

PRODUCT CATALOGUE

DIRECT DRIVE EXPERTS



SINADRIVES[®]
DIRECT DRIVE EXPERTS

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Innovation & Excellence

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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

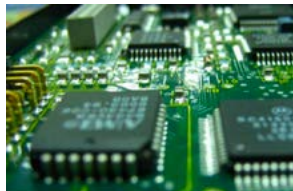
AUTOMATION
AUTOMOTIVE

PRINTING INDUSTRY
SEMICONDUCTOR

LASER CUTTING
FOOD INDUSTRY

PRESS TECHNOLOGY
TEST EQUIPMENT

PACKAGING
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

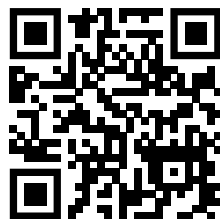
Schumannstraße 27
60325 Frankfurt am Main
Phone: +49 (0) 69505027470
Email: info@sinadrives.com

Our headquarters in SPAIN

Av. Mas Pins, 164. Nave 6
17457 Riudellots de la Selva (Girona)
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



APPLICATION MAP

SINADRIVES PRODUCT RANGE

MLS 5 - Open linear stage with linear motor

p.12

- 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.18

- 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.24

- 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.30

- 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.36

- 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**

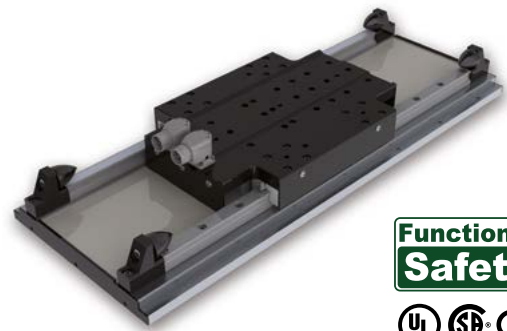


MLE 7 - Open linear stage with linear motor

p.42

- 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**



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

p.48

- 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.52

- 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**



APPLICATION MAP

SINADRIVES PRODUCT RANGE

MRT020001 - Flat rotary table

p.56

- 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.56

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

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



MRT030028 - Hollow shaft rotary table

p.56

- 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**



APPLICATION MAP SINADRIVES PRODUCT RANGE

MRT040056 - Hollow shaft rotary table

p.56

- 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

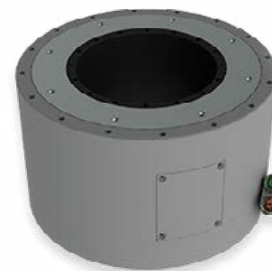


MRT060173 - Hollow shaft rotary table

p.56

- 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



LINEAR STAGES COMBINATIONS

INNOVATION & EXCELLENCE

001



002



003



004



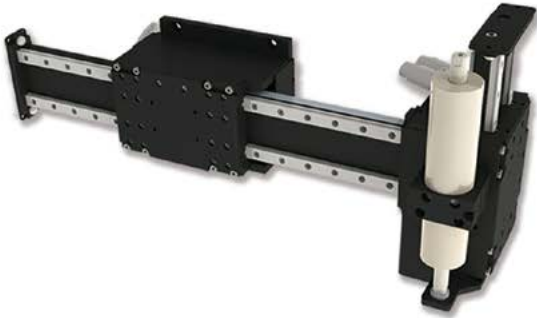
005



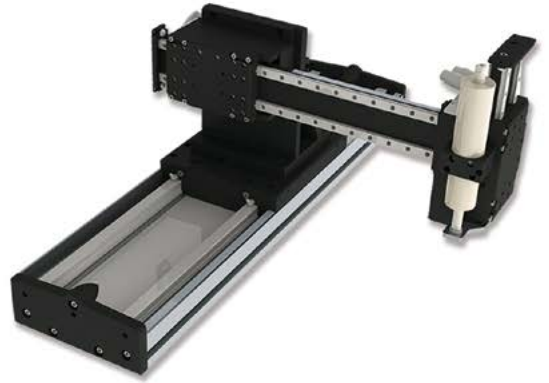
LINEAR STAGES COMBINATIONS

INNOVATION & EXCELLENCE

006



007



008



009

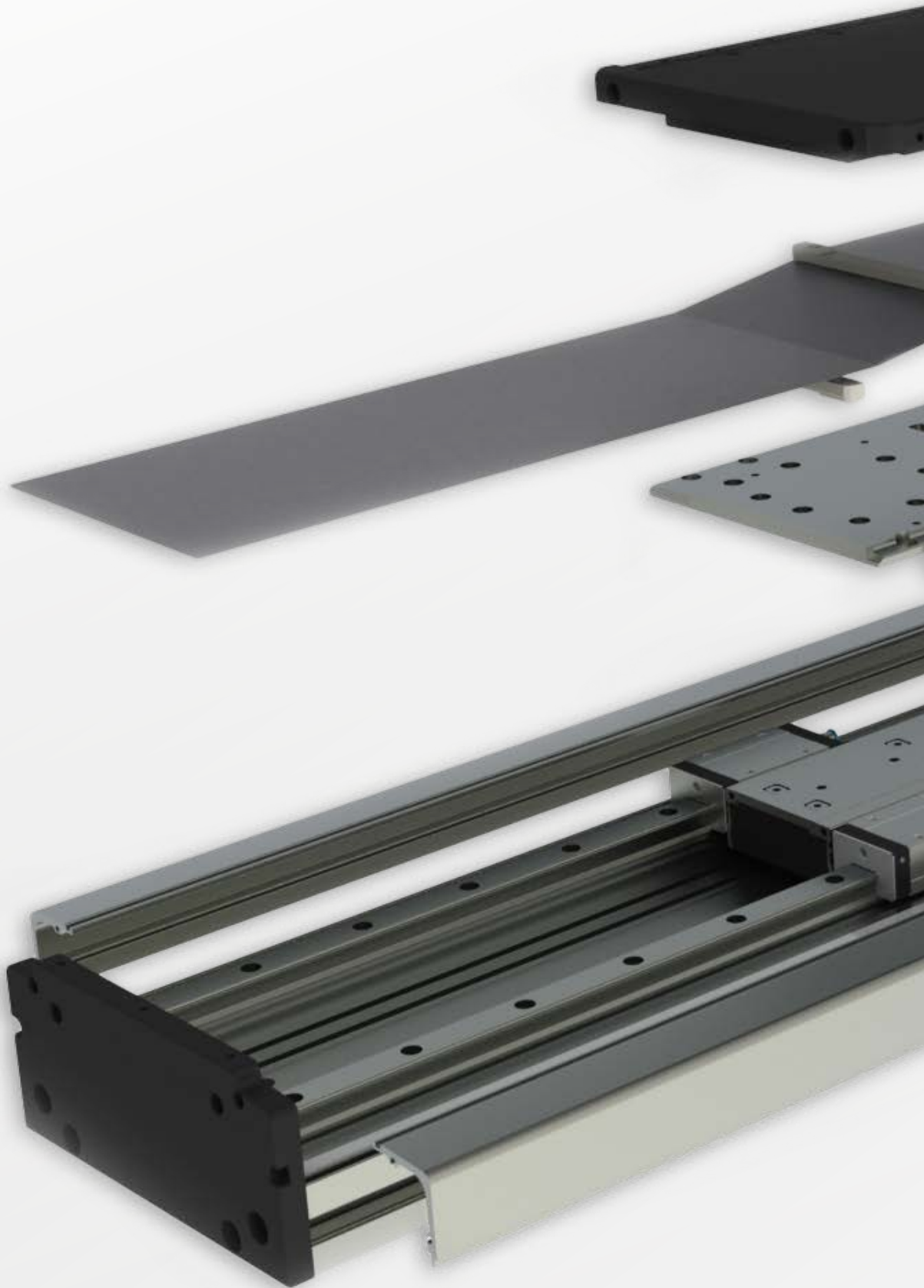


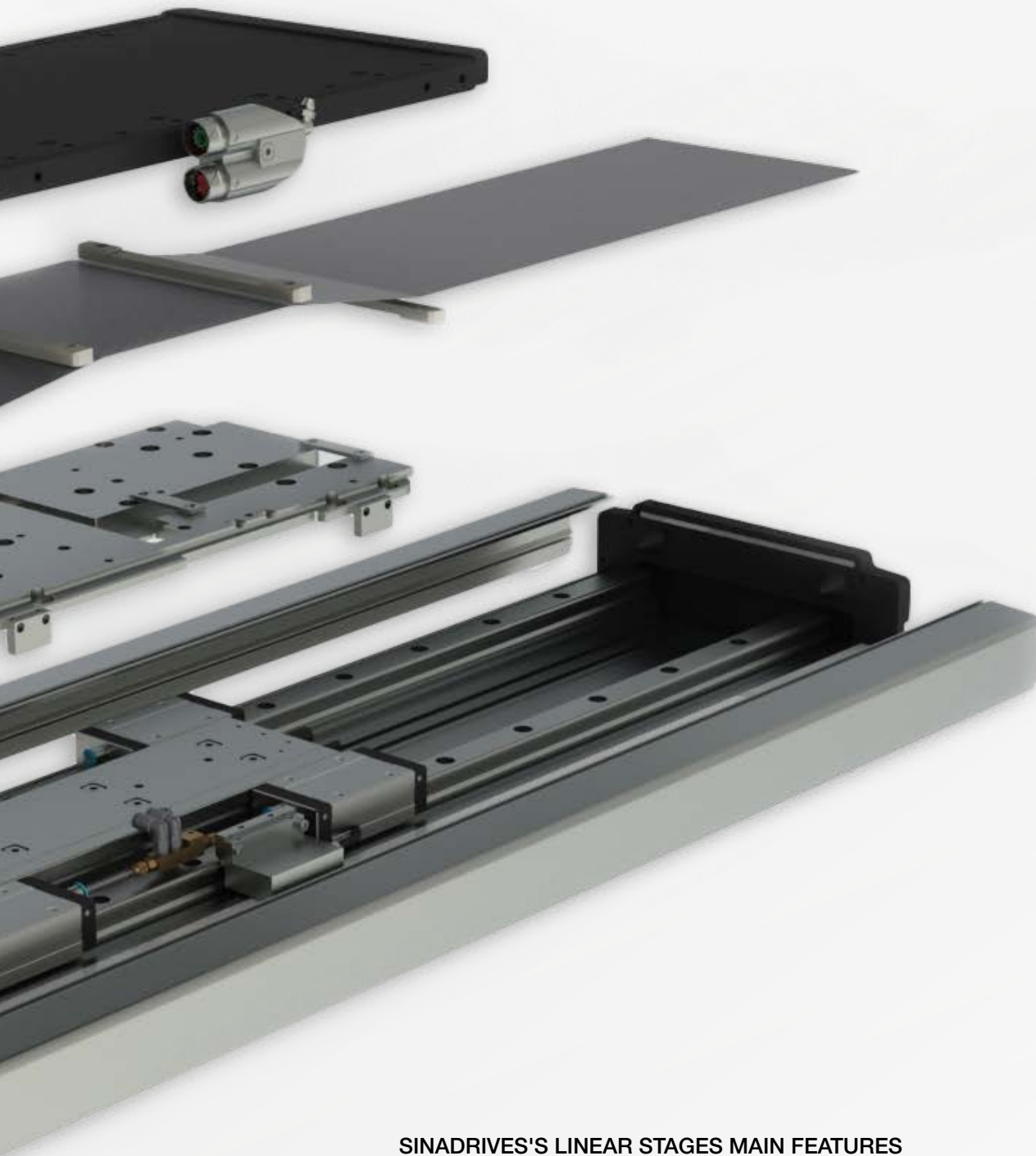
010



Introduction

In this catalog, you will discover our extensive selection of products, like linear stages and rotary tables for any type of application, ensuring a tailored solution for every machine's requirements.





SINADRIVES'S LINEAR STAGES MAIN FEATURES



Reduced lead time
of up to 2 weeks.



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



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

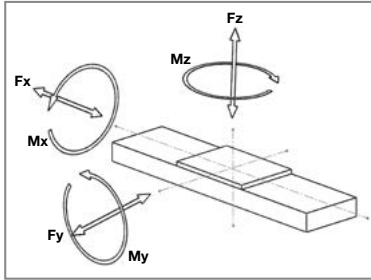


3 encoder technologies and can
be **incremental or absolute**, with
up to 50nm resolution.*

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

MLS 5 LINEAR MOTOR STAGE

Repeatability of measuring system: $\pm 0,5 \mu\text{m}$
 Repeatability of linear unit: $\pm 5 \mu\text{m}$
 Maximum length without joints: up to 6000 mm
 Operating voltage: 600 Vdc, max. 900 Vdc
 Maximum speed: 8 m/s
 Maximum acceleration: 180 m/s^2



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	7	7	7
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.)

F_y	N	2700	2700	4000
F_z	N	1800	1800	2700
M_x	Nm	400	400	675
M_y	Nm	630	900	1350
M_z	Nm	630	900	1350

For the sum of all forces and moments:

$$\frac{F_{ye}}{F_y} + \frac{F_{ze}}{F_z} + \frac{M_{xe}}{M_x} + \frac{M_{ye}}{M_y} + \frac{M_{ze}}{M_z} < 1 \quad \begin{matrix} (X_{xe} = \text{calculated value}) \\ (X_x = \text{max. catalogue value}) \end{matrix}$$

Structure profile features

Geometrical moments of inertia L_x	mm ⁴	$4,1 \times 10^5$	$4,1 \times 10^5$	$4,1 \times 10^5$
Geometrical moments of inertia L_y	mm ⁴	$14,4 \times 10^6$	$14,4 \times 10^6$	$14,4 \times 10^6$
Elastic module	N/mm ²	70000	70000	70000

Weight

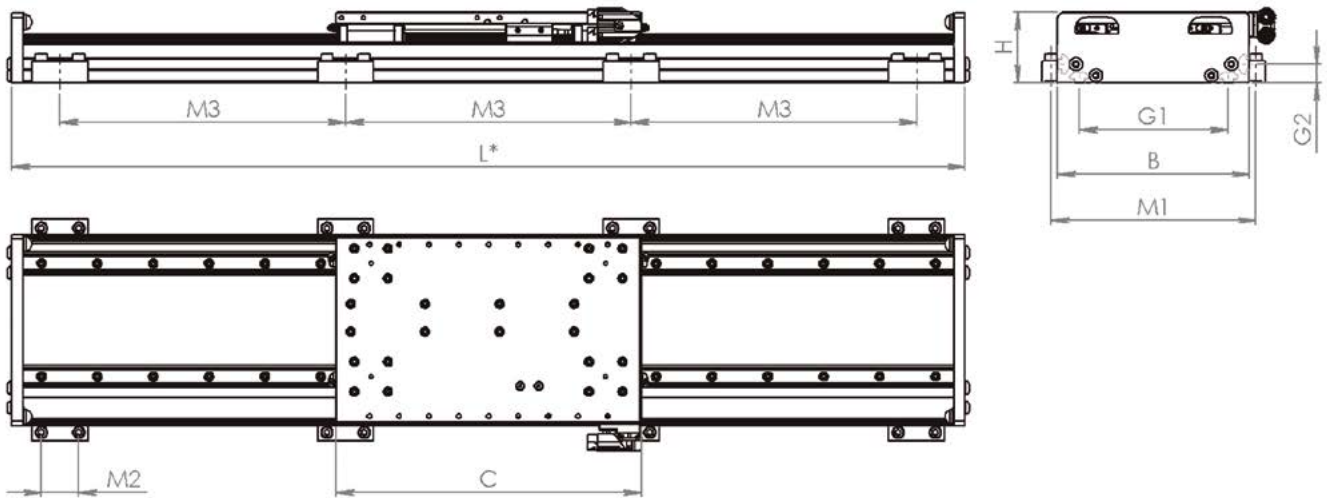
Weight of carriage	kg	5,4	7,2	10
Weight of 100mm	kg	1,8	1,8	1,8

¹⁾ Recommended speed for a lifetime >30000 km

²⁾ Depending on the application and ambient temperature

³⁾ Sinadrives's accessory

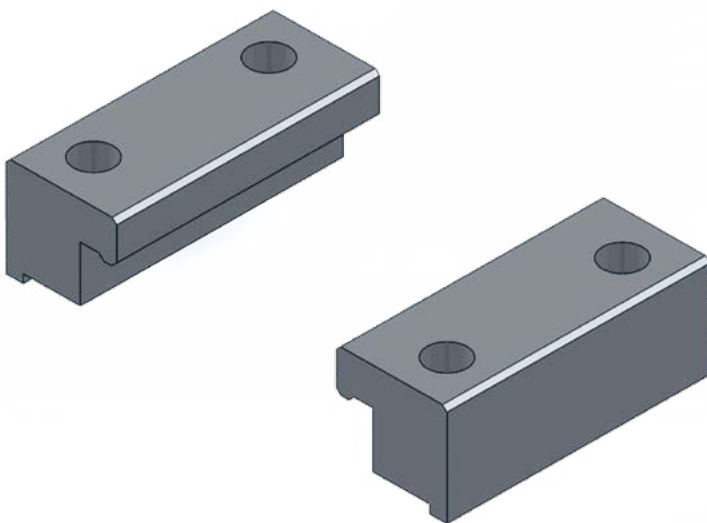
MLS 5 TECHNICAL DESCRIPTION



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

Mounting set (2 un.)

Ref. AC03-0501



T-slot nuts set (10 un.)

Ref. KTM0X

■ KTM05



M5

■ KTM06



M6

■ KTM08

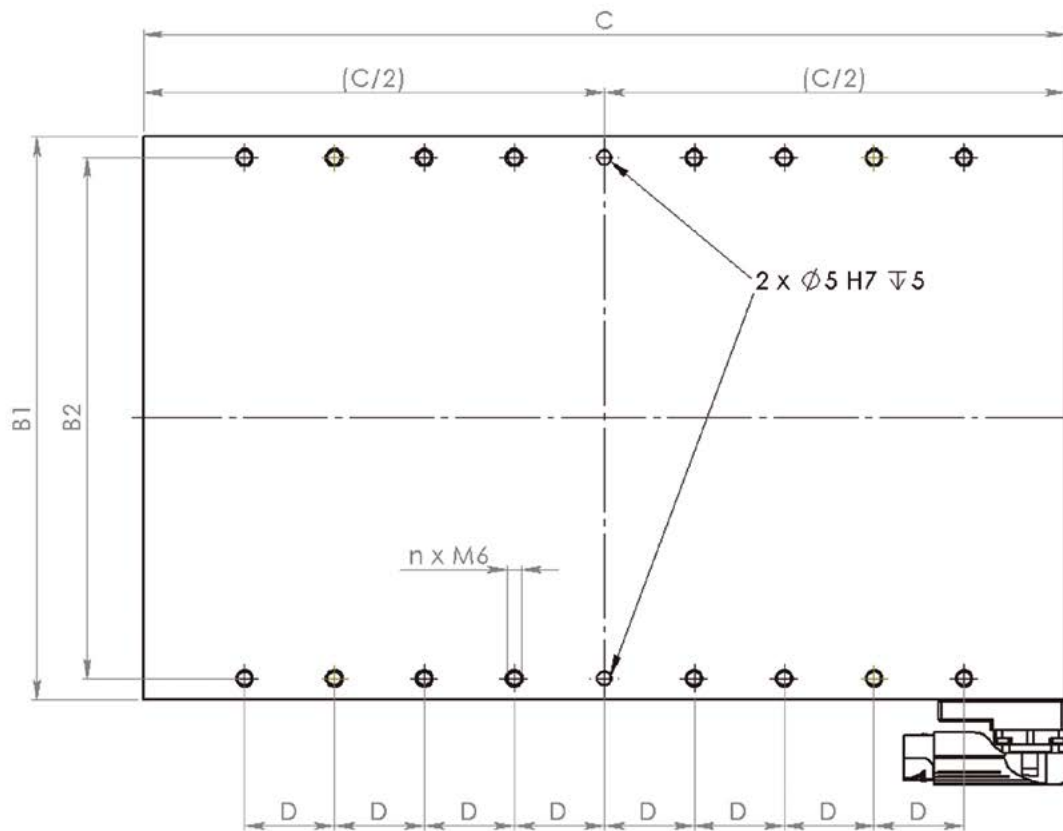


M8

MLS 5 CHOICE OF STROKE

Linear motor stage		MLS55		
Carriage model	900	1350	1800	
Length, L (mm)	Stroke			
00270	-	-	-	-
00366	30	-	-	-
00462	126	28	-	-
00558	222	124	-	-
00654	318	220	92	-
00750	414	316	188	-
00846	510	412	284	-
00942	606	508	380	-
01038	702	604	476	-
01134	798	700	572	-
01230	894	796	668	-
01326	990	892	764	-
01422	1086	988	860	-
01518	1182	1084	956	-
01614	1278	1180	1052	-
01710	1374	1276	1148	-
01806	1470	1372	1244	-
01902	1566	1468	1340	-
01998	1662	1564	1436	-
02094	1758	1660	1532	-
02190	1854	1756	1628	-
02286	1950	1852	1724	-
02382	2046	1948	1820	-
02478	2142	2044	1916	-
02574	2238	2140	2012	-
02670	2334	2236	2108	-
02766	2430	2332	2204	-
02862	2526	2428	2300	-
02958	2622	2524	2396	-
03054	2718	2620	2492	-
03150	2814	2716	2588	-
03246	2910	2812	2684	-
03342	3006	2908	2780	-
03438	3102	3004	2876	-
03534	3198	3100	2972	-
03630	3294	3196	3068	-
03726	3390	3292	3164	-
03822	3486	3388	3260	-
03918	3582	3484	3356	-
04014	3678	3580	3452	-
04110	3774	3676	3548	-
04206	3870	3772	3644	-
04302	3966	3868	3740	-
04398	4062	3964	3836	-
04494	4158	4060	3932	-
04590	4254	4156	4028	-
04686	4350	4252	4124	-
04782	4446	4348	4220	-
04878	4542	4444	4316	-
04974	4638	4540	4412	-
05070	4734	4636	4508	-
05166	4830	4732	4604	-
05262	4926	4828	4700	-
05358	5022	4924	4796	-
05454	5118	5020	4892	-
05550	5214	5116	4988	-
05646	5310	5212	5084	-
05742	5406	5308	5180	-
05838	5502	5404	5276	-
05934	5598	5500	5372	-
06030	5694	5596	5468	-

MLS 5 MOUNTING INTERFACE



Carriage model	B1 (mm)	B2 (mm)	C (mm)	D (mm)	n / row	Borehole
0900	200	185	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□X - □ - 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
X - Without winding

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⁾

Encoder

Technology:

1R - Optical incremental
2S - Magnetic incremental
4R - Optical absolute
5S - Magnetic absolute
XXXXX Without encoder

Reading head output:

* Incremental:

0 - 1 Vpp
4 - TTL

* Absolut:

E - Endat 2.2
D - Drivecliq
H - Hiperface
L - DSL
P - Panasonic

Measurement system:

4C - 40 μm
1U - 1 μm
2M - 2 mm
1H - 0,1 μm

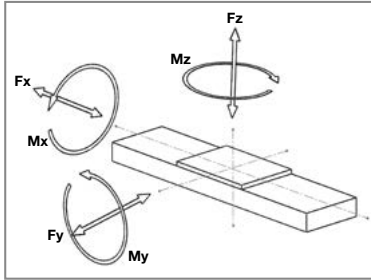
¹⁾ Depending on the application and ambient temperature

²⁾ Length on page 14

³⁾ Not available for motors IT13X and IT18X

MLC 5 LINEAR MOTOR STAGE

Repeatability of measuring system: $\pm 0,5 \mu\text{m}$
 Repeatability of linear unit: $\pm 5 \mu\text{m}$
 Maximum length without joints: up to 6000 mm
 Operating voltage: 600 Vdc, max. 900 Vdc
 Maximum speed: 8 m/s
 Maximum acceleration: 145 m/s^2



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	7	7	7
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:

$$\frac{F_{ye}}{F_y} + \frac{F_{ze}}{F_z} + \frac{M_{xe}}{M_x} + \frac{M_{ye}}{M_y} + \frac{M_{ze}}{M_z} < 1 \quad \begin{matrix} (X_x = \text{calculated value}) \\ (X_x = \text{max. catalogue value}) \end{matrix}$$

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

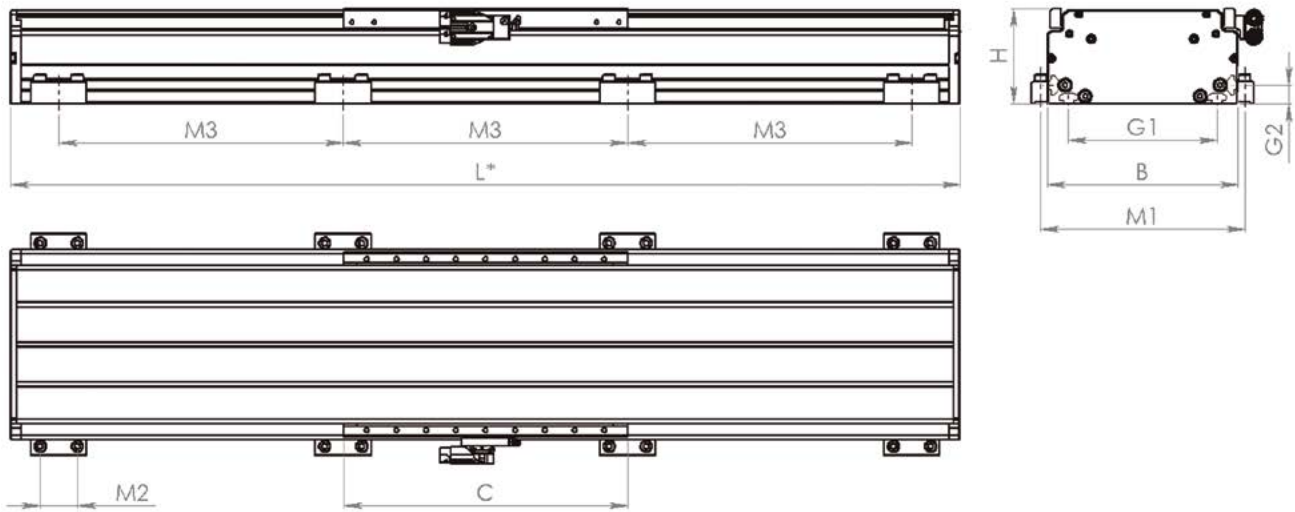
Weight of carriage	kg	6,8	8,9	12,4
Weight of 100mm	kg	2,1	2,1	2,1

¹⁾ Recommended speed for a lifetime >30000 km

²⁾ Depending on the application and ambient temperature

³⁾ Sinadrives's accessory

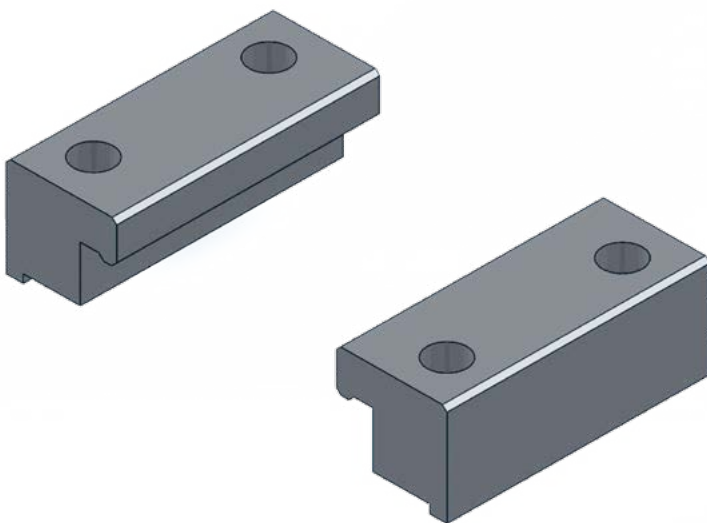
MLC 5 TECHNICAL DESCRIPTION



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

Mounting set (2 un.)

Ref. AC03-0501



T-slot nuts set (10 un.)

Ref. KTM0X

■ KTM05



M5

■ KTM06



M6

■ KTM08

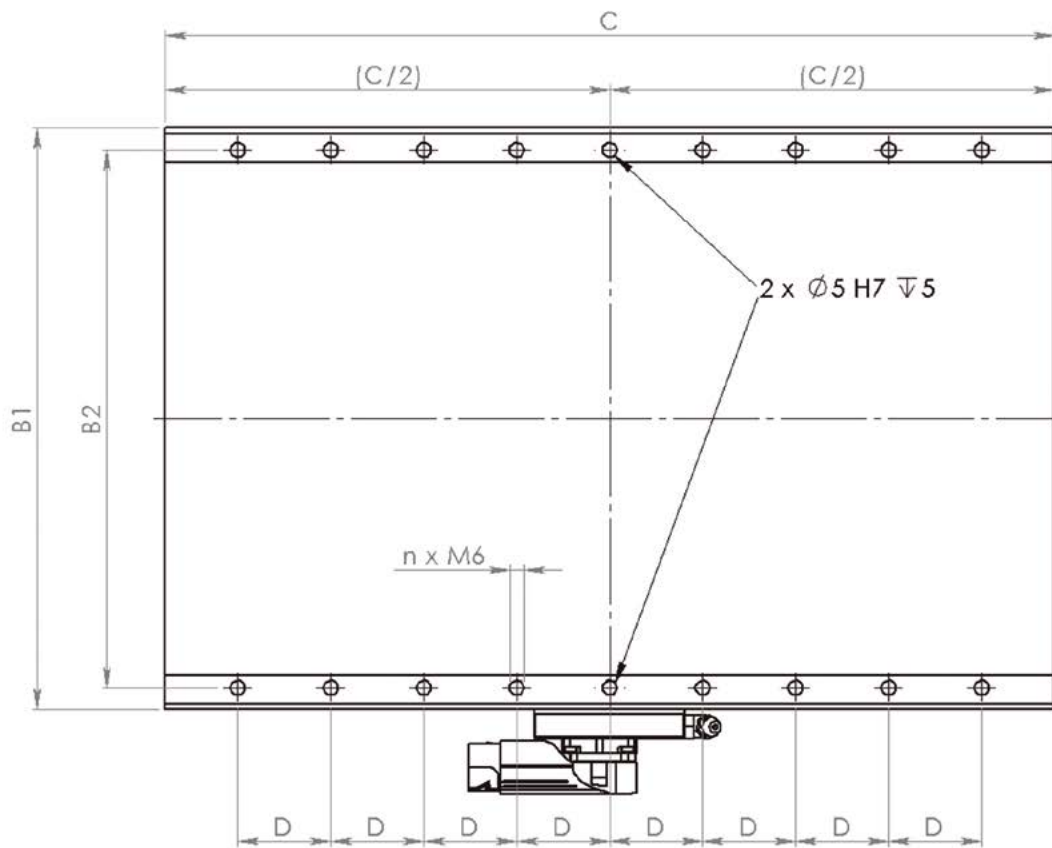


M8

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	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
I - Low voltage motor
X - Without winding

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

Encoder

Technology:

1R - Optical incremental
2S - Magnetic incremental
4R - Optical absolute
5S - Magnetic absolute
XXXXX Without encoder

Reading head output:

* Incremental:

0 - 1 Vpp
4 - TTL

* Absolut:

E - Endat 2.2
D - Drivecliq
H - Hiperface
L - DSL
P - Panasonic
S - SSI

Measurement system:

4C - 40 μm
1U - 1 μm
2M - 2 mm
1H - 0,1 μm

Lubrication

Grease type:

S - Standard
C - Clean room
F - Food grade
L - Low temperature

Upgrades

Version:

S - Standard
C - Clean room

Length (mm) ²⁾

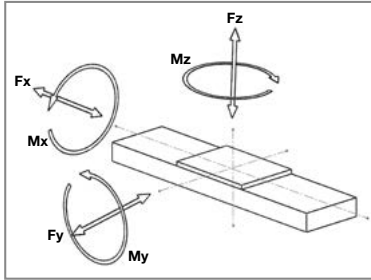
¹⁾ Depending on the application and ambient temperature

²⁾ Length on page 20

³⁾ Not available for motors IT13X and IT18X

MLE 2 LINEAR MOTOR STAGE

Repeatability of measuring system: $\pm 1 \mu\text{m}$
 Repeatability of linear unit: $\pm 5 \mu\text{m}$
 Maximum speed: 9 m/s
 Maximum acceleration: 95 m/s²
 Maximum length without joints: up to 6.000 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	182	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	480	720
Nominal current	Arms	3,0		6,2	6,2	4,5
Peak current	Arms	8,2		16,4	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: $\frac{F_{ye}}{F_y} + \frac{F_{ze}}{F_z} + \frac{M_{xe}}{M_x} + \frac{M_{ye}}{M_y} + \frac{M_{ze}}{M_z} < 1$ (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

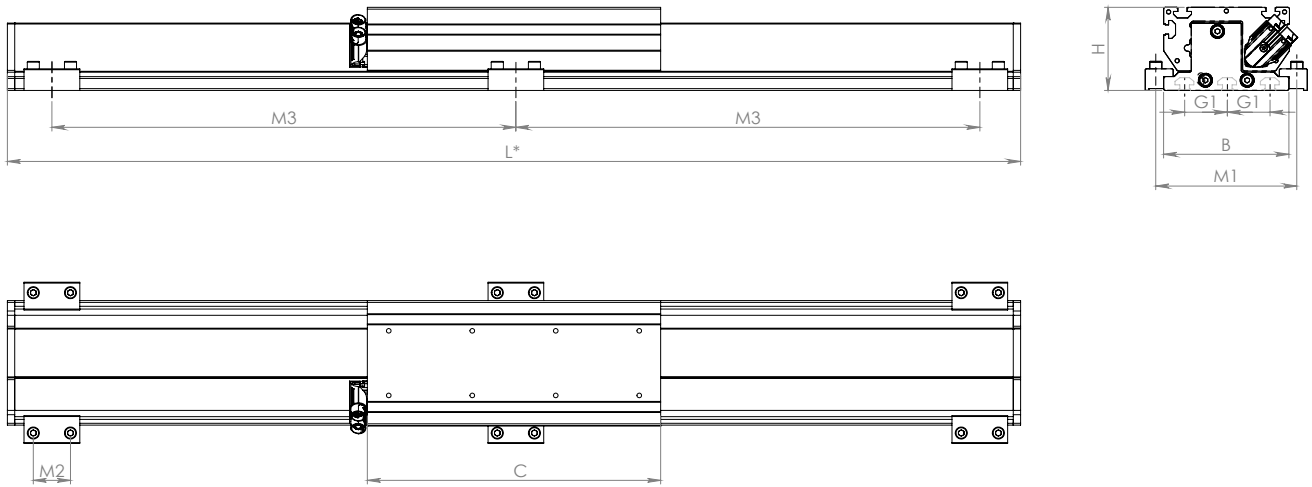
Weight of carriage	kg	3,2	3,8	4,5		6,2
Weight of 100mm	kg		1,25	1,25		1,25

¹⁾ Recommended speed for a lifetime >30000 km

²⁾ Depending on the application and ambient temperature

³⁾ Sinadrives's accessory

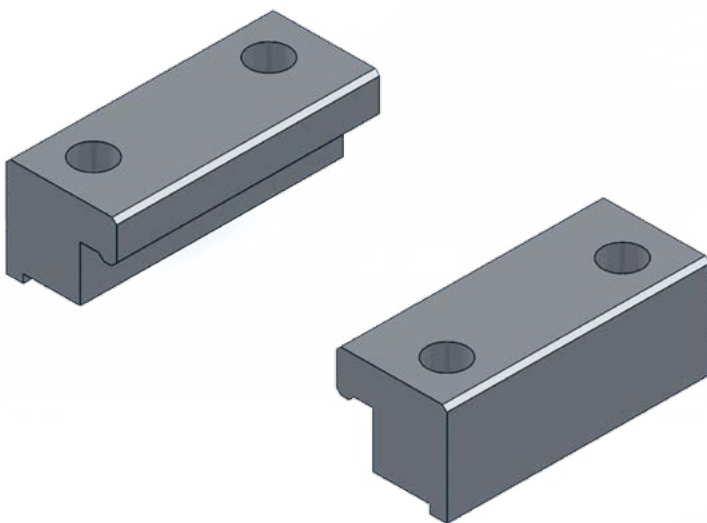
MLE 2 TECHNICAL DESCRIPTION



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

Mounting set (2 un.)

Ref. AC03-0501



T-slot nuts set (10 un.)

Ref. KTM0X

■ KTM05



M5

■ KTM06



M6

■ KTM08



M8

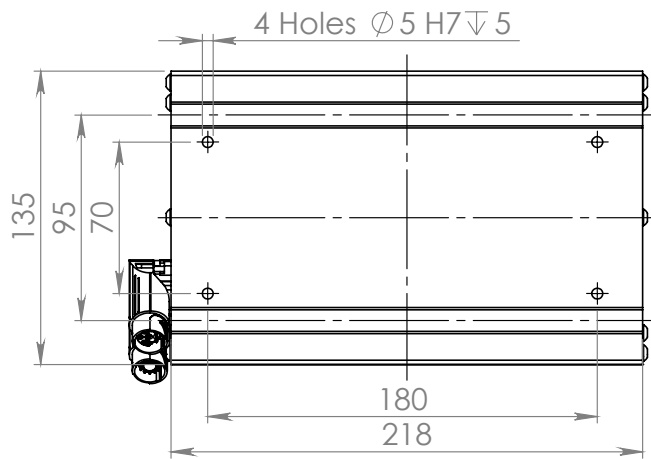
MLE 2 CHOICE OF STROKE

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

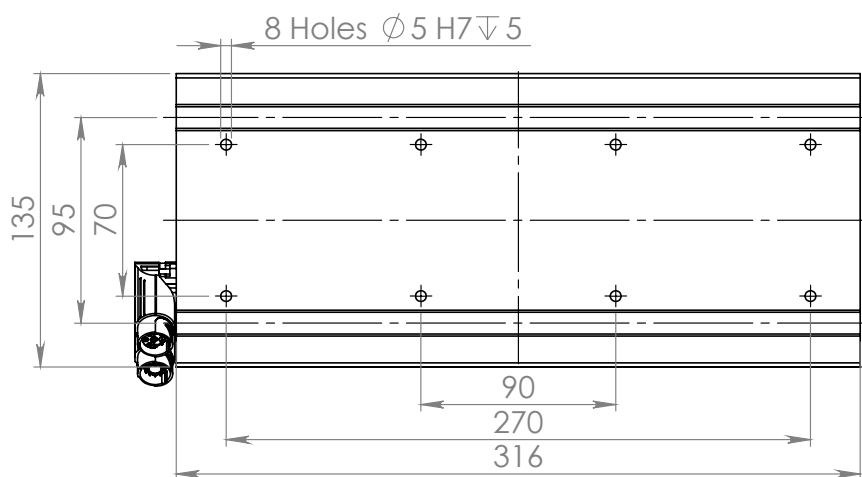
Size	2S	2R	2S	2R	2S
Carriage model	IT02X		IT05X		IT07X
Length, L (mm)	Stroke				
03252	2998	2900	2900	2805	2805
03300	3046	2948	2948	2853	2853
03348	3094	2996	2996	2901	2901
03396	3142	3044	3044	2949	2949
03492	3238	3140	3140	3045	3045
03588	3334	3236	3236	3141	3141
03636	3382	3284	3284	3189	3189
03684	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

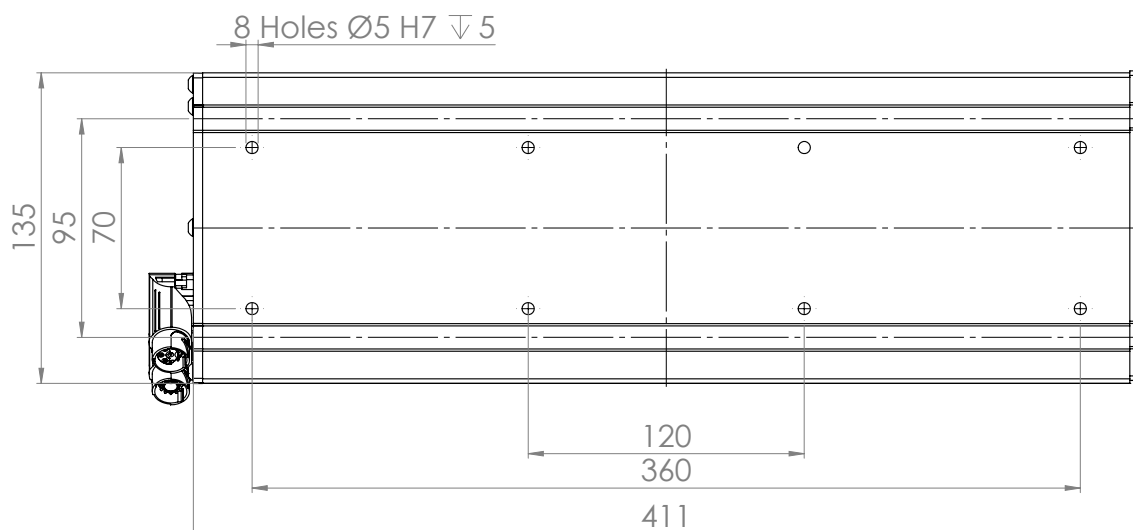
MLE 2S - IT02X



MLE 2R - IT02X / MLE2S - IT05X



MLE 2S - IT07X



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□X - □ - □XX - □□□□□

Axis size

Size:

- S** - Standard carriage
- R** - Reinforced carriage

Connectors

Typ:

- 00A** - Side connectors Y-TEC base
- 09A** - Side connectors hybrid M23

Motor / Carriage model

Motor type:

- IT** - Iron core motor
- XX** - Without motor

Peak force, N (aircooled) ¹⁾:

- | | | |
|-------------|---|--|
| MLE2 | } | <ul style="list-style-type: none"> 02 - 240N 05 - 480N 07 - 720N |
|-------------|---|--|

Motor winding:

- N** - Standard motor (N/A)
- H** - High-speed motor
- I** - Low voltage motor
- X** - Without winding

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

Encoder

Technology:

- 0A** - Inductive incremental
- 3A** - Inductive absolute
- XXXXX** Without encoder

Reading head output:

* Incremental:

- 0** - 1 Vpp
- 4** - TTL

* Absolut:

- E** - Endat 2.2
- D** - Drivecliq

Measurement system:

- 4C** - 40 µm
- 1U** - 1 µm
- 2H** - 0,25 µm
- 1S** - 0,1 µm + Safety function

Upgrades

Version:

- S** - Standard
- C** - Clean room

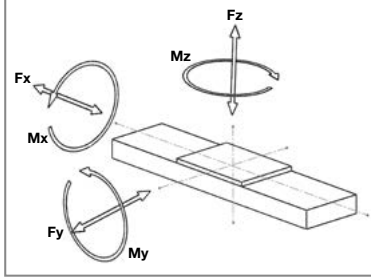
Length (mm) ²⁾

¹⁾ Depending on the application and ambient temperature

²⁾ Length on page 26

MLE 3 LINEAR MOTOR STAGE

Repeatability of measuring system: $\pm 1 \mu\text{m}$
 Repeatability of linear unit: $\pm 5 \mu\text{m}$
 Maximum speed: 9 m/s
 Maximum acceleration: 95 m/s^2
 Maximum length without joints: up to 6.000 mm
 Operating voltage: 600Vdc, max.900Vdc



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.)

F_y	N	1500		1500	2250
F_z	N	1000		1000	1500
M_x	Nm	180		180	270
M_y	Nm	280	320	320	480
M_z	Nm	280	320	320	480

For the sum of all forces and moments: $\frac{F_{ye}}{F_y} + \frac{F_{ze}}{F_z} + \frac{M_{xe}}{M_x} + \frac{M_{ye}}{M_y} + \frac{M_{ze}}{M_z} < 1$ (Xxe = calculated value)
 (Xx = max. catalogue value)

Structure profile features

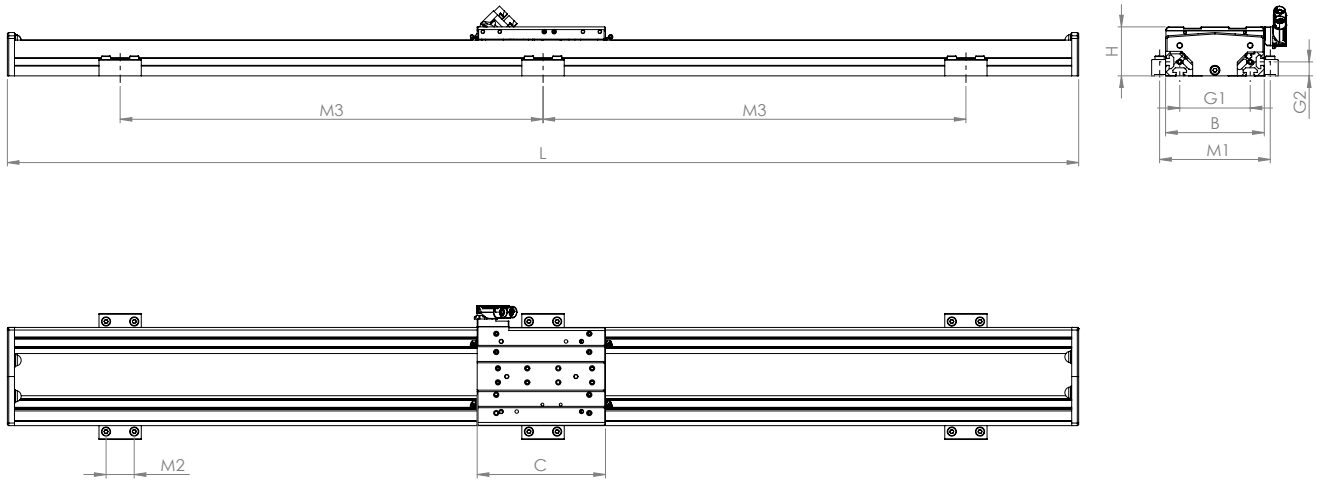
Geometrical moments of inertia L_x	mm ⁴	3,72x10 ⁵		3,72x10 ⁵	3,72x10 ⁵
Geometrical moments of inertia L_y	mm ⁴	55,58x10 ⁵		55,58x10 ⁵	55,58x10 ⁵
Elastic module	N/mm ²	70000		70000	70000

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

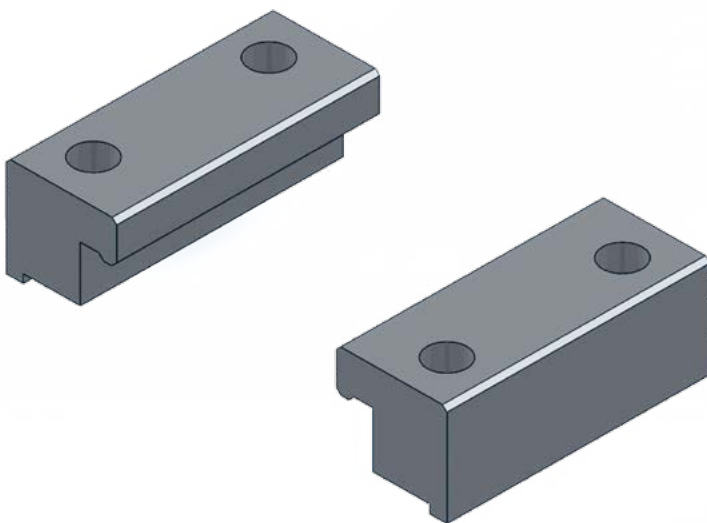
MLE 3 TECHNICAL DESCRIPTION



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

Mounting set (2 un.)

Ref. AC03-0501



T-slot nuts set (10 un.)

Ref. KTM0X

■ KTM05



M5

■ KTM06



M6

■ KTM08



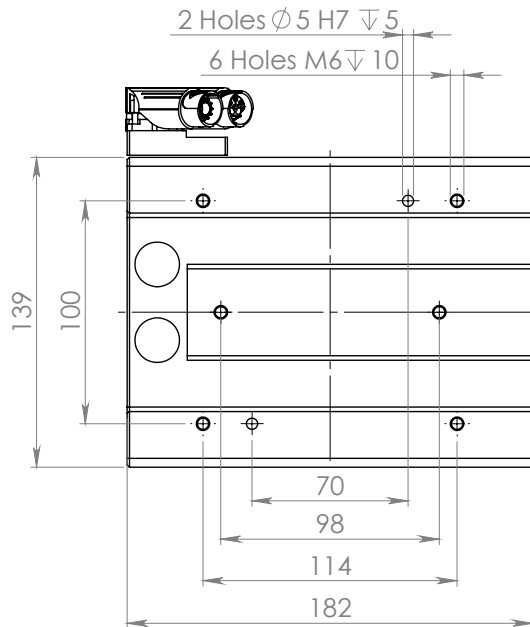
M8

MLE 3 CHOICE OF STROKE

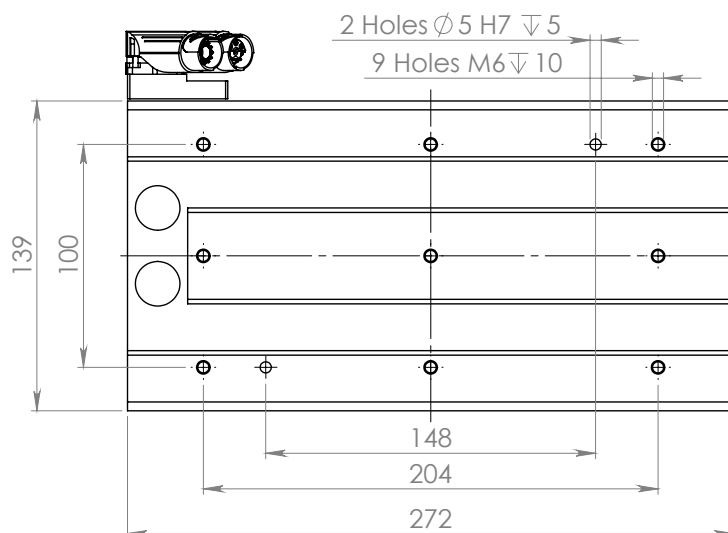
Size	3S	3R	3S	3S
Carriage model	IT02X		IT05X	IT07X
Length, L (mm)	Stroke			
00224	-	-	-	-
00272	-	-	-	-
00320	8	-	-	-
00368	56	-	-	-
00416	104	-	-	-
00512	200	66	66	-
00560	248	114	114	18
00608	296	162	162	66
00656	344	210	210	114
00704	392	258	258	162
00752	440	306	306	210
00800	488	354	354	258
00896	584	450	450	354
00944	632	498	498	402
00992	680	546	546	450
01040	728	594	594	498
01088	776	642	642	546
01136	824	690	690	594
01184	872	738	738	642
01280	968	834	834	738
01328	1016	882	882	786
01376	1064	930	930	834
01424	1112	978	978	882
01472	1160	1026	1026	930
01520	1208	1074	1074	978
01568	1256	1122	1122	1026
01664	1352	1218	1218	1122
01712	1400	1266	1266	1170
01760	1448	1314	1314	1218
01808	1496	1362	1362	1266
01856	1544	1410	1410	1314
01904	1592	1458	1458	1362
01952	1640	1506	1506	1410
02048	1736	1602	1602	1506
02096	1784	1650	1650	1554
02144	1832	1698	1698	1602
02192	1880	1746	1746	1650
02240	1928	1794	1794	1698
02288	1976	1842	1842	1746
02336	2024	1890	1890	1794
02432	2120	1986	1986	1890
02480	2168	2034	2034	1938
02528	2216	2082	2082	1986
02576	2264	2130	2130	2034
02624	2312	2178	2178	2082
02672	2360	2226	2226	2130
02720	2408	2274	2274	2178
02816	2504	2370	2370	2274
02864	2552	2418	2418	2322
02912	2600	2466	2466	2370
02960	2648	2514	2514	2418
03008	2696	2562	2562	2466
03056	2744	2610	2610	2514
03104	2792	2658	2658	2562
03200	2888	2754	2754	2658
03248	2936	2802	2802	2706
03296	2984	2850	2850	2754
03344	3032	2898	2898	2802
03392	3080	2946	2946	2850
03440	3128	2994	2994	2898
03488	3176	3042	3042	2946
03584	3272	3138	3138	3042

MLE 3 MOUNTING INTERFACE

MLE 3R - IT02X



MLE 3R - IT02X / MLE3R - IT05X

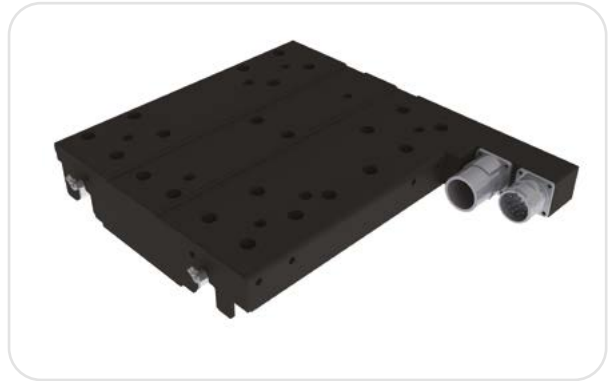


MLE 3 CONNECTORS OPTIONS

- 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 carriage
- R - Reinforced carriage

Connectors

Typ:

- 00A - Side connectors Y-TEC base
- 01A - Side connectors M23

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 (N/A)
- H - High-speed motor
- I - Low voltage motor
- X - Without winding

Lubrication

Grease type:

- S - Standard
- C - Clean room
- F - Food grade
- L - Low temperature

Length (mm) ²⁾

Encoder

Technology:

- 0A - Inductive incremental
- XXXXX Without encoder

Reading head output:

* Incremental:

- 0 - 1 Vpp
- 4 - TTL

Measurement system:

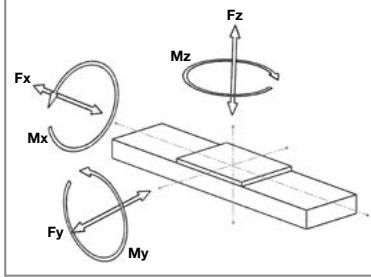
- 4C - 40 μm
- 1U - 1 μm

¹⁾ Depending on the application and ambient temperature

²⁾ Length on page 32

MLE 5 LINEAR MOTOR STAGE

Repeatability of measuring system: $\pm 1 \mu\text{m}$
 Repeatability of linear unit: $\pm 5 \mu\text{m}$
 Maximum speed: 6 m/s
 Maximum acceleration: 114 m/s^2
 Maximum length without joints: up to 6.000 mm
 Operating voltage: 600Vdc, max.900Vdc



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	7		7		7		7
Recommended speed ¹⁾	m/s	3		3		3		3
Continuous force aircooled ²⁾	N	400		500		600		800
Peak force	N	900		1125		1380		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.)

F_y	N	3000		3000	4500	4500		4500
F_z	N	2000		2000	3000	3000		3000
M_x	Nm	450		450	750	750		750
M_y	Nm	700	750	750	1000	1000	1500	1500
M_z	Nm	700	750	750	1000	1000	1500	1500

For the sum of all forces and moments: $\frac{F_{ye}}{F_y} + \frac{F_{ze}}{F_z} + \frac{M_{xe}}{M_x} + \frac{M_{ye}}{M_y} + \frac{M_{ze}}{M_z} < 1$ (Xxe = calculated value)
 (Xx = max. catalogue value)

Structure profile features

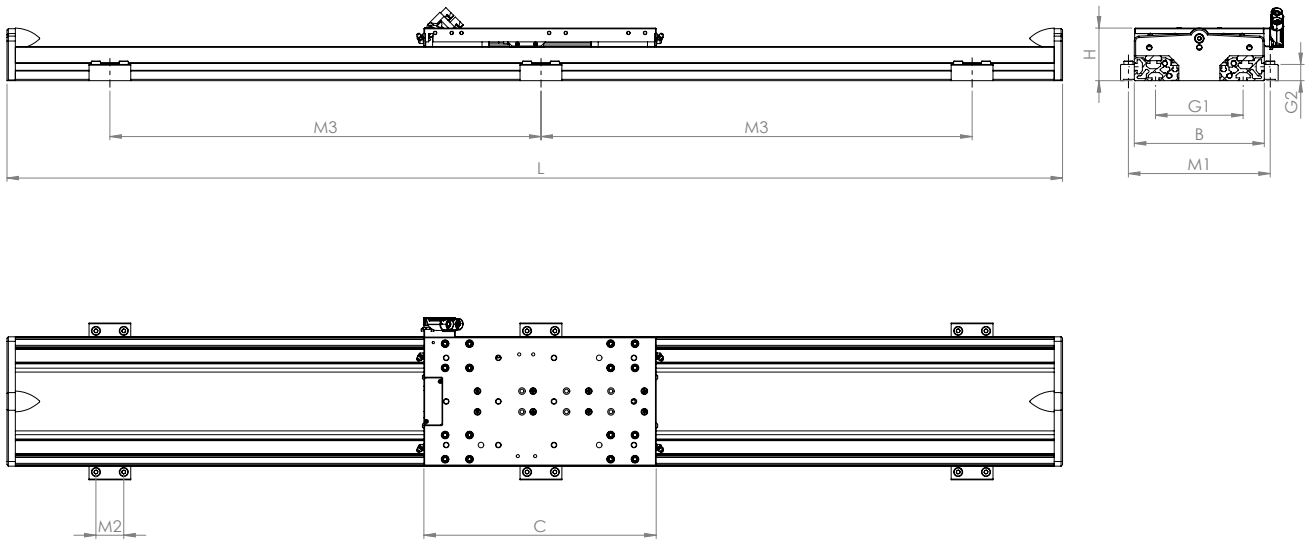
Geometrical moments of inertia L_x	mm ⁴	$2,7 \times 10^5$		$2,7 \times 10^5$		$2,7 \times 10^5$		$2,7 \times 10^5$
Geometrical moments of inertia L_y	mm ⁴	$86,82 \times 10^5$		$86,82 \times 10^5$		$86,82 \times 10^5$		$86,82 \times 10^5$
Elastic module	N/mm ²	70000		70000		70000		70000

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

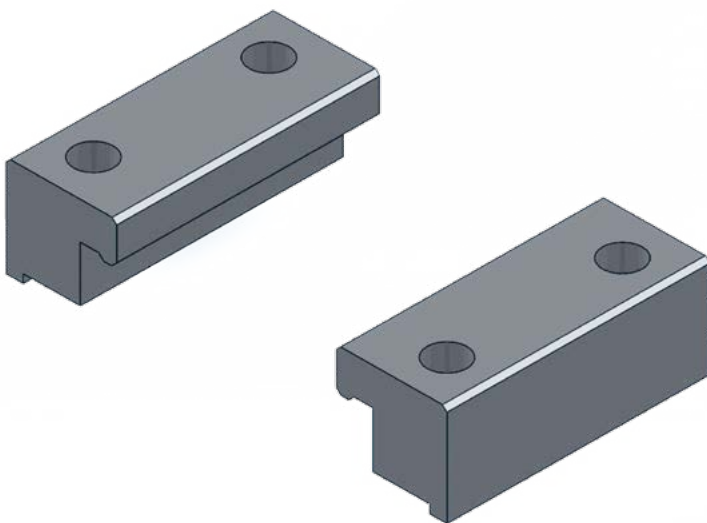
MLE 5 TECHNICAL DESCRIPTION



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

Mounting set (2 un.)

Ref. AC03-0501



T-slot nuts set (10 un.)

Ref. KTM0X

■ KTM05



M5

■ KTM06



M6

■ KTM08



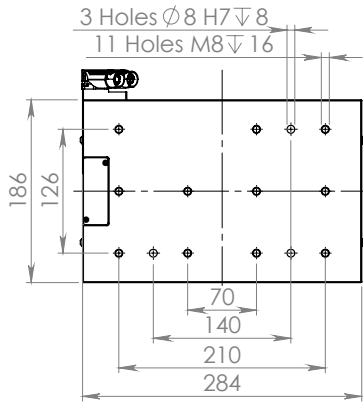
M8

MLE 5 CHOICE OF STROKE

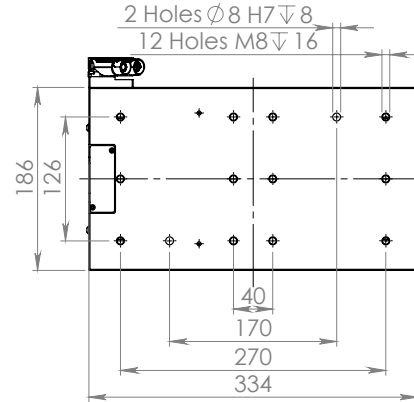
Size	5S	5R	5S	5R	5S	5R	5S
Carriage model	IT09X		IT11X		IT13X		IT18X
Length, L (mm)	Stroke						
00462	84	34	34	-	-	-	-
00558	180	130	130	88	88	-	-
00654	276	226	226	184	184	52	52
00750	372	322	322	280	280	148	148
00846	468	418	418	376	376	244	244
00942	564	514	514	472	472	340	340
01038	660	610	610	568	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

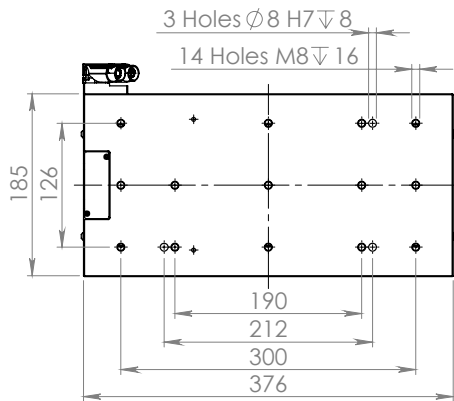
MLE 5S - IT09X / MLE5R - IT09X



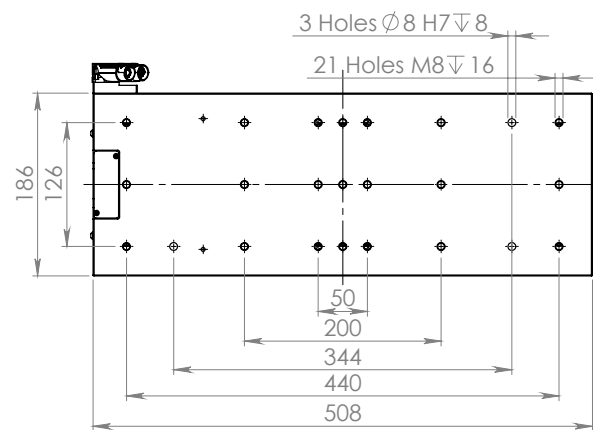
MLE 5S - IT11X / MLE5R - IT11X



MLE 5S - IT13X / MLE5R - IT13X



MLE 5S - IT18X



MLE 5 CONNECTORS OPTIONS

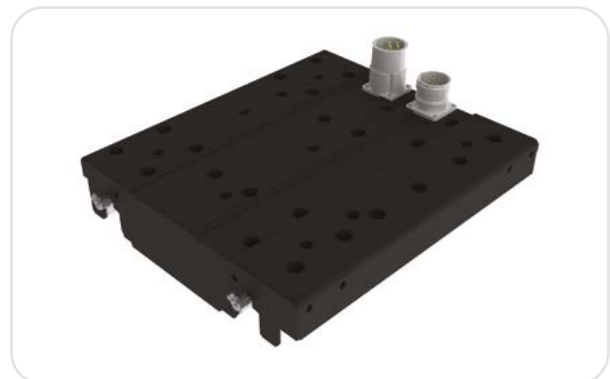
- Side connectors Y-TEC base (00)



- 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□X - □ - SXX - □□□□□

Axis size

Size:

- S** - Standard carriage
- R** - Reinforced carriage

Connectors

Typ:

- 00A** - Side connectors Y-TEC base ³⁾
- 01A** - Side connectors M23
- 07A** - Straight connectors M23 up

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

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

Encoder

Technology:

- 0A** - Inductive incremental
- 3A** - Inductive absolute
- XXXXX** Without encoder

Reading head output:

* Incremental:

0 - 1 Vpp

4 - TTL

* Absolut:

E - Endat 2.2

D - Drivecliq

Measurement system:

4C - 40 µm

1U - 1 µm

2H - 0,25 µm

1S - 0,1 µm + Safety function

Length (mm) ²⁾

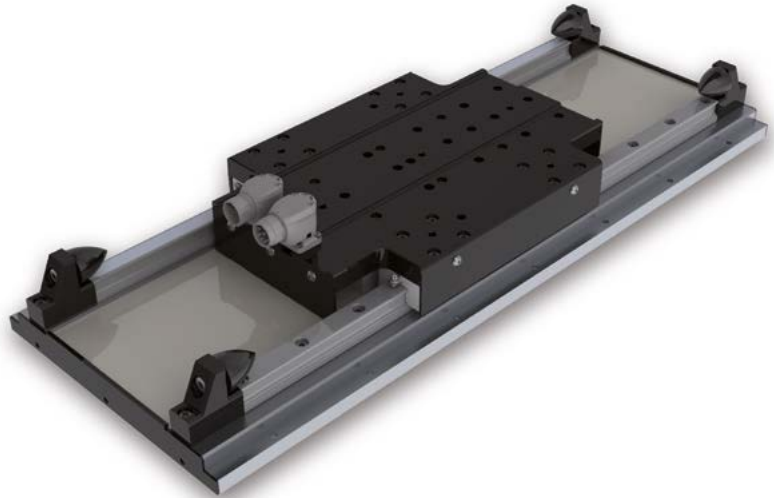
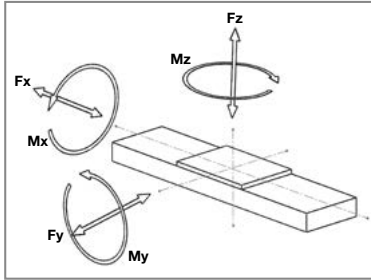
¹⁾ Depending on the application and ambient temperature

²⁾ Length on page 38u

³⁾ Not available for motors IT13X and IT18X

MLE 7 LINEAR MOTOR STAGE

Repeatability of measuring system: ± 1 µm
 Repeatability of linear unit: ± 5 µm
 Maximum speed: 4 m/s
 Maximum acceleration: 186 m/s²
 Maximum length without joints: up to 6.000 mm
 Operating voltage: 600Vdc, max. 900Vdc



Mechanical specifications

Size		R	S	R	S
Carriage model		IT18X	IT22X		IT45X
C - Carriage length	mm	342	342	620	620
B - Width	mm	241		241	241
H - Height	mm	78		78	78
G1 - Distance between profile base grooves	mm	270		270	270
M1 - Distance between fixation clamps boreholes ³⁾	mm	145		145	145
M2 - Distance between fixation clamp boreholes ³⁾	mm	255		255	255
M3 - Max. distance between fixation clamps ³⁾	mm	100		1001	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:

$$\frac{F_{ye}}{F_y} + \frac{F_{ze}}{F_z} + \frac{M_{xe}}{M_x} + \frac{M_{ye}}{M_y} + \frac{M_{ze}}{M_z} < 1 \quad \begin{matrix} (X_{xe} = \text{calculated value}) \\ (X_x = \text{max. catalogue value}) \end{matrix}$$

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

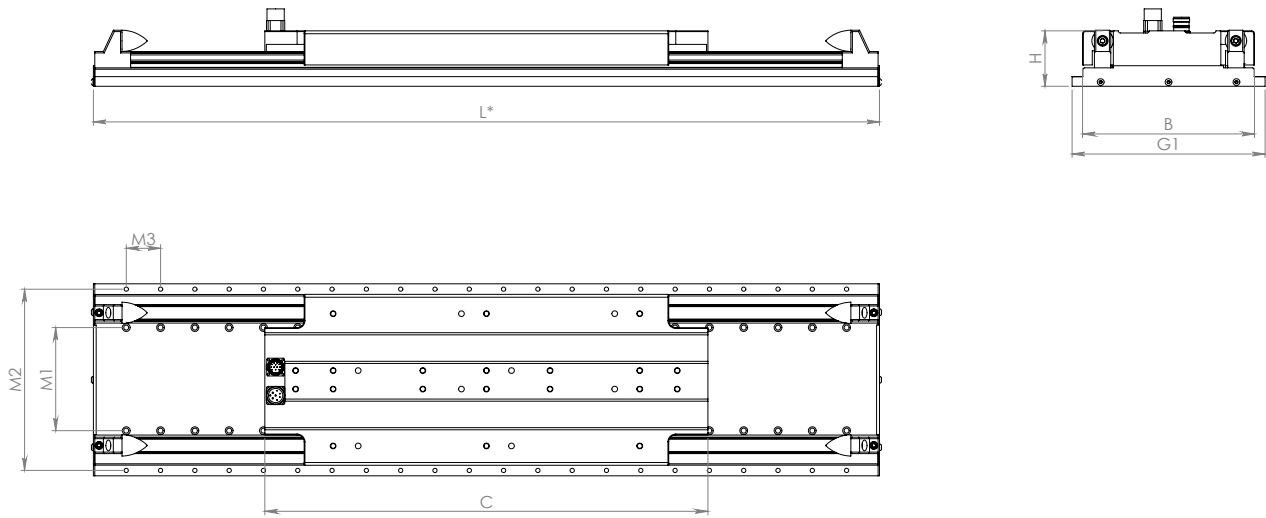
Weight of carriage	kg	9,8	11,1	14,2	19,9
Weight of 100mm	kg	3,0		3,0	3,0

¹⁾ Recommended speed for a lifetime >30000 km

²⁾ Depending on the application and ambient temperature

³⁾ Sinadrives's accessory

MLE 7 TECHNICAL DESCRIPTION



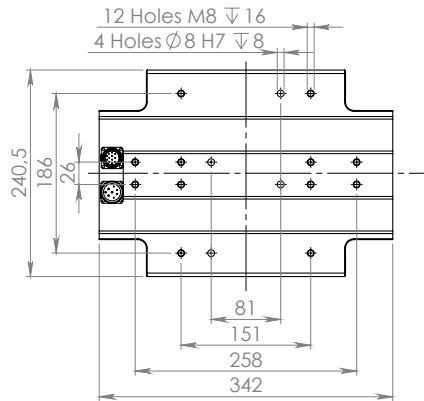
Drawing for reference only. Please ask for ready 3D files.

MLE 7 CHOICE OF STROKE

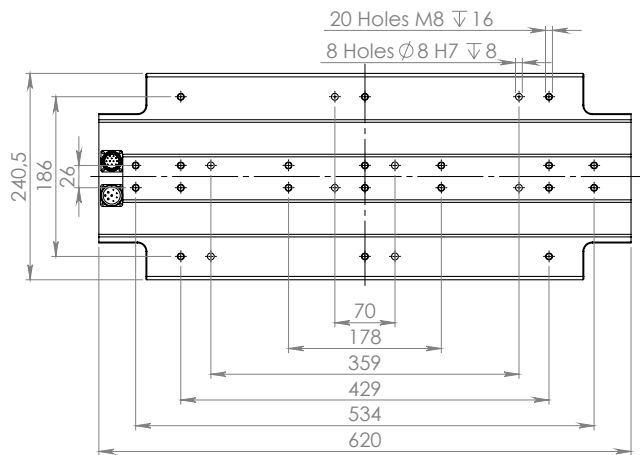
Size	7R	7S	7R	7S
Carriage model	IT18X	IT22X	IT22X	IT45X
Length, L (mm)	Stroke			
00524	146	146	-	-
00716	338	338	60	60
00812	434	434	156	156
00908	530	530	252	252
01004	626	626	348	348
01100	722	722	444	444
01196	818	818	540	540
01292	914	914	636	636
01388	1010	1010	732	732
01484	1106	1106	828	828
01580	1202	1202	924	924
01676	1298	1298	1020	1020
01772	1394	1394	1116	1116
01868	1490	1490	1212	1212
01964	1586	1586	1308	1308
02060	1682	1682	1404	1404
02156	1778	1778	1500	1500
02252	1874	1874	1596	1596
02348	1970	1970	1692	1692
02444	2066	2066	1788	1788
02636	2258	2258	1980	1980
02732	2354	2354	2076	2076
02828	2450	2450	2172	2172
02924	2546	2546	2268	2268
03020	2642	2642	2364	2364
03116	2738	2738	2460	2460
03212	2834	2834	2556	2556
03308	2930	2930	2652	2652
03404	3026	3026	2748	2748
03500	3122	3122	2844	2844
03596	3218	3218	2940	2940
03692	3314	3314	3036	3036
03788	3410	3410	3132	3132
03884	3506	3506	3228	3228
03980	3602	3602	3324	3324
04076	3698	3698	3420	3420
04172	3794	3794	3516	3516
04268	3890	3890	3612	3612

MLE 7 MOUNTING INTERFACE

MLE 7R - IT18X / MLE7S - IT22X

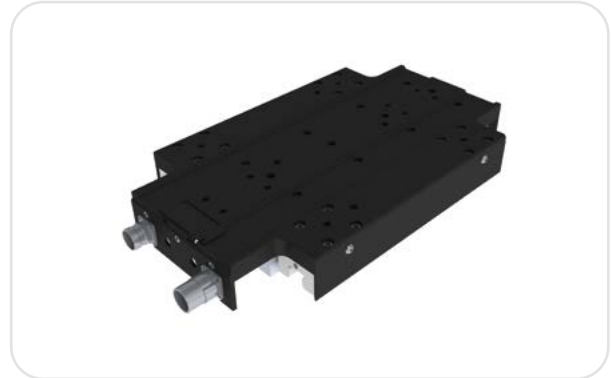


MLE 7R - IT22X / MLE7 - IT45X



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□B - □ - SXX - □□□□□

Axis size

Size:

- S - Standard carriage
- R - Reinforced carriage

Connectors

Typ:

- 01A - Backside connectors M23
- 07A - Straight connectors M23 up

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 (N/A)
- H - High-speed motor
- X - Ohne Motor

Guiding

Number of blocks:

- 4 - 4 Blocks
- 6 - 6 Blocks (only for IT45X)

Lubrication

Grease type:

- S - Standard
- C - Clean room
- F - Food grade
- L - Low temperature

Encoder

Technology:

- 0A - Inductive incremental
- 3A - Inductive absolute
- XXXXX Without encoder

Reading head output:

* Incremental:

- 0 - 1 Vpp
- 4 - TTL

* Absolut:

- E - Endat 2.2
- D - Drivecliq

Measurement system:

- 4C - 40 µm
- 1U - 1 µm
- 2H - 0,25 µm
- 1S - 0,1 µm + Safety function

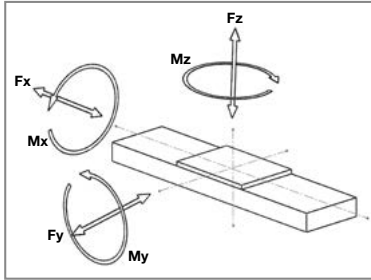
Length (mm) ²⁾

¹⁾ Depending on the application and ambient temperature

²⁾ Length on page 44

MLZ 2 LINEAR MOTOR STAGE

Repeatability of measuring system: $\pm 1 \mu\text{m}$
 Repeatability of linear unit: $\pm 5 \mu\text{m}$
 Maximum speed: 9 m/s
 Maximum acceleration: 203 m/s²
 Maximum stroke: up to 286 mm
 Operating voltage: 600Vdc, max. 900Vdc



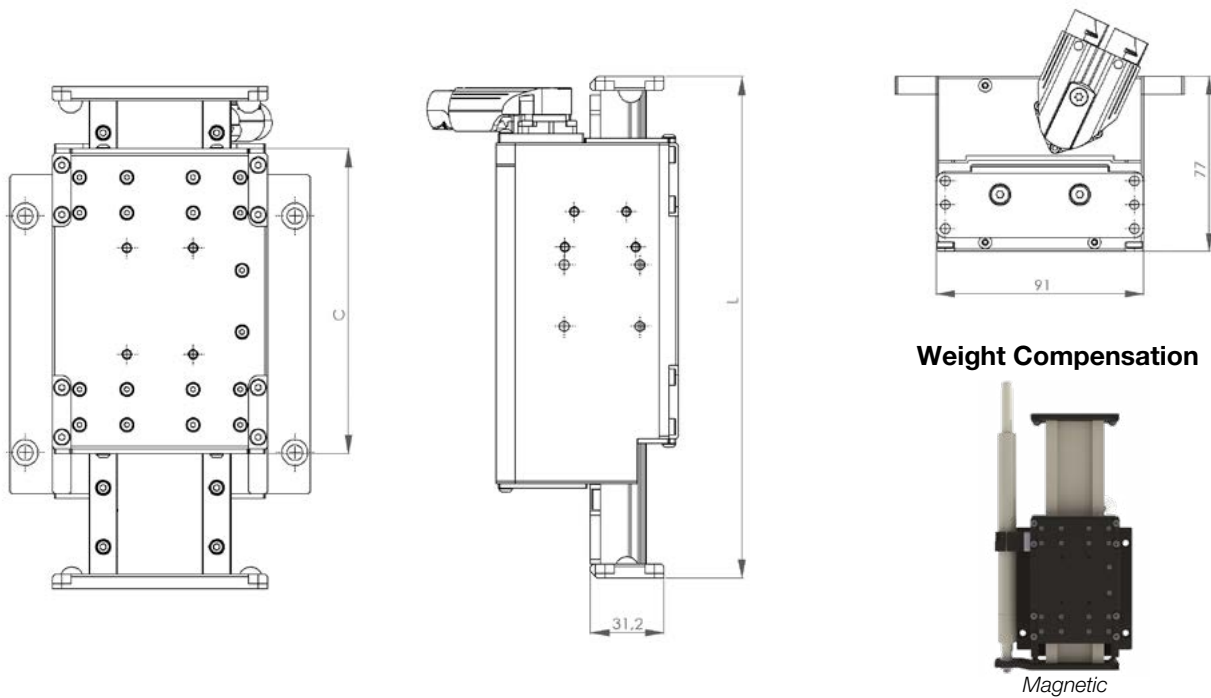
Mechanical specifications

Size		R	S
Carriage model		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 F _{xp}	N	105	210
Nominal current	Arms	1,5	3,0
Peak current	Arms	3,1	6,2
Guidance features			
F _y	N	300	300
F _z	N	150	150
M _x	Nm	95	95
M _y	Nm	160	160
M _z	Nm	160	160
For the sum of all forces and moments:	$\frac{F_{ye}}{F_y} + \frac{F_{ze}}{F_z} + \frac{M_{xe}}{M_x} + \frac{M_{ye}}{M_y} + \frac{M_{ze}}{M_z} < 1$		(X _{xe} = calculated value) (X _x = max. catalogue value)
Structure profile features			
Geometrical moments of inertia L _x	mm ⁴	0,55x10 ⁴	0,55x10 ⁴
Geometrical moments of inertia L _y	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



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

Choice of stroke

Linear motor stage			MLZ 20105R / MLZ 20210S				
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 90° M23 (00)



■ Side connectors M23 upwards (03)



MLZ 2 ORDER CODE

Axis model

MLZ 2 - Linear unit with iron core linear motor.

MLZ 2 - IT□□□ - □□□□□ - □□A - T1244 - □ - □□□ - □□□□□

Motor / Carriage model

Peak force, N (aircooled) ¹⁾:

MLZ 2 [01 - 105N
02 - 210N

Motor winding:

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

Encoder

Technology:

0A - Inductive incremental
3A - Inductive absolute
XXXXX Without encoder

Reading head output:

* Incremental:

0 - 1 Vpp
4 - TTL

* Absolut:

E - Endat 2.2

Measurement system:

4C - 40 µm
1U - 1 µm
2H - 0,25 µm
1H - 0,1 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

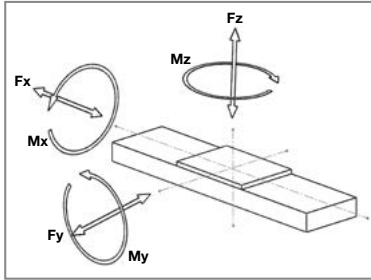
Length (mm) ²⁾

¹⁾ Depending on the application and ambient temperature

²⁾ Length on page 49

MLZ 5 LINEAR MOTOR STAGE

Repeatability of measuring system: $\pm 0,5 \mu\text{m}$
 Repeatability of linear unit: $\pm 5 \mu\text{m}$
 Maximum speed: 8 m/s
 Maximum acceleration: 380 m/s^2
 Maximum length: up to 824 mm
 Operating voltage: 600 Vdc, max. 900 Vdc



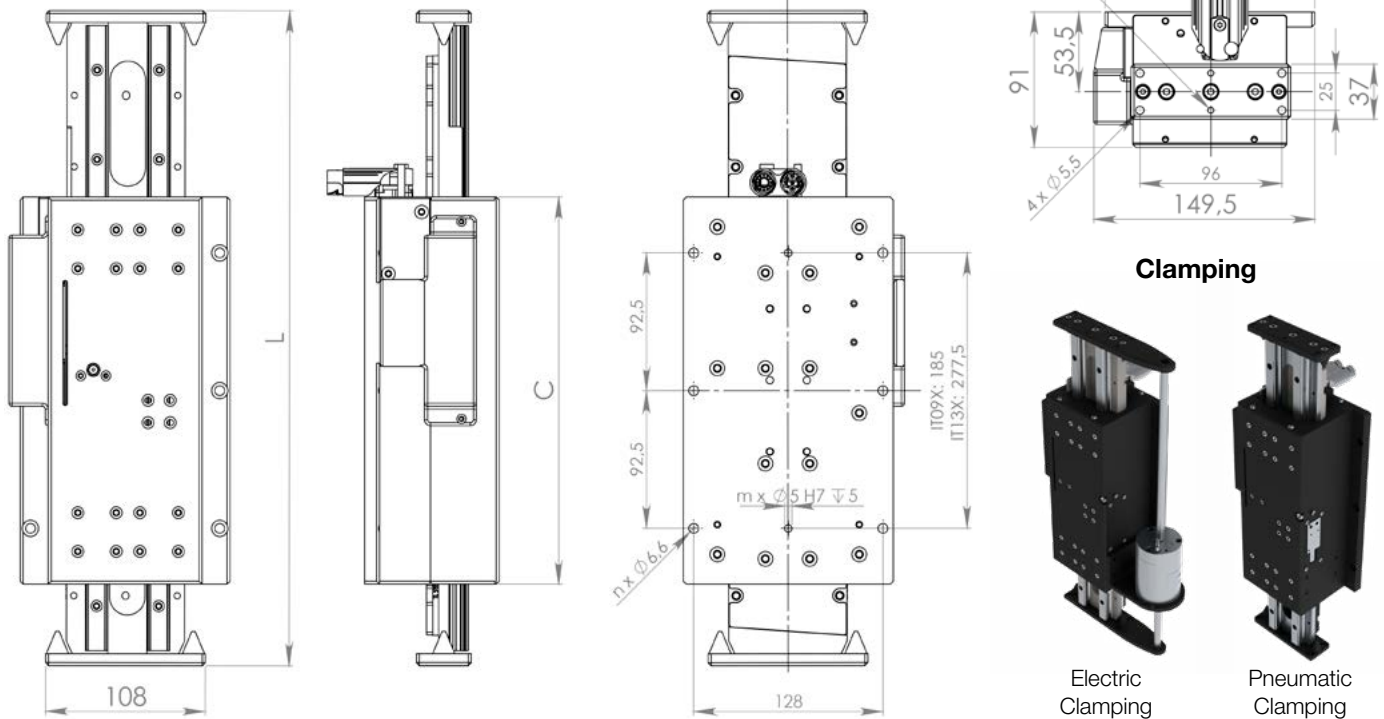
Mechanical specifications

Size		Z5	
Carriage model		IT09X	IT13X
C - Carriage length (mm)	mm	00260	00352
Linear motor			
Maximum speed at 560Vdc	m/s	7	7
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:	$\frac{F_{ye}}{F_y} + \frac{F_{ze}}{F_z} + \frac{M_{xe}}{M_x} + \frac{M_{ye}}{M_y} + \frac{M_{ze}}{M_z} < 1$	(Xxe = calculated value)	(Xx = max. catalogue value)
Structure profile features			
Geometrical moments of inertia Lx	mm ⁴	$3,15 \times 10^3$	$3,15 \times 10^3$
Geometrical moments of inertia Ly	mm ⁴	26×10^4	26×10^4
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



Drawing available under request.

Available strokes

Length, L (mm)	Stroke (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
<i>n</i> - Quantity of holes	6	8

Clamping

Clamping	Kg	Additional weight Kg/100mm
<i>Pneumatic Clamping (400 N)</i>	0,35	0
<i>Electric Clamping 1 (500 N)</i>	1,75	0,6
<i>Electric Clamping 2 (1300 N)</i>	4,2	0,6

MLZ 5 CONNECTORS OPTIONS

■ **Angled connectors $\pm 90^\circ$ YTEC (00)**



■ **Side connectors M23 (03)**



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 (N/A)
H - High-speed motor
X - Ohne Motor

Encoder

Technology:

0A - Inductive incremental
3A - Inductive absolute
XXXXX Without encoder

Reading head output:

* Incremental:

0 - 1 Vpp
4 - TTL

* Absolut:

E - Endat 2.2
D - Drivecliq
H - Hiperface
L - DSL
P - Panasonic

Measurement system:

4C - 40 µm
1U - 1 µm
2M - 2 mm
2H - 0,25 µm
1H - 0,1 µm
1S - 0,1 µm + Safety function
1Y - 1 µm + Safety function

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
FX - 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 53

³⁾ Not available for motor IT13X

MRT ROTARY TABLE SYSTEMS



MRT020001



MRT020005



MRT030028



MRT040056



MRT060173

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·cm ²	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□□ - TT□□□□ - □□□□□□ - 00A - XXXXX - □ - SXX

Size

Size model:

02 - 020001
02 - 020005
03 - 030028
04 - 040056
06 - 060173

Motor / Carriage model

Ultimate torque

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

Motor winding:

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

Encoder

Technology:

0A - Inductive incremental
3A - Inductive absolute
XXXXX Without encoder

Reading head output:

* Incremental:

0 - 1 Vpp
4 - TTL

* Absolut:

E - Endat 2.2
D - Drivecliq

Measurement system:

4C - 40 μm
1U - 1 μm
2H - 0,25 μm
1S - 0,1 μm + Safety function
1Y - 1 μm + Safety function

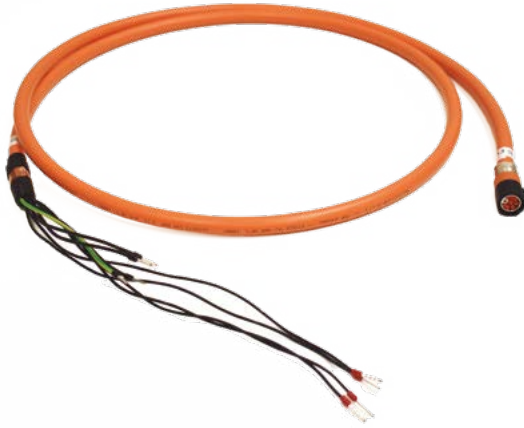
Lubrication

Grease type:

S - Standard
C - Clean room
F - Food grade
L - Low temperature

ACCESSORIES ADDITIONS

■ Power cable



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

■ Encoder cable



Description	Part number
Encoder cable, M23 connector, xx - cable length in m	KCES-55-04A-05A-Mxx
Encoder cable, Y-TEC connector, xx - cable length in m	KCES-55-06A-05A-Mxx

■ Mounting plate



Type	Part number
Flat	AC01-Fxx000
Square	AC01-Sxx000
Lateral	AC01-Lxx000

ACCESSORIES MOUNTING POSSIBILITIES

■ H - horizontally mounted (H05A)



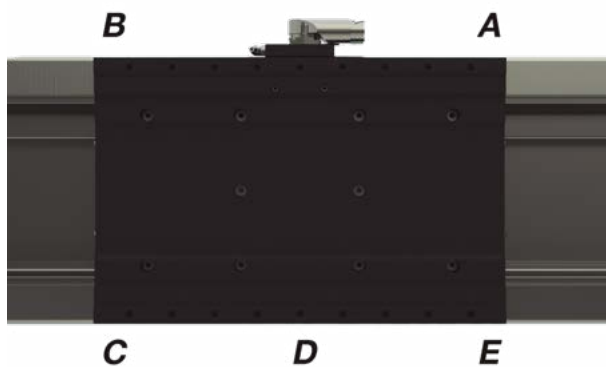
■ V - vertically mounted (V05A)



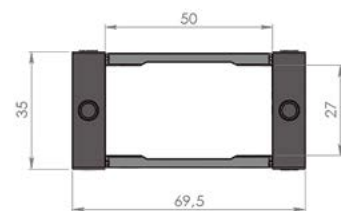
■ S - side mounted (S06A)



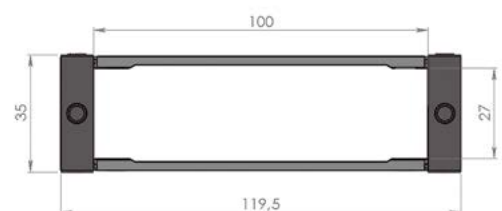
■ Mounting position of power chain



Size 05



Size 06



SINADRIVES[®]

DIRECT DRIVE EXPERTS

www.sinadrives.com
info@sinadrives.com

SINADRIVES GmbH

Schumannstraße 27 | 60325 Frankfurt am Main | Germany
Tel. +49 (0) 69 505 027 470
info@sinadrives.com

SINADRIVES Spain / SAIN AUTOMATION SOLUTIONS S.L

Av. Mas Pins, 164 Nave 6
17457 Riudellots de la Selva - Girona | Spain
Tel. +34 972 442 452
info@sinadrives.com

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Direct Drive technology
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