[1] Total length of the tape measure*
*[2] On request*

# KER
## ORDER CODE

**Type**
KER - Length measuring system scale

**KER□□S - □□□□□**

□□

**Encoder**

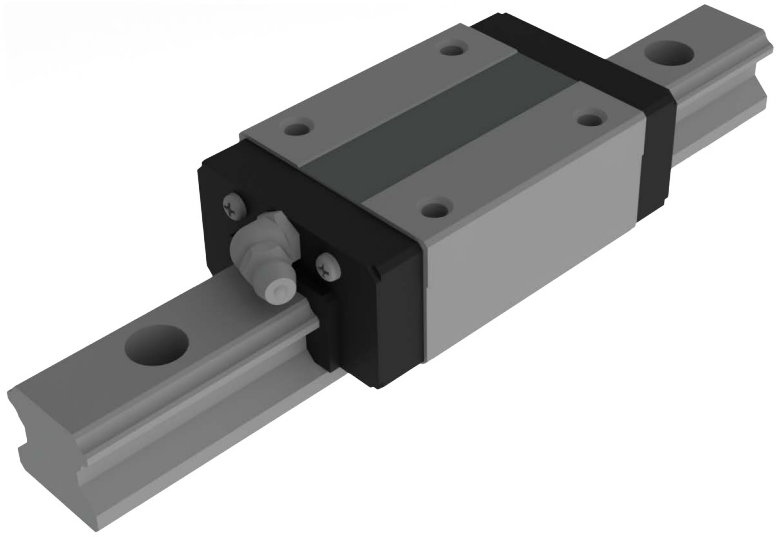
**Technology:**
**0A** - Inductive incremental
**2R** - Magnetic incremental
**3A** - Inductive absolute
**5S** - Magnetic absolute

**Total length of the tape measure (mm) [1)]**

*[1)] Total length of the tape measure*
*[2)] On request*

# HSV-R SERIES - LINEAR GUIDE

## DIMENSIONS AND SPECIFICATIONS

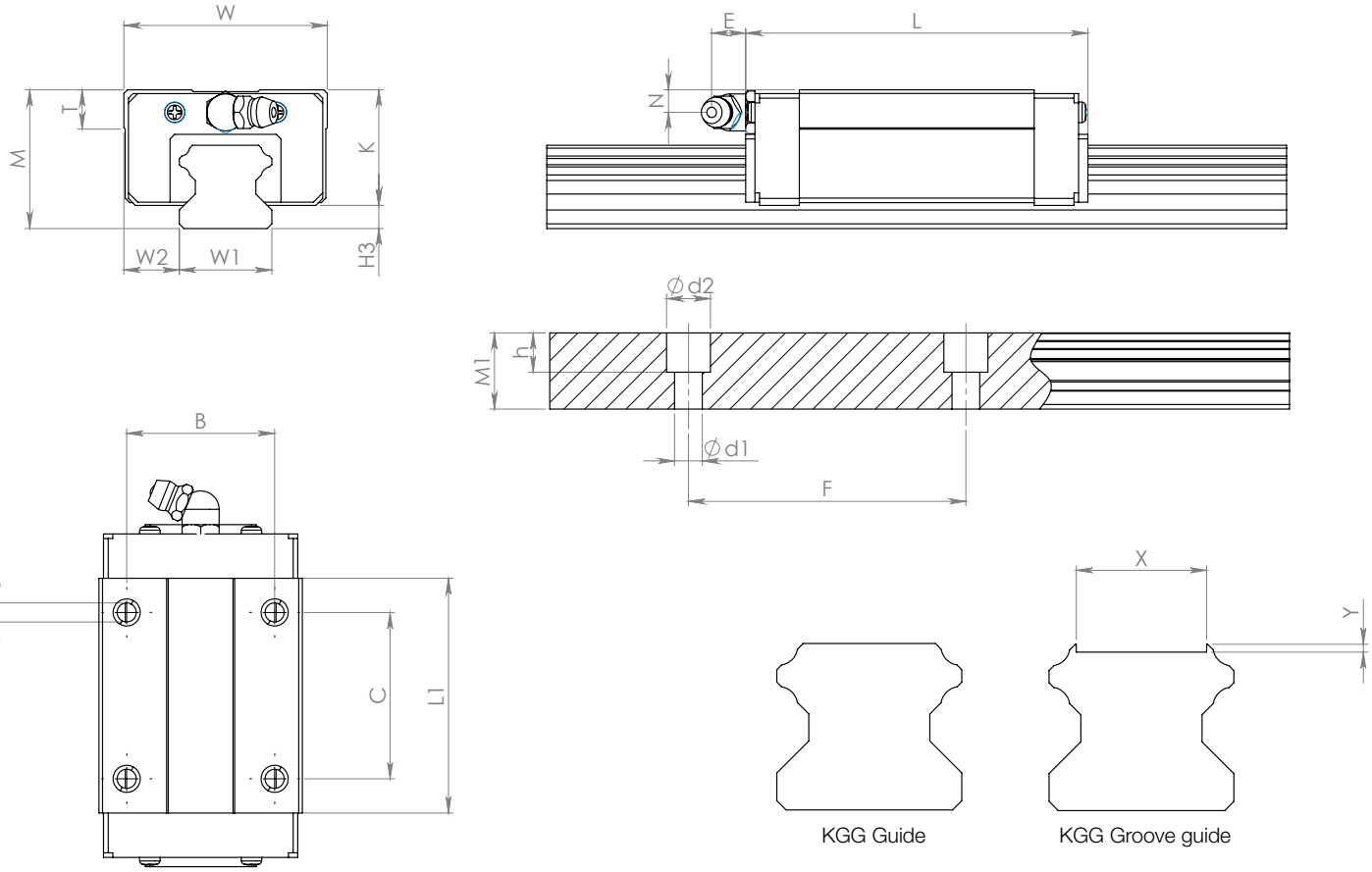


| Model | Outer dimensions | | | Block dimensions | | | | | | | | | | Basic load rating | | Mass Kg | $H_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Height M | Width W | Length L | $W_2$ | B | C | Sx⌀ | $L_1$ | T | K | N | E | Grease nipple | C [kN] | $C_0$ [kN] | | |
| **HSV 15R** | 28 | 34 | 56.6 | 9.5 | 26 | 26 | M4x5 | 38.8 | 6 | 23.8 | 8.3 | 5.5 | PB1021B | 8.33 | 13.5 | 0.18 | 4.2 |
| **HSV 20R** | 30 | 44 | 74 | 12 | 32 | 36 | M5x6 | 50.8 | 8 | 25 | 5 | 12 | B-M6F | 13.8 | 23.8 | 0.25 | 5 |
| **HSV 25R** | 40 | 48 | 83.1 | 12.5 | 35 | 35 | M6x8 | 59.5 | 9 | 33.5 | 10 | 12 | B-M6F | 19.9 | 34.4 | 0.54 | 6.5 |
| **HSV 30R** | 45 | 60 | 98 | 16 | 40 | 40 | M8x10 | 70.4 | 9 | 37 | 10 | 12 | B-M6F | 28 | 46.8 | 0.9 | 8 |
| **HSV 35R** | 55 | 70 | 109.4 | 18 | 50 | 50 | M8x12 | 80.4 | 12 | 45.6 | 15 | 12 | B-M6F | 37.3 | 61.1 | 1.5 | 9.4 |
| **HSV 45R** | 70 | 86 | 139 | 20.5 | 60 | 60 | M10x17 | 98 | 15 | 58.5 | 20 | 16 | B-R1/8 | 60 | 95.6 | 2.6 | 11.5 |

| Model | Rail dimensions | | | | | | Static permissible moment [kNm]*3 | | | | | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Width $W_1$ 0 -0,05 | $W_2$ | Height $M_1$ | Pitch F | $d_1xd_2xh$ | Length Max*2 | $M_A$ | | $M_B$ | | $M_C$ | Guide carriage [kg] | Guide rail [kg/m] |
| | | | | | | | 1 Block | 2 Block | 1 Block | 2 Block | 1 Block | | |
| **HSV 15R** | 15 | 9,5 | 15 | 60 | 4.5x7.5x5.3 | 3000 | 0.0805 | 0.457 | 0.0805 | 0.457 | 0.0844 | 0,18 | 1,5 |
| **HSV 20R** | 20 | 12 | 18 | 60 | 6x9.5x8.5 | 3000 | 0.19 | 1.04 | 0.19 | 1.04 | 0.201 | 0,25 | 2,3 |
| **HSV 25R** | 23 | 12,5 | 22 | 60 | 7x11x9 | 3000 | 0.307 | 1.71 | 0.307 | 1.71 | 0.344 | 0,54 | 3,3 |
| **HSV 30R** | 28 | 16 | 26 | 80 | 9x14x12 | 3000 | 0.524 | 2.7 | 0.524 | 2.7 | 0.562 | 0,9 | 4,8 |
| **HSV 35R** | 34 | 18 | 29 | 80 | 9x14x12 | 3000 | 0.782 | 3.93 | 0.782 | 3.93 | 0.905 | 1,5 | 6,6 |
| **HSV 45R** | 45 | 20,5 | 38 | 105 | 14x20x17 | 3000 | 1.42 | 7.92 | 1.42 | 7.92 | 1.83 | 2,6 | 11 |

# HSV-R SERIES - LINEAR GUIDE

## DIMENSIONS AND SPECIFICATIONS

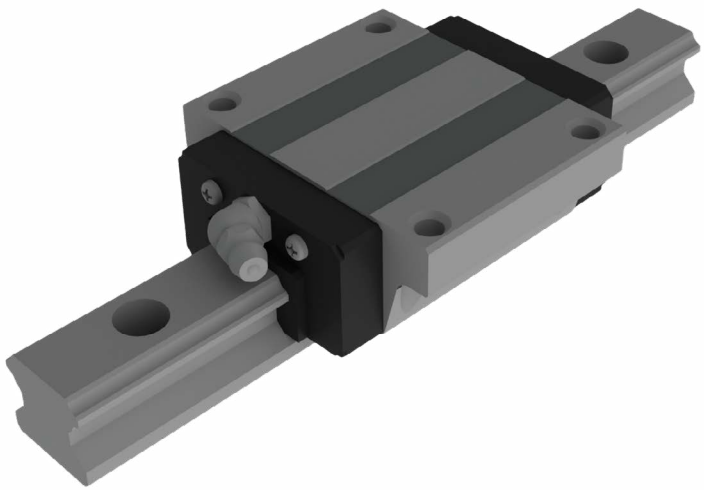



### Groove dimensions

| SIZE | 10x0.85 | 14x0.85 | 10x1.65 |
|---|---|---|---|
| 15 | x | - | - |
| 20 | x | x | x |
| 25 | x | x | x |
| 30 | - | x | - |
| 35 | - | x | - |
| 45 | - | x | - |

# HSV-C SERIES - LINEAR GUIDE

## DIMENSIONS AND SPECIFICATIONS

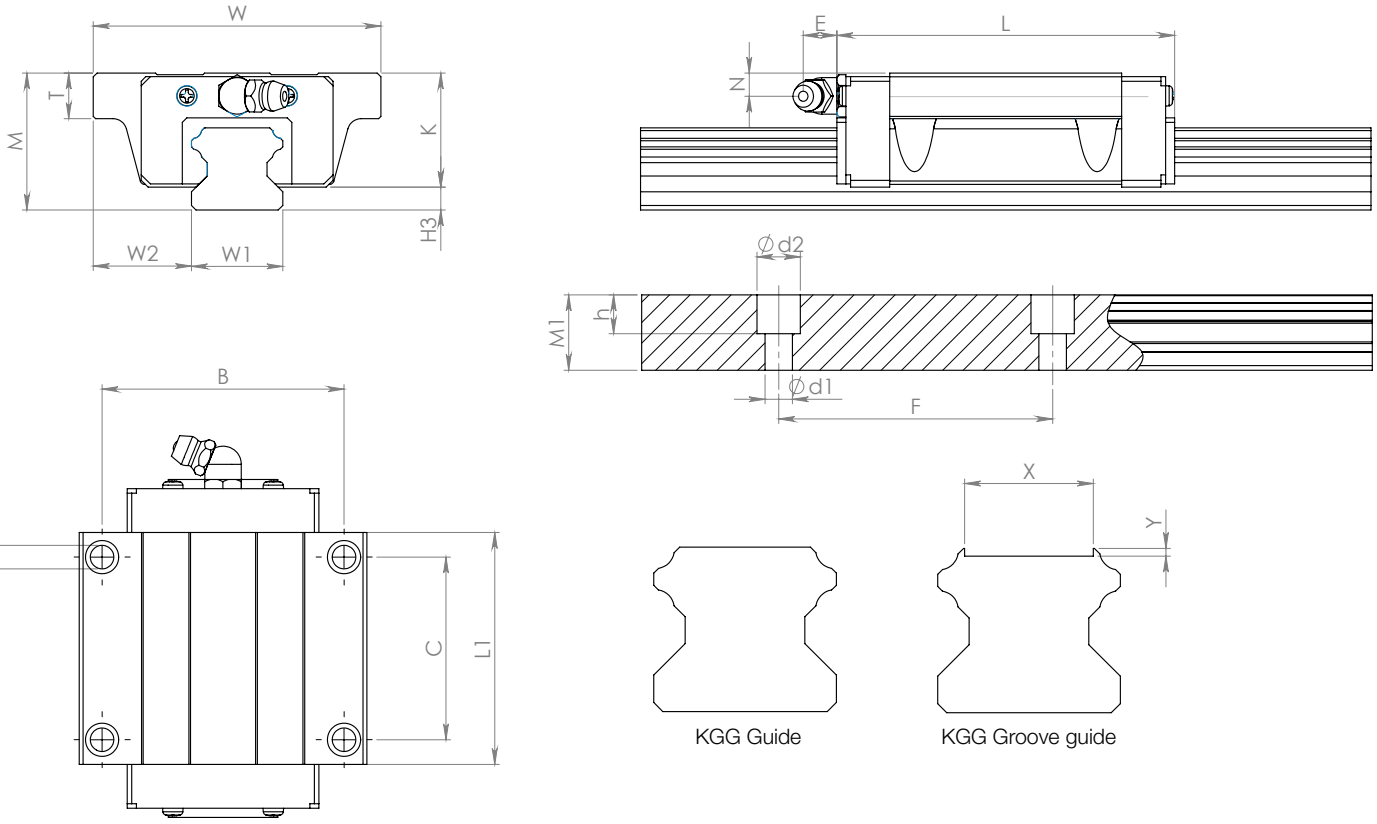


| Model | Outer dimensions | | | Block dimensions | | | | | | | | | Basic load rating | | $H_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Height M | Width W | Length L | B | C | S | $L_1$ | T | K | N | E | Grease nipple | C [kN] | $C_0$ [kN] | |
| **HSV 15C** | 24 | 47 | 56.6 | 26 | 26 | M5 | 38,8 | 6 | 23,8 | 8,3 | 5,5 | PB1021B | 8,33 | 13,5 | 4,2 |
| **HSV 20C** | 30 | 63 | 74 | 32 | 36 | M6 | 50,8 | 8 | 25 | 5 | 12 | B-M6F | 13,8 | 23,8 | 5 |
| **HSV 25C** | 36 | 70 | 83.1 | 35 | 35 | M8 | 59,5 | 9 | 33,5 | 10 | 12 | B-M6F | 19,9 | 34,4 | 6,5 |
| **HSV 30C** | 42 | 90 | 98 | 40 | 40 | M10 | 70,4 | 9 | 37 | 10 | 12 | B-M6F | 28 | 46,8 | 8 |
| **HSV 35C** | 48 | 100 | 109.4 | 50 | 50 | M10 | 80,4 | 12 | 45,6 | 15 | 12 | B-M6F | 37,3 | 71,1 | 9,4 |
| **HSV 45C** | 60 | 120 | 139 | 60 | 60 | M12 | 98 | 15 | 58,5 | 20 | 16 | B-R1/8 | 60 | 95,6 | 11,5 |

| Model | Rail dimensions | | | | | | Static permissible moment [kNm]*3 | | | | | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Width $W_1$ $^{0}_{-0,05}$ | $W_2$ | Height $M_1$ | Pitch F | $d_1xd_2xh$ | Length Max*2 | $M_A$ | | $M_B$ | | $M_C$ | Guide carriage [kg] | Guide rail [kg/m] |
| | | | | | | | 1 Block | 2 Block | 1 Block | 2 Block | 1 Block | | |
| **HSV 15C** | 15 | 16 | 13 | 60 | 4,5x7,5x5,3 | 3000 | 0,175 | 0,898 | 0,175 | 0,898 | 0,16 | 0,23 | 1,3 |
| **HSV 20C** | 20 | 21,5 | 16,5 | 60 | 6x9,5x8,5 | 3000 | 0,334 | 1,75 | 0,334 | 1,75 | 0,361 | 0,46 | 2,3 |
| **HSV 25C** | 23 | 23,5 | 20 | 60 | 7x11x9 | 3000 | 0,566 | 2,75 | 0,566 | 2,75 | 0,563 | 0,72 | 3,2 |
| **HSV 30C** | 28 | 31 | 23 | 80 | 9x14x12 | 3000 | 0,786 | 4,08 | 0,786 | 4,08 | 0,865 | 1,34 | 4,5 |
| **HSV 35C** | 34 | 33 | 26 | 80 | 9x14x12 | 3000 | 1,38 | 6,76 | 1,38 | 6,76 | 1,53 | 1,9 | 6,2 |
| **HSV 45C** | 45 | 37,5 | 32 | 105 | 14x20x17 | 3090 | 2,05 | 10,1 | 2,05 | 10,1 | 2,68 | 3,24 | 10,4 |

# HSV-C SERIES - LINEAR GUIDE

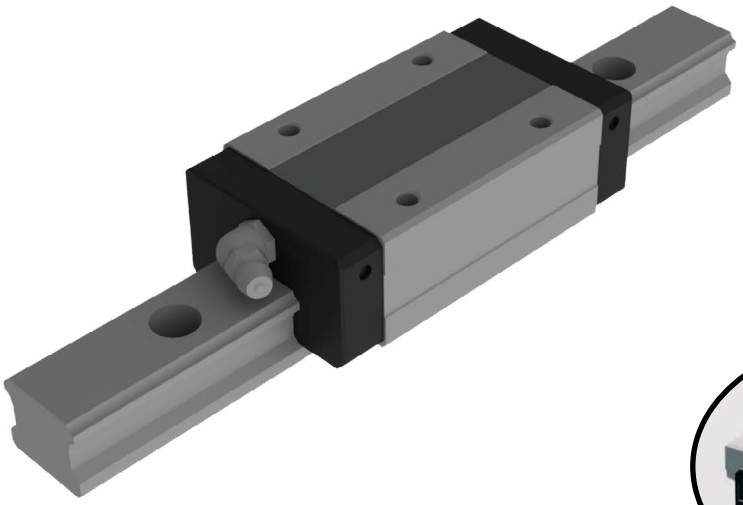
## DIMENSIONS AND SPECIFICATIONS

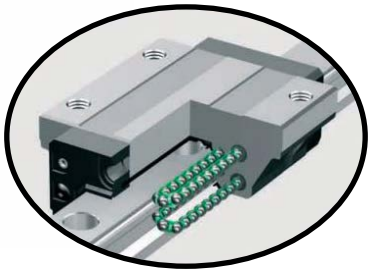



### Groove dimensions

| SIZE | 10x0.85 | 14x0.85 | 10x1.65 |
|---|---|---|---|
| 15 | x | - | - |
| 20 | x | x | x |
| 25 | x | x | x |
| 30 | - | x | - |
| 35 | - | x | - |
| 45 | - | x | - |

# SHS-V SERIES - LINEAR GUIDE
## DIMENSIONS AND SPECIFICATIONS





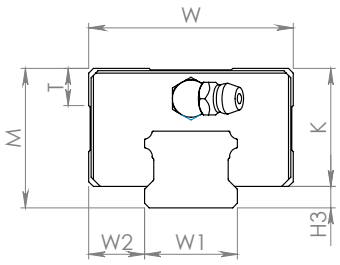
Ball bearing carriage

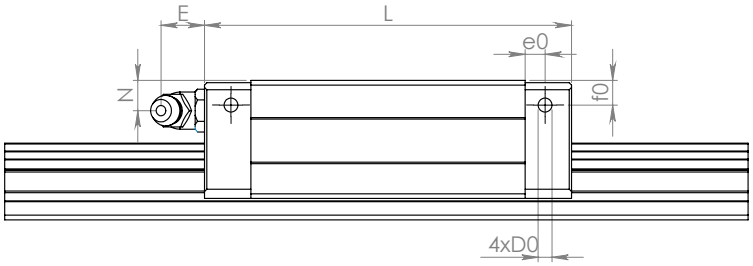
| Model | Outer dimensions | | | Block dimensions | | | | | | | | | Pilot hole for Side nipple | | | Basic load rating | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Height M | Width W | Length L | B | C | Sx⌀ | $L_1$ | T | K | N | E | Grease nipple | $e_0$ | $f_0$ | $D_0$ | C [kN] | $C_0$ [kN] |
| **SHS 15V** | 24 | 34 | 64.4 | 26 | 26 | M4x4 | 48 | 5.9 | 21 | 5.5 | 5.5 | PB1021B | 4 | 4 | 3 | 14.2 | 24.2 |
| **SHS 20V** | 30 | 44 | 79 | 32 | 36 | M5x5 | 59 | 8 | 25.4 | 6.5 | 12 | B-M6F | 4.3 | 5.3 | 3 | 22.3 | 38.4 |
| **SHS 25V** | 36 | 48 | 92 | 35 | 35 | M6x6.5 | 71 | 8 | 30.2 | 7.5 | 12 | B-M6F | 6 | 5.5 | 3 | 31.7 | 52.4 |
| **SHS 30V** | 42 | 60 | 106 | 40 | 40 | M8x8 | 80 | 8 | 35 | 8 | 12 | B-M6F | 5.5 | 6 | 5.2 | 44.8 | 66.6 |
| **SHS 35V** | 48 | 70 | 122 | 50 | 50 | M8x10 | 93 | 14.7 | 40.5 | 8 | 12 | B-M6F | 6.5 | 5.5 | 5.2 | 62.3 | 96.6 |
| **SHS 45V** | 60 | 86 | 140 | 60 | 60 | M10x15 | 106 | 14.9 | 51.1 | 10.5 | 16 | B-PT1/8 | 8 | 8 | 5.2 | 82.8 | 126 |

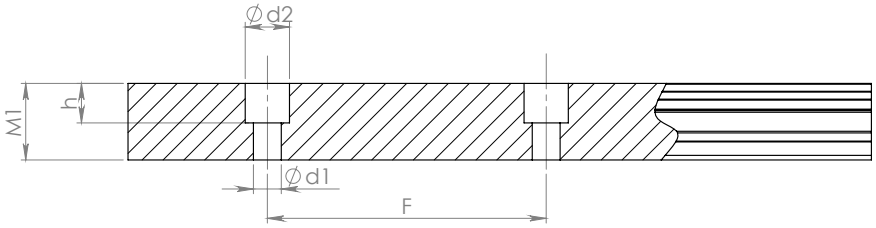
| Model | $H_3$ | Rail dimensions | | | | | | Static permissible moment [kNm][*3] | | | | | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Width $W_1$ $^{0}_{-0,05}$ | $W_2$ | Height $M_1$ | Pitch F | $d_1xd_2xh$ | Length Max[*2] | $M_A$ | | $M_B$ | | $M_C$ | Guide carriage [kg] | Guide rail [kg/m] |
| | | | | | | | | 1 Block | 2 Block | 1 Block | 2 Block | 1 Block | | |
| **SHS 15V** | 3 | 15 | 9.5 | 13 | 60 | 4.5x7.5x5.3 | 2500 | 0.175 | 0.898 | 0.175 | 0.898 | 0.16 | 0.19 | 1.3 |
| **SHS 20V** | 4.6 | 20 | 12 | 16.5 | 60 | 6x9.5x8.5 | 3000 | 0.334 | 1.75 | 0.334 | 1.75 | 0.361 | 0.35 | 2.3 |
| **SHS 25V** | 5.8 | 23 | 12.5 | 20 | 60 | 7x11x9 | 3000 | 0.566 | 2.75 | 0.566 | 2.75 | 0.563 | 0.54 | 3.2 |
| **SHS 30V** | 7 | 28 | 16 | 23 | 80 | 9x14x12 | 3000 | 0.786 | 4.08 | 0.786 | 4.08 | 0.865 | 0.94 | 4.5 |
| **SHS 35V** | 7.5 | 34 | 18 | 26 | 80 | 9x14x12 | 3000 | 1.38 | 6.76 | 1.38 | 6.76 | 1.53 | 1.4 | 6.2 |
| **SHS 45V** | 8.9 | 45 | 20.5 | 32 | 105 | 14x20x17 | 3090 | 2.05 | 10.1 | 2.05 | 10.1 | 2.68 | 2.54 | 10.4 |

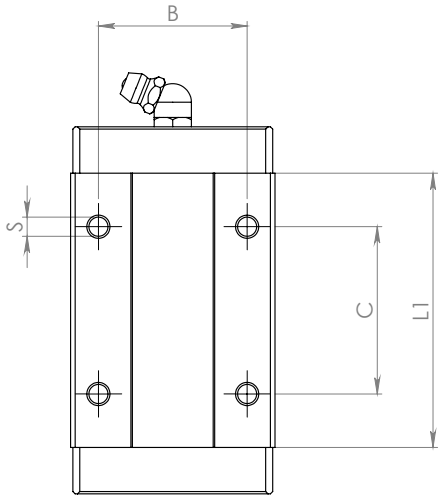
# SHS-V SERIES - LINEAR GUIDE

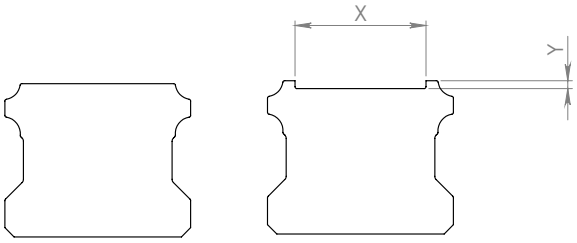
## DIMENSIONS AND SPECIFICATIONS



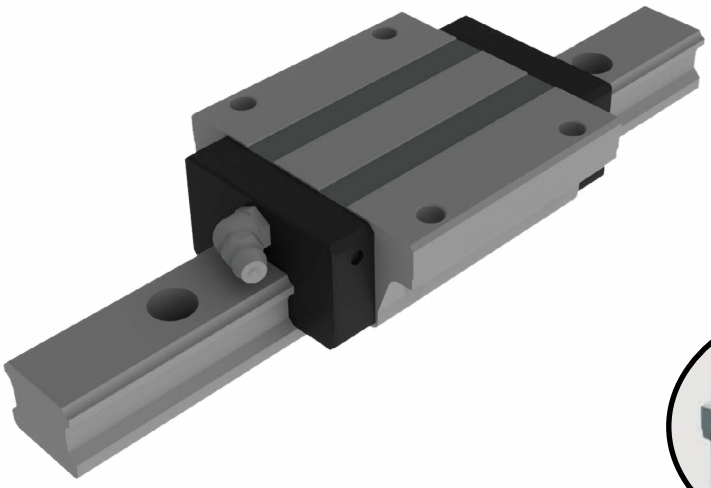

KGG Guide

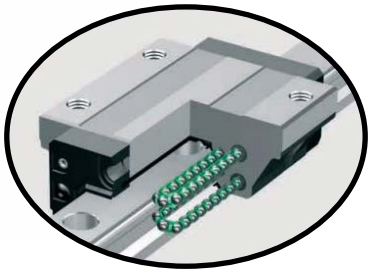
KGG Groove guide

### Groove dimensions

| SIZE | 10x0.85 | 14x0.85 | 10x1.65 |
|---|---|---|---|
| 15 | x | - | - |
| 20 | x | x | x |
| 25 | x | x | x |
| 30 | - | x | - |
| 35 | - | x | - |
| 45 | - | x | - |

# SHS-C SERIES - LINEAR GUIDE
## DIMENSIONS AND SPECIFICATIONS





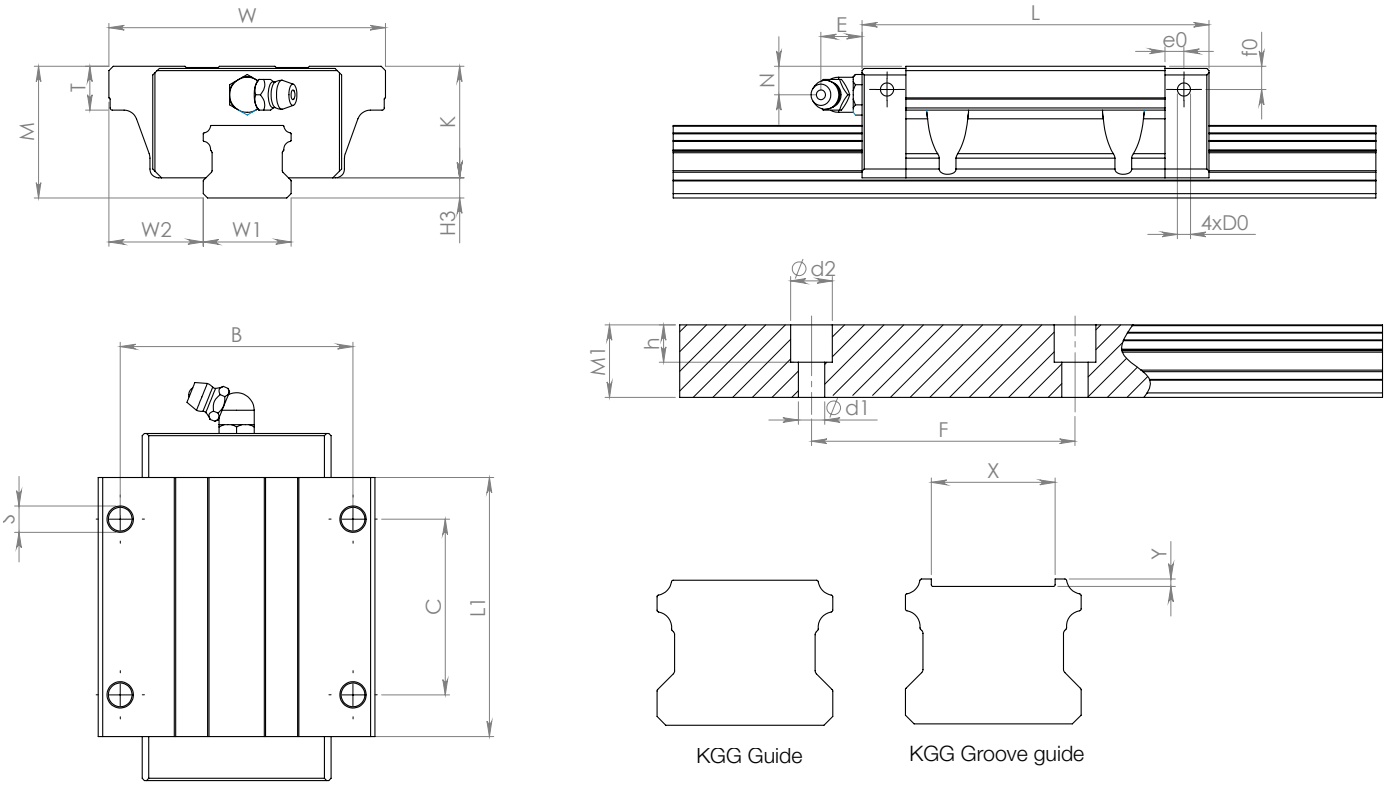
Ball bearing carriage

| Model | Outer dimensions | | | Block dimensions | | | | | | | | | | Pilot hole for Side nipple | | | Basic load rating | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Height M | Width W | Length L | B | C | S | H | $L_1$ | T | $T_1$ | K | N | E | Grease nipple | $e_0$ | $f_0$ | $D_0$ | C [kN] | $C_0$ [kN] |
| **SHS 15C** | 24 | 47 | 64,4 | 38 | 30 | M5 | 4.4 | 48 | 5.9 | 8 | 21 | 5.5 | 5.5 | PB1021B | 4 | 4 | 3 | 14.2 | 24.2 |
| **SHS 20C** | 30 | 63 | 79 | 53 | 40 | M6 | 5.4 | 59 | 7.2 | 10 | 25.4 | 6.5 | 12 | B-M6F | 4.3 | 5.3 | 3 | 22.3 | 38.4 |
| **SHS 25C** | 36 | 70 | 92 | 57 | 45 | M8 | 6.8 | 71 | 9.1 | 12 | 30.2 | 7.5 | 12 | B-M6F | 6 | 5.5 | 3 | 31.7 | 52.4 |
| **SHS 30C** | 42 | 90 | 106 | 72 | 52 | M10 | 8.5 | 80 | 11.5 | 15 | 35 | 8 | 12 | B-M6F | 5.5 | 6 | 5.2 | 44.8 | 66.6 |
| **SHS 35C** | 48 | 100 | 122 | 82 | 62 | M10 | 8.5 | 93 | 11.5 | 15 | 40.5 | 8 | 12 | B-M6F | 6.5 | 5.5 | 5.2 | 62.3 | 96.6 |
| **SHS 45C** | 60 | 120 | 140 | 100 | 80 | M12 | 10.5 | 106 | 14.1 | 18 | 51.1 | 10.5 | 16 | B-PT1/8 | 8 | 8 | 5.2 | 82.8 | 126 |

| Model | $H_3$ | Rail dimensions | | | | | | Static permissible moment [kNm][*3] | | | | | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Width $W_1$ $^{0}_{-0,05}$ | $W_2$ | Height $M_1$ | Pitch F | $d_1xd_2xh$ | Length Max[*2] | $M_A$ | | $M_B$ | | $M_C$ | Guide carriage [kg] | Guide rail [kg/m] |
| | | | | | | | | 1 Block | 2 Block | 1 Block | 2 Block | 1 Block | | |
| **SHS 15C** | 3 | 15 | 16 | 13 | 60 | 4.5x7.5x5.3 | 2500 | 0.175 | 0.898 | 0.175 | 0.898 | 0.16 | 0.23 | 1.3 |
| **SHS 20C** | 4.6 | 20 | 21.5 | 16.5 | 60 | 6x9.5x8.5 | 3000 | 0.334 | 1.75 | 0.334 | 1.75 | 0.361 | 0.46 | 2.3 |
| **SHS 25C** | 5.8 | 23 | 23.5 | 20 | 60 | 7x11x9 | 3000 | 0.566 | 2.75 | 0.566 | 2.75 | 0.563 | 0.72 | 3.2 |
| **SHS 30C** | 7 | 28 | 31 | 23 | 80 | 9x14x12 | 3000 | 0.786 | 4.08 | 0.786 | 4.08 | 0.865 | 1.34 | 4.5 |
| **SHS 35C** | 7.5 | 34 | 33 | 26 | 80 | 9x14x12 | 3000 | 1.38 | 6.76 | 1.38 | 6.76 | 1.53 | 1.9 | 6.2 |
| **SHS 45C** | 8.9 | 45 | 37.5 | 32 | 105 | 14x20x17 | 3090 | 2.05 | 10.1 | 2.05 | 10.1 | 2.68 | 3.24 | 10.4 |

# SHS-C SERIES - LINEAR GUIDE

## DIMENSIONS AND SPECIFICATIONS




### Groove dimensions

| SIZE | 10x0.85 | 14x0.85 | 10x1.65 |
|---|---|---|---|
| 15 | x | - | - |
| 20 | x | x | x |
| 25 | x | x | x |
| 30 | - | x | - |
| 35 | - | x | - |
| 45 | - | x | - |

# KGG & KGF
## ORDER CODE

**Type**
KG - Linear guide

**KG□□□H - □□□ - □□□□□ - E1□□E2□□**

**□ Linear guide model**
**G** - Linear guide without groove
**F** - Linearführung with groove

**□□ Guide size**
**15** - Size 15
**20** - Size 20
**25** - Size 25
**30** - Size 30
**35** - Size 35
**45** - Size 45

**Serie**
**HSV** - Serie HSV
**SHS** - Serie SHS

**Carriage model**
Length in mm

**□□ E1 and E2**
**E1** in mm
**E2** in mm

# KGP
## ORDER CODE

**Type**
KG - Guide carriage

**KGP□□H - □□□ - □ - □□ - □□**

□□

**Guide Size**
**15** - Size 15
**20** - Size 20
**25** - Size 25
**30** - Size 30
**35** - Size 35
**45** - Size 45

**Serie**
**HSV** - Serie HSV
**SHS** - Serie SHS

**Block type**
**C**
**V**
**R**

**Preload**
**V1**

**Wiper**
**SS**

# KRT01S SERIES - IRON CORE TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT01S | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II17N | II25N | II34Y | II60N | II60Y | II92Y |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 220-380 $V_{ac\ rms}$ (48V-600 $V_{dc}$) | | | | | |
| | **Peak torque @ 20°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 0.77 | 1.54 | 2.70 | 6.60 | 6.60 | 11.00 |
| | **Continuous torque** | Coil @ 100°C | $T_c$ | Nm | 0.36 | 0.85 | 1.30 | 2.80 | 2.78 | 4.60 |
| | **Maximum speed** | @$T_c$ | $N_{max}$ | rpm | 28000 | 28000 | 28000 | 7700 | 13000 | 10000 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 0.072 | 0.140 | 0.118 | 0.510 | 0.320 | 0.418 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | $(Nm)^2/W$ | 0.002 | 0.006 | 0.012 | 0.035 | 0.036 | 0.046 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 14.5 | 14.9 | 30.9 | 15.0 | 27.9 | 35.6 |
| | **Maximum continuous current** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 5 | 6.1 | 11 | 6.4 | 8.7 | 11 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 6 | 12 | 10 | 44 | 28 | 36 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 4 | 9 | 7 | 31 | 19 | 25 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 0.73 | 1.02 | 0.38 | 2.45 | 0.95 | 1.28 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 1.10 | 2.04 | 0.94 | 6.62 | 2.66 | 4.86 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 1.5 | 2 | 2.5 | 2.7 | 2.8 | 3.8 |
| | **Max. Continuous Power Loss** | All coils | $P_C$ | W | 71.2 | 146.6 | 177.5 | 291.2 | 279.6 | 604.6 |
| | **Poles** | | $N_{mgn}$ | nr | 8 | | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 1.50 | 0.80 | 0.58 | 0.37 | 0.37 | 0.11 |
| | **Temperature cut-off / sensor** | | | | Optional PTC 1kΩ / NTC | | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 65 | | | | | |
| | **Rotor ID** | | Ods | mm | 17 | | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 0.04 | 0.078 | 0.13 | 0.25 | 0.25 | 0.42 |
| | **Total mass** | Excluding cables | $M_T$ | g | 180 | 320 | 460 | 950 | 950 | 1600 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | Leadwires (4*1.5mm2) | | | | | |

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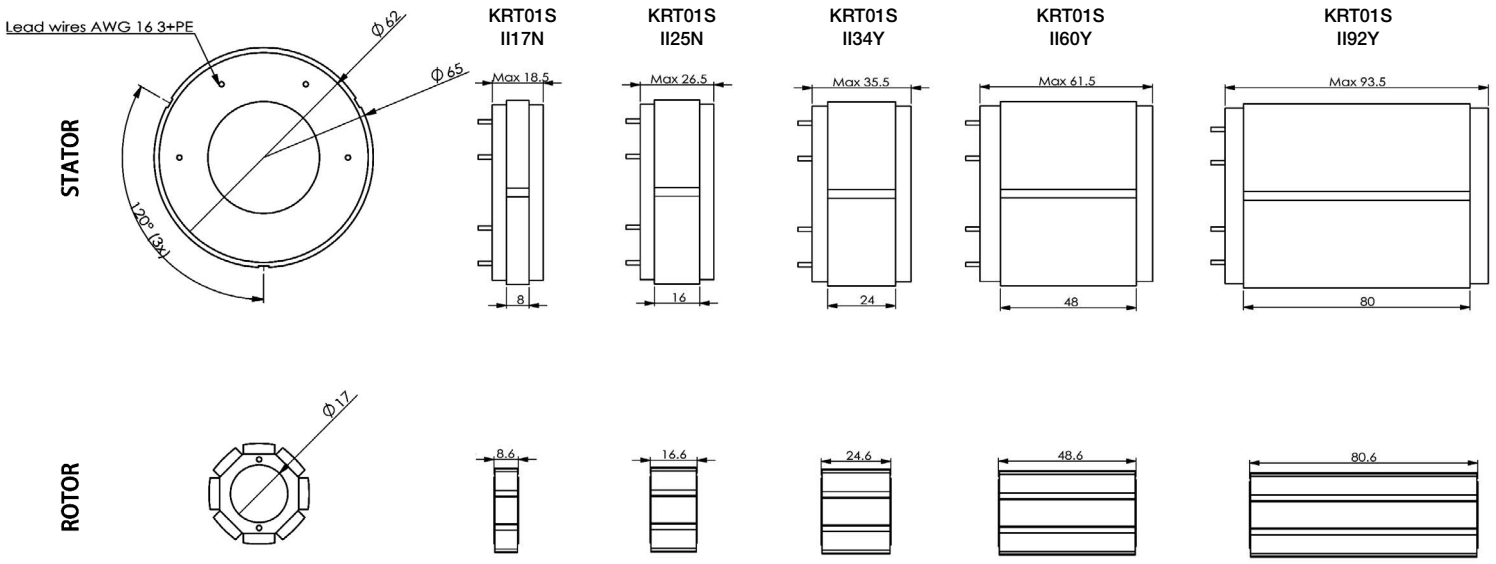
CE

**Winding C(mm)**
**N----------3**
**Y-Z----------5.5**



# KRT02S SERIES - IRON CORE TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT02S | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II17N | II25Y | II34Y | II60Y | II92Y |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 380 $V_{ac\ rms}$ (600$V_{dc}$) | | | | |
| | **Peak torque @ 20°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 1.5 | 3.5 | 5.5 | 13 | 21.7 |
| | **Continuous torque** | Coil @ 100°C | $T_c$ | Nm | 0.68 | 1.66 | 2.63 | 5.29 | 8.82 |
| | **Maximum speed @ 48 Volt** | @$T_c$ | $N_{max}$ | rpm | 2200 | 1962 | 1296 | 484 | 220 |
| | **Maximum speed @ max. voltage** | @$T_c$ | $N_{max}$ | rpm | 20000 | 17500 | 11500 | 4300 | 1900 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 0.14 | 0.16 | 0.24 | 0.64 | 1.40 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | $(Nm)^2/W$ | 0.006 | 0.019 | 0.034 | 0.093 | 0.340 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 14.1 | 30.1 | 31 | 27.6 | 20.9 |
| | **Maximum continuous current** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 4.9 | 10.5 | 11.1 | 8.3 | 6.3 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 12 | 14 | 20 | 55 | 121 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 9 | 10 | 14 | 39 | 85 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 1.11 | 0.44 | 0.56 | 1.44 | 1.92 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 1.78 | 0.97 | 1.34 | 4.48 | 6.53 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 1.6 | 2.2 | 2.4 | 3.1 | 3.4 |
| | **Max. Continuous Power Loss** | All coils | | | 102.5 | 190.9 | 266.7 | 390 | 297.2 |
| | **Poles** | | $N_{mag}$ | nr | 12 | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.99 | 0.54 | 0.39 | 0.26 | 0.16 |
| | **Temperature cut-off / sensor** | | | | Optional PTC 1kΩ / NTC | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 78 | | | | |
| | **Rotor ID** | | Ods | mm | 29 | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 0.13 | 0.25 | 0.38 | 0.76 | 1.27 |
| | **Total mass** | Excluding cables | $M_T$ | g | 280 | 440 | 650 | 1300 | 2000 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | Leadwires (4*1.5mm2) | | | | |

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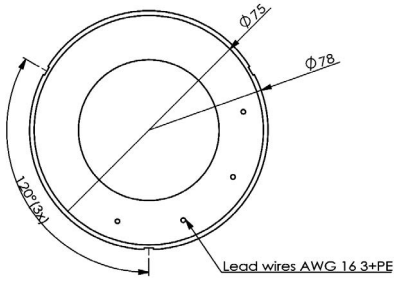
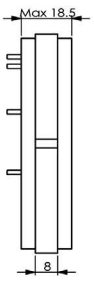
CE

**Winding C(mm)**
**N----------3**
**Y-Z----------5.5**

STATOR




**KRT02S II17N**

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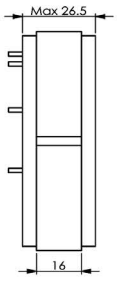
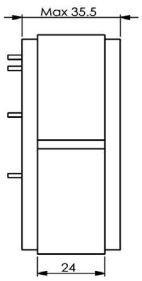



**KRT02S II34Y**

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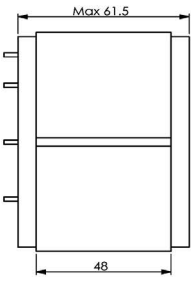
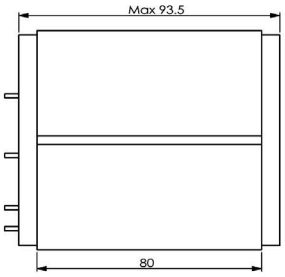
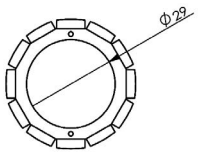
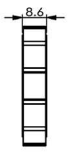


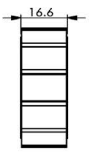

**KRT02S II92Y**



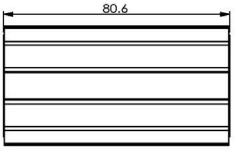

ROTOR





# KRT03S SERIES - IRON CORE TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT03S | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II17N | II17Y | II17I | II25N | II25Y | II25I | II34N | II34Y | II34I | II60N | II92Y |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 230 $V_{ac\ rms}$ (320$V_{dc}$) | | | | | | | | | 380 $V_{ac\ rms}$ (600$V_{dc}$) | |
| | **Peak torque @ 20ºC/s increase** | Magnet @ 25ºC | $T_p$ | Nm | 3.50 | 3.96 | 3.96 | 7.32 | 9 | 8.28 | 12.72 | 13.56 | 12.48 | 34 | 56 |
| | **Continuous torque** | Coil @ 120ºC | $T_c$ | Nm | 1.7 | 1.7 | 1.7 | 3.8 | 4 | 4 | 6.5 | 6.2 | 6.2 | 14.4 | 24 |
| | **Maximum speed @ max. voltage** | @$T_c$ | $N_{max}$ | rpm | 5879 | 10583 | 17638 | 2940 | 5345 | 9203 | 1654 | 3528 | 6047 | 1157 | 1323 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 0.36 | 0.20 | 0.12 | 0.72 | 0.40 | 0.23 | 1.28 | 0.60 | 0.35 | 3.43 | 3 |
| | **Motor constant** | Coils @ 25ºC | $K_m$ | $(Nm)^2/W$ | 0.025 | 0.024 | 0.027 | 0.069 | 0.070 | 0.073 | 0.143 | 0.125 | 0.131 | 0.455 | 0.493 |
| Electrical | **Peak current** | Magnet @ 25ºC | $I_p$ | $A_{rms}$ | 13.1 | 26.8 | 44.6 | 13.7 | 30.7 | 48.6 | 13.4 | 30.5 | 48.2 | 13.4 | 25.2 |
| | **Maximum continuous current** | Coils @ 110ºC | $I_c$ | $A_{rms}$ | 4.7 | 8.4 | 14 | 5.3 | 10.1 | 17.4 | 5.1 | 10.4 | 17.8 | 4.2 | 8 |
| | **Back EMF Phase-Phase$_{peak}$** | 25ºC+/-10% | $K_e$ | V/krpm | 31 | 17 | 10 | 62 | 34 | 20 | 110 | 52 | 30 | 295 | 258 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25ºC+/-10% | $K_e$ | V/krpm | 22 | 12 | 7 | 44 | 24 | 14 | 78 | 37 | 21 | 209 | 183 |
| | **Coil resistance per phase** | Coils @ 25ºC | R | Ω | 1.75 | 0.55 | 0.18 | 2.50 | 0.75 | 0.24 | 3.81 | 0.96 | 0.31 | 8.62 | 3.26 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 3.50 | 1.16 | 0.36 | 5.25 | 1.73 | 0.53 | 10.29 | 2.41 | 0.78 | 32.76 | 13.04 |
| | **Electrical time constant** | Coils @ 25ºC | $\tau_e$ | ms | 2 | 2.1 | 2 | 2.1 | 2.3 | 2.2 | 2.7 | 2.5 | 2.5 | 3.8 | 4 |
| | **Max. Continuous Power Loss** | All coils | $P_C$ | W | 148.6 | 151.4 | 137.6 | 277.3 | 298.4 | 283.1 | 380.8 | 405.8 | 386.8 | 592.5 | 813.7 |
| | **Poles** | | $N_{mag}$ | nr | 20 | | | | | | | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 0.68 | | | 0.34 | | | 0.24 | | | 0.14 | 0.11 |
| | **Temperature cut-off / sensor** | | | | Optional PTC 1kΩ / NTC | | | | | | | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 105 | | | | | | | | | | |
| | **Rotor ID** | | Ods | mm | 56 | | | | | | | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 0.80 | | | 1.5 | | | 2.3 | | | 4.4 | 7.4 |
| | **Total mass** | Excluding cables | $M_T$ | g | 320 | | | 620 | | | 960 | | | 1930 | 3120 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | 6.6(20) | 7.4(17) | | 6.6(20) | 7.4(17) | 8.4(15) | 6.6(20) | 8.4(15) | 8.4(15) | 6.6(20) | |

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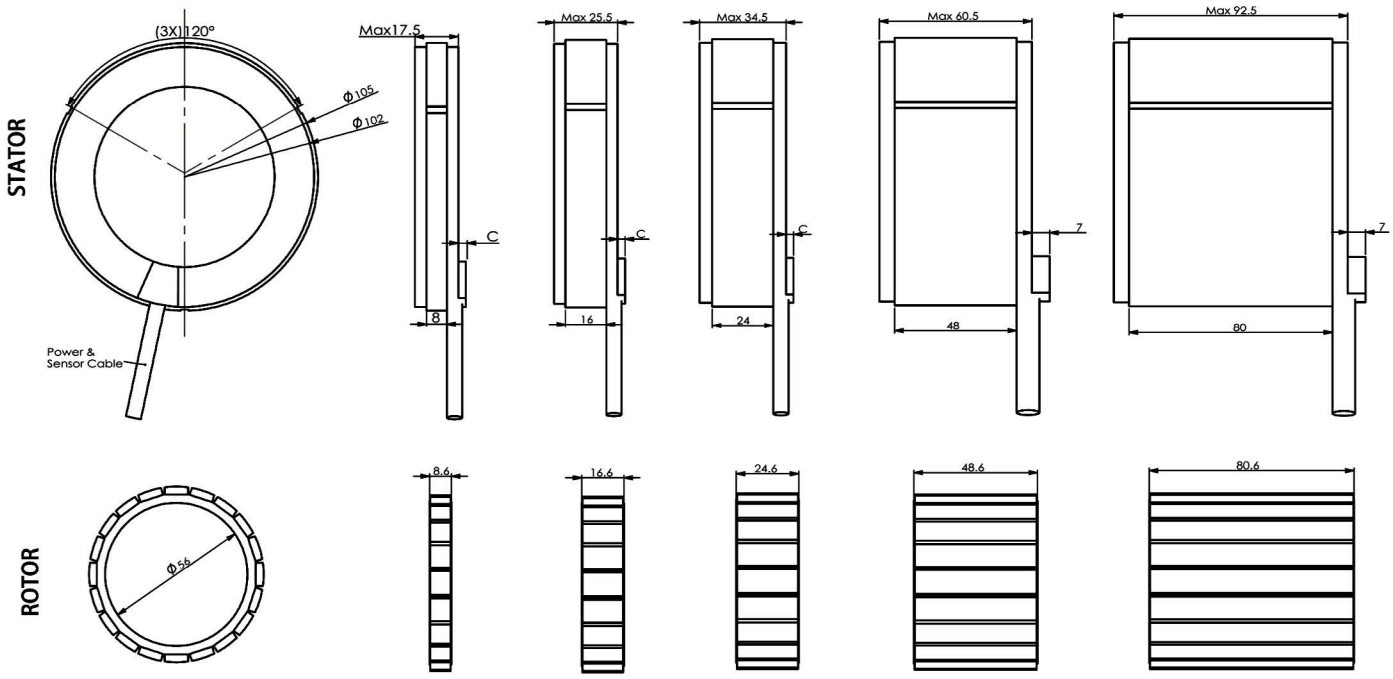
CE

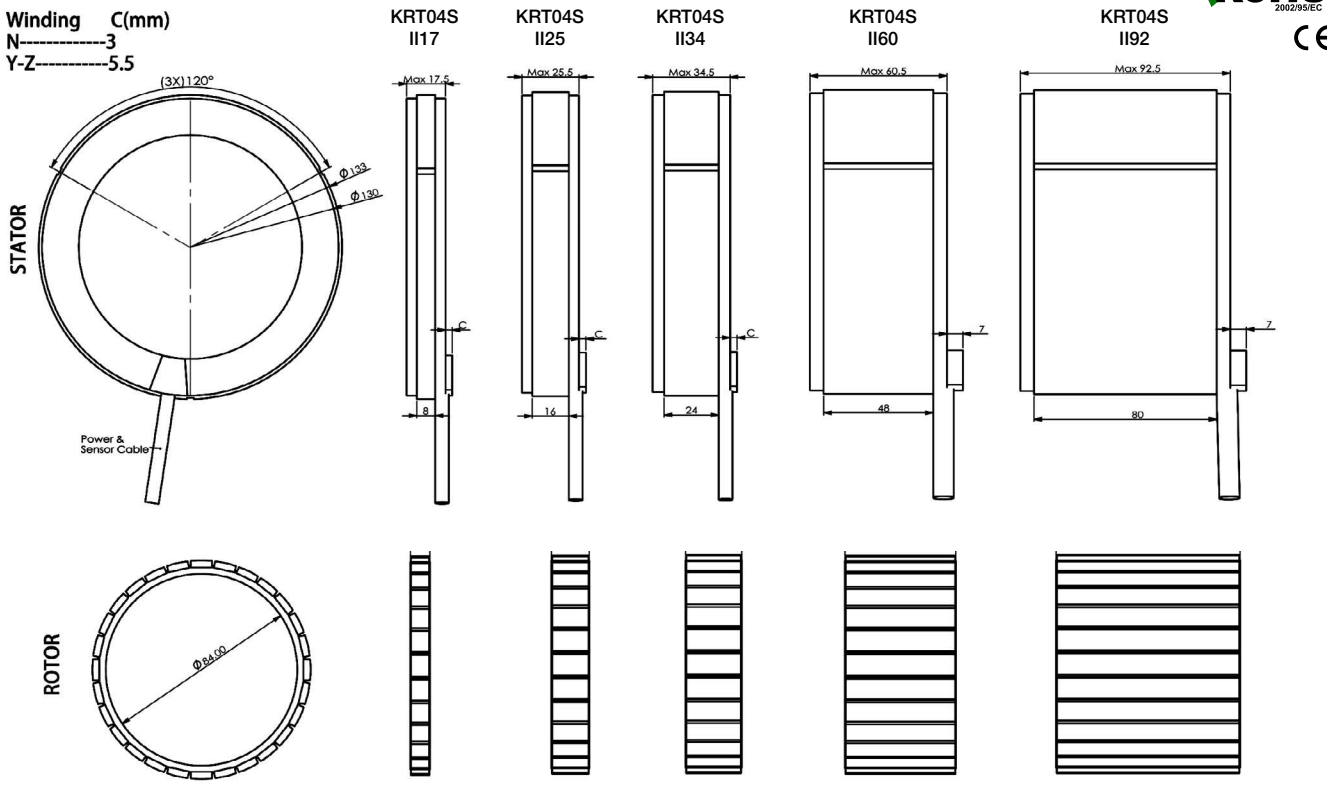
Winding C(mm)
N----------3
Y-Z----------5.5



# KRT04S SERIES - IRON CORE TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

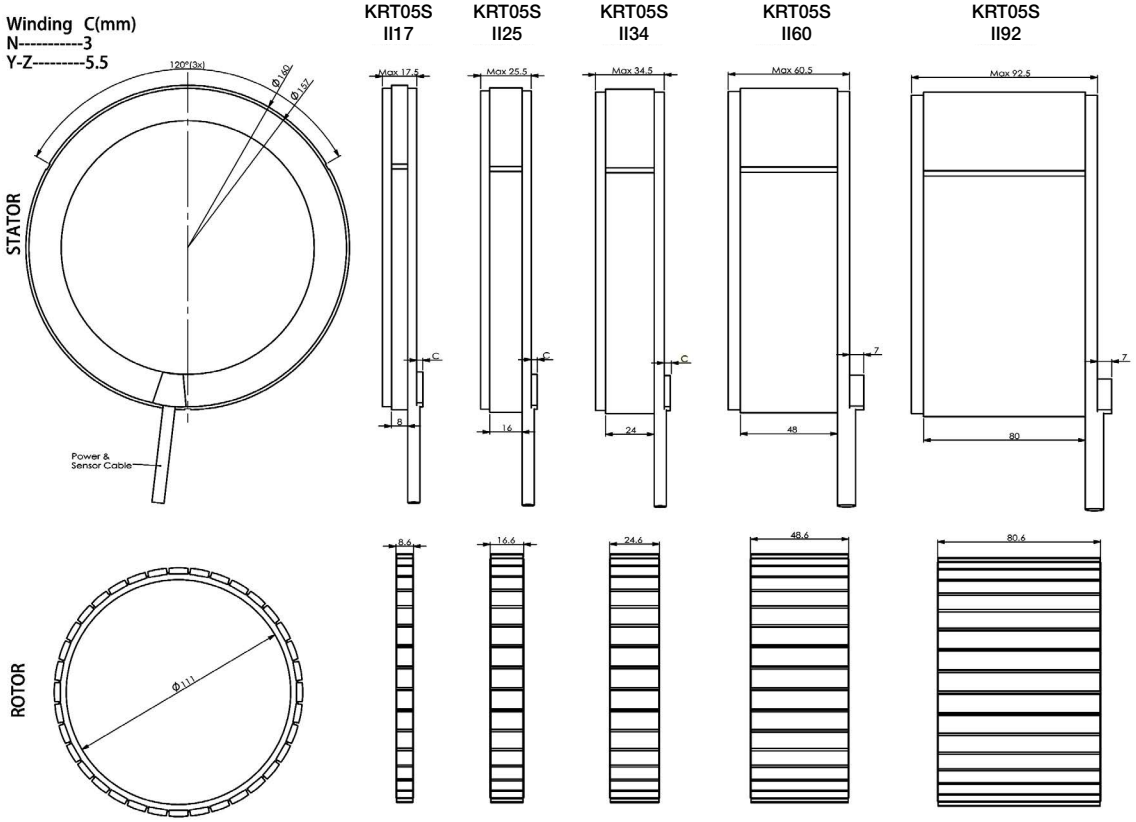
| | Parameter | Remarks | Sym | Unit | KRT04S | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II17N | II17Y | II17I | II25N | II25Y | II25I | II34N | II34I | II60N | II92Y |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 230 $V_{ac\ rms}$ (320$V_{dc}$) | | | | | | | | 380 $V_{ac\ rms}$ (600$V_{dc}$) | |
| | **Peak torque @ 20ºC/s increase** | Magnet @ 25ºC | $T_p$ | Nm | 6.72 | 7.68 | 7.68 | 14.28 | 16.20 | 16.20 | 24.72 | 24.72 | 66.60 | 110 |
| | **Continuous torque** | Coil @ 120ºC | $T_c$ | Nm | 3.20 | 3.20 | 3.20 | 7.60 | 7.80 | 7.80 | 13.00 | 12.40 | 28.00 | 46.70 |
| | **Maximum speed @ max. voltage** | @$T_c$ | $N_{max}$ | rpm | 3045 | 5345 | 9283 | 1521 | 2714 | 4642 | 843 | 3150 | 594 | 1018 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 0.70 | 0.40 | 0.23 | 1.39 | 0.78 | 0.46 | 2.51 | 0.67 | 6.68 | 3.90 |
| | **Motor constant** | Coils @ 25ºC | $K_m$ | (Nm)²/W | 0.066 | 0.070 | 0.067 | 0.189 | 0.201 | 0.203 | 0.394 | 0.352 | 1.236 | 1.449 |
| Electrical | **Peak current** | Magnet @ 25ºC | $I_p$ | $A_{rms}$ | 13.10 | 26.20 | 45.50 | 13.90 | 28.10 | 48.00 | 13.30 | 49.70 | 13.50 | 38.10 |
| | **Maximum continuous current** | Coils @ 110ºC | $I_c$ | $A_{rms}$ | 4.60 | 8.10 | 14.00 | 5.50 | 10.00 | 17.10 | 5.20 | 17.00 | 4.00 | 12.00 |
| | **Back EMF Phase-Phase$_{peak}$** | 25ºC+/-10% | $K_e$ | V/krpm | 60 | 34 | 20 | 120 | 67 | 39 | 216 | 58 | 575 | 336 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25ºC+/-10% | $K_e$ | V/krpm | 42 | 24 | 14 | 85 | 47 | 28 | 153 | 41 | 407 | 237 |
| | **Coil resistance per phase** | Coils @ 25ºC | R | Ω | 2.44 | 0.75 | 0.26 | 3.42 | 1.01 | 0.34 | 5.33 | 0.43 | 12.05 | 4.56 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 4.88 | 1.65 | 0.55 | 7.87 | 2.53 | 0.82 | 14.92 | 1.11 | 46.98 | 18.24 |
| | **Electrical time constant** | Coils @ 25ºC | $\tau_e$ | ms | 2.00 | 2.20 | 2.10 | 2.30 | 2.50 | 2.40 | 2.80 | 2.60 | 3.90 | 4.00 |
| | **Max. Continuous Power Loss** | All coils | $P_C$ | W | 201.7 | 191 | 199.7 | 397.6 | 393.9 | 389.1 | 557.6 | 563.8 | 824.4 | 2546.7 |
| | **Poles** | | $N_{mag}$ | nr | 28 | | | | | | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 0.50 | | | 0.28 | | | 0.20 | | 0.13 | 0.0955 |
| | **Temperature cut-off / sensor** | | | | Optional PTC 1kΩ / NTC | | | | | | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 133 | | | | | | | | | |
| | **Rotor ID** | | Ods | mm | 84 | | | | | | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 2.1 | | | 4.2 | | | 6.2 | | 12 | 18 |
| | **Total mass** | Excluding cables | $M_T$ | g | 550 | | | 955 | | | 1370 | | 2750 | 430 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | 6.6(20) | 7.4(17) | | 6.6(20) | 7.4(17) | 8.4(15) | 6.6(20) | 8.4(15) | 6.6(20) | 7.4(17) |



# KRT05S SERIES - IRON CORE TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT05S | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II17N | II17Y | II17I | II25N | II25Y | II25I | II34N | II34I | II60N | II60Y | II92Y |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 230 $V_{ac\ rms}$ ($320V_{dc}$) | | | | | | | | 380 $V_{ac\ rms}$ ($600V_{dc}$) | | |
| | **Peak torque @ 20°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 11.16 | 12.72 | 12.72 | 23.52 | 26.88 | 26.88 | 40.92 | 40.30 | 110 | 84 | 183.20 |
| | **Continuous torque** | Coil @ 120°C | $T_c$ | Nm | 4.92 | 5.04 | 5.04 | 11.28 | 11.64 | 11.64 | 18.84 | 18.00 | 43.56 | 44 | 72.00 |
| | **Maximum speed @ max. voltage** | @$T_c$ | $N_{max}$ | rpm | 1837 | 3266 | 5690 | 916 | 1648 | 2845 | 511 | 1890 | 361 | 650 | 397 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 1.15 | 0.65 | 0.37 | 2.31 | 1.28 | 0.74 | 4.14 | 1.12 | 11.00 | 6.11 | 10.00 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | $(Nm)^2/W$ | 0.140 | 0.147 | 0.149 | 0.407 | 0.423 | 0.418 | 0.832 | 0.760 | 2.605 | 2.910 | 4.263 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 13.10 | 26.50 | 46.20 | 13.80 | 28.30 | 48.80 | 13.40 | 48.60 | 13.50 | 16.00 | 24.80 |
| | **Maximum continuous current** | Coils @ 110°C | $I_c$ | $A_{rms}$ | 4.30 | 7.80 | 13.50 | 4.90 | 9.10 | 16.00 | 4.60 | 16.10 | 4.00 | 7.20 | 7.20 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 99 | 56 | 32 | 199 | 111 | 64 | 356 | 96 | 947 | 526 | 861 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 70 | 39 | 23 | 141 | 78 | 45 | 252 | 68 | 670 | 372 | 609 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 3.15 | 0.95 | 0.31 | 4.37 | 1.30 | 0.44 | 6.87 | 0.55 | 15.49 | 4.27 | 5.86 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 6.62 | 2.09 | 0.68 | 10.05 | 3.25 | 1.10 | 19.92 | 1.43 | 61.94 | 17.08 | 24.61 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 2.10 | 2.20 | 2.20 | 2.30 | 2.50 | 2.50 | 2.90 | 2.60 | 4.00 | 4.00 | 4.20 |
| | **Max. Continuous Power Loss** | All coils | $P_C$ | W | 224.1 | 224.1 | 221.9 | 406.4 | 416 | 421 | 554.9 | 554 | 947.1 | 864.9 | 1184.8 |
| | **Poles** | | $N_{mag}$ | nr | 36 | | | | | | | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.43 | | | 0.23 | | | 0.17 | | 0.1 | 0.1 | 0.06 |
| | **Temperature cut-off / sensor** | | | | Optional PTC 1kΩ / NTC | | | | | | | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 160 | | | | | | | | | | |
| | **Rotor ID** | | Ods | mm | 111 | | | | | | | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 4.6 | | | 9.2 | | | 14 | | 26 | 26 | 42 |
| | **Total mass** | Excluding cables | $M_T$ | g | 650 | | | 1150 | | | 1600 | | 3300 | 3300 | 5500 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | 6.6(20) | 7.4(17) | | 6.6(20) | 7.4(17) | 8.4(15) | 6.6(20) | 8.4(15) | 6.6(20) | | |



# KRT06S SERIES - IRON CORE TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT06S | | |
|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II65N | II85N | II05N |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 380 $V_{ac\ rms}$ (560$V_{dc}$) | | |
| | **Peak torque @ 20°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 175 | 260 | 350 |
| | **Continuous torque** | Coil @ 110°C | $T_c$ | Nm | 68 | 105 | 145 |
| | **Stall torque** | Coil @ 110°C | $T_c$ | Nm | 48 | 74 | 102 |
| | **Maximum speed** | @$T_c$ 560Vdc | $N_{max}$ | rpm | 426 | 283 | 212 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | $Nm/A_{rms}$ | 8.70 | 13.10 | 17.50 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | $(Nm)^2/W$ | 6.500 | 10.896 | 15.705 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 27.20 | 26.80 | 27.00 |
| | **Maximum continuous current** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 7.80 | 8.00 | 8.30 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 749 | 1128 | 1507 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 530 | 798 | 1066 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 3.93 | 5.25 | 6.50 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 15.50 | 22.00 | 28.00 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 4.00 | 4.20 | 4.30 |
| | **Max. Continuous Power Loss** | Coils @ 100°C | $P_c$ | W | 924.8 | 1270 | 1685 |
| | **Poles** | | $N_{mgn}$ | nr | 26 | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.097 | 0.071 | 0.053 |
| | **Temperature cut-off / sensor** | | | | Optional PTC 110/ NTC 10kΩ | | |
| Mechanical | **Stator OD** | | Ods | mm | 210 | | |
| | **Rotor ID** | | Ods | mm | 140 | | |
| | **Rotor inertia** | | JR | Kg·cm² | 90 | 140 | 190 |
| | **Rotor mass** | | $W_r$ | g | 16000 | 24000 | 32000 |
| | **Total mass** | Excluding cables | $M_T$ | g | 58000 | 83000 | 107000 |

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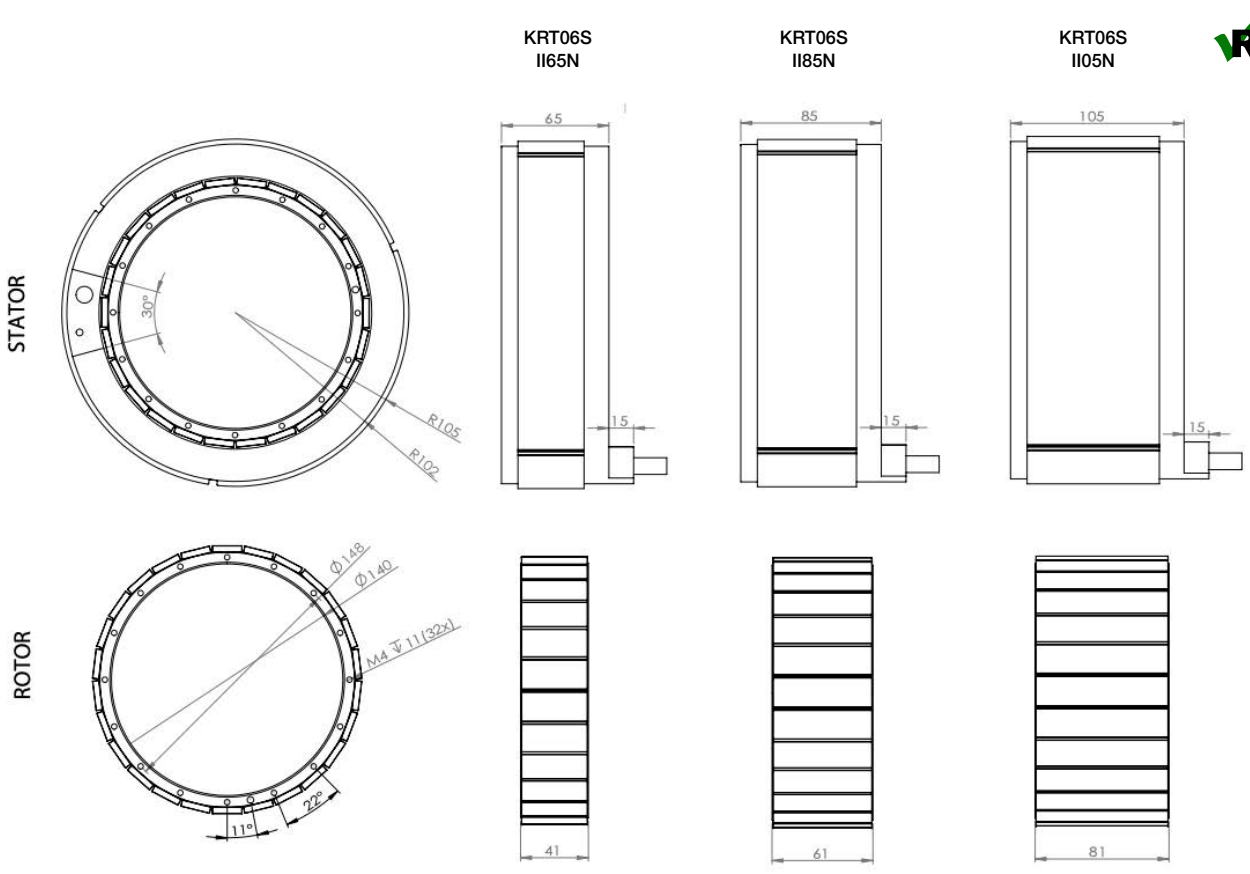
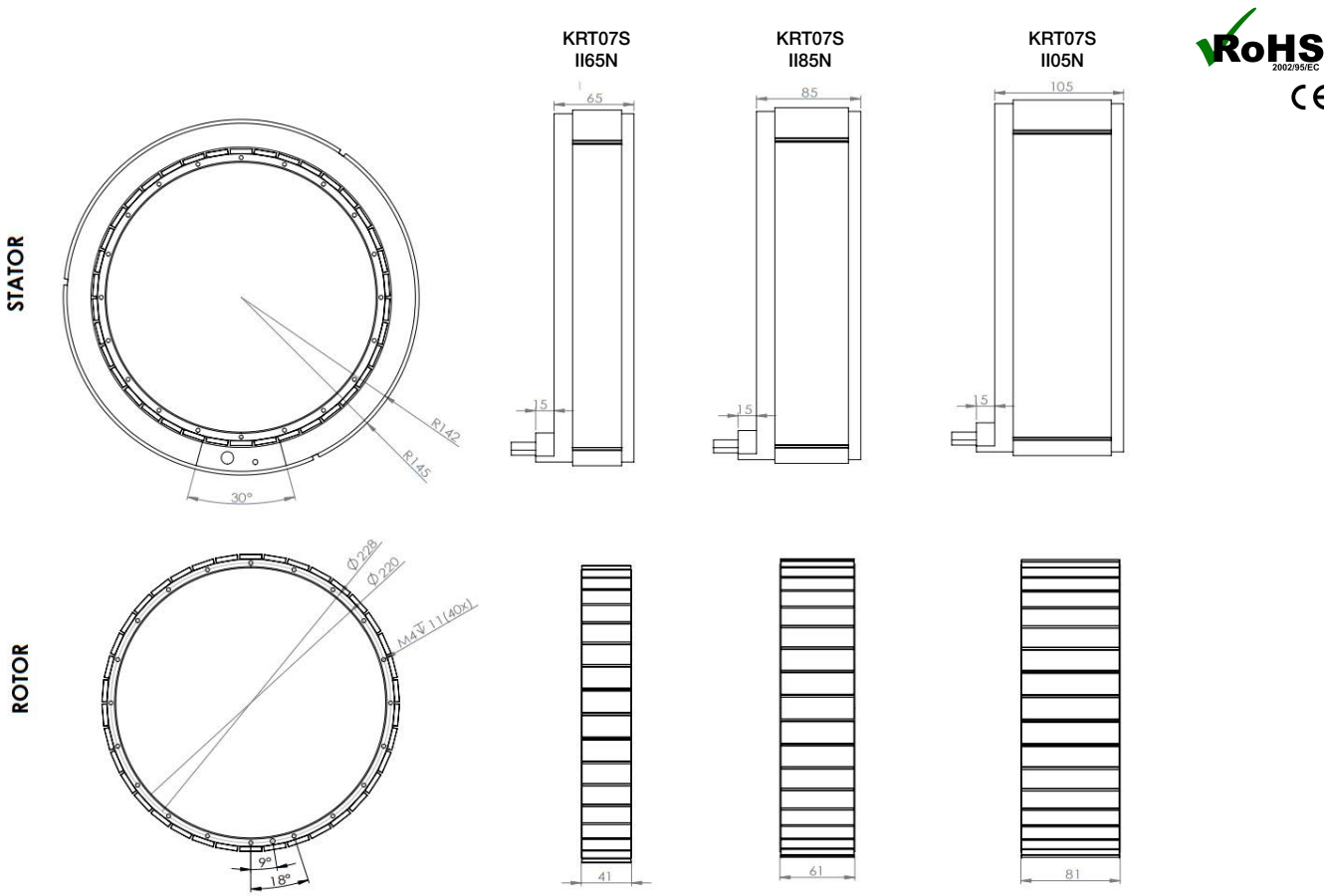


# KRT07S SERIES - IRON CORE TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT07S | | |
|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | II65N | II85N | II05N |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 380 $V_{ac\ rms}$ (560$V_{dc}$) | | |
| | **Peak torque @ 20°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 400 | 600 | 800 |
| | **Continuous torque** | Coil @ 110°C | $T_c$ | Nm | 145 | 228 | 315 |
| | **Stall torque** | Coil @ 110°C | $T_c$ | Nm | 102 | 160 | 221 |
| | **Maximum speed** | @$T_c$ 560Vdc | $N_{max}$ | rpm | 185 | 123 | 95 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 20.00 | 30.00 | 39.50 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | $(Nm)^2/W$ | 22.599 | 38.071 | 52.854 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 27.00 | 27.00 | 27.40 |
| | **Maximum continuous current** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 7.30 | 7.60 | 8.00 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 1722 | 2583 | 3401 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 1218 | 1827 | 2405 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 5.90 | 7.88 | 9.84 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 23.50 | 34 | 45 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 4.00 | 4.30 | 4.60 |
| | **Poles** | | $N_{mgn}$ | nr | 38 | | |
| Thermal | **Continuous power loss** | Coils @ 100°C | $P_c$ | W | 1209 | 1775 | 2441 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.051 | 0.037 | 0.053 |
| | **Temperature cut-off / sensor** | | | | Optional PTC 110/ NTC 10kΩ | | |
| Mechanical | **Stator OD** | | Ods | mm | 290 | | |
| | **Rotor ID** | | Ods | mm | 220 | | |
| | **Rotor inertia** | | JR | Kg·cm² | 310 | 460 | 610 |
| | **Rotor mass** | | $W_r$ | g | 23000 | 35000 | 47000 |
| | **Total mass** | Excluding cables | $M_T$ | g | 83000 | 118000 | 155000 |



# KRT91S SERIES - IRONLESS TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT91S | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI17N | UI25N | UI34Y | UI60Y | UI92Y |
| | **Motortype, max voltage ph-ph** | | | | 3 Phase synchronous slotless 220V-380Vac rms (48V-600V) | | | | |
| | **Peak torque @ 20°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 0.28 | 0.85 | 1.44 | 3.84 | 6.40 |
| | **Continuous torque** | Coil @ 100°C | $T_c$ | Nm | 0.07 | 0.21 | 0.36 | 0.96 | 1.60 |
| | **Maximum speed @320 Volt** | @$T_c$ | $N_{max}$ | rpm | 30000 | 30000 | 30000 | 30000 | 30000 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 0.015 | 0.030 | 0.025 | 0.067 | 0.113 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | $(Nm)^2/W$ | 0.0001 | 0.0003 | 0.0005 | 0.0016 | 0.0033 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 18.7 | 28.4 | 58.8 | 57.5 | 56.6 |
| | **Maximum continuous current** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 4.7 | 7.1 | 14.7 | 14.4 | 14.2 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 1.29 | 2.58 | 2.11 | 5.75 | 9.73 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 0.91 | 1.83 | 1.49 | 4.06 | 6.88 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 0.73 | 1.02 | 0.38 | 0.95 | 1.28 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 0.37 | 0.67 | 0.30 | 1.08 | 1.72 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 0.50 | 0.70 | 0.80 | 1.10 | 1.30 |
| | **Max. Continuous Power Loss** | All coils | $P_C$ | W | 62 | 200.5 | 315.8 | 766.4 | 1000.8 |
| | **Poles** | | $N_{mgn}$ | nr | 8 | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 1.50 | 0.80 | 0.58 | 0.37 | 0.11 |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 65 | | | | |
| | **Rotor ID** | | Ods | mm | 15 | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 0.031 | 0.062 | 0.092 | 0.18 | 0.32 |
| | **Total mass** | Excluding cables | $M_T$ | g | 180 | 320 | 460 | 950 | 1600 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | Leadwires (4*1.5mm2) | | | | |

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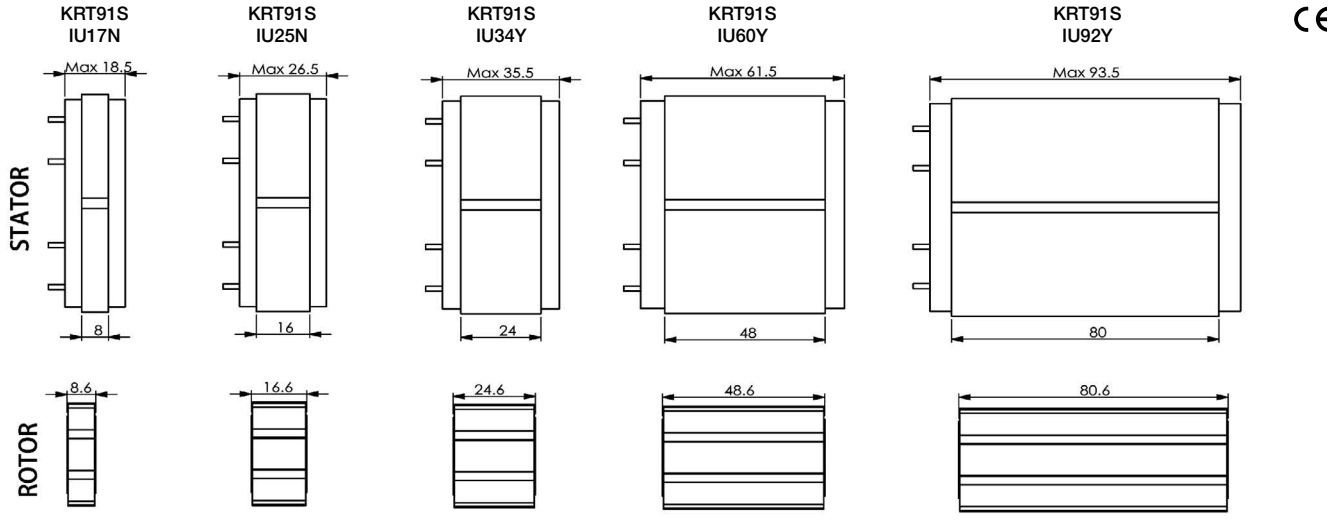


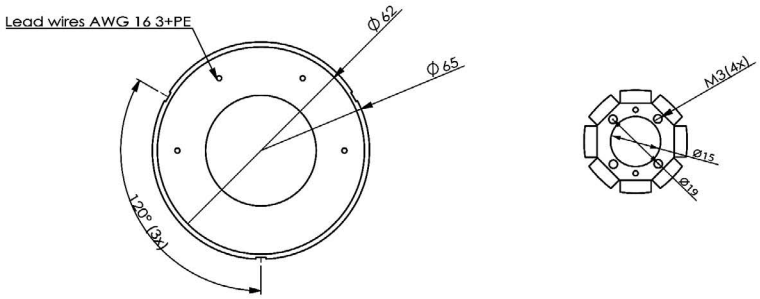

# KRT92S SERIES - IRONLESS TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT92S | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI17N | UI25Y | UI34Y | UI60Y | UI92Y |
| | **Motortype, max voltage ph-ph** | | | | 3 Phase synchronous slotless 220V-380Vac rms (48V-600Vdc) | | | | |
| | **Peak torque @ 6°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 0.57 | 1.38 | 2.20 | 4.40 | 7.33 |
| | **Continuous torque** | Coil @ 100°C | $T_c$ | Nm | 0.14 | 0.35 | 0.54 | 1.10 | 1.80 |
| | **Maximum speed @ 48 Volt** | @$T_c$ | $N_{max}$ | rpm | 3000 | 3000 | 3000 | 3000 | 3000 |
| | **Maximum speed @320 Volt** | @$T_c$ | $N_{max}$ | rpm | 25000 | 25000 | 25000 | 25000 | 25000 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | $Nm/A_{rms}$ | 0.027 | 0.033 | 0.05 | 0.13 | 0.28 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | $(Nm)^2/W$ | 0.0002 | 0.0008 | 0.0015 | 0.0039 | 0.0084 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 21.00 | 41.80 | 44.00 | 33.80 | 26.00 |
| | **Maximum continuous current** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 4.90 | 11.00 | 11.10 | 8.30 | 6.40 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 2.30 | 2.80 | 4.30 | 11.20 | 24.10 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 1.60 | 2.00 | 3.00 | 7.90 | 170 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 1.11 | 0.44 | 0.56 | 1.44 | 1.92 |
| | **Coil induction per phase** | $I < 0.63\ I_p$ | L | mH | 0.67 | 0.40 | 0.56 | 1.88 | 2.88 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 0.60 | 0.90 | 1.00 | 1.30 | 1.50 |
| | **Max. Continuous Power Loss** | All coils | $P_c$ | W | 116.80 | 187.60 | 254.30 | 403.30 | 309.50 |
| | **Poles** | | $N_{mgn}$ | nr | 12 | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.99 | 0.54 | 0.39 | 0.26 | 0.14 |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 78 | | | | |
| | **Rotor ID** | | Ods | mm | 27 | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 0.13 | 0.25 | 0.38 | 0.75 | 1.27 |
| | **Total mass** | Excluding cables | $M_T$ | g | 280 | 440 | 650 | 1300 | 2000 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | Leadwires (4*1.5mm2) | | | | |

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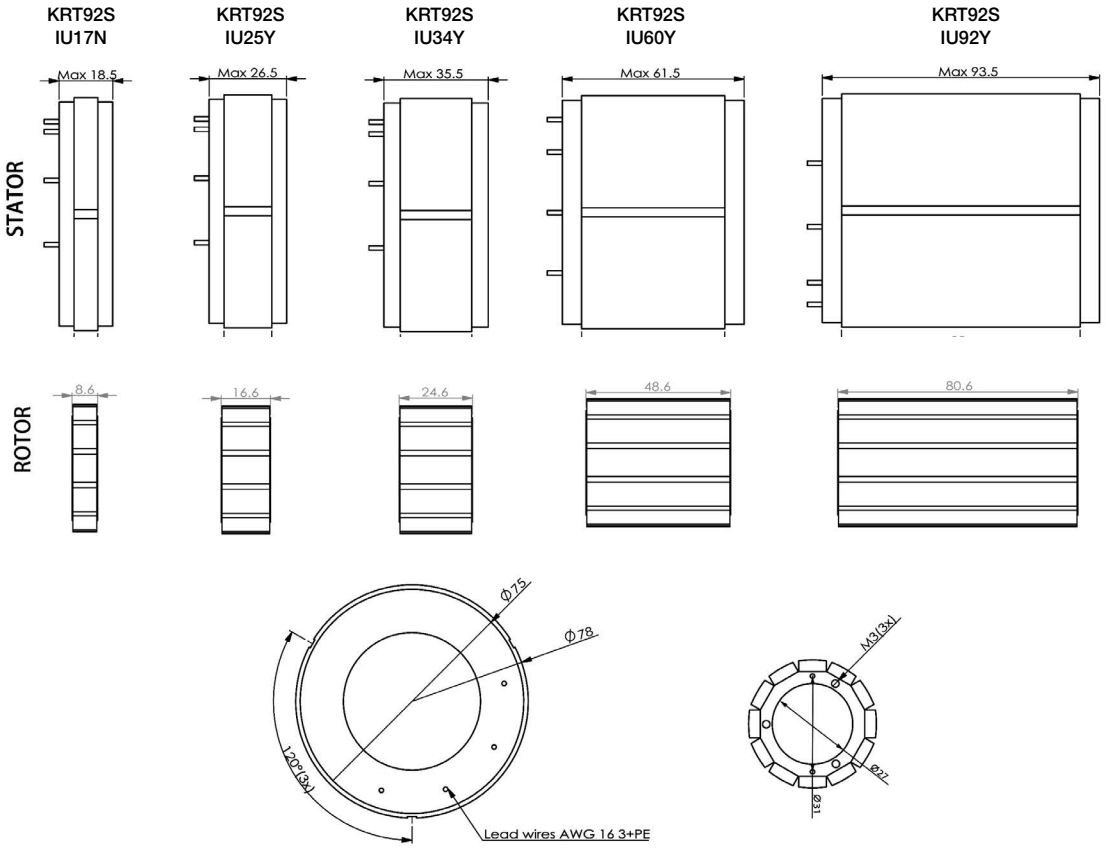

# KRT93S SERIES - IRONLESS TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT93S | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI17N | UI17Y | UI17I | UI25N | UI25Y | UI25I | UI34N | UI34Y | UI34I | UI60N | UI92Y |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Iron core, 230 $V_{ac\ rms}$ (320$V_{dc}$) | | | | | | | | | 380 $V_{ac\ rms}$ (600$V_{dc}$) | |
| | **Peak torque @ 20°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 1.20 | 1.20 | 1.20 | 3.20 | 3.20 | 3.20 | 5.40 | 5.40 | 5.40 | 12.00 | 20.00 |
| | **Continuous torque** | Coil @ 100°C | $T_c$ | Nm | 0.32 | 0.32 | 0.32 | 0.80 | 0.80 | 0.80 | 1.35 | 1.35 | 1.35 | 3.00 | 5.00 |
| | **Maximum speed @ 48 Volt** | @$T_c$ | $N_{max}$ | rpm | 20000 | 30000 | 50000 | 10000 | 20000 | 30000 | 5000 | 10000 | 20000 | 3000 | 3000 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 0.07 | 0.04 | 0.02 | 0.15 | 0.08 | 0.05 | 0.26 | 0.13 | 0.07 | 0.71 | 0.60 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | (Nm)²/W | 0.0009 | 0.0009 | 0.0009 | 0.0029 | 0.0028 | 0.0031 | 0.0061 | 0.0054 | 0.0058 | 0.0197 | 0.0199 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 17.30 | 31.90 | 55.10 | 21.60 | 40.00 | 68.00 | 20.40 | 43.20 | 73.60 | 16.80 | 33.20 |
| | **Maximum continuous current** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 4.60 | 8.50 | 14.70 | 5.40 | 10.00 | 17.00 | 5.10 | 10.80 | 18.40 | 4.20 | 8.30 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 6 | 3 | 2 | 13 | 7 | 4 | 23 | 11 | 6 | 62 | 52 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 4 | 2 | 1 | 9 | 5 | 3 | 16 | 8 | 4 | 43 | 37 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 1.75 | 0.55 | 0.18 | 2.50 | 0.75 | 0.24 | 3.81 | 0.96 | 0.31 | 8.62 | 6.08 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 1.61 | 0.56 | 0.16 | 3.00 | 0.75 | 0.25 | 4.99 | 1.25 | 0.37 | 16.01 | 12.75 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 0.90 | 1.00 | 0.90 | 1.20 | 1.00 | 1.00 | 1.20 | 1.30 | 1.20 | 1.80 | 1.90 |
| | **Max. Continuous Power Loss** | All coils | $P_c$ | W | 144.40 | 155 | 151.70 | 284.30 | 292.50 | 270.50 | 386.50 | 437.60 | 412 | 593 | 1633.50 |
| | **Poles** | | $N_{mgn}$ | nr | 20 | | | | | | | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.68 | 0.68 | 0.68 | 0.34 | 0.34 | 0.34 | 0.24 | 0.24 | 0.24 | 0.14 | 0.11 |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | | | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 105 | | | | | | | | | | |
| | **Rotor ID** | | Ods | mm | 52 | | | | | | | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 0.76 | | | 1.50 | | | 2.20 | | | 4.50 | 7.58 |
| | **Total mass** | Excluding cables | $M_T$ | g | 320 | | | 620 | | | 960 | | | 1930 | 3120 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | 6.6(20) | | 7.4(17) | 6.6(20) | 7.4(17) | 8.4(15) | 6.6(20) | 8.4(15) | 8.4(15) | 6.6(20) | |

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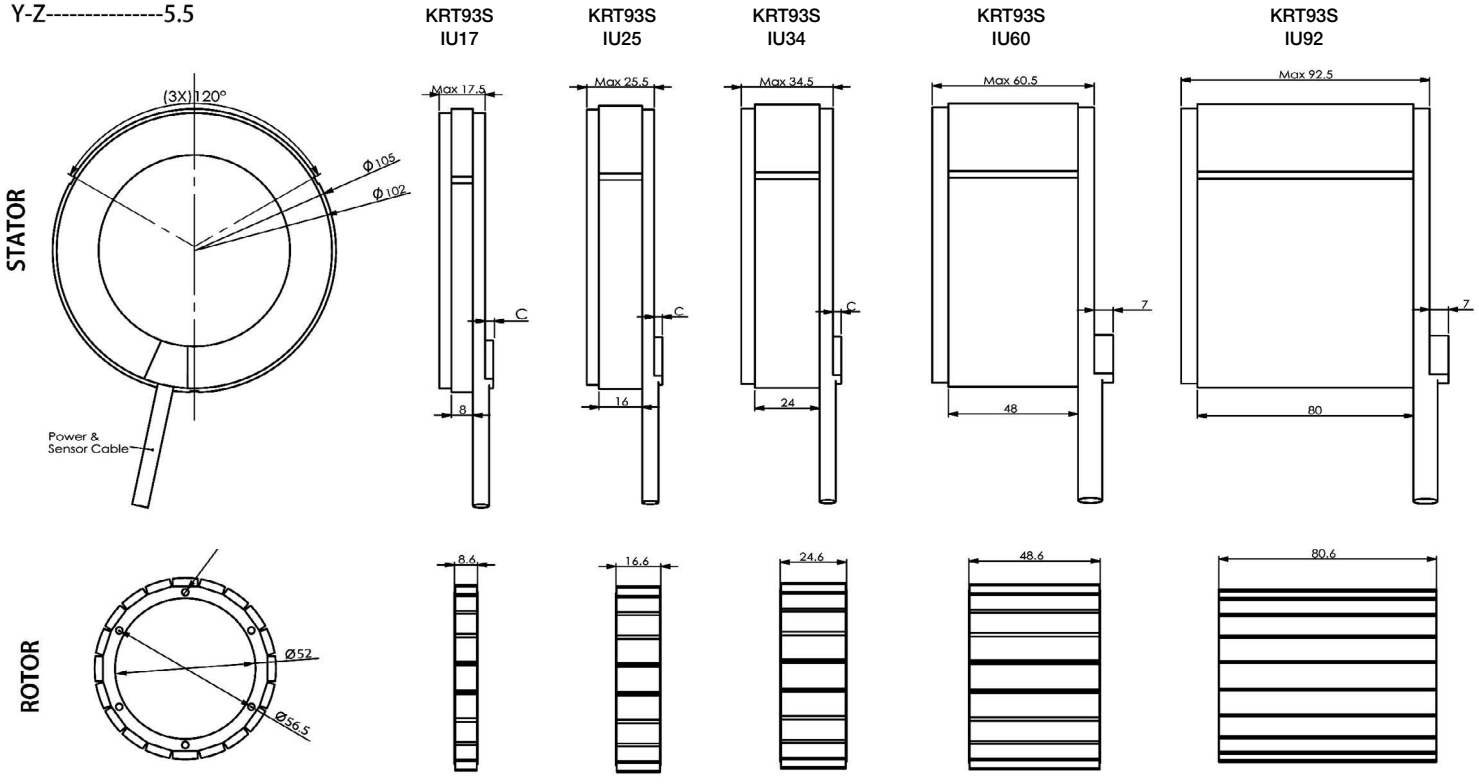
Winding C(mm)
N----------3
Y-Z----------5.5



# KRT94S SERIES - IRONLESS TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT94S | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI17N | UI17Y | UI17I | UI25N | UI25Y | UI25I | UI34N | UI34Y | UI34I | UI60N | UI60Y | UI92Y |
| | **Motortype, max voltage ph-ph** | | | | 3 Phase synchronous slotless 220V-380Vac rms (48V-600Vdc) | | | | | | | | | 380Vac rms (600Vdc) | | |
| | **Peak torque @ 20°C/s increase** | Magnet @ 25°C | $T_p$ | Nm | 2.70 | 2.70 | 2.80 | 6.00 | 6.00 | 6.00 | 10.00 | 10.00 | 10.00 | 22.00 | 22.00 | 36.80 |
| | **Continuous torque** | Coil @ 100°C | $T_c$ | Nm | 0.70 | 0.70 | 0.70 | 1.50 | 1.50 | 1.50 | 2.50 | 2.40 | 2.50 | 5.50 | 5.50 | 9.20 |
| | **Maximum speed @ 48 Volt** | @$T_c$ | $N_{max}$ | rpm | 14111 | 25501 | 44096 | 7055 | 12985 | 22280 | 4047 | 8819 | 15119 | 2835 | 11339 | 1725 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 0.150 | 0.083 | 0.048 | 0.300 | 0.163 | 0.095 | 0.523 | 0.24 | 0.140 | 1.400 | 0.35 | 2.300 |
| | **Motor constant** | Coils @ 25°C | $K_m$ | $(Nm)^2/W$ | 0.003 | 0.003 | 0.003 | 0.009 | 0.009 | 0.009 | 0.017 | 0.015 | 0.015 | 0.054 | 0.051 | 0.504 |
| Electrical | **Peak current** | Magnet @ 25°C | $I_p$ | $A_{rms}$ | 18.00 | 32.00 | 58.00 | 20.00 | 36.80 | 63.20 | 19.10 | 41.70 | 71.40 | 15.70 | 72.90 | 16.00 |
| | **Maximum continuous current** | Coils @ 100°C | $I_c$ | $A_{rms}$ | 4.50 | 8.00 | 14.60 | 5.00 | 9.20 | 16.00 | 4.80 | 10.00 | 17.90 | 3.90 | 16.00 | 4.00 |
| | **Back EMF Phase-Phase$_{peak}$** | 25°C+/-10% | $K_e$ | V/krpm | 13 | 7 | 4 | 26 | 14 | 8 | 45 | 21 | 12 | 121 | 30 | 198 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25°C+/-10% | $K_e$ | V/krpm | 9 | 5 | 3 | 18 | 10 | 6 | 32 | 15 | 9 | 85 | 21 | 140 |
| | **Coil resistance per phase** | Coils @ 25°C | R | Ω | 2.44 | 0.75 | 0.26 | 3.42 | 1.01 | 0.34 | 5.33 | 1.28 | 0.43 | 12.05 | 0.80 | 4.56 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 2.44 | 0.75 | 0.26 | 3.42 | 1.01 | 0.34 | 5.33 | 1.28 | 0.43 | 12.05 | 0.80 | 4.56 |
| | **Electrical time constant** | Coils @ 25°C | $\tau_e$ | ms | 1 | | | | | | | | | | | |
| | **Max. Continuous Power Loss** | All Coils | $P_c$ | W | 192.70 | 187.20 | 215.70 | 333.50 | 333.60 | 331.60 | 475.00 | 499.20 | 532.30 | 725.00 | 770.40 | 284.50 |
| | **Poles** | | $N_{mgn}$ | nr | 28 | | | | | | | | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | °C/W | 0.50 | 0.50 | 0.50 | 0.28 | 0.28 | 0.28 | 0.20 | 0.20 | 0.20 | 0.13 | 0.13 | 0.095 |
| | **Temperature cut-off / sensor** | | | | PTC 1kΩ / NTC | | | | | | | | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 133 | | | | | | | | | | | |
| | **Rotor ID** | | Ods | mm | 78 | | | | | | | | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 2.49 | | | 4.86 | | | 7.20 | | | 14.40 | | 24.60 |
| | **Total mass** | Excluding cables | $M_T$ | g | 550 | | | 955 | | | 1370 | | | 2750 | | 4300 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | 6.6(20) | | 7.4(17) | 6.6(20) | 7.4(17) | 8.4(15) | 6.6(20) | 8.4(15) | | 8.4(15) | | 8.4(15) |

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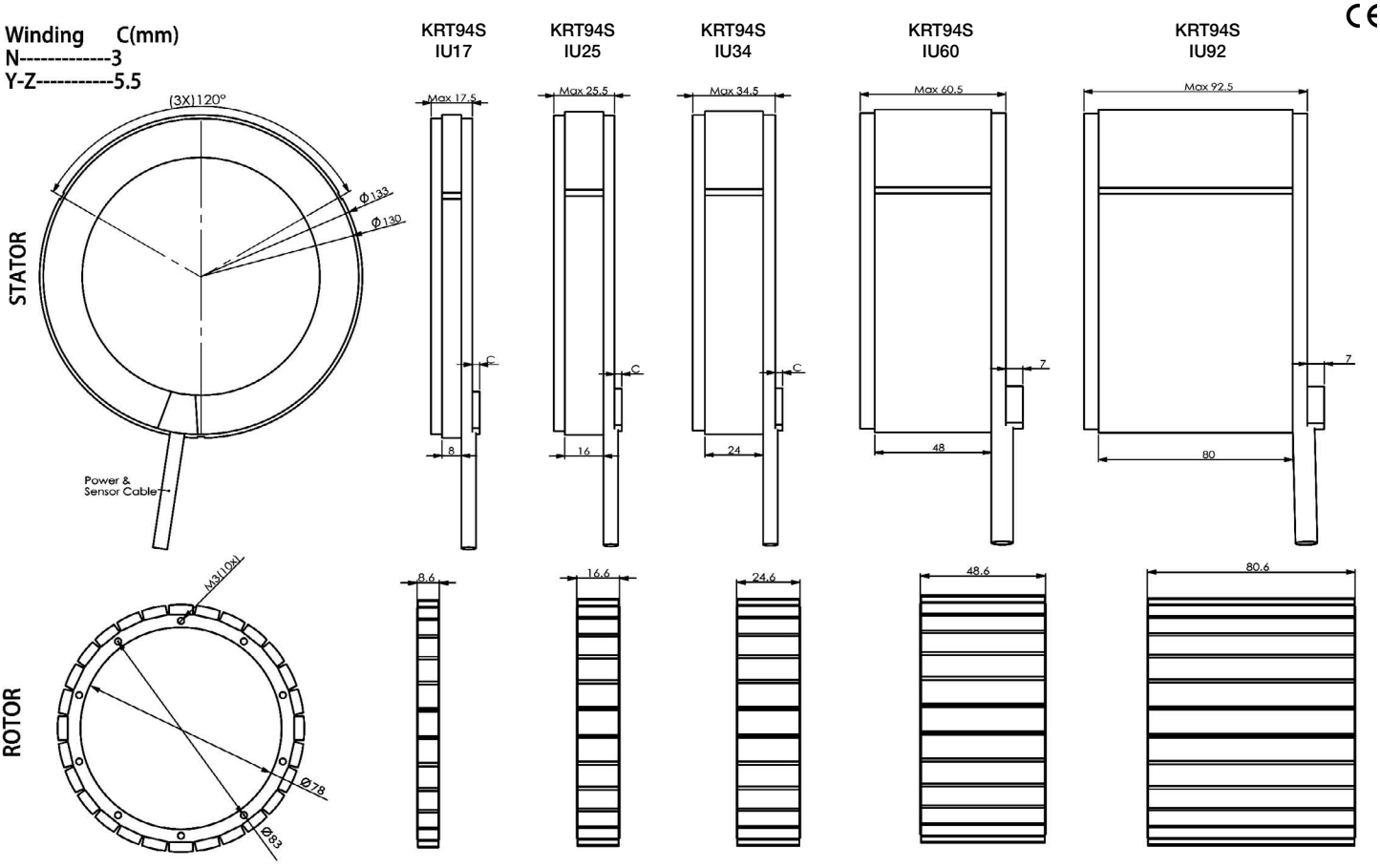
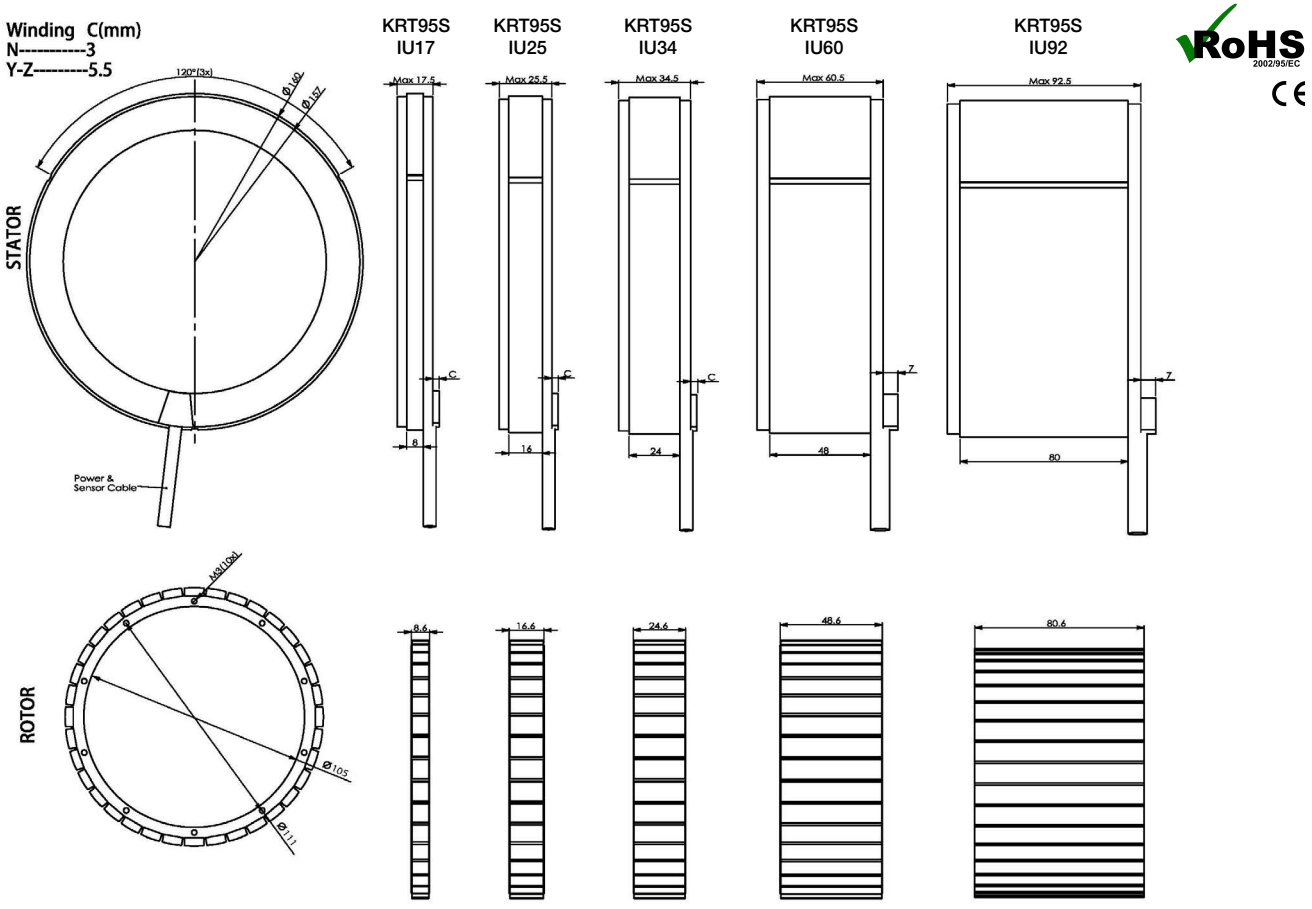
CE



# KRT95S SERIES - IRONLESS TORQUE MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRT95S | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI17N | UI17Y | UI17I | UI25N | UI25Y | UI25I | UI34N | UI34I | UI60N | UI92Y |
| | **Motortype, max voltage ph-ph** | | | | 3 phases synchronous slotless 230Vac rms (320Vdc) | | | | | | | | 380Vac rms (600Vdc) | |
| | **Peak torque @20ºC/s increase** | Magnet @ 25ºC | $T_p$ | Nm | 4.10 | 4.10 | 4.10 | 9.70 | 9.70 | 9.70 | 15.90 | 15.00 | 36.40 | 60.80 |
| | **Continuous torque** | Coil @ 100ºC | $T_c$ | Nm | 1.03 | 1.03 | 1.03 | 2.43 | 2.43 | 2.43 | 3.98 | 3.75 | 9.10 | 15.20 |
| | **Maximum speed @ 48 Volt** | @$T_c$ | $N_{max}$ | rpm | 8819 | 15679 | 26458 | 4410 | 7898 | 13656 | 2453 | 9407 | 1725 | 1036 |
| | **Motor torque constant** | Up to $I_c$ | $K_t$ | Nm/$A_{rms}$ | 0.24 | 0.14 | 0.08 | 0.48 | 0.27 | 0.16 | 0.86 | 0.23 | 2.30 | 3.83 |
| | **Motor constant** | Coils @ 25ºC | $K_m$ | $(Nm)^2/W$ | 0.006 | 0.006 | 0.007 | 0.018 | 0.018 | 0.018 | 0.036 | 0.031 | 0.114 | 0.625 |
| Electrical | **Peak current** | Magnet @ 25ºC | $I_p$ | $A_{rms}$ | 17.20 | 30.50 | 51.50 | 20.30 | 36.30 | 62.70 | 18.40 | 66.70 | 15.80 | 15.90 |
| | **Maximum continuous current** | Coils @ 100ºC | $I_c$ | $A_{rms}$ | 4.30 | 7.60 | 12.90 | 5.10 | 9.10 | 15.70 | 4.60 | 16.70 | 4.00 | 4.00 |
| | **Back EMF Phase-Phase$_{peak}$** | 25ºC+/-10% | $K_e$ | V/krpm | 21 | 12 | 7 | 41 | 23 | 13 | 74 | 19 | 198 | 330 |
| | **Back EMF Phase-Phase$_{RMS}$** | C25ºC+/-10% | $K_e$ | V/krpm | 15 | 8 | 5 | 29 | 16 | 9 | 53 | 14 | 140 | 233 |
| | **Coil resistance per phase** | Coils @ 25ºC | R | Ω | 3.15 | 0.95 | 0.31 | 4.37 | 1.30 | 0.44 | 6.87 | 0.55 | 15.49 | 5.86 |
| | **Coil induction per phase** | I < 0.63 $I_p$ | L | mH | 3.78 | 1.24 | 0.40 | 6.12 | 1.95 | 0.66 | 10.99 | 0.88 | 26.33 | 16.47 |
| | **Electrical time constant** | Coils @ 25ºC | $\tau_e$ | ms | 1.20 | 1.30 | 1.30 | 1.40 | 1.50 | 1.50 | 1.60 | 1.60 | 1.70 | 2.90 |
| | **Max. Continuous Power Loss** | All coils | $P_c$ | W | 226.3 | 215.7 | 200.4 | 436.8 | 416.2 | 422.7 | 568.4 | 595.8 | 945.4 | 348.9 |
| | **Poles** | | $N_{mgn}$ | nr | 36 | | | | | | | | | |
| Thermal | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 0.43 | 0.43 | 0.43 | 0.23 | 0.23 | 0.23 | 0.17 | 0.17 | 0.10 | 0.06 |
| | **Temperature cut-off / sensor** | | | | Optional PTC 1kΩ/NTC | | | | | | | | | |
| Mechanical | **Stator OD** | | Ods | mm | 160 | | | | | | | | | |
| | **Rotor ID** | | Ods | mm | 105 | | | | | | | | | |
| | **Rotor inertia** | | JR | Kg·cm² | 5.70 | | | 11.00 | | | 16.00 | | 33.60 | 57.50 |
| | **Total mass** | Excluding cables | $M_T$ | g | 0.65 | | | 1.15 | | | 1.60 | | 3.30 | 5.50 |
| | **Cable Type (power)** | Length 0.5 m | d | mm (AWG) | 6.6(20) | | 7.4(17) | 6.6(20) | 7.4(17) | 8.4(17) | 6.6(20) | 8.4(17) | 6.6(20) | 6.6(17) |



# KRTS1S SERIES - SEGMENT IRONLESS MOTOR

## DIMENSIONS AND SPECIFICATIONS

| | Parameter | Remarks | Sym | Unit | KRTS1S |
|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI06H |
| | **Motortype, max voltage ph-ph** | | | | 3 Phase synchronous ironless 230Vac rms (320Vdc) |
| | **Peak torque @ 6ºC/s increase** | Magnet @ 25ºC | $T_p$ | Nm | 40 |
| | **Continuous force** | Coil @ 110ºC | $T_c$ | Nm | 11 |
| Electrical | **Current@Tp** | | $I_p$ | $A_{mps}$ | 10.5 |
| | **Max. Current@Tc** | | $I_c$ | $A_{mps}$ | 3 |
| | **Maximum speed** | @Tc@320Vrms | nmax | $R_{mp}$ | 576 |
| | **Motor torque constant** | | Kt | $Nm/A_{rms}$ | 3.67 |
| | **Motor constant** | Coil@25ºC | Km | $Nm^2/W$ | 1.6 |
| | **Back EMF constant** | 25ºC+/-10% | Bemf | V/(rad/sec) | 2.12 |
| | **Coil resistance per phase** | Coils @ 25ºC | | Ω | 2.75 |
| | **Coil induction per phase** | $I < 0.63\ I_p$ | Lph | mH | 0.9 |
| | **Electrical time constant** | Coils @ 25ºC | $\tau_e$ | ms | 0.33 |
| | **Max. Continuous Power Loss** | All Coils | $P_c$ | W | 98 |
| Mechanical | **Coil Unit Weight** | ex.cables | Wc | kg | 0.16 |
| | **Magnet Yoke 72°Weight** | | Wm | kg | 0.98 |
| | **Magnet Pitch** | N-N | τ | Degree | 9 |

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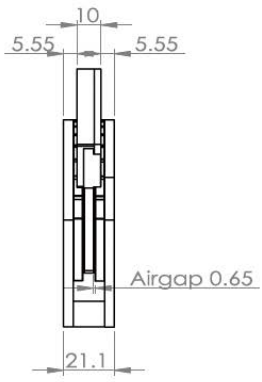
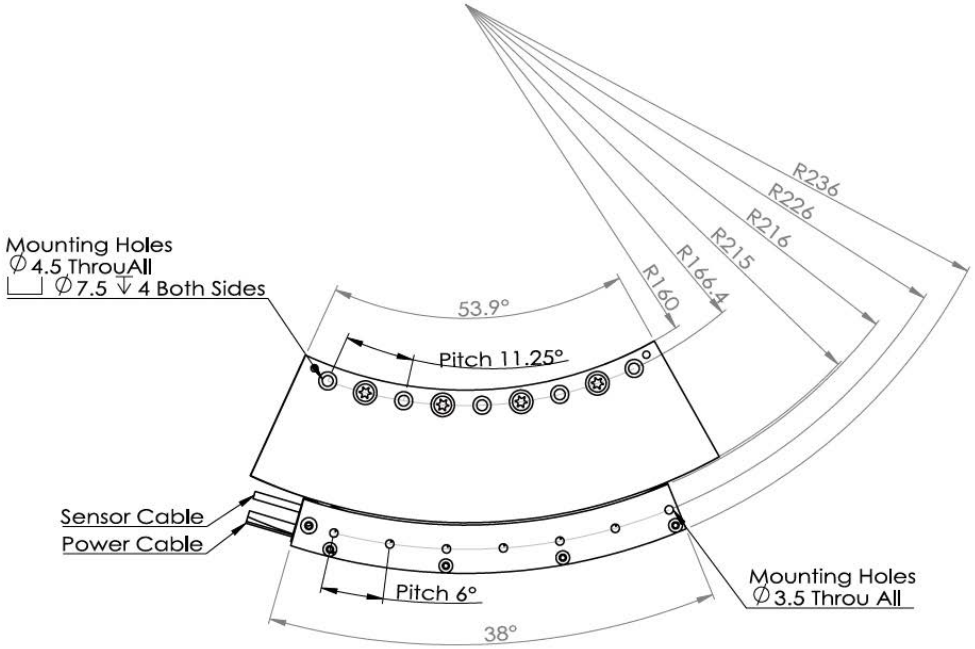


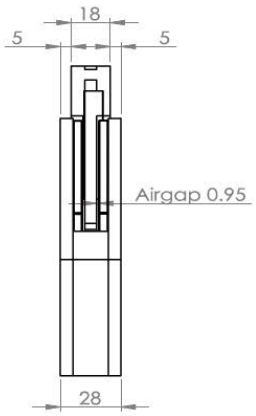
# KRTS2S SERIES - SEGMENT IRONLESS MOTOR

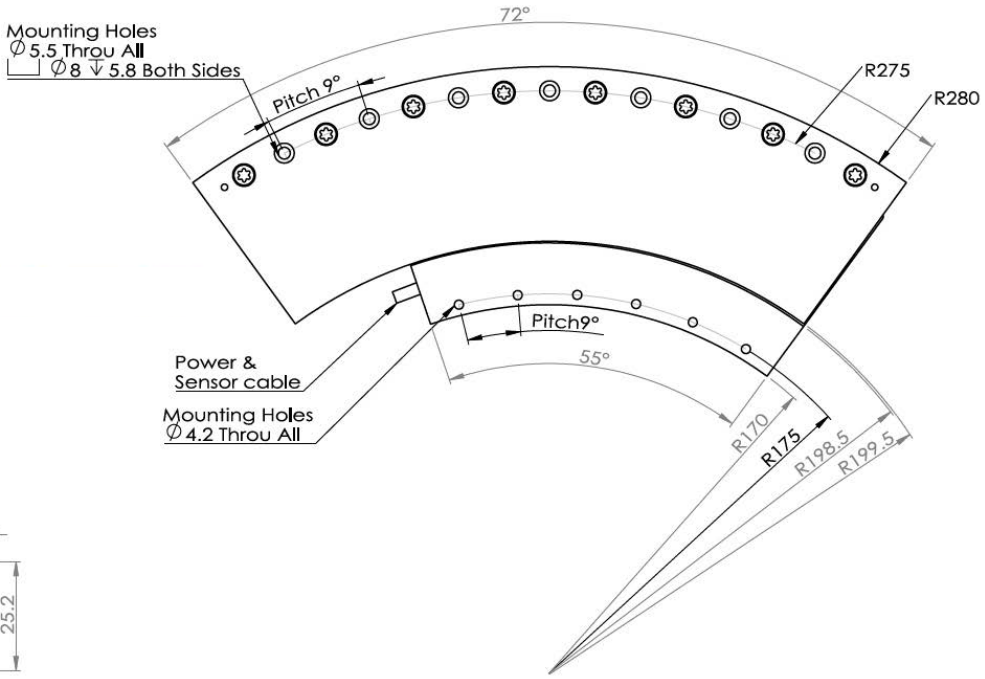
## DIMENSIONS AND SPECIFICATIONS

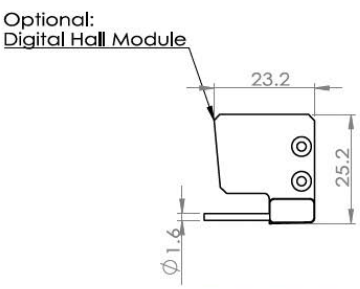
| | Parameter | Remarks | Sym | Unit | KRTS2S |
|---|---|---|---|---|---|
| Performance | **Winding type** | | | | UI09N |
| | **Motortype, max voltage ph-ph** | | | | 3 Phase synchronous ironless 230Vac rms (320Vdc) |
| | **Peak torque @ 6ºC/s increase** | Magnet @ 25ºC | $T_p$ | Nm | 142 |
| | **Continuous force** | Coil @ 100ºC | $T_c$ | Nm | 35.6 |
| Electrical | **Current@Tp** | | $I_p$ | $A_{mps}$ | 12 |
| | **Max. Current@Tc** | | $I_c$ | $A_{mps}$ | 3 |
| | **Maximum speed** | @Tc@320Vrms | nmax | $R_{mp}$ | 456 |
| | **Motor torque constant** | | Kt | $Nm/A_{rms}$ | 11.3 |
| | **Motor constant** | Coil@25ºC | Km | $Nm^2/W$ | 10.64 |
| | **Back EMF constant** | 25ºC+/-10% | Bemf | V/(rad/sec) | 6.5 |
| | **Coil resistance per phase** | Coils @ 25ºC | | Ω | 4.2 |
| | **Coil induction per phase** | $I < 0.63\ I_p$ | Lph | mH | 4 |
| | **Electrical time constant** | Coils @ 25ºC | $\tau_e$ | ms | 0.95 |
| | **Max. Continuous Power Loss** | All coils | $P_c$ | W | 155 |
| Mechanical | **Coil Unit Weight** | ex.cables | Wc | Kg | 0.6 |
| | **Magnet Yoke 72°Weight** | | Wm | kg | 3.2 |
| | **Magnet Pitch** | N-N | τ | Degree | 9 |

RoHS 2002/95/EC

CE



# KRT TORQUE MOTOR

## ORDER CODE

### Type

KRT - Torque motor

**KRT □□S - □□□□□ - □□□ - □□**

### Motor size (□□)

**Size Iron core:**
**01** - KRT01S
**02** - KRT02S
**03** - KRT03S
**04** - KRT04S
**05** - KRT05S
**06** - KRT06S
**07** - KRT07S

**Size Ironless:**
**91** - KRT91S
**92** - KRT92S
**93** - KRT93S
**94** - KRT94S
**95** - KRT95S

**Size Segment:**
**S1** - KRTS1S
**S2** - KRTS2S

### Motor (□□)

**Motor technology:**
**II** - Iron core motor
**UI** - Ironless motor

### Connectors (□□)

**Typ [2]:**
**04A** - Cable with connector M23
**05A** - Cable without connector
**06A** - Cable with connector Y-TEC

### Cable (□□□)

**Cable length in cm**
Max. cable lenght 50 cm

### Peak torque, Nm (aircooled) [1] (□□)

| | | | |
|---|---|---|---|
| KRT01S | **17** - 0.77Nm<br>**25** - 1.54Nm<br>**34** - 2.70Nm<br>**60** - 6.60Nm<br>**92** - 11.00Nm | KRT91S | **17** - 0.28Nm<br>**25** - 0.85Nm<br>**34** - 1.44Nm<br>**60** - 3.84Nm<br>**92** - 6.40Nm |
| KRT02S | **17** - 1.50Nm<br>**25** - 3.50Nm<br>**34** - 5.50Nm<br>**60** - 13.00Nm<br>**92** - 21.70Nm | KRT92S | **17** - 0.57Nm<br>**25** - 1.38Nm<br>**34** - 2.20Nm<br>**60** - 4.40Nm<br>**92** - 7.33Nm |
| KRT03S | **17** - 3.50Nm<br>**25** - 7.32Nm<br>**34** - 12.72Nm<br>**60** - 34.00Nm<br>**92** - 56.00Nm | KRT93S | **17** - 1.20Nm<br>**25** - 3.20Nm<br>**34** - 5.40Nm<br>**60** - 12.00Nm<br>**92** - 20.00Nm |
| KRT04S | **17** - 6.72Nm<br>**25** - 14.28Nm<br>**34** - 24.72Nm<br>**60** - 66.60Nm<br>**92** - 110Nm | KRT94S | **17** - 2.70Nm<br>**25** - 6.00Nm<br>**34** - 10.00Nm<br>**60** - 22.00Nm<br>**92** - 36.80Nm |
| KRT05S | **17** - 11.16Nm<br>**25** - 23.52Nm<br>**34** - 40.92Nm<br>**60** - 110Nm<br>**92** - 183Nm | KRT95S | **17** - 4.10Nm<br>**25** - 9.70Nm<br>**34** - 15.90Nm<br>**60** - 36.40Nm<br>**92** - 60.80Nm |
| KRT06S | **65** - 175Nm<br>**85** - 260Nm<br>**05** - 350Nm | KRTS1S<br>KRTS2S | **06** - 40.00Nm<br>**09** - 142Nm |
| KRT07S | **65** - 400Nm<br>**85** - 600Nm<br>**05** - 800Nm | | |

### Winding (□)

**Motor winding:**
**N** - Standard winding
**H** - High-speed winding
**I** - Low voltage winding
**Y** - Medium voltage winding

# KRTS SEGMENT MOTOR MAGNET

## ORDER CODE

**Type**
KMMS - Segment motor magnet

**KMMS□ - □□□□**

□ **Motor size**
**1** - KMMS1
**2** - KMMS2

□□□□ **Magnet size**

| | |
|---|---|
| KRTS1S | **0045** - 45°<br>**0054** - 54° |
| KRTS2S | **0072** - 72° |

# SERVO DRIVERS
## 400 V THREE PHASE

High performance servo drive
Interchangable bus adapters
Flexible power supply

By supplying the linear module with a servo driver, the customer receives a configured and parameterized system. Save time during commissioning and speed up the setup of your machine.


### Technical specifications

| | | M751-03-XX-XX | M751-04-XX-XX | M751-06-XX-XX |
|---|---|---|---|---|
| *Frame size W x D x H* | mm | Size 01: 40x174x233 | Size 01: 40x174x233 | Size 02: 40x174x278 |
| *Line supply* | | Three Phase AC 380 V...480 V (± 10%) @ 45...66 Hz | | |
| **Input** | | | | |
| *Max Power* | kW | 6.5 | 8.7 | 8.7 |
| **Output Servo** | | | | |
| *Rated Current* | A | 3 | 4.2 | 6 |
| *Max Peak Current* | A | 9 | 12.6 | 18 |
| **Output AC Induction** | | | | |
| *Max Continuous Current* | A | 3 | 4.2 | 6 |
| *Open Loop Peak Current* | A | 4.5 | 6.3 | 9 |
| *Closed Loop Peak Current* | A | 9 | 12.6 | 18 |
| *Motor Power at 400 V* | kW | 0.75 | 1.5 | 2.2 |
| **Overload** | | | | |
| *Closed-loop Overload* | | 300 % for 0.25 s or 200 % for 4 s | | |
| *Open-loop Overload* | | 150% for 8 s | | |
| *Current Loop Update* | | 62 µs | | |
| *Speed Loop Update* | | 250 µs | | |
| *Position Loop Update* | | 250 µs | | |

# SERVO DRIVERS
## MODULE COMMUNICATIONS

The M751 servo driver allows flexible connection of bus modules. This enables the machine manufacturer to reduce the number of items in stock and immediately configure the desired equipment.

**EtherCAT**

**PROFINET**

**Ethernet**

**CANopen**

**PROFIBUS**

**DeviceNet**

# SERVO DRIVERS & COMMUNICATIONS CABLE
## ORDER CODE

**Type**
M751 - Servo driver, 400V Three phases

**M751 - □□ - □□**

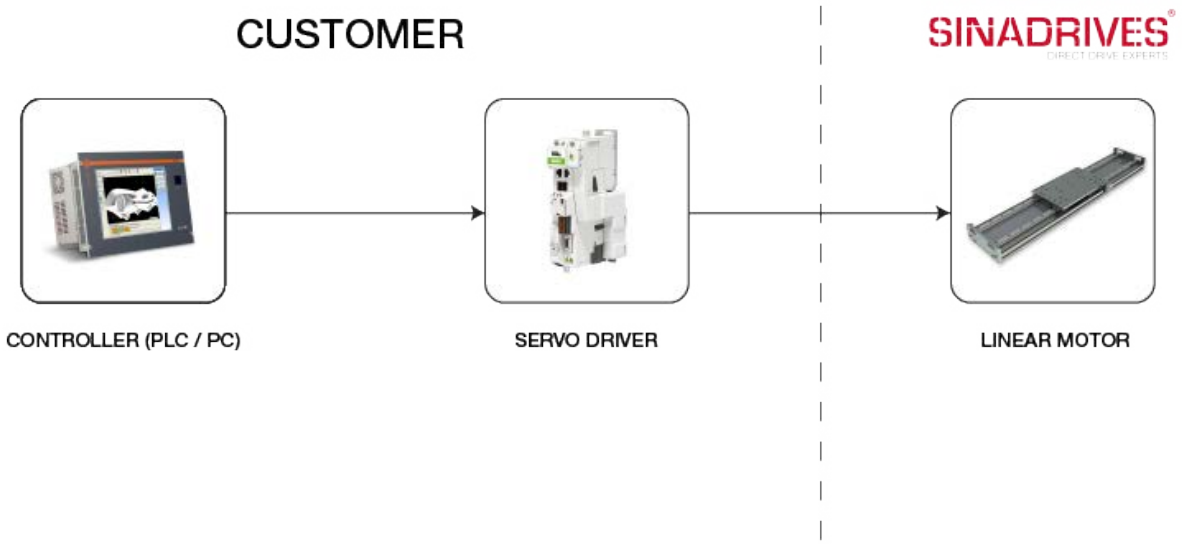
□□ **Rated current**
**03** - 3A / 9A
**04** - 4A / 12.6A
**06** - 6A / 18A

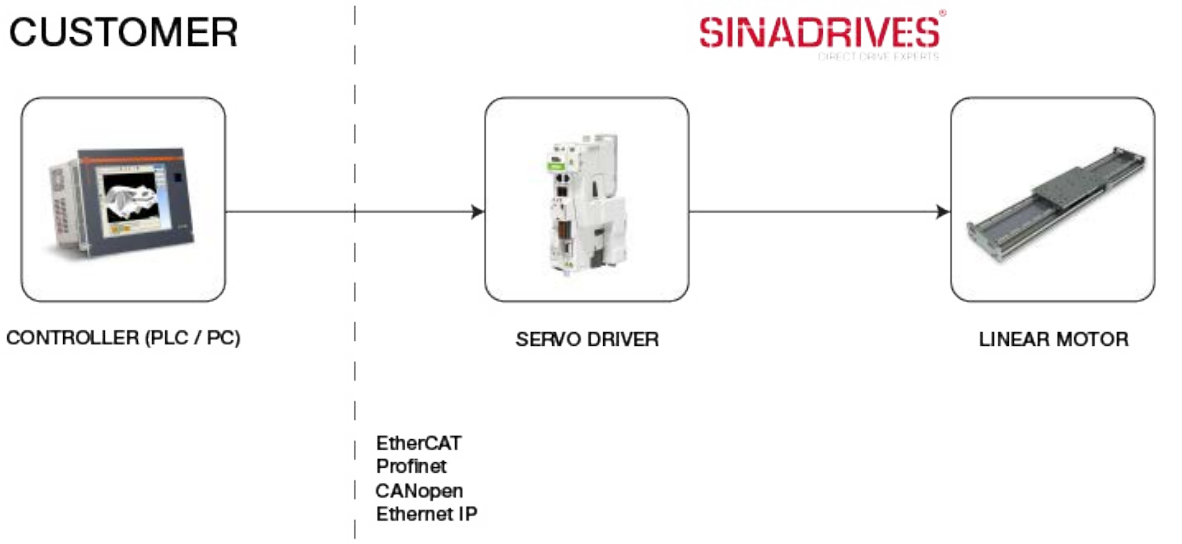
□□ **Module communications**
**EC** - EtherCat
**EN** - Ethernet
**PN** - Profinet
**PB** - Profibus
**CO** - CANOpen
**DN** - Devicenet

**Type**
Communication cable for servo driver, USB - RS485

**4500 - 0096**

# SERVO DRIVERS
## SET UP OPTIONS



# ACCESSORIES
## CABLES

### Power cable

| Description | Part number |
|---|---|
| Power cable, M23 connector,<br>xx - cable length in m | KCPS-SS-04A-05A-Mxx |
| Power cable, Y-TEC connector<br>xx - cable lenght in m | KCPS-SS-06A-05A-Mxx |

### Encoder cable

| Description | Part number |
|---|---|
| Encoder cable, M23 connector,<br>xx - cable lenght in m | KCES-55-04A-05A-Mxx |
| Encoder cable, Y-TEC connector,<br>xx - cable lenght in m | KCES-55-06A-05A-Mxx |

### Power cable plug

| Description | Part number |
|---|---|
| Power cable plug, M23 connector,<br>xx - cable length in m | KCPS-SS-04A-04A-Mxx |
| Power cable plug, Y-TEC connector<br>xx - cable lenght in m | KCPS-SS-06A-06A-Mxx |

### Encoder cable plug

| Description | Part number |
|---|---|
| Encoder cable plug, M23 connector,<br>xx - cable lenght in m | KCES-55-04A-04A-Mxx |
| Encoder cable plug, Y-TEC connector,<br>xx - cable lenght in m | KCES-55-06A-06A-Mxx |

### Technical data

| Cable type | Bending radius, mm | Weight per meter, Kg | Life Time, million cycles |
|---|---|---|---|
| Power cable | 100 | 0.19 | 10 |
| Encoder cable | 100 | 0.13 | 6 |

# ACCESSORIES
## MOUNTING POSSIBILITIES

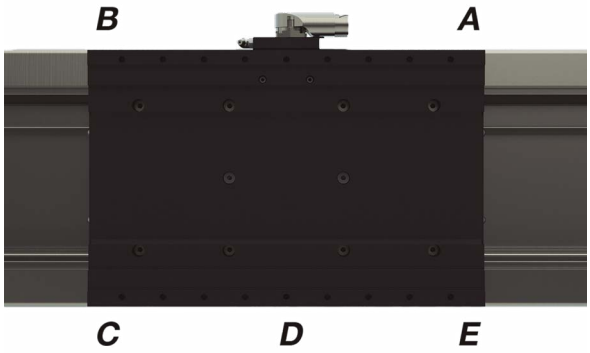
### H - horizontally mounted (H05A)

### V - vertically mounted (V05A)

### S - Side mounted (S06A)

*Support included

### Mounting position of power chain

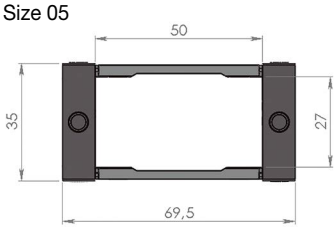



### Technical data

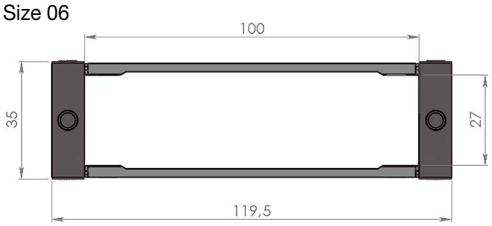
| Size | Bending radius, mm | Weight per meter, Kg |
|---|---|---|
| Size 05 | 100 | 0.90 |
| Size 06 | 100 | 1.12 |

### Available internal space

Size 05

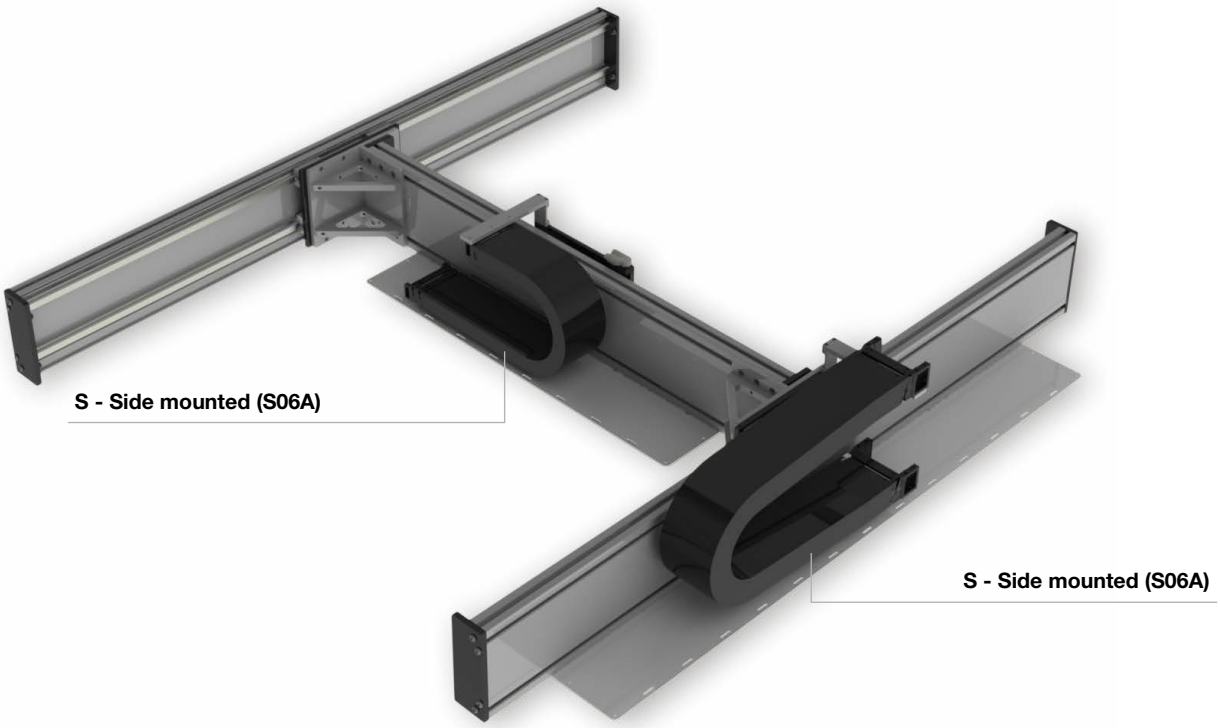



Size 06

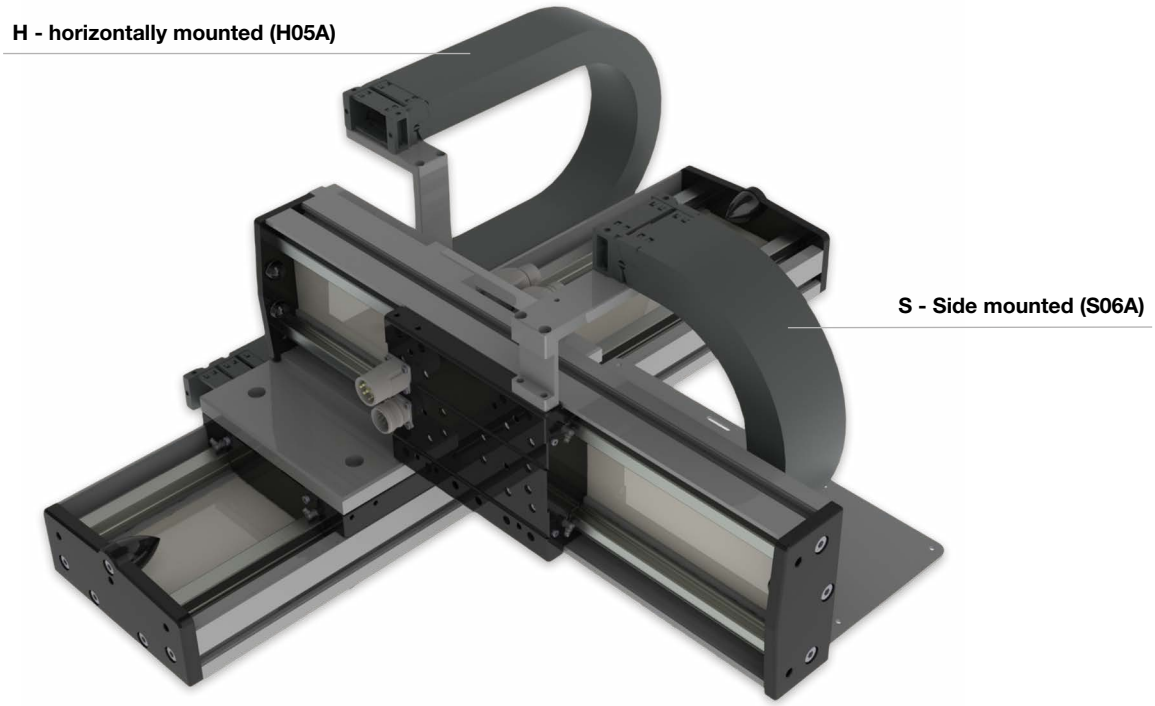


# POWER CHAIN

## MULTI-AXIS SYSTEMS WITH POWER CHAIN



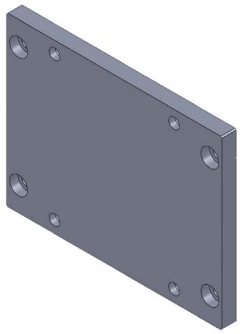

The power chain sets H, V, and S include the power chain and the supports for fixing to the movable carriage/base.
If a special power chain is required, an additional engineering service fee will apply.



# ACCESSORIES
## MOUNTING PLATES

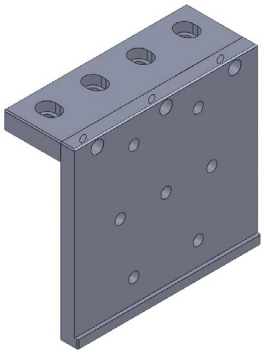
### Flat plate

| Type | Part number |
|---|---|
| Flat | AC01-Fxx000 |



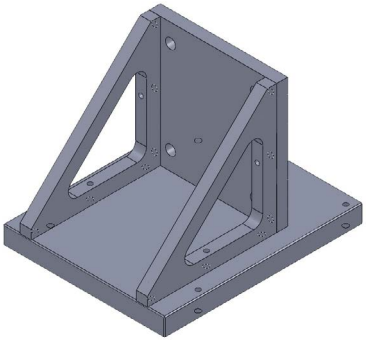
### Lateral plate

| Type | Part number |
|---|---|
| Lateral | AC01-Lxx000 |



### Square plate

| Type | Part number |
|---|---|
| Square | AC01-Sxx000 |



# AVAILABLE GREASE TYPES
## GREASE OPTIONS

| Description | Reference |
|---|---|
| Standard grease | NLGI class 00 grease according to DIN 51818 |
| Cleanroom grease | Klübersynth BEM 34-32 |
| Food grade grease | Klüberfood 4 NH1-68 |
| Low temperature grease | KL 15403 |

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