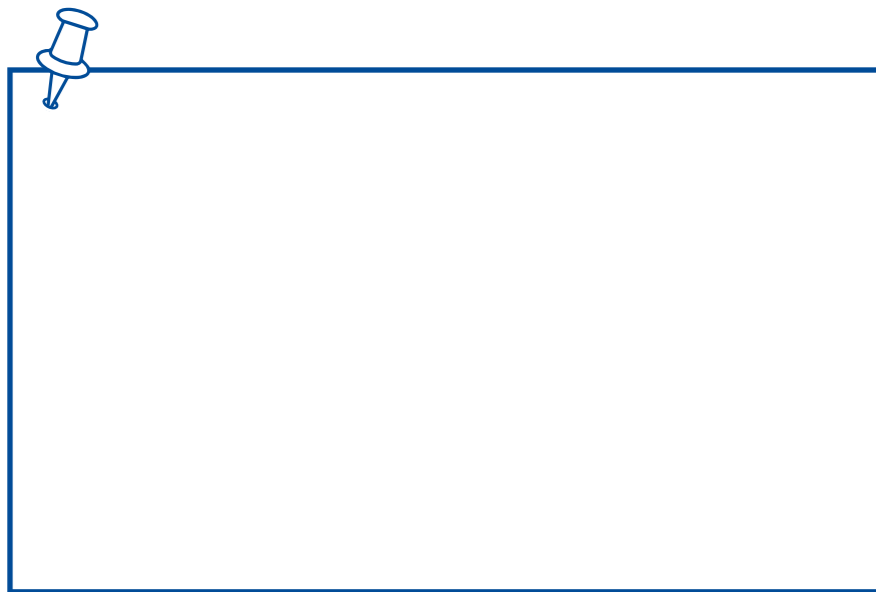




DH-ROBOTICS

# SERVO ELECTRIC CYLINDER



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Nanshan District, Shenzhen City, Guangdong Province, China.

# Features of MCE Series

The MCE series is a miniature electric table type cylinder independently developed and manufactured by DH-Robotics, with high energy density, heavy load capacity, and compact design. It can be applied to various application scenarios to complete complex tasks such as pick and place, arrangement, and handling.

## Compact design

Integrated design of motor, drive, and controller. Compact design with minimum width of only **35 mm**. The availability of several installation options ensures simple and quick deployment in a confined space.

## High speed, high efficiency

The use of high-performance servo motor and precise ball screw reduces the movement time on the sliding table and improves the movement efficiency with maximum speed up to **1000 mm/s** and maximum acceleration up to **3000 mm/s<sup>2</sup>**.

## High linear accuracy

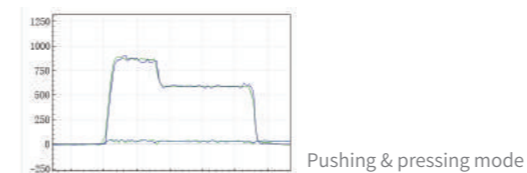
It is driven by a high-accuracy ball screw. A steel ball is strictly selected to effectively control the clearance of the ball screw so that the high accuracy requirement can be easily met. The positioning repeatability can be up to **± 0.003 mm**.

## High energy density, high load

High rigidity structure design. A high-performance linear guide is used with load capacity leading commercially available competing products. The maximum load in the horizontal direction can reach **15 kg**.

## Programmable parameters, a variety of motion modes

The position, speed, and thrust parameters are programmable to implement essential functions of pushing, pulling, pressing, and positioning at high speed. Either the position mode or pushing & pressing mode is available.



## Preferred applications

Lifting in Z-axis

Pushing & pressing in Z-axis

Low-stroke handling and pushing & pressing in X-axis

## Multiple mounting methods

Various mounting holes and optional outlet direction enable horizontal and vertical multi-sided installation for convenient deployment on the production line.



Side mounting hole



Bottom mounting hole



Backward



Forward

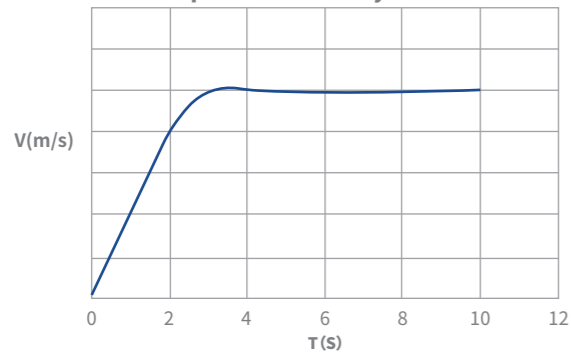


# Advantages of Electric Cylinder over Pneumatic Cylinder

Flexibly adjustable position, force, and speed

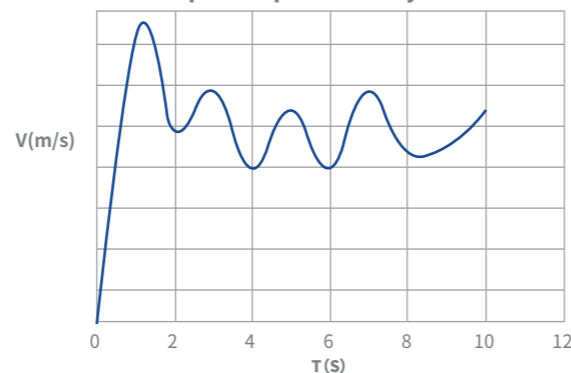
	Electric cylinder	Pneumatic cylinder
<b>Position</b>	<ol style="list-style-type: none"> <li>Multi-location programming</li> <li>The accuracy is determined by the software with positioning repeatability accurate to <math>\pm 0.02</math> mm</li> </ol>	<ol style="list-style-type: none"> <li>A magnetic switch and a mechanically controlled valve are used to achieve positioning</li> <li>The accuracy is determined by the stopper and installation method</li> </ol>
<b>Force</b>	<ol style="list-style-type: none"> <li>Controllable and programmable</li> <li>Capable of approaching at high speed and pressing &amp; pushing at low speed</li> </ol>	<ol style="list-style-type: none"> <li>The pressure of the air channel shall be adjusted in each adjustment</li> <li>The speed is coupled with force. To apply high thrust at low speed, an air-liquid converter shall be activated</li> </ol>
<b>Speed</b>	<ol style="list-style-type: none"> <li>Multi-section acceleration and uniform motion</li> <li>The max. speed can reach nearly 1000 mm/s by the use of a large-lead screw</li> </ol>	<ol style="list-style-type: none"> <li>Large speed fluctuation</li> <li>Delayed action</li> <li>The speed of standard pneumatic cylinders mostly ranges from 50 to 500 mm/s</li> </ol>

Speed of electric cylinder



The speed and thrust of the electric cylinder are more stable and smooth

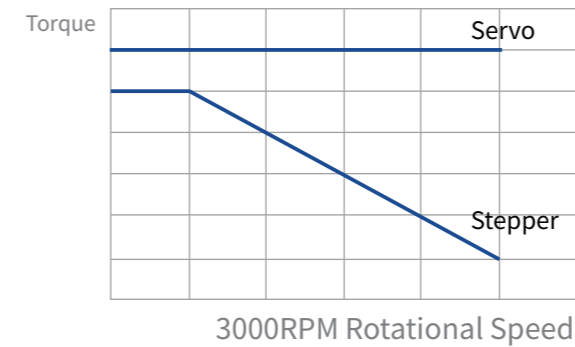
Speed of pneumatic cylinder



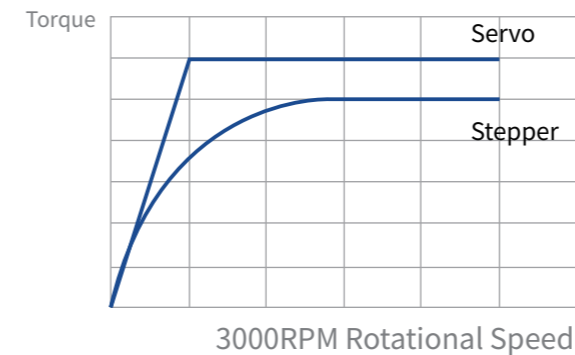
A pneumatic cylinder is compressible, resulting in poor motion stability and slow start

# Advantages of Servo Electric Cylinder over Stepper Electric Cylinder

Better thrust and load

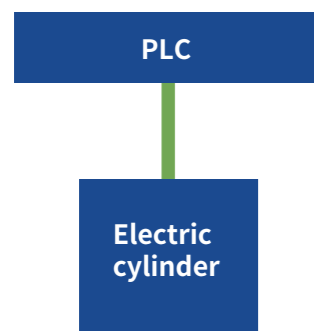


Stepper motor is limited by principle of the motor, high speed and strong force can no be met at the same time. Above 1000 RPM speed, the output torque drops sharply. At 3000 RPM speed (servo motor standard speed), the output torque of the servo motor will only be left a third or less. The output torque of the servo motor remains the same within the rated speed range, while the maximum speed and maximum torque of the stepper motor can not be achieved at the same time.



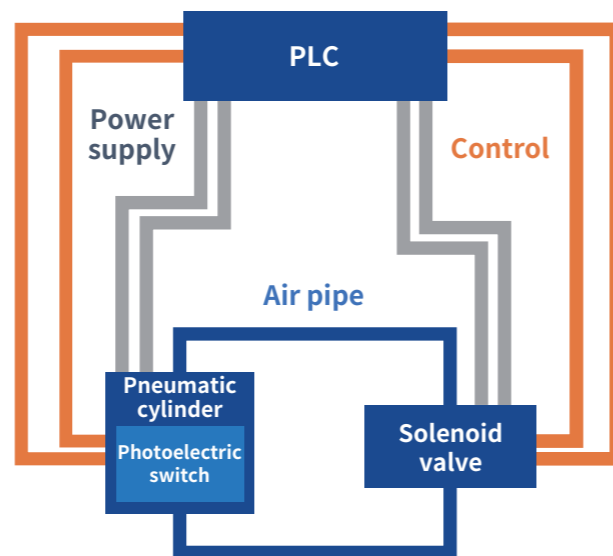
Closed-loop stepper motors have a speed limit of 3000 RPM speed, while servo motors can reach 6000 RPM speed or higher. Since stepper motors have the characteristic of decreasing torque as speed increases, the acceleration also decreases sharply as the speed increases, resulting in a longer acceleration section, making the working beat duration increase.

## Plug and play



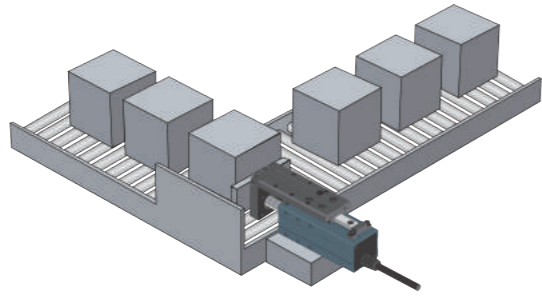
Connection diagram of electric cylinder

A controller is optional for the electric cylinder and can work simply by connecting with the PLC. Position information is returned in real time, and no external photoelectric switch is required.



Connection diagram of pneumatic cylinder

# Applications

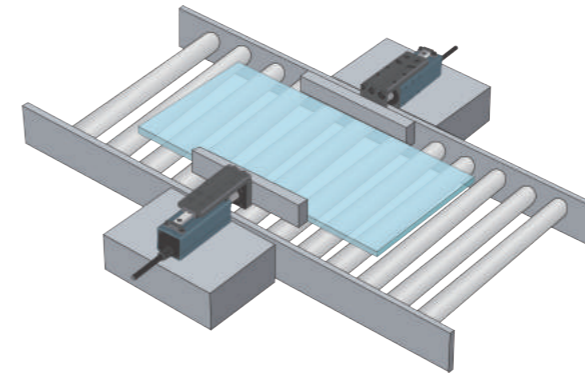


## Pushing and conveying

The electric cylinder pushes the workpiece on the conveyor belt in the production line to another conveyor belt at a specific angle in place of repetitive manual operation to achieve automated production.

### Advantages

The MCE series electric cylinder runs at high speed to significantly improve productivity. The thrust is adjustable up to 200 N to meet workpiece handling requirements at different weight levels. In addition, the acceleration can be programmed, enabling effective prevention of damage to workpieces, improved productivity, and reduced labour cost.

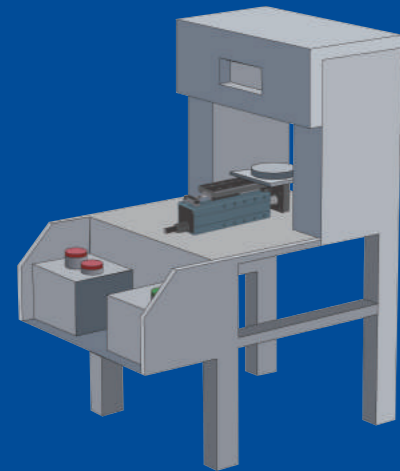


## Positioning correction

The use of an electric cylinder for positioning solves the problem of large positioning error and difficult commissioning in a pneumatic cylinder. The thrust is adjustable so that damage to workpiece may be avoided. For example glass substrate positioning and panel positioning devices are used.

### Advantages

The MCE series electric cylinder has the positioning repeatability of  $\pm 0.02$  mm and can perform well for accurate positioning at high speed.

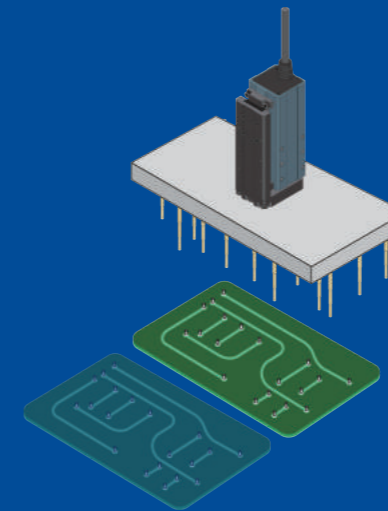


## Pressure loading

The MCE miniature electric cylinder pushes a heavy workpiece into the punching machine in place of manual handling, which reduces the risk of accident and improves productivity.

### Advantages

The MCE series electric cylinder has excellent load capacity, with a maximum weight capacity of 15 kg in the horizontal direction. The parameters are adjustable for accurate speed governing and positioning to ensure the machining accuracy of workpiece.

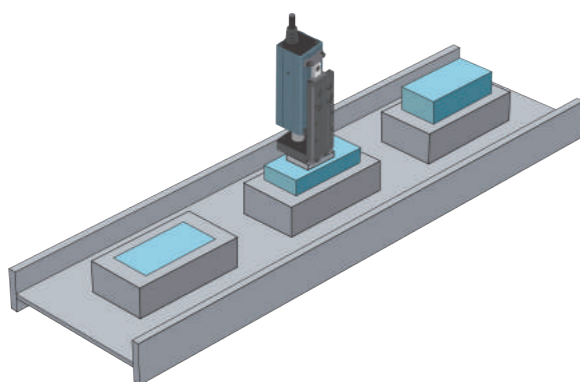


## Detection

The MCE miniature electric cylinder is used to lift and lower the probes to test the conduction performance of the circuit board. The MCE miniature electric cylinder can perform well to allow multiple probes to work at a time.

### Advantages

The MCE parameters are adjustable, and the position, speed, and thrust can be accurately programmed to achieve soft landing and pushing & pressing of workpieces. The MCE performs well in meeting the flexible production requirements in 3C electronics industry.

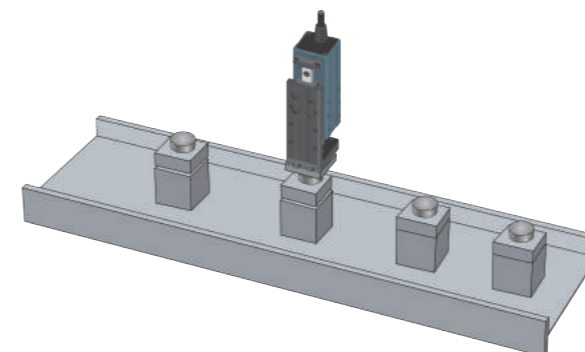


## Pushing & pressing

The MCE miniature electric cylinder is used instead of conventional servo + sensor system to push and press mount components into the base in the component mounting process.

### Advantages

The MCE can be programmed to achieve soft landing and pushing & pressing of workpieces at low speed after approaching the workpieces at high speed, speeding up the cycle time while reducing the defect rate and production costs.



## Installation

The MCE miniature electric cylinder is used to press fit the cover of the electronic component onto the component body. The position, speed, and thrust of the electric cylinder can be governed to complete operation tasks more efficiently and stably.

### Advantages


The position, speed, and thrust parameters of the MCE can be programmed to achieve soft landing and pushing & pressing of workpieces, meeting the flexible production requirements in 3C electronics industry while reducing the defect rate and downtime.

# MCE-3G

## MINIATURE ELECTRIC TABLE TYPE CYLINDER

### SELECTION METHOD

Cylinder Series	Width	Guide Type	Lead(mm)/Screw Type	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*
<b>MCE</b>	<b>3 G</b>	<b>01</b> <input type="checkbox"/>	<b>030</b>	<b>C</b>	<b>O</b>	<b>B</b>	<b>L1</b>	<b>0</b>	
	<b>G</b> Guide <b>WG</b> Wide guide	01 02 04 06 <b>None</b> Ball screw <b>P</b> Grinding screw	030 050 <b>C</b> Integrated controller <b>E</b> Non-integrated controller	<b>O</b> Without band-type brake <b>W</b> With band-type brake	<b>B</b> Backward <b>F</b> Forward	<b>L1</b> 1m <b>L3</b> 3m <b>L5</b> 5m <b>L10</b> 10m	<b>0</b> No customization <b>1</b> Customization		



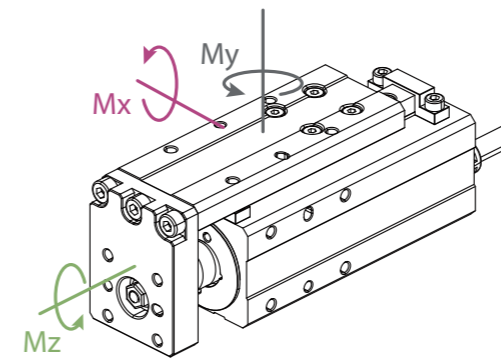
Horizontal mounting

Horizontal mounting on side

Horizontal ceiling mounting

Vertical mounting

## TECHNICAL SPECIFICATIONS



Technical Parameters				
Total stroke(mm)	30, 50			
Screw lead(mm)	1	2	4	6
Rated thrust(N)	200	100	50	30
Min. thrust(N)	60	30	15	9
Max. speed(mm/s)	50	100	200	300
Max. acceleration(mm/s <sup>2</sup> )	2000	3000	3000	3000
Max. weight capacity - horizontal(kg)	8	6	3	2
Max. weight capacity - vertical(kg)	2	1.5	0.75	0.5
Positioning repeatability(mm)	±0.02 ±0.003(Custom grinding screw rod)			
Idle stroke(mm)	Below 0.1 mm			

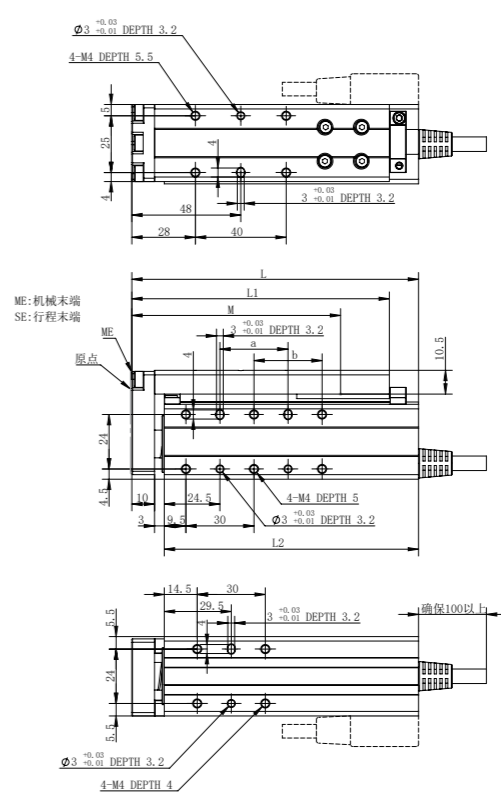
Operating Environment	
Communication protocol	Built-in: 485+4-way I/O(NPN, PNP) External: Depending on the selected controller
Adaptable to external controllers	SAC Serie
Rated voltage	24 V DC ± 10%
Current	1.5 A(Rated)/3 A(Peak)
Protection rating	IP 40
Recommended operating environment	0 to 40°C, below 85% RH
Compliance with international standards	CE, FCC, RoHS

Allowable load moment	
Mx	9.9 N·m
My	9.9 N·m
Mz	3.3 N·m

Stroke	30 mm	50 mm
Width	35 mm	35 mm
Weight	0.47 kg	0.55 kg

### Dimensions

注:  
1.A和B为50行程额外增加孔位距离, A为定位销孔距离, B为M4安装孔距离, 30行程没有额外增加孔位, 故30行程A和B均为0  
2.图纸虚线尺寸为出线方向为向前时网尾尺寸  
注意: 1.原点复位时滑块会一直移动到ME(机械末端), 请注意不要与周围物体产生干涉



	mm	
Stroke	30	50
L	105	125
L1	93.5	113.5
L2	92	112
L2 (With brake)	112	132
M	72	92
a	0	30
b	0	30


\*Note: For customization fees, consult with the sales staff of DH-Robotics


# MCE-3WG

## MINIATURE ELECTRIC TABLE TYPE CYLINDER


### SELECTION METHOD

Cylinder Series	Width	Guide Type	Lead(mm)/Screw Type	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*
<b>MCE</b>	<b>3 WG</b>	<b>01</b> <input type="checkbox"/>	<b>030</b>	<b>C</b>	<b>O</b>	<b>B</b>	<b>L1</b>	<b>0</b>	
	<b>G</b> Guide <b>WG</b> Wide guide	01 02 04 06	030 050	<b>C</b> Integrated controller <b>E</b> Non-integrated controller	<b>O</b> Without band-type brake <b>W</b> With band-type brake	<b>B</b> Backward <b>F</b> Forward	<b>L1</b> 1m <b>L3</b> 3m <b>L5</b> 5m <b>L10</b> 10m	<b>0</b> No customization <b>1</b> Customization	
		<b>None</b> Ball screw <b>P</b> Grinding screw							






Horizontal mounting



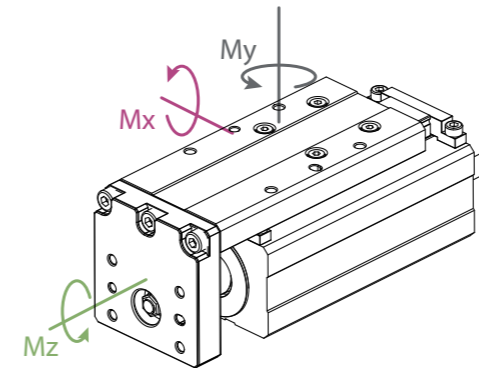
Horizontal ceiling mounting



Vertical mounting

\*Note: For customization fees, consult with the sales staff of DH-Robotics

## TECHNICAL SPECIFICATIONS



### Technical Parameters

Total stroke(mm)	30, 50			
Screw lead(mm)	1	2	4	6
Rated thrust(N)	200	100	50	30
Min. thrust(N)	60	30	15	9
Max. speed(mm/s)	50	100	200	300
Max. acceleration(mm/s <sup>2</sup> )	2000	3000	3000	3000
Max. weight capacity - horizontal(kg)	8	6	3	2
Max. weight capacity - vertical(kg)	2	1.5	0.75	0.5
Positioning repeatability(mm)	±0.02 ±0.003(Custom grinding screw rod)			
Idle stroke(mm)	Below 0.1 mm			

### Operating Environment

Communication protocol	Built-in: 485+4-way I/O(NPN, PNP) External: Depending on the selected controller
Adaptable to external controllers	SAC Serie
Rated voltage	24 V DC ± 10%
Current	1.5 A(Rated)/3 A(Peak)
Protection rating	IP 40
Recommended operating environment	0 to 40°C, below 85% RH
Compliance with international standards	CE, FCC, RoHS

### Allowable load moment

Mx	9.9 N·m
My	9.9 N·m
Mz*	12.2 N·m

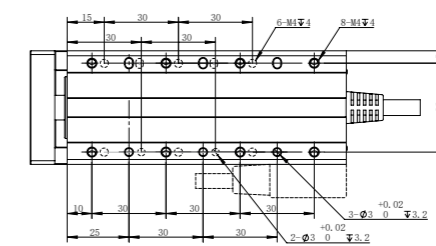
\*The MCE-3WG uses a more functional wide guide to provide a higher eccentric load moment, when compared with MCE-3G

### Stroke

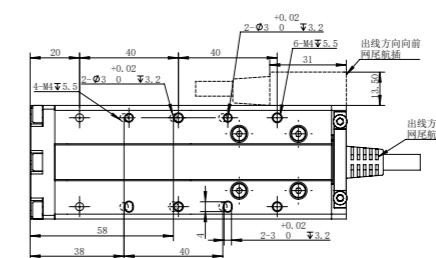
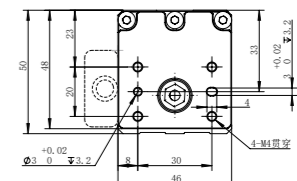
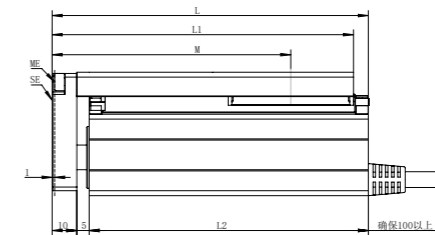
	30 mm	50 mm
Width	46 mm	46 mm
Weight	0.62 kg	0.7 kg

### Dimensions

- 注:
- 1.M:允许负载偏载距离
  - 2.图中虚线显示标注孔位为行程为30MM时安装孔尺寸
  - 3.图中虚线显示特征为出线方向为向前时网尾的尺寸



ME: 机械原点  
SE: 行程原点




	mm	
Stroke	30	50
L	108.4	128.4
L1	102.4	122.4
L2	93	113
L2 (With brake)	113	133
M	77	97


# MCE-4G

## MINIATURE ELECTRIC TABLE TYPE CYLINDER


### SELECTION METHOD

Cylinder Series	Width	Guide Type	Lead(mm)/Screw Type	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*
<b>MCE</b>	<b>4</b>	<b>G</b>	<b>05</b>	<b>075</b>	<b>E</b>	<b>O</b>	<b>B</b>	<b>L1</b>	<b>0</b>
		<b>G</b> Guide	05 10	075 150	None <b>P</b> Ball screw Grinding screw	<b>E</b> Non-integrated controller			
					<b>O</b> Without band-type brake <b>W</b> With band-type brake	<b>B</b> Backward <b>F</b> Forward		<b>L1</b> 1m <b>L3</b> 3m <b>L5</b> 5m <b>L10</b> 10m	<b>0</b> No customization <b>1</b> Customization







Horizontal mounting



Horizontal mounting on side

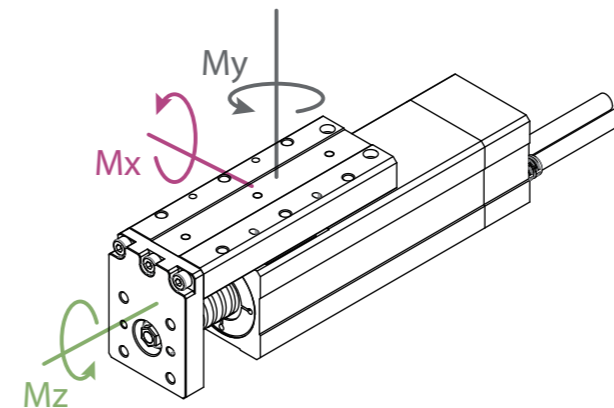


Horizontal ceiling mounting



Vertical mounting

## TECHNICAL SPECIFICATIONS



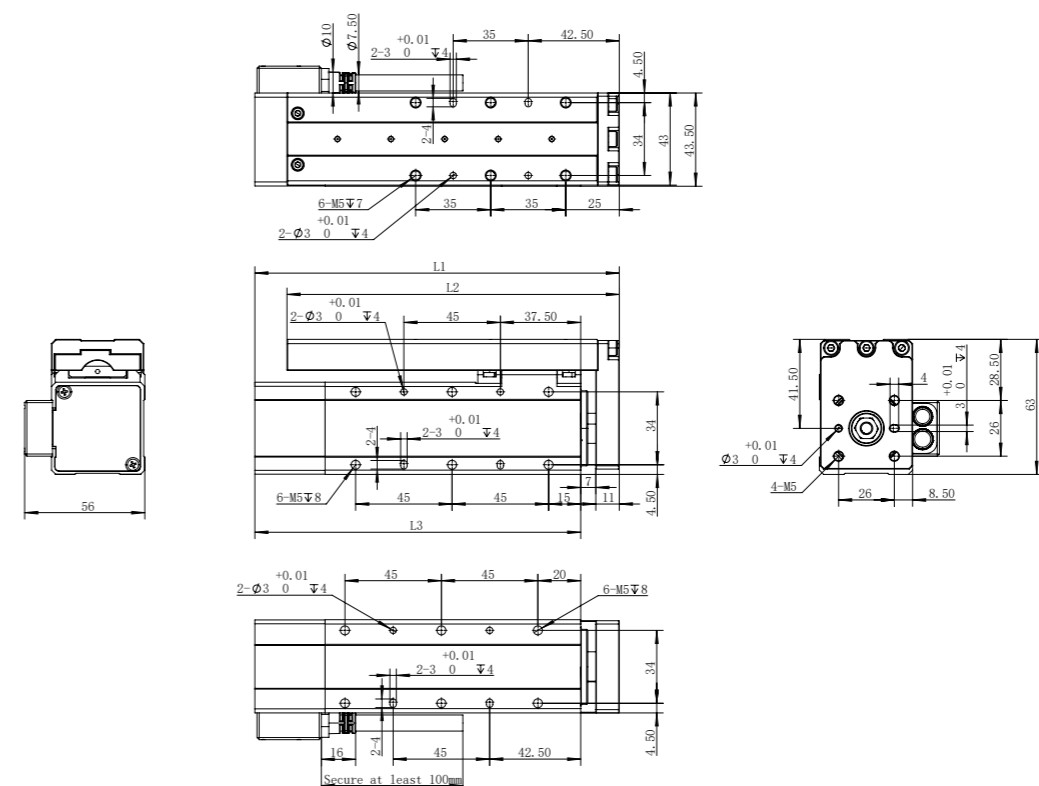
Technical Parameters		
Total stroke(mm)	75, 150	
Screw lead(mm)	5	10
Rated thrust(N)	170	85
Min. thrust(N)	51	25.5
Max. acceleration(mm/s <sup>2</sup> )	2000	3000
Max. speed(mm/s)	165	330
Max. weight capacity - horizontal(kg)	15	15
Max. weight capacity - vertical(kg)	6	3
Positioning repeatability(mm)	±0.02 ±0.003(Custom grinding screw rod)	
Idle stroke(mm)	Below 0.1 mm	

Operating Environment		
Communication protocol	External: Depending on the selected controller	
Adaptable to external controllers	SAC Serie	
Rated voltage	24 V DC ± 10%	
Current	2.5 A(Rated)/7 A(Peak)	
Protection rating	IP 40	
Recommended operating environment	0 to 40°C, below 85% RH	
Compliance with international standards	CE, FCC, RoHS	

Allowable load moment		
Mx	18.8 N·m	
My	18.8 N·m	
Mz	30.5 N·m	

Mechanical Parameters		
Stroke	75 mm	150 mm
Width	43.5 mm	43.5 mm
Weight	1.4 kg	1.65 kg

### Dimensions



Without Brake mm		
Stroke	075	150
<b>L1</b>	170	235
<b>L2</b>	155	235
<b>L3</b>	152	217

With Brake mm		
Stroke	075	150
<b>L1</b>	185	235
<b>L2</b>	160	235
<b>L3</b>	167	217

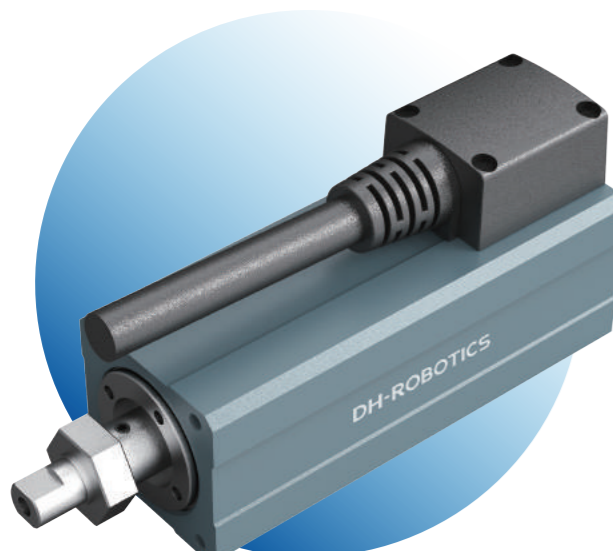
\*Note: For customization fees, consult with the sales staff of DH-Robotics


# RCE-3M

## MINIATURE ELECTRIC ROD TYPE CYLINDER


### SELECTION METHOD

Cylinder Series	Width	Guide Type	Lead(mm)/Screw Type	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*
<b>RCE</b>	<b>3 M</b>		<b>01</b> <input type="checkbox"/>	<b>030</b>	<b>C</b>	<b>O</b>	<b>F</b>	<b>L1</b>	<b>0</b>
	<b>M</b> Rod type		01 02 04 06	030 050	<b>C</b> Integrated controller <b>E</b> Non-integrated controller	<b>O</b> Without band-type brake <b>W</b> With band-type brake	<b>B</b> Backward <b>F</b> Forward	<b>L1</b> 1m <b>L3</b> 3m <b>L5</b> 5m <b>L10</b> 10m	<b>0</b> No customization <b>1</b> Customization
			<b>None</b> Ball screw <b>P</b> Grinding screw						






Horizontal mounting

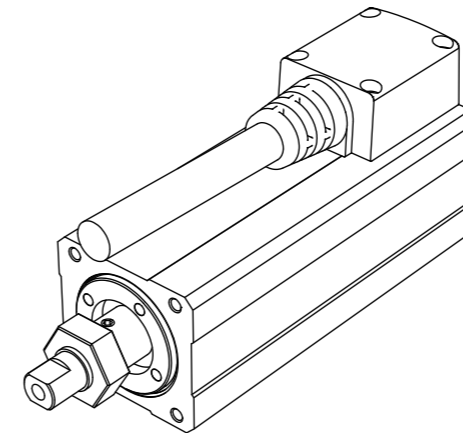


Horizontal ceiling mounting



Vertical mounting

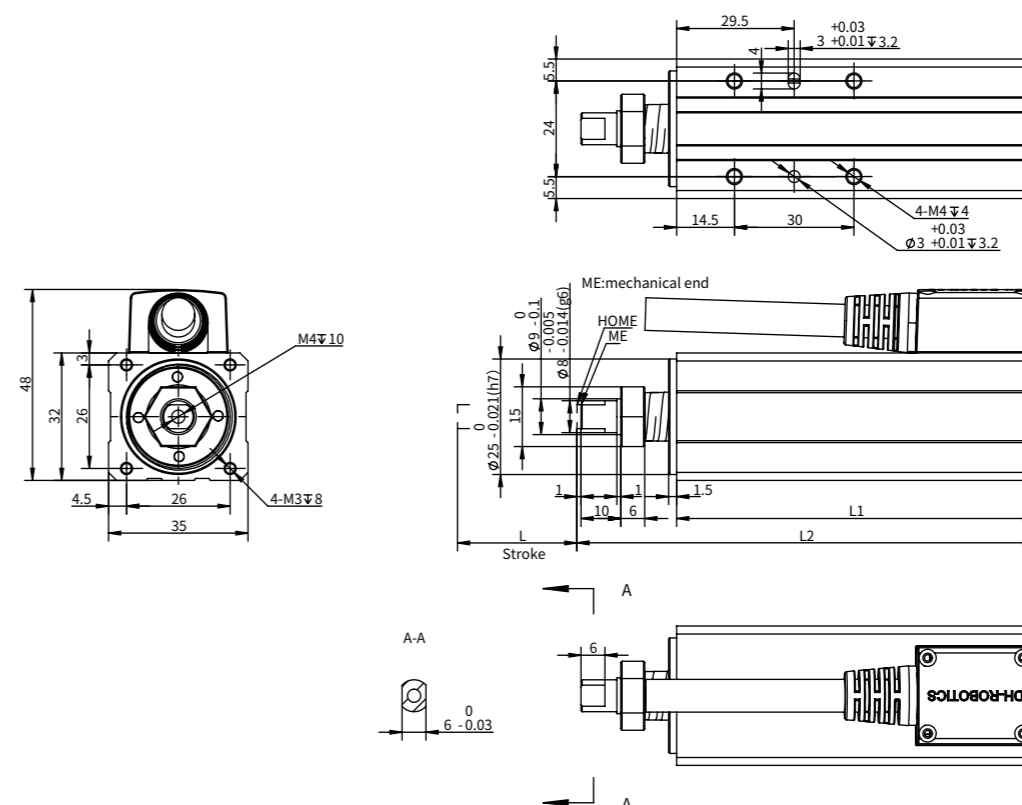
## TECHNICAL SPECIFICATIONS



Technical Parameters				
Total stroke(mm)	30, 50			
Screw lead(mm)	1	2	4	6
Rated thrust(N)	200	100	50	30
Min. thrust(N)	60	30	15	9
Max. speed(mm/s)	50	100	200	300
Max. acceleration(mm/s <sup>2</sup> )	2000	3000	3000	3000
Max. weight capacity - horizontal(kg)	8	6	3	2
Max. weight capacity - vertical(kg)	2	1.5	0.75	0.5
Positioning repeatability(mm)	±0.02 ±0.003(Custom grinding screw rod)			
Idle stroke(mm)	Below 0.1 mm			
Operating Environment				
Communication protocol	Built-in: 485+4-way I/O(NPN, PNP) External: Depending on the selected controller			
Adaptable to external controllers	SAC Serie			
Rated voltage	24 V DC ± 10%			
Current	1.5 A(Rated)/3 A(Peak)			
Protection rating	IP 40			
Recommended operating environment	0 to 40°C, below 85% RH			
Compliance with international standards	CE, FCC, RoHS			
<b>Stroke</b>	<b>30 mm</b>	<b>50 mm</b>		
Weight	0.47 kg	0.55 kg		

- \* Since the drive screw is not equipped with a stop-rotation structure, please add a structure with a stop-rotation function, such as a guide rail, to the end of the drive screw (without a stop-rotation structure, the drive screw will rotate with the rotation of the motor and cannot move back and forth). In addition, please do not use floating joints at the connection between the stop structure and the tie rod.
2. The horizontal load mass is the value with the use of an external rail.
3. Do not apply a load to the tie rod other than in the direction of tie rod movement.

### Dimensions



\*Note: For customization fees, consult with the sales staff of DH-Robotics

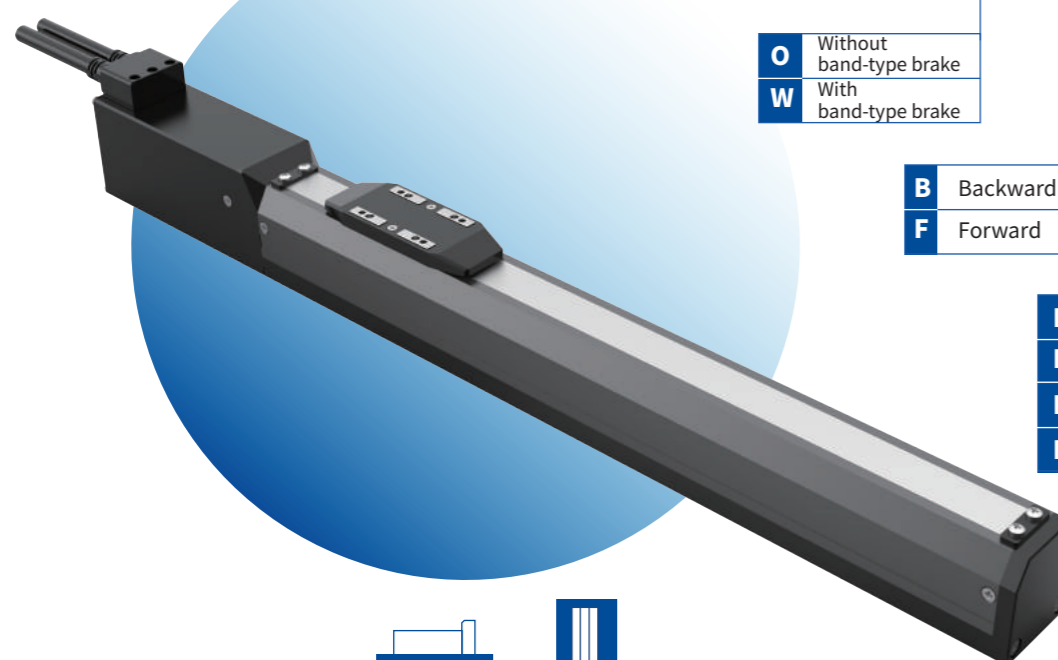



# LCE-4

## LINEAR ELECTRIC CYLINDER


### SELECTION METHOD

Cylinder Series	Width	Guide Type	Lead (mm)	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*											
<b>LCE</b>	<b>4 C</b>		<b>02</b>	<b>100</b>	<b>E</b>	<b>O</b>	<b>B</b>	<b>L1</b>	<b>0</b>											
	<table border="1"> <tr><td><b>4C</b></td><td>Motor Hidden in</td></tr> <tr><td><b>4ML</b></td><td>Motor Left Side</td></tr> <tr><td><b>4MR</b></td><td>Motor Right Side</td></tr> <tr><td><b>4MB</b></td><td>Motor Bottom Side</td></tr> </table>	<b>4C</b>	Motor Hidden in	<b>4ML</b>	Motor Left Side	<b>4MR</b>	Motor Right Side	<b>4MB</b>	Motor Bottom Side		<table border="1"> <tr><td>02</td></tr> <tr><td>05</td></tr> <tr><td>10</td></tr> </table>	02	05	10						
<b>4C</b>	Motor Hidden in																			
<b>4ML</b>	Motor Left Side																			
<b>4MR</b>	Motor Right Side																			
<b>4MB</b>	Motor Bottom Side																			
02																				
05																				
10																				
			100~500mm(50mm pitch)		<b>E</b> Non-integrated controller															
					<table border="1"> <tr><td><b>O</b></td><td>Without band-type brake</td></tr> <tr><td><b>W</b></td><td>With band-type brake</td></tr> </table>	<b>O</b>	Without band-type brake	<b>W</b>	With band-type brake											
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<b>B</b>	Backward																			
<b>F</b>	Forward																			
							<table border="1"> <tr><td><b>L1</b></td><td>1m</td></tr> <tr><td><b>L3</b></td><td>3m</td></tr> <tr><td><b>L5</b></td><td>5m</td></tr> <tr><td><b>L10</b></td><td>10m</td></tr> </table>	<b>L1</b>	1m	<b>L3</b>	3m	<b>L5</b>	5m	<b>L10</b>	10m					
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<b>1</b>	Customization																			



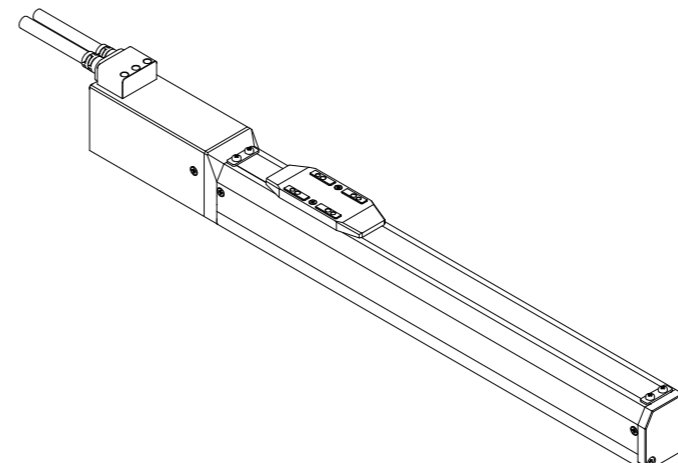


Horizontal mounting



Vertical mounting

### TECHNICAL SPECIFICATIONS



#### Technical Parameters

Total stroke	100~500mm(50mm pitch)		
Screw lead	2 mm	5 mm	10 mm
Rated thrust	125 N	50 N	25 N
Min. thrust	37.5 N	15 N	7.5 N
Max. acceleration	5000 mm/s <sup>2</sup>	5000 mm/s <sup>2</sup>	5000 mm/s <sup>2</sup>
Max. speed	100 mm/s	250 mm/s	500 mm/s
Max. weight capacity - horizontal	15 kg	15 kg	12 kg
Max. weight capacity - vertical	6 kg	3 kg	1.5 kg
Positioning repeatability	±0.02 mm		
Idle stroke	Below 0.1 mm		

#### Operating Environment

Communication protocol	External: Depending on the selected controller		
Adaptable to external controllers	SAC Serie		
Rated voltage	24 V DC ± 10%		
Current	1.5 A(Rated)/3 A(Peak)		
Protection rating	IP 40		
Recommended operating environment	0 to 40°C, below 85% RH		
Compliance with international standards	CE, FCC, RoHS		

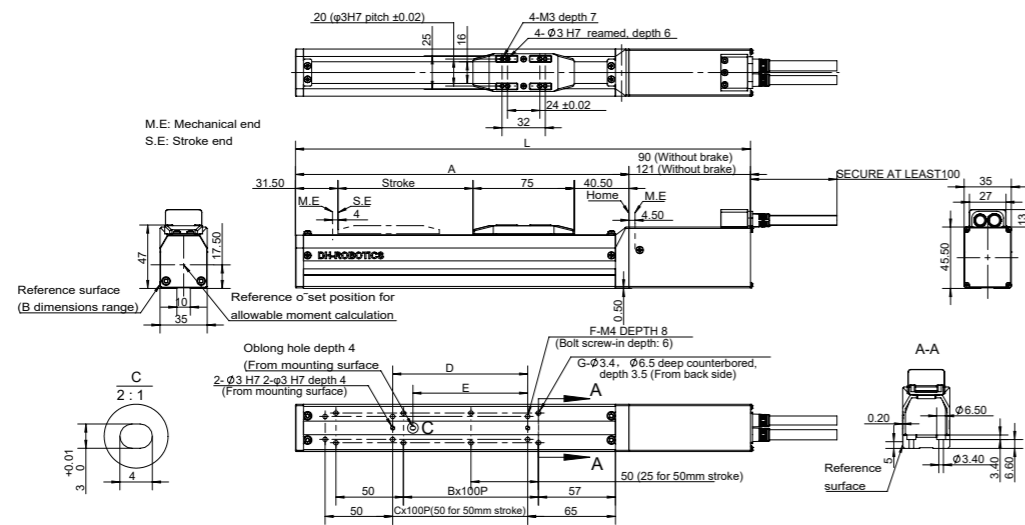
#### Allowable load moment

Mx	36.4 N·m
My	42.3 N·m
	14.33 N·m

\*Note: For customization fees, consult with the sales staff of DH-Robotics

## LCE-4C Dimensions

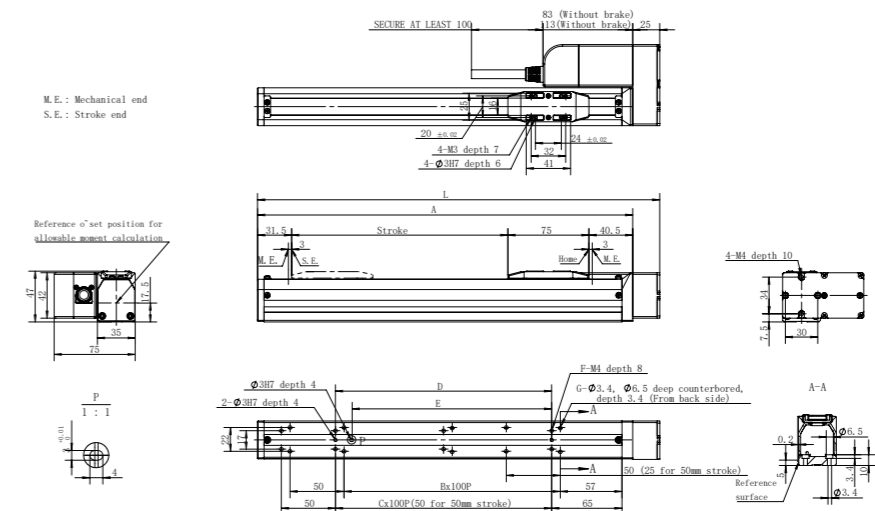
Motor Hidden in



Stroke	100	150	200	250	300	350	400	450	500	
L	w/o brake	337	387	437	487	537	587	637	687	737
	w/ brake	367	417	467	517	567	617	667	717	767
A	247	297	347	397	447	497	547	597	647	
B	0	1	1	2	2	3	3	4	4	
C	1	1	2	2	3	3	4	4	5	
D	100	100	200	200	300	300	400	400	500	
E	85	85	185	185	285	285	385	385	485	
F	6	6	8	8	10	10	12	12	14	
G	8	10	10	12	12	14	14	16	16	
Mass (kg)	w/o brake	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2
	w/ brake	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4

## LCE-4MR Dimensions

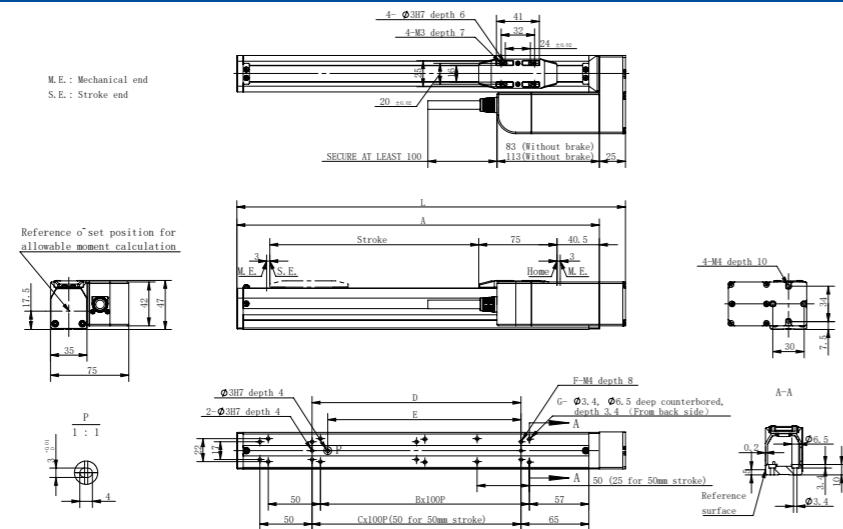
Motor Right Side



Stroke	100	150	200	250	300	350	400	450	500	
L	272	322	372	422	472	522	572	622	672	
A	247	297	347	397	447	497	547	597	647	
B	0	1	1	2	2	3	3	4	4	
C	1	1	2	2	3	3	4	4	5	
D	100	100	200	200	300	300	400	400	500	
E	85	85	185	185	285	285	385	385	485	
F	6	6	8	8	10	10	12	12	14	
G	8	10	10	12	12	14	14	16	16	
Mass (kg)	w/o brake	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1
	w/ brake	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2	2.3

## LCE-4ML Dimensions

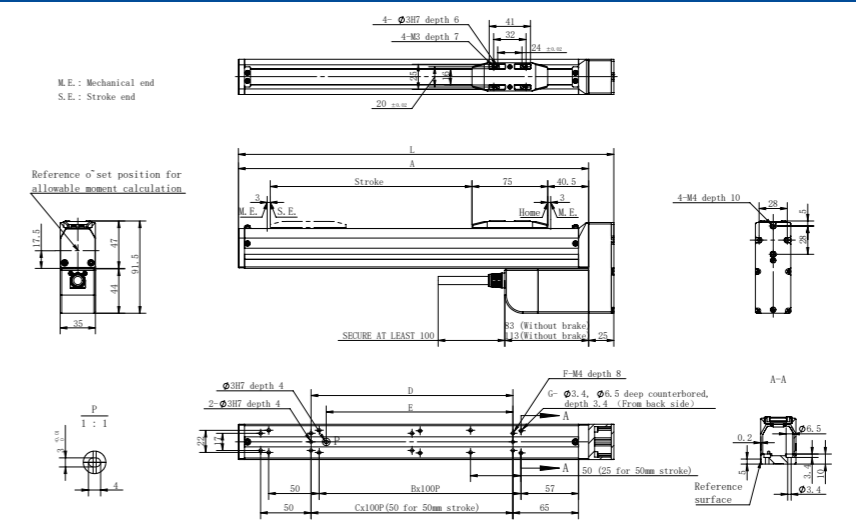
Motor Left Side



Stroke	100	150	200	250	300	350	400	450	500	
L	272	322	372	422	472	522	572	622	672	
A	247	297	347	397	447	497	547	597	647	
B	0	1	1	2	2	3	3	4	4	
C	1	1	2	2	3	3	4	4	5	
D	100	100	200	200	300	300	400	400	500	
E	85	85	185	185	285	285	385	385	485	
F	6	6	8	8	10	10	12	12	14	
G	8	10	10	12	12	14	14	16	16	
Mass (kg)	w/o brake	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1
	w/ brake	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2	2.3

## LCE-4MB Dimensions

Motor Bottom Side




Stroke	100	150	200	250	300	350	400	450	500	
L	272	322	372	422	472	522	572	622	672	
A	247	297	347	397	447	497	547	597	647	
B	0	1	1	2	2	3	3	4	4	
C	1	1	2	2	3	3	4	4	5	
D	100	100	200	200	300	300	400	400	500	
E	85	85	185	185	285	285	385	385	485	
F	6	6	8	8	10	10	12	12	14	
G	8	10	10	12	12	14	14	16	16	
Mass (kg)	w/o brake	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1
	w/ brake	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2	2.3


# LCE-5

## LINEAR ELECTRIC CYLINDER


### SELECTION METHOD

Cylinder Series	Width	Guide Type	Lead (mm)	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*											
<b>LCE</b>	<b>5 C</b>		<b>05</b>	<b>100</b>	<b>E</b>	<b>O</b>	<b>B</b>	<b>L1</b>	<b>0</b>											
	<table border="1"> <tr><td><b>5C</b></td><td>Motor Hidden in</td></tr> <tr><td><b>5ML</b></td><td>Motor Left Side</td></tr> <tr><td><b>5MR</b></td><td>Motor Right Side</td></tr> <tr><td><b>5MB</b></td><td>Motor Bottom Side</td></tr> </table>	<b>5C</b>	Motor Hidden in	<b>5ML</b>	Motor Left Side	<b>5MR</b>	Motor Right Side	<b>5MB</b>	Motor Bottom Side		<table border="1"> <tr><td>05</td></tr> <tr><td>10</td></tr> <tr><td>20</td></tr> </table>	05	10	20						
<b>5C</b>	Motor Hidden in																			
<b>5ML</b>	Motor Left Side																			
<b>5MR</b>	Motor Right Side																			
<b>5MB</b>	Motor Bottom Side																			
05																				
10																				
20																				
		100~800mm(50 mm pitch)			<b>E</b> Non-integrated controller															
						<table border="1"> <tr><td><b>O</b></td><td>Without band-type brake</td></tr> <tr><td><b>W</b></td><td>With band-type brake</td></tr> </table>	<b>O</b>	Without band-type brake	<b>W</b>	With band-type brake										
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						<table border="1"> <tr><td><b>B</b></td><td>Backward</td></tr> <tr><td><b>F</b></td><td>Forward</td></tr> </table>	<b>B</b>	Backward	<b>F</b>	Forward										
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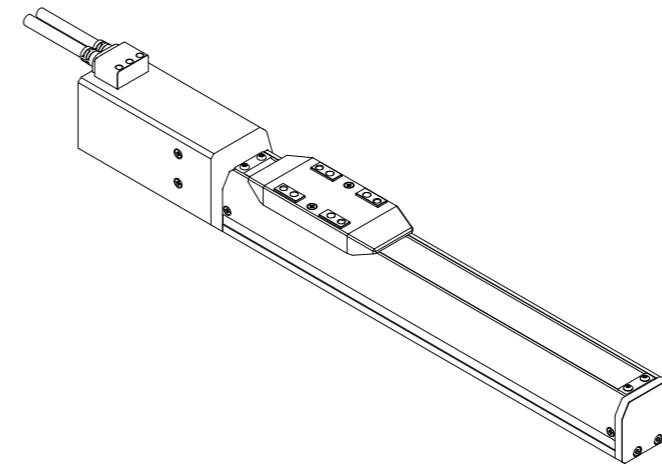


Horizontal mounting



Vertical mounting

### TECHNICAL SPECIFICATIONS



#### Technical Parameters

Total stroke	100~800mm(50 mm pitch)		
Screw lead	5 mm	10 mm	20 mm
Rated thrust	320 N	160 N	80 N
Min. thrust	96 N	48 N	24 N
Max. acceleration	5000 mm/s <sup>2</sup>	5000 mm/s <sup>2</sup>	5000 mm/s <sup>2</sup>
Max. speed	250 mm/s	500 mm/s	1000 mm/s
Max. weight capacity - horizontal	35 kg	25 kg	15 kg
Max. weight capacity - vertical	10 kg	5 kg	2.5 kg
Positioning repeatability	±0.02 mm		
Idle stroke	Below 0.1 mm		

#### Operating Environment

Communication protocol	Standard configurations: Modbus RTU (RS485), Digital I/O Option: EtherCAT Need to adapt to the external purchase of other brands of drives
Rated voltage	24 V DC ± 10%
Rated power	100 W
Protection rating	IP 40
Recommended operating environment	0 to 40°C, below 85% RH
Compliance with international standards	CE, FCC, RoHS

#### Allowable load moment

Mx	78.6 N·m
My	91.0 N·m
Mz	31.5 N·m

\*Note: For customization fees, consult with the sales staff of DH-Robotics





# LCE-7

## LINEAR ELECTRIC CYLINDER


### SELECTION METHOD

Cylinder Series	Width	Guide Type	Lead (mm)	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*																																		
<b>LCE</b>	<b>7 C</b>		<b>05</b>	<b>100</b>	<b>E</b>	<b>O</b>	<b>B</b>	<b>L1</b>	<b>0</b>																																		
	<table border="1"> <tr><td><b>7C</b></td><td>Motor Hidden in</td></tr> <tr><td><b>7ML</b></td><td>Motor Left Side</td></tr> <tr><td><b>7MR</b></td><td>Motor Right Side</td></tr> <tr><td><b>7MB</b></td><td>Motor Bottom Side</td></tr> </table>	<b>7C</b>	Motor Hidden in	<b>7ML</b>	Motor Left Side	<b>7MR</b>	Motor Right Side	<b>7MB</b>	Motor Bottom Side		<table border="1"> <tr><td>05</td></tr> <tr><td>10</td></tr> <tr><td>16</td></tr> <tr><td>20</td></tr> </table>	05	10	16	20			<table border="1"> <tr><td><b>E</b></td><td>Non-integrated controller</td></tr> <tr><td><b>O</b></td><td>Without band-type brake</td></tr> <tr><td><b>W</b></td><td>With band-type brake</td></tr> </table>	<b>E</b>	Non-integrated controller	<b>O</b>	Without band-type brake	<b>W</b>	With band-type brake	<table border="1"> <tr><td><b>B</b></td><td>Backward</td></tr> <tr><td><b>F</b></td><td>Forward</td></tr> </table>	<b>B</b>	Backward	<b>F</b>	Forward	<table border="1"> <tr><td><b>L1</b></td><td>1m</td></tr> <tr><td><b>L3</b></td><td>3m</td></tr> <tr><td><b>L5</b></td><td>5m</td></tr> <tr><td><b>L10</b></td><td>10m</td></tr> </table>	<b>L1</b>	1m	<b>L3</b>	3m	<b>L5</b>	5m	<b>L10</b>	10m	<table border="1"> <tr><td><b>0</b></td><td>No customization</td></tr> <tr><td><b>1</b></td><td>Customization</td></tr> </table>	<b>0</b>	No customization	<b>1</b>	Customization
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<b>1</b>	Customization																																										
		100~800mm(50 mm pitch)																																									



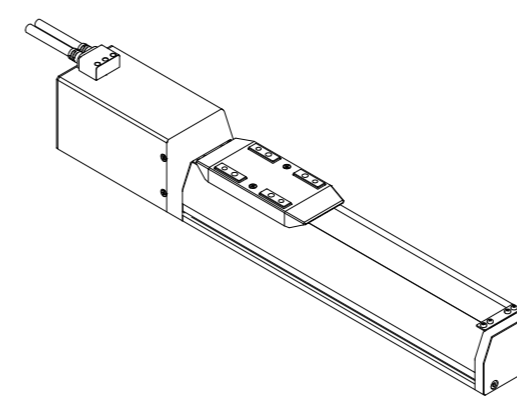


Horizontal mounting



Vertical mounting

## TECHNICAL SPECIFICATIONS



### Technical Parameters

Total stroke	100~800mm(50mm pitch)			
Screw lead	5 mm	10 mm	16 mm	20 mm
Rated thrust	680 N	340 N	210 N	170 N
Min. thrust	204 N	102 N	63 N	51 N
Max. acceleration	5000 mm/s <sup>2</sup>	5000 mm/s <sup>2</sup>	5000 mm/s <sup>2</sup>	5000 mm/s <sup>2</sup>
Max. speed	250 mm/s	500 mm/s	800 mm/s	1000 mm/s
Max. weight capacity - horizontal	55 kg	50 kg	45 kg	35 kg
Max. weight capacity - vertical	25 kg	15 kg	8 kg	6 kg
Positioning repeatability	±0.02 mm			
Idle stroke	Below 0.1 mm			

### Operating Environment

Communication protocol	Standard configurations: Modbus RTU (RS485), Digital I/O Option: EtherCAT Need to adapt to the external purchase of other brands of drives
Rated voltage	24 V DC ± 10%
Rated power	200 W
Protection rating	IP 40
Recommended operating environment	0 to 40°C, below 85% RH
Compliance with international standards	CE, FCC, RoHS

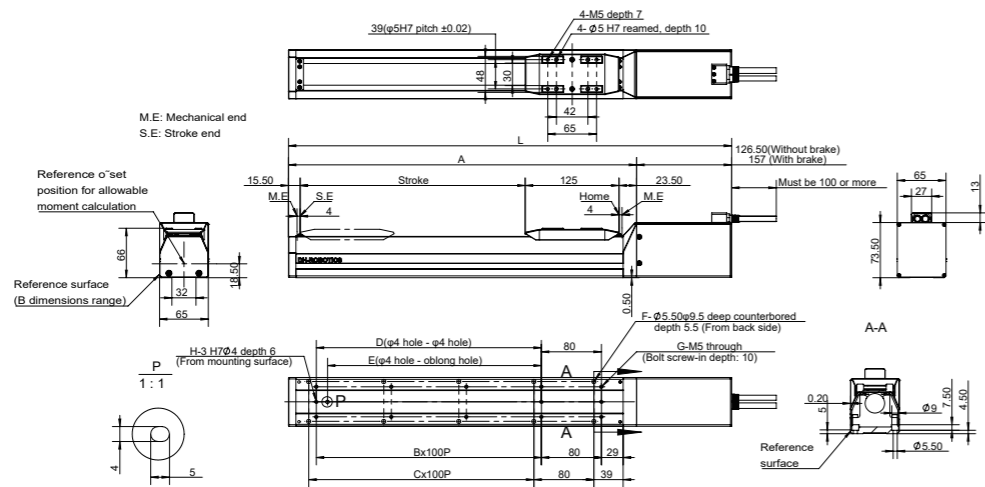
### Allowable load moment

Mx	290 N·m
My	290 N·m
Mz	176 N·m

\*Note: For customization fees, consult with the sales staff of DH-Robotics

## LCE-7C Dimensions

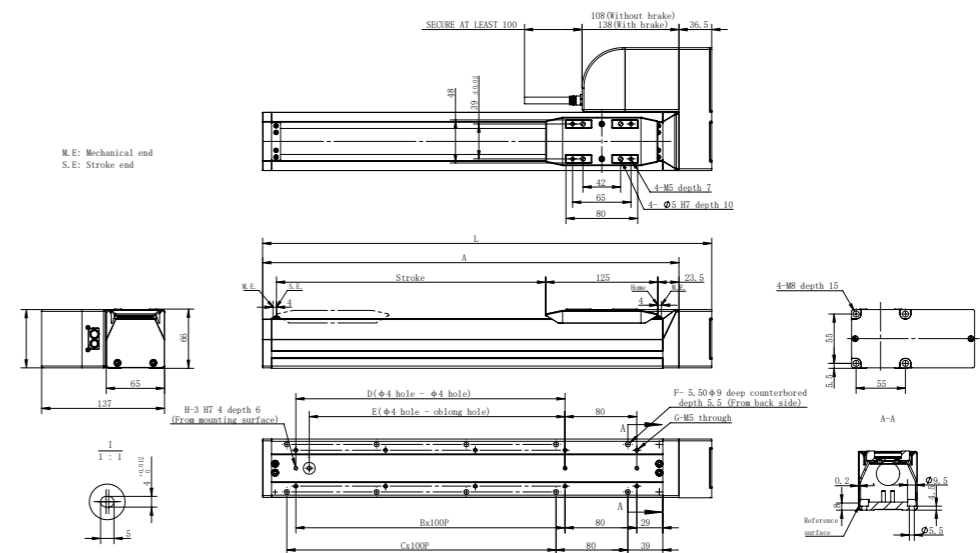
Motor Hidden in



Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	w/o brake	390.5	440.5	490.5	540.5	590.5	640.5	690.5	740.5	790.5	840.5	890.5	940.5	990.5	1040.5	1090.5
	w/ brake	421	471	521	571	621	671	721	771	821	871	921	971	1021	1071	1121
A	264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	
B	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
D	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
E	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
F	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
G	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
H	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Mass (kg)	w/o brake	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8
	w/ brake	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4

## LCE-7MR Dimensions

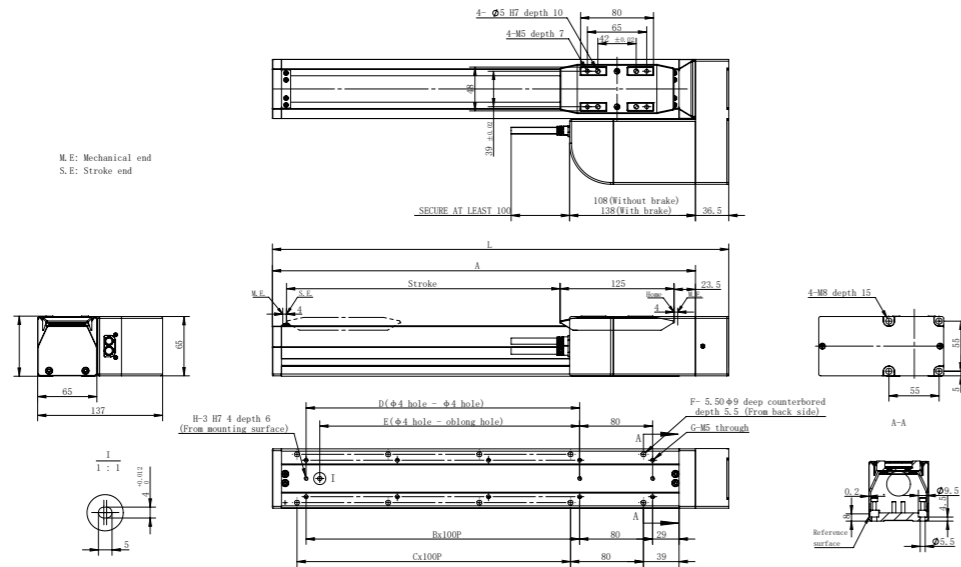
Motor Right Side



Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	300.5	350.5	400.5	450.5	500.5	550.5	600.5	650.5	700.5	750.5	800.5	850.5	900.5	950.5	1000.5	
	264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	
B	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
D	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
E	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
F	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
G	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
H	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Mass (kg)	w/o brake	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8
	w/ brake	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4

## LCE-7ML Dimensions

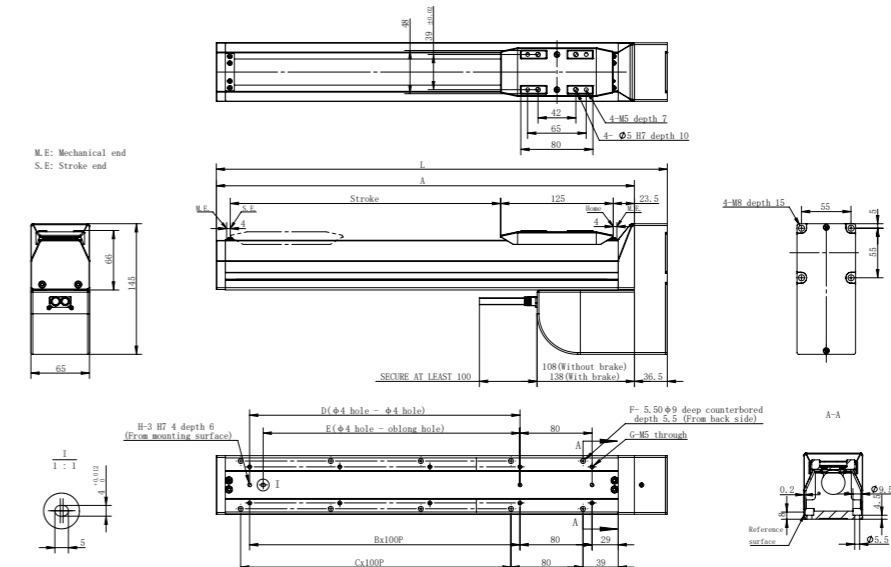
Motor Left Side



Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	300.5	350.5	400.5	450.5	500.5	550.5	600.5	650.5	700.5	750.5	800.5	850.5	900.5	950.5	1000.5	
	264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	
B	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
D	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
E	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
F	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
G	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
H	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Mass (kg)	w/o brake	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8
	w/ brake	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4

## LCE-7MB Dimensions

Motor Bottom Side



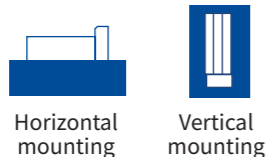
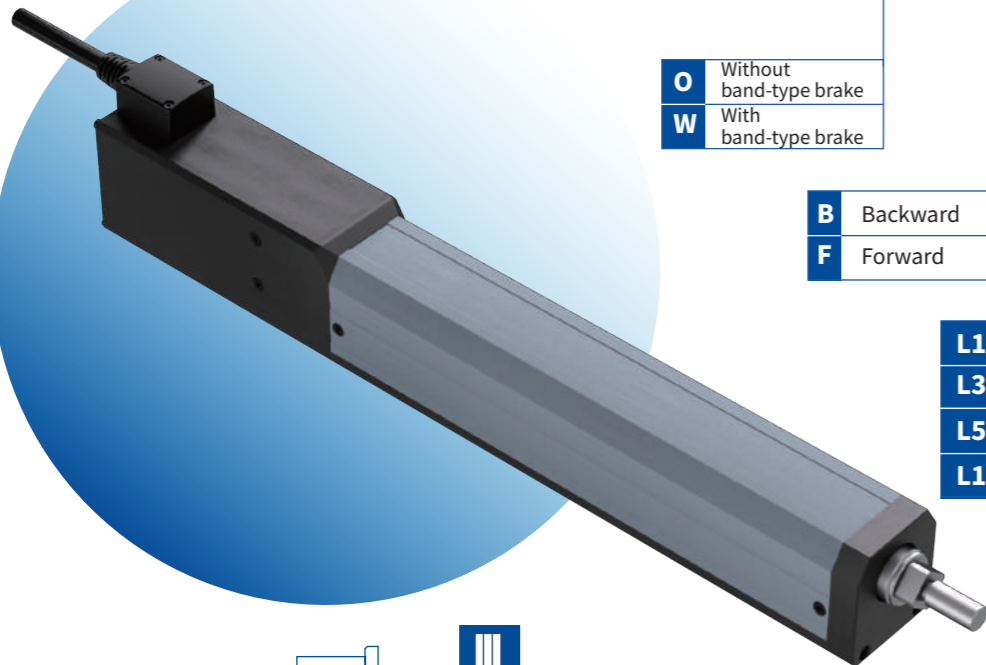
Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	300.5	350.5	400.5	450.5	500.5	550.5	600.5	650.5	700.5	750.5	800.5	850.5	900.5	950.5	1000.5	
	264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	
B	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
D	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
E	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
F	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
G	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
H	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Mass (kg)	w/o brake	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8
	w/ brake	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4

# RCE-5

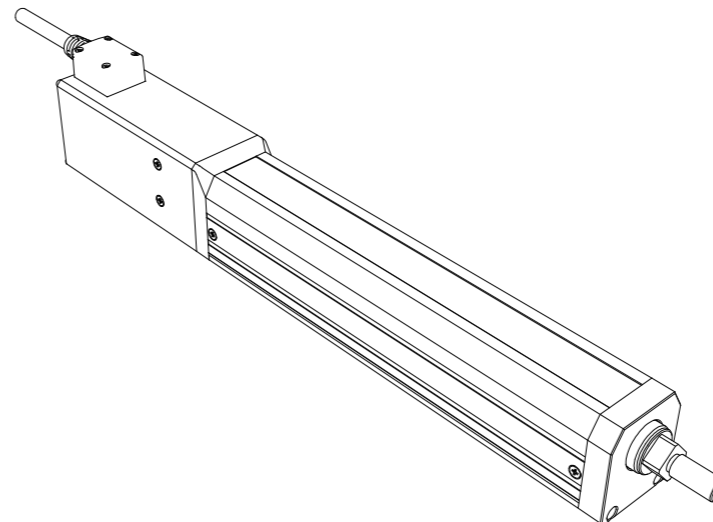
## ELECTRIC ROD TYPE CYLINDER

### SELECTION METHOD

Cylinder Series	Width	Guide Type	Lead (mm)	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*																																	
<b>LCE</b>	<b>5 C</b>		<b>05</b>	<b>100</b>	<b>E</b>	<b>O</b>	<b>B</b>	<b>L1</b>	<b>0</b>																																	
	<table border="1"> <tr><td><b>5C</b></td><td>Motor Hidden in</td></tr> <tr><td><b>5ML</b></td><td>Motor Left Side</td></tr> <tr><td><b>5MR</b></td><td>Motor Right Side</td></tr> <tr><td><b>5MB</b></td><td>Motor Bottom Side</td></tr> </table>	<b>5C</b>	Motor Hidden in	<b>5ML</b>	Motor Left Side	<b>5MR</b>	Motor Right Side	<b>5MB</b>	Motor Bottom Side		<table border="1"> <tr><td>05</td></tr> <tr><td>10</td></tr> <tr><td>20</td></tr> </table>	05	10	20	100~800mm(50 mm pitch)	<table border="1"> <tr><td><b>E</b></td><td>Non-integrated controller</td></tr> </table>	<b>E</b>	Non-integrated controller	<table border="1"> <tr><td><b>O</b></td><td>Without band-type brake</td></tr> <tr><td><b>W</b></td><td>With band-type brake</td></tr> </table>	<b>O</b>	Without band-type brake	<b>W</b>	With band-type brake	<table border="1"> <tr><td><b>B</b></td><td>Backward</td></tr> <tr><td><b>F</b></td><td>Forward</td></tr> </table>	<b>B</b>	Backward	<b>F</b>	Forward	<table border="1"> <tr><td><b>L1</b></td><td>1m</td></tr> <tr><td><b>L3</b></td><td>3m</td></tr> <tr><td><b>L5</b></td><td>5m</td></tr> <tr><td><b>L10</b></td><td>10m</td></tr> </table>	<b>L1</b>	1m	<b>L3</b>	3m	<b>L5</b>	5m	<b>L10</b>	10m	<table border="1"> <tr><td><b>0</b></td><td>No customization</td></tr> <tr><td><b>1</b></td><td>Customization</td></tr> </table>	<b>0</b>	No customization	<b>1</b>	Customization
<b>5C</b>	Motor Hidden in																																									
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<b>5MR</b>	Motor Right Side																																									
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<b>O</b>	Without band-type brake																																									
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<b>L1</b>	1m																																									
<b>L3</b>	3m																																									
<b>L5</b>	5m																																									
<b>L10</b>	10m																																									
<b>0</b>	No customization																																									
<b>1</b>	Customization																																									



## TECHNICAL SPECIFICATIONS



### Technical Parameters

Total stroke	100~800mm(50 mm pitch)		
Screw lead	5 mm	10 mm	20 mm
Rated thrust	320 N	160 N	80 N
Min. thrust	96 N	48 N	24 N
Max. speed	250 mm/s	500 mm/s	1000 mm/s
Max. weight capacity - horizontal <sup>*①</sup>	35 kg	25 kg	15 kg
Max. weight capacity - vertical	10 kg	5 kg	2.5 kg
Positioning repeatability	±0.02 mm		
Idle stroke	Below 0.1 mm		
Rod Diameter	φ22mm		
Maximum Allowable Static Torque at Rod End	1.5 N·m		
Maximum Angular Displacement at Rod End <sup>*②</sup>	±1°		

### Operating Environment

Communication protocol	Standard configurations: Modbus RTU (RS485), Digital I/O Option: EtherCAT Need to adapt to the external purchase of other brands of drives
Rated voltage	24 V DC ± 10%
Rated power	100 W
Protection rating	IP 40
Recommended operating environment	0 to 40°C, below 85% RH
Compliance with international standards	CE, FCC, RoHS

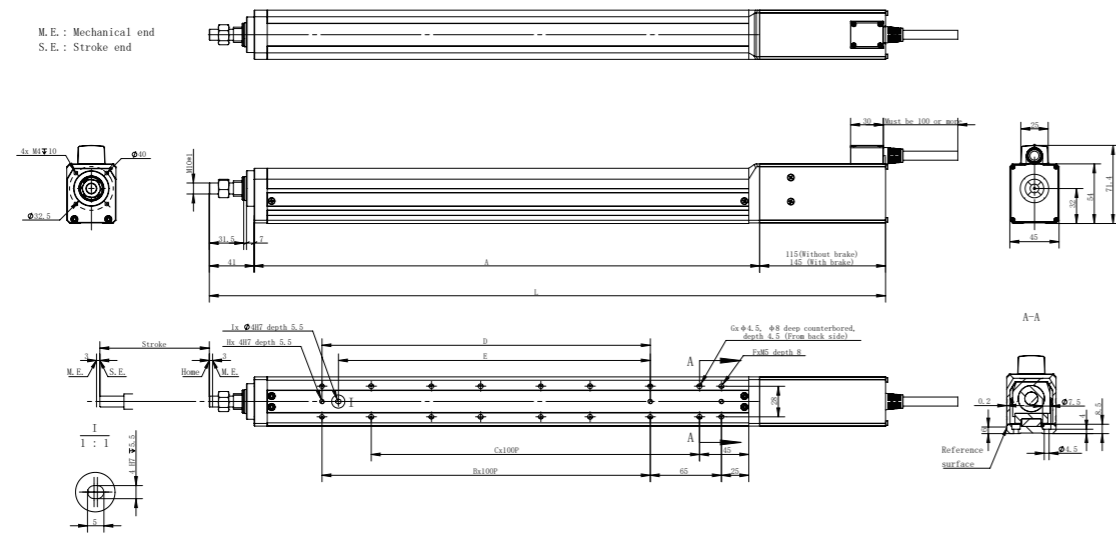
\*① This load condition requires the external addition of auxiliary guides to withstand radial loads.

\*② With the rod fully retracted into the main body, the angular displacement at the rod end due to the maximum allowable static torque is measured (using the initial value as a reference).

\*Note: For customization fees, consult with the sales staff of DH-Robotics

## RCE-5C Dimensions

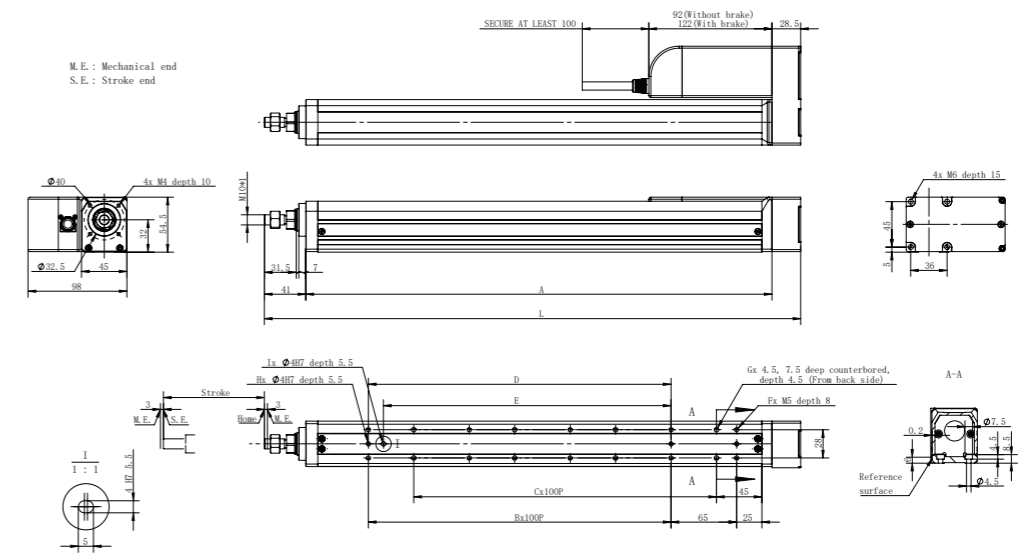
Motor Hidden in



Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	
A	212	262	312	362	412	462	512	562	612	662	712	762	812	862	912	962	
B	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	
D	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
E	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
F	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
G	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	
H	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
I	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Mass (kg)	w/o brake	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4
	w/ brake	2.1	2.4	2.7	3	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6	6.3	6.6

## RCE-5MR Dimensions

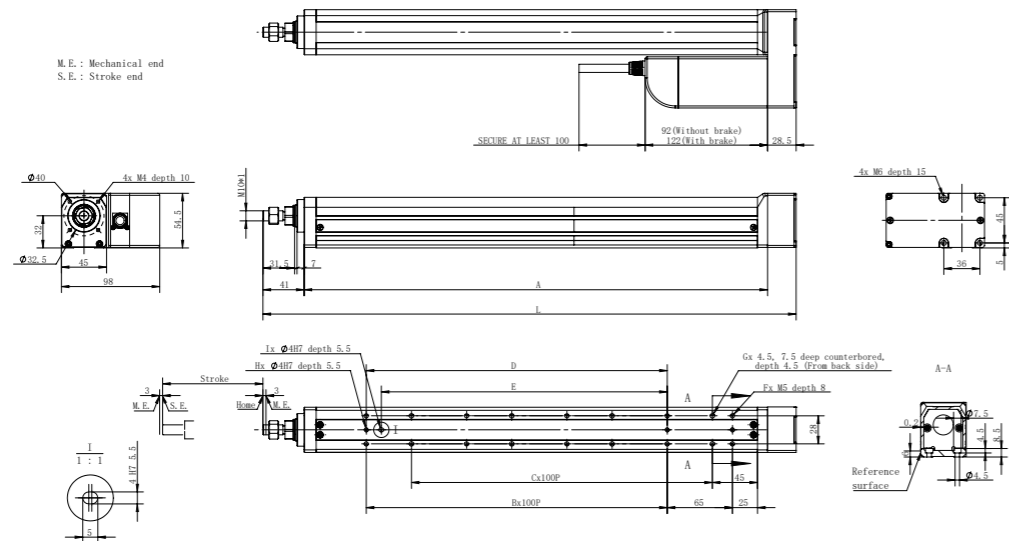
Motor Right Side



Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5	981.5	1031.5	
A	212	262	312	362	412	462	512	562	612	662	712	762	812	862	912	962	
B	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	
D	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
E	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
F	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
G	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	
H	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
I	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Mass (kg)	w/o brake	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4
	w/ brake	2.1	2.4	2.7	3	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6	6.3	6.6

## RCE-5ML Dimensions

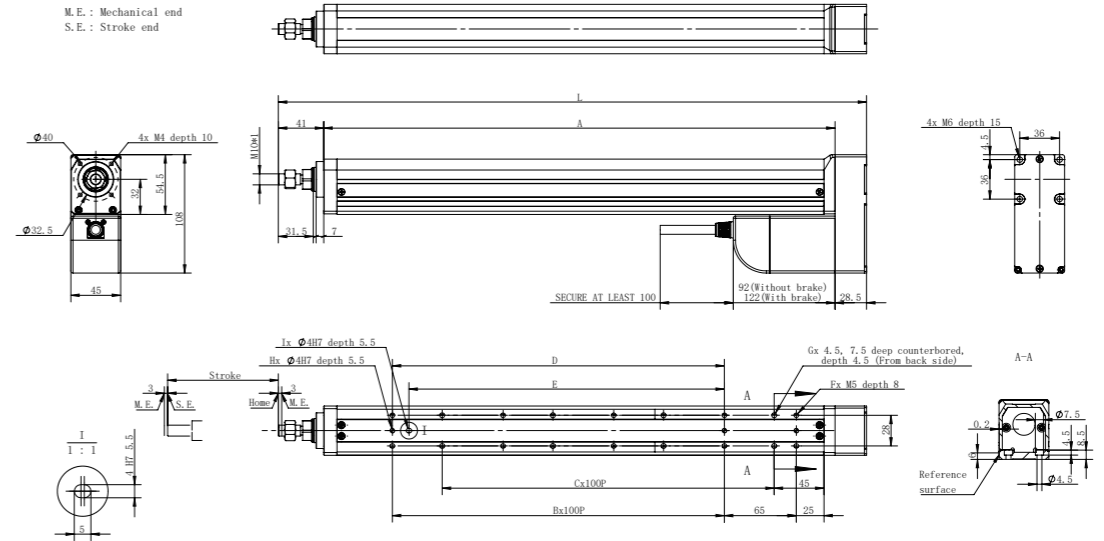
Motor Left Side



Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5	981.5	1031.5	
A	212	262	312	362	412	462	512	562	612	662	712	762	812	862	912	962	
B	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	
D	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
E	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
F	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
G	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	
H	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
I	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Mass (kg)	w/o brake	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4
	w/ brake	2.1	2.4	2.7	3	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6	6.3	6.6

## RCE-5MB Dimensions

Motor Bottom Side



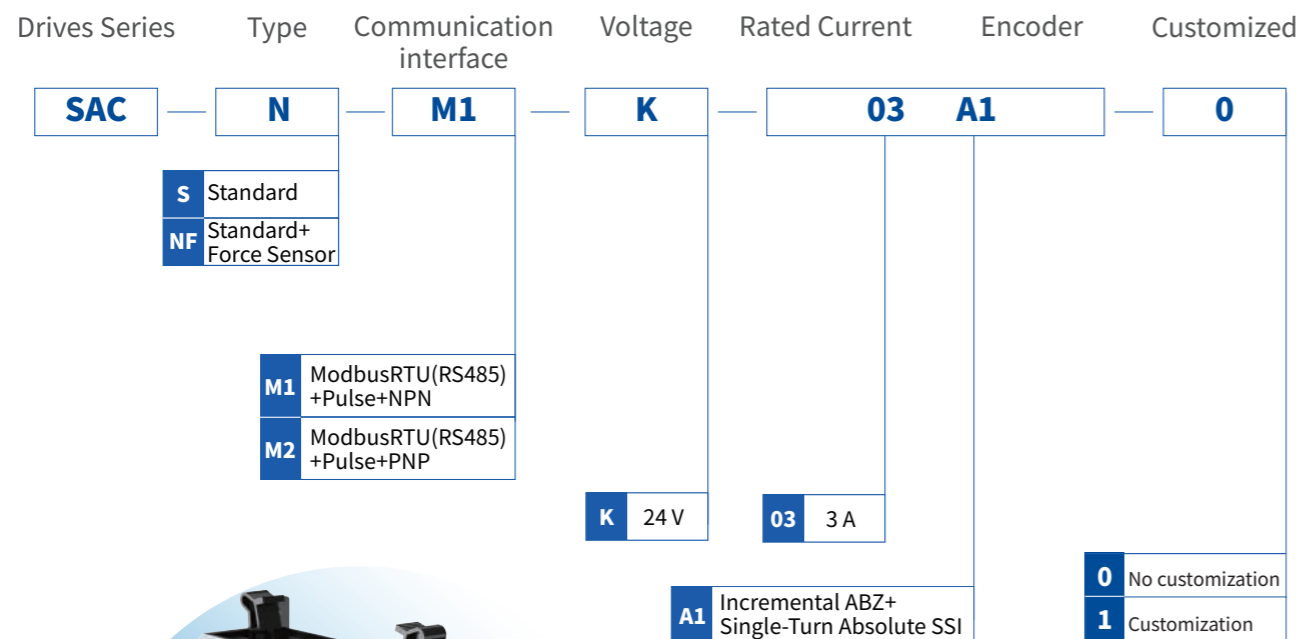
Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
L	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5	981.5	1031.5	
A	212	262	312	362	412	462	512	562	612	662	712	762	812	862	912	962	
B	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	
D	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800	
E	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785	
F	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	
G	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	
H	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
I	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Mass (kg)	w/o brake	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4
	w/ brake	2.1	2.4	2.7	3	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6	6.3	6.6



# SAC-N

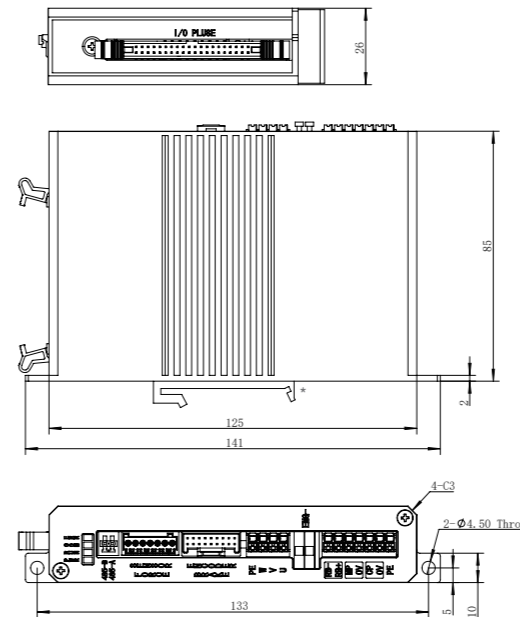
## SINGLE AXIS CONTROLLER

### SELECTION METHOD



Adaptable Products: MCE Series and LCE-4

## TECHNICAL SPECIFICATIONS



\*Guide rail clips are industry standard size and can be removed when installed with screws

Technical Parameters	
Number of controllable axes	1
Support control methods	I/O, Pulse, ModbusRTU RS485
Number of points	64
I/O and pulse connection holder	40PIN Connector
Number of I/O	16 in 16 out
Debugging protocols	RS485(Modbus-RTU)
Pulse type	Opticalcoupler
Max. pulse frequency	100Kpps
Brake control	Support
Force-controlled closed-loop control	Support
Operating Environment	
Input voltage	24 V DC ±10%
Output Current	3 A(Rated)/9 A(Peak)
Recommended operating environment	0 to 40°C, below 85% RH
IP class	IP 20
Weigh	300 g

### Interface Diagram

#### 1. Power Supply, Discharge, and PE Interface

Logic Power Supply Interface: Supplies power to internal logic circuits, brake, and some external interfaces.

Motor Power Supply Interface: Supplies power to the motor for motion.

PE (Protective Earth) Interface: Connects to the equipment's protective earth (ground) connection.

#### 2. Emergency Stop

Emergency Stop Control Interface: Used for emergency stop control.

#### 3. Motor Interface

UVW and PE connections for the motor of the actuator.

#### 4. Feedback and Brake Interface

Connects to the encoder and brake of the actuator.

#### 5. Sensor Interface:

Relay sensor interface.

#### 6. RS485 Interface

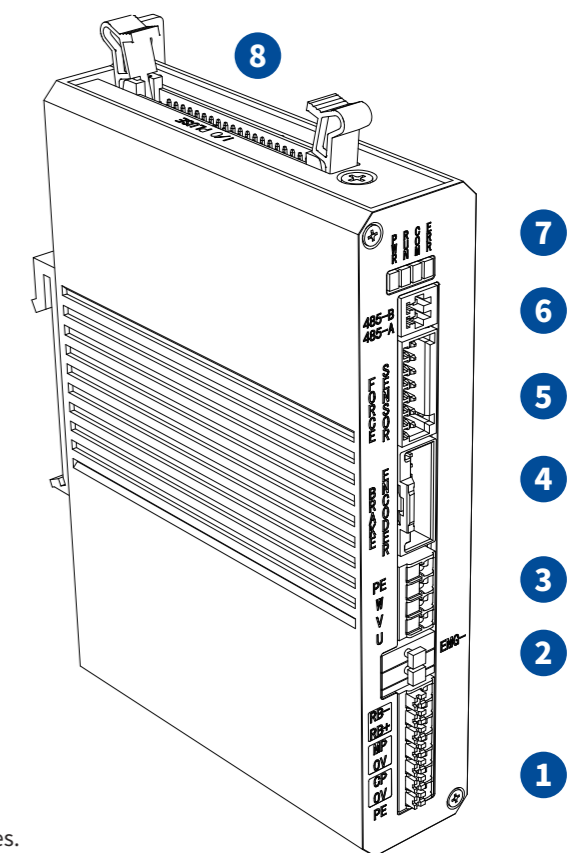
Used for debugging, control, and monitoring.

#### 7. Indicators

Power indicator and status indicator.

#### 8. I/O and Pulse Interface

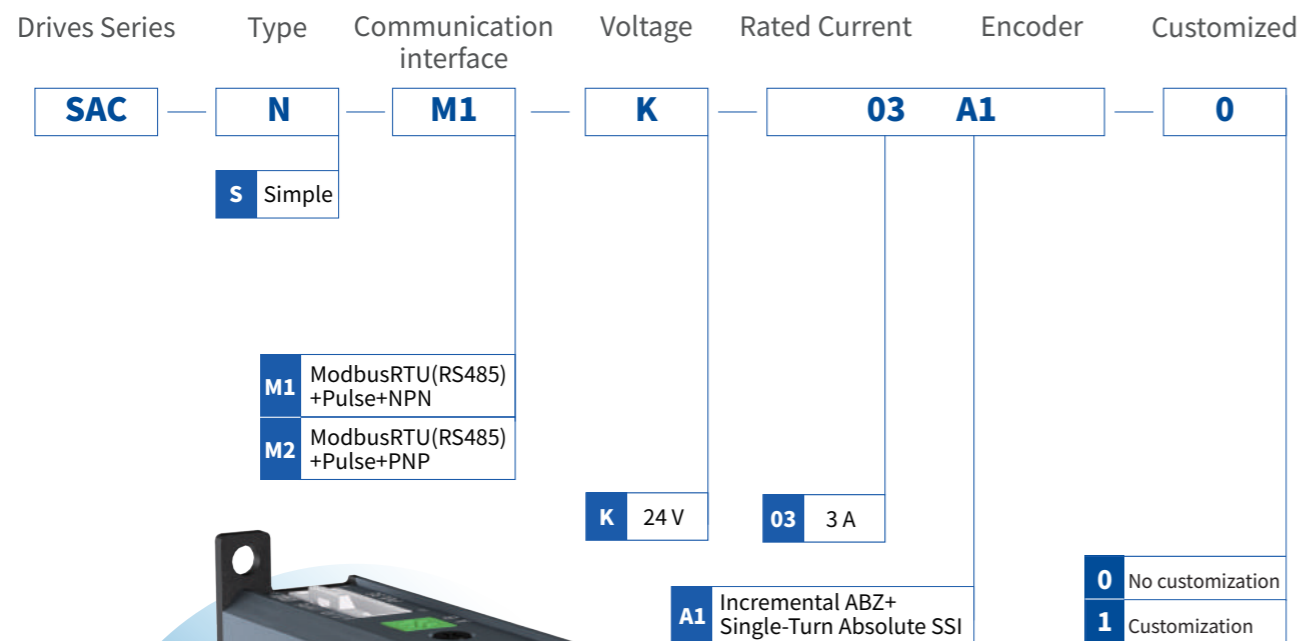
40-Pin Terminal Block, including I/O interfaces and pulse input interfaces.



# SAC-S

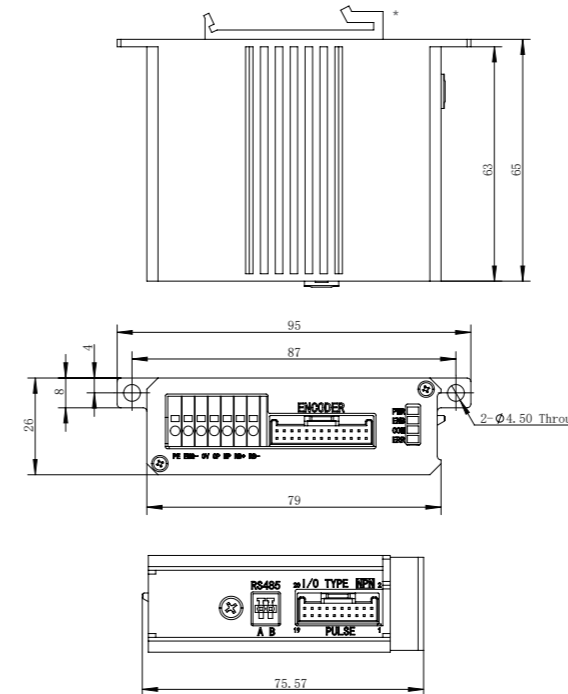
## SINGLE AXIS CONTROLLER

### SELECTION METHOD



Adaptable Products: MCE Series and LCE-4

## TECHNICAL SPECIFICATIONS



### Technical Parameters

Number of controllable axes	1
Support control methods	I/O, Pulse, ModbusRTU RS485
Number of points	16
I/O and pulse connection holder	20PIN Connector
Number of I/O	8 in 8 out
Debugging protocols	RS485(Modbus-RTU)
Pulse type	Opticalcoupler
Max. pulse frequency	100Kpps
Brake control	Support
Force-controlled closed-loop control	No support

### Operating Environment

Input voltage	24 V DC ±10%
Output Current	3 A(Rated)/9 A(Peak)
Recommended operating environment	0 to 40°C, below 85% RH
IP class	IP 20
Weigh	150 g

\*Guide rail clips are industry standard size and can be removed when installed with screws

### Interface Diagram

#### 1. Power Supply, Discharge, Emergency Stop, and PE Interface

Logic Power Supply Interface: Supplies power to internal logic circuits, brake, and some external interfaces.  
 Motor Power Supply Interface: Supplies power to the motor for motion.  
 PE (Protective Earth) Interface: Connects to the equipment's protective earth (ground) connection.

#### 2. Actuator Interface

Connects to the actuator of the electric cylinder, including motor power line, encoder line, and brake line interfaces.

#### 3. Indicators

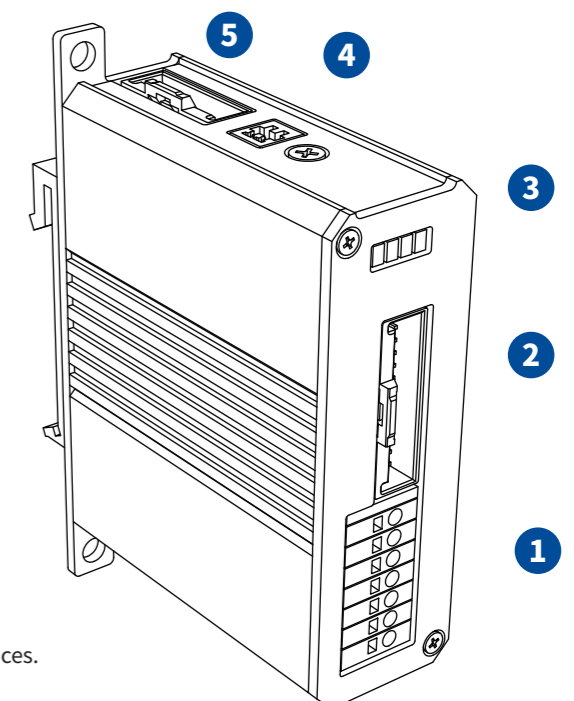
Power indicator and status indicator.

#### 4. RS485 Interface

Used for debugging, control, and monitoring.

#### 5. I/O and Pulse Interface

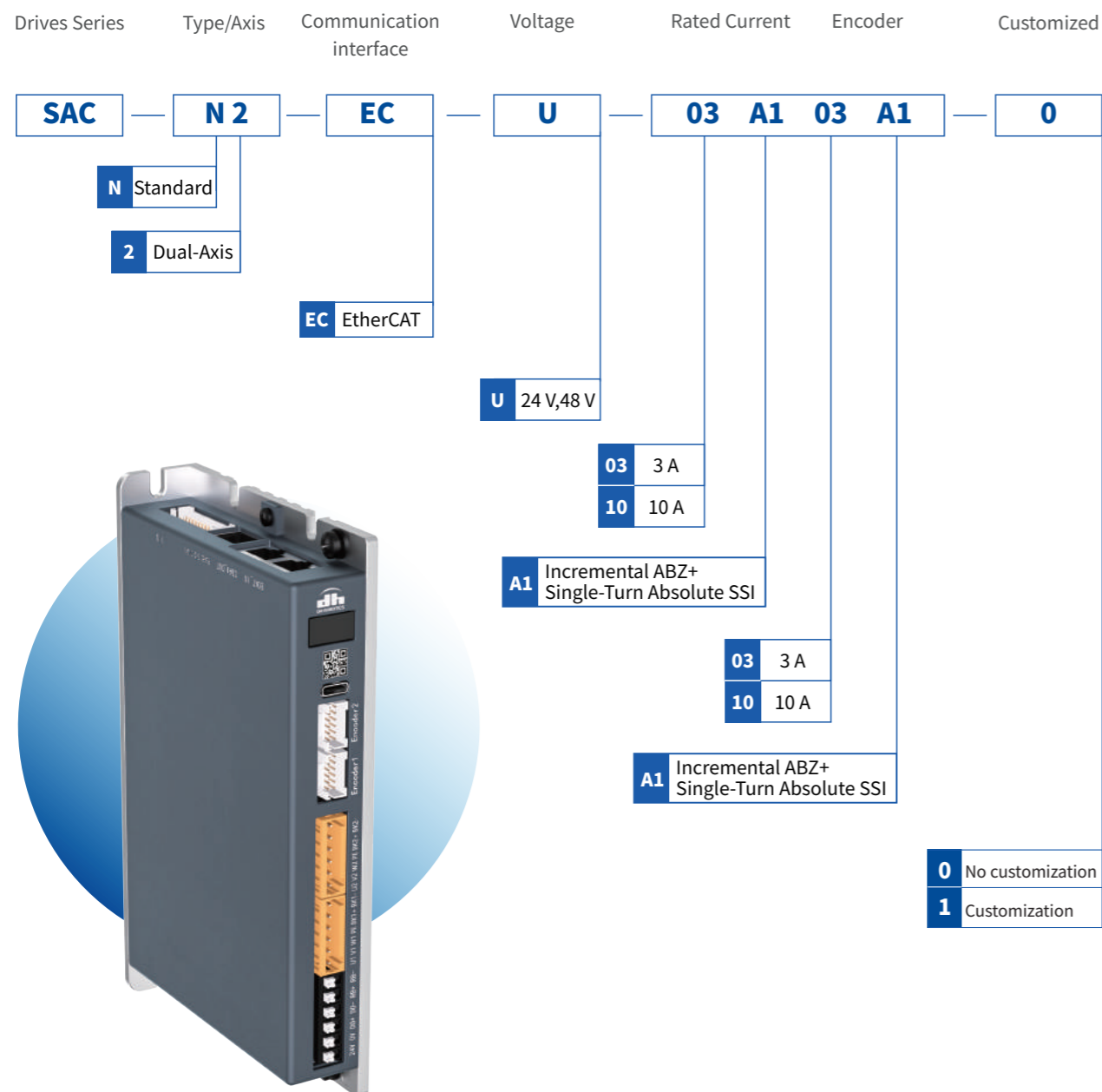
20-Pin Terminal Block, including I/O interfaces and pulse input interfaces.



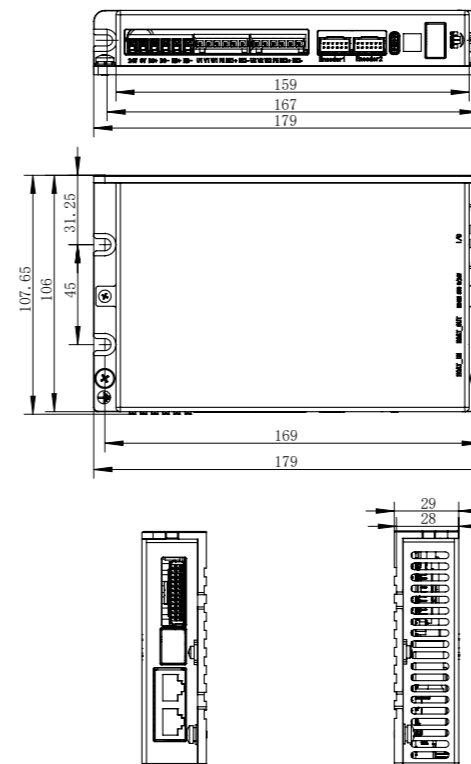
# SAC-N2

## DUAL AXIS CONTROLLER

### SELECTION METHOD



## TECHNICAL SPECIFICATIONS



### Technical Parameters

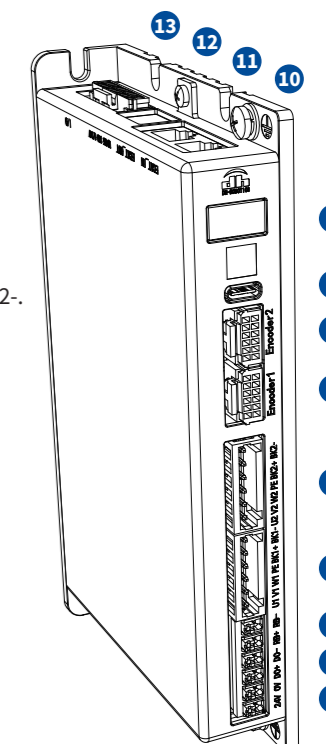
Controlled Axis	2
Supported Control Methods	EtherCAT, IO, MODBUS
EtherCAT Control Modes	Position Mode, Velocity Mode, Torque Mode, and Hybrid Mode
Power Supply Voltage	24 V
Motor Voltage	24 V
Output Rated Current	3 A / 10 A
Encoder	Supports BissC\SSI\Endat\Motegi\ABZ
Limit Switch, Home Position, Probe	Supported

### Operating Environment

Overload	3 times overload for more than 2.5 seconds
Minimum EtherCAT Period	200 us
Filters	4 or more
Closed-Loop Control	Supported
Gantry Control	Synchronized in nanoseconds
High-Precision Encoder and Sampling	Supports 23-bit resolution
Auto-Tuning Gain	Supported
Protection	Overcurrent, Overvoltage, Overheating protection; STO (Safe Torque Off) function
Speed Loop Response	3.5 KHz
Weight	<0.6 KG
Maximum Power	24 V, 240 W; 48 V 480 W
Protection Level	IP20
Operating Temperature	0~55 °C

### Interface Diagram

- Logic Power (24 V / 0 V):** Logic power interface, supplying 24V power to internal control chips, communication chips, IO, and STO.
- Motor Power (DC+ / DC-):** Motor power interface, capable of accepting 24/48V, supplying power to the motor.
- Overvoltage Discharge Resistor (RB+ / RB-):** External overvoltage discharge resistor interface.
- Axis 1 Power Line, PE, Brake:** EAxis 1 motor three-phase power output U1V1W1, PE (ground), and brake control interface BK1+ / BK1-.
- Axis 2 Power Line, PE, Brake:** 2 motor three-phase power output U2V2W2, PE (ground), and brake control interface BK2+ / BK2-.
- Axis 1 Encoder:** Axis 1 encoder differential interface Encoder1, supports ABZ/SSI/BissC/Motegi, etc.
- Axis 2 Encoder:** Axis 2 encoder differential interface Encoder2, supports ABZ/SSI/BissC/Motegi, etc.
- Debug Interface:** Type-C debug interface, connecting to the upper computer for debugging.
- Panel Display:** Three-digit LED display showing the current status of the drive.
- ECAT\_IN:** EtherCAT bus input interface.
- ECAT\_OUT:** EtherCAT bus output interface.
- STO and 485 Interface:** STO and 485 interfaces with an attached 24V power supply.
- I/O and Pulse Interface:** Axis 1 and Axis 2 I/O, PE (ground), and pulse interfaces with an attached 24V power supply.



## DH-Robotics' Gripper and Cylinder Communication Protocol Conversion Box

The communication within DH-Robotics' Servo Gripper and Servo Electric Cylinder defaults to Modbus RTU (RS485) and a small number of I/O. If customers choose other communication protocols, they will need to use the communication protocol conversion box. The following communication protocol conversion boxes are available for selection:

	Communication Protocol Conversion Box Name	Ordering Model
	EtherCAT 1-1	FG-M2E-B1-1
	EtherCAT 1-4	FG-M2E-B1-4
	EtherCAT转 I/O 1-more	Please contact our technical staff confirm the specific parameters
	TCP/IP 1-1	FG-M2T-B1-1-YBT
	PROFINET 1-2	FG-M2P2-B1-2-HJ
	PROFINET 1-11	FG-M2P-B1-11-9

## Customer trust

More than 500 customers around the world are using DH-Robotics products

The number of customers continues to grow rapidly. . .



## Product Distribution

### Chinese Agent Distribution Cities

Beijing/Changchun/Changsha/Chengdu/Chongqing/Dalian/Dongguan/Guangzhou/Hangzhou/Hefei/Jinan/Nanchang/Nanjing/Ningbo/Qingdao/Shanghai/Shenyang/Shenzhen/Suzhou/Wuhan/Wuxi/Xi'an/Xiamen/Yantai/Yangzhou/Zhengzhou/Zhuhai

### Overseas Agents Distribution Area

**Europe:** Spain / France / Italy / Germany / UK / Czech Republic / Romania / Russia / Netherlands / Lithuania / Sweden / Denmark / Norway  
**Asia:** Israel / Bangladesh / India / Japan / Thailand / South Korea / Malaysia  
**Australia:** Australia / New Zealand  
**America:** United States / Mexico  
**Middle East:** Saudi Arabia / Tunisia / Türkiye