MCEA-3G

Micro Servo Electric Cylinder

Integrated-Drive Electric Cylinder Selection Method

Series	Width/Guide	Lead	Stroke	Integrated Drive	Brake	Cable Direction	Applicable Drive IO Type	Cable Length	Accessory Bag
MCEA	3G	01	030	C	O	F1	M01	L01	0

Lead	Stroke	Brake	Cable Direction	Applicable Drive IO Type	Cable Length	Accessory Bag
01	030	O Without Brake	F1 Side exit (in the motion direction)	M01 ModbusRTU(RS485)+IO(NN)	L01 1m Direct Cable Outlet	0 No Accessories
02	050	W With Brake	F2 Side exit (opposite to the motion direction)	M02 ModbusRTU(RS485)+IO(PP)	L03 3m Direct Cable Outlet	1 I/O Cable
04			F3 Side exit (perpendicular to the motion direction, toward the guide rail)		L05 5m Direct Cable Outlet	
06			F4 Side exit (perpendicular to the motion direction, opposite to the guide rail)		L10 10m Direct Cable Outlet	

External-Drive Electric Cylinder Selection Method

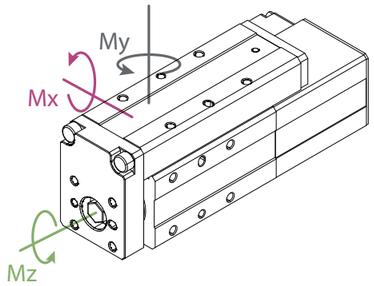
Series	Width/Guide	Lead	Stroke	External Drive	Brake	Cable Direction	Cable Selection	Accessory Bag
MCEA	3G	01	030	E1	O	F1	SL01	0

Lead	Stroke	External Drive	Brake	Cable Direction	Cable Selection	Accessory Bag
01	030	E1 ABZ *①	O Without Brake	F1 Side exit (in the motion direction)	S SAC-S	0 No Accessories
02	050	E2 SSI *②	W With Brake	F2 Side exit (opposite to the motion direction)	N SAC-N	1 I/O Cable
04				F3 Side exit (perpendicular to the motion direction, toward the guide rail)	X SAC-N2(Phasing Out)	
06				F4 Side exit (perpendicular to the motion direction, opposite to the guide rail)	M SAC2-NP1-EC	
					G SAC2-NP1-G	
					Y SAC-NP2/NP4	

Cable Selection	
L01	1m Direct Cable Outlet
L03	3m Direct Cable Outlet
L05	5m Direct Cable Outlet
L10	10m Direct Cable Outlet

Note: *① ABZ: Incremental Encoder: Phase search is required after power-up.
*② SSI: Single-Turn Absolute Encoder: Phase search is not required after power-up. (It is recommended to select this type of encoder when the electric cylinder is used as the Z-axis).

TECHNICAL SPECIFICATIONS



Technical Parameters

Total stroke	30 mm, 50 mm			
Screw lead	1 mm	2 mm	4 mm	6 mm
Rated thrust	200 N	100 N	50 N	30 N
Min. Thrust	78 N	41 N	21 N	12 N
Max. Speed	50 mm/s	100 mm/s	200 mm/s	300 mm/s
Max. Acceleration	2000 mm/s²	3000 mm/s²	3000 mm/s²	3000 mm/s²
Max. Weight capacity - horizontal	8 kg	6 kg	3 kg	2 kg
Max. Weight capacity - vertical	2 kg	1.5 kg	0.75 kg	0.5 kg
Positioning repeatability	±0.01 mm			
Mechanical backlash	Less than 0.1mm			
Weight (O)	30 Total stroke: 0.47 kg		50 Total stroke: 0.55 kg	
Weight (W)	30 Total stroke: 0.54 kg		50 Total stroke: 0.62 kg	

Operating Environment

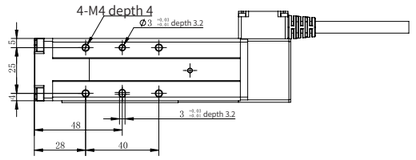
Communication protocol	External: Depending on the Selected Driver
Rated voltage	24 V DC ± 10%
Current	1.5 A (Rated) /3 A (Peak) *④
Protection rating	IP 40
Recommended operating environment	0 to 40°C, below 85% RH
Compliance with international standards	CE, FCC, RoHS, TUV

Allowable Load Moment

Mx	9.9 N.m
My	9.9 N.m
Mz	3.3 N.m

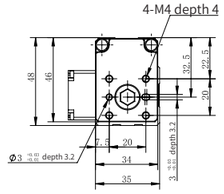
*④ When selecting the power supply, please select according to the peak current. If the current is lower than the parameter, it will cause the product can not work normally.

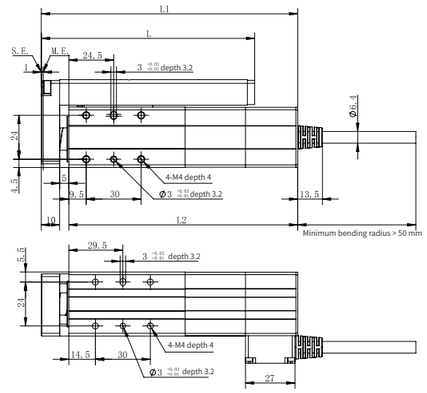
Dimensions

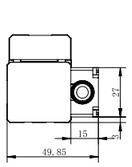


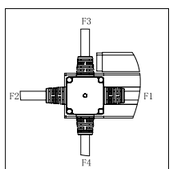
Caution:
During origin reset, the slider will keep moving to the mechanical end (ME). Please be cautious to avoid interference with surrounding objects.

M.E.: Mechanical origin
S.E.: Stroke origin









Electric cylinder wiring diagram

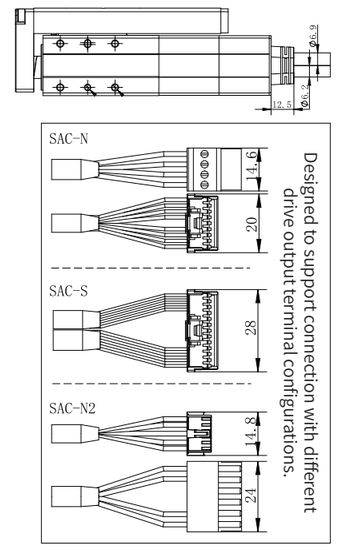
Without Brake mm

Stroke	30	50
L	96.5	116.5
L1	107	127
L2	92	112

With Brake mm

Stroke	30	50
L	96.5	116.5
L1	127	140
L2	112	125

External Electric Cylinder – Compatible with Various Drive Output Terminal Types



Designed to support connection with different drive output terminal configurations.

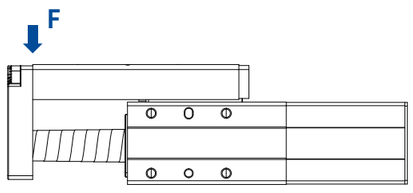
Applicable Drive

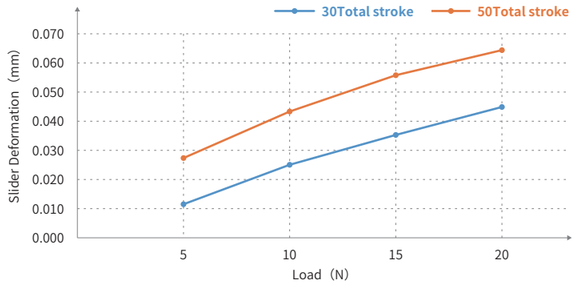
Name	Appearance	Controllable Maxes	Model	Control Methods	Feature	Input voltage	Power Capacity	Reference Page
Small Scale Single-Axis Dedicated Controller		1	SAC-S	RS485	ModbusRTU	DC24V	MAX 72W	SAC-S Selection Page P29-30
				I/O	Up to 16 I/O Points			
				Pulse+I/O	Direction+Pulse			
Single-Axis Dedicated Controller		1	SAC-N	RS485	ModbusRTU	DC24V	MAX 200W	SAC-N Selection Page P31-32
				I/O	Up to 64 I/O Points			
				Pulse+I/O	Direction+Pulse			
Single-Axis Dedicated Force Control Controller		1	SAC-NF	RS485	ModbusRTU	DC24V	MAX 200W	Please Contact us for Force Control Applications.
Single Axis Drive		1	SAC2-NP1	EtherCat	Standard CIA402 Axis Control	DC24V / DC72V	MAX 750W	SAC2-NP1 Selection Page P33-36
				Pulse+I/O	Direction+Pulse			
				RS485	ModbusRTU			
Dual Axis Standard Drive		2	SAC-N2	EtherCat	Standard CIA402 Axis Control	DC24V / DC72V	MAX 240W (24V) /480W (48V)	SAC-N2 Selection Page P37-38
				Pulse+I/O	Direction+Pulse			
				RS485	ModbusRTU			
Dual-Axis Drive		2	SAC-NP2	EtherCat	Standard CIA402 Axis Control	DC24V / DC48V	MAX 240W (24V) /480W (48V)	SAC-N2 Selection Page P39-40
				Pulse+I/O	Direction+Pulse			
Four-Axis Drive		4	SAC-NP4	EtherCat	Standard CIA402 Axis Control	DC24V / DC48V	MAX 480W	SAC-N2 Selection Page P41-42
				Pulse+I/O	Direction+Pulse			

Rigidity Deformation of Electric Cylinder (Reference Value)

> Axial Bending

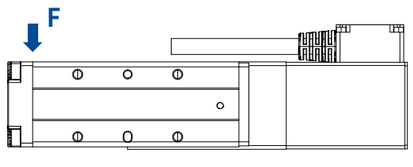
The amount of deformation at the tip of the slider due to axial bending moment load when the slider is fully extended and a load is applied at the indicated position (arrow).

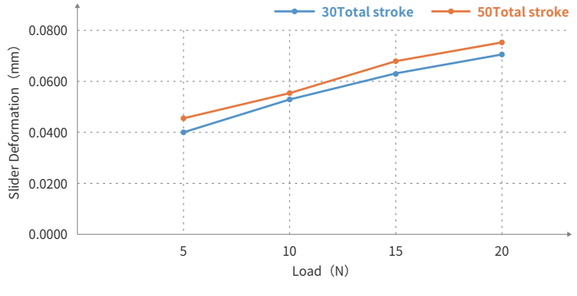




> Offset Load (Eccentric Load)

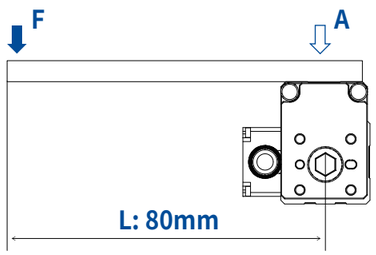
The amount of deformation at the tip of the slider caused by an offset (eccentric) moment load when the slider is fully extended and a load is applied at the indicated position (arrow).

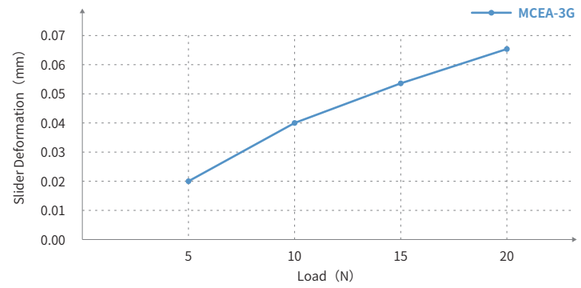




> Torsion (Rotational Moment)

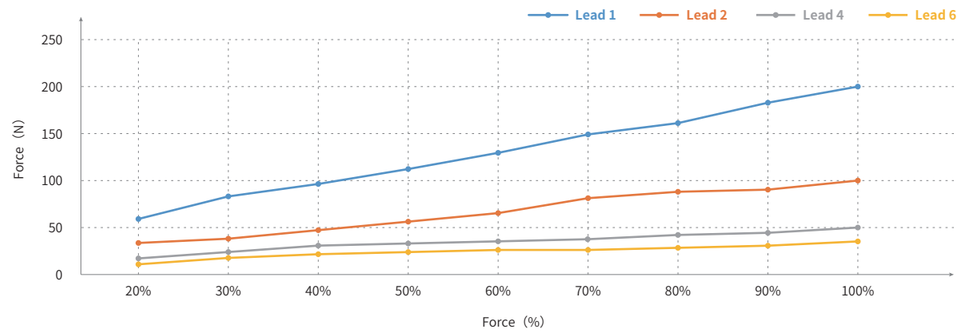
The amount of deformation at point A on the slider caused by a rotational moment load when the slider is fully retracted and a load is applied at point F.





Electric Cylinder Thrust Curve (Reference Value)

Thrust output curves under different load conditions with the electric cylinder mounted horizontally.



Electric Cylinder Cycle Time Curve (Reference Value)

Reference values for maximum load operation cycle time of the electric cylinder.Note: Communication delay of 30 ms is included in the reference values.