

High Performance Direct Drive Motor Product Catalogue

Lead the pioneers of the industry and
guide the forefront of science and technology



Linear Motors/Torque Motors/Linear Modules/Voice Coil Motors/Rod Motors

CONTENTS

01 Foreword

P4	Corporate Profile
P5	Corporate Milestones
P6	Selection and Calculation system

02 Linear Motors

P8	Introduction to iron core linear motors
P12	ZW3 series iron core linear motors
P30	ZW3A series iron core linear motors
P38	ZW8 series iron core linear motors
P50	Introduction to ironless linear motors
P52	ZWU series ironless linear motors

03 Torque Motors

P60	Introduction to torque motor with axial magnetic field
P64	ZWD series direct drive rotary motors
P76	ZWDR frameless direct drive rotary motors

04 Linear Modules

P80	Introduction to linear modules
P88	ZWM series linear modules

COMPANY PROFILE

2017
Founding

50+
Patent

10+
National Scientific
Research Projects

ISO 9001
Quality Management
System Certification

Suzhou Zhiwei precision drive control Technology Co., Ltd was founded in Suzhou in February 2017, which is a holding subsidiary of Shenzhen MEGMEET Electrical Co., Ltd. (Listed on Shenzhen Stock Exchange, stock code: 002851). It is a national high-tech enterprise and a private science and technology enterprise in Jiangsu Province. Relying on the Jiangsu Provincial Key Laboratory of Advanced Robotics located in Soochow University. With the help of listed companies, we have achieved the industrialisation of high-end products.

We mainly develops, produces and sells various kinds of Linear Motors, Direct Drive Motors, Voice Coil Motors, Linear Modules, XY high precision positioning stages, aerostatic guideway and stages, which are widely used in semiconductor, photovoltaic, lithium electricity, precision machines, medical devices and other industries.



Corporate vision

Create a "core" of intelligent manufacturing



Corporate philosophy

High-quality products, customised services, continuous innovation, scientific management



Quality policy

Customer-oriented, quality first, continuous innovation, continuous improvement



DEVELOPMENT COURSE

● 2020 / Rapid development

Entered the semiconductor, lithium electricity and photovoltaic industries, and successfully developed high-precision positioning stages used for LDI, wafer dicing, laser cutting, positioning table with air bearings vision inspection, etc.

● 2019 / Financing and Development

MEGMEET invests to quickly promote product series, standardisation and high quality.

● 2017 / Industrialisation of Achievements

The company was founded. Research and development, production and sales of linear motors, linear modules and DD motors.

● 2012 / Technical Attack

Relying on the Key Laboratory of Advanced Robot Technology of Soochow University, and focus on the research of high-speed and high-precision positioning technology.

● 2009 / Demonstration Application

Sewing machine motors, injection moulding machine motors, linear motors and drivers have been developed.

● 2002 / Key Technologies

Researched on key technologies such as AC permanent magnet synchronous motor, AC servo driver, magneto electric encoder, etc.

Selection and Calculation system



zwmsc.megmeet.com



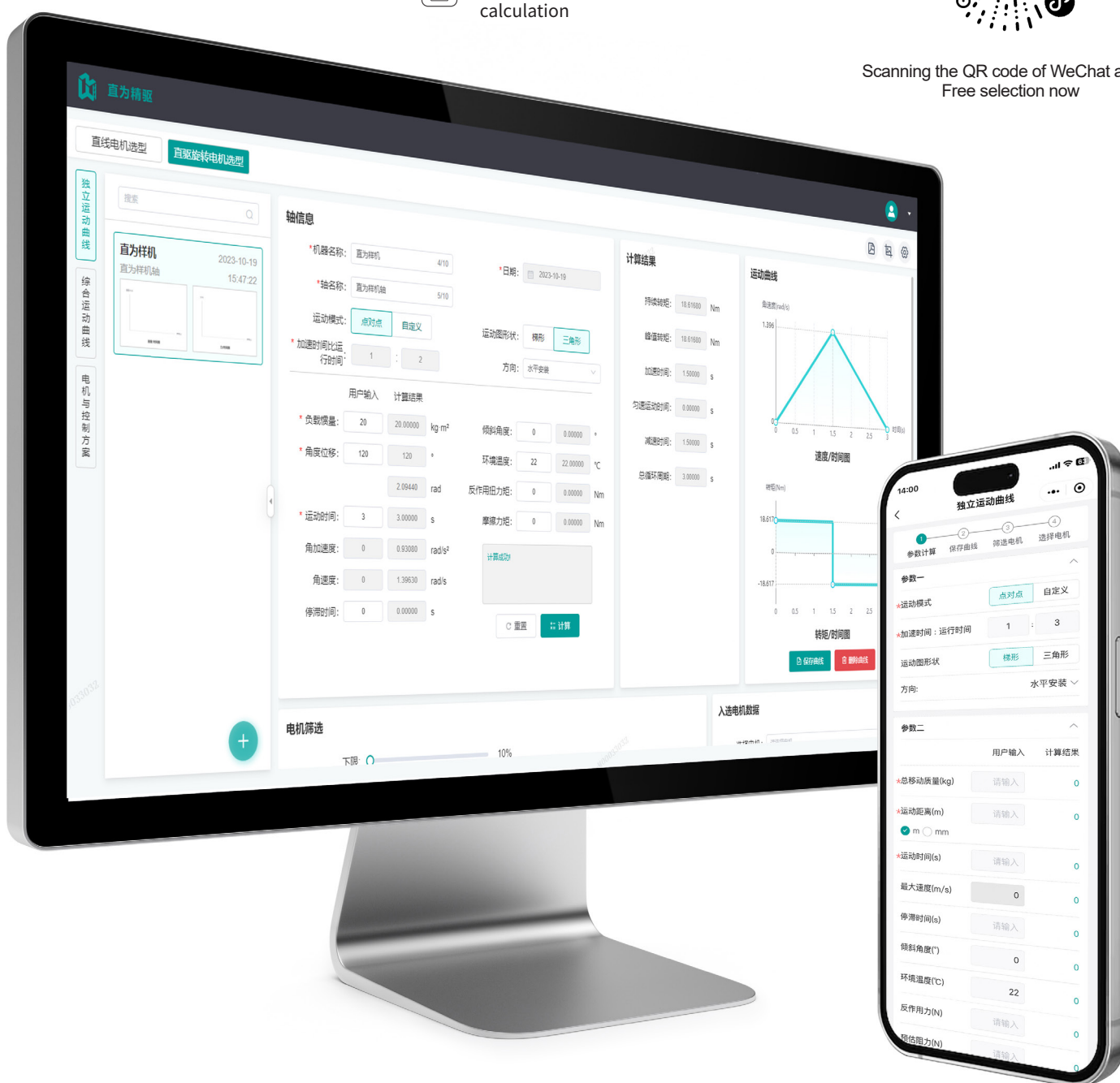
Viewing anytime and anywhere through the WeChat applet



Inputting basic data for automatic calculation



Scanning the QR code of WeChat applet
Free selection now



Selection steps

How to select a motor

Step 1: Parameter calculation

Confirming and inputting the following technical data:

- Motion Type
- Total Moving Mass
- Travel Distance
- Travel Time

The interface is divided into two main sections: '轴信息' (Axis Information) and '计算结果' (Calculation Results). The '轴信息' section includes input fields for motor name, axis name, motion mode, and travel distance/time. The '计算结果' section displays calculated values for total mass, distance, time, and force.

Step 3: Marching the motor

The system matches the motor model by selecting the following technical data:

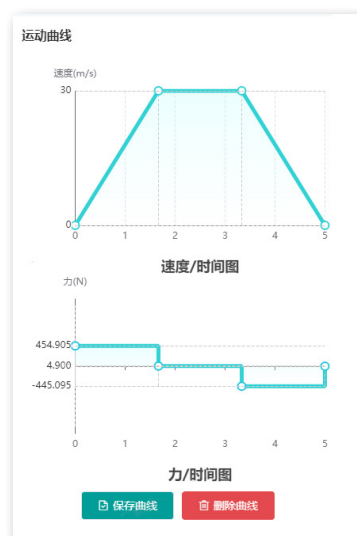
- Safety Margin
- Cooling method
- Iron core or Ironless

The '电机筛选' (Motor Selection) interface features a slider for '安全余量' (Safety Margin) ranging from 10% to 100%. It also includes checkboxes for '冷却方式' (Cooling Method) and '有无铁芯' (Iron Core or Ironless).

1

Step 2: Save Profile

The system automatically draws the motion profile according to the input technical data.



3

Step 4: Selected a motor

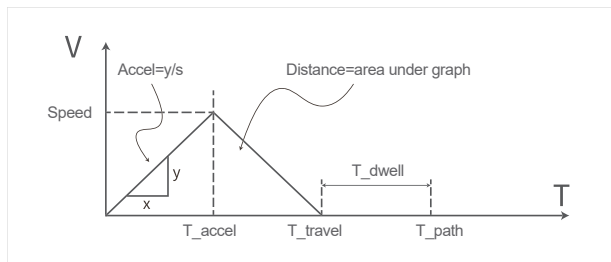
Selection according to the recommended motors.

The '入选电机数据' (Selected Motor Data) section displays a dropdown menu for selecting a motor model. Below the dropdown, a list of motor parameters is shown, including maximum current, continuous current, torque constant, back EMF, resistance, inductance, time constant, motor constant, and maximum winding temperature.

IRON CORE LINEAR MOTOR

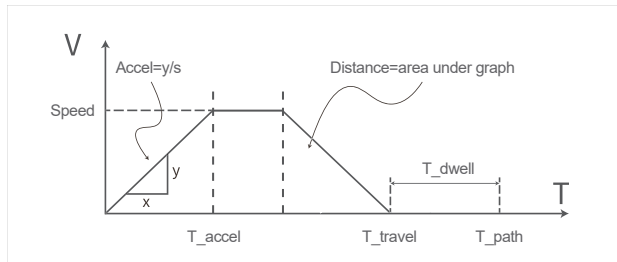
- 1、 The selection of linear motors includes the calculation of the pick force and continuous force requirement.
- 2、 For accelerated linear motion, $F = ma$, where F is the force needed to move an object in N, m is the moving mass in kg, a is the acceleration in m/s^2 . Peak force is determined by the moving mass and maximum acceleration required. In practical application, Force = Mass * Acceleration + Friction Force + External Opposing Force.
For example, if moving mass is 10 kg (including coil assembly) and required acceleration is $10 m/s^2$, the motor needs to exert a force of 100 N. This assuming Friction and Opposing Force are negligible.
- 3、 Very often, we do not know the actual required acceleration, but we have the motion time requirement. We can calculate the required acceleration if we know the travel distance and the travel time. Usually for short travel distance, a Triangle-Shape Velocity Profile is used. Whereas for long travel distances, it is recommended to use Trapezoidal-Shape Velocity Profile.

1) Triangle Profile: $a=4s/t^2$



2) For Trapezoidal Profile, a desired cruising speed will help to determine the required acceleration:

Acceleration = Cruise Speed / (T_path - T_dwell - Distance/Cruise Speed)



- 4、 Basically, the calculation of the deceleration is similar to the acceleration, unless there is an unbalanced force (gravitational force) acting on the motor.
- 5、 Force required by the motor during cruising (against friction and opposing forces) and dwelling (against opposing force) may also be calculated. (To maintain a constant speed, the motor resists friction and external stresses. When the servo on the motor stops, it will resist external stress.)
- 6、 Compute the continuous force using the formula below:

$$\text{Continuous force} = \sqrt{\frac{F_a^2 \times T_a + F_c^2 \times T_c + F_d^2 \times T_d + F_w^2 \times T_w}{T_a + T_c + T_d + T_w}}$$

F_a = Acceleration Force
 F_c = Cruise Force
 F_d = Deceleration Force
 F_w = Dwell Force

T_a = Acceleration time
 T_c = Cruise time
 T_d = Deceleration time
 T_w = Dwell time

- 7、 The motor should be selected based on the calculated peak and continuous force requirements. Users should consider a safety factor of at least 20-30%, especially when there is a need to overcome friction and external opposing forces.

Applications

It is applied to wafer inspection system, stamping, laser cutting or welding, SMT machine, inverted crystal packaging/solidification machine, welding machine, PCB punching machine, PCB testing machine, flat panel display, medical equipment, general automation system...

Iron Core Linear Motor

- The size and force of the unit motor are large, and the iron core enhances the magnetic field strength.
- High dynamic performance application
- Patented of low cogging force technology
- Low cogging force technology with iron core
- Multi-winding design
- Insulation technology



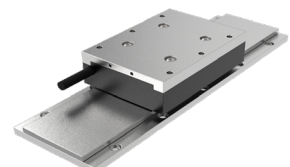
ZW3-H10



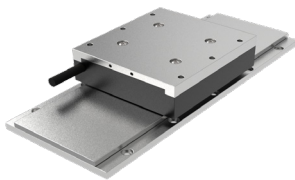
ZW3-H25



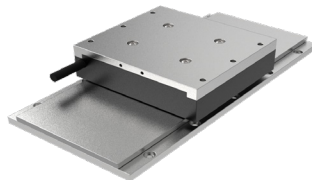
ZW3-H35



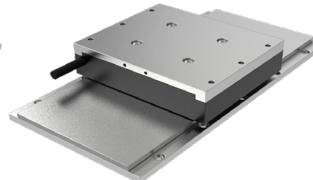
ZW3-H55



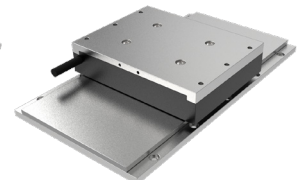
ZW3-H75



ZW3-H95



ZW3-H105



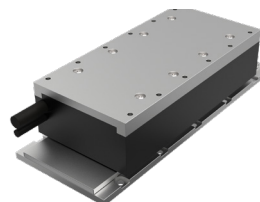
ZW3-H115



ZW3A-H35



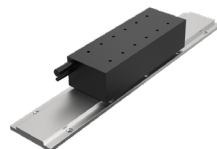
ZW3A-H55



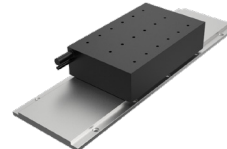
ZW3A-H75



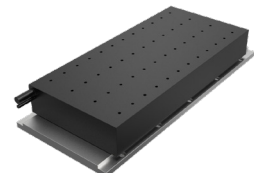
ZW8-H30



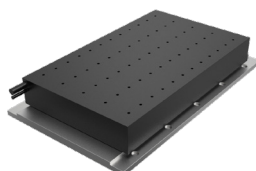
ZW8-H50



ZW8-H100



ZW8-H150

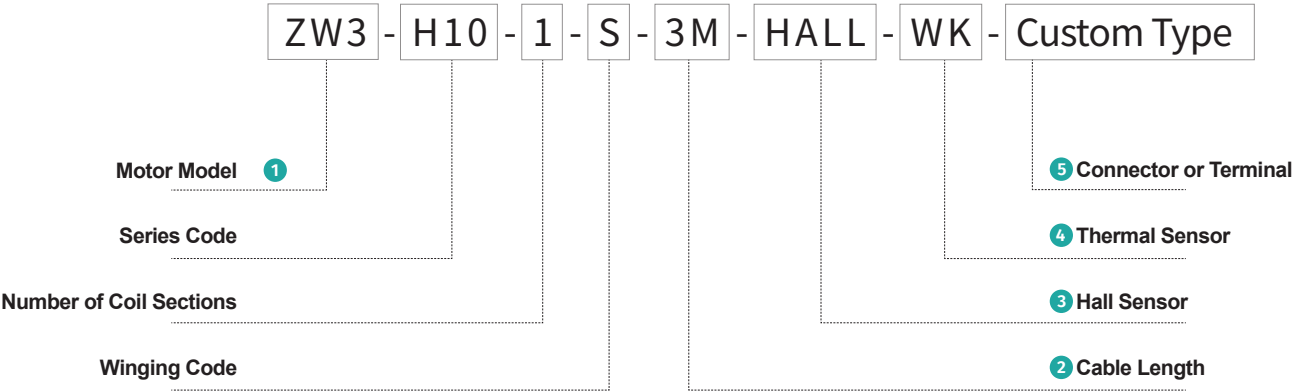


ZW8-H200

Iron Core Linear Motor Products

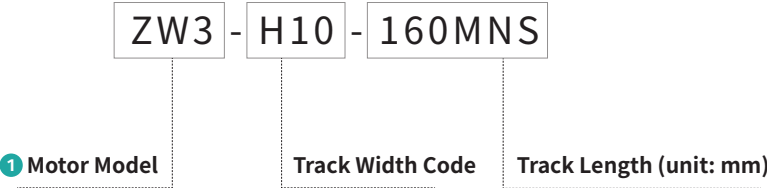
Part Numbering

Motor Coil



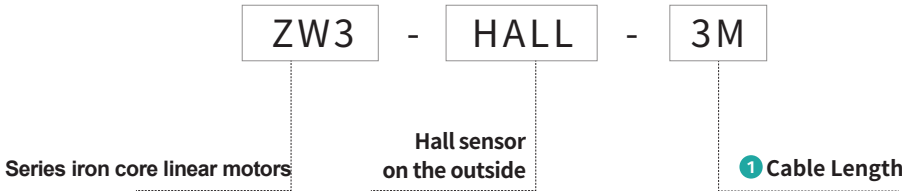
1		2		3		4		5
Code	Motor Model	Code	Cable Length	Code	HALL	Code	Thermal Sensor	Custom Type
ZW3	ZW3 series iron core linear motors	0.5M	Standard 0.5 meters	HALL	With	WK	With	9W4 (With Thermal Sensor)
ZW3A	ZW3A series iron core linear motors	3M	Standard 3 meters	Blank	Without	Blank	Without	3W3 (Without Thermal Sensor)
ZW8	ZW8 series iron core linear motors	Other	Specified in meters					GX series
ZWU	ZWU series ironless linear motors							Tube terminal

Motor Track



1	Code	Motor Model
	ZW3	ZW3 series iron core linear motors
	ZW3A	ZW3A series iron core linear motors
	ZW8	ZW8 series iron core linear motors
	ZWU	ZWU series ironless linear motors

Hall



1	Code	Cable Length
	0.5M	Standard 0.5 meters
	3M	Standard 3 meters
	Other	Specified in meters

Overview

■ Continuous Force
■ Peak Force

Motor Model	100N	1000N	10000N	15000N
ZW3-H10	24-71N 69-207N			
ZW3-H25	60-179N 173-518N			
ZW3-H35	91-273N 252-756N			
ZW3-H55	138-413N 271-1113N			
ZW3-H75	189-566N 522-1566N			
ZW3-H95	234-702N 648-1944N			
ZW3-H105	273-819N 759-2268N			
ZW3-H115	294-876N 851-2538N			
ZW3A-H35	118-471N 270-1073N			
ZW3A-H55	186-739N 413-1652N			
ZW3A-H75	252-1005N 564-2250N			
ZW8-H30	119.4-477.6N 253.5-1014N			
ZW8-H50	199-796N 422.5-1690N			
ZW8-H100	398-1592N 845-3380N			
ZW8-H150	2388-4776N 5070-10140N			
ZW8-H200	3184-6368N 6760-13520N			

ZW3 Series Products

- Iron core technology, Low cogging force
- High continuous force and peak force
- Hall sensor is optional
- High motor constant
- Comprehensive size and specifications
- Continuous Force: 24 N to 882 N
- Peak Force: 69 N to 2553 N



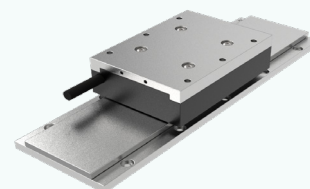
ZW3-H10



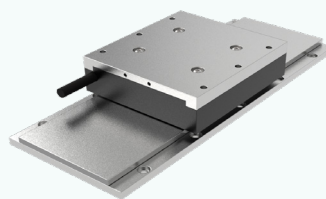
ZW3-H25



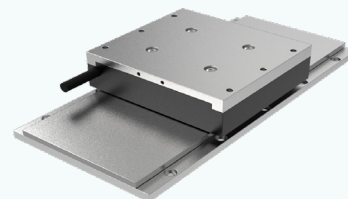
ZW3-H35



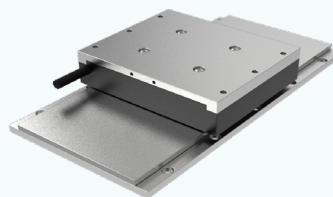
ZW3-H55



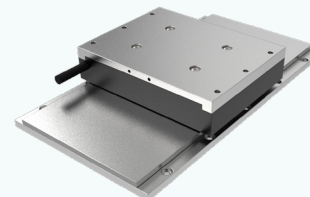
ZW3-H75



ZW3-H95



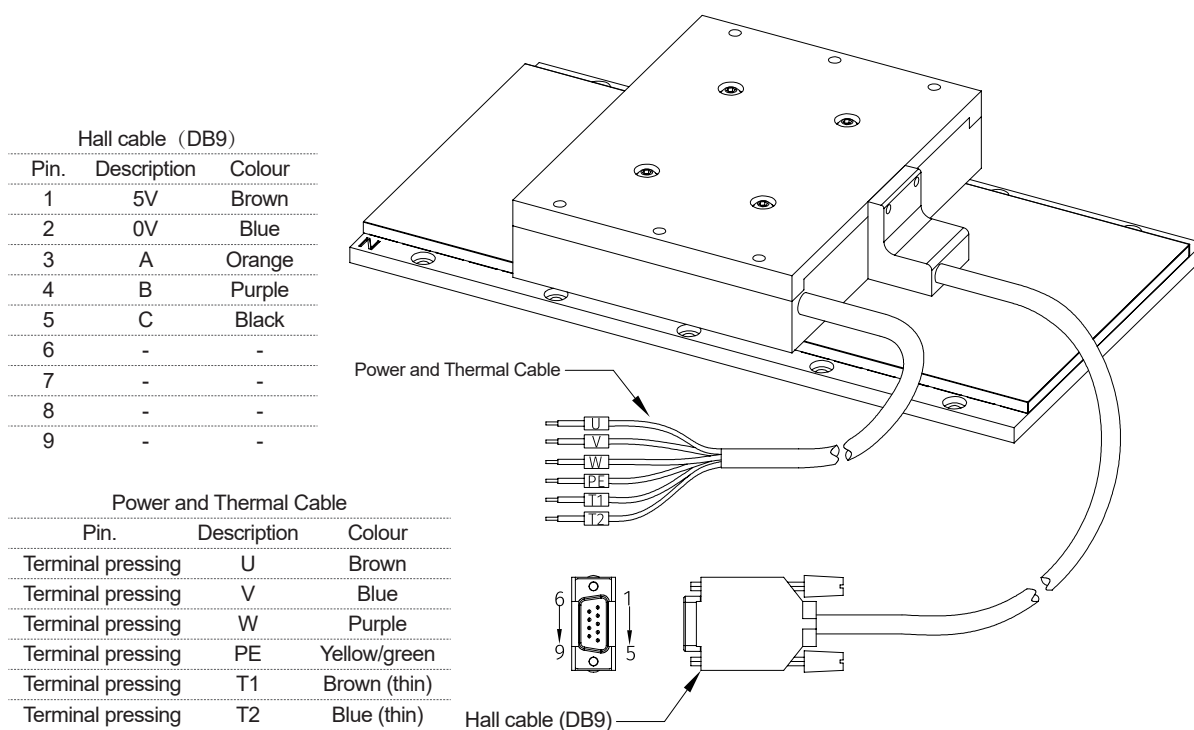
ZW3-H105



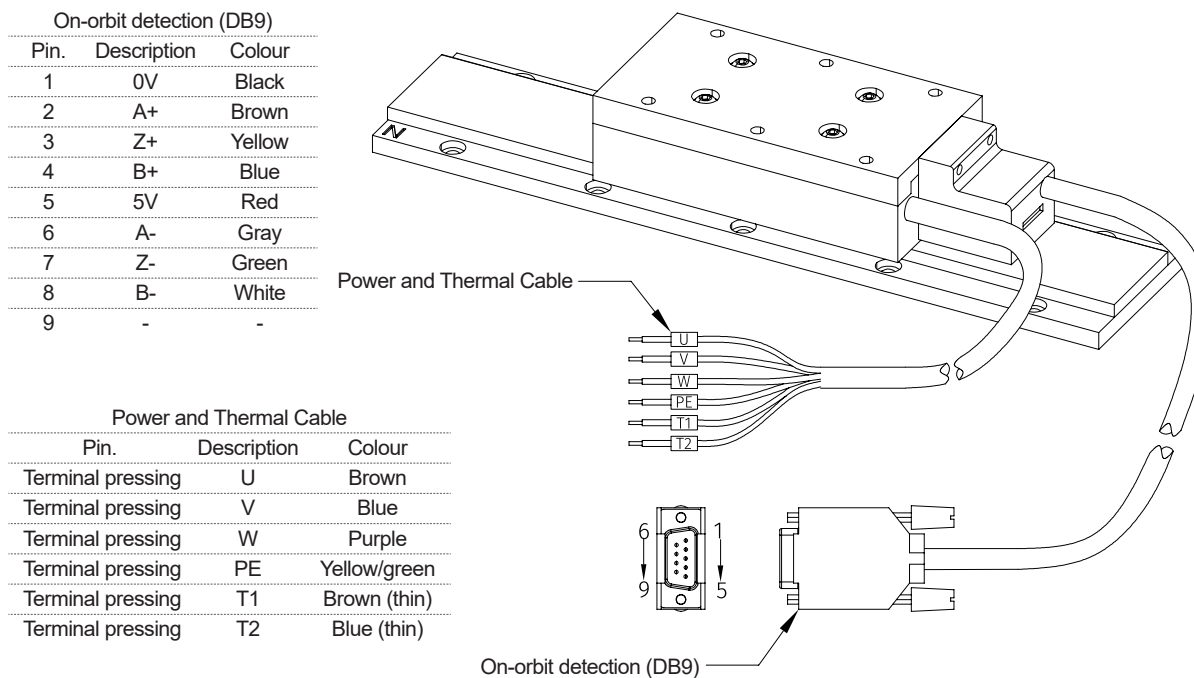
ZW3-H115

Iron Core Linear Motor

ZW3 motor wiring diagram



On-orbit detection wiring diagram



Iron Core Linear Motor

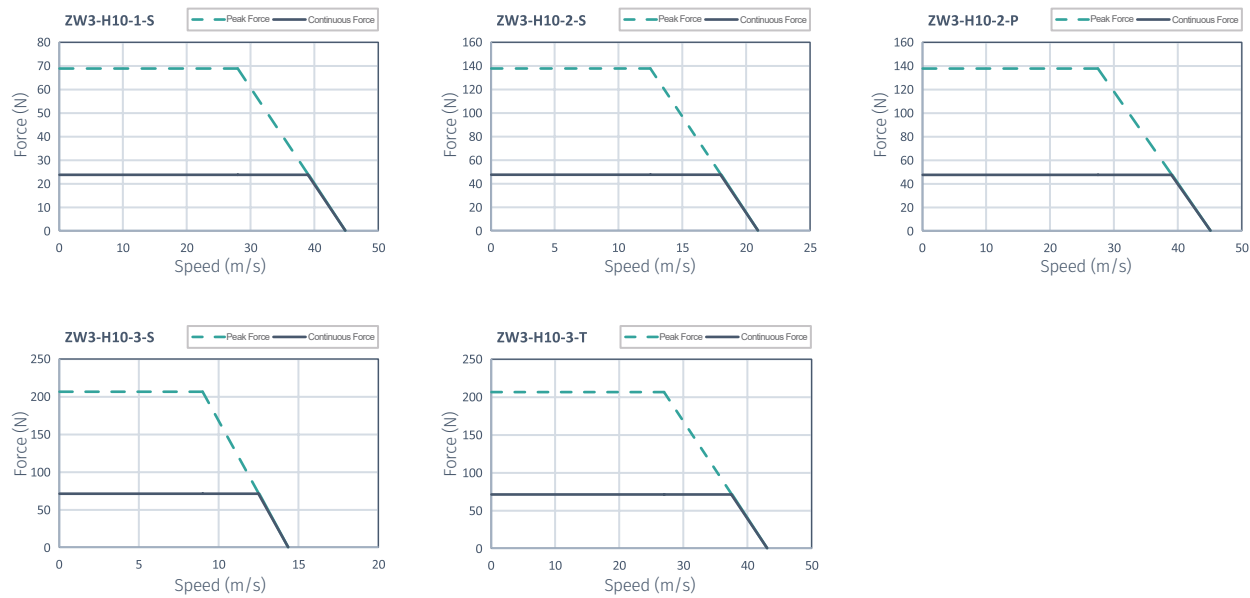
ZW3-H10 Specification



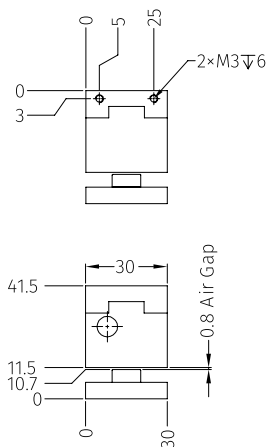
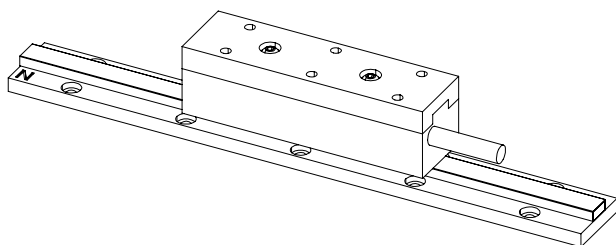
Parameters

Model	Unit	ZW3-H10-1	ZW3-H10-2	ZW3-H10-3		
Winging Code		S	S	P	S	T
Performance Parameters						
Peak Force	N	69	138	138	207	207
Continuous Force	N	24	48	48	72	72
Peak Power	W	1932	1725	3795	1863	5589
Continuous Power	W	936	864	1872	900	2700
Attraction Force	N	151	302	302	453	453
Electrical Parameters						
Peak current	Arms	10.34	10.34	20.68	10.34	31.02
Continuous current	Arms	3.39	3.39	6.78	3.39	10.17
Force Constant	N/Arms	7.03	14.06	7.03	21.09	7.03
Back EMF Constant	Vpeak/(m/s)	6.69	13.38	6.69	20.07	6.69
Resistance	Ohms	1.3	2.40	0.70	3.6	0.4
Inductance	mH	4.87	9.81	2.44	14.14	1.62
Time Constant	ms	4.58	4.10	3.75	3.96	3.77
Motor Constant	N/Sqrt(W)	5.07	7.17	7.17	8.78	8.78
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	105	193	193	193	280
Coil Mass	Kg	0.3	0.4	0.4	0.4	0.5
Track Mass	Kg/m	1.1	1.1	1.1	1.1	1.1
Magnetic Period	mm	25	25	25	25	25

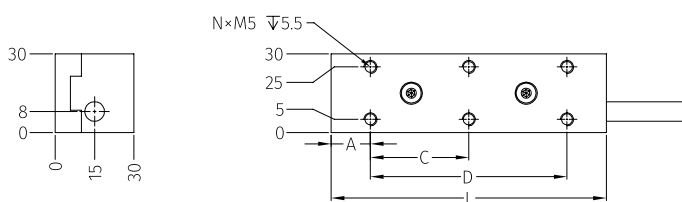
Force-Speed Curve @310V



Dimension

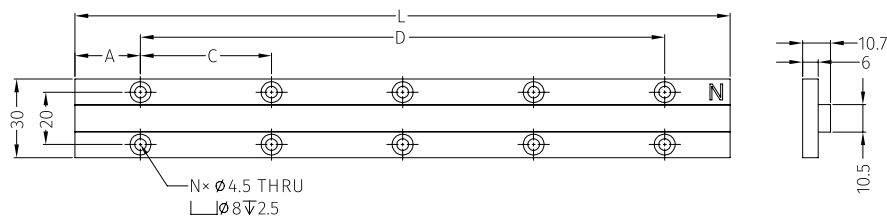


Coil size



Dimension	ZW3-H10-1	ZW3-H10-2	ZW3-H10-3
A	15	16.5	20
C	37.5	40	40
D	75	160	240
L	105	193	280
N	6	10	14

Track size



Dimension	ZW3-H10-150MNS	ZW3-H10-200MNS	ZW3-H10-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

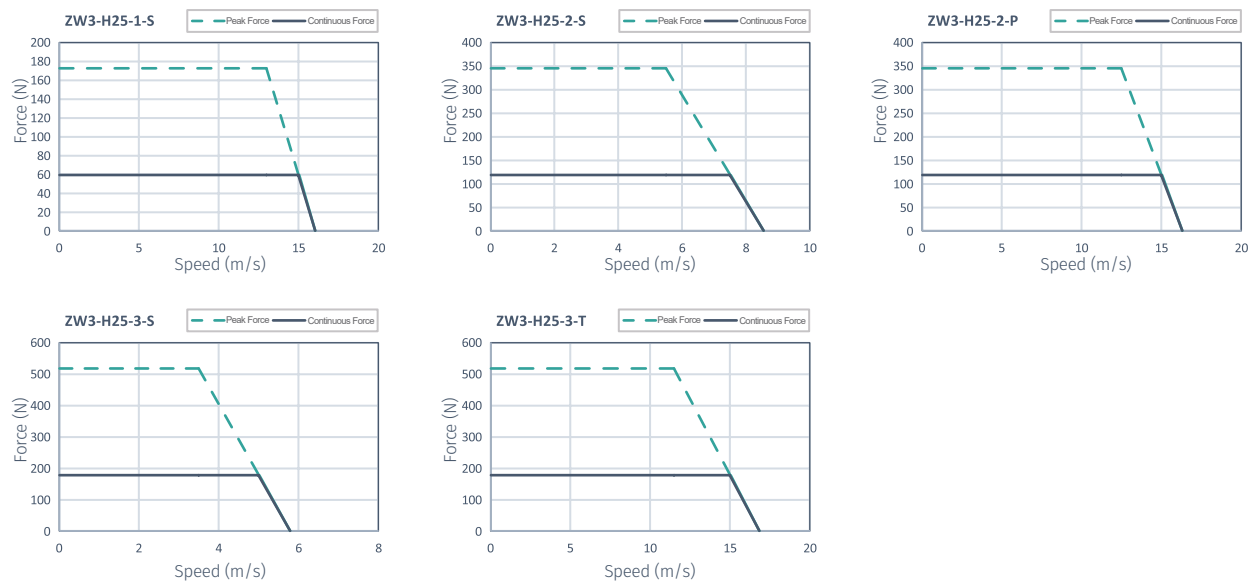
ZW3-H25 Specification



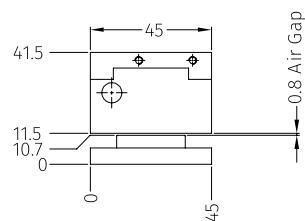
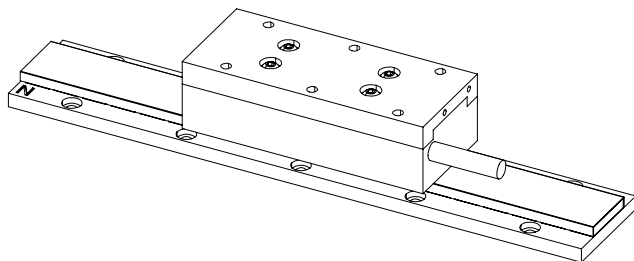
Parameters

Model	Unit	ZW3-H25-1	ZW3-H25-2		ZW3-H25-3	
Winging Code		S	S	P	S	T
Performance Parameters						
Peak Force	N	173	346	346	519	519
Continuous Force	N	60	120	120	180	180
Peak Power	W	2249	1903	4325	1817	5969
Continuous Power	W	900	900	1800	900	2700
Attraction Force	N	379	758	758	1137	1137
Electrical Parameters						
Peak current	Arms	10.37	10.37	20.74	10.37	31.11
Continuous current	Arms	3.40	3.40	6.80	3.40	10.20
Force Constant	N/Arms	17.58	35.16	17.58	52.74	17.58
Back EMF Constant	Vpeak/(m/s)	16.73	33.46	16.73	50.19	16.73
Resistance	Ohms	1.83	3.66	0.92	5.60	0.60
Inductance	mH	8.37	16.74	4.19	27.94	2.79
Time Constant	ms	4.91	4.94	4.55	4.99	4.57
Motor Constant	N/Sqrt(W)	10.65	15.06	15.06	18.45	18.45
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	105	193	193	280	280
Coil Mass	Kg	0.60	0.90	0.90	1.20	1.20
Track Mass	Kg/m	2.8	2.8	2.8	2.8	2.8
Magnetic Period	mm	25	25	25	25	25

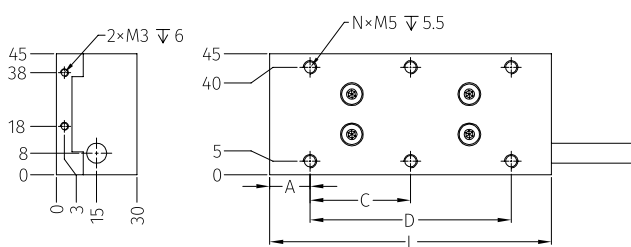
Force-Speed Curve @310V



Dimension

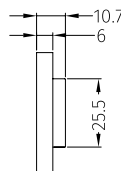
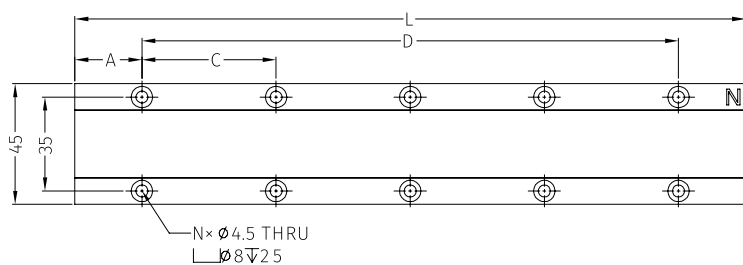


Coil size



Dimension	ZW3-H25-1	ZW3-H25-2	ZW3-H25-3
A	15	16.5	20
C	37.5	40	40
D	75	160	240
L	105	193	280
N	6	10	14

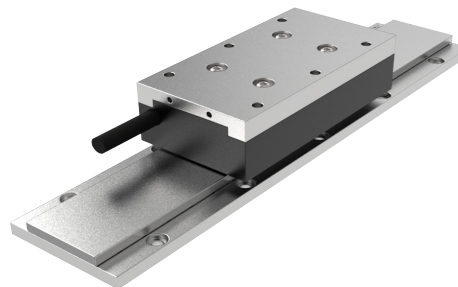
Track size



Dimension	ZW3-H25-150MNS	ZW3-H25-200MNS	ZW3-H25-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

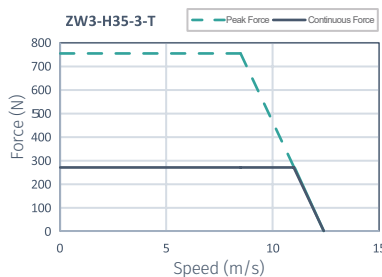
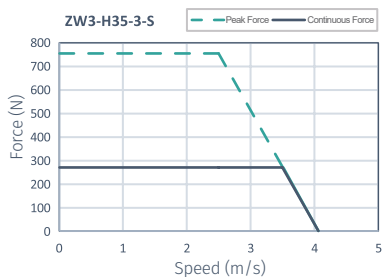
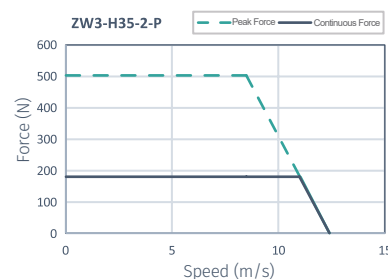
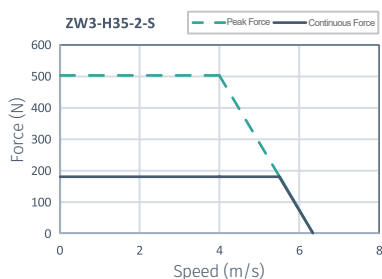
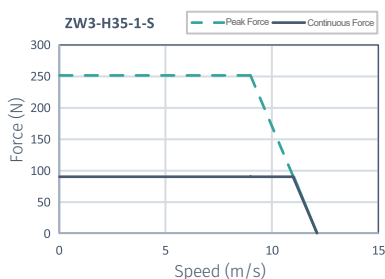
ZW3-H35 Specification



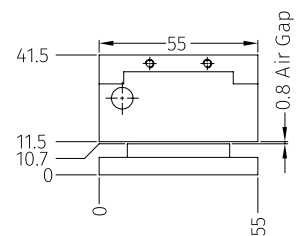
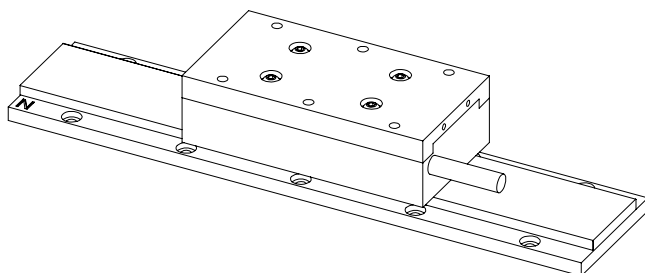
Parameters

Model	Unit	ZW3-H35-1	ZW3-H35-2	ZW3-H35-3		
Winging Code		S	S	P	S	T
Performance Parameters						
Peak Force	N	252	504	504	756	756
Continuous Force	N	91	182	182	273	273
Peak Power	W	2268	2016	4284	1890	6426
Continuous Power	W	1001	1001	2002	956	3003
Attraction Force	N	530	1060	1060	1590	1590
Electrical Parameters						
Peak current	Arms	10.31	10.31	20.62	10.31	30.93
Continuous current	Arms	3.38	3.38	6.76	3.38	10.14
Force Constant	N/Arms	26.92	53.84	26.92	80.76	26.92
Back EMF Constant	Vpeak/(m/s)	23.42	46.84	23.42	70.26	23.42
Resistance	Ohms	2.4	5.0	1.3	6.7	0.8
Inductance	mH	11.62	23.73	5.8	35.18	3.87
Time Constant	ms	4.84	4.71	4.57	5.24	4.61
Motor Constant	N/Sqrt(W)	13.82	19.54	19.54	23.94	23.94
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	105	193	193	280	280
Coil Mass	Kg	0.9	1.3	1.3	1.7	1.7
Track Mass	Kg/m	3.6	3.6	3.6	3.6	3.6
Magnetic Period	mm	25	25	25	25	25

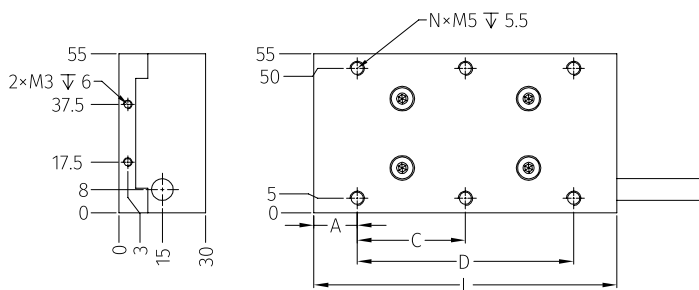
Force-Speed Curve @310V



Dimension

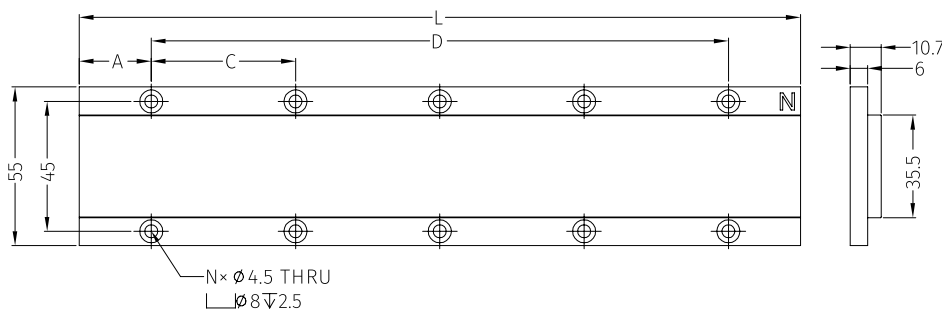


Coil size



Dimension	ZW3-H35-1	ZW3-H35-2	ZW3-H35-3
A	15	16.5	20
C	37.5	40	40
D	75	160	240
L	105	193	280
N	6	10	14

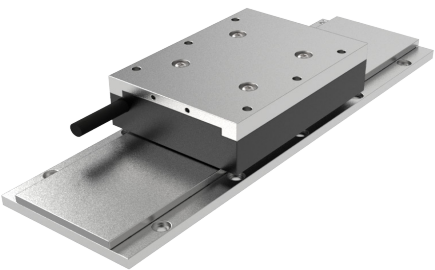
Track size



Dimension	ZW3-H35-150MNS	ZW3-H35-200MNS	ZW3-H35-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

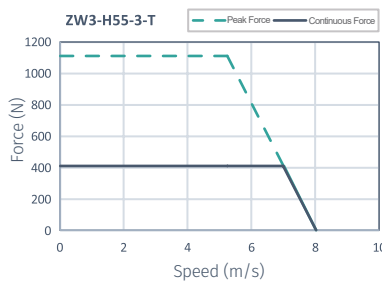
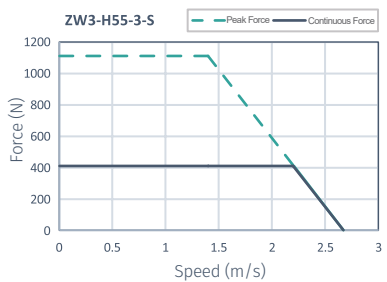
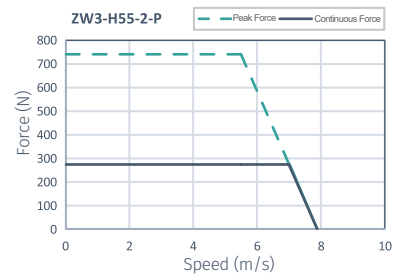
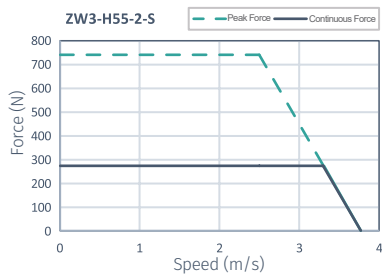
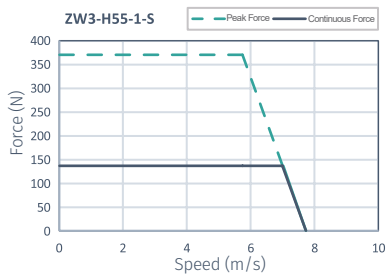
ZW3-H55 Specification



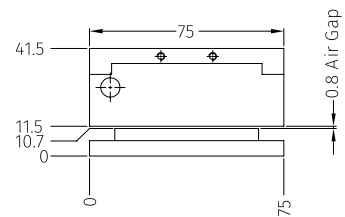
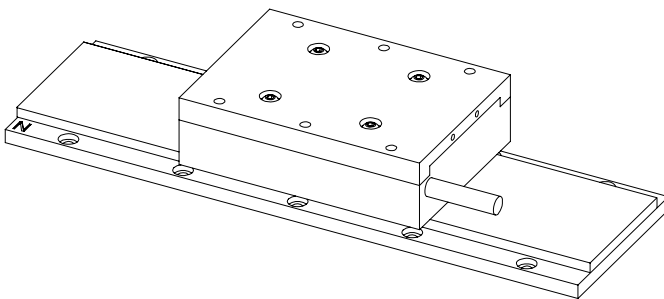
Parameters

Model	Unit	ZW3-H55-1	ZW3-H55-2	ZW3-H55-3		
Winging Code		S	S	P	S	T
Performance Parameters						
Peak Force	N	371	742	742	1113	1113
Continuous Force	N	138	276	276	414	414
Peak Power	W	2133	1855	4081	1558	5843
Continuous Power	W	966	911	1932	911	2898
Attraction Force	N	640	1280	1280	1920	1920
Electrical Parameters						
Peak current	Arms	10.31	10.31	20.62	10.31	30.93
Continuous current	Arms	3.23	3.23	6.46	3.23	9.69
Force Constant	N/Arms	41.57	83.14	41.57	124.71	41.57
Back EMF Constant	Vpeak/(m/s)	36.7	73.40	36.70	110.10	36.70
Resistance	Ohms	3.2	6.8	1.7	10.1	1.1
Inductance	mH	17.19	36.26	7.83	52.2	5.77
Time Constant	ms	5.39	5.08	4.58	5.19	5.25
Motor Constant	N/Sqrt(W)	18.89	26.72	26.72	32.72	32.72
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	105	193	193	280	280
Coil Mass	Kg	1.16	2.1	2.1	2.5	2.5
Track Mass	Kg/m	5.1	5.1	5.1	5.1	5.1
Magnetic Period	mm	25	25	25	25	25

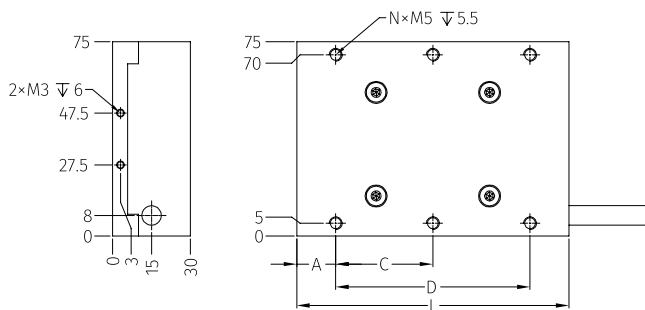
Force-Speed Curve @310V



Dimension

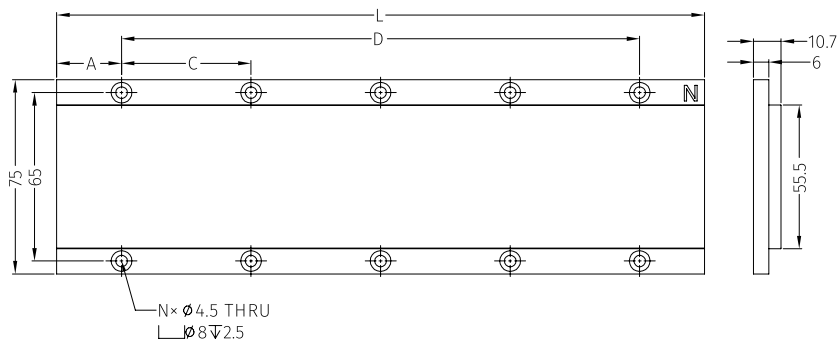


Coil size



Dimension	ZW3-H55-1	ZW3-H55-2	ZW3-H55-3
A	15	16.5	20
C	37.5	40	40
D	75	160	240
L	105	193	280
N	6	10	14

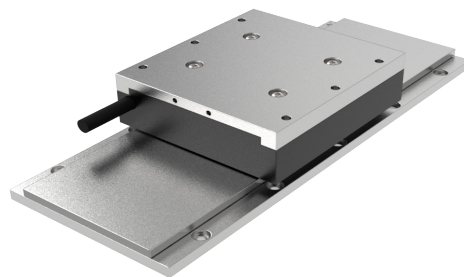
Track size



Dimension	ZW3-H55-150MNS	ZW3-H55-200MNS	ZW3-H55-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

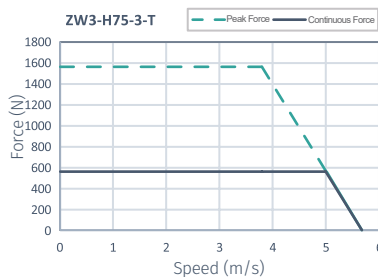
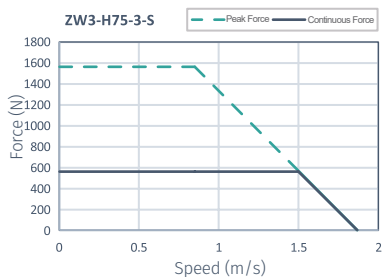
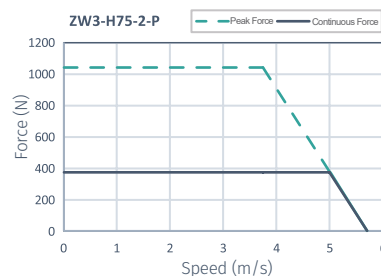
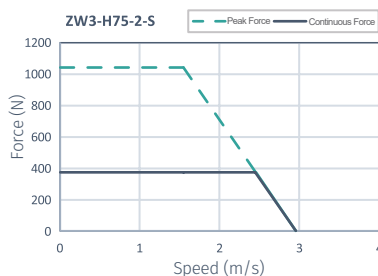
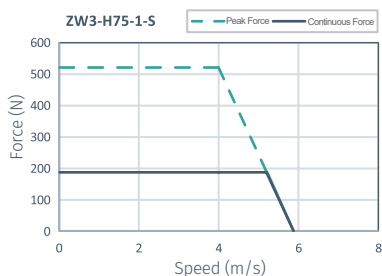
ZW3-H75 Specification



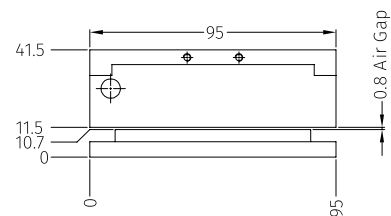
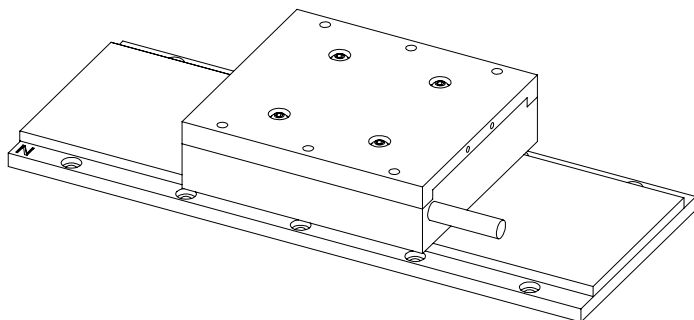
Parameters

Model	Unit	ZW3-H75-1	ZW3-H75-2	ZW3-H75-3		
Winging Code		S	S	P	S	T
Performance Parameters						
Peak Force	N	522	1044	1044	1566	1566
Continuous Force	N	189	378	378	567	567
Peak Power	W	2088	1618	3915	1331	5951
Continuous Power	W	983	926	1890	851	2835
Attraction Force	N	873	1746	1746	2619	2629
Electrical Parameters						
Peak current	Arms	10.3	10.3	20.6	10.3	30.9
Continuous current	Arms	3.28	3.28	6.56	3.28	9.84
Force Constant	N/Arms	56.84	113.68	56.84	170.52	56.84
Back EMF Constant	Vpeak/(m/s)	50.18	100.36	50.18	150.54	50.18
Resistance	Ohms	4.2	8.4	2.5	12.7	1.4
Inductance	mH	23.09	45.48	11.62	64.98	7.36
Time Constant	ms	5.52	5.40	4.74	5.11	5.15
Motor Constant	N/Sqrt(W)	22.72	32.12	32.12	39.34	39.34
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	105	193	193	280	280
Coil Mass	Kg	1.52	2.8	2.8	3.6	3.6
Track Mass	Kg/m	6.6	6.6	6.6	6.6	6.6
Magnetic Period	mm	25	25	25	25	25

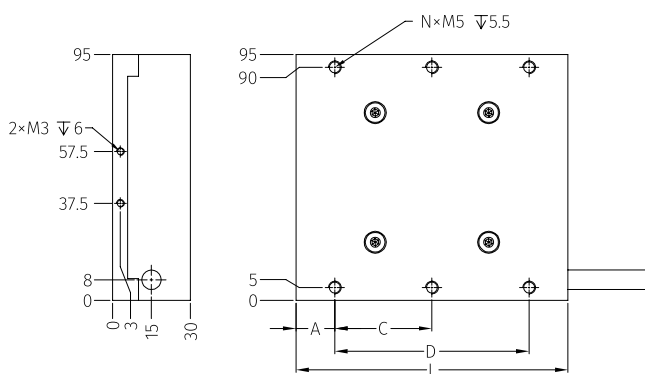
Force-Speed Curve @310V



Dimension

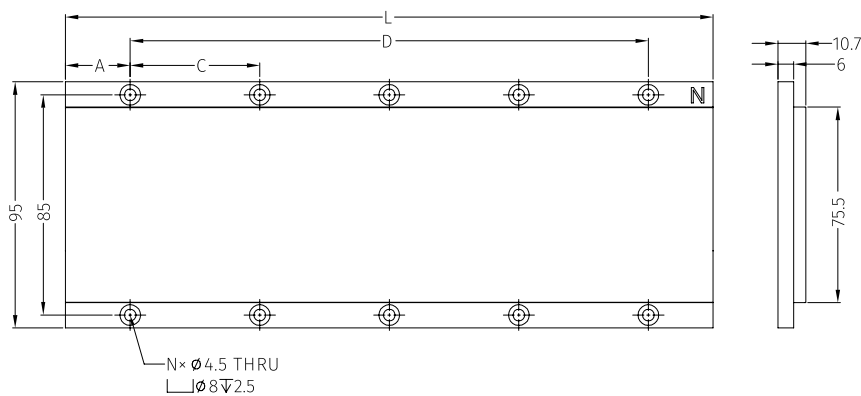


Coil size



Dimension	ZW3-H75-1	ZW3-H75-2	ZW3-H75-3
A	15	16.5	20
C	37.5	40	40
D	75	160	240
L	105	193	280
N	6	10	14

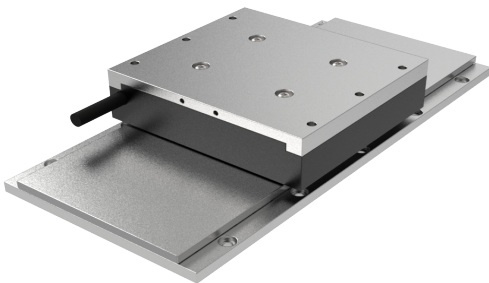
Track size



Dimension	ZW3-H75-150MNS	ZW3-H75-200MNS	ZW3-H75-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

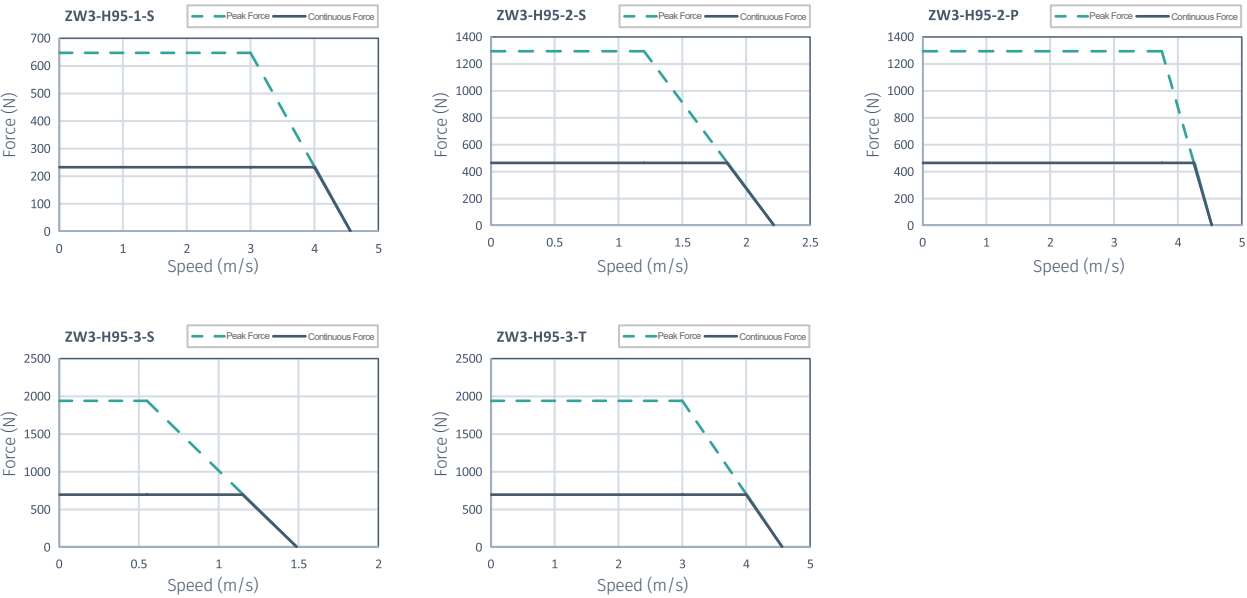
ZW3-H95 Specification



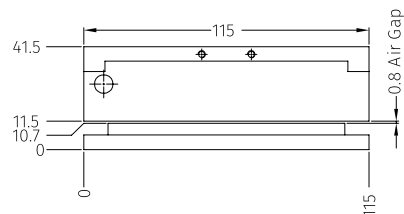
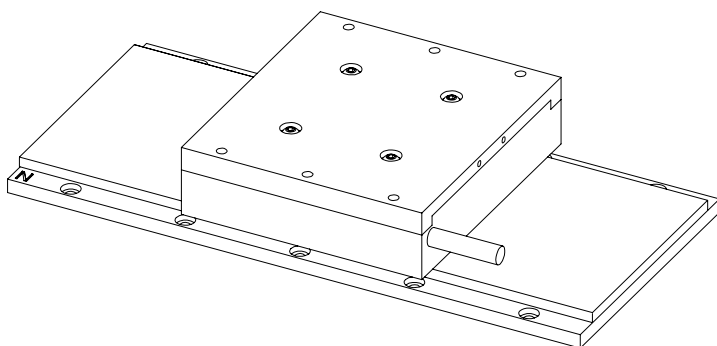
Parameters

Model	Unit	ZW3-H95-1	ZW3-H95-2		ZW3-H95-3	
Winging Code		S	S	P	S	T
Performance Parameters						
Peak Force	N	648	1296	1296	1944	1944
Continuous Force	N	234	468	468	702	702
Peak Power	W	1944	1555	4860	1069	5832
Continuous Power	W	936	866	1989	807	2808
Attraction Force	N	1105	2210	2210	3315	3315
Electrical Parameters						
Peak current	Arms	10.3	10.3	10.3	10.3	30.87
Continuous current	Arms	3.22	3.22	3.22	3.2	9.66
Force Constant	N/Arms	72.02	144.04	72.02	216.06	72.02
Back EMF Constant	Vpeak/(m/s)	63.56	127.12	63.56	190.68	63.56
Resistance	Ohms	5.2	10.2	2.1	15.5	1.4
Inductance	mH	27.61	56.64	13.9	85.55	9.27
Time Constant	ms	5.36	5.57	6.62	5.51	6.62
Motor Constant	N/Sqrt(W)	28.95	40.95	40.95	50.15	50.15
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	105	193	193	280	280
Coil Mass	Kg	1.8	3.4	3.4	4.8	4.6
Track Mass	Kg/m	8.2	8.2	8.2	8.2	8.2
Magnetic Period	mm	25	25	25	25	25

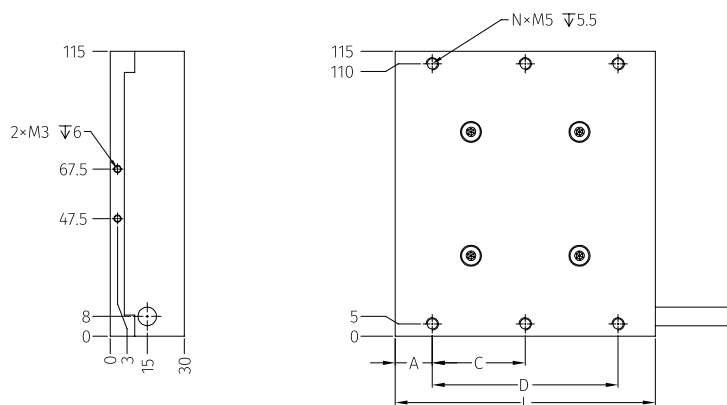
Force-Speed Curve @310V



Dimension

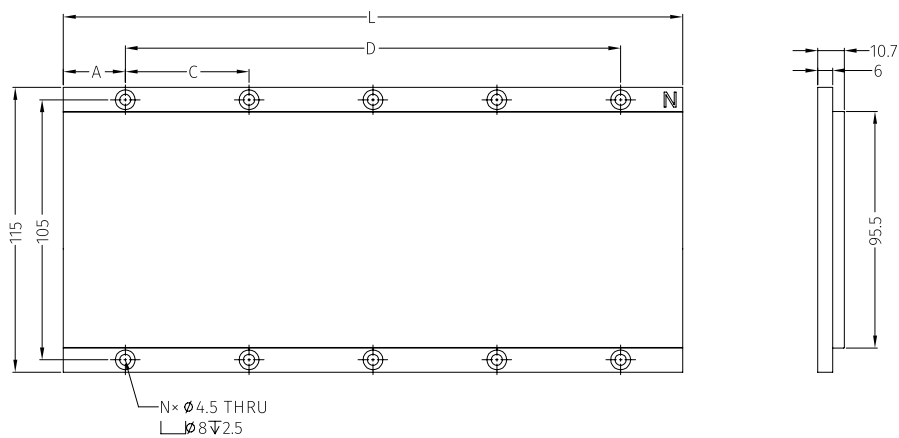


Coil size



Dimension	ZW3-H95-1	ZW3-H95-2	ZW3-H95-3
A	15	16.5	20
C	37.5	40	40
D	75	160	240
L	105	193	280
N	6	10	14

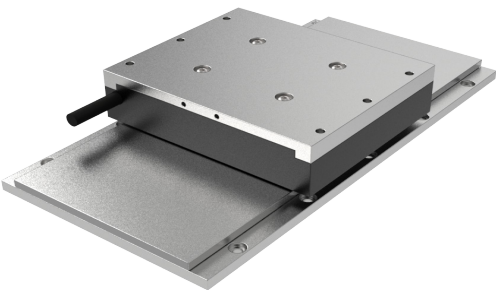
Track size



Dimension	ZW3-H95-150MNS	ZW3-H95-200MNS	ZW3-H95-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

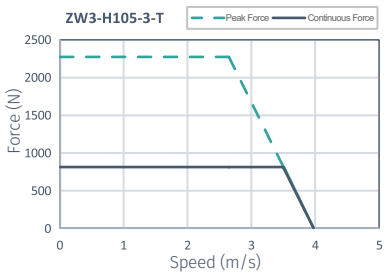
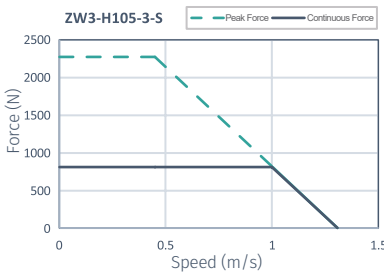
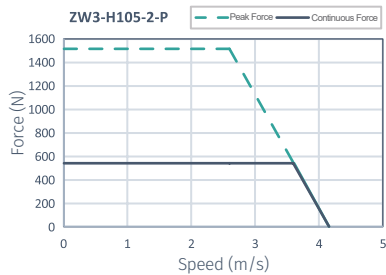
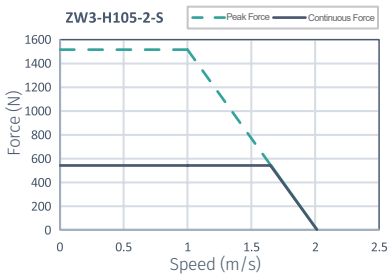
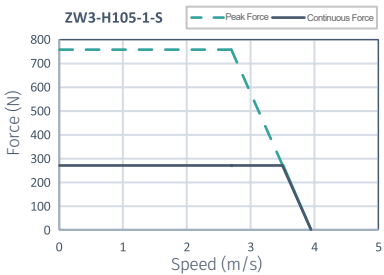
ZW3-H105 Specification



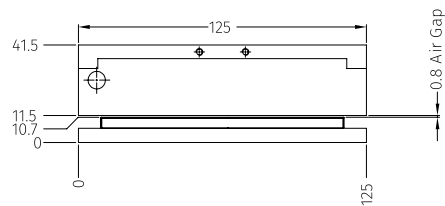
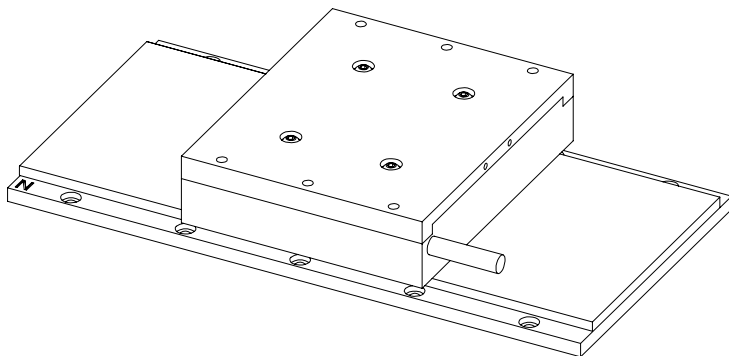
Parameters

Model	Unit	ZW3-H105-1	ZW3-H105-2	ZW3-H105-3		
Winging Code		S	S	P	S	T
Performance Parameters						
Peak Force	N	759	1518	1518	2277	2277
Continuous Force	N	273	546	546	819	819
Peak Power	W	2049	1518	3947	1025	6034
Continuous Power	W	956	901	1966	819	2867
Attraction Force	N	1221	2442	2442	3663	3663
Electrical Parameters						
Peak current	Arms	10.28	10.28	20.56	10.28	30.84
Continuous current	Arms	3.38	3.38	6.76	3.38	10.14
Force Constant	N/Arms	79.59	159.18	79.59	238.77	79.59
Back EMF Constant	Vpeak/(m/s)	70.25	140.50	70.25	210.75	70.25
Resistance	Ohms	5.8	11.4	2.9	16.9	1.9
Inductance	mH	31.46	63.14	15.73	93.55	10.38
Time Constant	ms	5.47	5.52	5.46	5.53	5.55
Motor Constant	N/Sqrt(W)	27.50	33.89	33.89	47.64	47.64
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	105	193	193	280	280
Coil Mass	Kg	2	4.3	4.3	5.9	5.9
Track Mass	Kg/m	8.9	8.9	8.9	8.9	8.9
Magnetic Period	mm	25	25	25	25	25

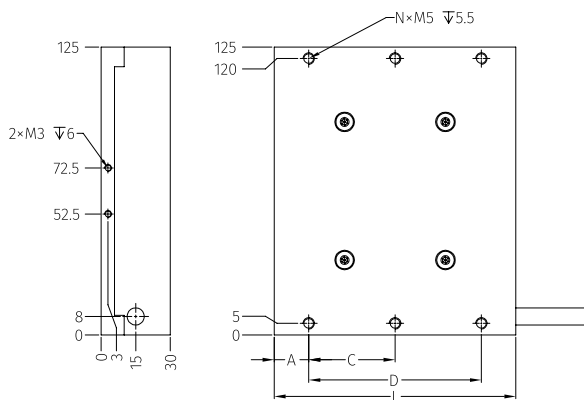
Force-Speed Curve @310V



Dimension

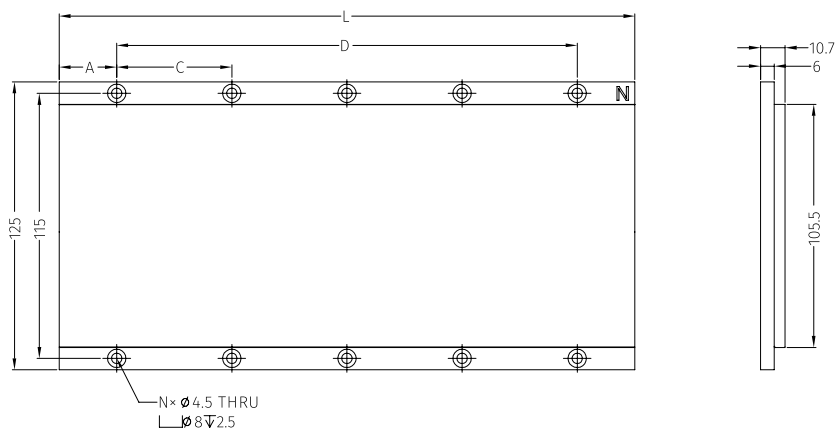


Coil size



Dimension	ZW3-H105-1	ZW3-H105-2	ZW3-H105-3
A	15	16.5	20
C	37.5	40	40
D	75	160	240
L	105	193	280
N	6	10	14

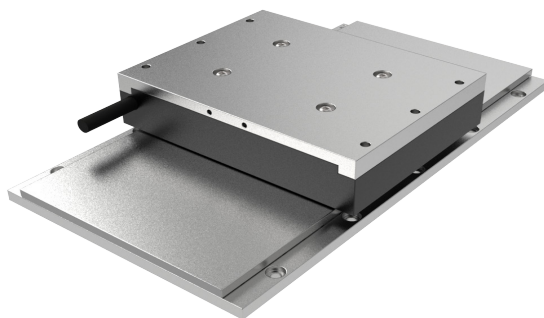
Track size



Dimension	ZW3-H105-150MNS	ZW3-H105-200MNS	ZW3-H105-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

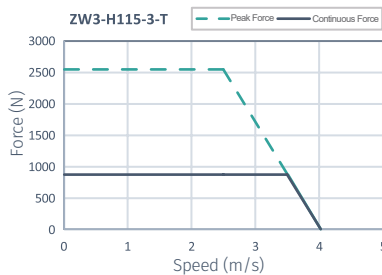
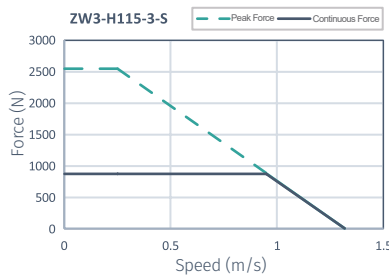
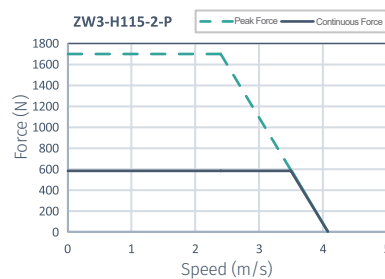
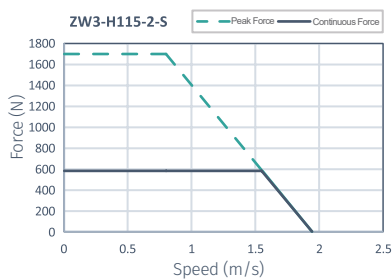
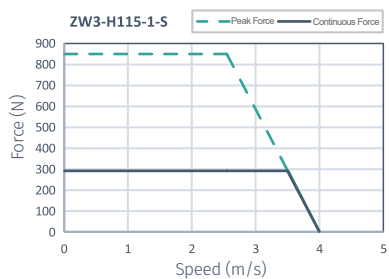
ZW3-H115 Specification



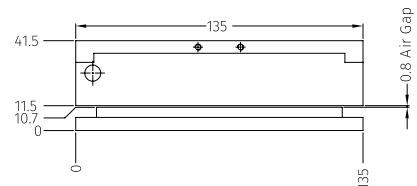
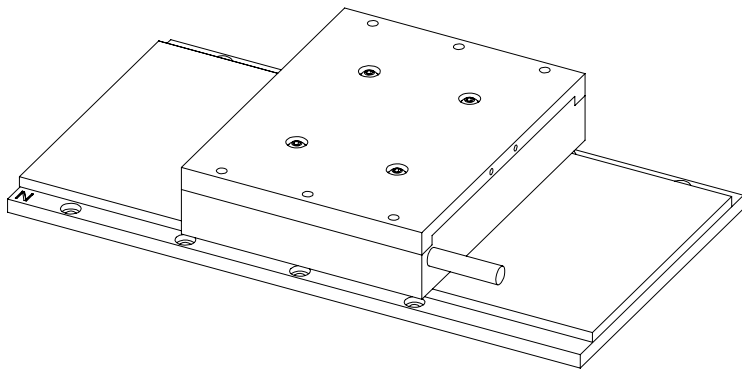
Parameters

Model	Unit	ZW3-H115-1	ZW3-H115-2	ZW3-H115-3		
Winging Code		S	S	P	S	T
Performance Parameters						
Peak Force	N	851	1702	1705	2553	2553
Continuous Force	N	294	588	588	882	882
Peak Power	W	2170	1362	4085	638	6383
Continuous Power	W	1029	911	2058	838	3087
Attraction Force	N	1741	3482	3482	5223	5223
Electrical Parameters						
Peak current	Arms	10.3	10.3	20.62	10.3	30.93
Continuous current	Arms	3.38	3.38	6.67	3.38	10.14
Force Constant	N/Arms	80.77	161.54	80.77	242.31	80.77
Back EMF Constant	Vpeak/(m/s)	70.25	140.52	70.26	210.78	70.26
Resistance	Ohms	6.9	13.8	3.5	20.7	2.0
Inductance	mH	34.8	69.6	17.4	104.4	11.5
Time Constant	ms	5.04	5.04	5.04	5.04	5.56
Motor Constant	N/Sqrt(W)	27.04	38.24	38.24	46.83	46.83
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	105	193	193	280	280
Coil Mass	Kg	2	4.3	4.3	5.9	5.9
Track Mass	Kg/m	8.9	8.9	8.9	8.9	8.9
Magnetic Period	mm	25	25	25	25	25

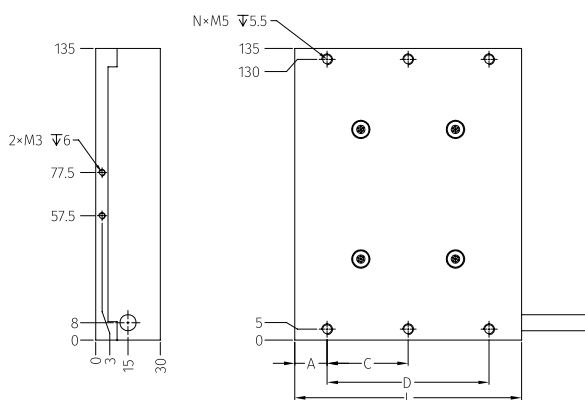
Force-Speed Curve @310V



Dimension

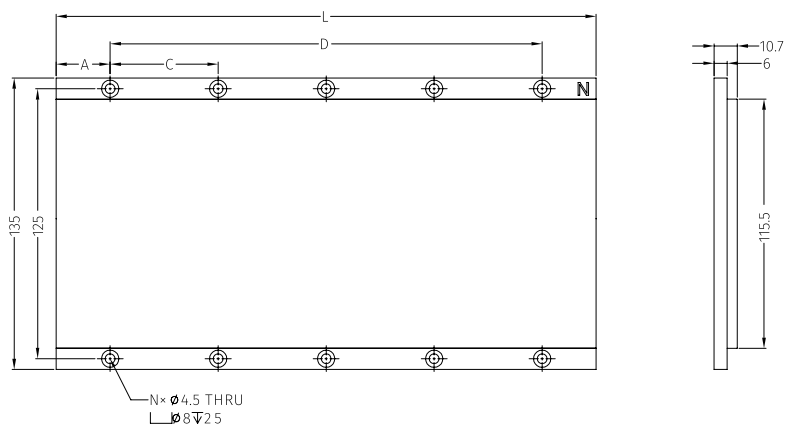


Coil size



Dimension	ZW3-H115-1	ZW3-H115-2	ZW3-H115-3
A	15	16.5	20
C	37.5	40	40
D	75	160	240
L	105	193	280
N	6	10	14

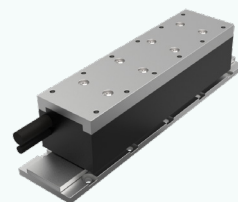
Track size



Dimension	ZW3-H115-150MNS	ZW3-H115-200MNS	ZW3-H115-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

ZW3A Series Products

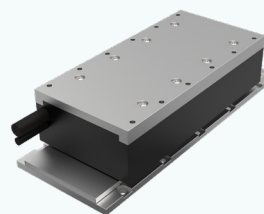
- ZW3 series thickened model
- Iron core technology, Low cogging force
- High continuous force and peak force
- Hall sensor is optional
- High motor constant
- Continuous Force: 238 N to 1005 N
- Peak Force: 541 N to 2250 N



ZW3A-H35



ZW3A-H55



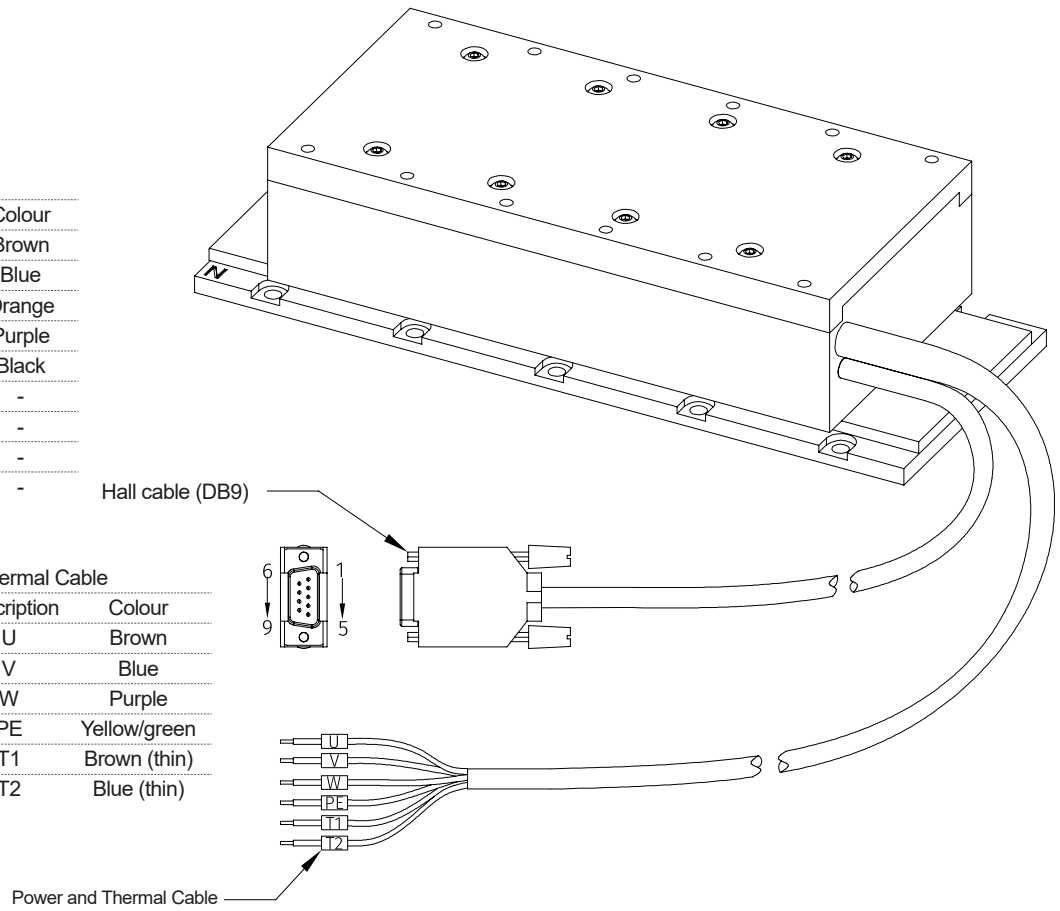
ZW3A-H75

Iron Core Linear Motor

ZW3A motor wiring diagram

Hall cable (DB9)		
Pin.	Description	Colour
1	5V	Brown
2	0V	Blue
3	A	Orange
4	B	Purple
5	C	Black
6	-	-
7	-	-
8	-	-
9	-	-

Power and Thermal Cable		
Pin.	Description	Colour
Terminal pressing	U	Brown
Terminal pressing	V	Blue
Terminal pressing	W	Purple
Terminal pressing	PE	Yellow/green
Terminal pressing	T1	Brown (thin)
Terminal pressing	T2	Blue (thin)



Iron Core Linear Motor

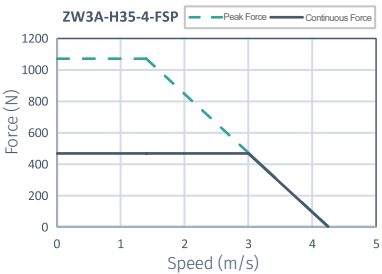
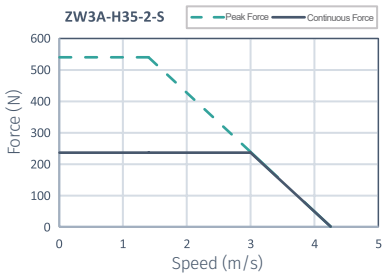
ZW3A-H35 Specification



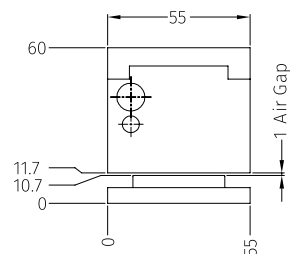
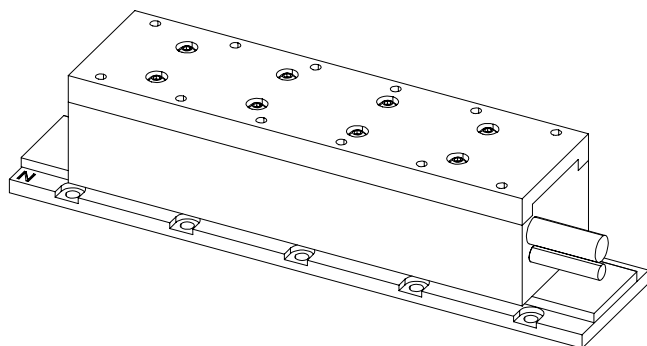
Parameters

Model	Unit	ZW3A-H35-2	ZW3A-H35-4
Winding Code		S	FSP
Performance Parameters			
Peak Force	N	541	1073
Continuous Force	N	238	471
Peak Power	W	757	1502
Continuous Power	W	714	1413
Attraction Force	N	846	1691
Electrical Parameters			
Peak current	Arms	8.93	17.7
Continuous current	Arms	2.79	5.53
Force Constant	N/Arms	85.19	85.19
Back EMF Constant	Vpeak/(m/s)	73.18	73.31
Resistance	Ohms	8.4	3.8
Inductance	mH	110.24	51.56
Time Constant	ms	13.17	13.01
Motor Constant	N/Sqrt(W)	24.04	34.16
Max. Coil Temperature	°C	130	130
Max. Bus Voltage	VDC	310	310
Mechanical Parameters			
Coil Length	mm	198	380
Coil Mass	Kg	2.7	4.3
Track Mass	Kg/m	3.6	3.6
Magnetic Period	mm	25	25

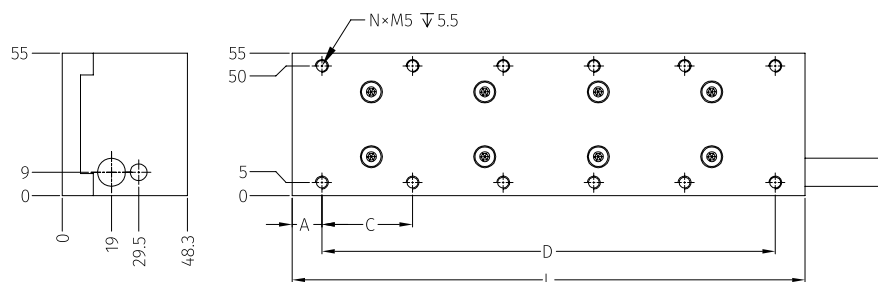
Force-Speed Curve @310V



Dimension

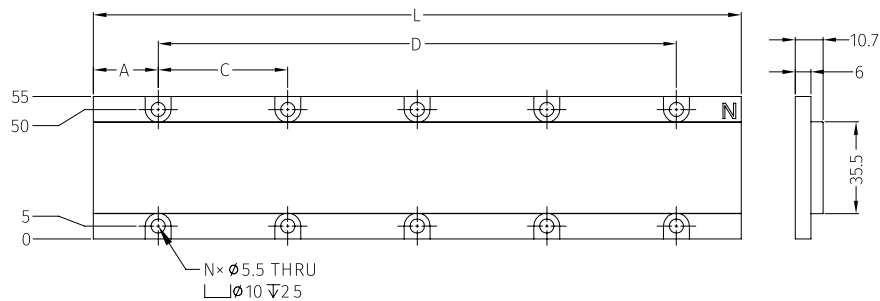


Coil size



Dimension	ZW3A-H35-2	ZW3A-H35-4
A	11.5	15
C	35	35
D	175	350
L	198	380
N	12	22

Track size



Dimension	ZW3A-H35-150MNS	ZW3A-H35-200MNS	ZW3A-H35-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

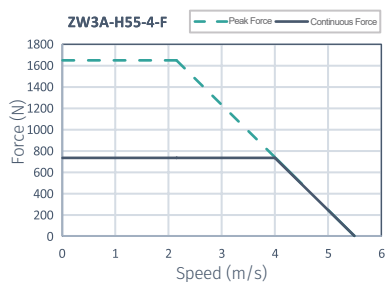
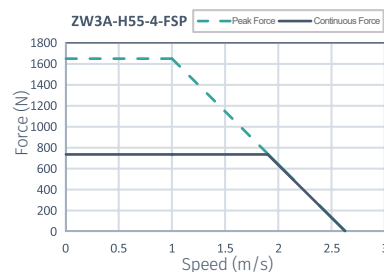
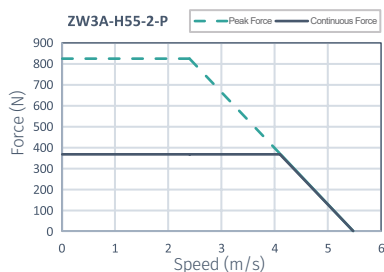
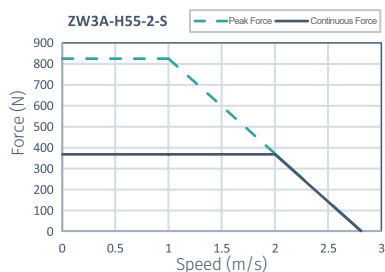
ZW3A-H55 Specification



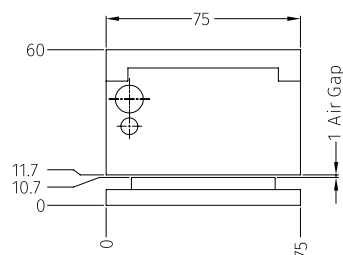
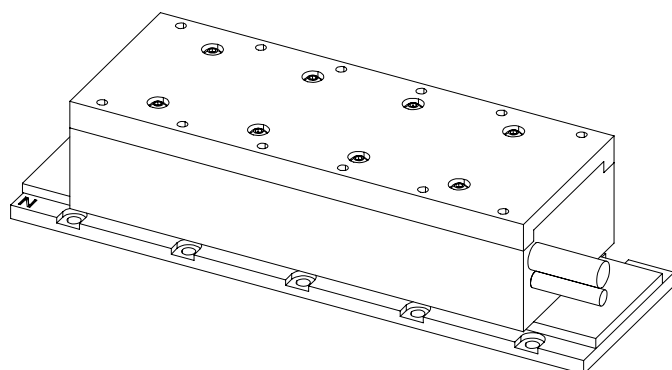
Parameters

Model	Unit	ZW3A-H55-2		ZW3A-H55-4	
Winging Code		S	P	FSP	F
Performance Parameters					
Peak Force	N	826	826	1652	1652
Continuous Force	N	370	370	739	739
Peak Power	W	826	1982	1652	3552
Continuous Power	W	740	1517	1404	2956
Attraction Force	N	1329	1329	2658	2658
Electrical Parameters					
Peak current	Arms	8.67	17.34	17.33	34.66
Continuous current	Arms	2.77	5.54	5.52	11.04
Force Constant	N/Arms	135.57	67.79	133.88	66.94
Back EMF Constant	Vpeak/(m/s)	115.00	57.50	115.20	57.60
Resistance	Ohms	10.0	2.5	5.2	1.3
Inductance	mH	144.15	36.04	74.75	18.6875
Time Constant	ms	12.69	12.69	10.56	10.56
Motor Constant	N/Sqrt(W)	28.74	28.74	40.74	40.74
Max. Coil Temperature	°C	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310
Mechanical Parameters					
Coil Length	mm	198	198	380	380
Coil Mass	Kg	3.8	3.8	6.5	6.5
Track Mass	Kg/m	5.1	5.1	5.1	5.1
Magnetic Period	mm	25	25	25	25

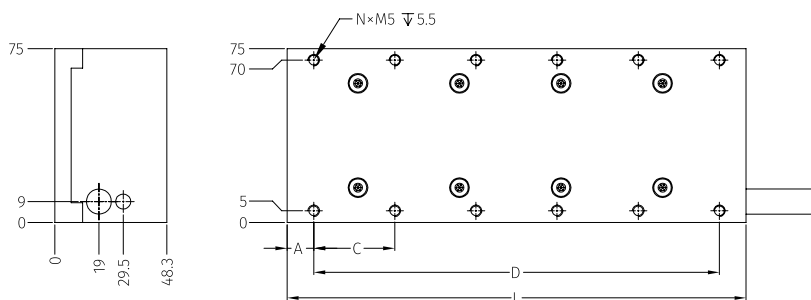
Force-Speed Curve@310V



Dimension

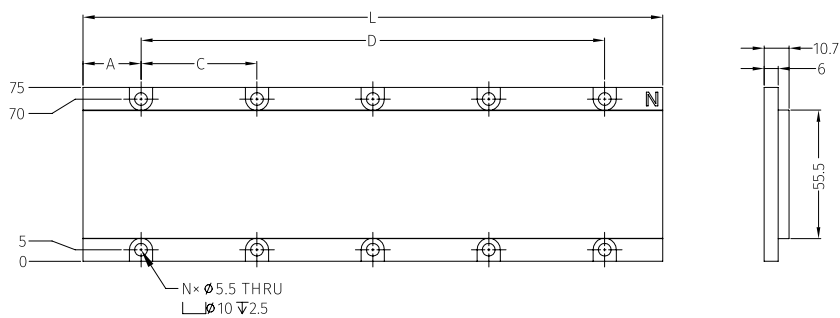


Coil size



Dimension	ZW3A-H55-2	ZW3A-H55-4
A	11.5	15
C	35	35
D	175	350
L	198	380
N	12	22

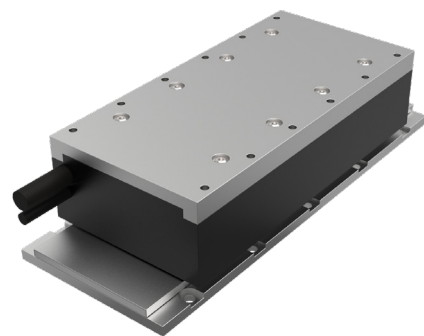
Track size



Dimension	ZW3A-H55-150MNS	ZW3A-H55-200MNS	ZW3A-H55-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

Iron Core Linear Motor

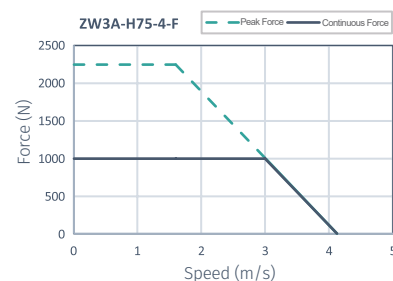
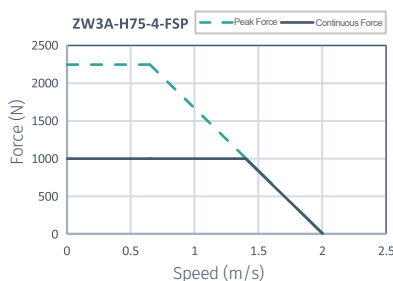
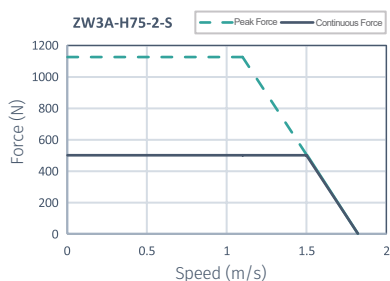
ZW3A-H75 Specification



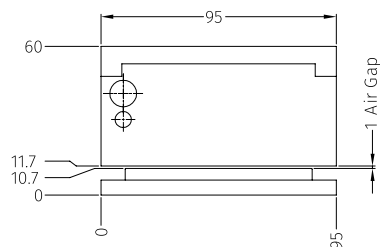
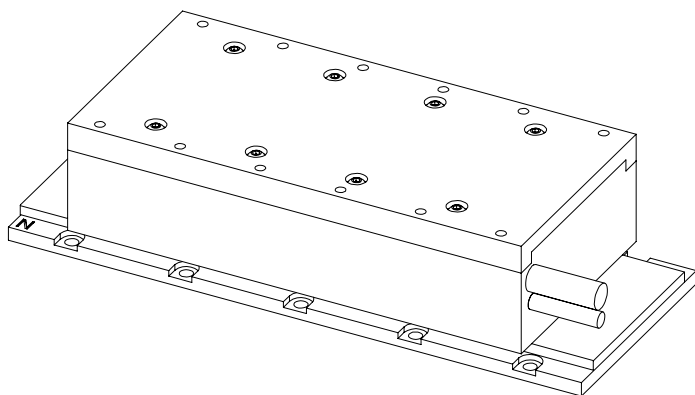
Parameters

Model	Unit	ZW3A-H75-2	ZW3A-H75-4
Winging Code		S	FSP
			F
Performance Parameters			
Peak Force	N	1128	2250
Continuous Force	N	504	1005
Peak Power	W	1241	1463
Continuous Power	W	756	1407
Attraction Force	N	1812	3625
Electrical Parameters			
Peak current	Arms	8.67	17.33
Continuous current	Arms	2.77	5.52
Force Constant	N/Arms	182.14	182.15
Back EMF Constant	Vpeak/(m/s)	157.64	157.09
Resistance	Ohms	7.3	7.4
Inductance	mH	104.4	93.46
Time Constant	ms	12.69	12.69
Motor Constant	N/Sqrt(W)	33.57	33.57
Max. Coil Temperature	°C	130	130
Max. Bus Voltage	VDC	310	310
Mechanical Parameters			
Coil Length	mm	198	380
Coil Mass	Kg	5.1	8.4
Track Mass	Kg/m	6.6	6.6
Magnetic Period	mm	25	25

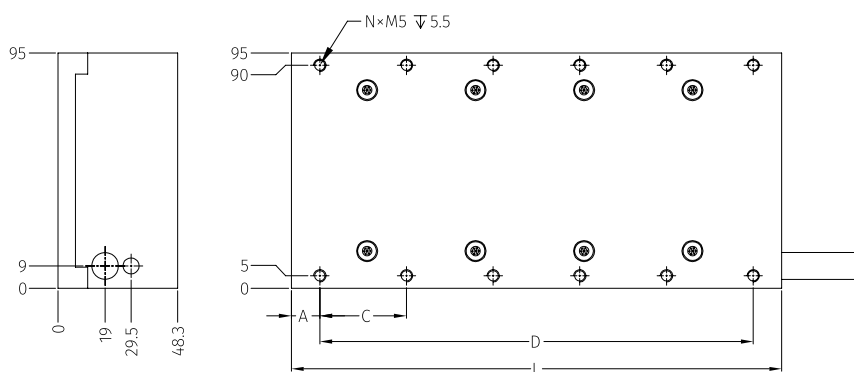
Force-Speed Curve @310V



Dimension

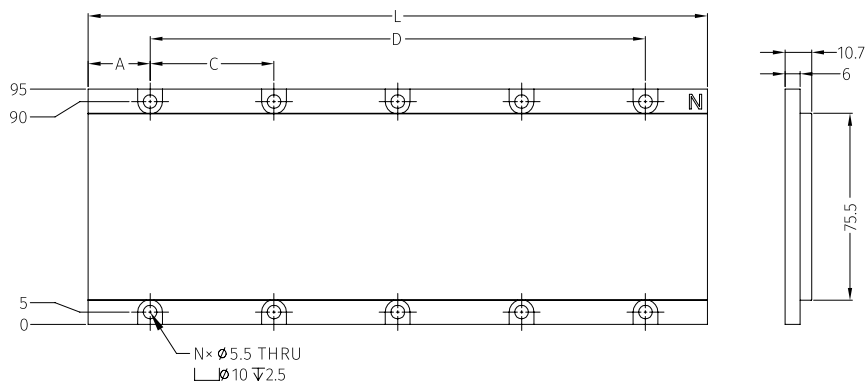


Coil size



Dimension	ZW3A-H75-2	ZW3A-H75-4
A	11.5	15
C	35	35
D	175	350
L	198	380
N	12	22

Track size



Dimension	ZW3A-H75-150MNS	ZW3A-H75-200MNS	ZW3A-H75-250MNS
A	25	25	25
C	50	50	50
D	100	150	200
L	150	200	250
N	6	8	10

ZW8 Series Products

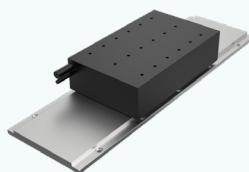
- Iron core technology, Low cogging force
- High continuous force and peak force
- High motor constant
- Length of coils are optional
- Continuous Force: 119.4 N to 6368 N
- Peak Force: 253.5 N to 13520 N



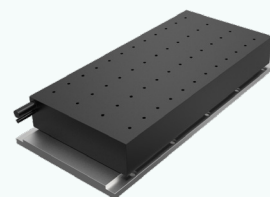
ZW8-H30



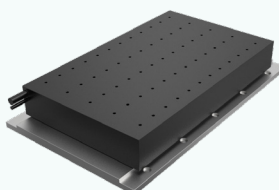
ZW8-H50



ZW8-H100



ZW8-H150



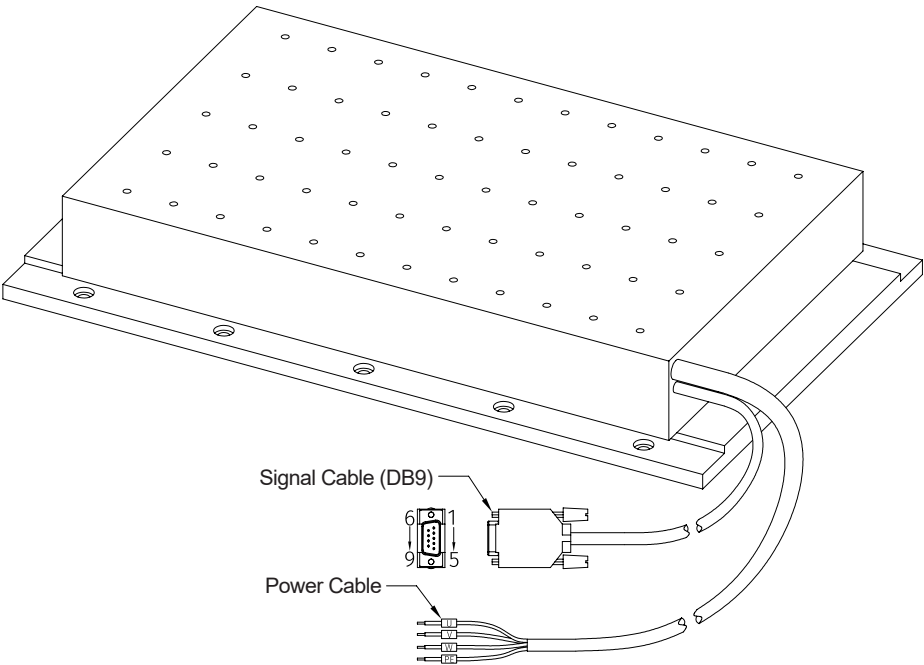
ZW8-H200

Iron Core Linear Motor

ZW8 motor wiring diagram

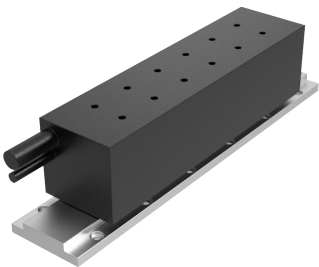
Signal Cable (DB9)		
Pin.	Description	Colour
1	5V	Brown
2	0V	Blue
3	A	Orange
4	B	Purple
5	C	Black
6	T1	Red
7	T2	White
8	-	-
9	-	-

Power Cable		
Pin.	Description	Colour
1	U	Brown
2	V	Blue
3	W	Purple
4	PE	Yellow/green



Iron Core Linear Motor

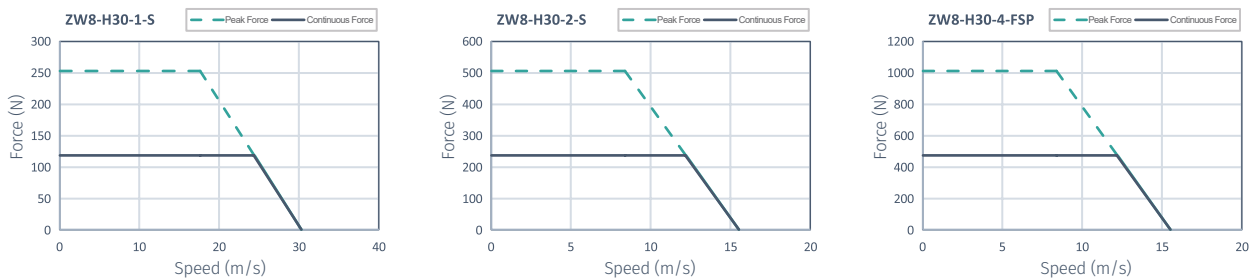
ZW8-H30 Specification



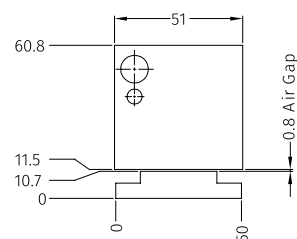
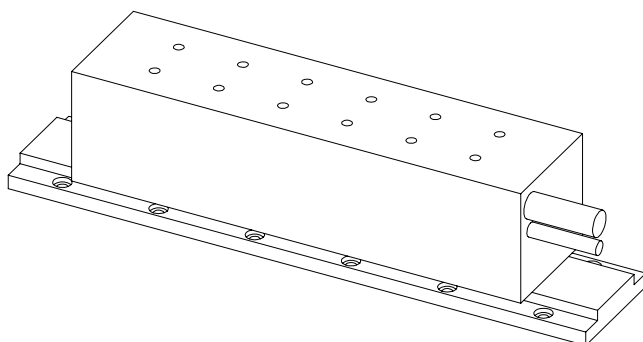
Parameters

Model	Unit	ZW8-H30-1	ZW8-H30-2	ZW8-H30-4
Winding Code		S	S	FSP
Performance Parameters				
Peak Force	N	253.5	507	1014
Continuous Force	N	119.4	238.8	477.6
Peak Power	W	4472	4259	8518
Continuous Power	W	2909	2909	5817
Attraction Force	N	390	780	1560
Electrical Parameters				
Peak current	Arms	14.52	14.52	29.04
Continuous current	Arms	4.84	4.84	9.68
Force Constant	N/Arms	24.67	49.34	49.34
Back EMF Constant	Vpeak/(m/s)	20.31	40.63	40.63
Resistance	Ohms	0.9	1.7	0.9
Inductance	mH	19.8	39.6	19.8
Time Constant	ms	23.02	23.02	23.02
Motor Constant	N/Sqrt(W)	21.72	30.72	42.44
Max. Coil Temperature	°C	130	130	130
Max. Bus Voltage	VDC	600	600	600
Mechanical Parameters				
Coil Length	mm	112	196	364
Coil Mass	Kg	1.5	2.7	5.1
Track Mass	Kg/m	2.5	2.5	2.5
Magnetic Period	mm	42	42	42

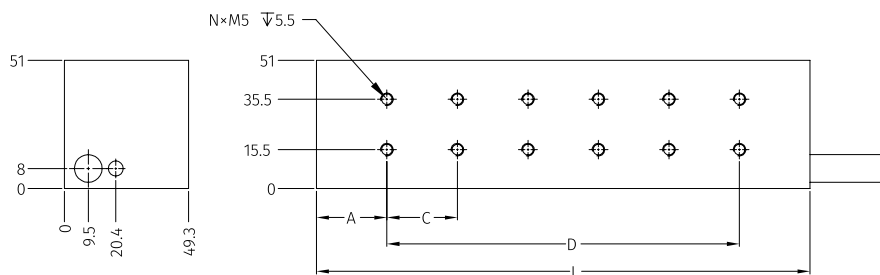
Force-Speed Curve @600V



Dimension

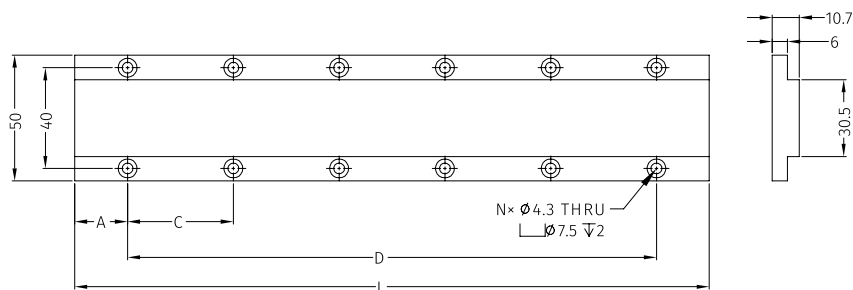


Coil size



Dimension	ZW8-H30-1	ZW8-H30-2	ZW8-H30-4
A	28	28	28
C	28	28	28
D	56	140	308
L	112	196	364
N	6	12	24

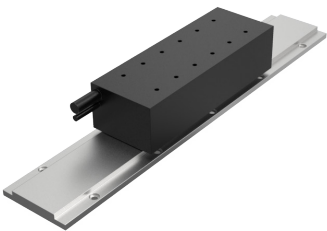
Track size



Dimension	ZW8-H30-168MNS	ZW8-H30-252MNS	ZW8-H30-420MNS
A	21	21	21
C	42	42	42
D	126	210	378
L	168	252	420
N	8	12	20

Iron Core Linear Motor

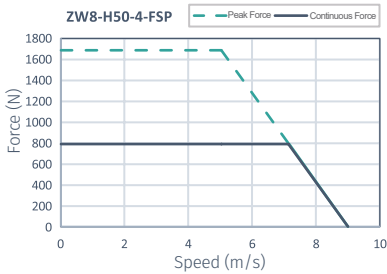
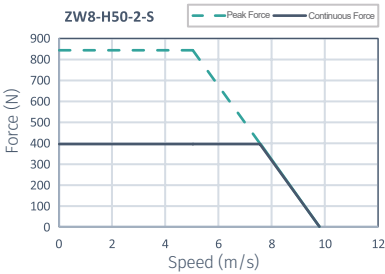
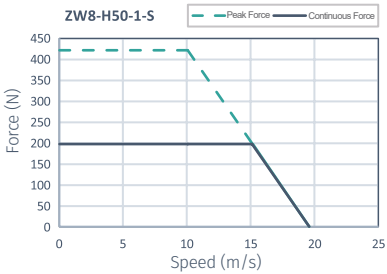
ZW8-H50 Specification



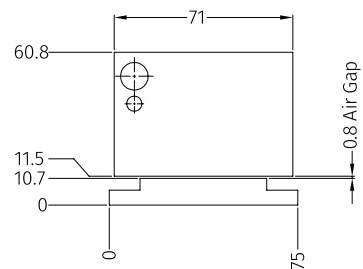
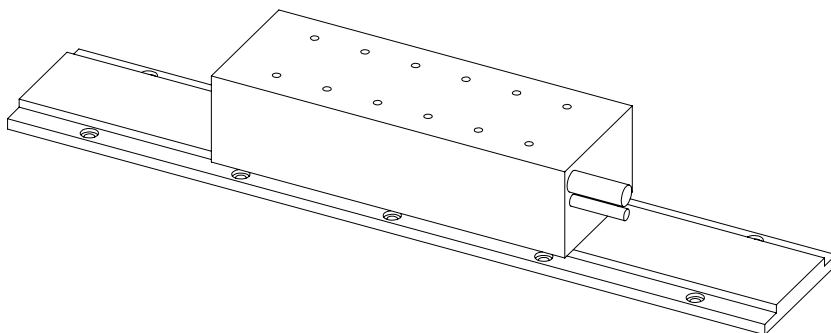
Parameters

Model	Unit	ZW8-H50-1	ZW8-H50-2	ZW8-H50-4
Winding Code		S	S	FSP
Performance Parameters				
Peak Force	N	422.5	845	1690
Continuous Force	N	199	398	796
Peak Power	W	4259	4259	8518
Continuous Power	W	3009	3009	5683
Attraction Force	N	650	1300	2600
Electrical Parameters				
Peak current	Arms	14.52	14.52	29.04
Continuous current	Arms	4.84	4.84	9.68
Force Constant	N/Arms	41.12	82.23	82.23
Back EMF Constant	Vpeak/(m/s)	33.86	67.71	67.71
Resistance	Ohms	1.3	2.5	1.3
Inductance	mH	33	66	33
Time Constant	ms	25.98	25.98	25.98
Motor Constant	N/Sqrt(W)	29.79	42.13	59.58
Max. Coil Temperature	°C	130	130	130
Max. Bus Voltage	VDC	600	600	600
Mechanical Parameters				
Coil Length	mm	112	196	364
Coil Mass	Kg	2.2	4.1	7.9
Track Mass	Kg/m	4.7	4.7	4.7
Magnetic Period	mm	42	42	42

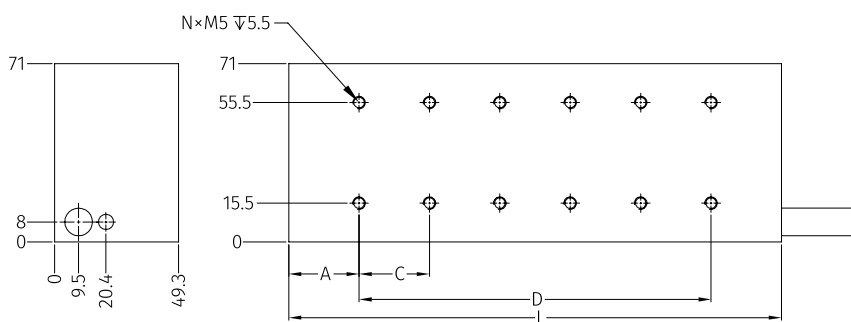
Force-Speed Curve @600V



Dimension

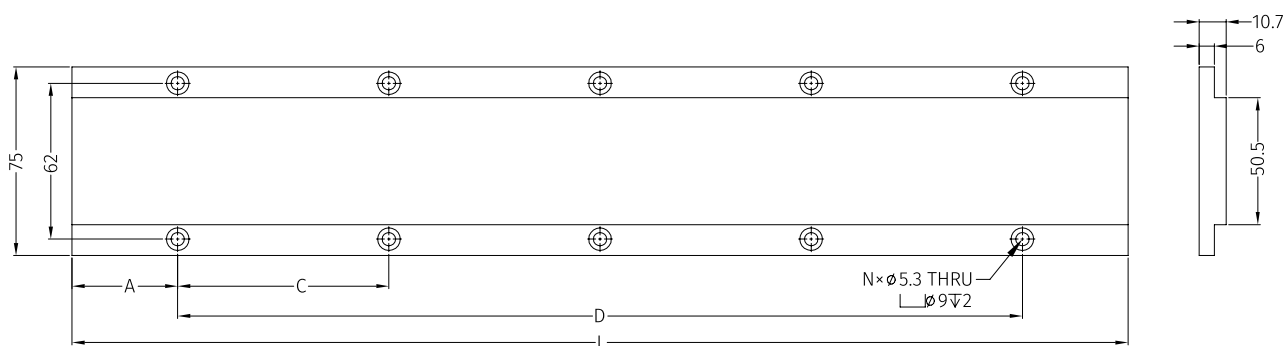


Coil size



Dimension	ZW8-H50-1	ZW8-H50-2	ZW8-H50-4
A	28	28	28
C	28	28	28
D	56	140	308
L	112	196	364
N	6	12	24

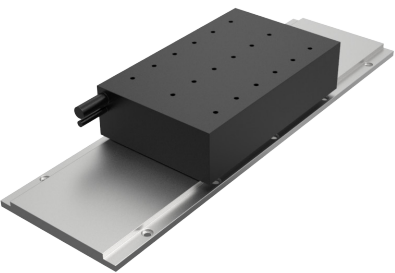
Track size



Dimension	ZW8-H50-168MNS	ZW8-H50-252MNS	ZW8-H50-420MNS
A	21	21	21
C	42	42	42
D	126	210	378
L	168	252	420
N	8	12	20

Iron Core Linear Motor

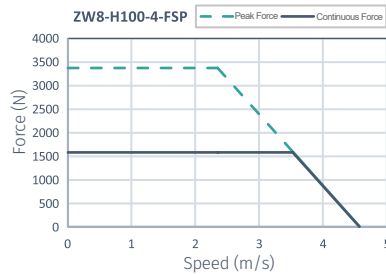
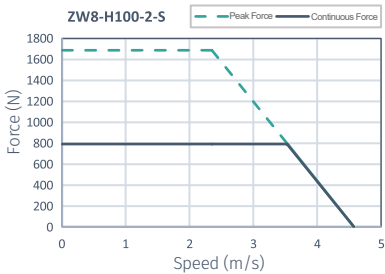
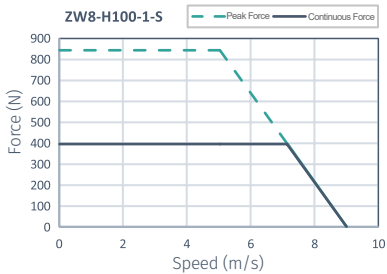
ZW8-H100 Specification



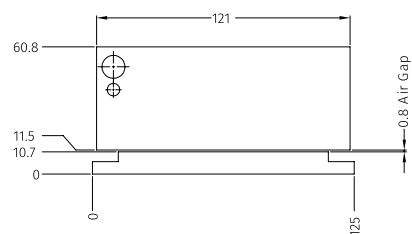
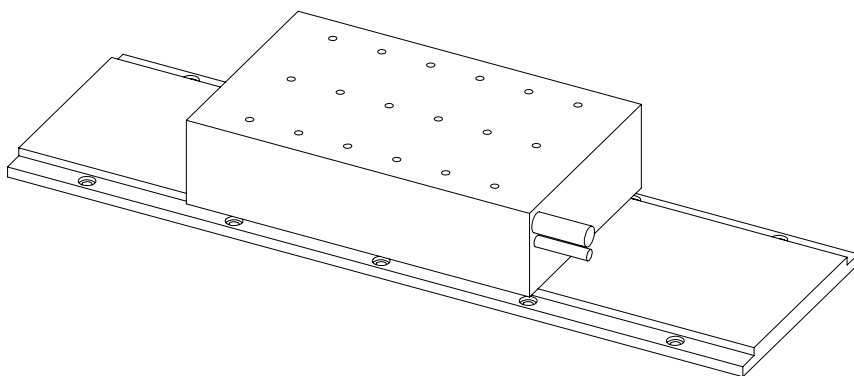
Parameters

Model	Unit	ZW8-H100-1	ZW8-H100-2	ZW8-H100-4
Winging Code		S	S	FSP
Performance Parameters				
Peak Force	N	845	1690	3380
Continuous Force	N	398	796	1592
Peak Power	W	4259	3975	7950
Continuous Power	W	2842	2808	5617
Attraction Force	N	1300	2600	5200
Electrical Parameters				
Peak current	Arms	14.52	14.52	29.04
Continuous current	Arms	4.84	4.84	9.68
Force Constant	N/Arms	82.23	164.46	164.46
Back EMF Constant	Vpeak/(m/s)	67.71	135.43	135.43
Resistance	Ohms	2.3	4.6	2.3
Inductance	mH	66	132	66
Time Constant	ms	28.70	28.70	28.70
Motor Constant	N/Sqrt(W)	44.27	62.61	88.54
Max. Coil Temperature	°C	130	130	130
Max. Bus Voltage	VDC	600	600	600
Mechanical Parameters				
Coil Length	mm	112	196	364
Coil Mass	Kg	4	7	13.5
Track Mass	Kg/m	8.5	8.5	8.5
Magnetic Period	mm	42	42	42

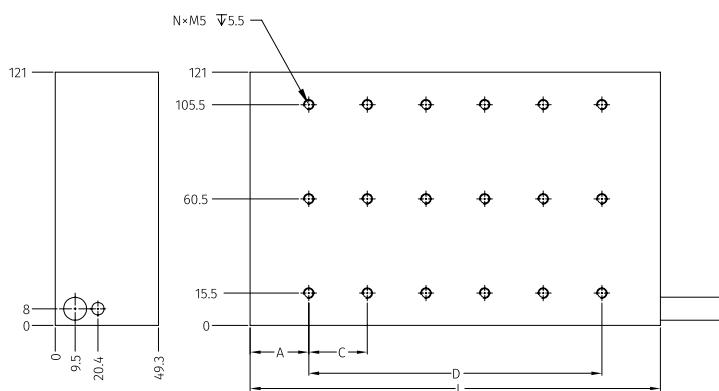
Force-Speed Curve @600V



Dimension

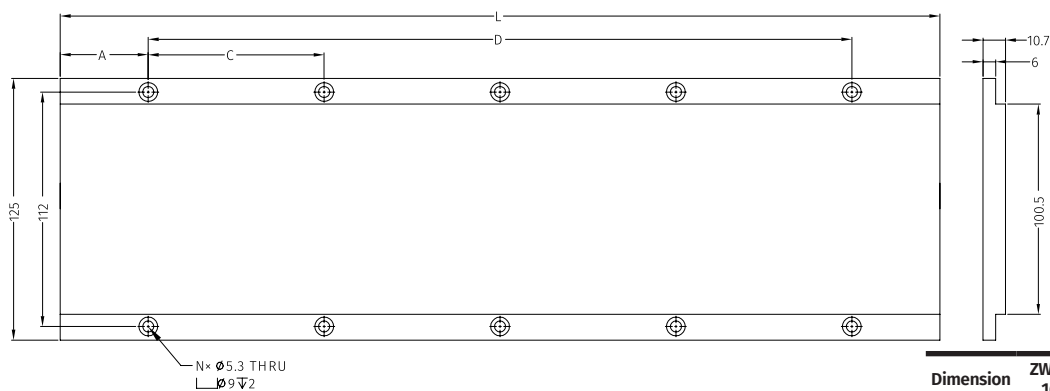


Coil size



Dimension	ZW8-H100-1	ZW8-H100-2	ZW8-H100-4
A	28	28	28
C	28	28	28
D	56	140	308
L	112	196	364
N	9	18	38

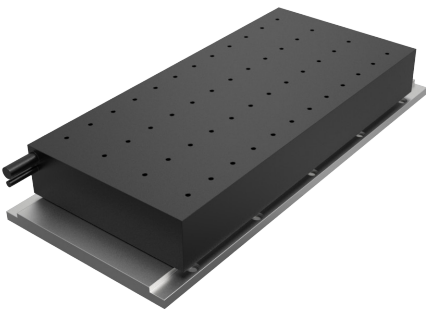
Track size



Dimension	ZW8-H100-168MNS	ZW8-H100-252MNS	ZW8-H100-420MNS
A	42	42	42
C	84	84	84
D	84	168	336
L	168	252	420
N	4	6	10

Iron Core Linear Motor

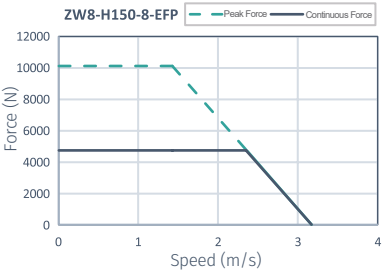
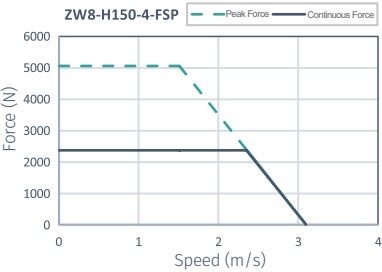
ZW8-H150 Specification



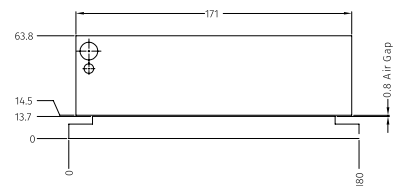
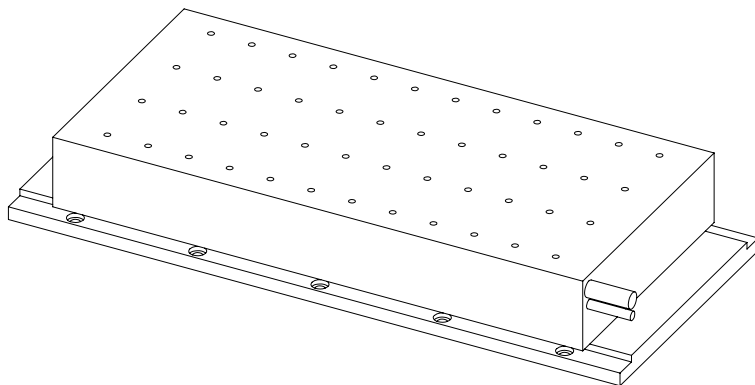
Parameters

Model	Unit	ZW8-H150-4	ZW8-H150-8
Winding Code		FSP	EFP
Performance Parameters			
Peak Force	N	5070	10140
Continuous Force	N	2388	4776
Peak Power	W	15210	14480
Continuous Power	W	7164	11233
Attraction Force	N	7800	15600
Electrical Parameters			
Peak current	Arms	29.04	58.08
Continuous current	Arms	9.68	19.36
Force Constant	N/Arms	246.69	246.69
Back EMF Constant	Vpeak/(m/s)	203.14	203.14
Resistance	Ohms	3.33	1.7
Inductance	mH	99	49.5
Time Constant	ms	29.73	29.73
Motor Constant	N/Sqrt(W)	110.38	156.10
Max. Coil Temperature	°C	130	130
Max. Bus Voltage	VDC	600	600
Mechanical Parameters			
Coil Length	mm	364	700
Coil Mass	Kg	20.2	39.4
Track Mass	Kg/m	15.1	15.1
Magnetic Period	mm	42	42

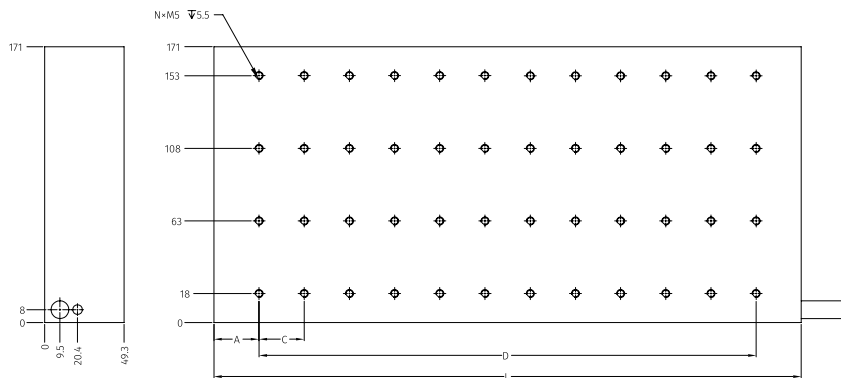
Force-Speed Curve @600V



Dimension

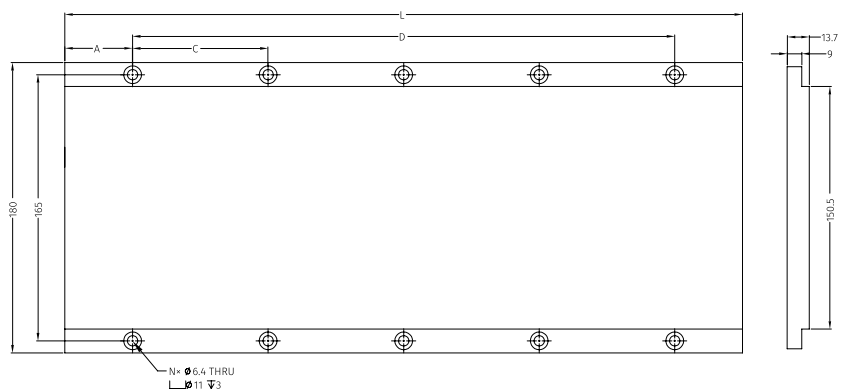


Coil size



Dimension	ZW8-H150-4	ZW8-H150-8
A	28	28
C	28	28
D	308	644
L	364	700
N	48	96

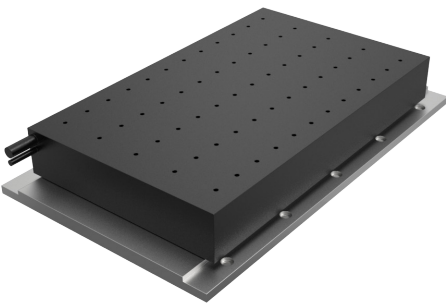
Track size



Dimension	ZW8-H150-168MNS	ZW8-H150-252MNS	ZW8-H150-420MNS
A	42	42	42
C	84	84	84
D	84	168	336
L	168	252	420
N	4	6	10

Iron Core Linear Motor

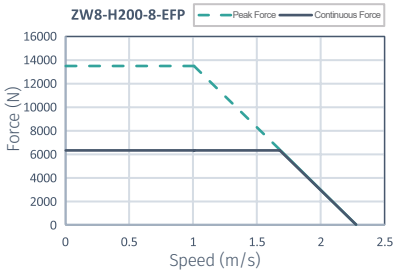
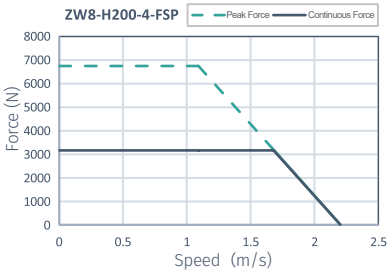
ZW8-H200 Specification



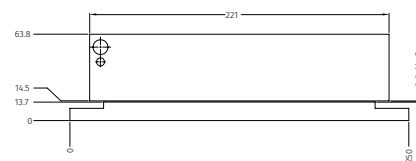
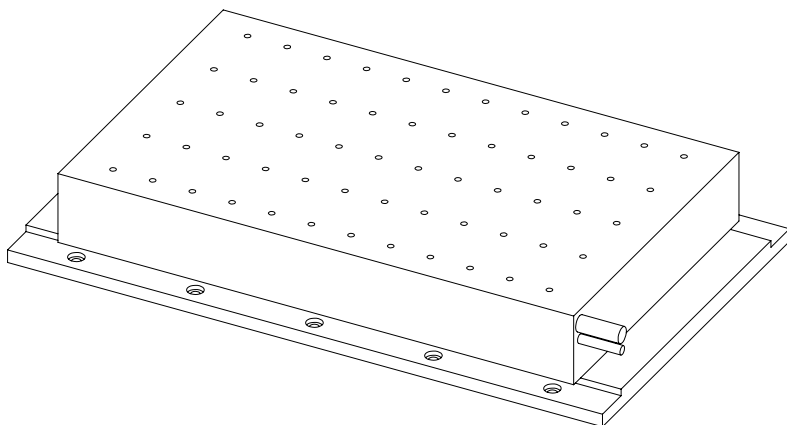
Parameters

Model	Unit	ZW8-H200-4	ZW8-H200-8
Winding Code		FSP	FFP
Performance Parameters			
Peak Force	N	6760	13520
Continuous Force	N	3184	6368
Peak Power	W	7382	13628
Continuous Power	W	5349	10698
Attraction Force	N	10400	20800
Electrical Parameters			
Peak current	Arms	29.04	58.08
Continuous current	Arms	9.68	19.36
Force Constant	N/Arms	328.93	328.93
Back EMF Constant	Vpeak/(m/s)	270.85	270.85
Resistance	Ohms	4.4	2.2
Inductance	mH	132	66
Time Constant	ms	30.28	30.28
Motor Constant	N/Sqrt(W)	128.62	181.90
Max. Coil Temperature	°C	130	130
Max. Bus Voltage	VDC	600	600
Mechanical Parameters			
Coil Length	mm	364	700
Coil Mass	Kg	26.5	51.6
Track Mass	Kg/m	22.3	22.3
Magnetic Period	mm	42	42

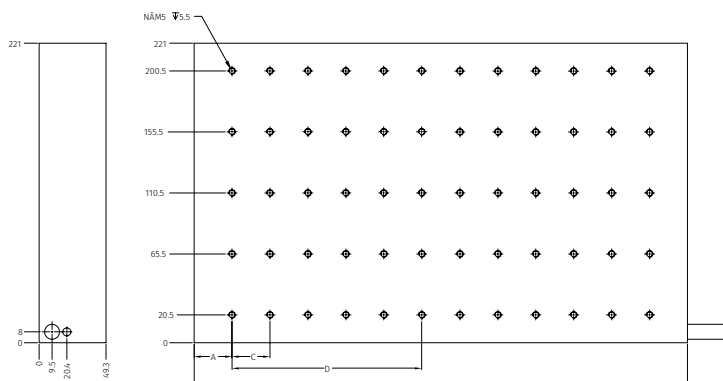
Force-Speed Curve @600V



Dimension

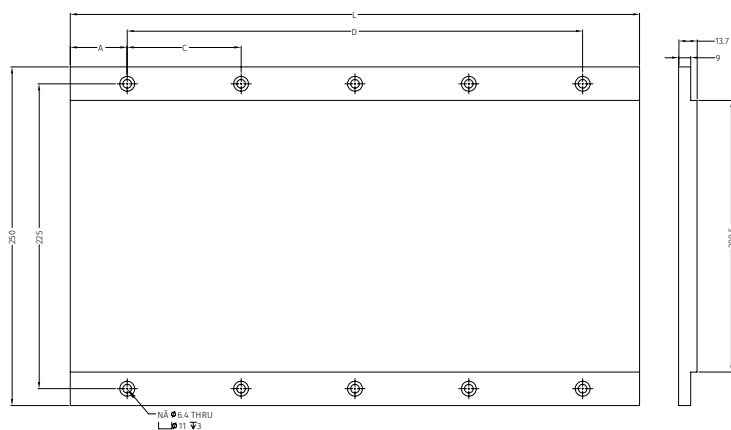


Coil size



Dimension	ZW8-H200-4	ZW8-H200-8
A	28	28
C	28	28
D	308	644
L	364	700
N	60	120

Track size



Dimension	ZW8-H200-168MNS	ZW8-H200-252MNS	ZW8-H200-420MNS
A	42	42	42
C	84	84	84
D	84	168	336
L	168	252	420
N	4	6	10

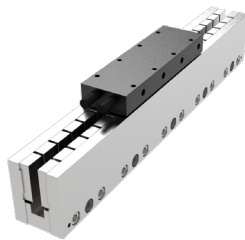
IRONLESS LINEAR MOTOR

Zhiwei ironless linear motor consists of motor coil and Magnet track. Zhiwei ironless linear motors provide unparalleled advantages and features to improve system performance and efficiency: high speed, high acceleration, low velocity ripple; low operation noise, superior stability, wear and tear free, maintenance free, and long travel stroke; High force and rigidity, high motor constant, high efficiency, low energy consumption, T-shaped motor coil, thin thickness.

The ironless linear motor adopts single-coil double-sided excitation structure, which improves the force and response time of the motor. Zero cogging force is conducive to more accurate positioning and smoother speed movement.

Ironless Linear Motor

- Zero attraction force
- The motor is preferred to be matched with aerostatic bearings
- The speed stability is better than 0.1%
- It is suitable for applications with small loads but require high motion speed and acceleration.
- 0.15°C/W Temperature rise is suppressed to 0.15°C/W
- Force fluctuation is less than 0.5%
- Optional: Forced air cooling
- Ironless technology
- Zero cogging force
- High continuous force and peak force
- Hall sensor is optional
- High motor constant
- Wide range of force



ZWU-30A



ZWU-30B

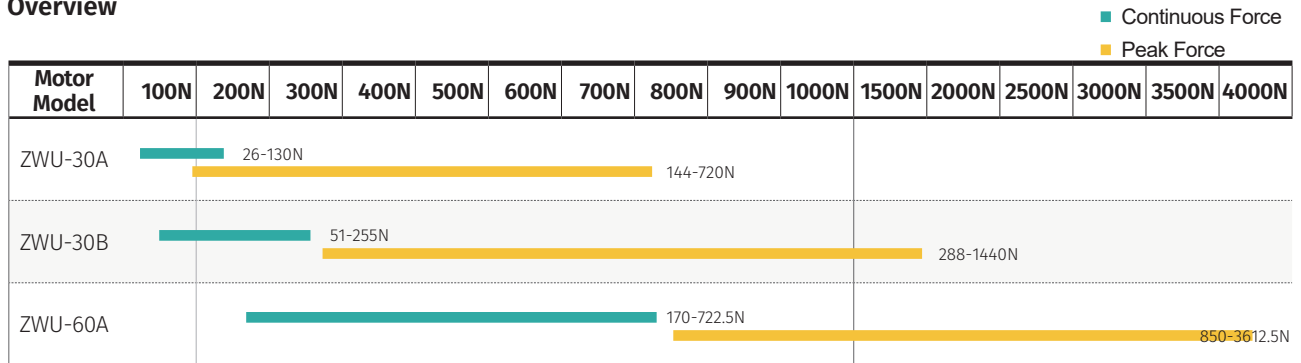


ZWU-60A

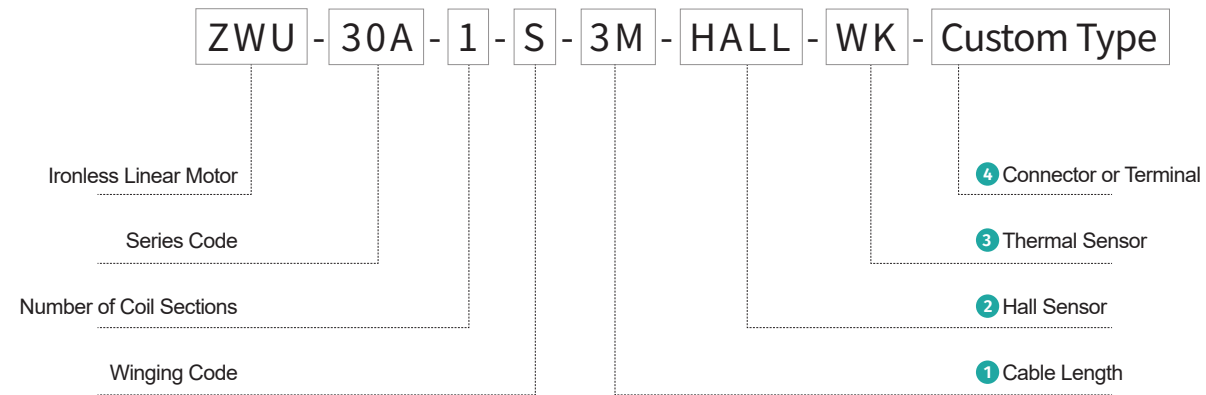
Applications

It is applied to wafer inspection system, SMT machine, inverted crystal packaging/solidification machine, welding machine, PCB testing machine, aerostatic bearings, three-dimensional measuring machine, optical equipment production, medical equipment, general automation system, precision 3D printing, LDI exposure machine (for IC carrier board, FPC, HDI board and multi-layer board digital imaging) ...

Overview



Motor Coil



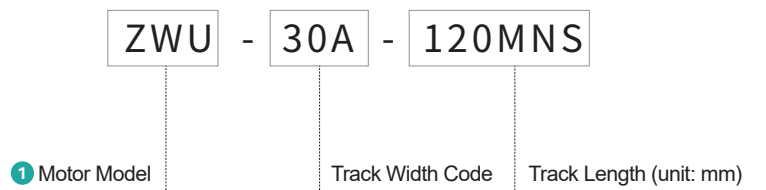
Code	Motor Model
0.5M	Standard 0.5 meters
3M	Standard 3 meters
Other	Specified in meters

Code	Hall Sensor
HALL	With
Blank	Without

Code	Thermal Sensor
WK	With
Blank	Without

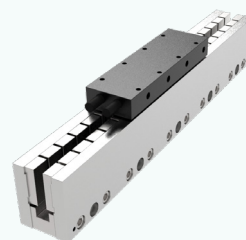
Custom Type
9W4 (With Thermal)
3W3 (Without Thermal)
GX Series
Tube terminal

Motor Track

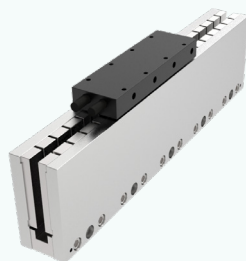


ZWU Series Products

- Ironless technology, zero cogging force
- High continuous force and peak force
- Hall sensor is optional
- Small size, high motor constant
- Wide range of force, complete range of specifications
- Continuous Force: 26 N to 850 N
- Peak Force: 144 N to 4250 N



ZWU-30A



ZWU-30B



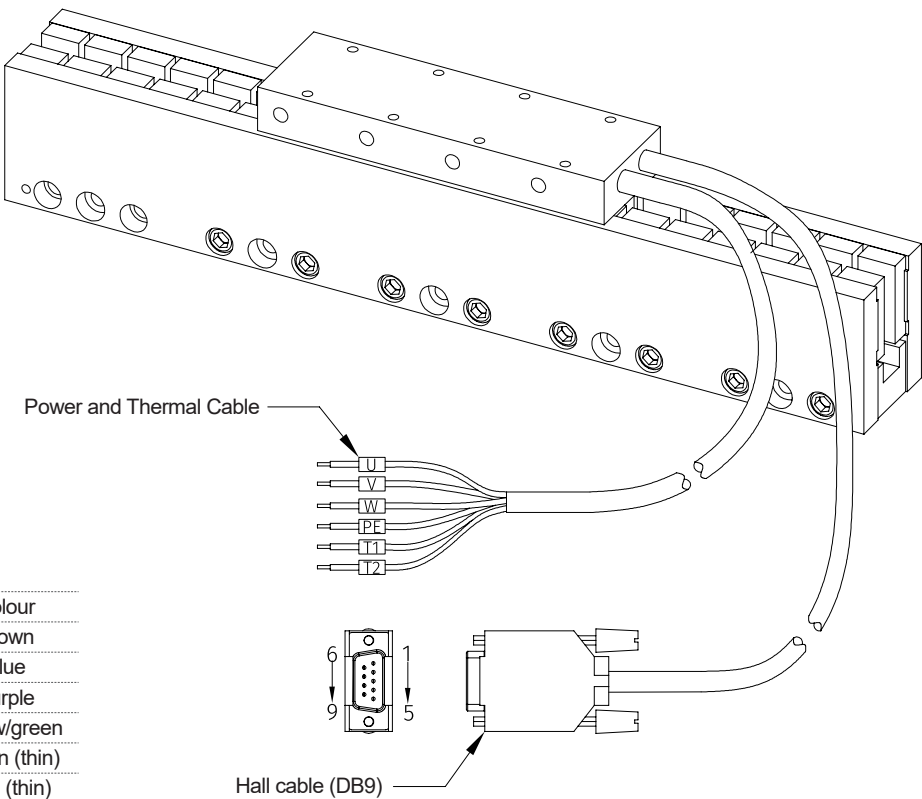
ZWU-60A

Ironless Linear Motor

ZWU motor wiring diagram

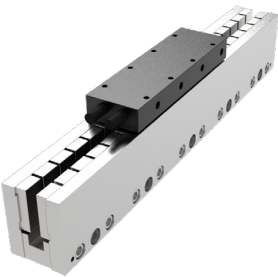
Hall cable (DB9)		
Pin.	Description	Colour
1	5V	Brown
2	0V	Blue
3	A	Orange
4	B	Purple
5	C	Black
6	-	-
7	-	-
8	-	-
9	-	-

Power and Thermal Cable		
Pin.	Description	Colour
Terminal pressing	U	Brown
Terminal pressing	V	Blue
Terminal pressing	W	Purple
Terminal pressing	PE	Yellow/green
Terminal pressing	T1	Brown (thin)
Terminal pressing	T2	Blue (thin)



Ironless Linear Motor

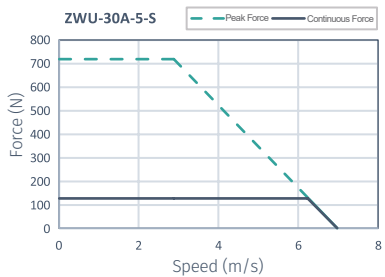
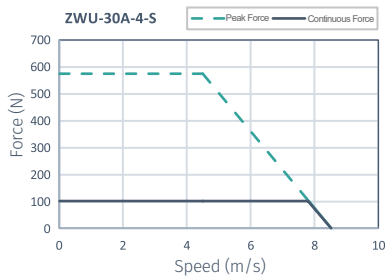
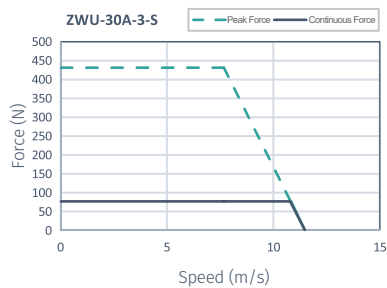
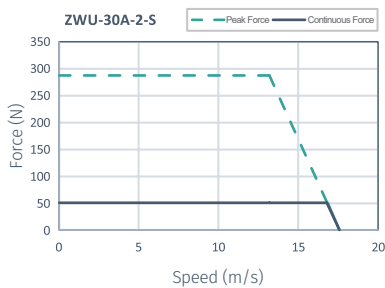
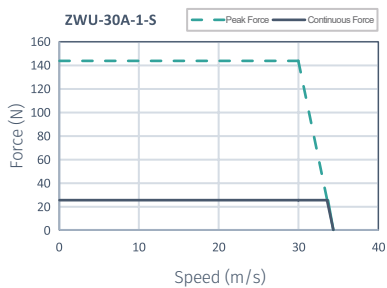
ZWU-30A Specification



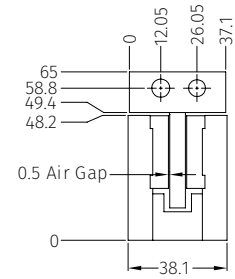
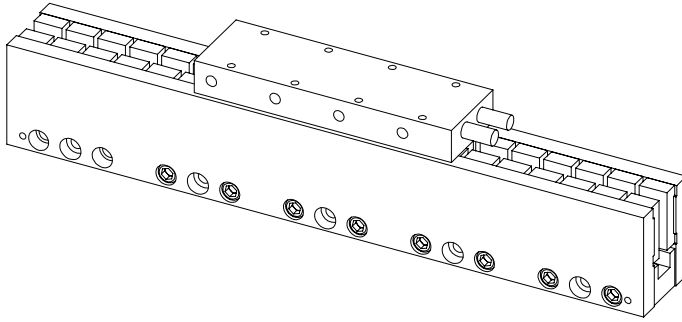
Parameters

Model	Unit	ZWU-30A-1	ZWU-30A-2	ZWU-30A-3	ZWU-30A-4	ZWU-30A-5
Winging Code		S	S	S	S	S
Performance Parameters						
Peak Force	N	144	288	432	576	720
Continuous Force	N	26	52	78	104	130
Peak Power	W	4320	3802	3318	2592	2074
Continuous Power	W	874	874	842	811	811
Attraction Force	N	0	0	0	0	0
Electrical Parameters						
Peak current	Arms	14.3	14.3	14.3	14.3	14.3
Continuous current	Arms	2.54	2.54	2.54	2.54	2.54
Force Constant	N/Arms	10.24	20.47	3.74	40.94	51.18
Back EMF Constant	Vpeak/(m/s)	8.00	16.00	24.00	32.00	40.00
Resistance	Ohms	2.0	4.2	6.4	8.0	11.3
Inductance	mH	0.763	1.57	2.52	3.4	2.65
Time Constant	ms	0.38	0.38	0.24	0.42	0.24
Motor Constant	N/Sqrt(W)	5.57	7.88	9.65	11.14	12.46
Max. Coil Temperature	°C	100	100	100	100	100
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	61	121	181	241	301
Coil Mass	Kg	0.15	0.3	0.45	0.6	0.75
Track Mass	Kg/m	11	11	11	11	11
Magnetic Period	mm	30	30	30	30	30

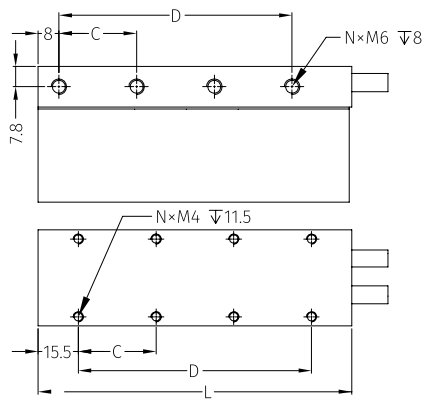
Force-Speed Curve @310V



Dimension

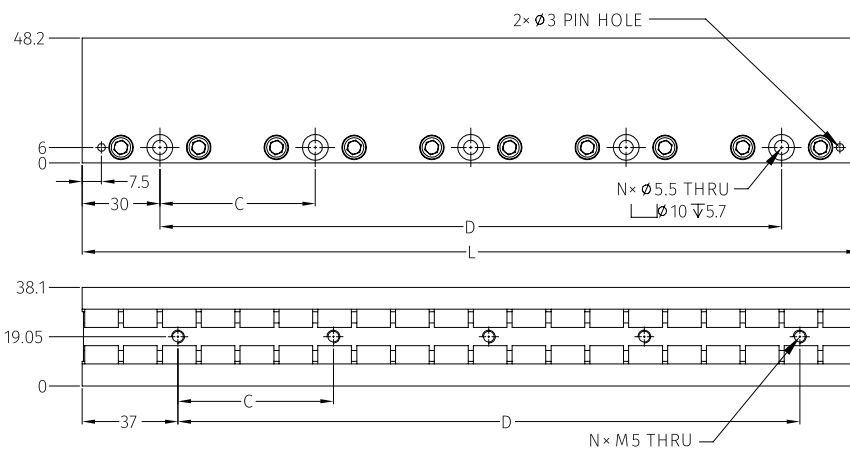


Coil size



Dimension	ZWU-30A-1	ZWU-30A-2	ZWU-30A-3	ZWU-30A-4	ZWU-30A-5
C	30	30	30	30	30
D	30	90	150	210	270
L	61	121	181	241	301
N	4	8	12	16	20

Track size



Dimension	ZWU-30A-120MNS	ZWU-30A-180MNS	ZWU-30A-240MNS	ZWU-30A-300MNS
C	60	60	60	60
D	60	120	180	240
L	120	180	240	300
N	2	3	4	5

Ironless Linear Motor

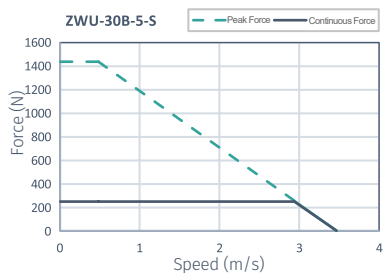
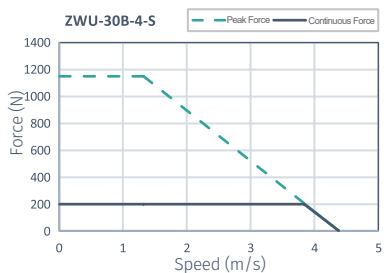
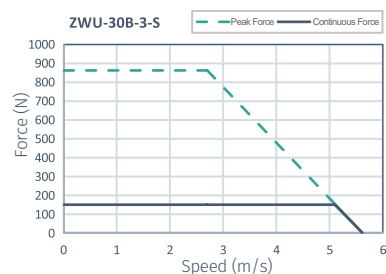
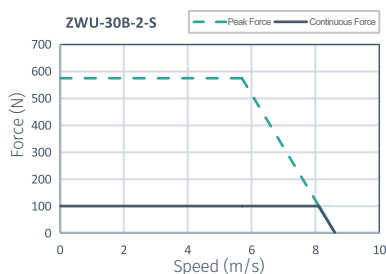
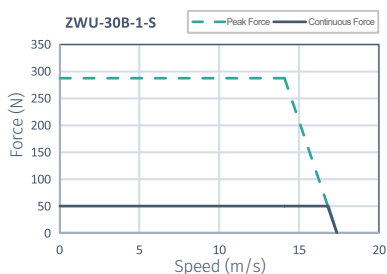
ZWU-30B Specification



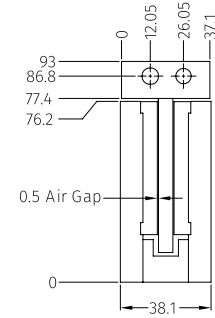
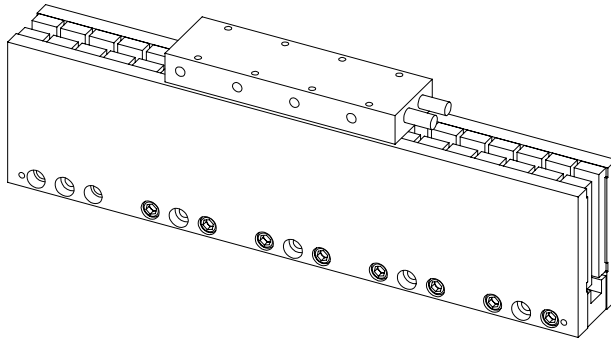
Parameters

Model	Unit	ZWU-30B-1	ZWU-30B-2	ZWU-30B-3	ZWU-30B-4	ZWU-30B-5
Winging Code		S	S	S	S	S
Performance Parameters						
Peak Force	N	288	576	864	1152	1440
Continuous Force	N	51	102	153	204	255
Peak Power	W	4061	3283	2333	1521	691
Continuous Power	W	857	826	780	783	750
Attraction Force	N	0	0	0	0	0
Electrical Parameters						
Peak current	Arms	14.3	14.3	14.3	14.3	14.3
Continuous current	Arms	2.54	2.54	2.54	2.54	2.54
Force Constant	N/Arms	20.08	40.16	60.24	80.31	100.39
Back EMF Constant	Vpeak/(m/s)	16.00	32.00	48.00	64.00	80.00
Resistance	Ohms	3.3	6.6	10.0	13.2	16.7
Inductance	mH	1.07	3.04	4.34	6.05	6.39
Time Constant	ms	0.32	0.32	0.43	0.46	0.38
Motor Constant	N/Sqrt(W)	9.02	12.76	15.63	18.05	20.18
Max. Coil Temperature	°C	100	100	100	100	100
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	61	121	181	241	301
Coil Mass	Kg	0.2	0.4	0.6	0.8	1
Track Mass	Kg/m	17.5	17.5	17.5	17.5	17.5
Magnetic Period	mm	30	30	30	30	30

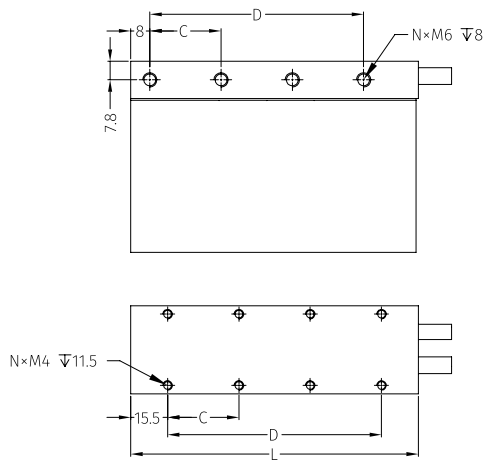
Force-Speed Curve @310V



Dimension

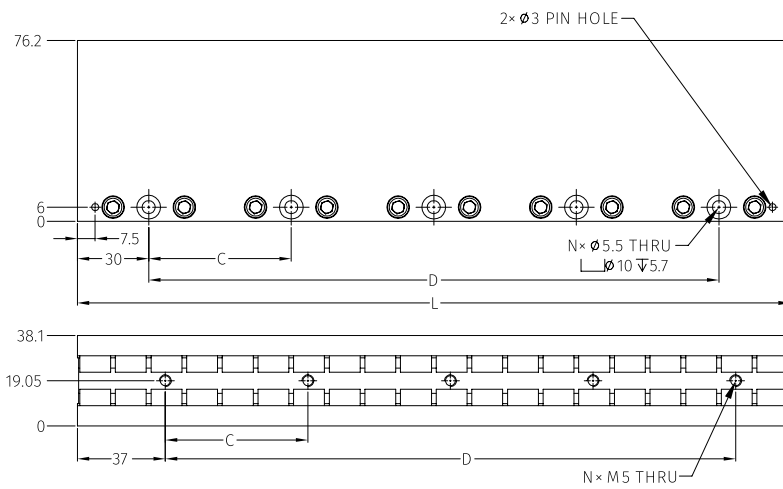


Coil size



Dimension	ZWU-30B-1	ZWU-30B-2	ZWU-30B-3	ZWU-30B-4	ZWU-30B-5
C	30	30	30	30	30
D	30	90	150	210	270
L	61	121	181	241	301
N	4	8	12	16	20

Track size



Dimension	ZWU-30B-120MNS	ZWU-30B-180MNS	ZWU-30B-240MNS	ZWU-30B-300MNS
C	60	60	60	60
D	60	120	180	240
L	120	180	240	300
N	2	3	4	5

Ironless Linear Motor

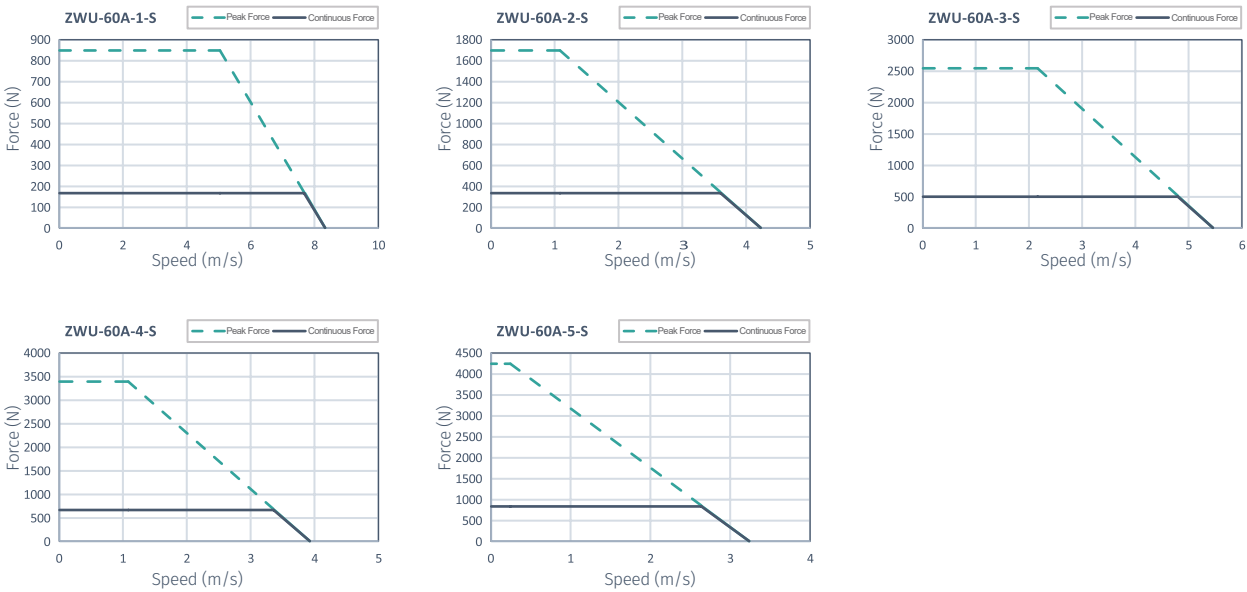
ZWU-60A Specification



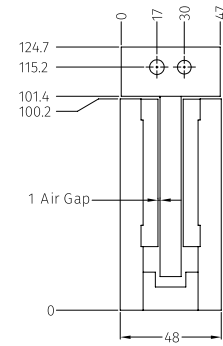
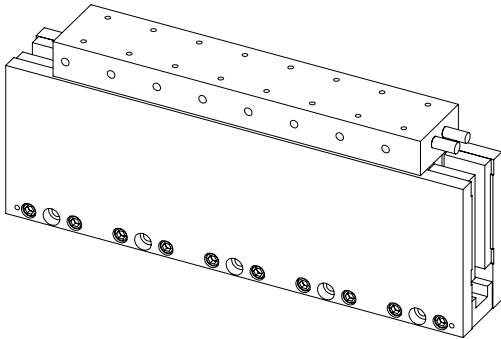
Parameters

Model	Unit	ZWU-60A-1	ZWU-60A-2	ZWU-60A-3	ZWU-60A-4	ZWU-60A-5
Winging Code		S	S	S	S	S
Performance Parameters						
Peak Force	N	850	1700	2550	3400	4250
Continuous Force	N	170	340	510	680	850
Peak Power	W	4284	1836	5508	3672	1020
Continuous Power	W	1306	1224	2448	2285	2244
Attraction Force	N	0	0	0	0	0
Electrical Parameters						
Peak current	Arms	20.7	20.7	20.7	20.7	20.7
Continuous current	Arms	4.1	3.977	3.69	4.1	4.1
Force Constant	N/Arms	41.46	85.49	138.21	165.85	207.32
Back EMF Constant	Vpeak/(m/s)	33.40	66.80	100.20	133.60	167.00
Resistance	Ohms	4.9	9.8	14.8	19.7	24.6
Inductance	mH	5.8	11.6	17.4	23.2	29
Time Constant	ms	1.18	1.18	1.18	1.18	1.18
Motor Constant	N/Sqrt(W)	15.26	22.25	29.37	30.53	34.13
Max. Coil Temperature	°C	130	130	130	130	130
Max. Bus Voltage	VDC	310	310	310	310	310
Mechanical Parameters						
Coil Length	mm	121	241	361	481	601
Coil Mass	Kg	0.55	1.1	1.65	2.2	2.75
Track Mass	Kg/m	27	27	27	27	27
Magnetic Period	mm	60	60	60	60	60

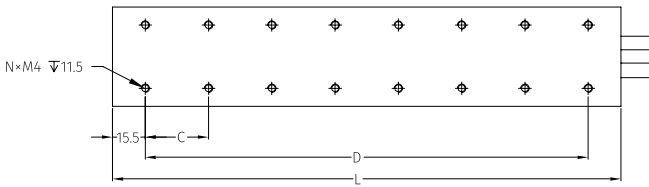
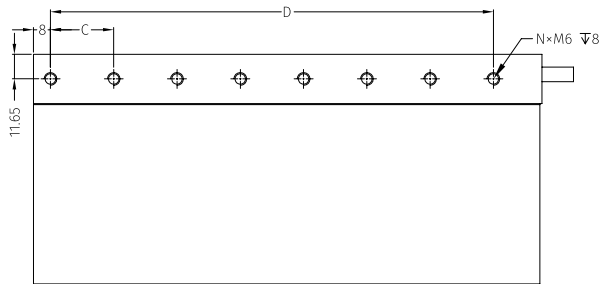
Force-Speed Curve @600V



Dimension

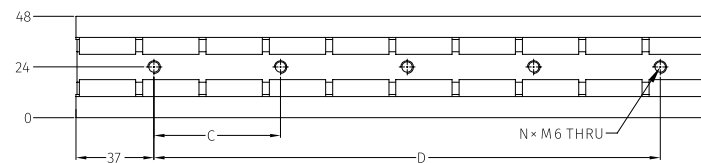
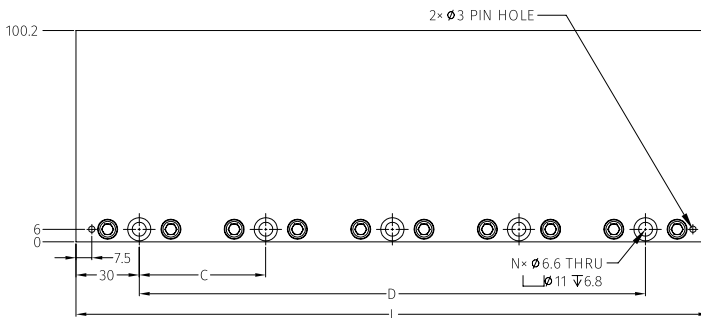


Coil size



Dimension	ZWU-60A-1	ZWU-60A-2	ZWU-60A-3	ZWU-60A-4	ZWU-60A-5
C	30	30	30	30	30
D	90	210	330	450	570
L	121	241	361	481	601
N	8	16	24	32	40

Track size



Dimension	ZWU-60A-120MNS	ZWU-60A-180MNS	ZWU-60A-240MNS	ZWU-60A-300MNS
C	60	60	60	60
D	60	120	180	240
L	120	180	240	300
N	2	3	4	5

Torque motor

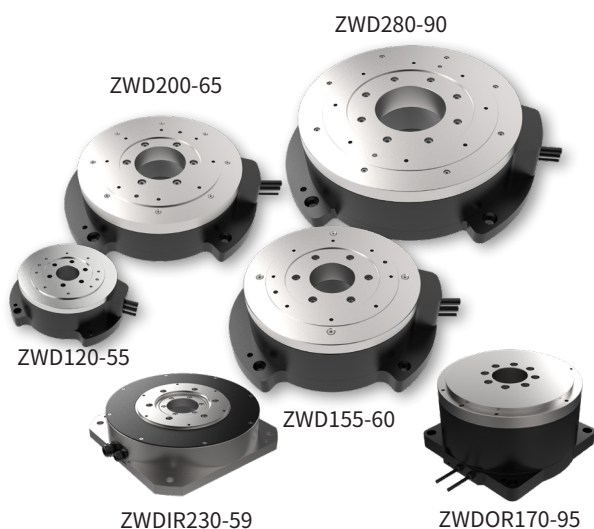
Direct drive rotary motors (DDR) are motors that are designed to drive loads directly without the need of any transmission mechanism, such as gears or belts.

These motors are also called torque motors. They use high energy permanent magnets to generate high torque. In addition, its air gap is flat, and its magnetic field is axial, so it belongs to an axial magnetic field motor.

The torque motor could output high torque when it moves at low or medium speed, or even at rest or at zero speed. Unlike traditional motors, the specifications and selection of torque motors mainly depend on torque rather than power. Because the direct drive rotary motor is equipped with a high-resolution circular grating, its accuracy can be one level higher than that of ordinary AC servo motor. The absolute rotation angle error of the positioning accuracy of the ZWD series direct drive rotary motor is accurate to ± 3 arc-sec, which is suitable for equipment or mechanisms that require precise positioning.

Framed motor (integral)

-  High torque density
-  Small rotational inertia
-  The large central hole is convenient for wiring
-  High-resolution optical encoder
-  Unique appearance patent



Frameless motor (fractional)

-  The motor rotates steadily
-  Low cogging torque
-  Small total harmonic distortion
-  Large range of operation speed and fast acceleration
-  Optional low-speed winding/high-speed winding/low-high-voltage rotation speed



Peak torque and continuous torque

The torque ratings of a DDR motor must meet the torque requirements of the application. In other words, the peak torque and continuous torque of the motor must be higher than the peak torque and RMS (root mean square) torque of the application. Otherwise, the motor will not be able to accelerate as fast as needed, or the motor will overheat after some time.

For linear motion, by Newton's second law, $F = ma$, where F is the force needed to move an object in N, m is the moving mass in Kg, a is the acceleration in m/s^2 .

Similarly, for rotary motion, $T = J\alpha$, where T is the torque needed to rotate an object in Nm, J is the moment of inertia in Kgm^2 , and α is the angular acceleration, in $radians/s^2$.

Peak torque during acceleration/deceleration, $T = J\alpha$

$$RMS_{Torque} = \sqrt{\frac{T_a^2 \times t_a + T_c^2 \times t_c + T_d^2 \times t_d + T_w^2 \times t_w}{t_a + t_c + t_d + t_w}}$$

T_a = Acceleration torque

T_c = Cruise torque

T_d = Deceleration torque

T_w = Dwell torque

t_a = Acceleration Time

t_c = Cruise Time

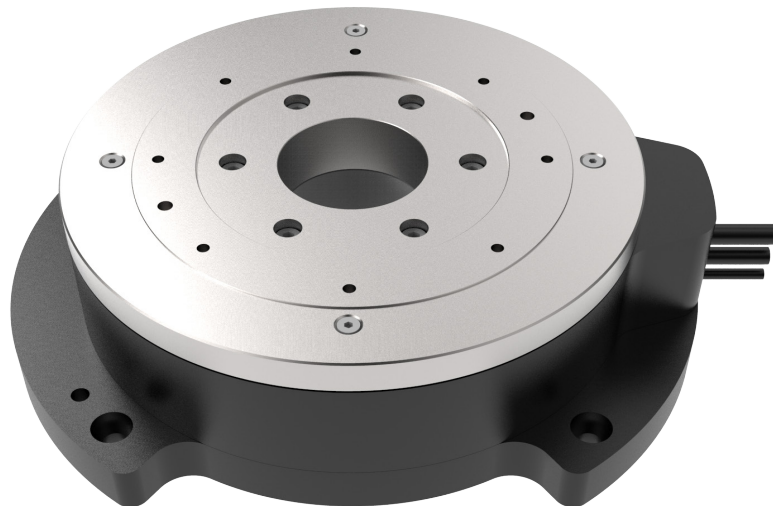
t_d = Deceleration Time

t_w = Dwell Time

A motor should be selected based on the computed peak torque and RMS torque required. A safety factor of 20-30% may be used, especially if friction and external opposing torque are assumed to be zero in the calculation.

Zhiwei provides motor selection software, where the peak torque and RMS torque are computed automatically, and a motor is recommended after you key in the application parameters.

Zhiwei DDR motors are designed with very high torque density, providing higher peak torque and continuous torque compared to conventional motors design.



Torque Motor Products

Part Numbering

ZWD120 - 55 - P - 0.5M - HALL - WK - 3W3

Motor Model ①

Winging Code ②

Cable Length ③

With ferrite bead or flying lead

⑤ Thermal Sensor

④ Hall Sensor

①

Code	Motor Model
ZWD	Axial DD motor
ZWDIR	Internal rotor DD motor
ZWDOR	External rotor DD motor
ZWDR	Frameless DD motor

②

Code	Winging Code
P	Parallel connection
S	Series connection

③

Code	Cable Length
0.5	Standard 0.5 meters
Other	Specified in meters

④

Code	Hall Sensor
HALL	With
Blank	Without

⑤

Thermal Sensor
WK
PT100
NTC
PTC

Overview

■ Continuous Torque ■ Peak Torque

Unit: Nm

Motor Model	10	100	1000	2000
ZWD120-55	■ 3.45Nm ■ 10.35Nm			
ZWD155-60	■ 6.59Nm ■ 19.77Nm			
ZWD200-65	■ 14.7Nm ■ 44.1Nm			
ZWD280-90	■ 47.95Nm	■ 143.84Nm		
ZWDIR230-59	■ 12Nm ■ 40Nm			
ZWDOR170-95	■ 20.16Nm ■ 51.6Nm			
ZWDR260-70	■ 75Nm	■ 300Nm		
ZWDR360-140		■ 360Nm	■ 1080Nm	

Applications

Applicable Equipment	Application Type	Specific Device	Application Advantage
Line Marking Equipment / FPD Bonding Equipment / Screen Printing Equipment / FPD Inspection Equipment / Wafer Cutting Equipment / Packaging Equipment / Wafer Processing Equipment / Wafer Inspection Equipment / X-ray Analysis Equipment / PE Printing Equipment / Precision Machining and Measuring Equipment / Die Casting Equipment	High Inertia Load Rotary Application	FPD Rotary and Visual Alignment Equipment / Inspection Equipment	• High inertia ratio load capacity • High precision positioning • Simple structure, space-saving
	High Precision Roller Drive	Roll Coater / PE Printer, etc.	• High precision positioning • High speed stability
	Ball Screw Application	Die Casting Equipment / Servo Press Equipment, etc.	• High response operation • Hollow structure for compact equipment design • Without the oil pressure device, enhanced safety and cleanliness
Wafer Handling Equipment / Food Handling Equipment / Filling Equipment / Punching Equipment / Feeding Equipment / Laser Processing Equipment / Lamination Equipment / FPD Bonding Equipment / Die Cutting Equipment / Screen Printing Equipment / Contact and Non-Contact Testing Equipment / Various Dividing Equipment	Indexing Control Application / Torque Control Application	Indexing Equipment / Packaging Sealing Equipment	• High precision, arbitrary angle indexing • Simple structure • Silent • Easy maintenance and care • Reduced positioning time
		Sealing Equipment	• Hollow structure facilitates easier accessory installation • Faster torque control response
	Roller Printing Machine Application	Die Cutting Machine / Printing Machinery, etc.	• High speed stability • Simple structure • Easy maintenance and care
	Unwinding/Rewinding Application (Winding Equipment)	Lamination Equipment / Coating Equipment / Surface Analysis Devices, etc.	• High speed stability • Silent • Easy maintenance and care • Real-time adjustment and faster response
	Worktable Application	Laser Processing Machine / Various Processing Equipment, etc.	• High rigidity • High position • High response • High speed positioning
SMT Placement Equipment / Sorting Equipment / Rotary Coating Equipment / Rotary Cleaning Equipment	High-Speed Pick-and-Place Equipment	SMT Machine / Separator	• High speed positioning, faster response • High precision positioning • Simple structure, space-saving
	Rotary Application	Rotary Coating Equipment / Rotary Cleaning Equipment, etc.	• High speed stability • Simple structure • High acceleration
Sorting Equipment / SMT Placement Equipment / Visual Inspection Equipment / Automotive Parts Test Machine / Torque Tester / Various Test Machines / Vibration Machine	High-Speed Indexing Application	High Speed Separator / SMT Placement Equipment	• High speed positioning, faster response • High precision positioning • High speed and high response
	Testing Equipment Application	Torque Testing Equipment / Material Testing Equipment / Durability Testing Equipment, etc.	• High response operation • Compact structure and quiet operation • Safer and more reliable

Mounting illustration



Upright Mount



Inverted Mount



Wall Mount

Direct Drive Rotary Motor

ZWD120-55



Parameters

Model		ZWD120-55			
Performance Parameters		Symbol	Unit	S	P
Motor diameter		∅	mm	120	120
Motor height		H	mm	55	55
Continuous Torque (Natural Cool) @100°C①		T _{cn}	Nm	3.45	3.45
Peak Torque		T _{pk}	Nm	10.35	10.35
Torque Constant ±10%		K _t	Nm/Arms	2.16	1.08
Back EMF constant ±10%		K _e	Vpeak/rpm	0.20	0.10
Motor Constant @25°C		K _m	Nm/Sqrt(W)	0.46	0.46
Resistance (L-L) @25°C ±10%②		R ₂₅	Ω	14.90	3.73
Inductance (L-L) ±20%③		L	mH	61.50	15.38
Electrical time constant		T _e	ms	4.13	4.13
Continuous Current (Natural Cool) @100°C①		I _{cn}	Arms	1.60	3.20
Peak Current		I _{pk}	Arms	4.80	9.60
Max. Coil Temperature		t _{max}	°C	130	130
Max. Bus Voltage		U _{bus}	W/°C	310	310
Pole Number		2P	-	14	14
Rec. Max Speed④		Ω _{max}	rpm	900	1900
Mechanical Parameters					
Overall Mass (Natural Cool)		m _n	Kg	2.98	2.98
Rotor Inertia		J _r	Kg•°C	0.00163	0.00163
Axial Runout⑤		-	μm	20	20
Radial Runout⑤		-	μm	20	20
Max Axial Load (Upright Mounting)⑥		-	N	500	500
Max Axial Load (Inverted/Wall mounting)		-	N	150	150
Max Moment Load (Upright Mounting)		-	Nm	30	30
Max Moment Load (Inverted/Wall Mounting)		-	Nm	10	10
Encoder Parameters					
ABZ Optical Incremental Encoder (SIN/COS)		-	lines/rev	8192	8192
ABZ Optical Incremental Encoder Digital Resolution (80x)		-	counts/rev	819200	819200
ABZ Optical Incremental Encoder Digital Resolution (128x)		-	counts/rev	1048576	1048576
ABZ Optical Incremental Encoder Digital Resolution (200x)		-	counts/rev	1638400	1638400
ABZ Optical Incremental Encoder Digital Resolution (256x)		-	counts/rev	2097152	2097152
ATOM DX Optical Incremental Encoder		-	lines/rev	8192	8192
Compensated positioning accuracy⑦		-	arc sec	±6	±6
Repeatability⑦		-	arc sec	±3	±3
Other Information					
Insulation Class			Class A		
Protection Grade			IP40		
Ambient Temperature		Operation	0°C to 40°C (non-freezing)		
		Storage	-15°C to 70°C (non-freezing)		
Ambient Humidity		Operation	10%RH to 80%RH (non-condensing)		
		Storage	10%RH to 80%RH (non-condensing)		
Recommended Ambience		Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.			

① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

② Resistance is measured by DC current with standard 3 m cable.

③ Inductance is measured by current frequency of 1 kHz.

④ The value is based on ABZ Optical Incremental Encoder (SIN/COS) or ABZ Optical Incremental Encoder Digital Resolution (200x) under maximum bus voltage.

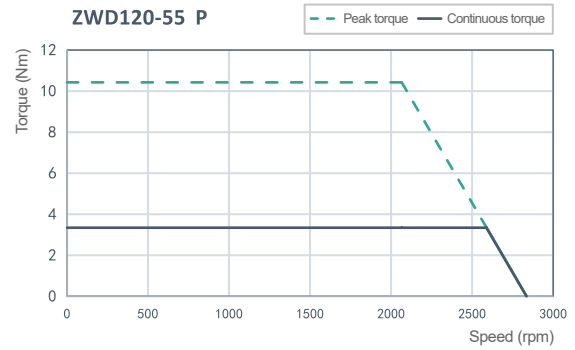
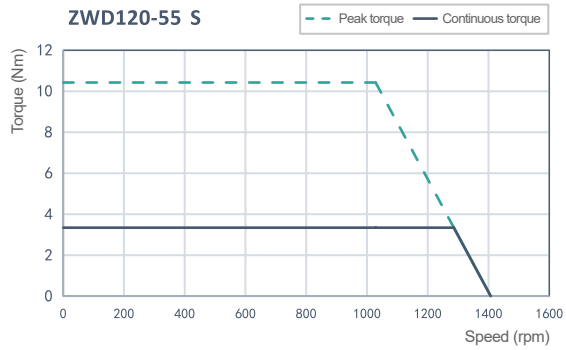
⑤ The runout value in parenthesis is optional.

⑥ Please refer to the illustration for different mountings.

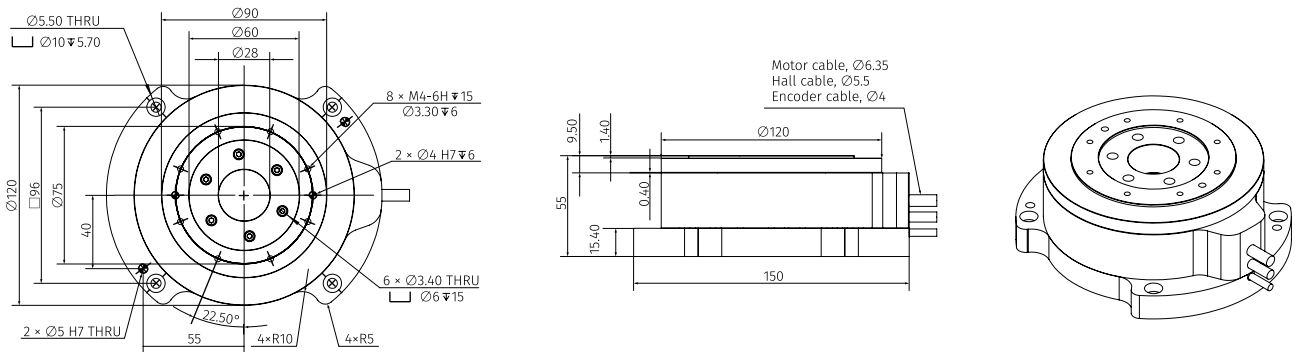
⑦ The value is based on ABZ Optical Incremental Encoder (SIN/COS) or ABZ Optical Incremental Encoder Digital Resolution (200x) with standard runout.

The contents of datasheet are subjected to change with prior notice.

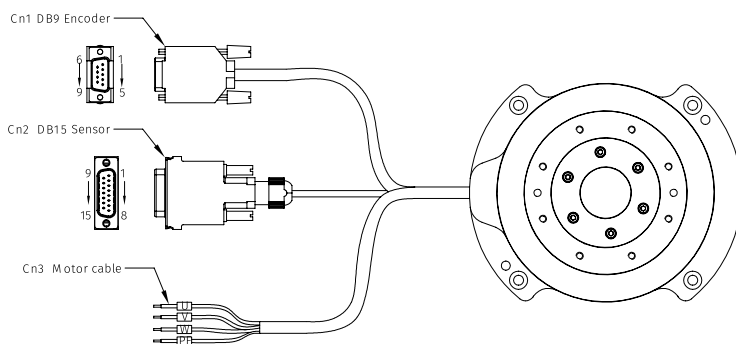
Torque-Speed Curve @310V



Dimension



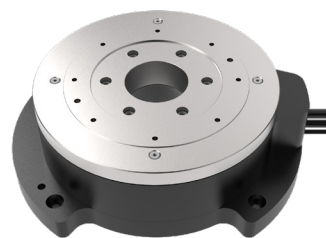
Wiring diagram



Cn1 DB9 Encoder			Cn2 DB15 Sensor		
Pin.	Description	Colour	Pin.	Description	Colour
1	5V	Brown	1	V1-	Blue
2	0V	Blue	2	V2-	Green
3	HA	Orange	3	V0+	Purple
4	HB	Purple	4	5V	Brown
5	HC	Black	5		
6	T1	Red	6	Vx	Transparency
7	T2	White	7	-	-
8	-	-	8	-	-
9	-	-	9	V1+	Red
			10	V2+	Yellow
			11	V0-	Gray
Cn3 Motor Cable			12	0V	White
Pin.	Description	Colour	13		
1	U	Brown	14	Calibration	Orange
2	V	Blue	15	-	-
3	W	Purple			
4	PE	Yellow			

Direct Drive Rotary Motor

ZWD155-60



Parameters

Model		ZWD-155-60			
Performance Parameters		Symbol	Unit	S	P
Motor diameter		∅	mm	155	155
Motor height		H	mm	60	60
Continuous Torque (Natural Cool) @100°C①		T _{cn}	Nm	6.59	6.59
Peak Torque		T _{pk}	Nm	19.77	19.77
Torque Constant ±10%		K _t	Nm/Arms	3.88	1.94
Back EMF constant ±10%		K _e	Vpeak/rpm	0.44	0.22
Motor Constant @25°C		K _m	Nm/Sqrt(W)	0.84	0.84
Resistance (L-L) @25°C ±10%②		R ₂₅	Ω	14.10	3.53
Inductance (L-L) ±20%③		L	mH	86.56	21.64
Electrical time constant		T _e	ms	6.14	6.14
Continuous Current (Natural Cool) @100°C①		I _{cn}	Arms	1.70	3.40
Peak Current		I _{pk}	Arms	5.10	10.20
Max. Coil Temperature		t _{max}	°C	130	130
Max. Bus Voltage		U _{bus}	W/°C	310	310
Pole Number		2P	-	14	14
Rec. Max Speed④		Ω _{max}	rpm	400	900
Mechanical Parameters					
Overall Mass (Natural Cool)		m _n	Kg	4.82	4.82
Rotor Inertia		J _r	Kg•°C	0.00443	0.00443
Axial Runout⑤		-	μm	20	20
Radial Runout⑤		-	μm	20	20
Max Axial Load (Upright Mounting)⑥		-	N	750	750
Max Axial Load (Inverted/Wall mounting)		-	N	225	225
Max Moment Load (Upright Mounting)		-	Nm	40	40
Max Moment Load (Inverted/Wall Mounting)		-	Nm	12	12
Encoder Parameters					
ABZ Optical Incremental Encoder (SIN/COS)		-	lines/rev	8192	8192
ABZ Optical Incremental Encoder Digital Resolution (80x)		-	counts/rev	819200	819200
ABZ Optical Incremental Encoder Digital Resolution (128x)		-	counts/rev	1048576	1048576
ABZ Optical Incremental Encoder Digital Resolution (200x)		-	counts/rev	1638400	1638400
ABZ Optical Incremental Encoder Digital Resolution (256x)		-	counts/rev	2097152	2097152
ATOM DX Optical Incremental Encoder		-	lines/rev	10052	10052
Compensated positioning accuracy⑦		-	arc sec	±5	±5
Repeatability⑦		-	arc sec	±2.5	±2.5
Other Information					
Insulation Class		Class A			
Protection Grade		IP40			
Ambient Temperature	Operation	0°C to 40°C (non-freezing)			
	Storage	-15°C to 70°C (non-freezing)			
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)			
	Storage	10%RH to 80%RH (non-condensing)			
Recommended Ambience		Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.			

① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

② Resistance is measured by DC current with standard 3 m cable.

③ Inductance is measured by current frequency of 1 kHz.

④ The value is based on ABZ Optical Incremental Encoder (SIN/COS) or ABZ Optical Incremental Encoder Digital Resolution (200x) under maximum bus voltage.

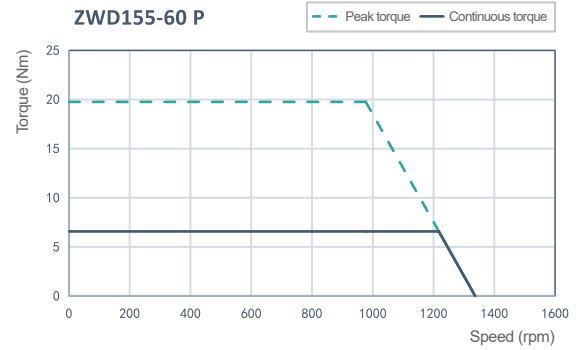
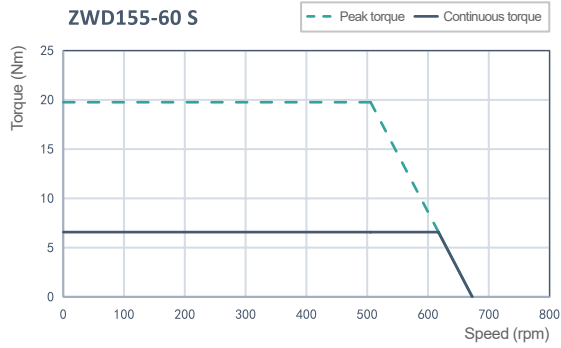
⑤ The runout value in parenthesis is optional.

⑥ Please refer to the illustration for different mountings.

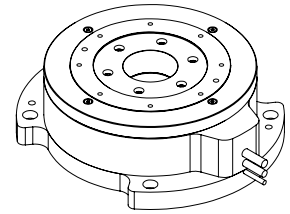
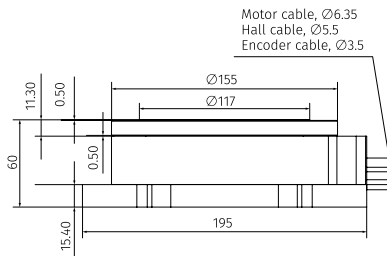
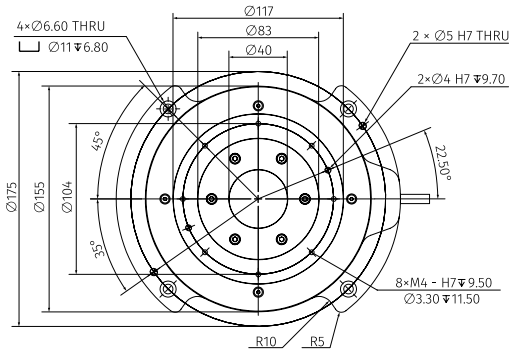
⑦ The value is based on ABZ Optical Incremental Encoder (SIN/COS) or ABZ Optical Incremental Encoder Digital Resolution (200x) with standard runout.

The contents of datasheet are subjected to change with prior notice.

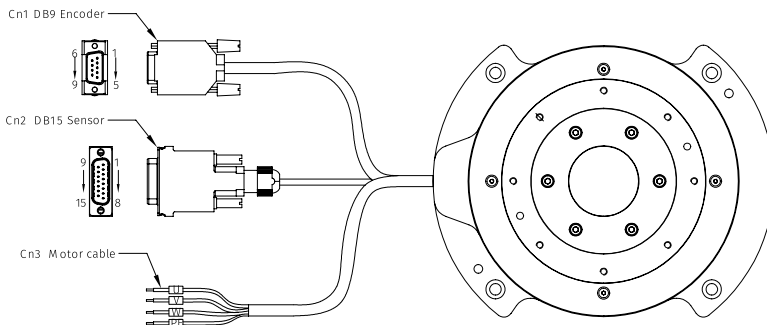
Torque-Speed Curve @310V



Dimension



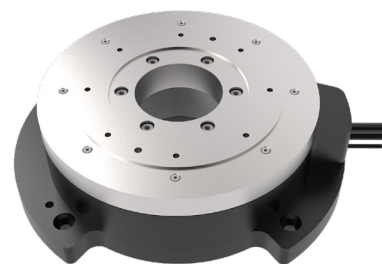
Wiring diagram



Cn1 DB9 Encoder			Cn2 DB15 Sensor		
Pin.	Description	Colour	Pin.	Description	Colour
1	5V	Brown	1	V1-	Blue
2	0V	Blue	2	V2-	Green
3	HA	Orange	3	V0+	Purple
4	HB	Purple	4	5V	Brown
5	HC	Black	5	Vx	Transparency
6	T1	Red	6	-	-
7	T2	White	7	-	-
8	-	-	8	-	-
9	-	-	9	V1+	Red
Cn3 Motor Cable			10	V2+	Yellow
Pin.	Description	Colour	11	V0-	Gray
1	U	Brown	12	0V	White
2	V	Blue	13	Calibration	Orange
3	W	Purple	14	-	-
4	PE	Yellow	15	-	-

Direct Drive Rotary Motor

ZWD200-70



Parameters

Model		ZWD-200-70			
Performance Parameters		Symbol	Unit	S	P
Motor diameter		∅	mm	200	200
Motor height		H	mm	70	70
Continuous Torque (Natural Cool) @100°C①		T _{cn}	Nm	14.70	14.70
Peak Torque		T _{pk}	Nm	44.10	44.10
Torque Constant ±10%		K _t	Nm/Arms	6.39	3.20
Back EMF constant ±10%		K _e	Vpeak/rpm	0.75	0.38
Motor Constant @25°C		K _m	Nm/Sqrt(W)	1.30	1.30
Resistance (L-L) @25°C ±10%②		R ₂₅	Ω	16.0	4.0
Inductance (L-L) ±20%③		L	mH	183.60	45.90
Electrical time constant		T _e	ms	11.45	11.45
Continuous Current (Natural Cool) @100°C①		I _{cn}	Arms	2.30	4.60
Peak Current		I _{pk}	Arms	6.90	13.80
Max. Coil Temperature		t _{max}	°C	130	130
Max. Bus Voltage		U _{bus}	W/°C	310	310
Pole Number		2P	-	14	14
Rec. Max Speed④		Ω _{max}	rpm	165	400
Mechanical Parameters					
Overall Mass (Natural Cool)		m _n	Kg	9.1	9.1
Rotor Inertia		J _r	Kg·°C	0.01051	0.01051
Axial Runout⑤		-	μm	30	30
Radial Runout⑤		-	μm	30	30
Max Axial Load (Upright Mounting)⑥		-	N	1000	1000
Max Axial Load (Inverted/Wall mounting)		-	N	300	300
Max Moment Load (Upright Mounting)		-	Nm	50	50
Max Moment Load (Inverted/Wall Mounting)		-	Nm	15	15
Encoder Parameters					
ABZ Optical Incremental Encoder (SIN/COS)		-	lines/rev	8192	8192
ABZ Optical Incremental Encoder Digital Resolution (80x)		-	counts/rev	819200	819200
ABZ Optical Incremental Encoder Digital Resolution (128x)		-	counts/rev	1048576	1048576
ABZ Optical Incremental Encoder Digital Resolution (200x)		-	counts/rev	1638400	1638400
ABZ Optical Incremental Encoder Digital Resolution (256x)		-	counts/rev	2097152	2097152
ATOM DX Optical Incremental Encoder		-	lines/rev	14452	14452
Compensated positioning accuracy⑦		-	arc sec	±4	±4
Repeatability⑦		-	arc sec	±2	±2
Other Information					
Insulation Class			Class A		
Protection Grade			IP40		
Ambient Temperature		Operation	0°C to 40°C (non-freezing)		
		Storage	-15°C to 70°C (non-freezing)		
Ambient Humidity		Operation	10%RH to 80%RH (non-condensing)		
		Storage	10%RH to 80%RH (non-condensing)		
Recommended Ambience			Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.		

① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

② Resistance is measured by DC current with standard 0.5 m cable.

③ Inductance is measured by current frequency of 1 kHz.

④ The value is based on ABZ Optical Incremental Encoder (SIN/COS) or ABZ Optical Incremental Encoder Digital Resolution (200x) under maximum bus voltage.

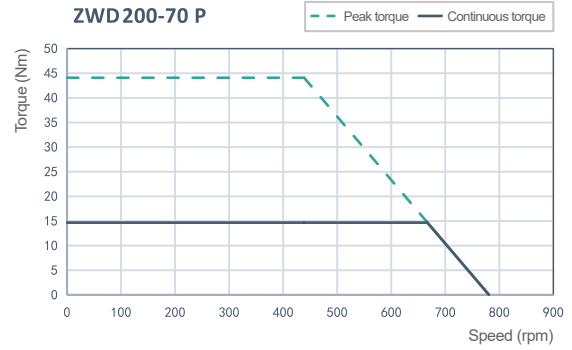
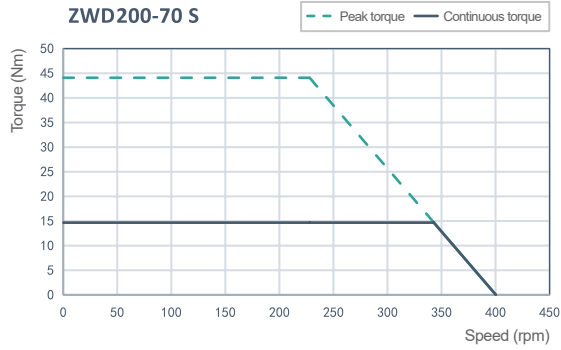
⑤ The runout value in parenthesis is optional.

⑥ Please refer to the illustration for different mountings.

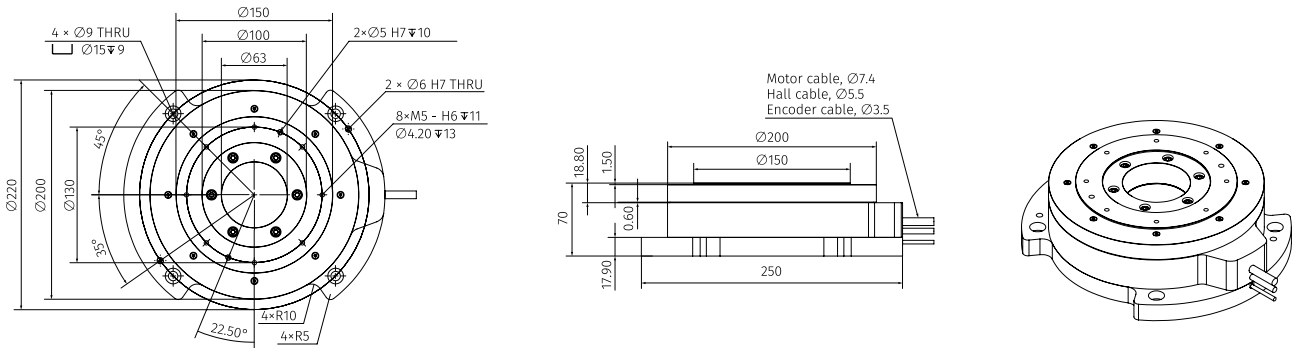
⑦ The value is based on ABZ Optical Incremental Encoder (SIN/COS) or ABZ Optical Incremental Encoder Digital Resolution (200x) with standard runout.

The contents of datasheet are subjected to change with prior notice.

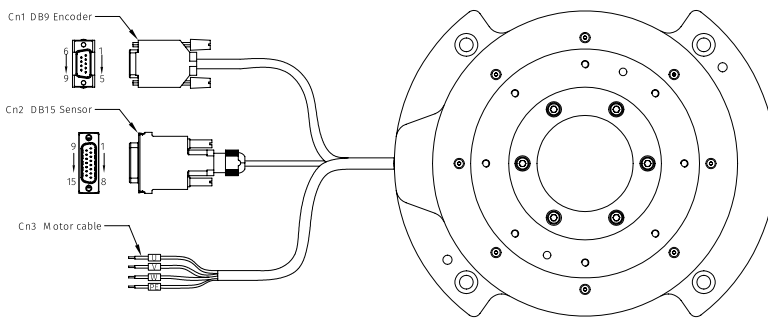
Torque-Speed Curve @310V



Dimension



Wiring diagram



Cn1 DB9 Encoder			Cn2 DB15 Sensor		
Pin.	Description	Colour	Pin.	Description	Colour
1	5V	Brown	1	V1-	Blue
2	0V	Blue	2	V2-	Green
3	HA	Orange	3	V0+	Purple
4	HB	Purple	4	5V	Brown
5	HC	Black	5	Vx	Transparency
6	T1	Red	6	V1+	Red
7	T2	White	7	V2+	Yellow
8	-	-	8	0V	White
9	-	-	9	Calibration	Orange
Cn3 Motor Cable			10	-	-
Pin.	Description	Colour	11	-	-
1	U	Brown	12	-	-
2	V	Blue	13	-	-
3	W	Purple	14	-	-
4	PE	Yellow	15	-	-

Direct Drive Rotary Motor

ZWD280-90



Parameters

Model		ZWD-280-90		
Performance Parameters		Symbol	Unit	
			S	P
Motor diameter		ϕ	mm	280
Motor height		H	mm	90
Continuous Torque (Natural Cool) @100°C①		T_{cn}	Nm	47.95
Peak Torque		T_{pk}	Nm	143.84
Torque Constant $\pm 10\%$		K_t	Nm/Arms	20.85
Back EMF constant $\pm 10\%$		K_e	Vpeak/rpm	1.86
Motor Constant @25°C		K_m	Nm/Sqrt(W)	4.0
Resistance (L-L) @25°C $\pm 10\%$ ②		R_{25}	Ω	18.00
Inductance (L-L) $\pm 20\%$ ③		L	mH	202.0
Electrical time constant		T_e	ms	11.22
Continuous Current (Natural Cool) @100°C①		I_{cn}	Arms	2.30
Peak Current		I_{pk}	Arms	8.0
Max. Coil Temperature		t_{max}	°C	130
Max. Bus Voltage		U_{bus}	W/°C	310
Pole Number		2P	-	28
Rec. Max Speed④		Ω_{max}	rpm	55
Mechanical Parameters				
Overall Mass (Natural Cool)		m_n	Kg	21.45
Rotor Inertia		J_r	Kg·°C	0.04963
Axial Runout⑤		-	μm	40
Radial Runout⑤		-	μm	40
Max Axial Load (Upright Mounting)⑥		-	N	1800
Max Axial Load (Inverted/Wall mounting)		-	N	500
Max Moment Load (Upright Mounting)		-	Nm	75
Max Moment Load (Inverted/Wall Mounting)		-	Nm	23
Encoder Parameters				
ABZ Optical Incremental Encoder (SIN/COS)		-	lines/rev	8192
ABZ Optical Incremental Encoder Digital Resolution (80x)		-	counts/rev	819200
ABZ Optical Incremental Encoder Digital Resolution (128x)		-	counts/rev	1048576
ABZ Optical Incremental Encoder Digital Resolution (200x)		-	counts/rev	1638400
ABZ Optical Incremental Encoder Digital Resolution (256x)		-	counts/rev	2097152
ATOM DX Optical Incremental Encoder		-	lines/rev	20656
Compensated positioning accuracy⑦		-	arc sec	± 4
Repeatability⑦		-	arc sec	± 2
Other Information				
Insulation Class			Class A	
Protection Grade			IP40	
Ambient Temperature	Operation		0°C to 40°C (non-freezing)	
	Storage		-15°C to 70°C (non-freezing)	
Ambient Humidity	Operation		10%RH to 80%RH (non-condensing)	
	Storage		10%RH to 80%RH (non-condensing)	
Recommended Ambience			Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.	

① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

② Resistance is measured by DC current with standard 0.5 m cable.

③ Inductance is measured by current frequency of 1 kHz.

④ The value is based on ABZ Optical Incremental Encoder (SIN/COS) or ABZ Optical Incremental Encoder Digital Resolution (200x) under maximum bus voltage.

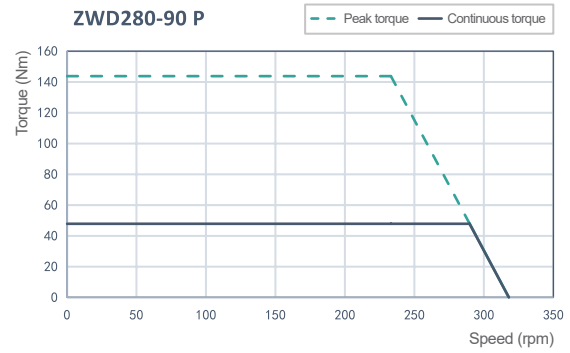
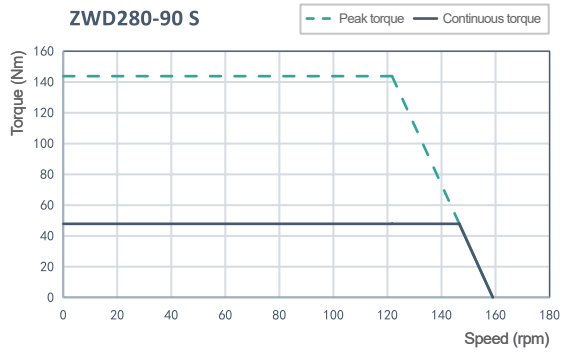
⑤ The runout value in parenthesis is optional.

⑥ Please refer to the illustration for different mountings.

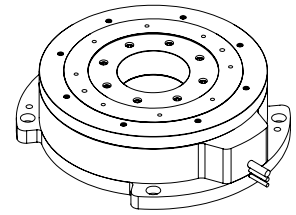
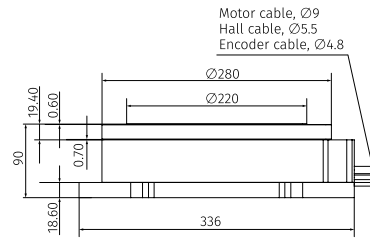
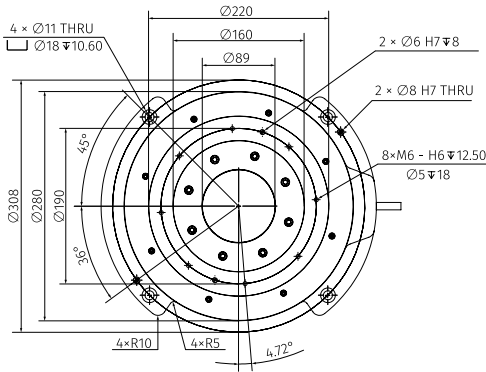
⑦ The value is based on ABZ Optical Incremental Encoder (SIN/COS) or ABZ Optical Incremental Encoder Digital Resolution (200x) with standard runout.

The contents of datasheet are subjected to change with prior notice.

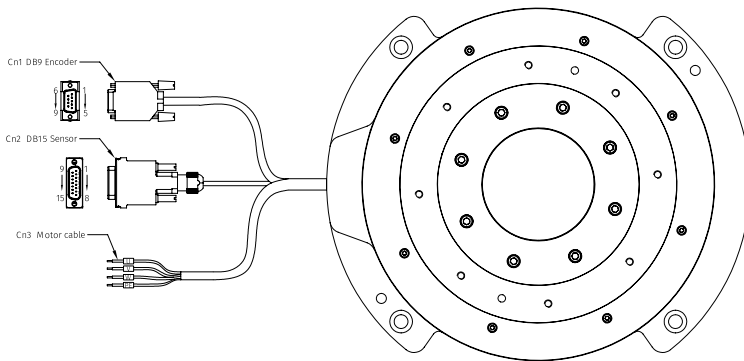
Torque-Speed Curve @310V



Dimension



Wiring diagram



Cn1 DB9 Encoder			Cn2 DB15 Sensor		
Pin.	Description	Colour	Pin.	Description	Colour
1	5V	Brown	1	V1-	Blue
2	0V	Blue	2	V2-	Green
3	HA	Orange	3	V0+	Purple
4	HB	Purple	4	5V	Brown
5	HC	Black	5	Vx	Transparency
6	T1	Red	6	-	-
7	T2	White	7	-	-
8	-	-	8	-	-
9	-	-	9	V1+	Red
Cn3 Motor Cable			10	V2+	Yellow
Pin.	Description	Colour	11	V0-	Gray
1	U	Brown	12	0V	White
2	V	Blue	13	-	-
3	W	Purple	14	Calibration	Orange
4	PE	Yellow	15	-	-

Direct Drive Rotary Motor

ZWDIR230-59



Parameters

Model		ZWDIR230-59		
Performance Parameters		Symbol	Unit	S
Motor diameter		$\varnothing$	mm	230
Motor height		H	mm	59
Continuous Torque (Natural Cool) @100°C①		T_{cn}	Nm	12
Peak Torque		T_{pk}	Nm	40
Torque Constant $\pm 10\%$		K_t	Nm/Arms	4.71
Back EMF constant $\pm 10\%$		K_e	Vpeak/rpm	0.51
Motor Constant @25°C		K_m	Nm/Sqrt(W)	3.74
Resistance (L-L) @25°C $\pm 10\%$ ②		R_{25}	Ω	6.67
Inductance (L-L) $\pm 20\%$ ③		L	mH	28.27
Electrical time constant		τ_e	ms	4.4
Continuous Current (Natural Cool) @100°C①		I_{cn}	Arms	2.55
Peak Current		I_{pk}	Arms	7.77
Max. Coil Temperature		t_{max}	°C	100
Max. Bus Voltage		U_{bus}	W/°C	310
Pole Number		2P	-	30
Rec. Max Speed④		Ω_{max}	rpm	500
Mechanical Parameters				
Overall Mass (Natural Cool)		m	Kg	11
Rotor Inertia		J_r	Kg·m ²	0.01
Axial Runout⑤		-	um	15
Radial Runout⑤		-	um	30
Max Axial Load		-	N	400
Encoder Parameters				
resolution		-	arc sec	0.154
positioning accuracy⑦		-	arc sec	± 4
Repeatability⑦		-	arc sec	± 2
Other Information				
Insulation Class		Class H		
Protection Grade		IP40		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)		
	Storage	-15°C to 70°C (non-freezing)		
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)		
	Storage	10%RH to 80%RH (non-condensing)		
Recommended Ambience		Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.		

① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

② Resistance is measured by DC current with standard 3 m cable.

③ Inductance is measured by current frequency of 1 kHz.

④ The value is based on 23-bit Absolute value linear encoder under maximum bus voltage.

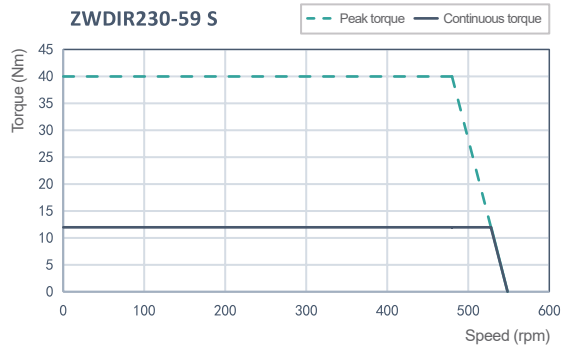
⑤ The runout value in parenthesis is optional.

⑥ Please refer to the illustration for different mountings.

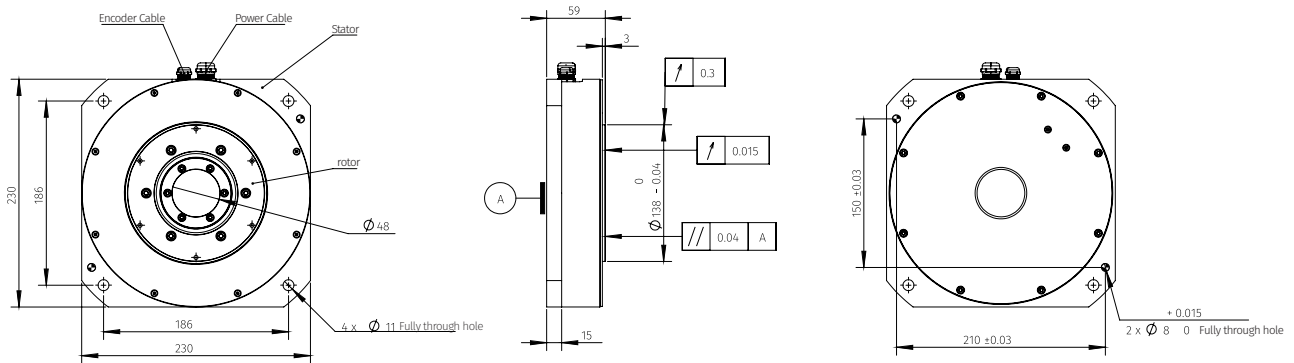
⑦ The value is based on 23-bit Absolute value linear encoder with standard runout.

The contents of datasheet are subjected to change with prior notice.

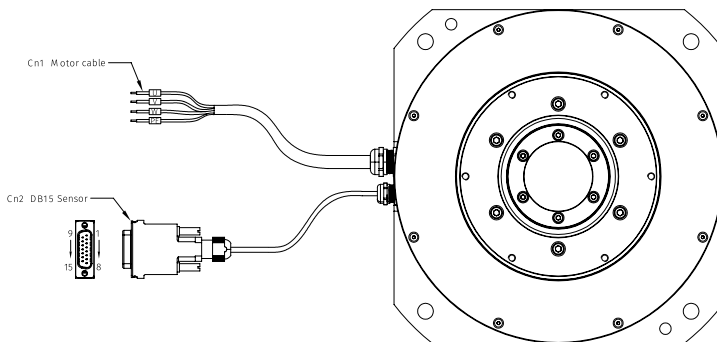
Torque-Speed Curve @310V



Dimension



Wiring diagram



Cn1 DB15 Encoder

Pin.	Description	Colour
1	-	-
2	MA+	Gray
3	MA-	Purple
4	5V	Red
5	-	-
6	SL0+	Brown
7	SL0-	Green
8	0V	Black, White
9	-	-
10	-	-
11	-	-
12	-	-
13	-	-
14	-	-
15	-	-

Cn2 Motor Cable

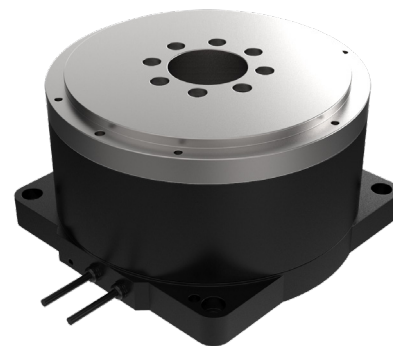
Pin.	Description	Colour
1	U	Brown
2	V	Blue
3	W	Purple
4	PE	Yellow/Green

Cn3 DB9 Encoder

Pin.	Description	Colour
1	5V	Brown
2	0V	Blue
3	HA	Orange
4	HB	Purple
5	HC	Black
6	-	-
7	-	-
8	-	-
9	-	-

Direct Drive Rotary Motor

ZWDOR170-95



Parameters

Model		ZWDOR170-95		
Performance Parameters		Symbol	Unit	S
Motor diameter		$\varnothing$	mm	170
Motor height		H	mm	95
Continuous Torque (Natural Cool) @100°C①		T_{cn}	Nm	20.16
Peak Torque		T_{pk}	Nm	51.6
Torque Constant $\pm 10\%$		K_t	Nm/Arms	7.9
Back EMF constant $\pm 10\%$		K_e	Vpeak/rpm	0.72
Motor Constant @25°C		K_m	Nm/Sqrt(W)	3.26
Resistance (L-L) @25°C $\pm 10\%$ ②		R_{25}	Ω	10.2
Inductance (L-L) $\pm 20\%$ ③		L	mH	18
Electrical time constant		τ_e	ms	3.26
Continuous Current (Natural Cool) @100°C①		I_{cn}	Arms	2.5
Peak Current		I_{pk}	Arms	7.5
Max. Coil Temperature		t_{max}	°C	130
Max. Bus Voltage		U_{bus}	W/°C	310
Pole Number		2P	-	30
Rec. Max Speed④		Ω_{max}	rpm	200
Mechanical Parameters				
Overall Mass (Natural Cool)		m	Kg	11.7
Rotor Inertia		J_r	Kg·m ²	0.02
Axial Runout⑤		-	um	5
Radial Runout⑤		-	um	5
Max Axial Load		-	N	1000
Max Moment Load		-	Nm	150
Encoder Parameters				
ABZ Optical Incremental Encoder (SIN/COS)		-	line	11740
positioning accuracy		-	arc sec	± 6
Repeatability		-	arc sec	± 3
Other Information				
Insulation Class		Class A		
Protection Grade		IP40		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)		
	Storage	-15°C to 70°C (non-freezing)		
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)		
	Storage	10%RH to 80%RH (non-condensing)		
Recommended Ambience		Indoor (no direct sunlight);		
		No corrosive gas, inflammable gas, oil mist or dust.		

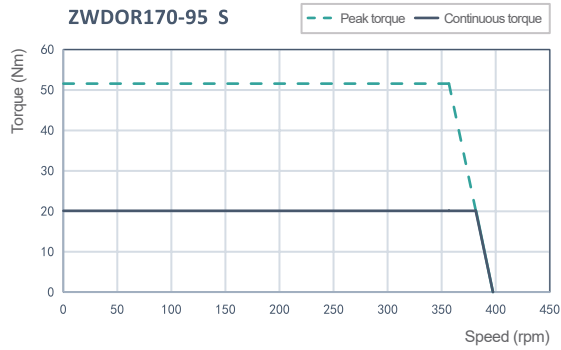
① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

② Resistance is measured by DC current with standard 3 m cable.

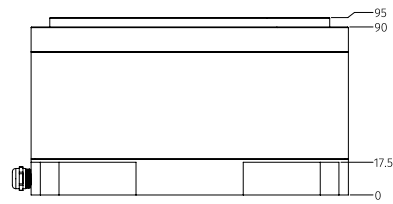
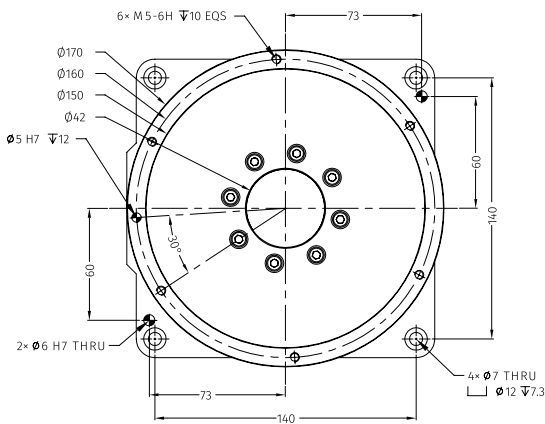
③ Inductance is measured by current frequency of 1 kHz.

The contents of datasheet are subjected to change with prior notice.

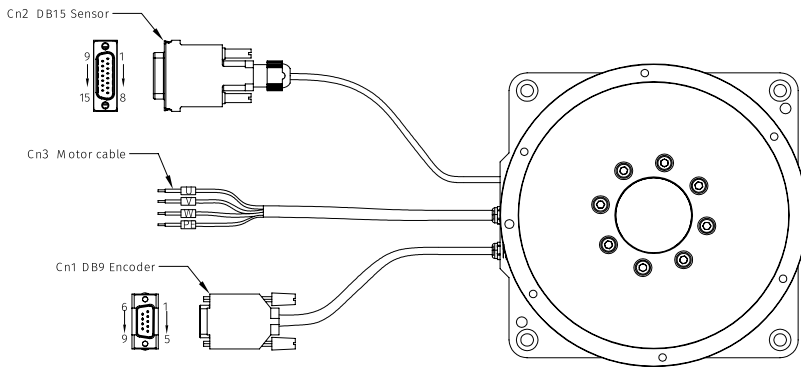
Torque-Speed Curve @310V



Dimension



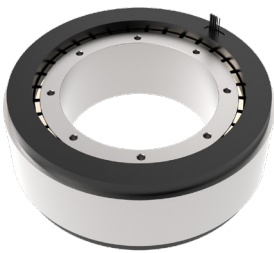
Wiring diagram



Cn1 DB9 Encoder			Cn2 DB15 Encoder		
Pin.	Description	Colour	Pin.	Description	Colour
1	5V	Brown	1	V1-	Blue
2	0V	Blue	2	V2-	Green
3	HA	Orange	3	V0+	Purple
4	HB	Purple	4	5V	Brown
5	HC	Black	5	Vx	Transparency
6	T1	Red	6	-	-
7	T2	White	7	-	-
8	-	-	8	-	-
9	-	-	9	V1+	Red
Cn3 Motor Cable			10	V2+	Yellow
Pin.	Description	Colour	11	V0-	Gray
1	U	Brown	12	0V	White
2	V	Blue	13	Calibration	Orange
3	W	Purple	14	-	-
4	PE	Yellow	15	-	-

Frameless Direct Drive Rotary Motor

ZWDR260-70



Parameters

Model		ZWDR260-70		
Performance Parameters		Symbol	Unit	S
Motor diameter		$\varnothing$	mm	260
Motor height		H	mm	70
Continuous Torque (Natural Cool) @100①		T_{cn}	Nm	75
Peak Torque		T_{pk}	Nm	300
Torque Constant $\pm 10\%$		K_t	Nm/Arms	11.3
Back EMF constant $\pm 10\%$		K_e	Vpeak/rpm	0.9
Motor Constant @25°C		K_m	Nm/Sqrt(W)	4.86
Resistance (L-L) @25°C $\pm 10\%$ ②		R_{25}	Ω	3.75
Inductance (L-L) $\pm 20\%$ ③		L	mH	29.77
Electrical time constant		τ_e	ms	7.94
Continuous Current (Natural Cool) @100 C ①		I_{cn}	Arms	6.5
Peak Current		I_{pk}	Arms	31.4
Max. Coil Temperature		t_{max}	°C	130
Max. Bus Voltage		U_{bus}	W/°C	600
Pole Number		2P	-	32
Rec. Max Speed		Ω_{max}	rpm	250
Mechanical Parameters				
Rotor Mass		m	Kg	6.7
Stator Mass		m	Kg	8.94
Rotor Inertia		$-J_r$	Kg·m ²	0.058
Other Information				
Insulation Class			Class A	
Protection Grade			IP40	
Ambient Temperature	Operation		0°C to 40°C (non-freezing)	
	Storage		-15°C to 70°C (non-freezing)	
Ambient Humidity	Operation		10%RH to 80%RH (non-condensing)	
	Storage		10%RH to 80%RH (non-condensing)	
Recommended Ambience			Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.	

① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

② Resistance is measured by DC current with standard 3 m cable.

③ Inductance is measured by current frequency of 1 kHz.

The contents of datasheet are subjected to change with prior notice.

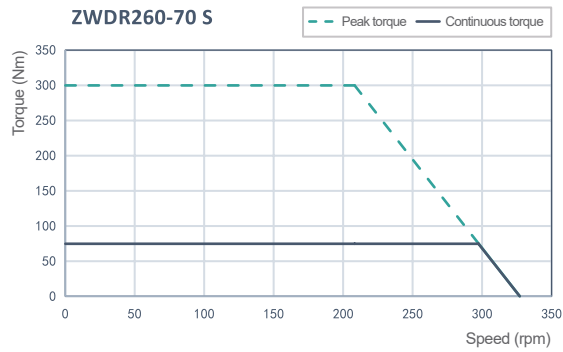
Iron Core Linear Motor

Ironless Linear Motor

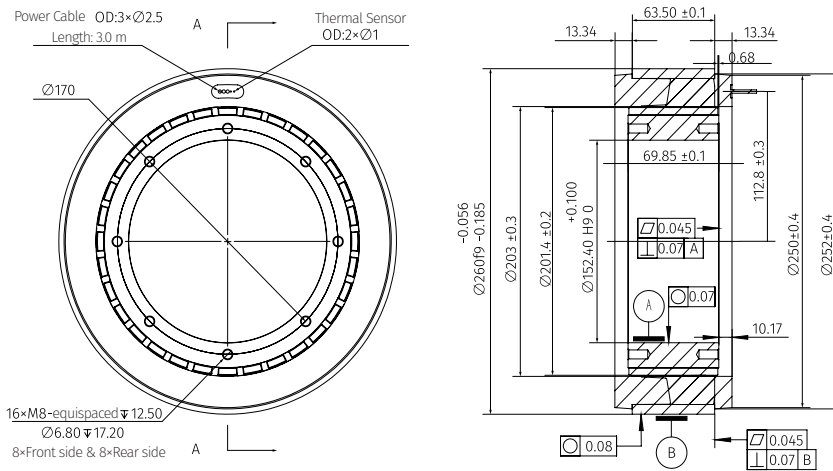
Torque Motor

Linear Motor Module

Torque-Speed Curve @310V



Dimension



Frameless Direct Drive Rotary Motor

ZWDR360-140



Parameters

Model		ZWDR360-140		
Performance Parameters		Symbol	Unit	P
Motor diameter		$\varnothing$	mm	360
Motor height		H	mm	140
Continuous Torque (Natural Cool) @100①		T_{cn}	Nm	360.00
Peak Torque		T_{pk}	Nm	1080.00
Torque Constant $\pm 10\%$		K_t	Nm/Arms	18.0
Back EMF constant $\pm 10\%$		K_e	Vpeak/rpm	2.03
Motor Constant @25°C		K_m	Nm/Sqrt(W)	13.89
Resistance (L-L) @25°C $\pm 10\%$ ②		R_{25}	Ω	4.48
Inductance (L-L) $\pm 20\%$ ③		L	mH	52.48
Electrical time constant		τ_e	ms	11.7
Continuous Current (Natural Cool) @100 C ①		I_{cn}	Arms	10.0
Peak Current		I_{pk}	Arms	30.0
Max. Coil Temperature		t_{max}	°C	120
Max. Bus Voltage		U_{bus}	W/°C	600
Pole Number		2P	-	32
Rec. Max Speed④		Ω_{max}	rpm	85
Mechanical Parameters				
Rotor Mass		m	Kg	14.40
Stator Mass		m	Kg	34.78
Rotor Inertia		$-J_r$	Kg·m ²	0.237
Other Information				
Insulation Class			Class A	
Protection Grade			IP40	
Ambient Temperature	Operation		0°C to 40°C (non-freezing)	
	Storage		-15°C to 70°C (non-freezing)	
Ambient Humidity	Operation		10%RH to 80%RH (non-condensing)	
	Storage		10%RH to 80%RH (non-condensing)	
Recommended Ambience			Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.	

① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

② Resistance is measured by DC current with standard 3 m cable.

③ Inductance is measured by current frequency of 1 kHz.

The contents of datasheet are subjected to change with prior notice.

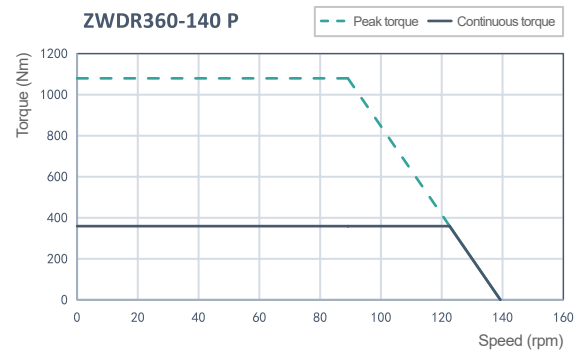
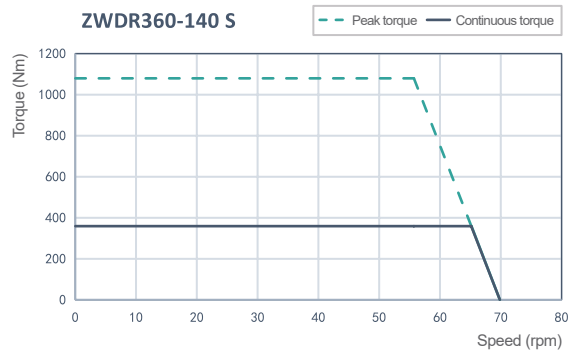
Iron Core Linear Motor

Ironless Linear Motor

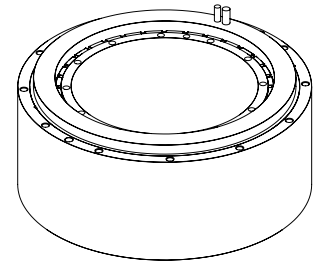
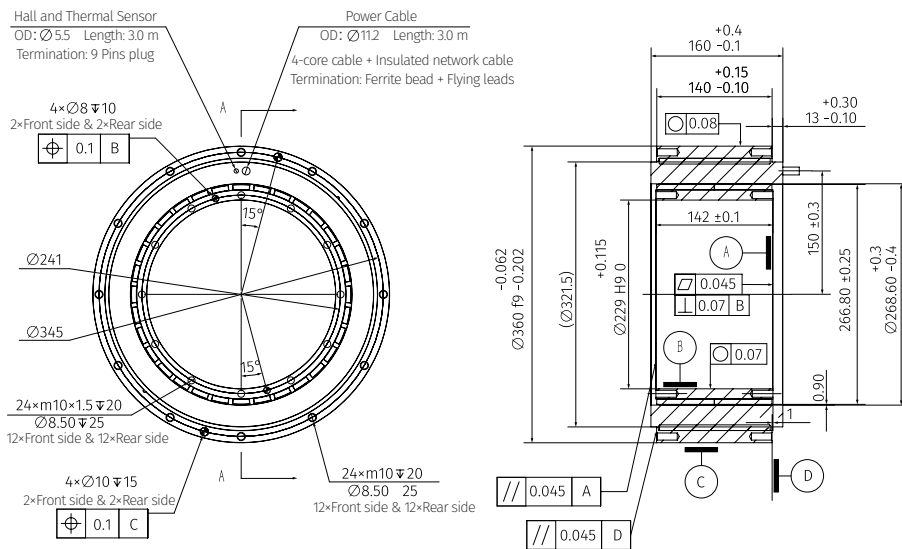
Torque Motor

Linear Motor Module

Torque-Speed Curve @310V



Dimension



LINEAR MOTOR MODULE

During the movement of a linear motor, it is necessary to collect the position information of the motor. The traditional position acquisition method is to use a magnetic encoder or an optical encoder, but this method is expensive and has high requirements for the operating environment of the motor.

Application Field

At present, linear modules have been widely used in measurement systems, laser welding machine, laser cutting machine, glue coating machine, spraying machine, punching machine, glue dispensing machine, small CNC machine tool, engraving and milling machine, sample drawing machine, cutting machine, transfer machine, sorting machine, testing machine and applicable education and other fields.

Advantages of linear motor modules

The linear motor module is a transmission device that directly converts electrical energy into linear motion mechanical energy without any intermediate conversion mechanism. It has the advantages of simple structure, convenient to achieve long stroke, high acceleration, fast response, high accuracy, and the highest repeatability is $\pm 0.001 \mu\text{m}$.

High Speed

The speed can be up to 5 m/s, but the speed is usually controlled at 3 m/s to avoid runaway, which results in shorter production cycle time.

High Efficiency

Because there is no intermediate transmission link, the energy loss in mechanical friction is eliminated and the transmission efficiency is greatly improved.

High Dynamic Stiffness

Due to the "direct drive", it avoids the movement delay caused by elastic deformation, friction wear and reverse gap of the intermediate transmission connecting rod in the process of starting, changing speed and changing direction, and also improves the dynamic stiffness.

Multi-operation Mode

Continuous operation, interval work, variable speed work, positive and reverse operation, fixed-point positioning, rapid braking, soft start and soft stop and other modes can be adopted according to the needs of the equipment.

Quick Response

Due to the direct elimination of some mechanical transmission components (such as screws, etc.) with large response time constants in the system, the dynamic corresponding performance of all feedback control systems is greatly improved, which is correspondingly very sensitive and fast.

Higher acceleration (can be up to 25g) and shorter rectification time to increase production efficiency.

High Accuracy

The transmission system eliminates the transmission gap and error caused by mechanical mechanisms such as screws, and reduces the tracking error caused by the transmission system during the interpolation movement after the removal lag.

Direct measurement system is adopted, and distance/angle conversion is not required.

Through the feedback control of linear position detection, the positioning accuracy of the machine tool can be greatly improved.

Quiet and low noise during motion

Because the transmission device eliminates the mechanical friction of screws and other parts, and the guide system can use rolling rails or magnetic pad suspension rails (no mechanical contact), the noise of movement will be greatly reduced.

Diversified options and flexible customisation

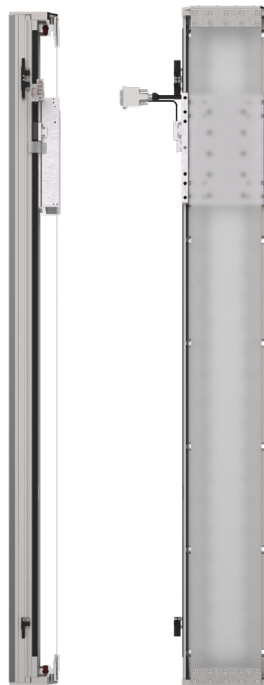
It can be single-axis multi-slider matching, and can be combined into XY, XYθ, XY horizontal cantilever, XY vertical cantilever, gantry structure.

The stroke is not limited.

The stroke is theoretically infinitely long, and the maximum is more than 40m at present.

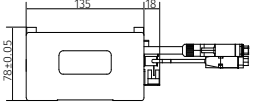
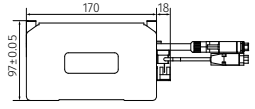
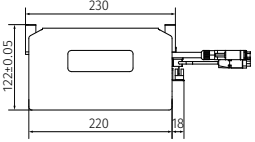
No back gap

Directly coupled power drive load, no mechanical conversion, so there is no back gap.



ZW Linear Motor Module

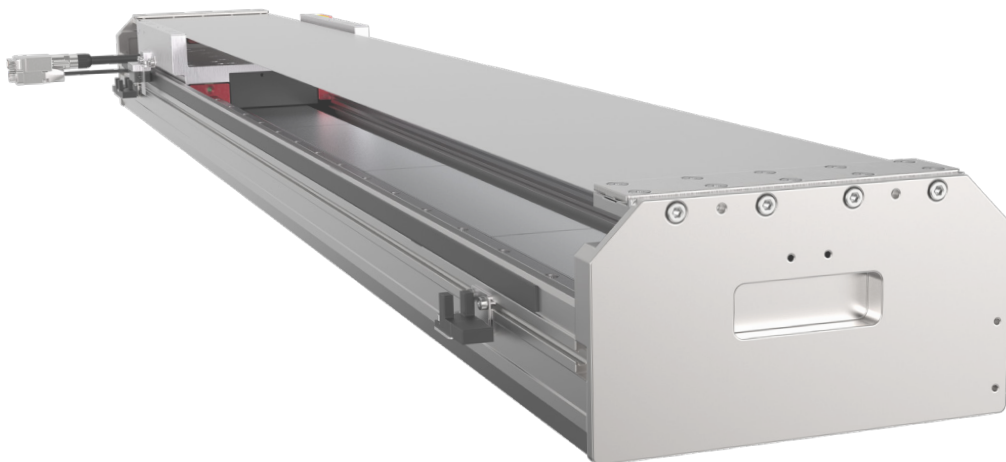
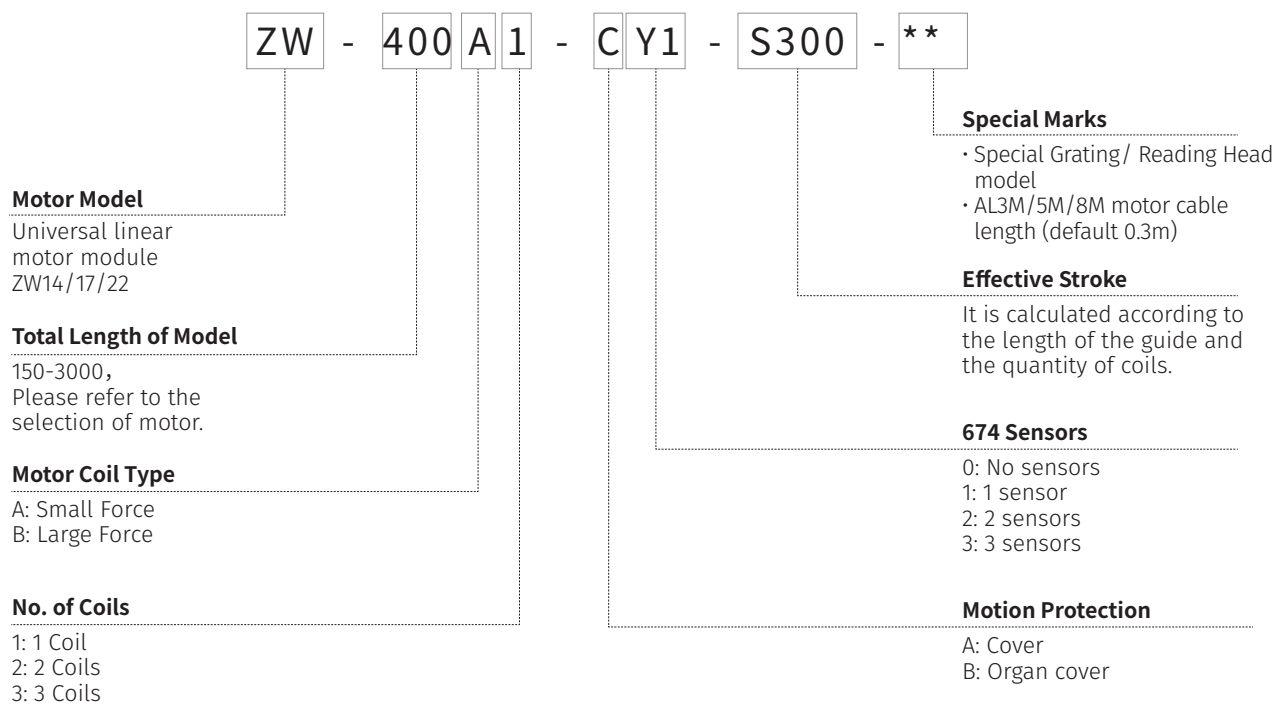
Linear Motors Series

Model	Peak Force (N)	Continuous Force (N)	Dimensions	Slider Length	Length quick calculation (single slider)	Guide series
ZW14P-□ -A	60	173		120	Total length = Stroke + 170	15
ZW14P-□ -B	119	345		210	Total length = Stroke + 260	15
ZW17P-□ -A	138	371		120	Total length = Stroke + 170	15
ZW17P-□ -B	276	742		210	Total length = Stroke + 260	15
ZW22P-□ -A	377	1044		230	Total length = Stroke + 280	25
ZW22P-□ -B	566	1566		300	Total length = Stroke + 350	25

1. Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
2. The accuracy is measured using an API laser interferometer with a measuring stroke of 500 mm.
3. Resistance is measured by DC current with standard 0.3 m cable.
4. Inductance is measured by current frequency of 1 kHz.
5. The weight of the sliding assembly includes motor, slider, fixed bracket, encoder, and other parts.
6. Undeclared tolerance is ± 0.1 mm.

1. The dwell time for the load/speed parameter test is 0.5 s, with a stroke of 500 mm. The theoretical value when placed horizontally is for reference only. The actual load is affected by factors such as motion speed, acceleration, friction, installation environment, and motor force.
2. The ZW linear motor module is standard equipped with guide, magnetic encoder and photoelectric sensor of ZW brand. If you need a special model, please contact the sales engineer.
3. The contents of datasheet are subject to change without prior notice.
4. The default cable length of ZW linear motor is 0.3m, and the extension cable can be configured. If you need a special cable length, please mark the motor cable length at the end of the model.
5. If organ cover protection is required, the installation size of the module is the same, but the effective stroke is reduced by 30%.

Quick identification method (Part Numbering)



ZW Linear Motor Accessories

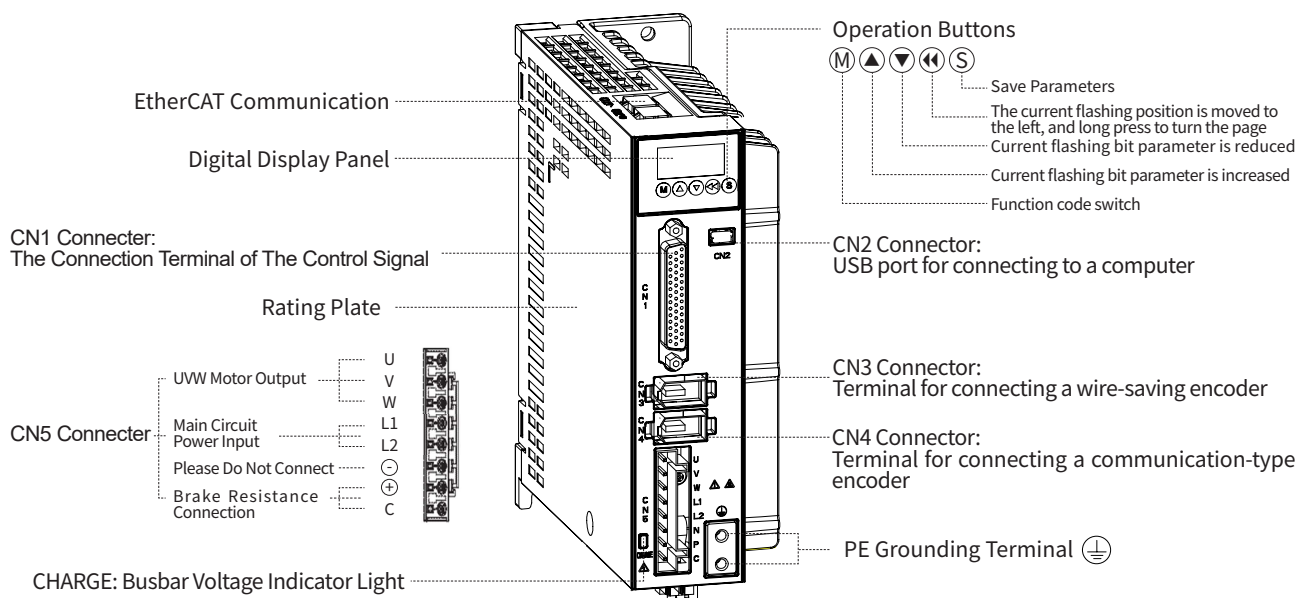
Servo Driver

Iron Core Linear Motor

Ironless Linear Motor

Torque Motor

Linear Motor Module



Electrical Specifications

Item		SIZE-A Type				SIZE-B Type	
Drive Model EAS-R*-PA**	R70	R90	1R6	2R8	3R8	5R5	7R6
Continuous Output Current Arms	0.7	0.9	1.6	2.8	3.8	5.5	7.6
Maximum Output Current Arms	2.1	3.2	5.9	9.3	11	16.9	17
Input Power Supply Voltage Specifications	Single Phase AC200V-240V, +10 to -15%, 50/60HZ						
Input Power Supply Current Specification (Arms)	0.8	1.6	2.4	5	6.3	8.7	10
Braking Function	Externally Connected Braking Resistor				Built-in Braking Resistor		
Built-in Braking Resistor Resistance Value (Ohms)	-	-	-	-	50	50	50
Built-in Braking Resistor Capacity (Watts)	-	-	-	-	50	50	50
Minimum Resistance Value of Externally Connected Braking Resistor (Ohms)	40	40	40	40	40	40	40

Specifications

Item	Description		
Basic Specification	Control Method		IGBT PWM control, sinusoidal current drive method.
	Encoder Feedback	Rotary Servo Motor	R0 Series: Incremental type wire-saving encoder: 2500 line incremental encoder
			R1 Series: Bus type serial encoder: 17bit (absolute/type incremental encoder), 23bit (absolute/type incremental encoder)
		Linear Servo Motor	Absolute value linear encoder (signal resolution varies with the absolute value linear encoder)
			Incremental type linear encoder (signal resolution varies with the incremental type linear encoder and serial conversion unit)
	Control Signals	DI Input	General 5 inputs General input functions are selectable through parameters
		DO Output	General 4 outputs General output functions are selectable through parameters
	Analog Signal	Input	Input: 1 channel 12-bit A/D input
	Communication Function	USB	Connection with computers, etc.
	Performance	Dynamic Brake	
Control Mode		Speed mode, torque mode, position mode, position/speed mode, position/torque mode, speed torque mode, full closed-loop mode The above 7 control modes can be switched through parameters. Here is the translation of the provided text into English	
Speed variation rate*1		Load variation rate	Rated speed within ±0.1% (Load fluctuation: 0 to 100%)
		Voltage variation rate	Rated speed 0% (Voltage fluctuation: ±10%)
		Temperature variation rate	Rated speed within ±0.1% (Temperature fluctuation: 25±25 °C)
Speed Control Range		1:6000	
Speed Loop Frequency Characteristics		3.0KHZ	
Torque Control Precision		±1%	
Circuit Time Parameters		Around 47μs	
Encoder pulse output with frequency division		Output	
	Division ratio		Arbitrary division
Input and output signals	Digital input signals	Signals can be reassigned	5 DIs DI Functions: Servo enable, alarm reset, gain switching, positive limit switch, negative limit switch, home switch.
	Digital output signals	Signals can be reassigned	4 DOs DO Functions: Servo ready, motor rotation, zero-speed signal, speed consistency, positioning completion, brake release, warning output, fault output, torque arrival.
Built-in Functions	Over-travel (OT) prevention function		Immediately stop when P-OT or N-OT is activated.
	Protective Functions		Overcurrent, overvoltage, undervoltage, overload, main circuit abnormality detection, heatsink overheating, power phase loss, overspeed, encoder abnormality, CPU abnormality, parameter abnormality, others.
	LED Display Function		Main power CHARGE, 5-digit LED display.
	Vibration Suppression		Support for low-frequency suppression from 0-100Hz. Support for mid-high frequency suppression from 100-5000Hz.
	Other Functions		Gain adjustment, alarm recording, JOG operation.

Note *1: The speed variation rate is defined by the following formula:

$$\text{Speed variation rate} = \frac{\text{No-load speed} - \text{Full-load speed}}{\text{Rated speed}} \times 100\%$$

In practice, voltage changes and temperature variations can cause amplifier deviations, leading to changes in the resistance value of the acid. Consequently, this effect will be manifested through changes in the speed. The variation in speed, represented as a ratio to the rated speed, is the speed variation rate caused by voltage changes and temperature variations.

Note *2: The built-in open-collector power supply is not electrically isolated from the control circuit within the servo driver.

ZW Linear Motor Accessories

Cable Configuration

ZWXC - M - RCNINHL - ZW3W3 - SD - 010 - QD

ZW Cables

Classification

M: Power Cable
E: Encoder Cable

Encoder Types

RCN: RENISHAW
HEI: HEIDENHAIN
LAM: LAMOTION

Interface Types

IN: Incremental
AN: Analog
AB: Absolute

Hall

H: With Hall
NH: Without Hall

QD: Drive Side
TL: Cable Chain Side

Cable Length

010: 1m
020: 2m

Connector Type

3W3
DB9
DB15

Drive Type

ZW: Zhiwei
GC: SERVOTRONIX
SX: Panasonic

Limit

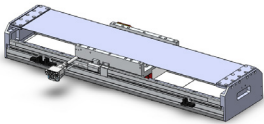
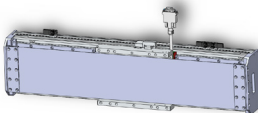
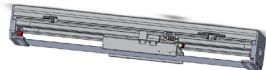
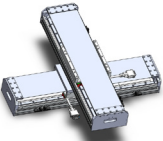
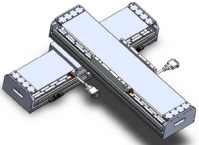
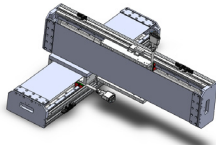
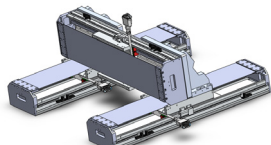
L: With Patch Limit
NL: Without Patch Limit

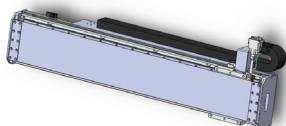
Cable Description

Colour	Ren	Black	Green	Purple	White	Blue	Yellow	Brown	Shield
Description	5V	0V	A+	A-	B+	B-	Z+	Z-	Shell
DB9 Connector, male	5	9	4	8	3	7	2	6	Shell

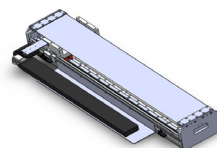
Colour	Brown	White	Yellow	Green	Red	Blue	Purple	Gray	Shield
Description	5V	0V	A+	A-	B+	B-	Z+	Z-	Shell
DB15 Connector, male	7, 8	2, 9	14	6	13	5	12	4	Shell

ZWM linear motor module selection table

Customer Name		Industry	☐ General industrial environment ☐ Clean room, Class ☐ Vacuum environment, Class ☐ Dust environmen ☐ Other: _____		
Contact person					
E-mail					
Mobile No.					
Motion Mode A: ☐ Point motion B: ☐ Scanning C: ☐ Other		Encoder selection A: ☐ ZW 1um magnetic encoder (standard) B: ☐ Grating encoder C: ☐ Other		Guide selection A: ☐ ZW linear guide B: ☐ Other	Module size requirements Length: _____mm Width: _____mm High: _____mm
Motor Cable Length: 0.3m (standard), extension cable length ☐ 3m ☐ 5m ☐ 8m		Motor Cable Length: ☐ 1m ☐ 2m ☐ 3m ☐ 5m ☐ 8m			
☐ Single axis horizontal installation 	☐ Single axis vertical installation 	☐ Single axis wall installation 	☐ Single axis inverted installation 		
☐ Cross installation of XY axis 	☐ XY horizontal cantilever installation 	☐ XY wall cantilever installation 	☐ Gantry structure 		
No. of Motor Coils	Motor 1	Motor 2	Motor 3		
Load (kg)					
Total stroke					
No. of sensors					
[A-B] Stroke (mm)					
Stroke (mm)					
Dwell Time (s)					
[B-C] Stroke (mm)					
Stroke (mm)					
Dwell Time (s)					
[C-A] Stroke (mm)					
Stroke (mm)					
Dwell Time (s)					
Drive configuration: Drive Voltage: ☐ 220V ☐ 280V ☐ Other: _____ Drive Type: ☐ Pulse ☐ EtherCAT Bus type Sensor:		Customer Other Requirements:			

Cable Chain Installation Method

Recommended installation method for the cable chain when the module is sidewall.



Recommended installation method for the cable chain when the module is horizontal.

ZW Linear Motor Module

ZWM14-A Series



Parameter Table

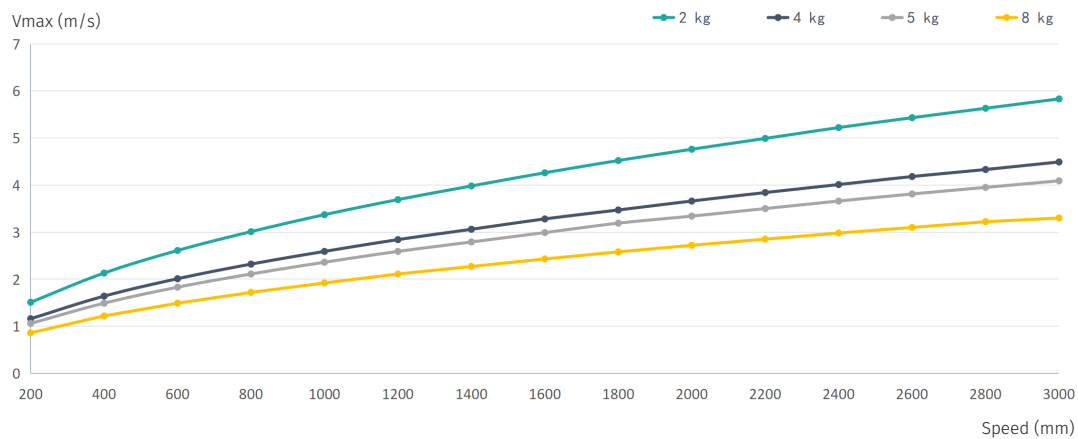
Performance Parameter	
Repetitive Precision Positioning	±2 μm
Maximum Acceleration	5 G
Recommended Maximum Speed	3 m/s
Mechanical Specification	
Length of Slider	120 mm
Slider Mass	0.9 kg

Motor Specification	
Peak Current	10.37 Arms
Continuous Current	3.4 Arms
Peak Force	173 N
Continuous Force	60 N
Motor Force Constant	17.58 N/Arms
Interphase Resistance	1.83 Ω

Motor Specification	
Interphase Inductance	8.37 mH
Magnetic Period	25 mm

Stroke (mm) \ Load (kg)	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
2	1.51	2.13	2.61	3.01	3.37	3.69	3.98	4.26	4.52	4.76	4.99	5.22	5.43	5.63	5.83
4	1.16	1.64	2.01	2.32	2.59	2.84	3.06	3.28	3.47	3.66	3.84	4.01	4.18	4.33	4.49
5	1.06	1.49	1.83	2.11	2.36	2.59	2.79	2.99	3.19	3.34	3.50	3.66	3.81	3.95	4.09
8	0.86	1.22	1.49	1.72	1.92	2.11	2.27	2.43	2.58	2.72	2.85	2.98	3.10	3.22	3.3

Quickly Selection of Motor Load



Total Length (mm)	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
Stroke (mm)	30	80	130	180	230	280	330	380	430	480	530	580	630	680	730	780	830	930	1030
Mass (kg)	3.7	4.25	4.8	5.35	5.9	6.45	7	7.55	8.1	8.65	9.2	9.75	10.3	10.85	11.4	11.95	12.5	13.6	14.7
Stroke of Double Coils (mm)	-	-	-	-	100	150	200	250	300	350	400	450	600	550	600	650	700	800	900
Mass of Double Coils (kg)	-	-	-	-	7.7	8.25	8.8	9.35	9.9	10.45	11	11.55	12.1	12.65	13.2	13.75	14.3	15.4	16.5

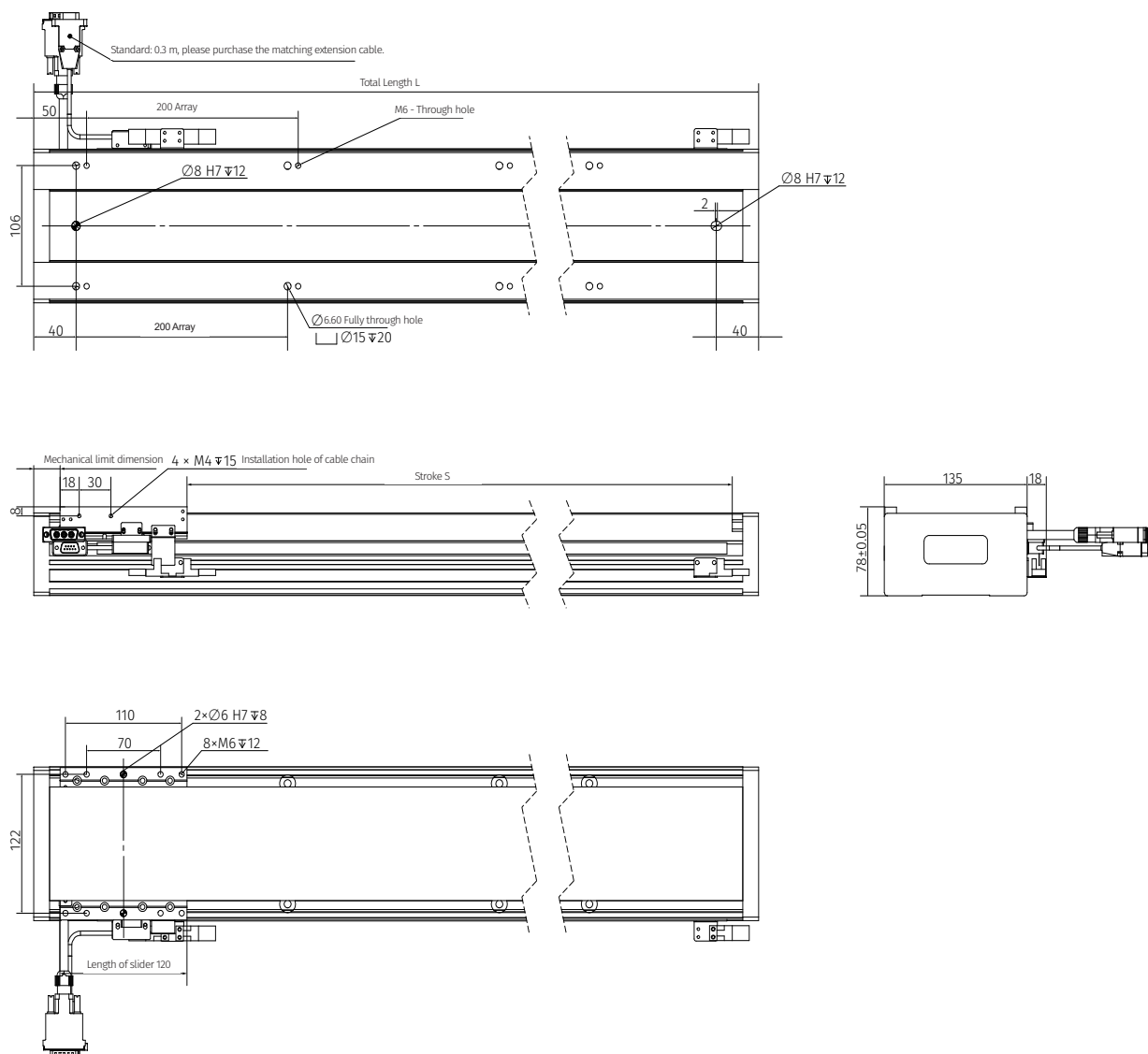
Total Length (mm)	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	-
Stroke (mm)	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	2430	2530	2630	2730	2830	-
Mass (kg)	15.8	16.9	18	19.1	20.2	21.3	22.4	23.5	24.6	25.7	26.8	27.9	29	30.1	31.2	32.3	33.4	34.5	-
Stroke of Double Coils (mm)	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	-
Mass of Double Coils (kg)	17.6	18.7	19.8	20.9	22	23.1	24.2	25.3	26.4	27.5	28.6	29.7	30.8	31.9	33	34.1	35.2	36.3	-

Compatible Servo Drivers

Driver Brand	Pulse Model	Bus Model
ZW	EAS-L1-PA5R5	EAS-L1-NA5R5
Panasonic	MBDLN35SL	MCDLN35BL
SERVOTRONIX CDHD First Generation	CDHD-0032AAP1	CDHD-0032AEC2
SERVOTRONIX Economic Model	CDHDE-4D52AAP1	CDHDE-4D52AEB

ZW linear motors are compatible with most brands and models of drivers on the market. For more information on the use and purchase of drivers from other brands, please consult with ZW sales engineers for details.

Dimension



ZW Linear Motor Module

ZWM14-B Series



Parameter Table

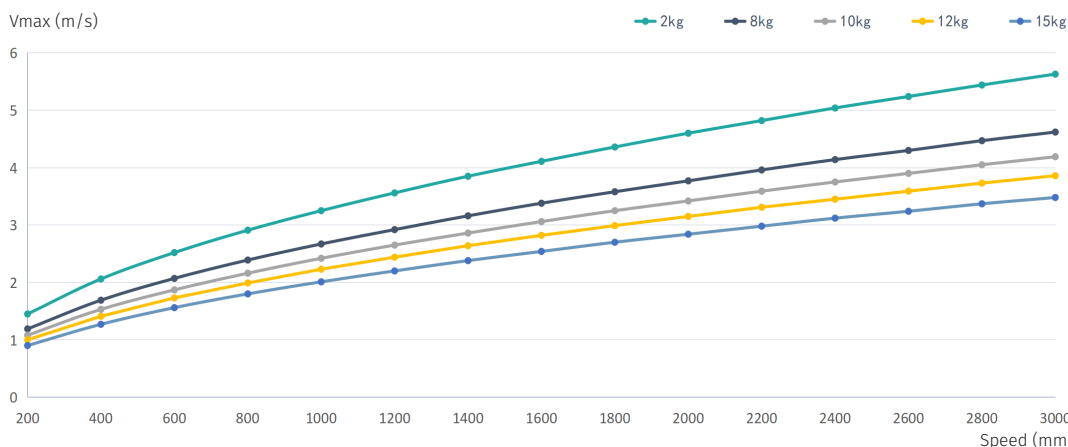
Performance Parameter	
Repetitive Precision Positioning	±2 μm
Maximum Acceleration	5 G
Recommended Maximum Speed	3 m/s
Mechanical Specification	
Length of Slider	120 mm
Slider Mass	0.9 kg

Motor Specification	
Peak Current	10.37 Arms
Continuous Current	3.4 Arms
Peak Force	346 N
Continuous Force	120 N
Motor Force Constant	35.16 N/Arms
Interphase Resistance	3.66 Ω

Motor Specification	
Interphase Inductance	16.74 mH
Magnetic Period	25 mm

Stroke (mm) \ Load (kg)	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
	Maximum Speed (m/s)														
2	1.45	2.06	2.52	2.91	3.25	3.56	3.85	4.11	4.36	4.60	4.82	5.04	5.24	5.44	5.63
8	1.19	1.69	2.07	2.39	2.67	2.92	3.16	3.38	3.58	3.77	3.96	4.14	4.30	4.47	4.62
10	1.08	1.53	1.87	2.16	2.42	2.65	2.86	3.06	3.25	3.42	3.59	3.75	3.90	4.05	4.19
12	1.00	1.41	1.73	1.99	2.23	2.44	2.64	2.82	2.99	3.15	3.31	3.45	3.59	3.73	3.86
15	0.90	1.27	1.56	1.80	2.01	2.20	2.38	2.54	2.70	2.84	2.98	3.12	3.24	3.37	3.48

Quickly Selection of Motor Load



Total Length (mm)	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	1300
Stroke (mm)	40	90	140	190	240	290	340	390	440	490	540	590	640	690	740	840	940	1040
Mass (kg)	5.5	6.05	6.6	7.15	7.7	8.25	8.8	9.35	9.9	10.45	11	11.55	12.1	12.65	13.2	14.3	15.4	16.5
Stroke of Double Coils (mm)	-	-	-	-	-	-	120	170	220	270	320	370	420	470	520	620	720	820
Mass of Double Coils (kg)	-	-	-	-	-	-	11.4	11.95	12.5	13.05	13.6	14.15	14.7	15.25	15.8	16.9	18	19.1

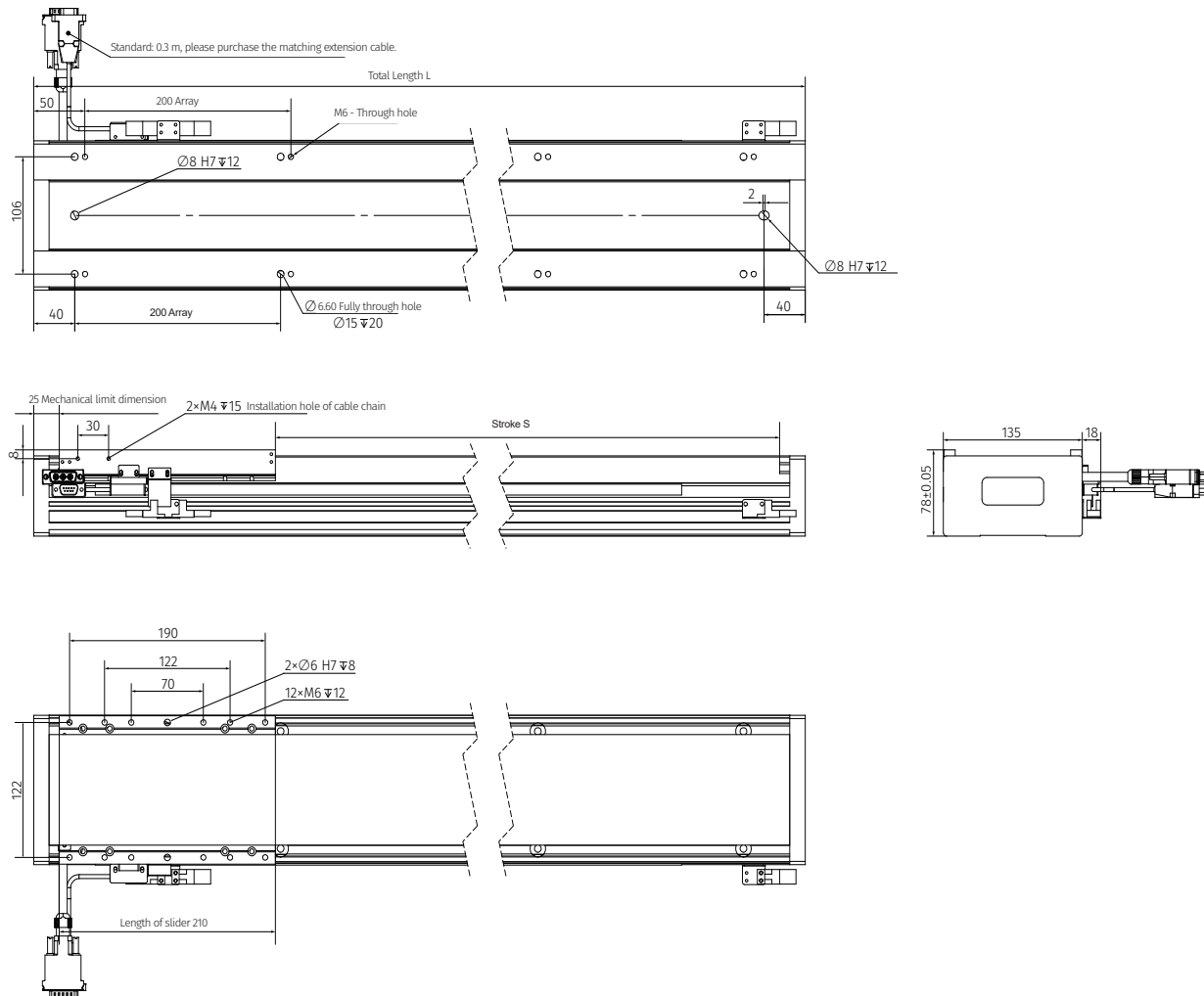
Total Length (mm)	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	-
Stroke (mm)	1140	1240	1340	1440	1540	1640	1740	1840	1940	2040	2140	2240	2340	2440	2540	2640	2740	-
Mass (kg)	17.6	18.7	19.8	20.9	22	23.1	24.2	25.3	26.4	27.5	28.6	29.7	30.8	31.9	33	34.1	35.2	-
Stroke of Double Coils (mm)	920	1020	1120	1220	1320	1420	1520	1620	1720	1820	1920	2020	2120	2220	2320	2420	2520	-
Mass of Double Coils (kg)	20.2	21.3	22.4	23.5	24.6	25.7	26.8	27.9	29	30.1	31.2	32.3	33.4	34.5	35.6	36.7	37.8	-

Compatible Servo Drivers

Driver Brand	Pulse Model	Bus Model
ZW	EAS-L1-PA5R5	EAS-L1-NA5R5
Panasonic	MBDLN35SL	MCDLN35BL
SERVOTRONIX CDHD First Generation	CDHD-0032AAP1	CDHD-0032AEC2
SERVOTRONIX Economic Model	CDHDE-4D52AAP1	CDHDE-4D52AEB

ZW linear motors are compatible with most brands and models of drivers on the market. For more information on the use and purchase of drivers from other brands, please consult with ZW sales engineers for details.

Dimension



ZW Linear Motor Module

ZWM17-A Series



Parameter Table

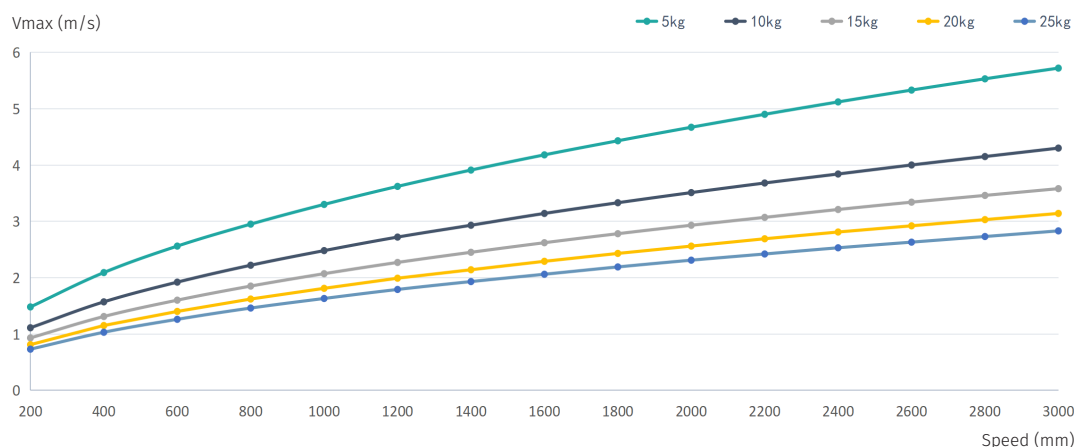
Performance Parameter	
Repetitive Precision Positioning	±2 μm
Maximum Acceleration	5 G
Recommended Maximum Speed	3 m/s
Mechanical Specification	
Length of Slider	120 mm
Slider Mass	0.9 kg

Motor Specification	
Peak Current	10.31 Arms
Continuous Current	3.23 Arms
Peak Force	371 N
Continuous Force	138 N
Motor Force Constant	41.57 N/Arms
Interphase Resistance	3.41 Ω

Motor Specification	
Interphase Inductance	15.66 mH
Magnetic Period	25 mm

Stroke (mm) \ Load (kg)	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
5	1.48	2.09	2.56	2.95	3.30	3.62	3.91	4.18	4.43	4.67	4.90	5.12	5.33	5.53	5.72
10	1.11	1.57	1.92	2.22	2.48	2.72	2.93	3.14	3.33	3.51	3.68	3.84	4.00	4.15	4.30
15	0.93	1.31	1.60	1.85	2.07	2.27	2.45	2.62	2.78	2.93	3.07	3.21	3.34	3.46	3.58
20	0.81	1.15	1.40	1.62	1.81	1.99	2.14	2.29	2.43	2.56	2.69	2.81	2.92	3.03	3.14
25	0.73	1.03	1.26	1.46	1.63	1.79	1.93	2.06	2.19	2.31	2.42	2.53	2.63	2.73	2.83

Quickly Selection of Motor Load



Total Length (mm)	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
Stroke (mm)	30	80	130	180	230	280	330	380	430	480	530	580	630	680	730	780	830	930	1030
Mass (kg)	4.7	5.55	6.4	7.25	8.1	8.95	9.8	10.65	11.5	12.35	13.2	14.05	14.9	15.75	16.6	17.45	18.3	20	21.7
Stroke of Double Coils (mm)	-	-	-	-	100	150	200	250	300	350	400	450	500	550	600	650	700	800	900
Mass of Double Coils (kg)	-	-	-	-	10.9	11.75	12.6	13.45	14.3	15.15	16	16.85	17.7	18.55	19.4	20.25	21.1	22.8	24.5

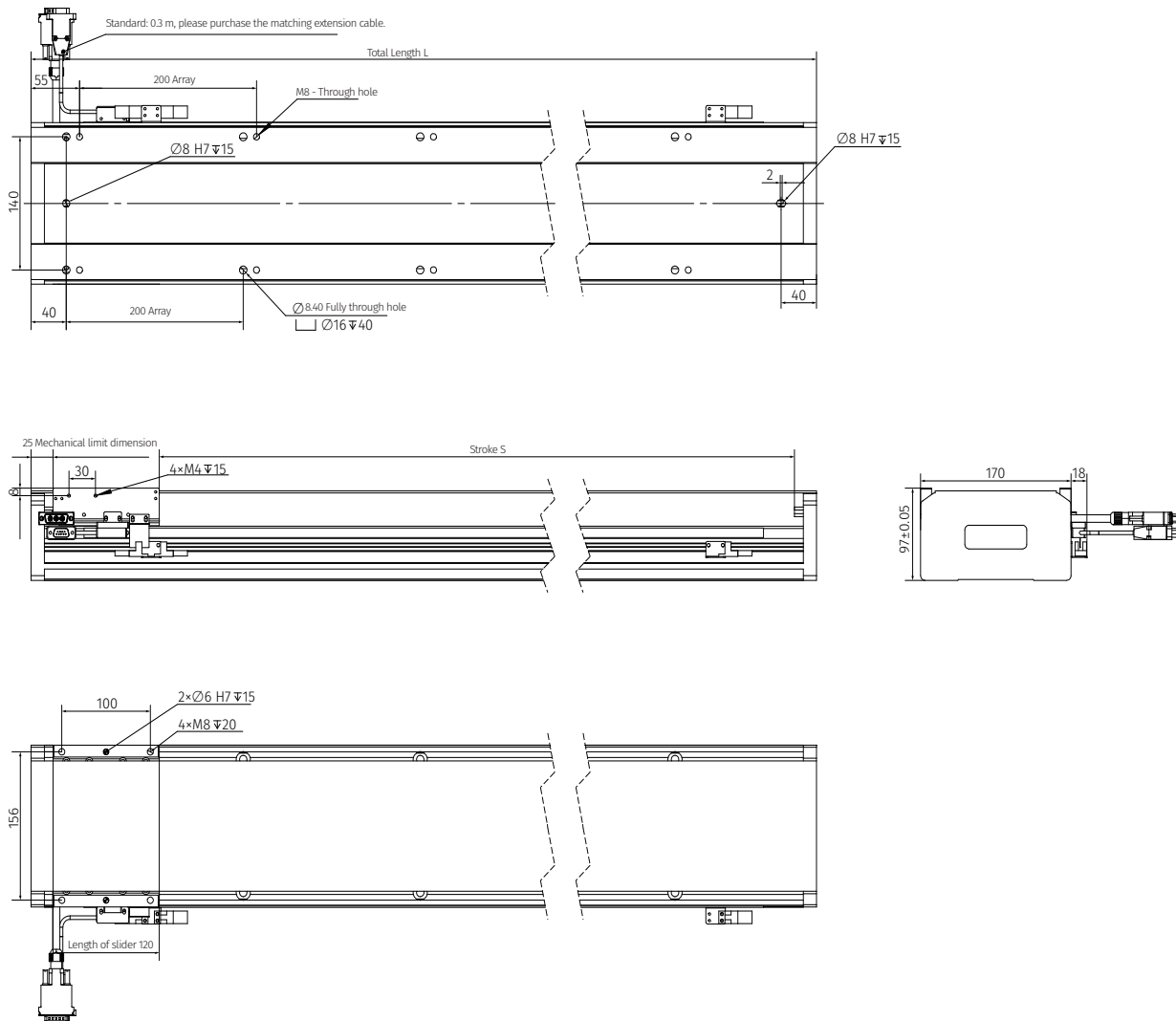
Total Length (mm)	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	-
Stroke (mm)	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	2430	2530	2630	2730	2830	-
Mass (kg)	23.4	25.1	26.8	28.5	30.2	31.9	33.6	35.3	37	38.7	40.4	42.1	43.8	45.5	47.2	48.9	50.6	52.3	-
Stroke of Double Coils (mm)	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	-
Mass of Double Coils (kg)	26.2	27.9	29.6	31.3	33	34.7	36.4	38.1	39.8	41.5	43.2	44.9	46.6	48.3	50	51.7	53.4	55.1	-

Compatible Servo Drivers

Driver Brand	Pulse Model	Bus Model
ZW	EAS-L1-PA5R5	EAS-L1-NA5R5
Panasonic	MBDLN35SL	MCDLN35BL
SERVOTRONIX CDHD First Generation	CDHD-0032AAP1	CDHD-0032AEC2

ZW linear motors are compatible with most brands and models of drivers on the market. For more information on the use and purchase of drivers from other brands, please consult with ZW sales engineers for details.

Dimension



ZW Linear Motor Module

ZWM17-B Series



Parameter Table

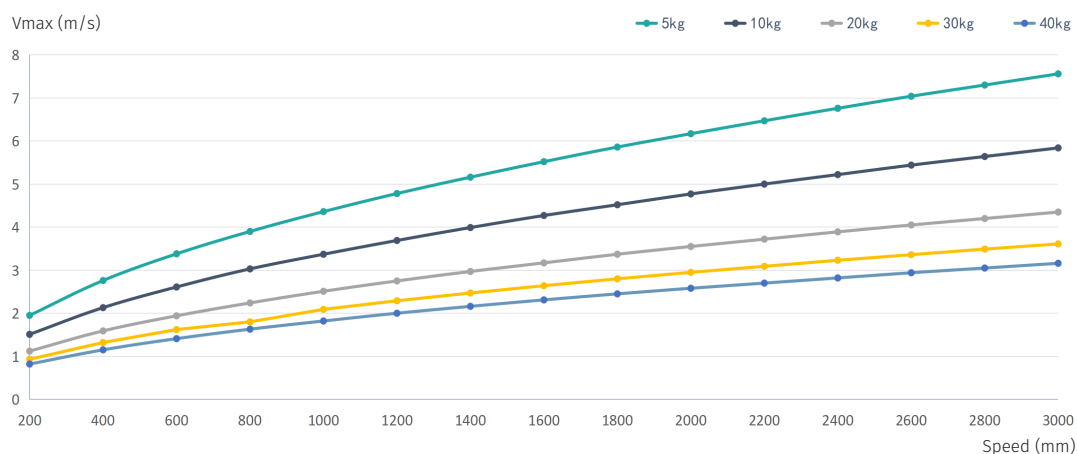
Performance Parameter	
Repetitive Precision Positioning	±2 μm
Maximum Acceleration	5 G
Recommended Maximum Speed	3 m/s
Mechanical Specification	
Length of Slider	120 mm
Slider Mass	0.9 kg

Motor Specification	
Peak Current	10.31 Arms
Continuous Current	3.23 Arms
Peak Force	742 N
Continuous Force	276 N
Motor Force Constant	83.14 N/Arms
Interphase Resistance	6.82 Ω

Motor Specification	
Interphase Inductance	31.32 mH
Magnetic Period	25 mm

Stroke (mm) \ Load (kg)	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
5	1.95	2.76	3.38	3.90	4.36	4.78	5.16	5.52	5.86	6.17	6.47	6.76	7.04	7.30	7.56
10	1.51	2.13	2.61	3.03	3.37	3.69	3.99	4.27	4.52	4.77	5.00	5.22	5.44	5.64	5.84
20	1.12	1.59	1.94	2.24	2.51	2.75	2.97	3.17	3.37	3.55	3.72	3.89	4.05	4.20	4.35
30	0.93	1.32	1.62	1.8	2.09	2.29	2.47	2.64	2.80	2.95	3.09	3.23	3.36	3.49	3.61
40	0.82	1.15	1.41	1.63	1.82	2.00	2.16	2.31	2.45	2.58	2.70	2.82	2.94	3.05	3.16

Quickly Selection of Motor Load



Total Length (mm)	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	1300
Stroke (mm)	40	90	140	190	240	290	340	390	440	490	540	590	640	690	740	840	940	1040
Mass (kg)	7.7	8.55	9.4	10.25	11.1	11.95	12.8	13.65	14.5	15.35	16.2	17.05	17.9	18.75	19.6	21.3	23	24.7
Stroke of Double Coils (mm)	-	-	-	-	-	-	120	170	220	270	320	370	420	470	520	620	720	820
Mass of Double Coils (kg)	-	-	-	-	-	-	16.9	17.75	18.6	19.45	20.3	21.15	22	22.85	23.7	25.4	27.1	28.8

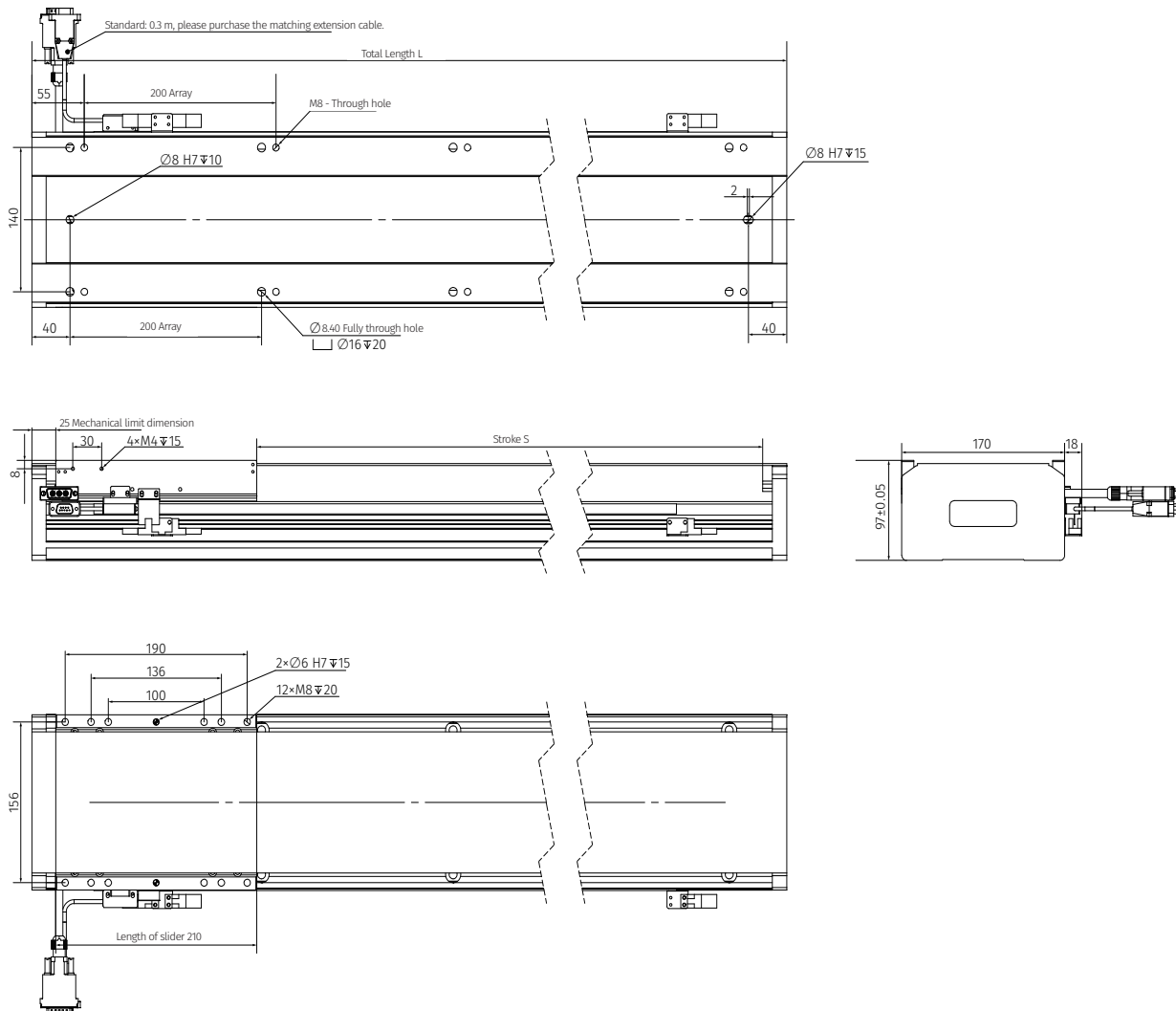
Total Length (mm)	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	-
Stroke (mm)	1140	1240	1340	1440	1540	1640	1740	1840	1940	2040	2140	2240	2340	2440	2540	2640	2740	-
Mass (kg)	26.4	27.1	29.8	31.5	33.2	34.9	36.6	38.3	40	41.7	43.4	45.1	46.8	48.5	50.2	51.9	53.6	-
Stroke of Double Coils (mm)	920	1020	1120	1220	1320	1420	1520	1620	1720	1820	1920	2020	2120	2220	2320	2420	2520	-
Mass of Double Coils (kg)	30.5	32.2	33.9	35.6	37.3	39	40.7	42.4	44.1	45.8	47.5	49.2	50.9	52.6	54.3	56	57.7	-

Compatible Servo Drivers

Driver Brand	Pulse Model	Bus Model
ZW	EAS-L1-PA5R5	EAS-L1-NA5R5
Panasonic	MDDLN35SL	MDDLN35BL
SERVOTRONIX CDHD First Generation	CDHD-0062AAP1	CDHD-0062AEC2

ZW linear motors are compatible with most brands and models of drivers on the market. For more information on the use and purchase of drivers from other brands, please consult with ZW sales engineers for details.

Dimension



ZW Linear Motor Module

ZWM22-A Series



Parameter Table

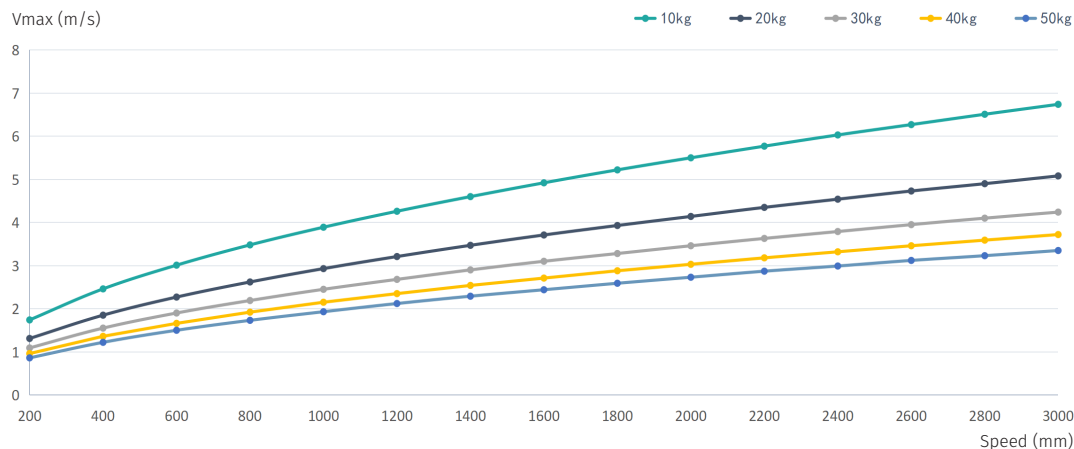
Performance Parameter	
Repetitive Precision Positioning	±2 μm
Maximum Acceleration	5 G
Recommended Maximum Speed	3 m/s
Mechanical Specification	
Length of Slider	120 mm
Slider Mass	0.9 kg

Motor Specification	
Peak Current	10.3 Arms
Continuous Current	3.28 Arms
Peak Force	1044 N
Continuous Force	378 N
Motor Force Constant	113.68 N/Arms
Interphase Resistance	8.58 Ω

Motor Specification	
Interphase Inductance	47.2 mH
Magnetic Period	25 mm

Stroke (mm)	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Load (kg)	Maximum Speed (m/s)														
10	1.74	2.46	3.01	3.48	3.89	4.26	4.60	4.92	5.22	5.50	5.77	6.03	6.27	6.51	6.74
20	1.31	1.85	2.27	2.62	2.93	3.21	3.47	3.71	3.93	4.14	4.35	4.54	4.73	4.90	5.08
30	1.09	1.55	1.90	2.19	2.45	2.68	2.90	3.10	3.28	3.46	3.63	3.79	3.95	4.10	4.24
40	0.96	1.36	1.66	1.92	2.15	2.35	2.54	2.71	2.88	3.03	3.18	3.32	3.46	3.59	3.72
50	0.86	1.22	1.50	1.73	1.93	2.12	2.29	2.44	2.59	2.73	2.87	2.99	3.12	3.23	3.35

Quickly Selection of Motor Load



Total Length (mm)	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	1300	1400
Stroke (mm)	120	170	220	270	320	370	420	470	520	570	620	670	720	820	920	1020	1120
Mass (kg)	18.5	19.75	21	22.25	23.5	24.75	26	27.25	28.5	29.75	31	32.25	33.5	36	38.5	41	43.5
Stroke of Double Coils (mm)	-	-	-	-	80	130	180	230	280	330	380	430	480	580	680	780	880
Mass of Double Coils (kg)	-	-	-	-	29	30.25	31.5	32.75	34	35.25	36.5	37.75	39	41.5	44	46.5	49

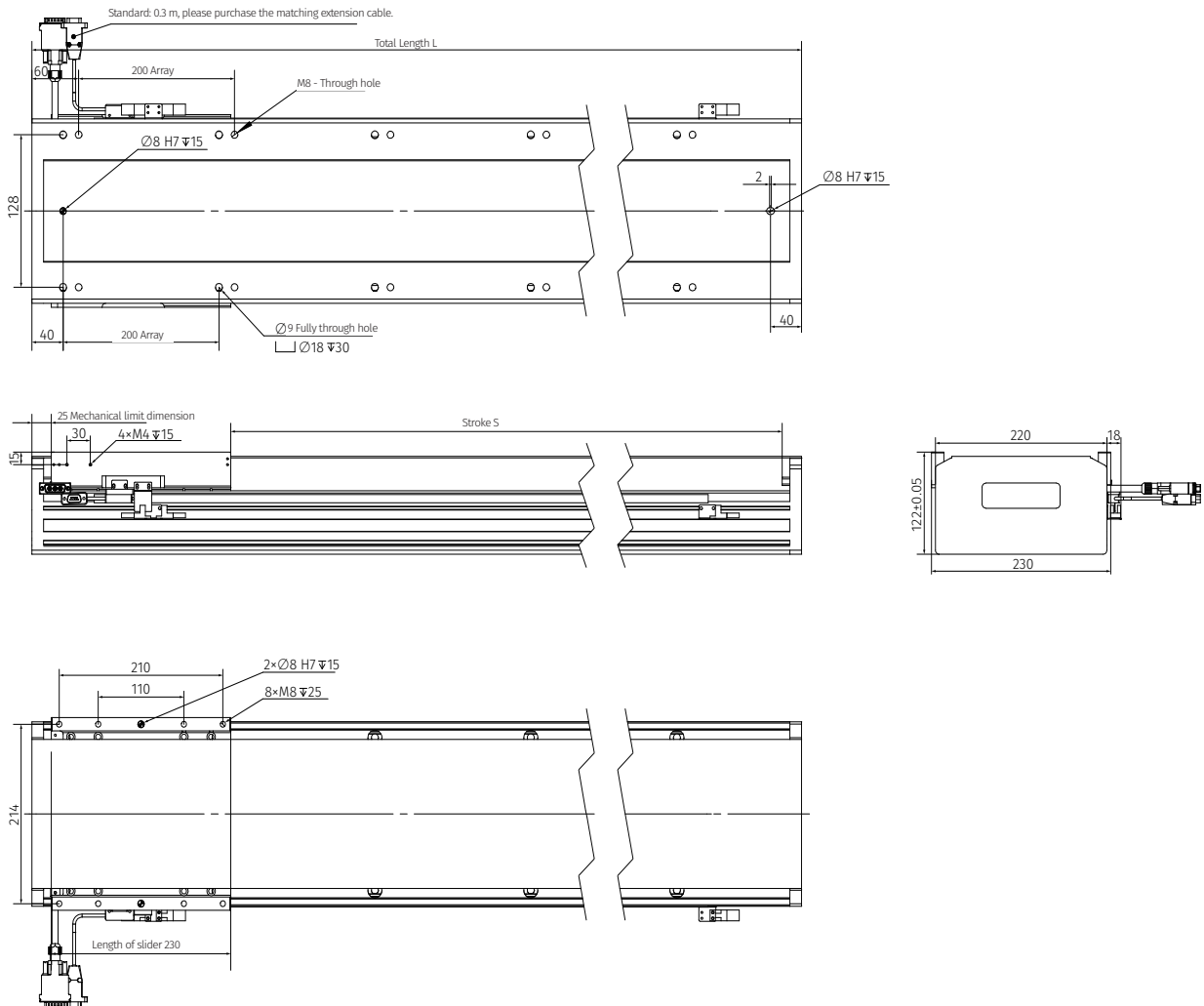
Total Length (mm)	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	-
Stroke (mm)	1220	1320	1420	1520	1620	1720	1820	1920	2020	2120	2220	2320	2420	2520	2620	2720	-
Mass (kg)	56	58.5	51	53.5	56	58.5	61	63.5	66	68.5	71	73.5	76	78.5	81	83.5	-
Stroke of Double Coils (mm)	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280	2380	2480	-
Mass of Double Coils (kg)	51.5	54	56.5	59	61.5	64	66.5	69	71.5	74	76.5	79	81.5	84	86.5	89	-

Compatible Servo Drivers

Driver Brand	Pulse Model	Bus Model
ZW	EAS-L1-PA5R5	EAS-L1-NA5R5
Panasonic	MDDL N35SL	MDDL N35BL
SERVOTRONIX CDHD First Generation	CDHD-0082AAP1	CDHD-0082AEC2

ZW linear motors are compatible with most brands and models of drivers on the market. For more information on the use and purchase of drivers from other brands, please consult with ZW sales engineers for details.

Dimension



ZW Linear Motor Module

ZWM22-B Series



Parameter Table

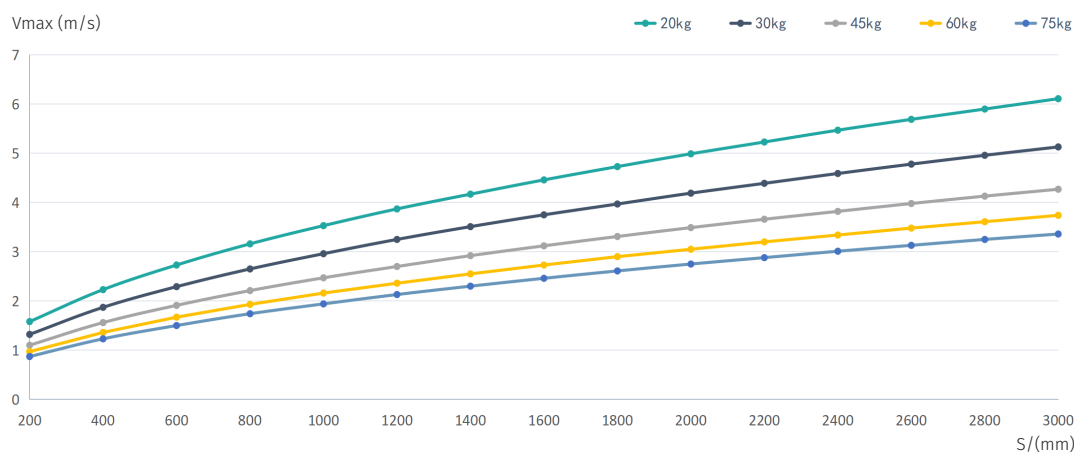
Performance Parameter	
Repetitive Precision Positioning	±2 μm
Maximum Acceleration	5 G
Recommended Maximum Speed	3 m/s
Mechanical Specification	
Length of Slider	120 mm
Slider Mass	0.9 kg

Motor Specification	
Peak Current	10.3 Arms
Continuous Current	3.28 Arms
Peak Force	1566 N
Continuous Force	567 N
Motor Force Constant	170.52 N/Arms
Interphase Resistance	12.87 Ω

Motor Specification	
Interphase Inductance	70.8 mH
Magnetic Period	25 mm

Stroke (mm)	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Load (kg)	Maximum Speed (m/s)														
20	1.58	2.23	2.73	3.16	3.53	3.87	4.17	4.46	4.73	4.99	5.23	5.47	5.69	5.90	6.11
30	1.32	1.87	2.29	2.65	2.96	3.25	3.51	3.75	3.97	4.19	4.39	4.59	4.78	4.96	5.13
45	1.10	1.56	1.91	2.21	2.47	2.70	2.92	3.12	3.31	3.49	3.66	3.82	3.98	4.13	4.27
60	0.97	1.36	1.67	1.93	2.16	2.36	2.55	2.73	2.90	3.05	3.20	3.34	3.48	3.61	3.74
75	0.87	1.23	1.50	1.74	1.94	2.13	2.30	2.46	2.61	2.75	2.88	3.01	3.13	3.25	3.36

Quickly Selection of Motor Load



Total Length (mm)	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	1300	1400
Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	750	850	950	1050
Mass (kg)	20.6	21.85	23.1	24.35	25.6	26.85	28.1	29.35	30.6	31.85	33.1	34.35	35.6	38.1	40.6	43.1	45.6
Stroke of Double Coils (mm)	-	-	-	-	-	-	40	90	140	190	240	290	340	440	540	640	740
Mass of Double Coils (kg)	-	-	-	-	-	-	35.7	36.95	38.2	39.45	40.7	41.95	43.2	45.7	48.2	50.7	53.2

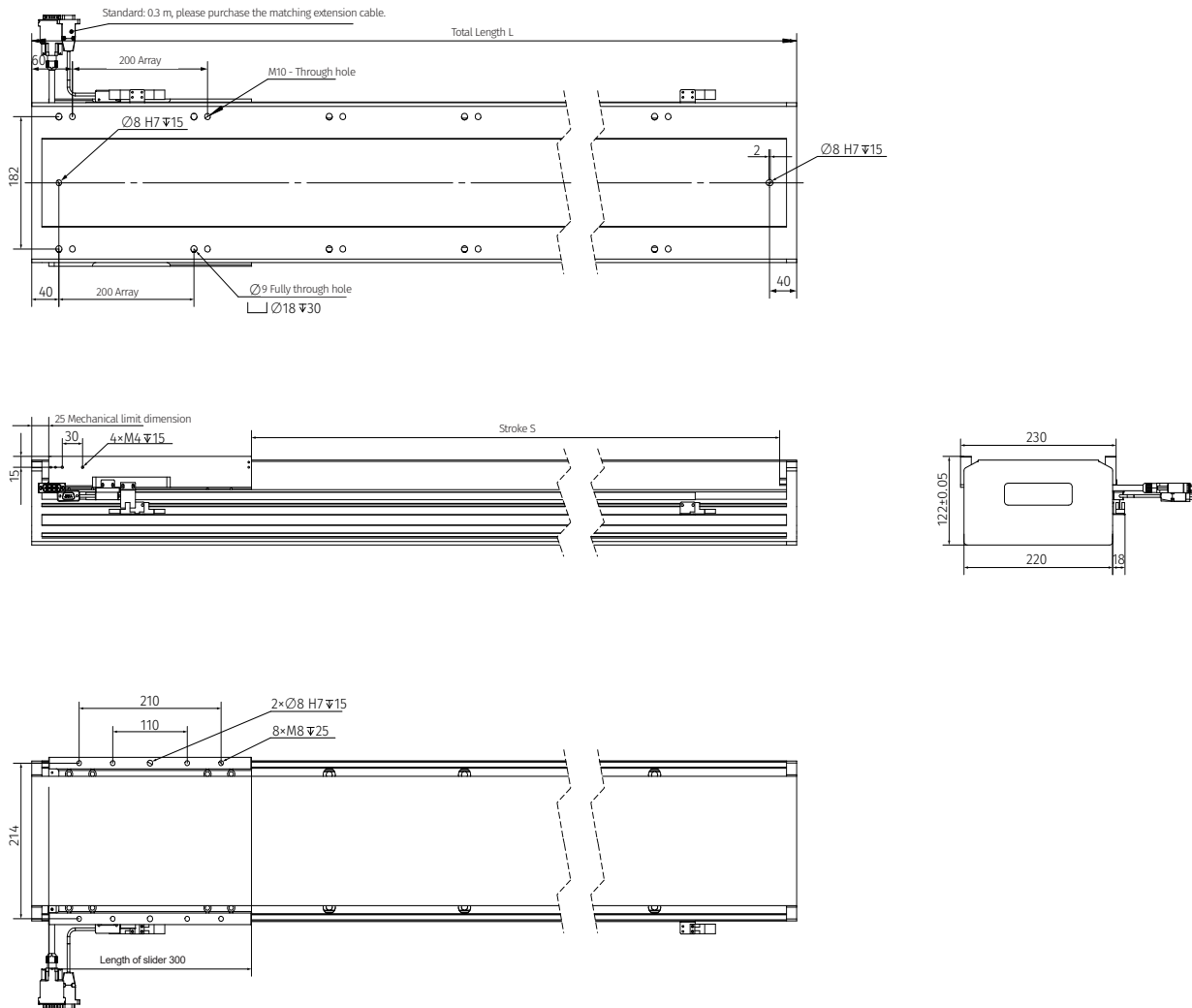
Total Length (mm)	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	-
Stroke (mm)	1150	1250	1350	1450	1550	1650	1750	1850	1950	2050	2150	2250	2350	2450	2550	2650	-
Mass (kg)	48.1	50.6	53.1	55.6	58.1	60.6	63.1	65.6	68.1	70.6	73.1	75.6	78.1	80.6	83.1	85.6	-
Stroke of Double Coils (mm)	840	940	1040	1140	1240	1340	1440	1540	1640	1740	1840	1940	2040	2140	2240	2340	-
Mass of Double Coils (kg)	55.7	58.2	60.7	63.2	65.7	68.2	70.7	73.2	75.7	78.2	80.7	83.2	85.7	88.2	90.7	93.2	-

Compatible Servo Drivers

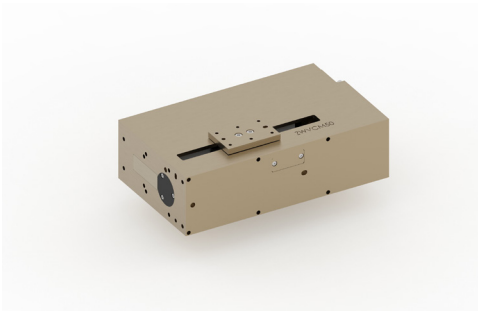
Driver Brand	Pulse Model	Bus Model
ZW	EAS-L1-PA5R5	EAS-L1-NA5R5
Panasonic	MDDL35SL	MDDL35BL
SERVOTRONIX CDHD First Generation	CDHD-0082AAP1	CDHD-0082AEC2

ZW linear motors are compatible with most brands and models of drivers on the market. For more information on the use and purchase of drivers from other brands, please consult with ZW sales engineers for details.

Dimension



VOICE COIL MOTOR

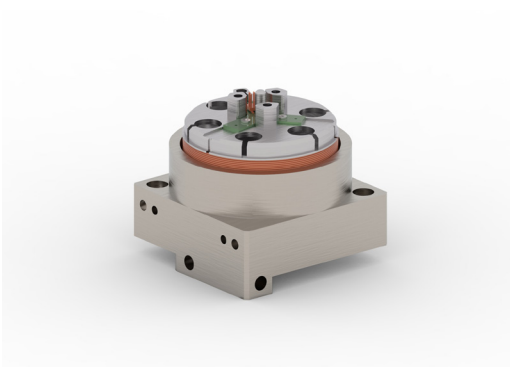


Voice Coil Actuator

ZWVCM50

- Used for semiconductor wafer adjustment, force control, and wafer mounting. Leveraging the high responsiveness, high acceleration, high speed, and compact size of the voice coil motor, combined with guides and encoders to form a closed-loop system, it can achieve high-frequency reciprocating motion of 50-100 Hz per second.

- Peak Force: 39 N
- Continuous Force: 18 N
- Current: 1.7 A
- Force Constant: 24.2 N/Arms
- Effective Stroke: 75 mm
- Repeatability: $\pm 1 \mu\text{m}$
- Motor mass: 4.3 kg



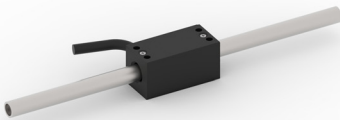
Voice Coil Actuator

ZWY50

- Used for MiniLED. Leveraging the high responsiveness, high acceleration, high speed, and compact size of the voice coil motor, combined with guides and encoders to form a closed-loop system, it can achieve high-frequency reciprocating motion of 50-100 Hz per second.

- Stroke: 6 mm
- Frequency: 50-100 Hz
- Motor mass: 36 g
- Continuous Force (Natural Cool/Air Cool): 21 N or 40 N
- Peak Force: 64 N
- Current: 2 A or 4 A
- Force Constant: 10.5 N/Arms

ROD MOTOR



ZWG8/ZWG16/ZWG25/ZWG35

Rod Motor

ZWG8/ZWG16/ZWG25/ZWG35

- Suitable for medical and semiconductor industries
Offers advantages such as compact size, good heat dissipation, and convenient assembly; there are four series available: ZWG8, ZWG16, ZWG25, ZWG35, with continuous force ranging from 7N to 143N; capable of meeting various customized needs. The design features a lightweight slider to effectively enhance the motor's acceleration and response characteristics, and the internal air-cooling method improves the motor's power density. Suitable for short-stroke, light-load, high-frequency reciprocating motion applications.

- Compact size
- High dynamics
- Low mass
- Capable of supporting high-frequency reciprocation
- Maximum acceleration can reach over 30 g
- Lightweight slider design



WeChat



WeChat applet

MEGMEET • Suzhou Zhiwei precision drive control Technology Co., Ltd.

2nd Floor, Building 3, No. 521, Nanguandu Road, Wuzhong District, Suzhou City, Jiangsu.

TEL: 189 1315 2053

MAIL: support@zwjqddl.com

WEB: zwmisc.megmeet.com

WEB: www.zhiweijq.com