



DH-ROBOTICS

SERVO ELECTRIC CYLINDER



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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 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**.

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.



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/s²**.

High energy density, high load

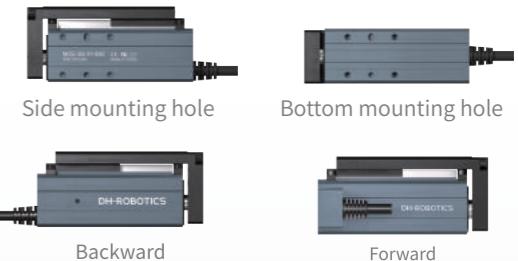
High rigidity structure design. A high-performance linear guide is used with load capacity leading commercially available competing products. The maximum load in the horizontal direction can reach **15 kg**.

Preferred applications



Multiple mounting methods

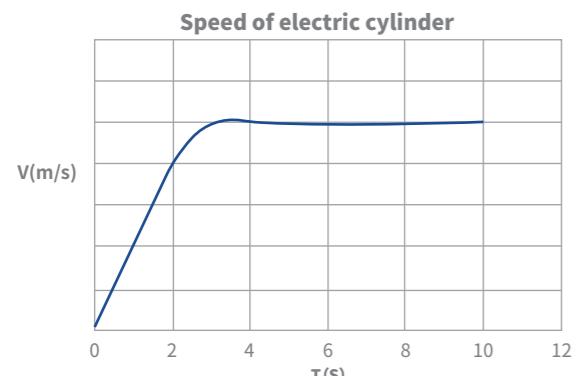
Various mounting holes and optional outlet direction enable horizontal and vertical multi-sided installation for convenient deployment on the production line.



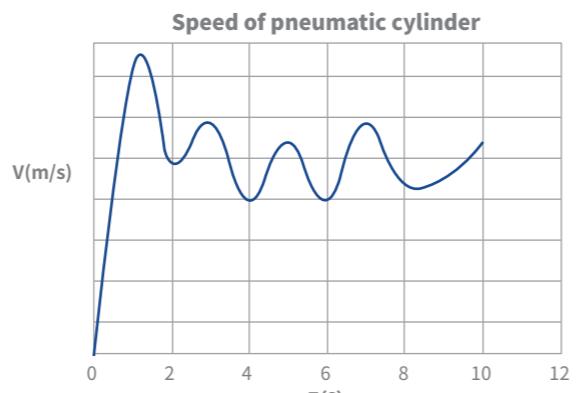
Advantages of Electric Cylinder over Pneumatic Cylinder

Flexibly adjustable position, force, and speed

	Electric cylinder	Pneumatic cylinder
Position	1. Multi-location programming 2. The accuracy is determined by the software with positioning repeatability accurate to ± 0.02 mm	1. A magnetic switch and a mechanically controlled valve are used to achieve positioning 2. The accuracy is determined by the stopper and installation method
Force	1. Controllable and programmable 2. Capable of approaching at high speed and pressing & pushing at low speed	1. The pressure of the air channel shall be adjusted in each adjustment 2. The speed is coupled with force. To apply high thrust at low speed, an air-liquid converter shall be activated
Speed	1. Multi-section acceleration and uniform motion 2. The max. speed can reach nearly 1000 mm/s by the use of a large-lead screw	1. Large speed fluctuation 2. Delayed action 3. The speed of standard pneumatic cylinders mostly ranges from 50 to 500 mm/s

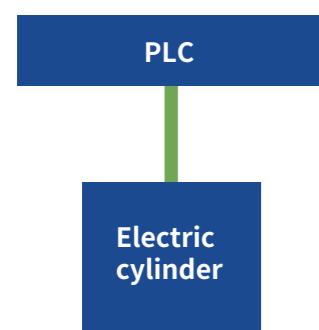


The speed and thrust of the electric cylinder are more stable and smooth



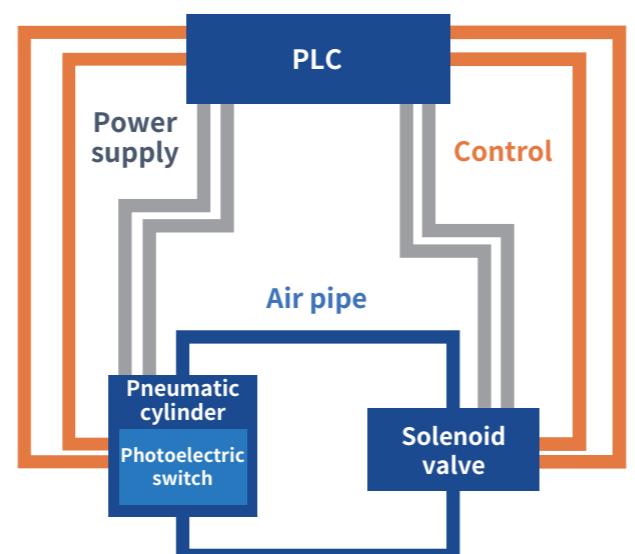
A pneumatic cylinder is compressible, resulting in poor motion stability and slow start

Plug and play



Connection diagram of electric cylinder

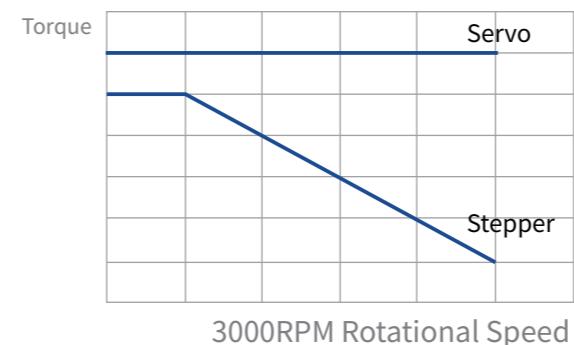
A controller is optional for the electric cylinder and can work simply by connecting with the PLC. Position information is returned in real time, and no external photoelectric switch is required.



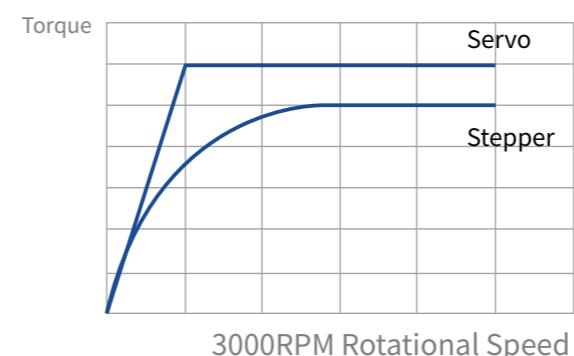
Connection diagram of pneumatic cylinder

Advantages of Servo Electric Cylinder over Stepper Electric Cylinder

Better thrust and load

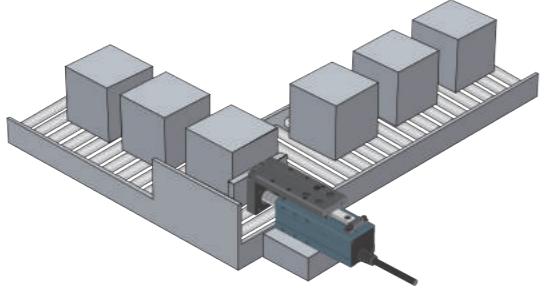


Stepper motor is limited by principle of the motor, high speed and strong force can no be met at the same time. Above 1000 RPM speed, the output torque drops sharply. At 3000 RPM speed (servo motor standard speed), the output torque of the servo motor will only be left a third or less. The output torque 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.

Applications

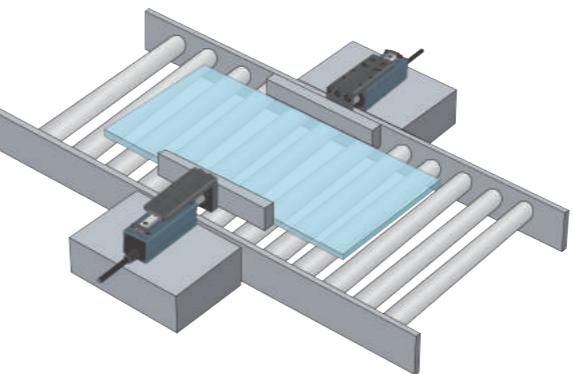


Pushing and conveying

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.

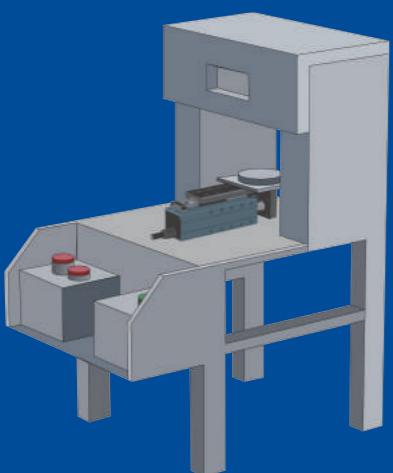


Positioning correction

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 ± 0.02 mm and can perform well for accurate positioning at high speed.

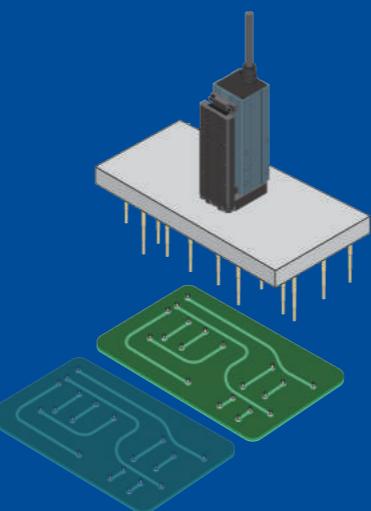


Pressure loading

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.

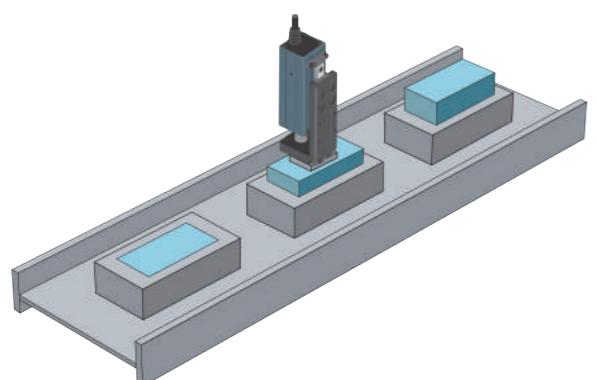


Detection

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.

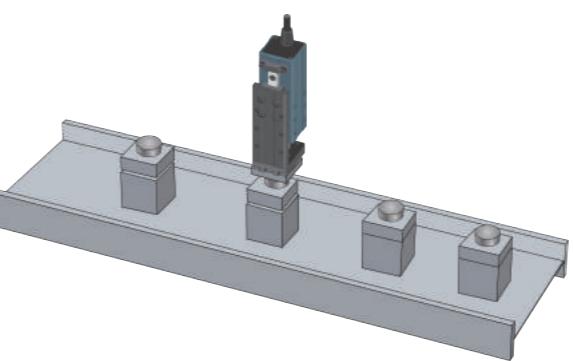


Pushing & pressing

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.

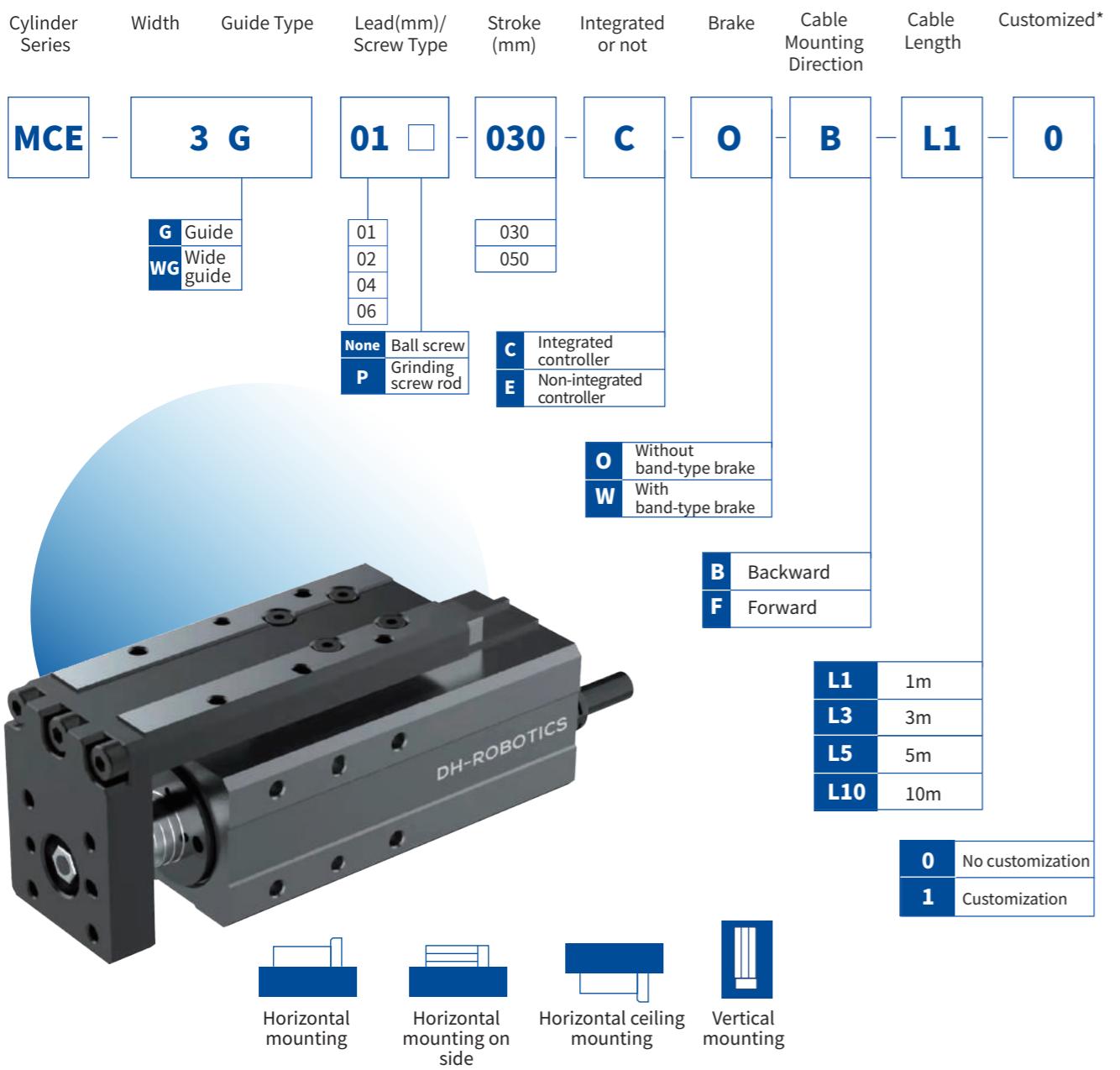
Advantages

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

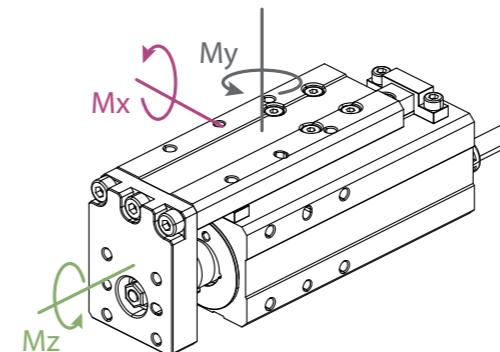
MINIATURE ELECTRIC TABLE TYPE CYLINDER

SELECTION METHOD



*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 ²)	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(Grounding screw rod)		
Idle stroke(mm)	Below 0.1 mm			

Operating Environment

Communication protocol	Buit-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
Stroke	30 mm 50 mm
Width	35 mm 35 mm
Weight	0.47 kg 0.55 kg

Allowable load moment

Mx	9.9 N·m
My	9.9 N·m
Mz	3.3 N·m

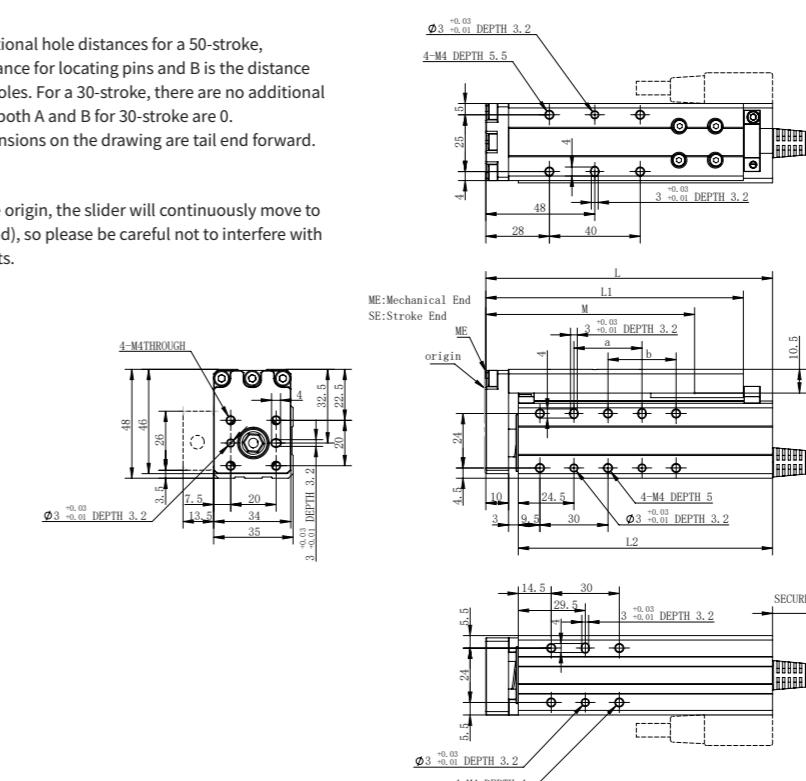
Dimensions

Note:

1.A and B are additional hole distances for a 50-stroke, where A is the distance for locating pins and B is the distance for M4 mounting holes. For a 30-stroke, there are no additional hole distances, so both A and B for 30-stroke are 0.
2.Dotted line dimensions on the drawing are tail end forward.

Caution:

When resetting the origin, the slider will continuously move to ME (mechanical end), so please be careful not to interfere with surrounding objects.



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

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*
MCE - 3 WG - 01 - 030 - C - O - B - L1 - 0									

G Guide
WG Wide guide

01
01
02
04
06

030
030
050

C Integrated controller
E Non-integrated controller

O Without band-type brake
W With band-type brake

B Backward
F Forward

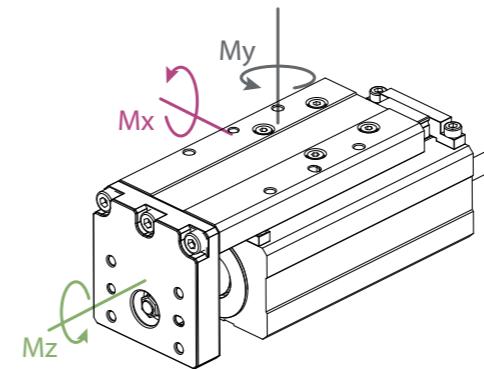
L1 1m
L3 3m
L5 5m
L10 10m

0 No customization
1 Customization



*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 ²)	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(Grounding screw rod)			
Idle stroke(mm)	Below 0.1 mm				

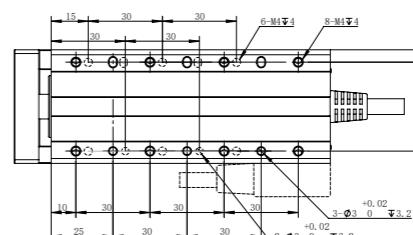
Operating Environment

Communication protocol	Buit-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
Stroke	30 mm 50 mm
Width	46 mm 46 mm
Weight	0.62 kg 0.7 kg

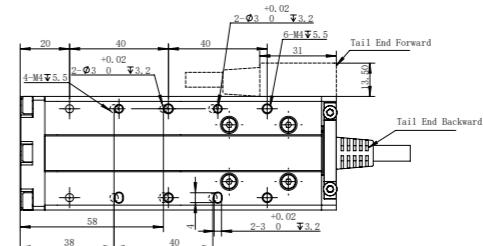
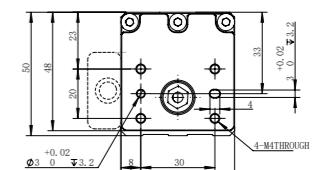
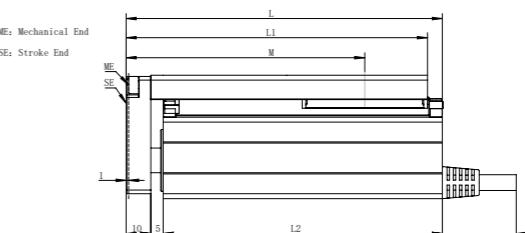
Dimensions

Note:

- 1.M: Allows for the permissible load eccentricity distance.
- 2.Dotted lines in the drawing indicate hole dimensions for installation when the stroke is 30mm.
- 3.Dotted lines in the drawing indicate the dimensions of the tail when the feature faces forward in the direction of exit.



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

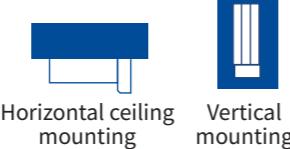
Cylinder Series	Width	Guide Type	Lead(mm)/Screw Type	Stroke (mm)	Integrated or not	Brake	Cable Mounting Direction	Cable Length	Customized*
MCE	4 G	05 □	075	E	O	B	L1	0	
		G Guide							
			05 10						
				075 150					
					E Non-integrated controller				
			None Ball screw						
			P Grinding screw rod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



Horizontal mounting



Horizontal mounting on side



Horizontal ceiling mounting



Vertical mounting

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

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 ²)	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(Grounding screw rod)
Idle stroke(mm)	Below 0.1 mm

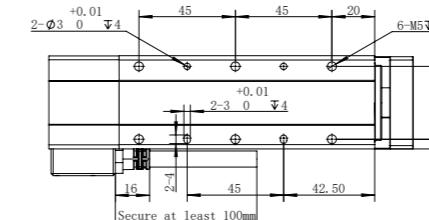
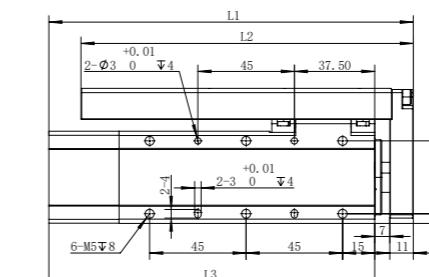
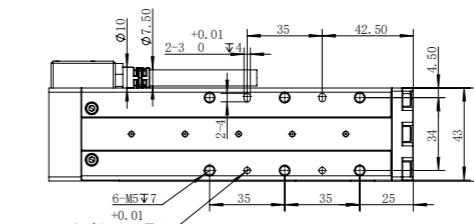
Operating Environment

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

Mechanical Parameters

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

Dimensions



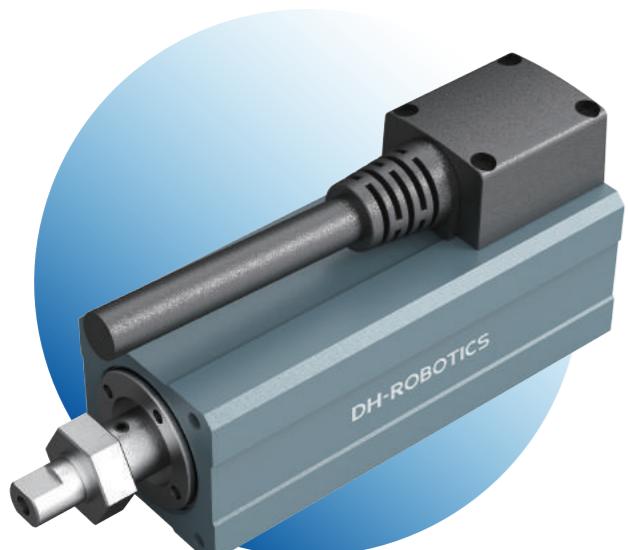
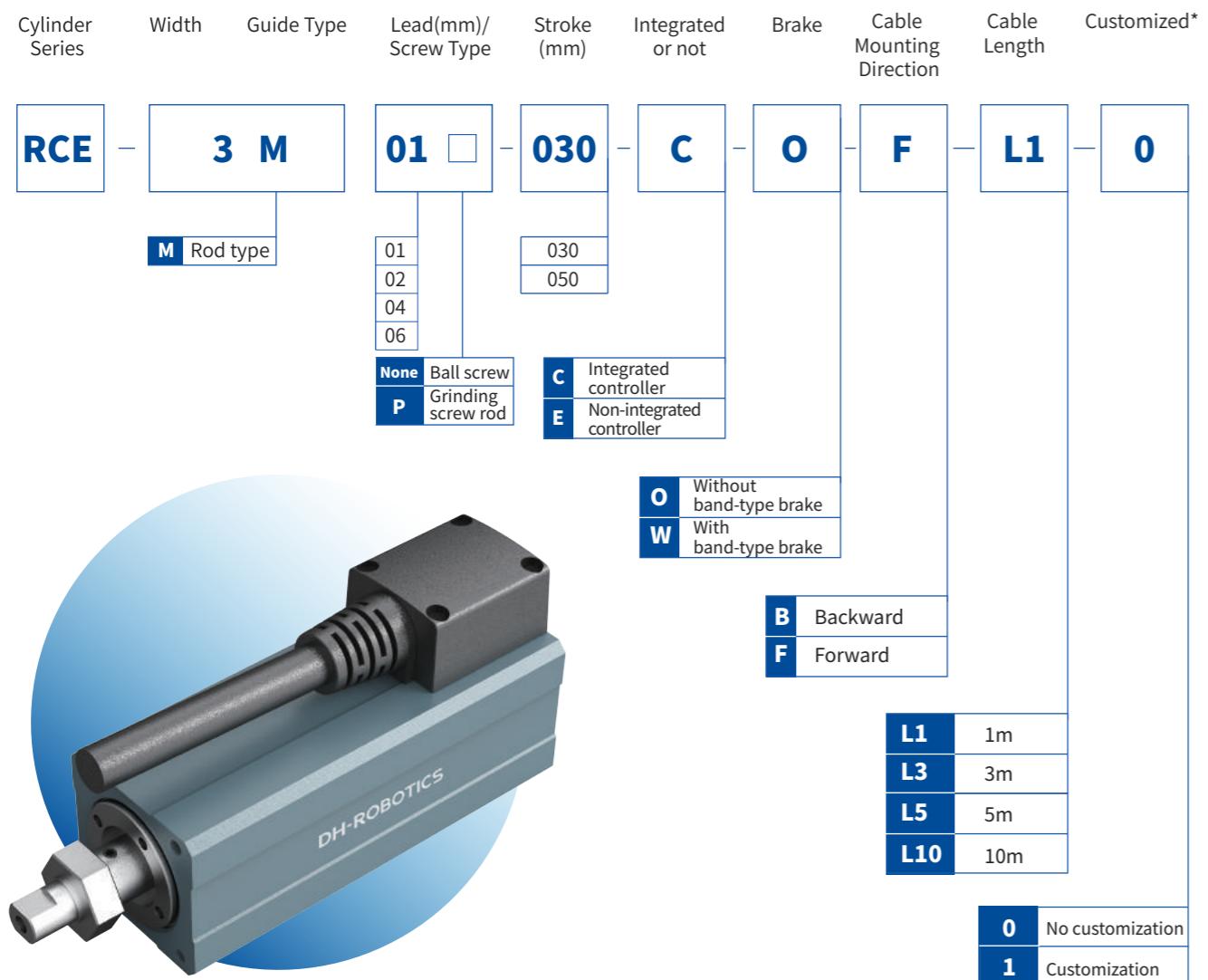
Without Brake mm	
Stroke	075 150
L1	170 235
L2	155 235
L3	152 217

With Brake mm	
Stroke	075 150
L1	185 235
L2	160 235
L3	167 217

RCE-3M

MINIATURE ELECTRIC ROD TYPE CYLINDER

SELECTION METHOD



Horizontal mounting



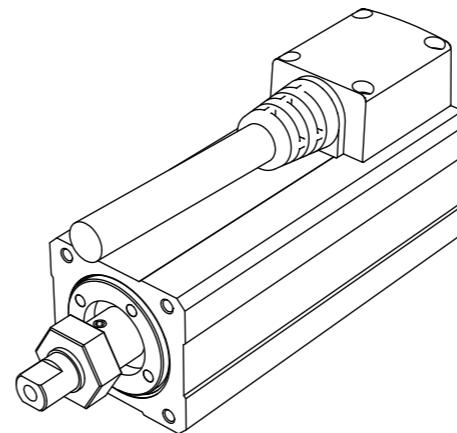
Horizontal ceiling mounting



Vertical mounting

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

TECHNICAL SPECIFICATIONS



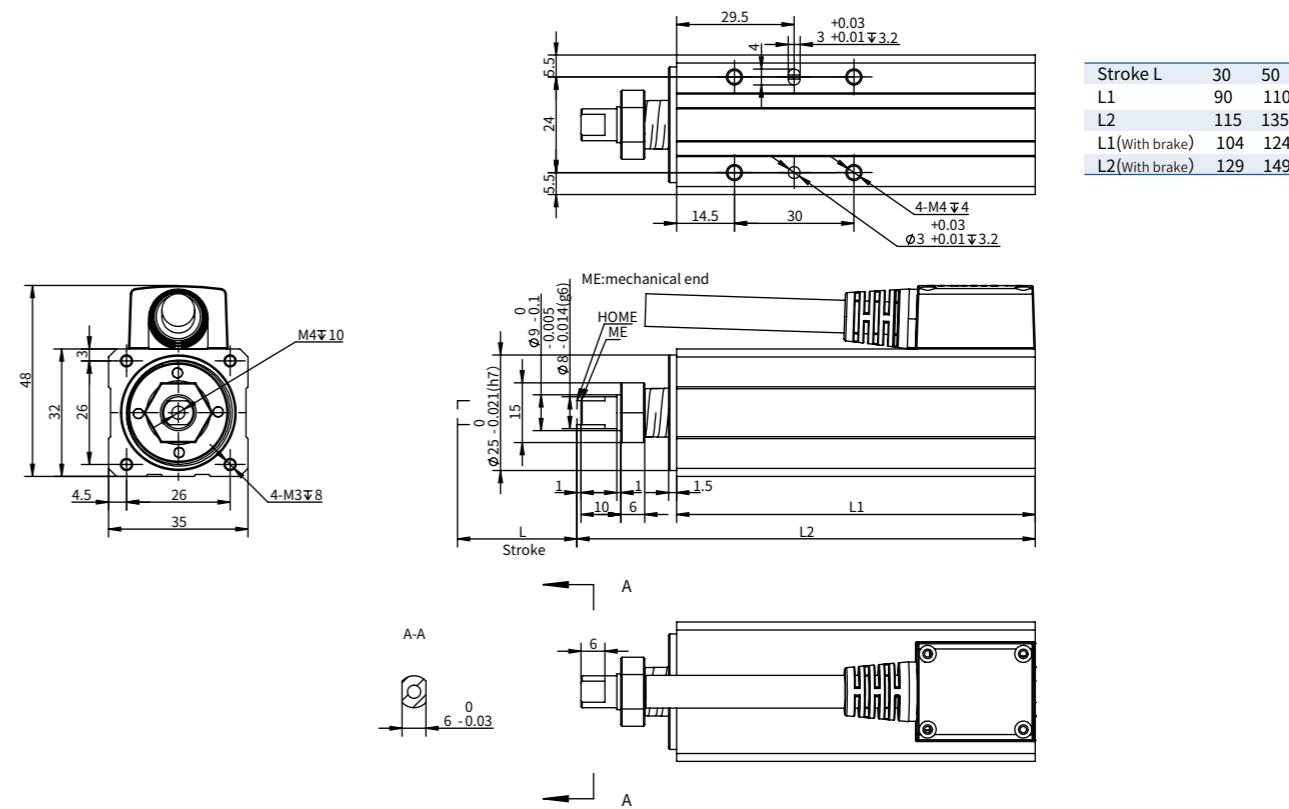
Technical Parameters

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 ²)	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(Grounding screw rod)		
Idle stroke(mm)	Below 0.1 mm			

Operating Environment

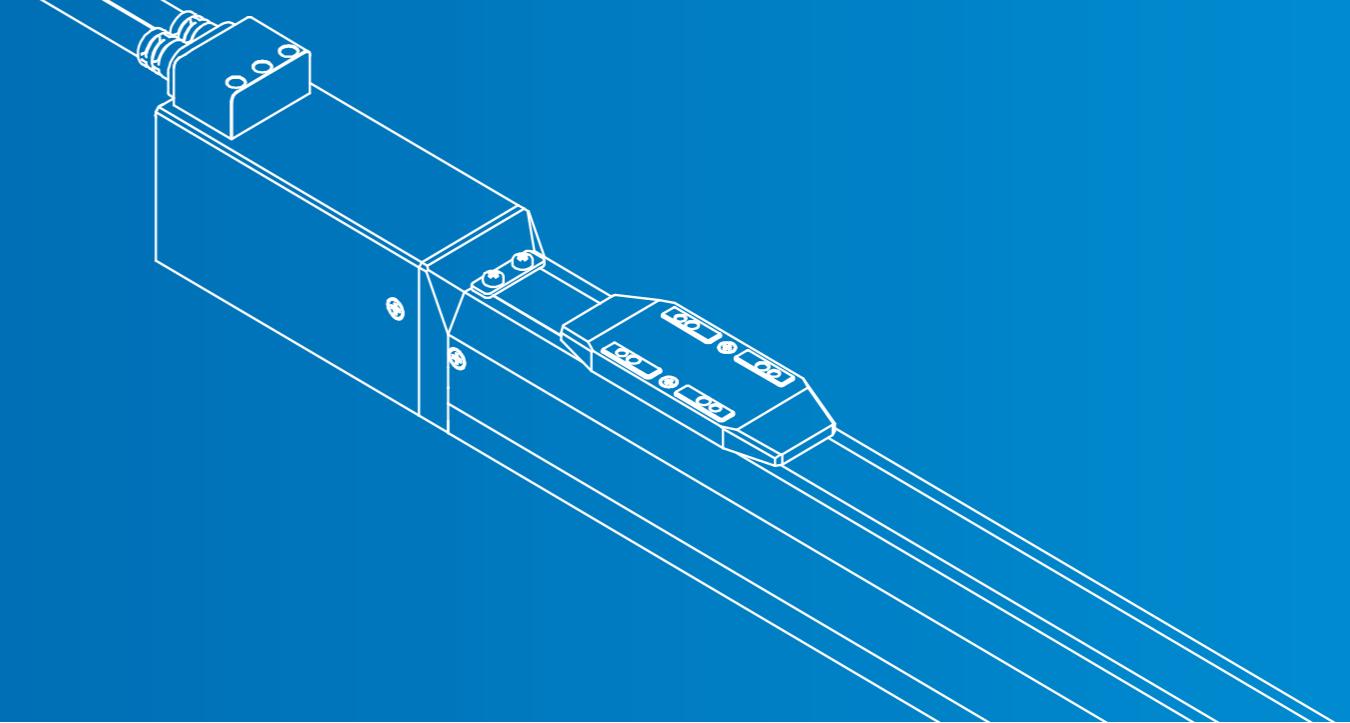
Communication protocol	Buit-in:485+4-way I/O(NPN, PNP) External: Depending on the selected controller
Adaptable to external controllers	SAC Serie
Rated voltage	24 V DC ± 10%
Current	1.5 A(Rated)/3 A(Peak)
Protection rating	IP 40
Recommended operating environment	0 to 40°C, below 85% RH
Compliance with international standards	CE, FCC, RoHS
Stroke	30 mm 50 mm
Weight	0.47 kg 0.55 kg

Dimensions

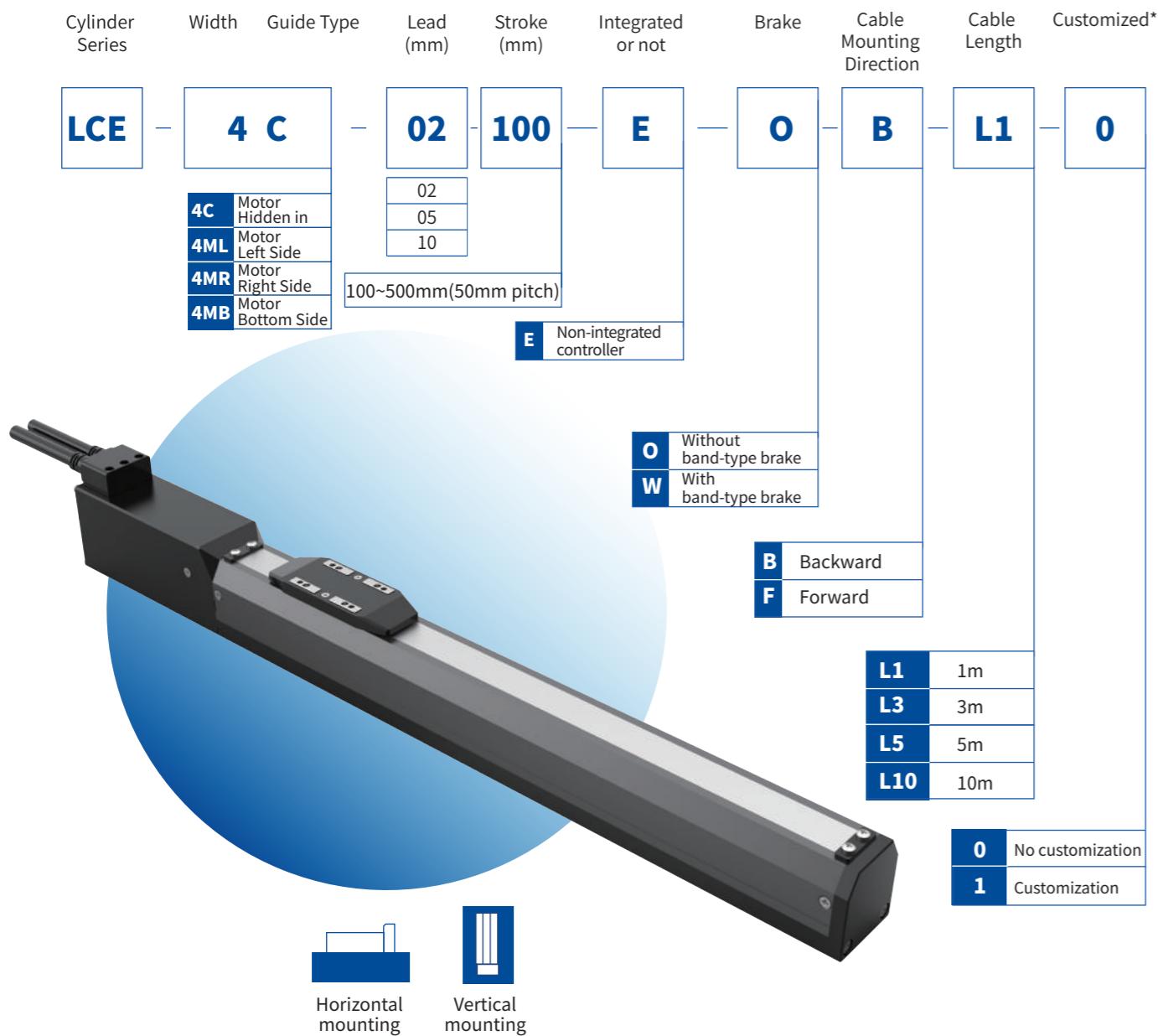


LCE-4

LINEAR ELECTRIC CYLINDER

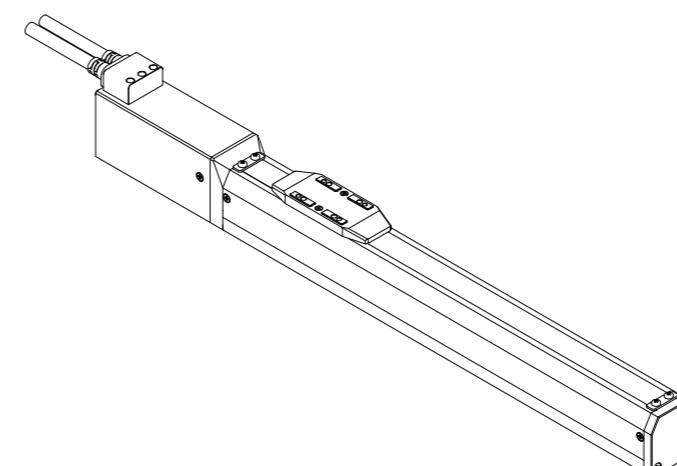


SELECTION METHOD



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

TECHNICAL SPECIFICATIONS



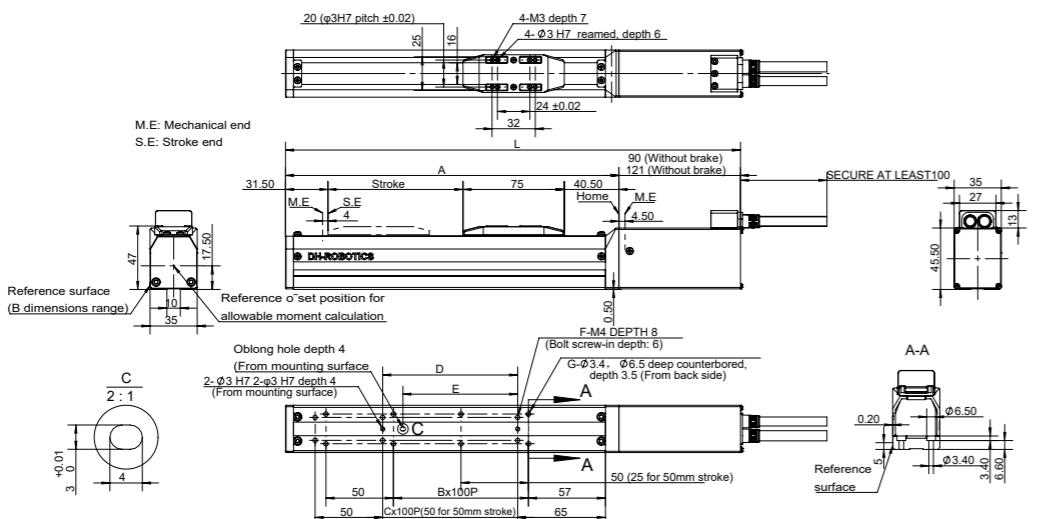
Technical Parameters		
Total stroke	100~500mm(50mm pitch)	
Screw lead	2 mm	5 mm
Rated thrust	125 N	50 N
Min. thrust	37.5 N	15 N
Max. acceleration	5000 mm/s ²	5000 mm/s ²
Max. speed	100 mm/s	250 mm/s
Max. weight capacity - horizontal	15 kg	15 kg
Max. weight capacity - vertical	6 kg	3 kg
Positioning repeatability	±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
Mz	14.33 N·m

LCE-4C Dimensions

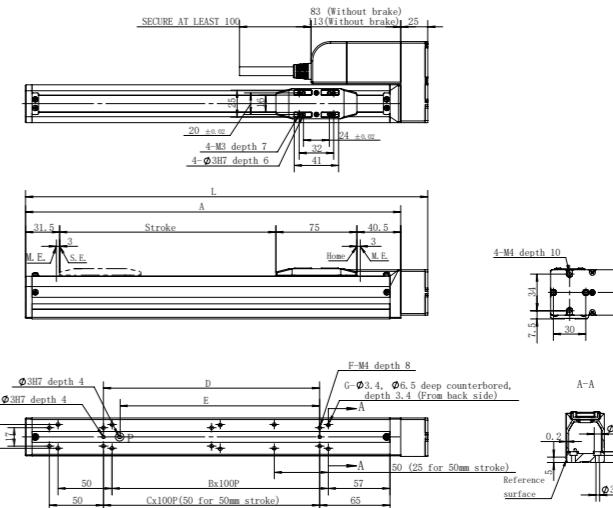
Motor Hidden in



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	
	w/ brake	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.4	

LCE-4MR Dimensions

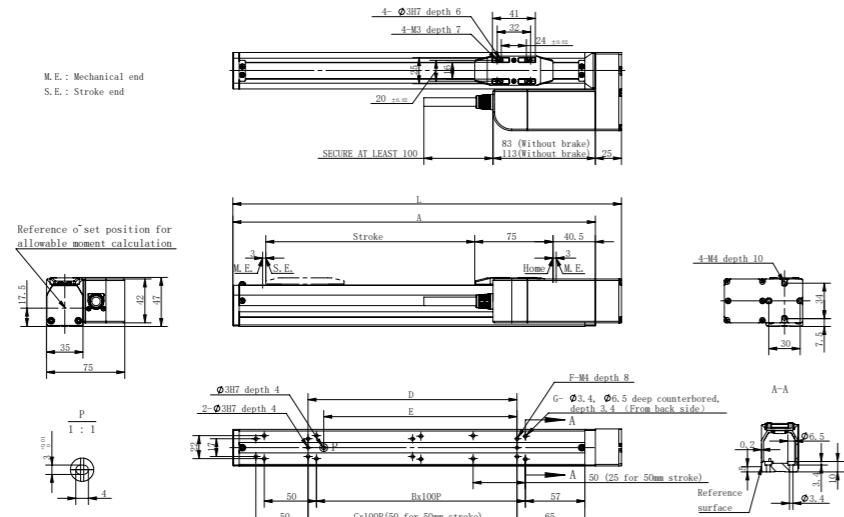
Motor Right Side



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	2.1
	w/ brake	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.3

LCE-4ML Dimensions

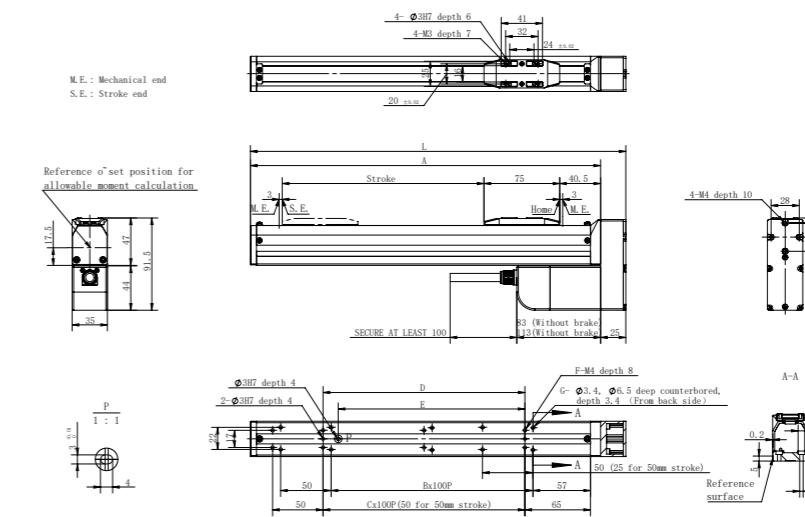
Motor Left Side



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	2.1
	w/ brake	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.3

LCE-4MB Dimensions

Motor Bottom Side

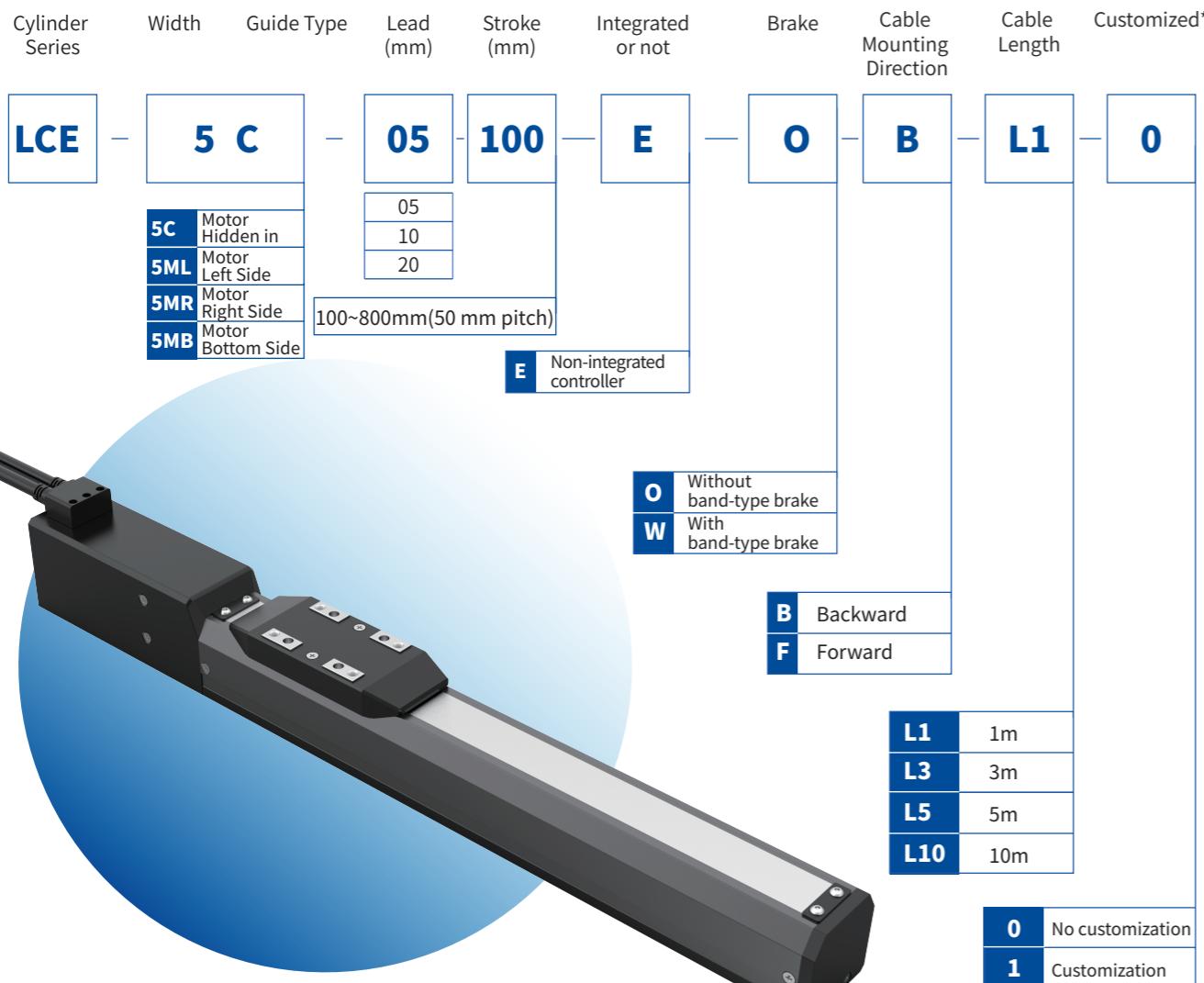
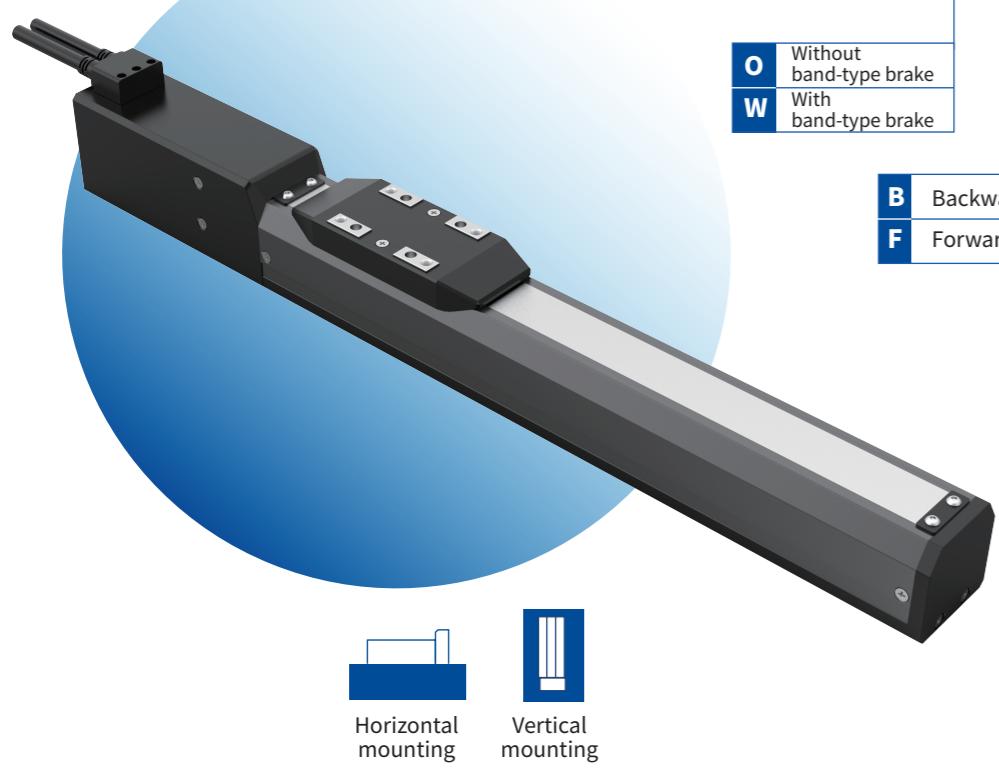


Stroke	100	150	200	250	300	350	400	450	500
L	272	322	372	422	472	522	572	622	672
A	247	297	347	397	447	497	547	597	647
B	0	1	1	2	2	3	3	4	4
C	1	1	2	2	3	3	4	4	5
D	100	100	200	200	300	300	400	400	500
E	85	85	185	185	285	285	385	385	485
F	6	6	8	8	10	10	12	12	14
G	8	10	10	12	12	14	14	16	16
Mass (kg)	w/o brake	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1
	w/ brake	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.3

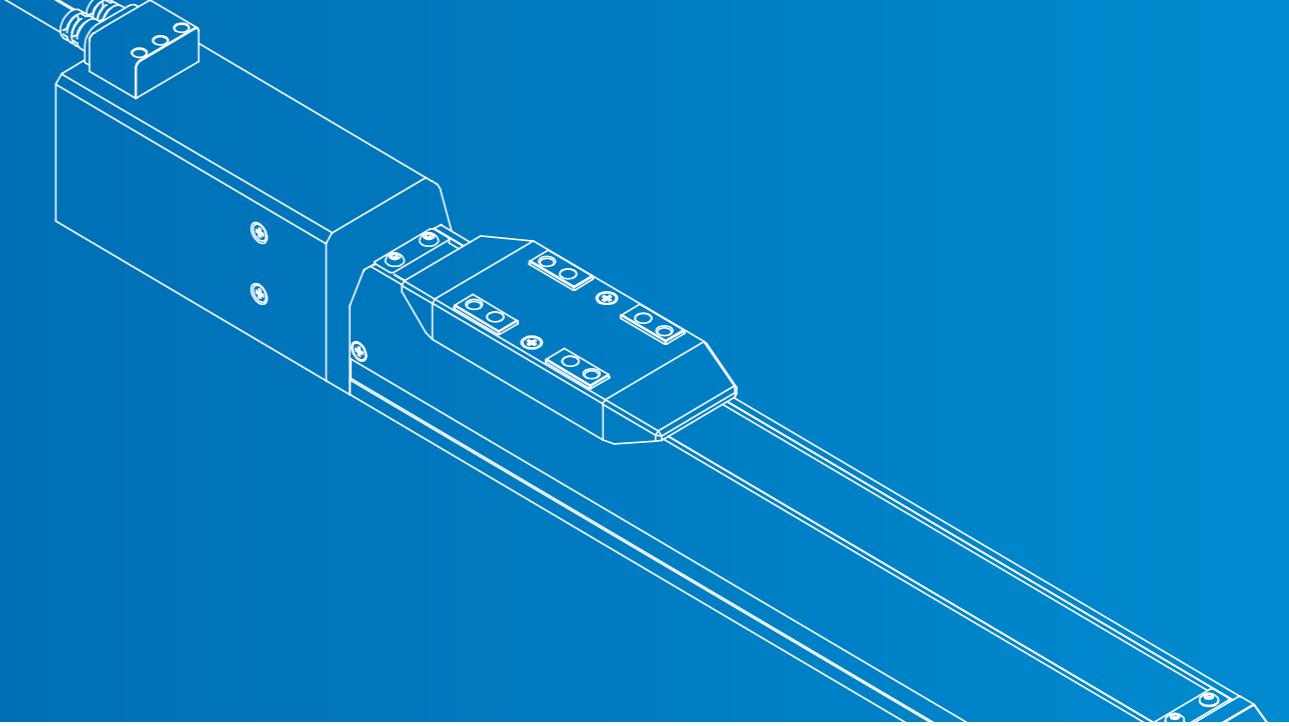
LCE-5

LINEAR ELECTRIC CYLINDER

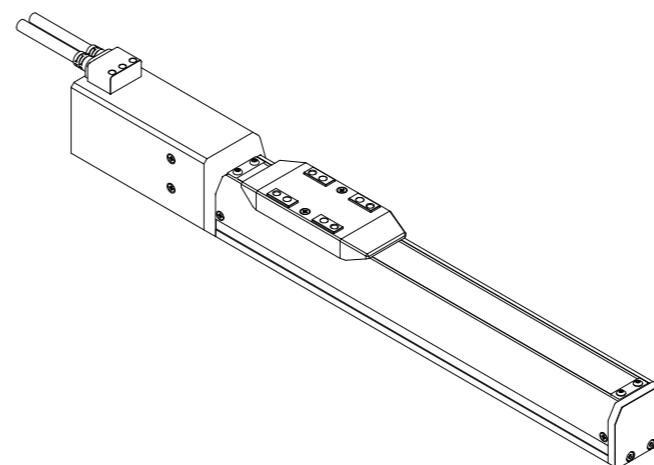
SELECTION METHOD



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



TECHNICAL SPECIFICATIONS



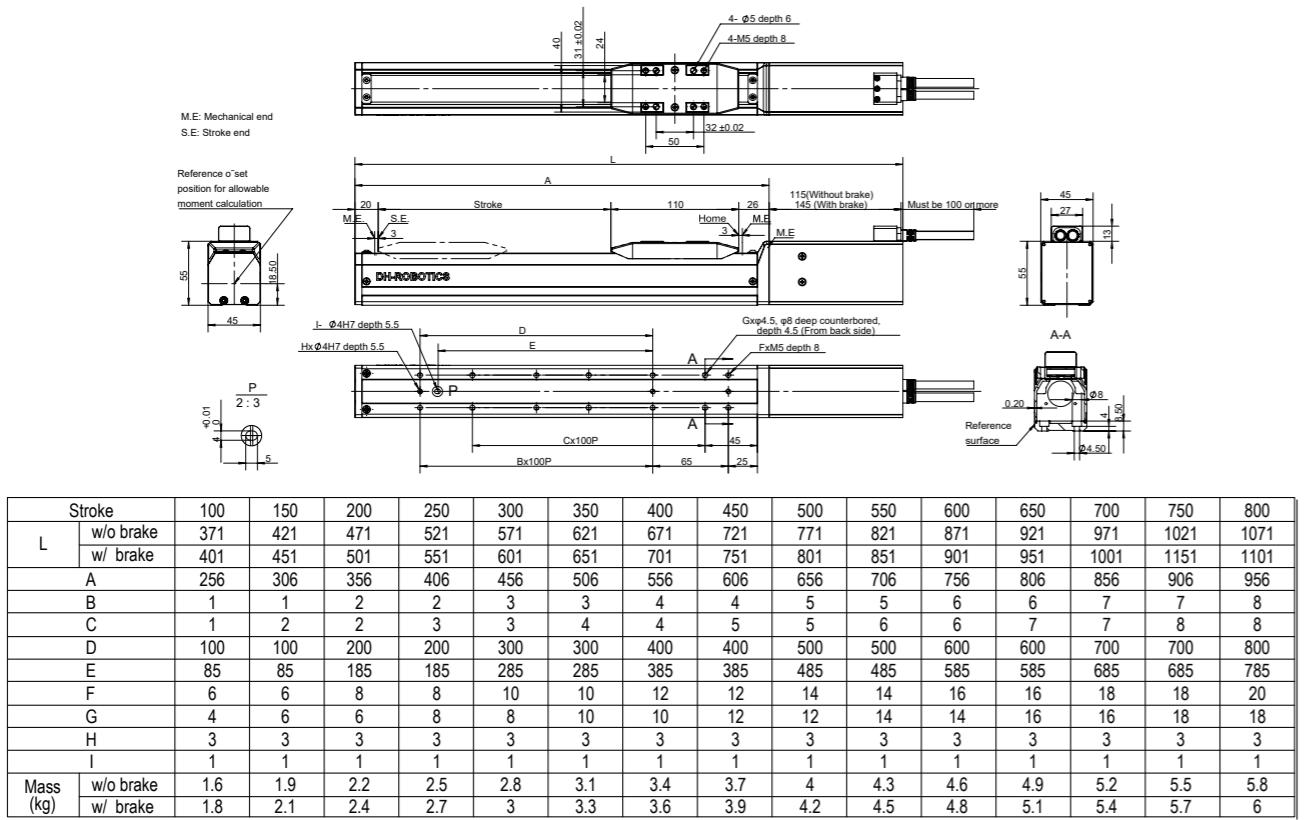
Technical Parameters		
Total stroke	100~800mm(50 mm pitch)	
Screw lead	5 mm	10 mm
Rated thrust	320 N	160 N
Min. thrust	96 N	48 N
Max. acceleration	5000 mm/s ²	5000 mm/s ²
Max. speed	250 mm/s	500 mm/s
Max. weight capacity - horizontal	35 kg	25 kg
Max. weight capacity - vertical	10 kg	5 kg
Positioning 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

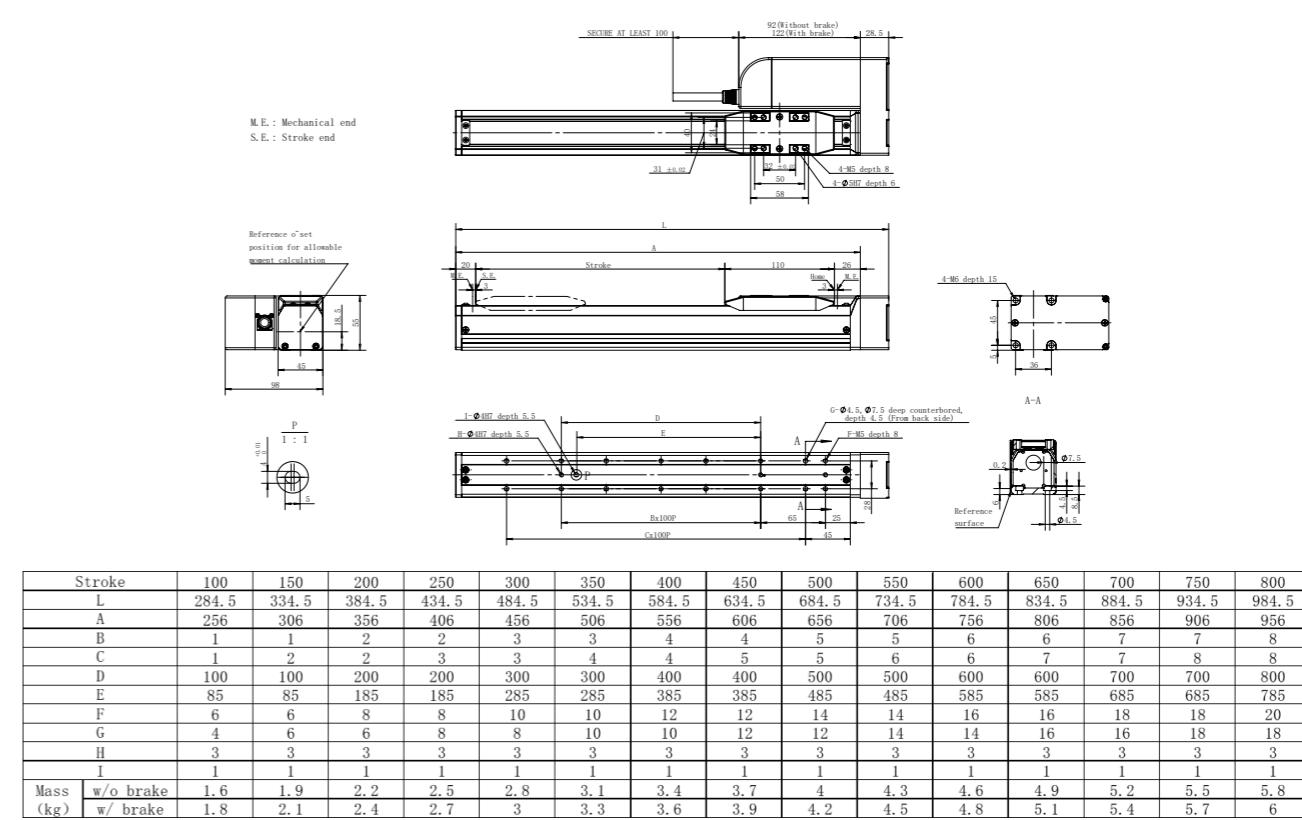
LCE-5C Dimensions

Motor Hidden in



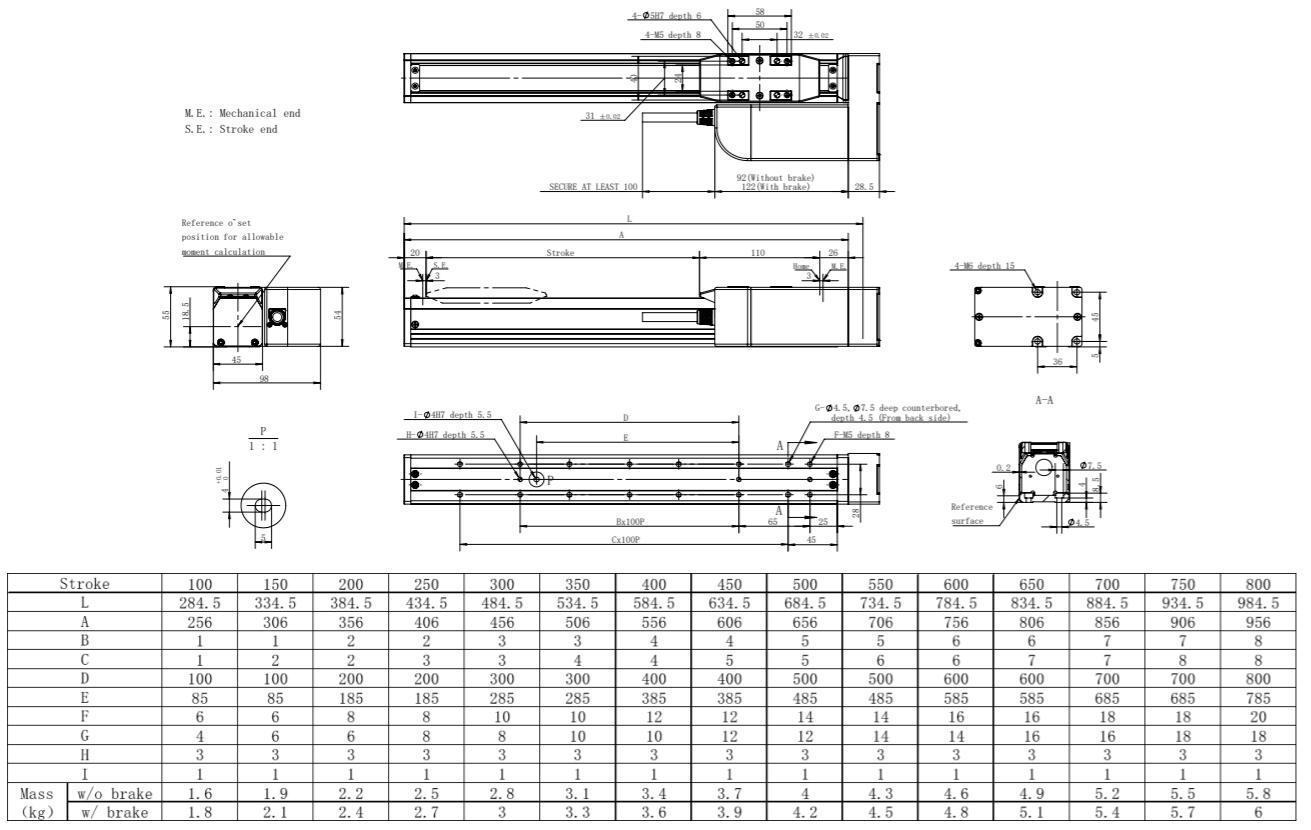
LCE-5MR Dimensions

Motor Right Side



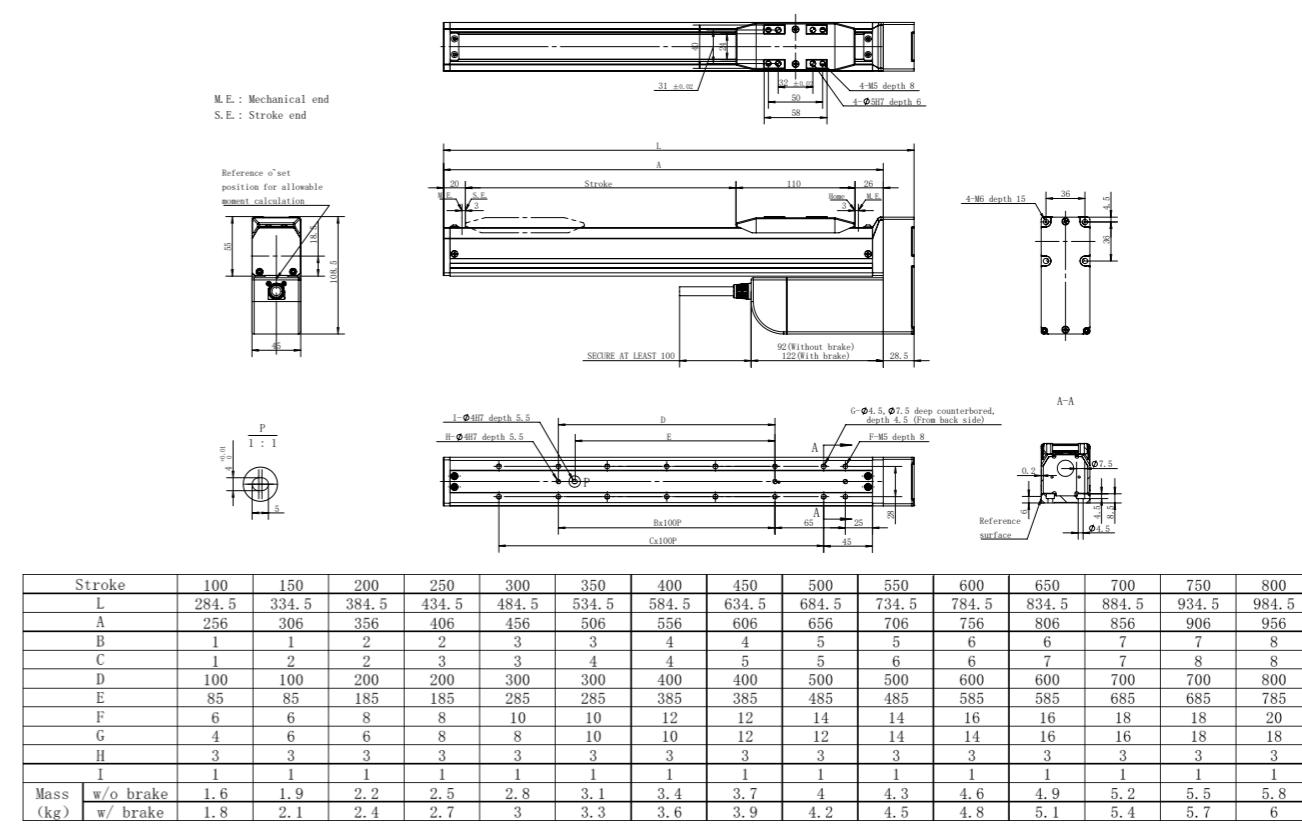
LCE-5ML Dimensions

Motor Left Side



LCE-5MB Dimensions

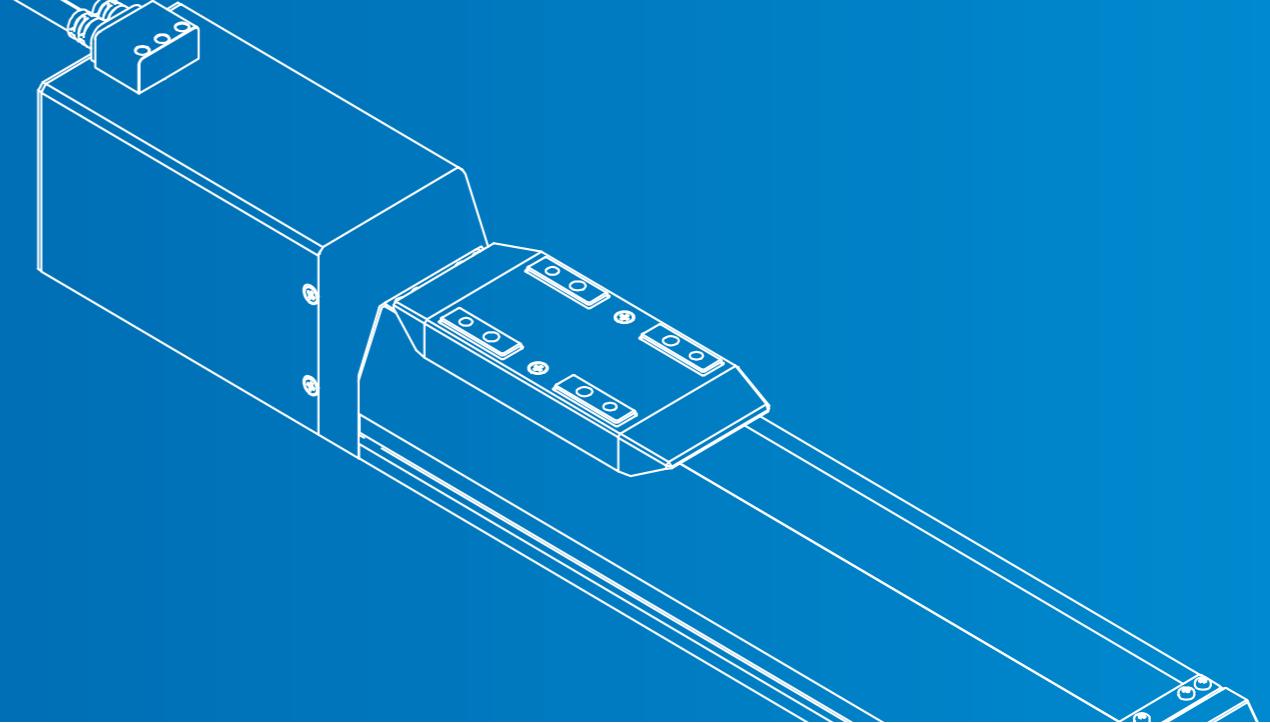
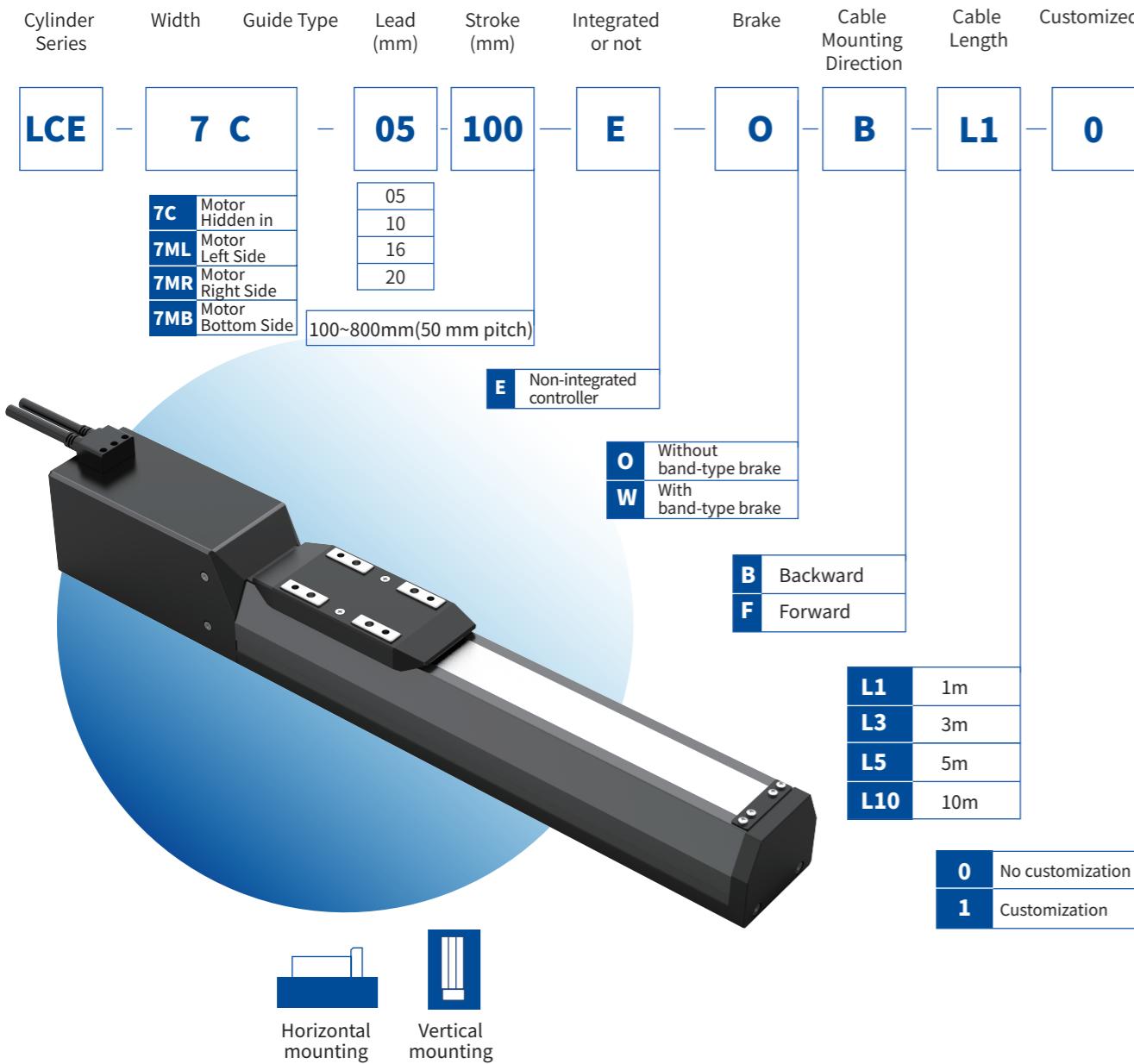
Motor Bottom Side



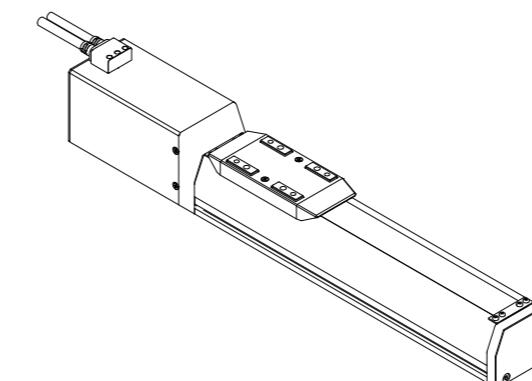
LCE-7

LINEAR ELECTRIC CYLINDER

SELECTION METHOD



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 ²	5000 mm/s ²	5000 mm/s ²	5000 mm/s ²
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			

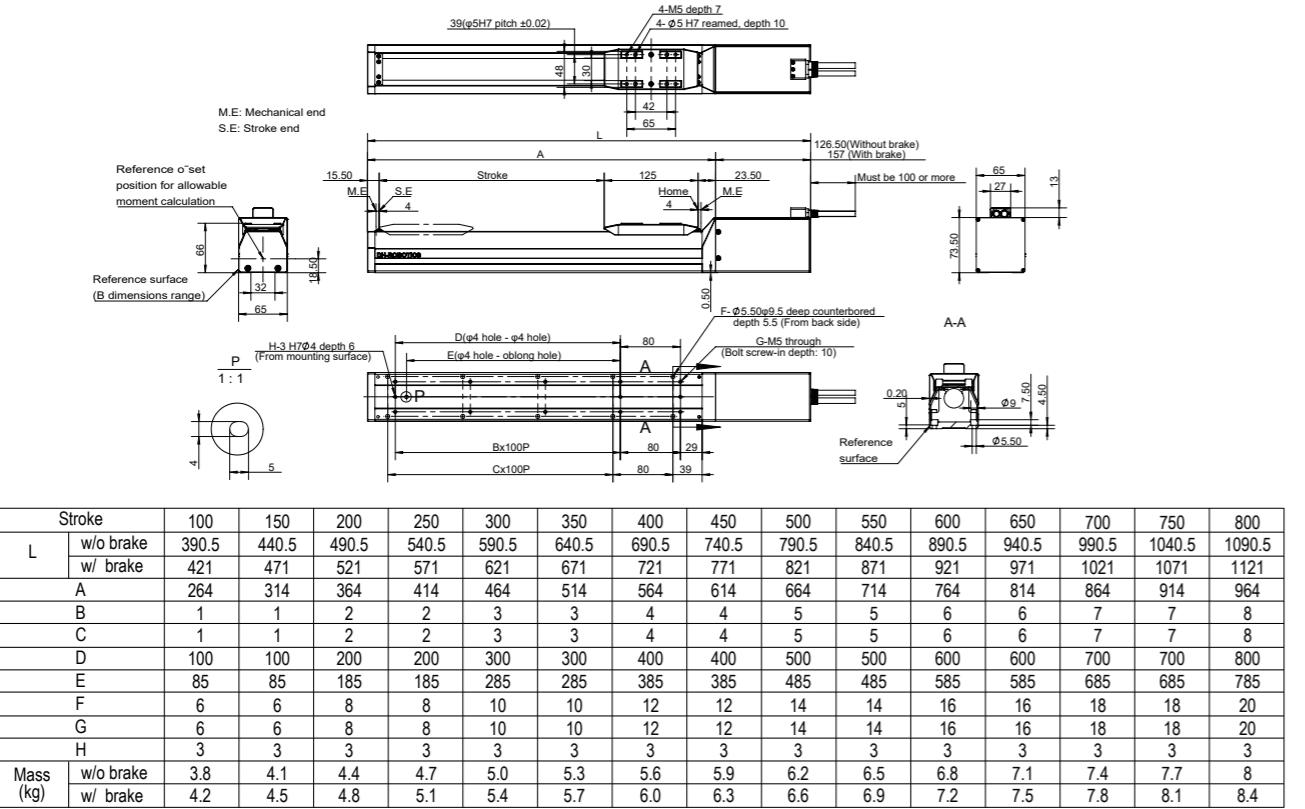
Operating Environment	
Communication protocol	Standard configurations: Modbus RTU (RS485), Digital I/O Option: EtherCAT Need to adapt to the external purchase of other brands of drives
Rated voltage	24 V DC ± 10%
Rated power	200 W
Protection rating	IP 40
Recommended operating environment	0 to 40°C, below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

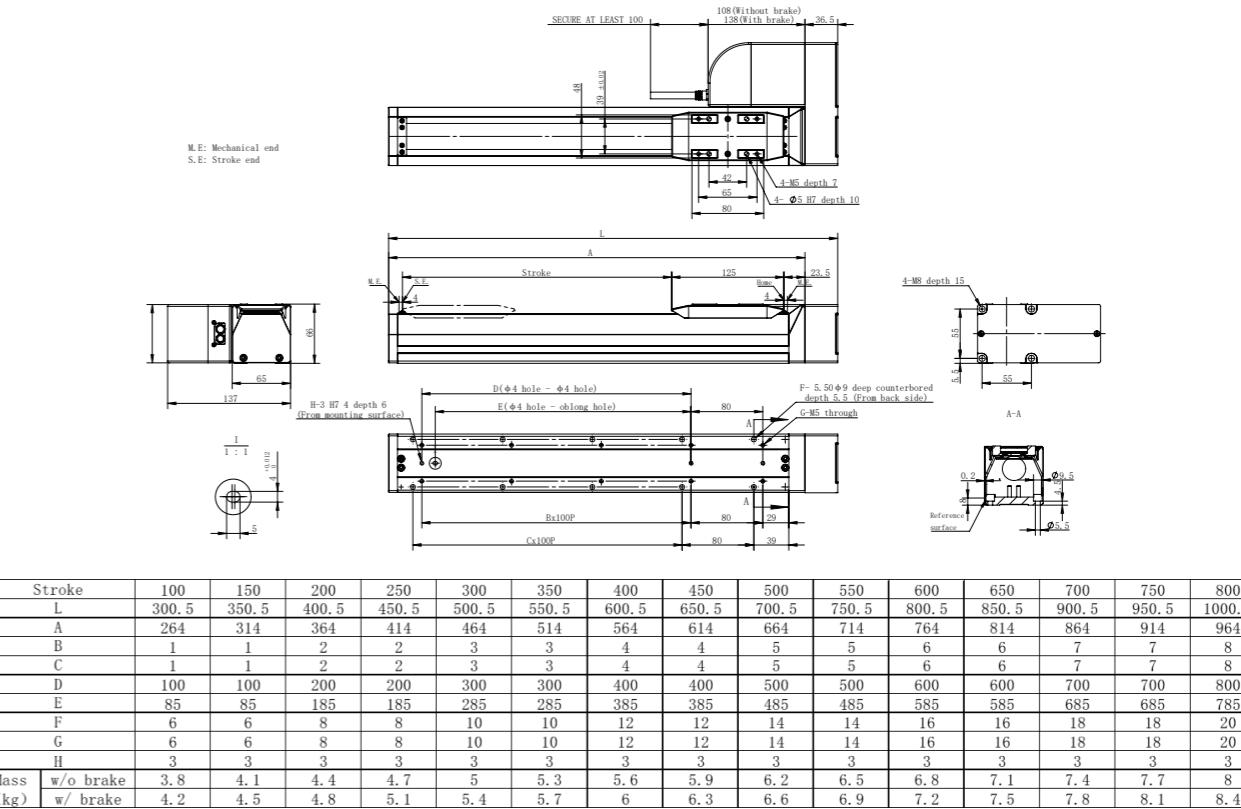
LCE-7C Dimensions

Motor Hidden in



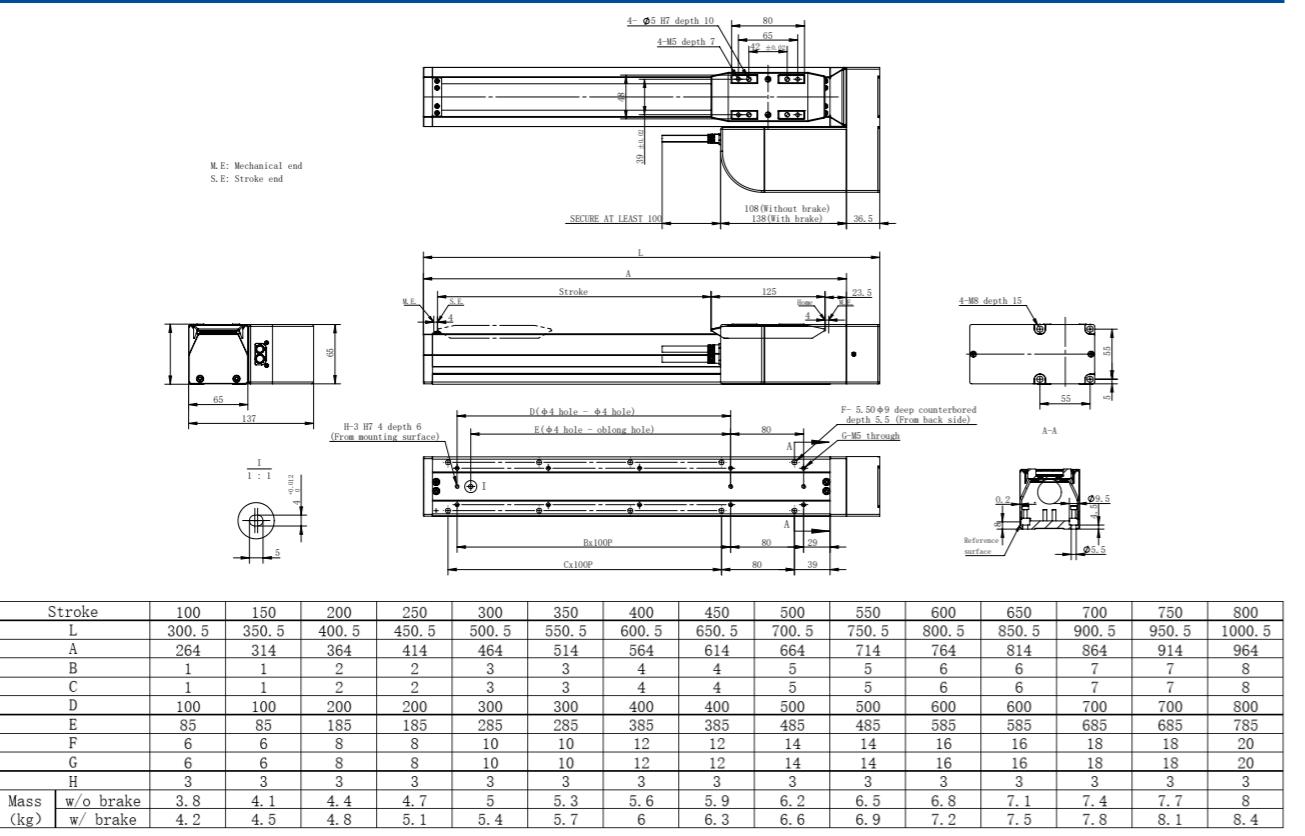
LCE-7MR Dimensions

Motor Right Side



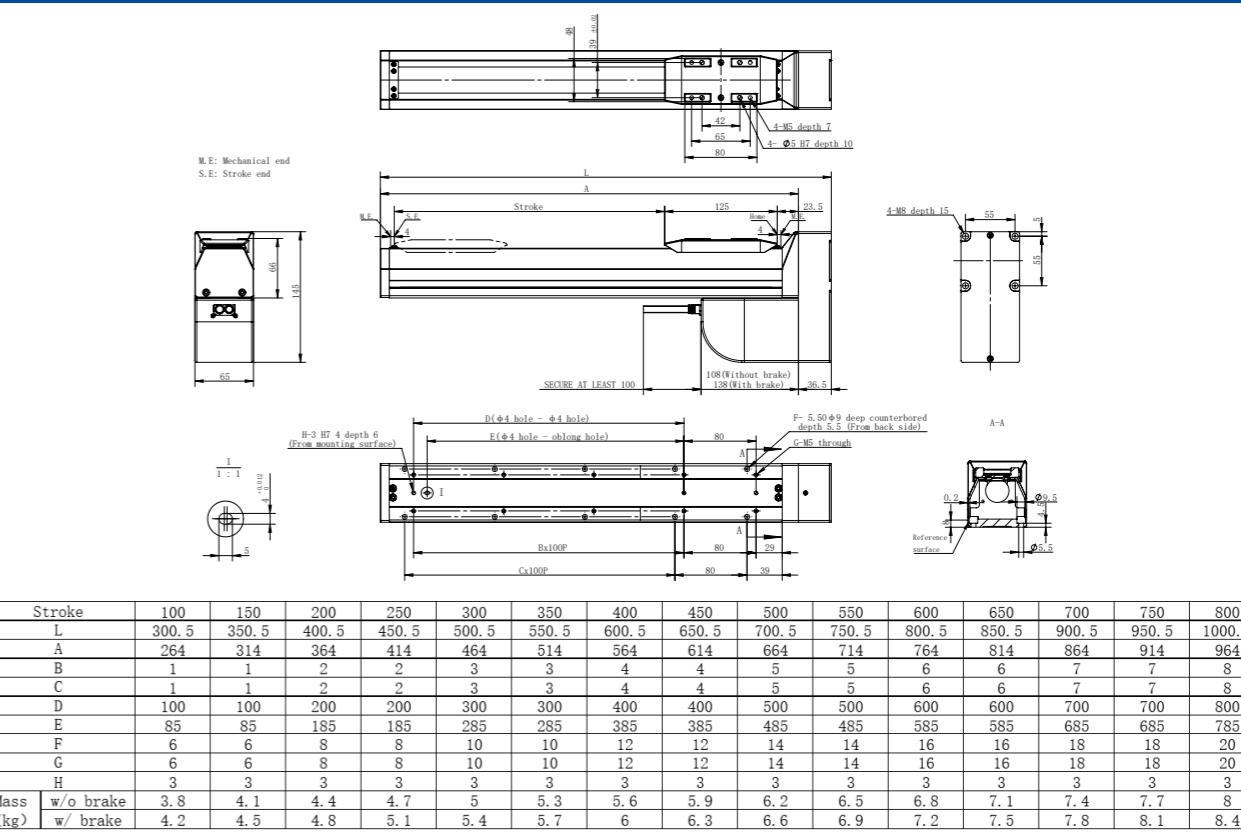
LCE-7ML Dimensions

Motor Left Side



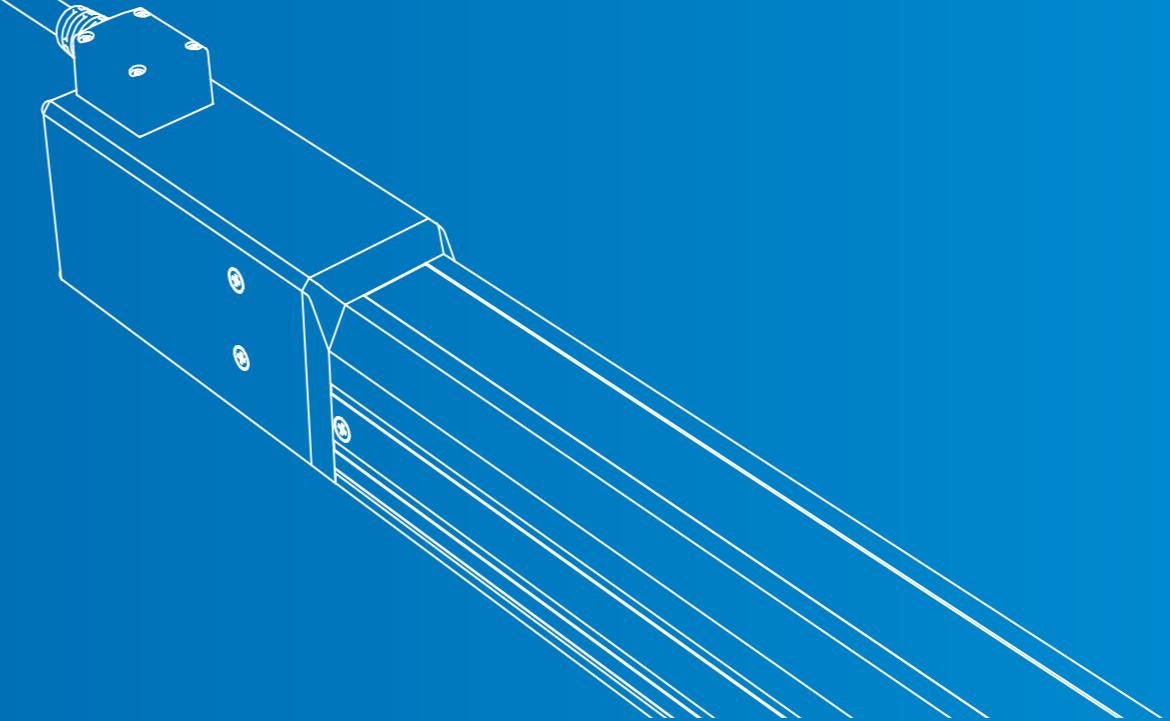
LCE-7MB Dimensions

Motor Bottom Side

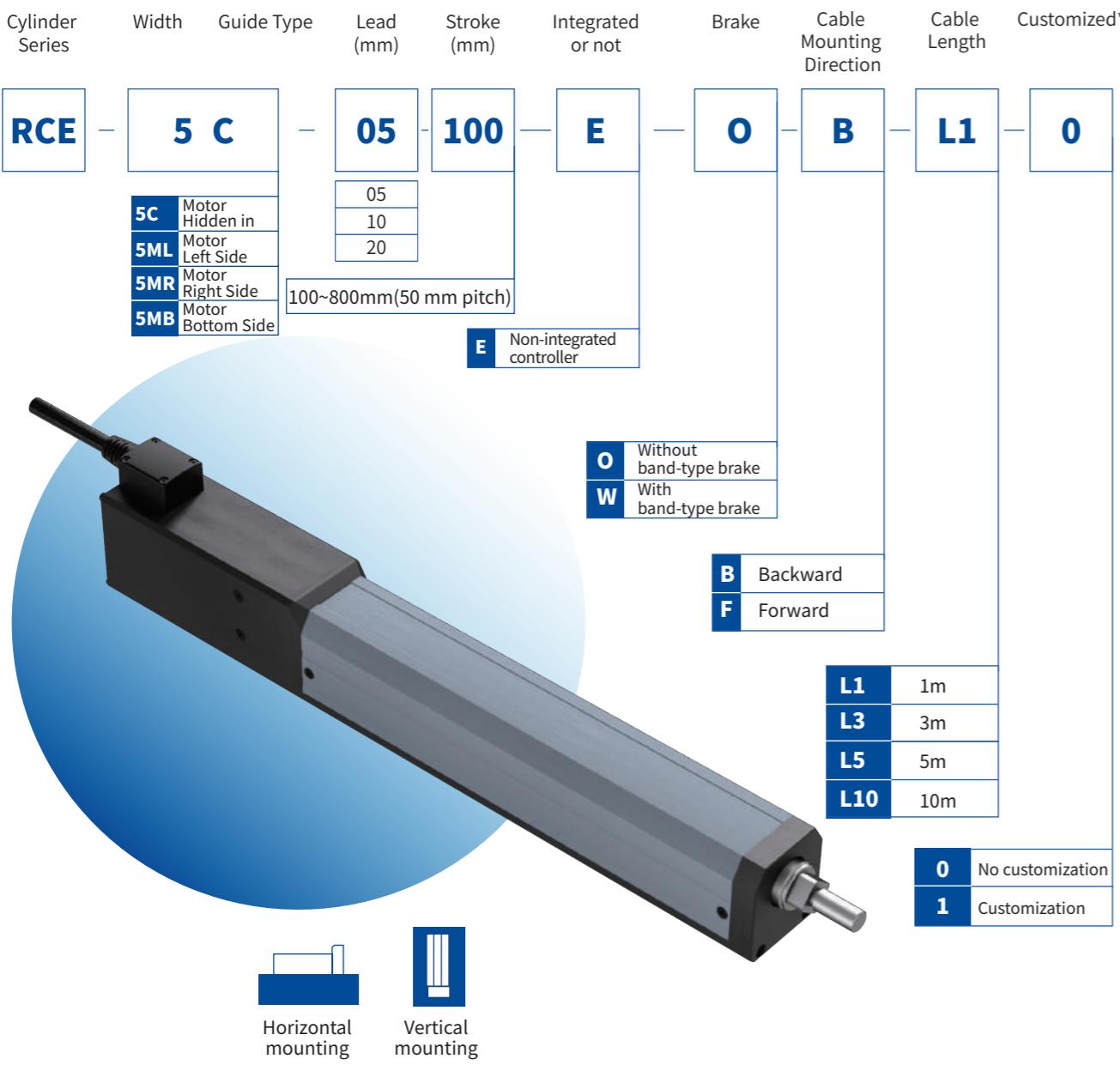


RCE-5

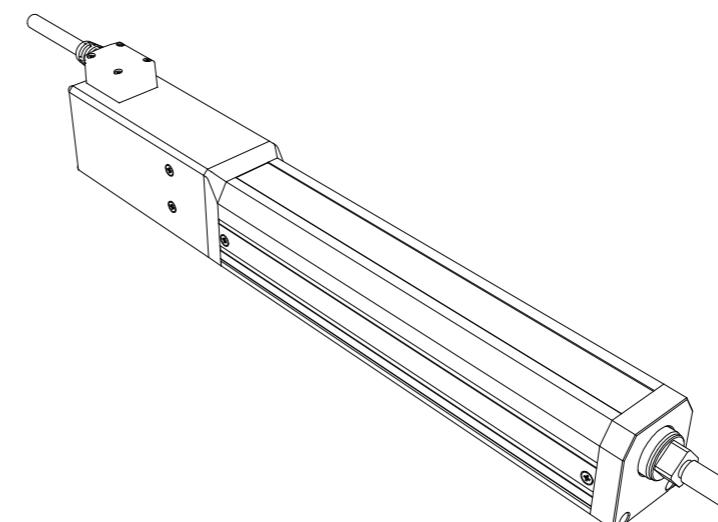
ELECTRIC ROD TYPE CYLINDER



SELECTION METHOD



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*① 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		
Rod Diameter	φ22mm		
Maximum Allowable Static Torque at Rod End	1.5 N·m		
Maximum Angular Displacement at Rod End	*②	±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

★

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

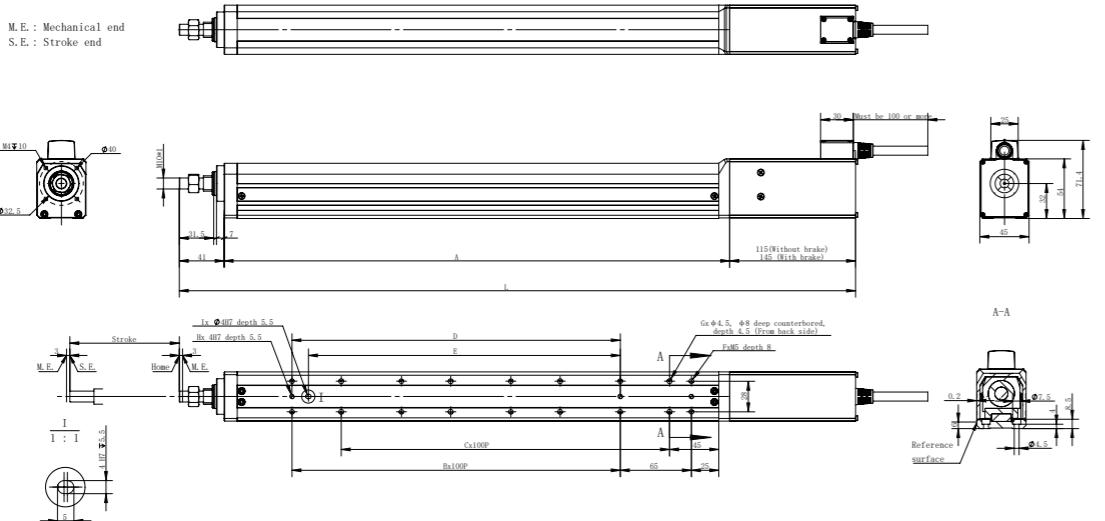
★

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

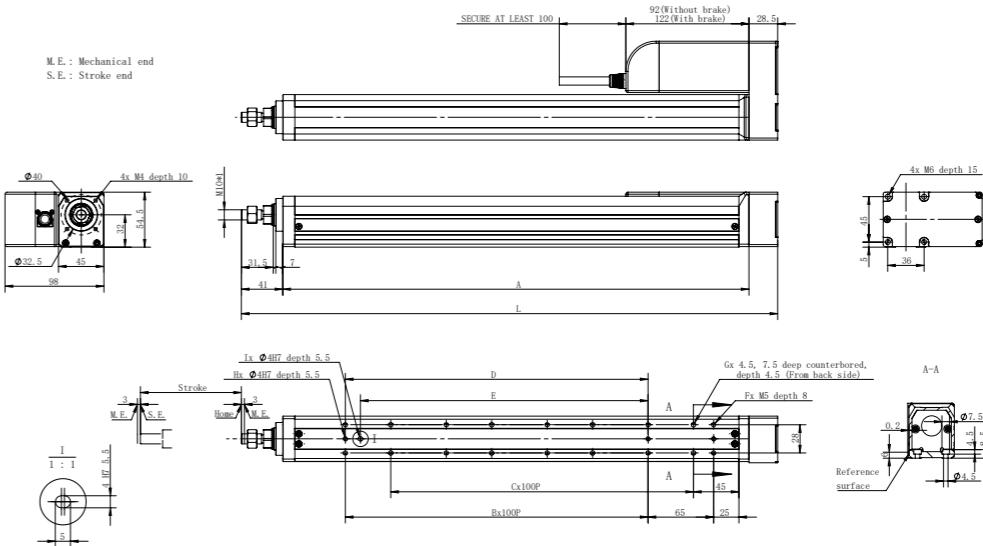
Motor Hidden in



Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L w/o brake	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118
L w/ brake	398	448	498	548	598	648	698	748	798	848	898	948	998	1048	1098	1148
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)	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/o 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
w/ brake																

RCE-5MR Dimensions

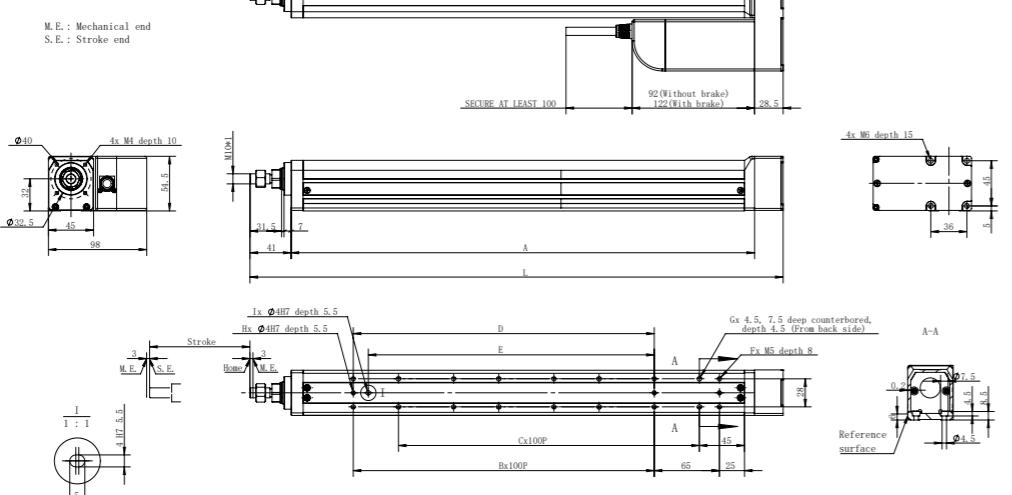
Motor Right Side



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)	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/o 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
w/ brake																

RCE-5ML Dimensions

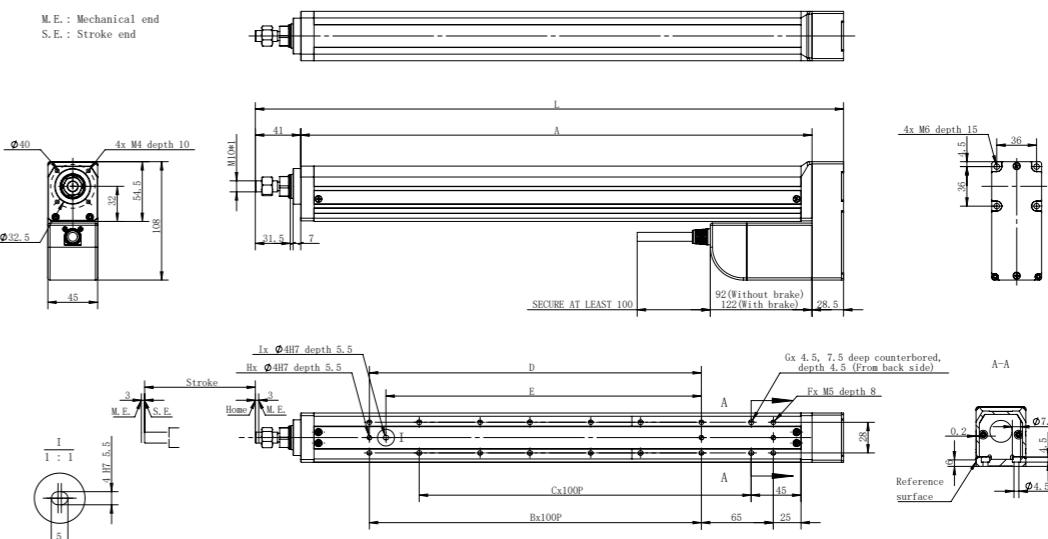
Motor Left Side



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)	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/o 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
w/ brake																

RCE-5MB Dimensions

Motor Bottom Side

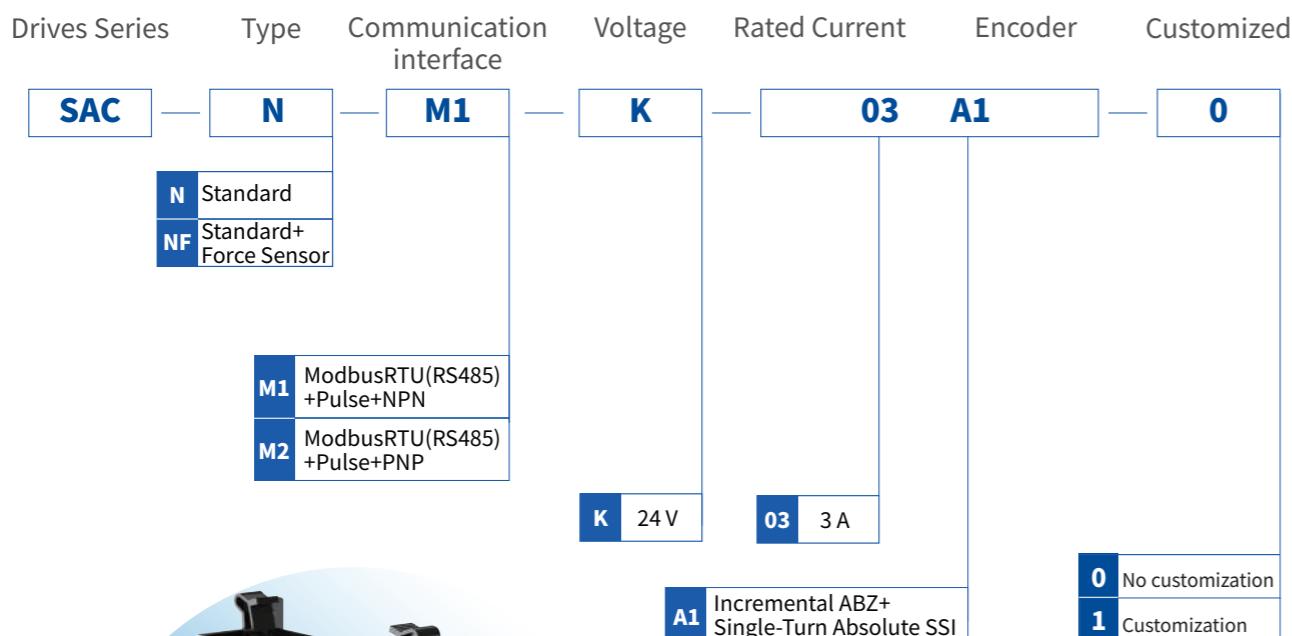


Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	281.5	331.5	381.5	431.5	481.5	531.5	581.5									

SAC-N

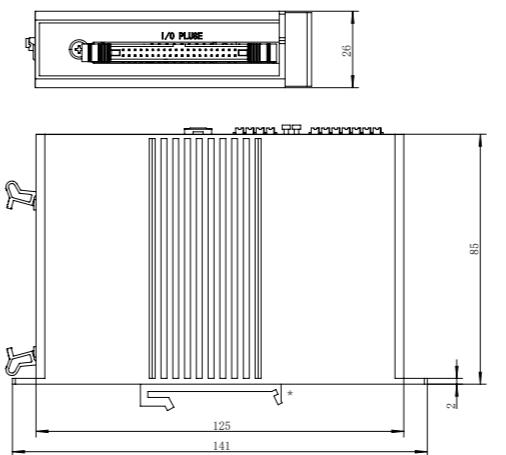
SINGLE AXIS CONTROLLER

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
Weight	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

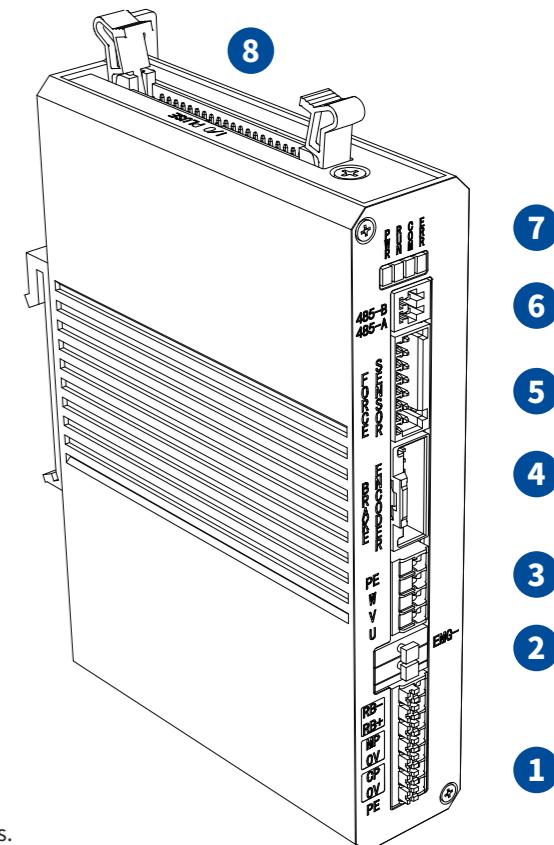
Used for debugging, control, and monitoring.

7. Indicators

Power indicator and status indicator.

8. I/O and Pulse Interface

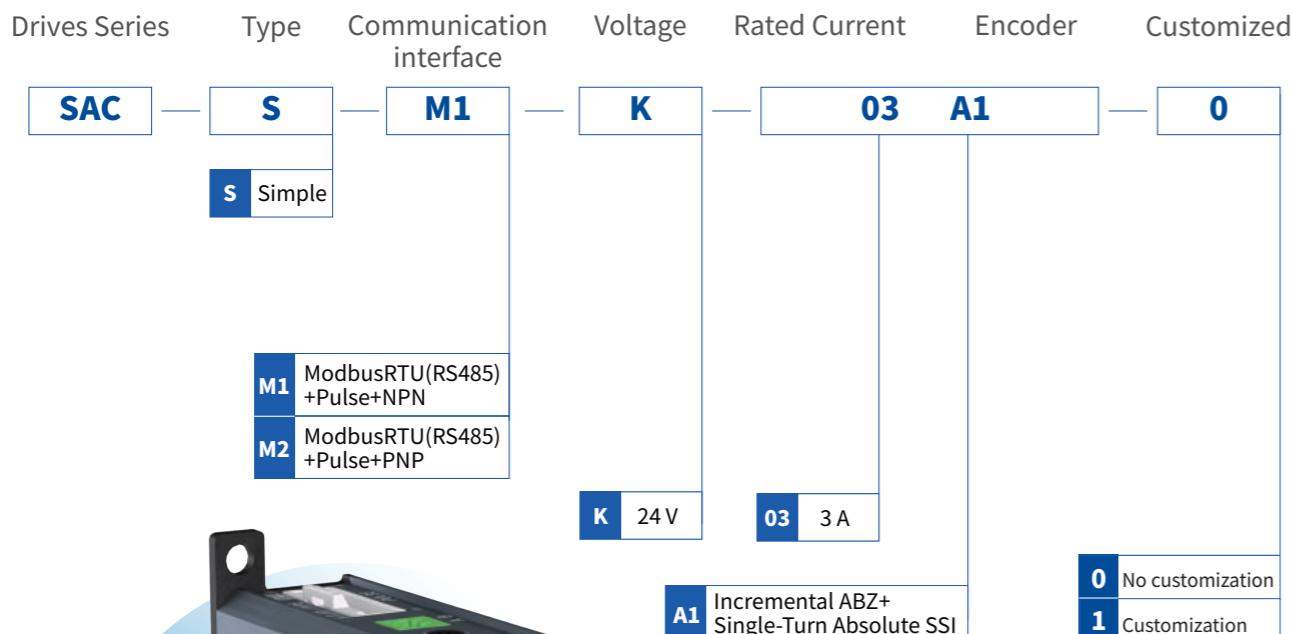
40-Pin Terminal Block, including I/O interfaces and pulse input interfaces.



SAC-S

SINGLE AXIS CONTROLLER

SELECTION METHOD

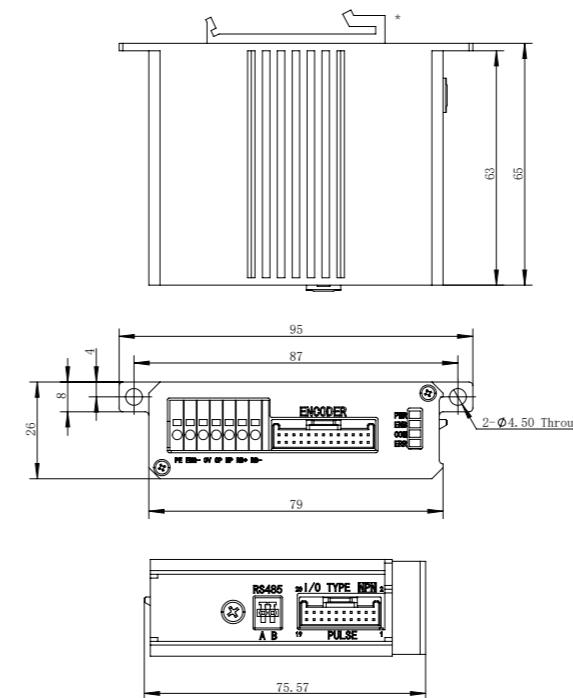


Adaptable Products: MCE Series and LCE-4

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



*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

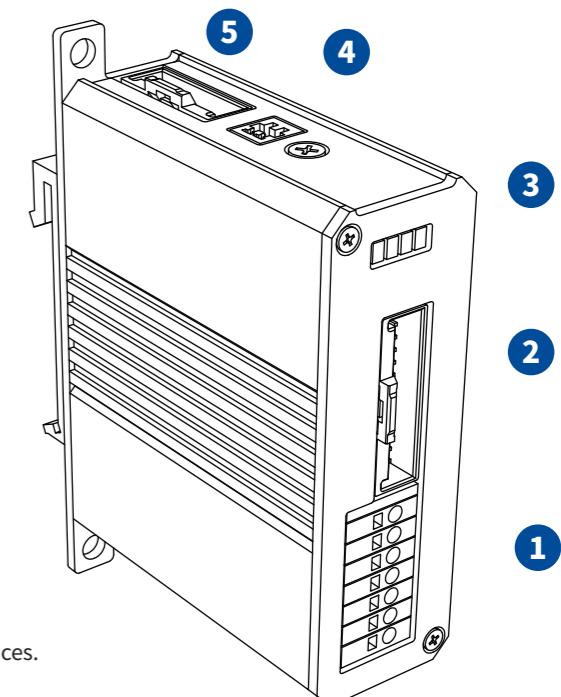
Power indicator and status indicator.

4. RS485 Interface

Used for debugging, control, and monitoring.

5. I/O and Pulse Interface

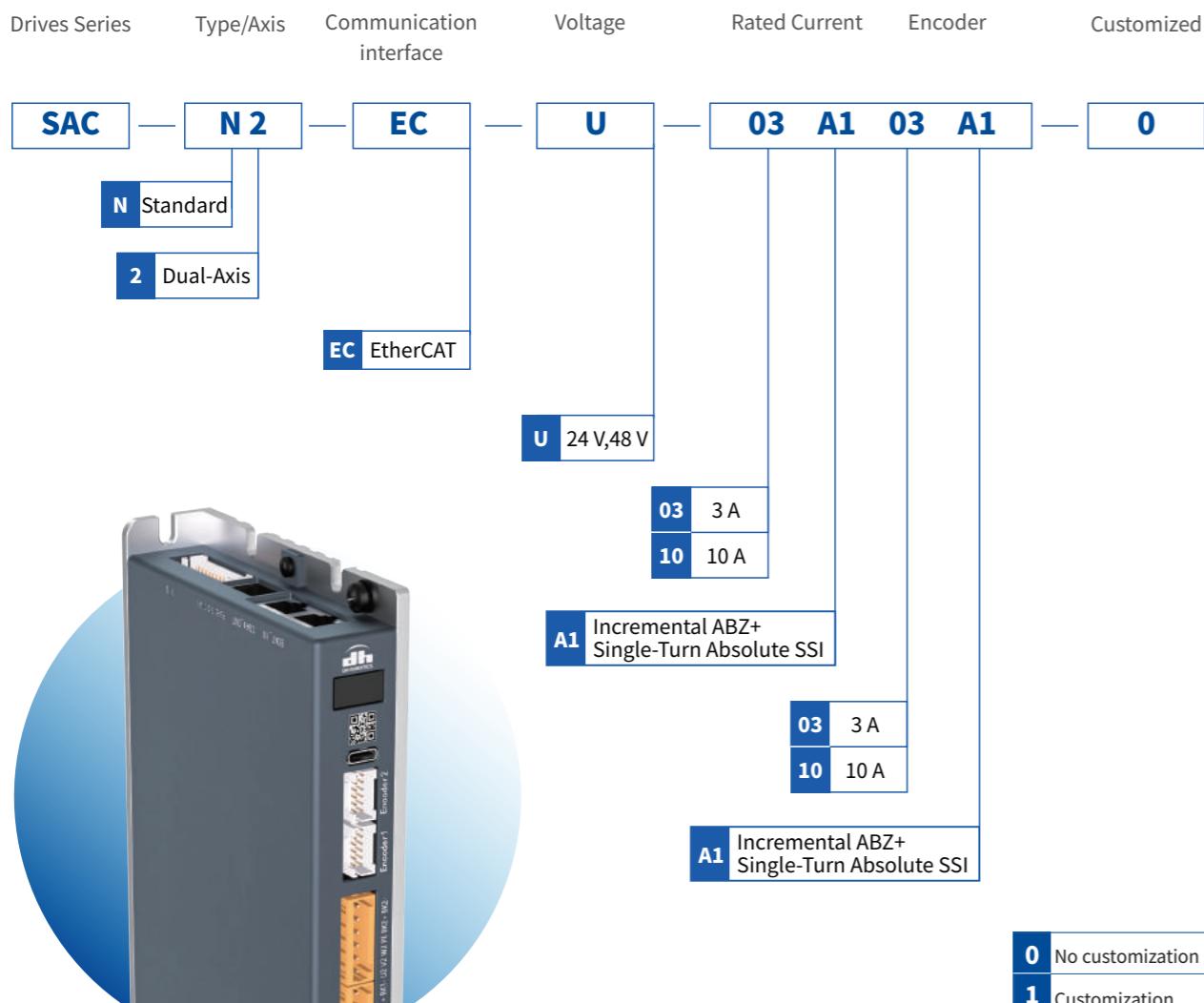
20-Pin Terminal Block, including I/O interfaces and pulse input interfaces.



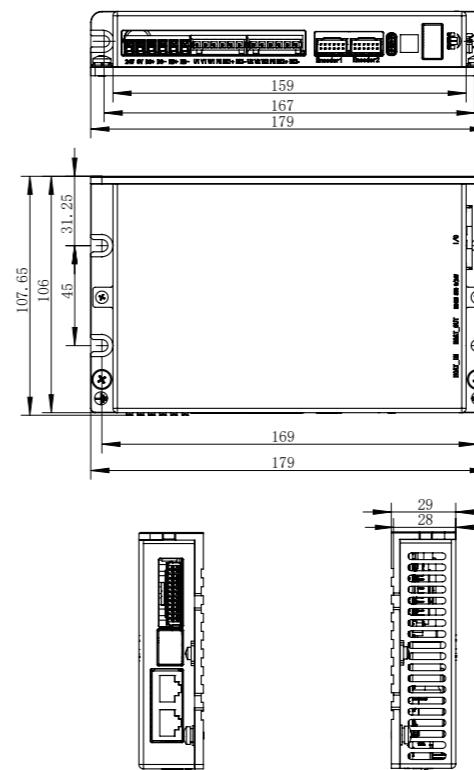
SAC-N2

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 / 10A
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

1. Logic Power (24 V / 0 V):

Logic power interface, supplying 24V power to internal control chips, communication chips, IO, and STO.

2. Motor Power (DC+ / DC-):

Motor power interface, capable of accepting 24/48V, supplying power to the motor.

3. Overvoltage Discharge Resistor (RB+ / RB-):

External overvoltage discharge resistor interface.

4. Axis 1 Power Line, PE, Brake:

EAxis 1 motor three-phase power output U1V1W1, PE (ground), and brake control interface BK1+ / BK1-.

5. Axis 2 Power Line, PE, Brake:

2 motor three-phase power output U2V2W2, PE (ground), and brake control interface BK2+ / BK2-.

6. Axis 1 Encoder:

Axis 1 encoder differential interface Encoder1, supports ABZ/SSI/BissC/Motegi, etc.

7. Axis 2 Encoder:

Axis 2 encoder differential interface Encoder2, supports ABZ/SSI/BissC/Motegi, etc.

8. Debug Interface:

Type-C debug interface, connecting to the upper computer for debugging.

9. Panel Display:

Three-digit LED display showing the current status of the drive.

10. ECAT_IN:

EtherCAT bus input interface.

11. ECAT_OUT:

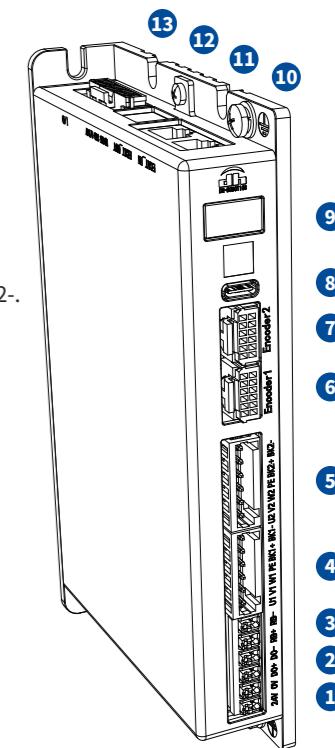
EtherCAT bus output interface.

12. STO and 485 Interface:

STO and 485 interfaces with an attached 24V power supply.

13. 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

