



Customizable,
High-Quality, Heavy Duty,
Industrial-Grade Actuators

INDUSTRIAL MOTION



TiMOTION ELECTRONIC LINEAR ACTUATORS – MOTION TECHNOLOGY THAT HELPS PROVIDE A CLEANER, BETTER FUTURE

Many industrial applications require heavy-duty automation on a large scale — especially for agricultural, construction, mining, ventilation, and process control machinery, among others. The technology is out there, and it's only getting better. Equipment manufacturers are increasingly turning to electric linear actuators as a cost-efficient and reliable alternative to previous industry standards, such as hydraulic and pneumatic motion systems. TiMOTION's Industrial Motion product line is shown within this catalog, as well as additional information about what we offer and the full benefits of our linear actuator technology.

JP series

TiMOTION's JP series family is designed with an inline actuator appearance. All the products in the JP series are ideally suited for high or low load required industrial applications where up to IP69K dust and liquid ingress protection is necessary. The JP series is made for use in limited spaces without sacrificing power.



JP3 - Page 10

Max. load

2,000N (push/pull)

Max. speed at max. load

3.5mm/s

Max. speed at no load

23.5mm/s

Retracted length

≥ Stroke + 217mm

IP rating

IP69K



JP4 - Page 12

Max. load

4,500N (push)

3,000N (pull)

Max. speed at max. load

2.5mm/s

Max. speed at no load

27.5mm/s

Retracted length

≥ Stroke + 289mm

IP rating

IP69K

MA series

TiMOTION's MA series family is specifically designed for harsh working environments, requiring a durable, long-life solution. All of our MA series actuators are ideal for the heavy-duty machinery, industrial equipment and off road vehicles. Also, they all comply with IP69K protection that will withstand high-pressure water jets, and the ingress of dust and other solid contaminants.



MA1 - Page 14

Max. load

ACME screw: 2,500N
(push/pull)
Ball screw: 4,500N
(push/pull)

Max. speed at max. load

14.3mm/s
(ACME screw, DC motor)
14mm/s
(Ball screw, DC motor)

Max. speed at no load

58.5mm/s
(Ball screw, DC motor)

Retracted length

≥ Stroke + 160mm
(ACME screw, without POT)
≥ Stroke + 201mm
(Ball screw, without POT)

IP rating

IP69K



MA2 - Page 16

Max. load

8,000N (push/pull)

Max. speed at max. load

5.4mm/s

Max. speed at no load

52.5mm/s

Retracted length

≥ Stroke + 131mm

IP rating

IP69K



NEW

MA2T - Page 18

Max. load

8,000N (push/pull)

Max. speed at max. load

5.4mm/s

Max. speed at no load

52.5mm/s

Retracted length

≥ Stroke + 131mm

IP rating

IP69K



NEW

MA4 - Page 20

Max. load

3,500N (push)
2,000N (pull)

Max. speed at max. load

1.8mm/s

Max. speed at no load

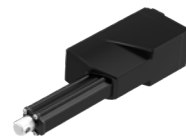
43mm/s

Retracted length

≥ Stroke + 106mm (min.
retracted length has to be
greater than 213mm)

IP rating

IP69K



MA5 - Page 22

Max. load

3,500N (push)
2,000N (pull)

Max. speed at max. load

2.4mm/s

Max. speed at no load

56.5mm/s

Retracted length

≥ 200mm (depending on
chosen fixation type)

IP rating

IP69K

TA series

TiMOTION's TA series family is a well-developed product line for the industrial market segment. All the products in the TA series have a compact design, and can meet the demands of high-force, high-speed, and low noise requirements. The TA series is recommended for use in small spaces where force or capability cannot be sacrificed.



TA2 - Page 24

Max. load
1,000N (push/pull)

Max. speed at max. load
7.6mm/s

Max. speed at no load
67.5mm/s

Retracted length
≥ Stroke + 105mm (without output signals)

IP rating
IP66D



TA2P - Page 26

Max. load
3,500N (push)
2,000N (pull)

Max. speed at max. load
2.4mm/s

Max. speed at no load
56.5mm/s

Retracted length
≥ Stroke + 108mm (with Hall sensors or without output signals)

IP rating
IP66D



TA16 - Page 28

Max. load
3,500N (push/pull)

Max. speed at max. load
6.2mm/s

Max. speed at no load
23.5mm/s

Retracted length
≥ Stroke + 112mm

IP rating
IP66



TA21 - Page 30

Max. load
10,000N (push)
6,000N (pull)

Max. speed at max. load
6.3mm/s

Max. speed at no load
24.7mm/s

Retracted length
≥ 67mm



TA38 - Page 32

Max. load
1,500N (push/pull)

Max. speed at max. load
9mm/s

Max. speed at no load
15.7mm/s

Retracted length
≥ 160mm

IP rating
IP66

VN series



TiMOTION's VN series is designed especially for automated ventilation systems. Whether trying to improve the indoor air quality in the building through lower peak summer temperatures or enhancing the interior climate in livestock houses, our VN series can meet the growing demand for ventilation applications. All the actuator in our VN series have metallic appearance with an IP66 rating.

VN1 - Page 34

Max. load

3,500N (push/pull)

Max. speed at max. load

4.2mm/s

Max. speed at no load

10.4mm/s

Retracted length

≥ 181mm

(DC version, w/o T-Smart)

≥ 401mm

(AC version)

* With front attachment #1,
2, or 3

* Required outer tube
adjustable attachment

IP rating

IP66

TL series

TiMOTION's TL (lifting column) series is made up of two or three extruded aluminum tubes of rectangular shape that give the system great stability and a high stroke with reduced retracted length. Our electric lifting columns are perfect for industrial applications such as height-adjustable workstations, screens and lifting tables.



TL3 - Page 36

Max. load
4,000N (push)

Self-locking force
4,000N

Max. dynamic bending moment
1,000Nm

Max. speed at max. load
13.7mm/s

Max. speed at no load
39mm/s

Retracted length
 $\geq \text{Stroke}/2 + 150\text{mm}$

IP rating
IPX6



TL17 - Page 38

Max. load
2,000N (push)

Max. dynamic bending moment
250Nm

Max. speed at max. load
11.5mm/s

Max. speed at no load
41mm/s

Retracted length
 $\geq \text{Stroke}/2 + 150\text{mm}$

IP rating
IPX6



TL18 - Page 40

Max. load
4,500N (push)

Self-locking force
4,500N

Max. dynamic bending moment
200Nm

Max. speed at max. load
6.6mm/s

Max. speed at no load
45mm/s

Retracted length
 $\geq \text{Stroke} + 147\text{mm}$



TL18AC - Page 42

Max. load
4,500N (push)

Self-locking force
4,500N

Max. dynamic bending moment
250Nm

Max. speed at max. load
6.6mm/s

Max. speed at no load
45mm/s

Retracted length
 $\geq 383\text{mm}$

TGM

series

TiMOTION's TGM (Gear Motor) series is primarily designed for height-adjustable table applications. The TGM products allow for fast, smooth and quiet adjustments of built-in spindles through the use of external limit switches. Shafting allows for the mechanical synchronization of dual spindles.



TGM1 - Page 44

Max. rated torque
7.4Nm

Max. speed at max. load
72RPM ($\pm 5\%$)

Max. speed at no load
262.5RPM ($\pm 5\%$)

Options
Hall sensors



TGM2 - Page 46

Max. rated torque
18.3Nm

Max. speed at max. load
51RPM ($\pm 5\%$)

Max. speed at no load
108RPM ($\pm 5\%$)

Options
Hall sensors



TGM3 - Page 48

Max. rated torque
4.6Nm

Max. speed at max. load
61RPM ($\pm 5\%$)

Max. speed at no load
259RPM ($\pm 5\%$)

Options
Hall sensors



TGM4 - Page 50

Max. rated torque
6Nm

Max. speed at max. load
98RPM ($\pm 5\%$)

Max. speed at no load
219RPM ($\pm 5\%$)

Options
Hall sensors



TGM7 - Page 52

Max. rated torque
7.2Nm

Max. speed at max. load
78RPM ($\pm 5\%$)

Max. speed at no load
355RPM ($\pm 5\%$)

Options
Hall sensors

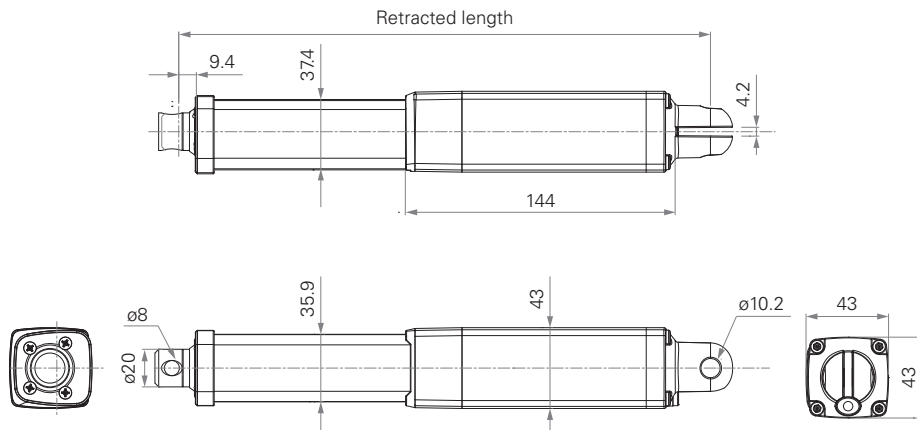
JP3

series



Standard Dimension

(mm)



General Features

Max. load	2,000N (push/pull)
Max. speed at max. load	3.5mm/s
Max. speed at no load	23.5mm/s
Retracted length	≥ Stroke + 217mm
IP rating	IP69K
Certificate	UL73
Stroke	20~1000mm

Voltage	12/24V DC; 12/24V DC (PTC)
Color	Black or grey
Operational temperature range	-5°C~+65°C
Operational temperature range at full performance	+5°C~+45°C
Storage temperature range	-40°C~+70°C
An inline actuator designed for small spaces	

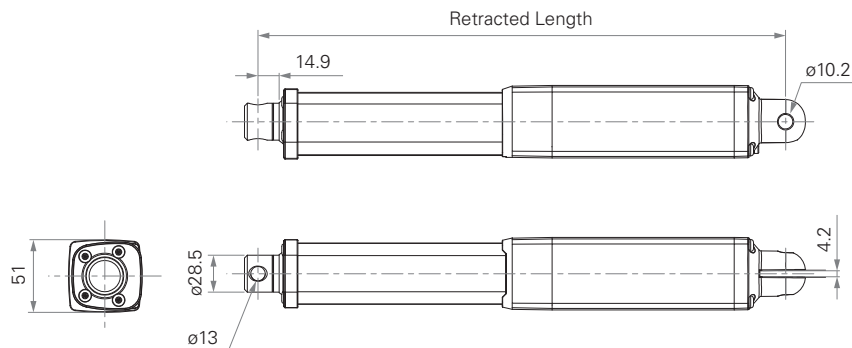
JP4

series



Standard Dimension

(mm)



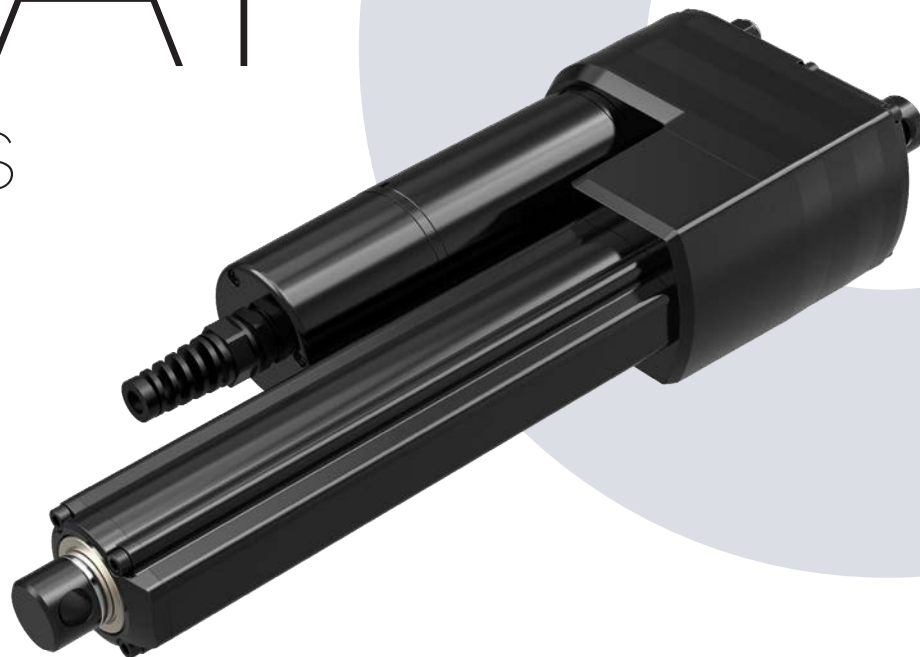
General Features

Max. load	4,500N (push); 3,000N (pull)
Max. speed at max. load	2.5mm/s
Max. speed at no load	27.5mm/s
Retracted length	≥ Stroke + 289mm
IP rating	IP69K
Certificate	UL73
Stroke	20~1000mm

Voltage	12/24V DC; 12/24V DC (PTC)
Color	Black or grey
Operational temperature range	-5°C~+65°C
Operational temperature range at full performance	+5°C~+45°C
Storage temperature range	-40°C~+70°C
An inline actuator designed for small spaces	

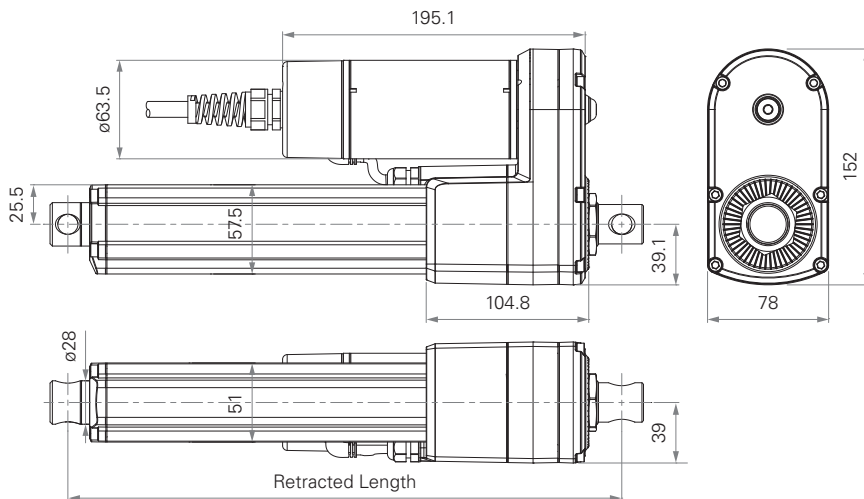
MA1

series



Standard Dimension

(mm)



General Features

Max. load

ACME screw: 2,500N (push/pull)
Ball screw: 4,500N (push/pull)

Max. speed at max. load

14.3mm/s (ACME screw, DC motor)
14mm/s (Ball screw, DC motor)

Max. speed at no load

58.5mm/s (Ball screw, DC motor)

Retracted length

$\geq$ Stroke + 160mm
(ACME screw, without POT)
 $\geq$ Stroke + 201mm
(Ball screw, without POT)

IP rating

IP69K

Certificate

UL73, EMC

Stroke

20~1000mm (ACME screw)
50~800mm (Ball screw)

Options

Overload clutch,
electromagnetic brake, Hall
sensors, POT, manual crank
function

Voltage

12/24/36V DC; 110/220V AC

Spindle

ACME or Ball screw

Color

Black

Operational temperature range

-30°C~+65°C

Operational temperature range at full performance

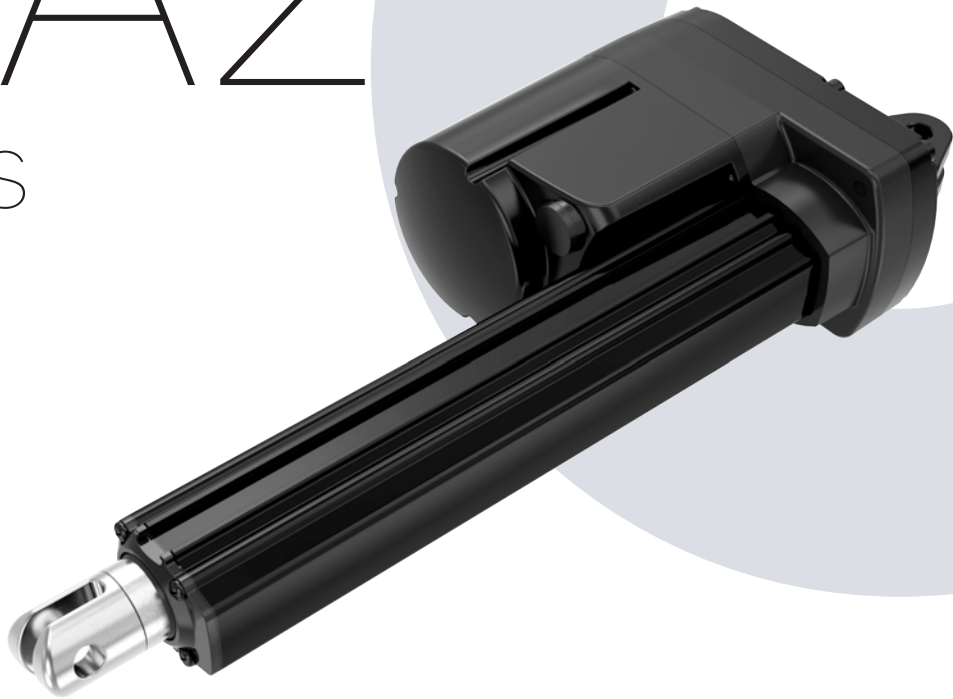
+5°C~+45°C

Mechanical or electromagnetic brake

Higher duty cycle (25%), corrosion proof

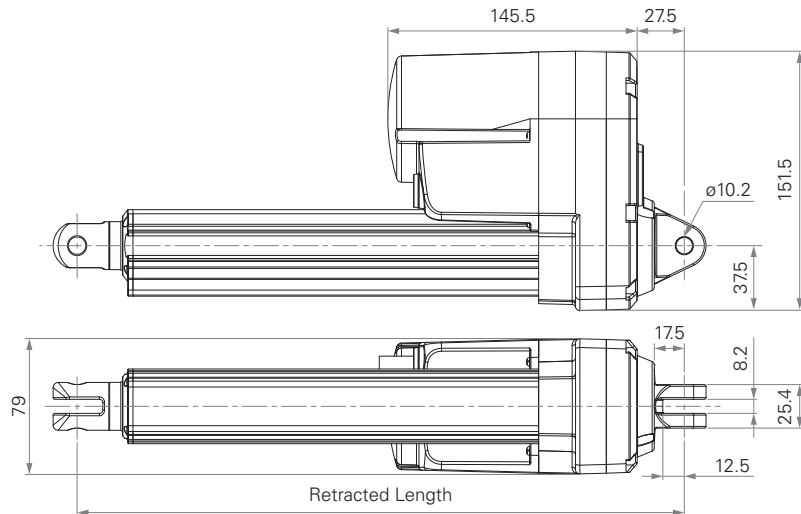
MA2

series



Standard Dimension

(mm)



General Features

Max. load	8,000N (push/pull)
Max. speed at max. load	5.4mm/s
Max. speed at no load	52.5mm/s
Retracted length	≥ Stroke + 131mm
IP rating	IP69K
Certificate	UL73, EMC
Stroke	25~1000mm

Options

Hall sensors, POT, manual drive, Reed sensor on the outer tube

Voltage

12/24/36V DC; 12/24/36V DC (thermal control)

Operational temperature range

-30°C~+65°C

Operational temperature range at full performance

+5°C~+45°C

MA2T

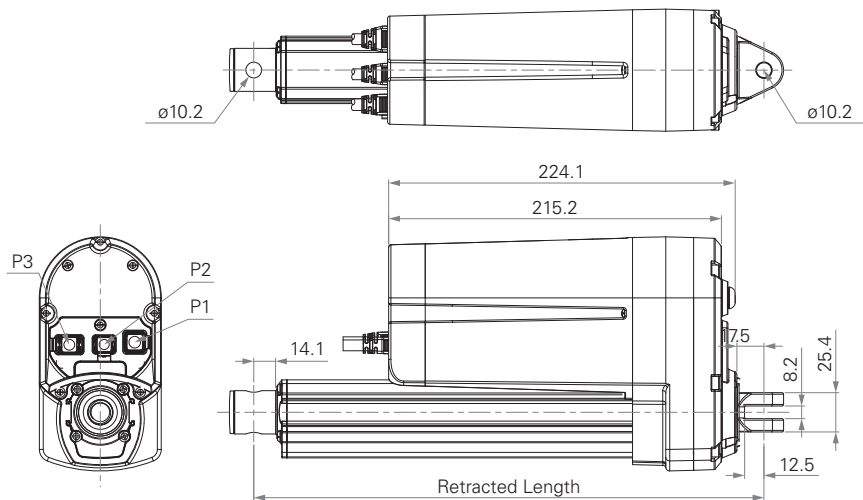
series



NEW

Standard Dimension

(mm)



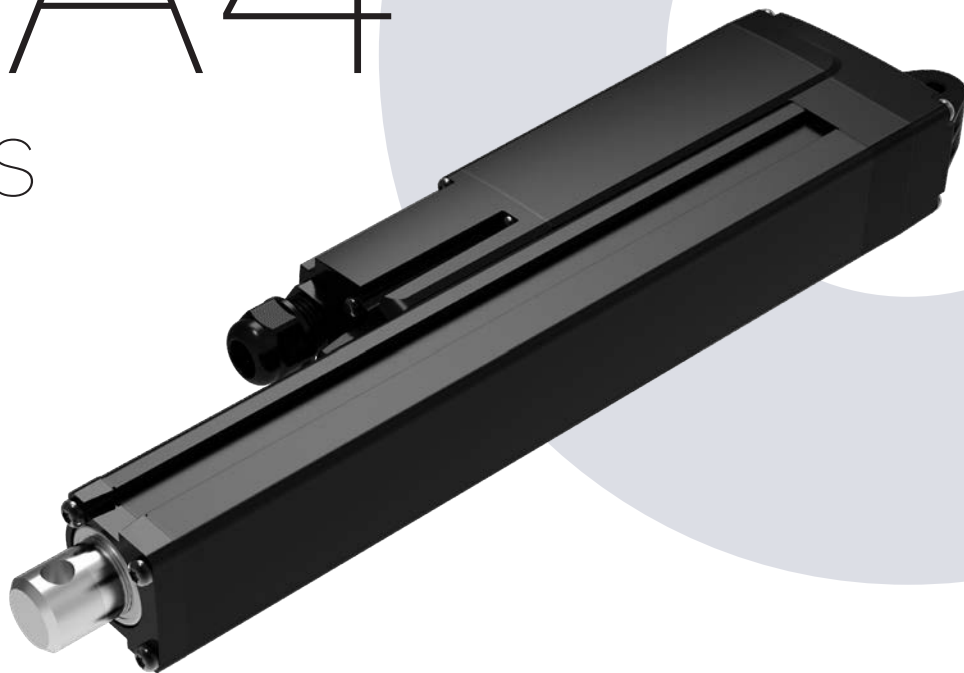
General Features

Max. load	8,000N (push/pull)
Max. speed at max. load	5.4mm/s
Max. speed at no load	52.5mm/s
Retracted length	≥ Stroke + 131mm
IP rating	IP69K
Stroke	25~1000mm

Options	Hall sensors, manual drive, Reed sensor on the outer tube, T-Smart, CAN bus board
Voltage	12/24 V DC
Operational temperature range	-40°C~+85°C
Operational temperature range at full performance	+5°C~+45°C

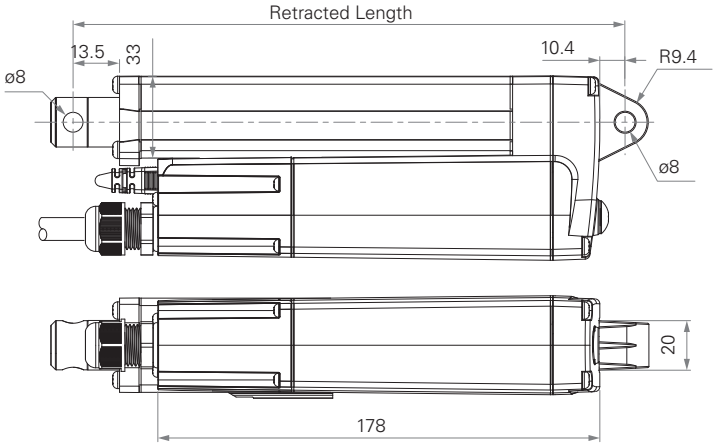
MA4

series



NEW

Standard Dimension
(mm)



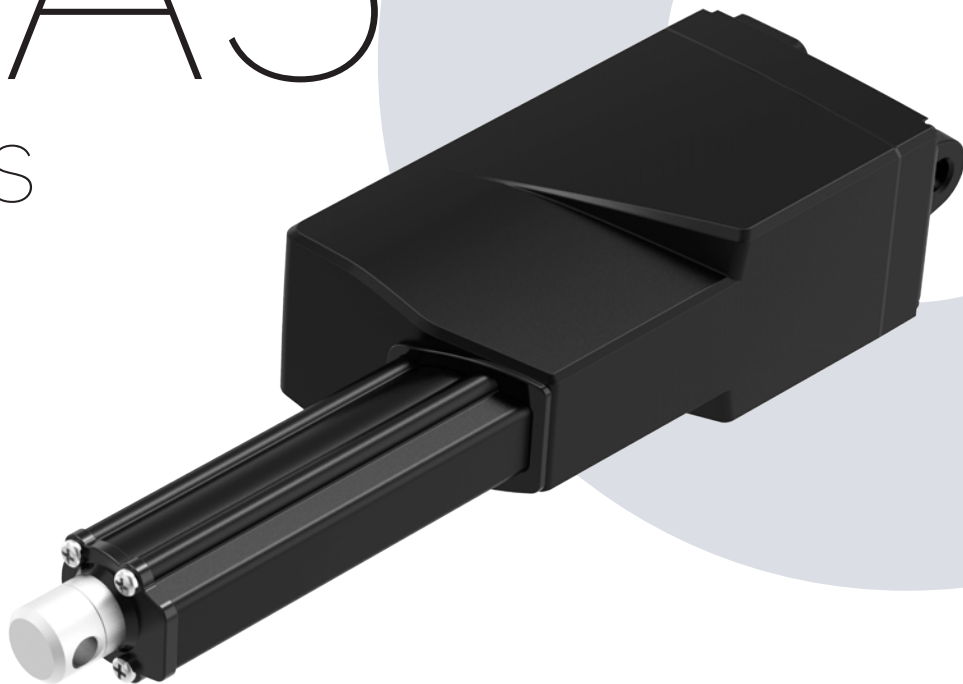
General Features

Max. load	3,500N (push); 2,000N (pull)
Max. speed at max. load	1.8mm/s
Max. speed at no load	43mm/s
Retracted length	≥ Stroke + 106mm (min. retracted length has to be greater than 213mm)
IP rating	IP69K
Stroke	20~1000mm

Options	Adjustable reed switch, mechanical POT, Hall sensor(s), CAN bus interface
Voltage	12/24V DC; 12/24V DC (thermal control)
Operational temperature range	-40°C~+85°C
Operational temperature range at full performance	+5°C~+45°C

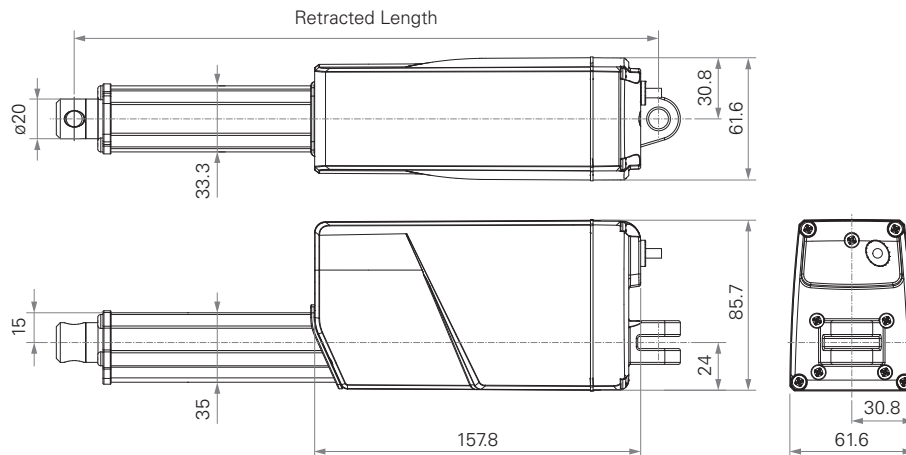
MA5

series



Standard Dimension

(mm)



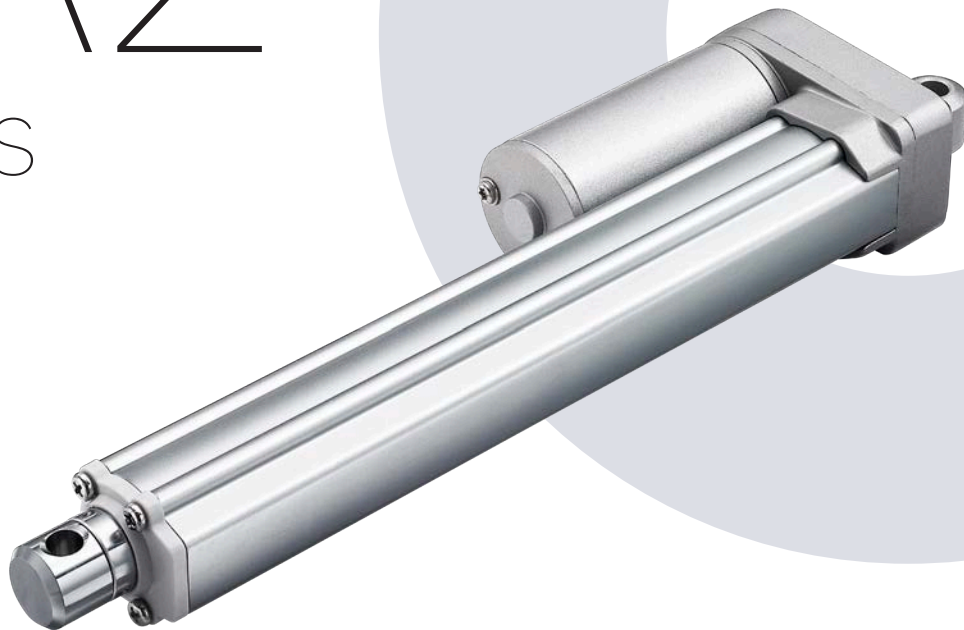
General Features

Max. load	3,500N (push); 2,000N (pull)
Max. speed at max. load	2.4mm/s
Max. speed at no load	56.5mm/s
Retracted length	≥ 200 mm (depending on chosen fixation type)
IP rating	IP69K

Stroke	20~1000mm
Options	Hall sensors, POT, grease chamber
Operational temperature range	-25°C~+65°C
Operational temperature range at full performance	+5°C~+45°C

TA2

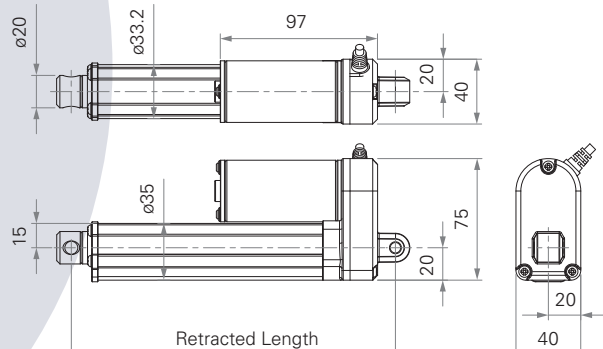
series



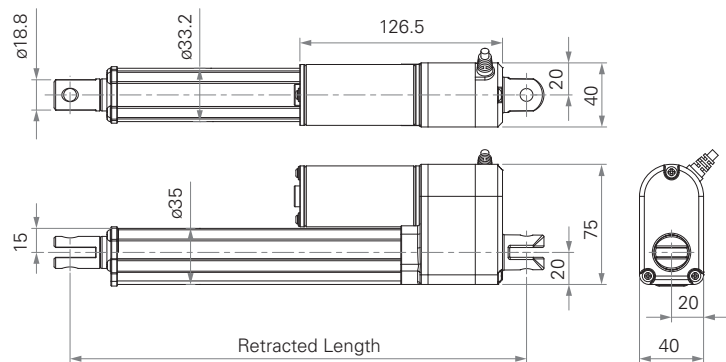
Standard Dimension

(mm)

Without Output Signal



With Output Signal



General Features

Max. load	1,000N (push/pull)
Max. speed at max. load	7.6mm/s
Max. speed at no load	67.5mm/s
Retracted length	≥ Stroke + 105mm (without output signals)
IP rating	IP66D
Certificate	IEC60601-1, ES60601-1, EMC
Stroke	20~1000mm

Options	POT, Reed, Hall sensors
Voltage	12/24/36/48V DC; 12/24/36/48V DC (PTC)
Color	Silver
Operational temperature range	+5°C~+45°C (Load < 500N); -25°C~+65°C (Load ≥ 500N)
Operational temperature range at full performance	+5°C~+45°C
Compact size for limited space	

TA2P

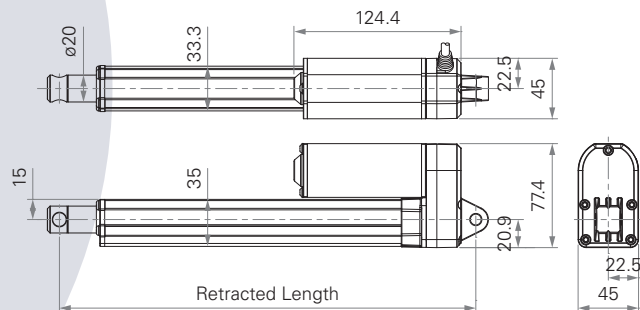
series



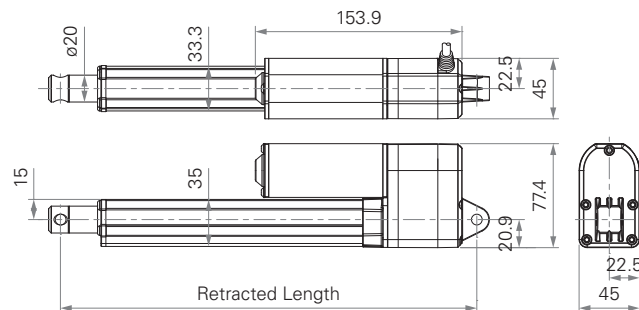
Standard Dimension

(mm)

Without Output Signal



With Output Signal



General Features

Max. load	3,500N (push); 2,000N (pull)
Max. speed at max. load	2.4mm/s
Max. speed at no load	56.5mm/s
Retracted length	≥ Stroke + 108mm (with Hall sensors or without output signals)
IP rating	IP66D
Certificate	IEC60601-1, ES60601-1, EN 61000-6-1, EN 61000-6-3, UL73

Stroke	20~1000mm
Options	POT, Reed or Hall sensors
Voltage	12/24/36V DC; 12/24V DC (PTC)
Color	Silver
Operational temperature range	-25°C~+65°C
Operational temperature range at full performance	+5°C~+45°C

TA16

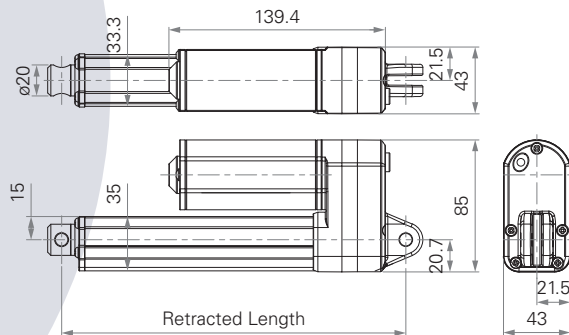
series



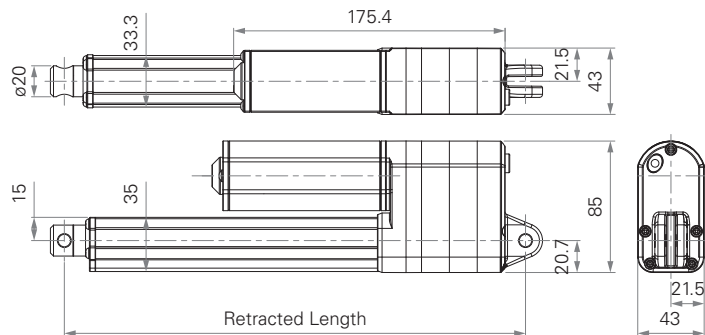
Standard Dimension

(mm)

Without Output Signal or with Hall Sensors



With POT



General Features

Max. load	3,500N (push/pull)
Max. speed at max. load	6.2mm/s
Max. speed at no load	23.5mm/s
Retracted length	≥ Stroke + 112mm
IP rating	IP66
Certificate	IEC60601-1, ES60601-1, IEC60601-1-2, UL962, EMC

Stroke	20~600mm
Options	POT, Hall sensor(s)
Voltage	12/24/36/48V DC
Color	Silver
Operational temperature range at full performance	+5°C~+45°C

With very low noise, small size for easy installation

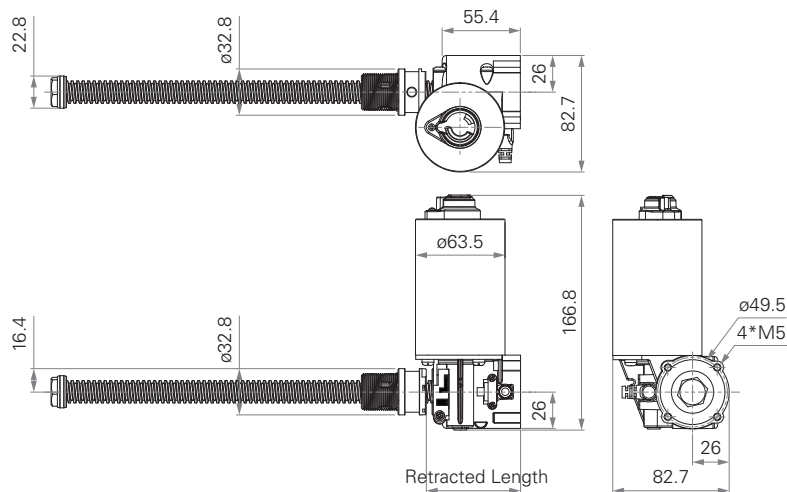
TA21

series



Standard Dimension

(mm)



General Features

Max. load	10,000N (push); 6,000N (pull)	Stroke	25~400mm
Max. speed at max. load	6.3mm/s	Options	Hall sensors, Reed sensor
Max. speed at no load	24.7mm/s	Voltage	24V DC; 24V DC (UL)
Retracted length	≥ 67mm	Color	Black or grey
Certificate	UL962		High design flexibility

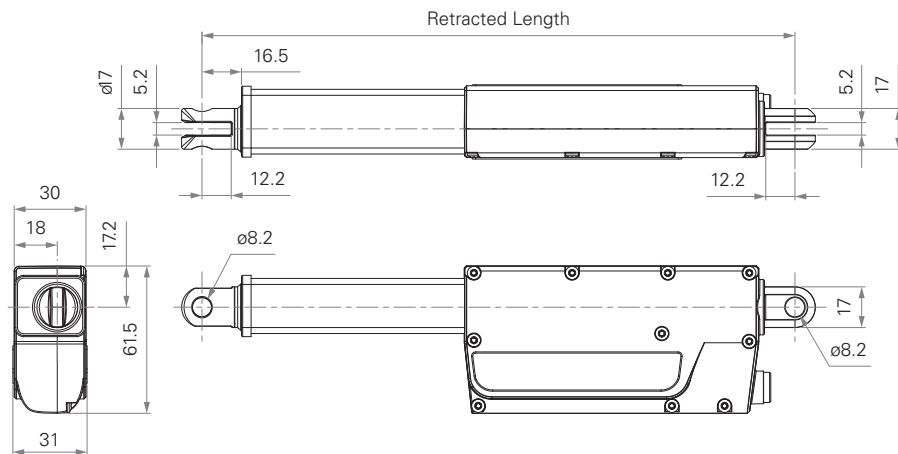
TA38

series



Standard Dimension

(mm)

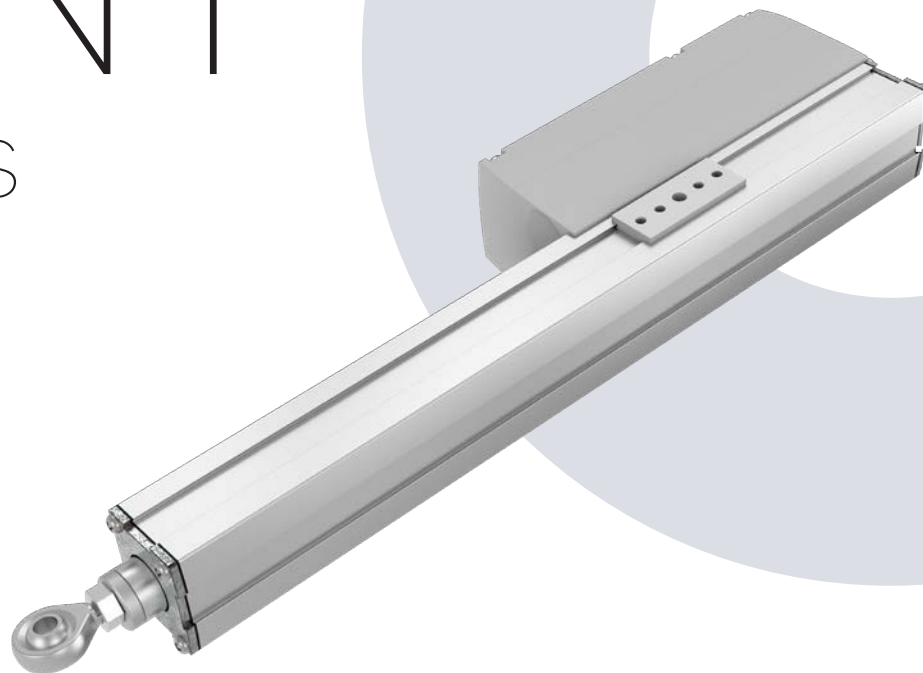


General Features

Max. load	1,500N (push/pull)	Stroke	20~200mm
Max. speed at max. load	9mm/s	Options	Hall sensors
Max. speed at no load	15.7mm/s	Voltage	24V DC; 12/24V DC (PTC)
Retracted length	≥ 160mm	Color	Black or grey
IP rating	IP66	Operational temperature range	+5°C~+45°C

VN1

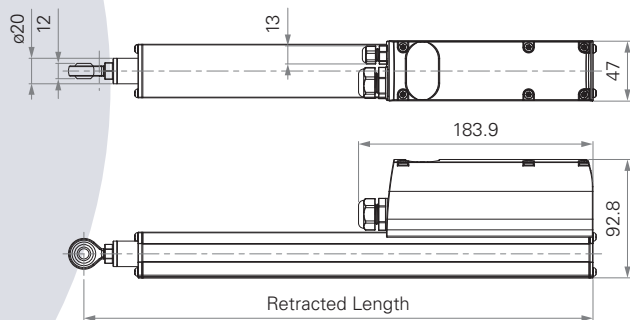
series



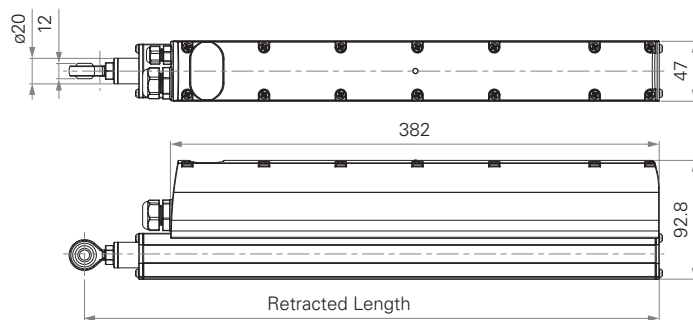
Standard Dimension

(mm)

With DC Voltage



With AC Voltage



General Features

Max. load	3,500N (push/pull)
Max. speed at max. load	4.2mm/s
Max. speed at no load	10.4mm/s
Retracted length	≥ 181mm (DC version, w/o T-Smart) ≥ 401mm (AC version) * With front attachment #1, 2, or 3 * Required outer tube adjustable attachment
IP rating	IP66

Stroke	20~500mm
Options	Hall sensors, safety nut, window seal mechanism
Voltage	12/24V DC; 100~240V AC (50Hz)
Color	Black, grey
Operational temperature range	-15°C~+50°C
Operational temperature range at full performance	+5°C~+45°C

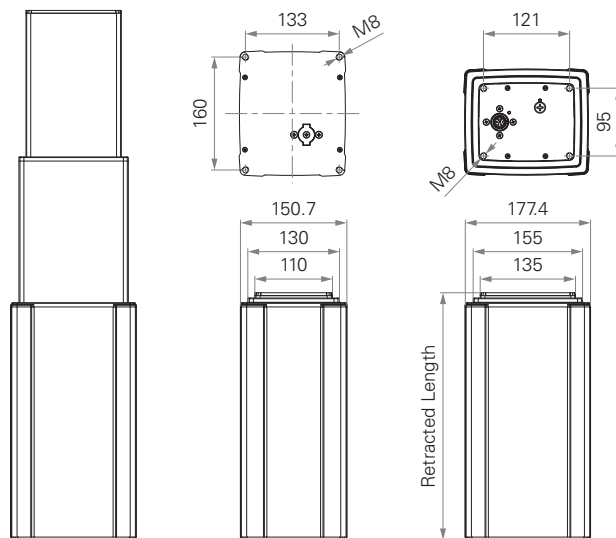
TL3

series



Standard Dimension

(mm)



General Features

Max. load	4,000N (push)
Self-locking force	4,000N
Max. dynamic bending moment	1,000Nm
Max. static bending moment	2,000Nm
Max. speed at max. load	13.7mm/s
Max. speed at no load	39mm/s
Retracted length	$\geq \text{Stroke}/2 + 150\text{mm}$

IP rating	IPX6
Dimension of outer tube	3-stage, 177.4*150.7mm rectangular
Stroke	250~1200mm
Certificate	IEC60601-1, EMC
Options	POT, Hall sensors, direct cut system
Operational temperature range	+5°C~+45°C

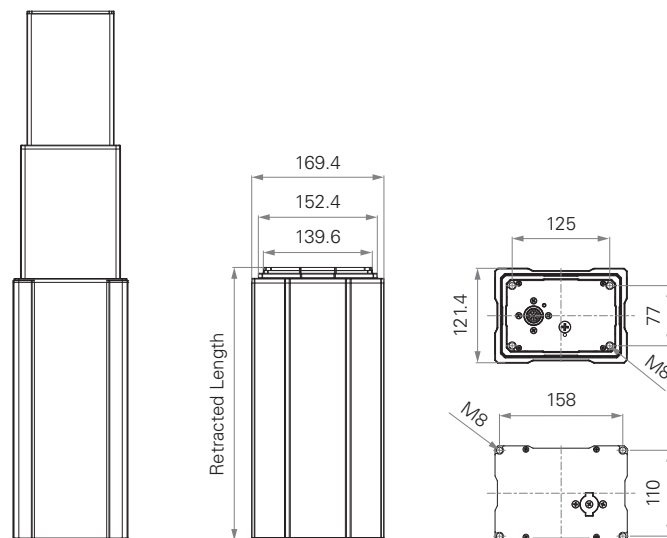
TL17

series



Standard Dimension

(mm)



General Features

Max. load	2,000N (push)
Max. dynamic bending moment	250Nm
Max. static bending moment	500Nm
Max. speed at max. load	11.5mm/s
Max. speed at no load	41mm/s
Retracted length	$\geq \text{Stroke}/2 + 150\text{mm}$
IP rating	IPX6

Dimension of outer tube	3-stage, 169.4*121.4mm rectangular
Stroke	250~1200mm
Certificate	IEC60601-1, ES60601-1, IEC60601-1-2
Options	Hall sensor(s)
Color	Silver, black
Operational temperature range	+5°C~+45°C

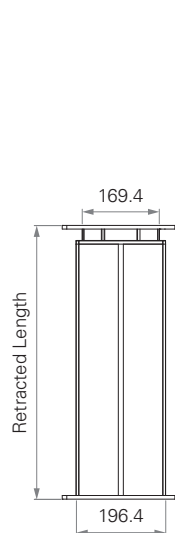
TL18

series



Standard Dimension

(mm)

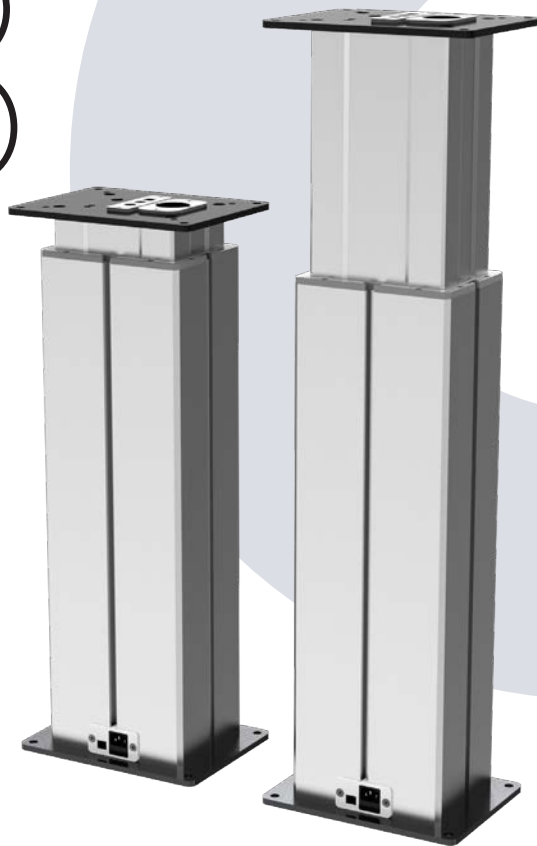


General Features

Max. load	4,500N (push)
Self-locking force	4,500N
Max. dynamic bending moment	200Nm
Max. static bending moment	400Nm
Max. speed at max. load	6.6mm/s
Max. speed at no load	45mm/s
Retracted length	$\geq \text{Stroke} + 147\text{mm}$

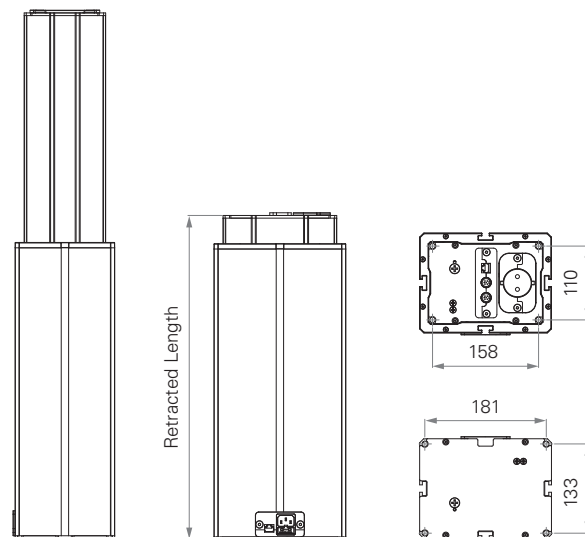
Dimension of outer tube	2-stage, 196.4*148.4mm rectangular
Stroke	100~700mm
Certificate	IEC60601-1, ES60601-1, IEC60601-1-2, UL73, EMC
Options	Hall sensor(s), cable exit from top or bottom side, direct cut system
Operational temperature range	+5°C~+45°C

TL18 AC series



Standard Dimension

(mm)



General Features

Max. load 4,500N (push)

Self-locking force 4,500N

Max. dynamic bending moment 250Nm

Max. static bending moment 500Nm

Max. speed at max. load 6.6mm/s

Max. speed at no load 45mm/s

Retracted length $\geq 383\text{mm}$

Dimension of outer tube 2-stage, 196.4*148.4mm rectangular

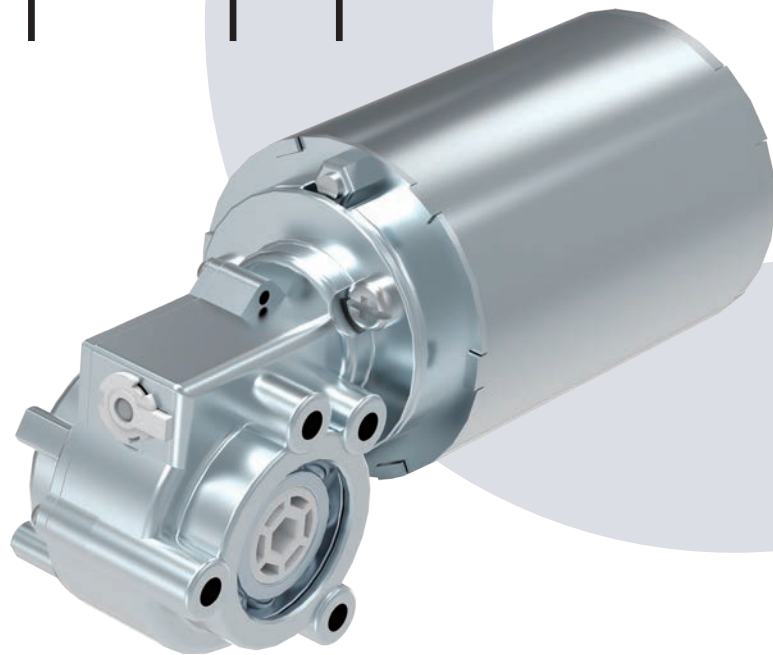
Stroke 200~700mm

Options AC cable exit from top end, top side; Ethernet socket

Operational temperature range $+5^{\circ}\text{C} \sim +45^{\circ}\text{C}$

TGM1

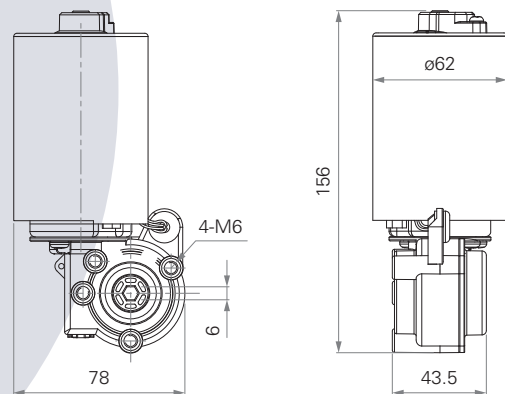
series



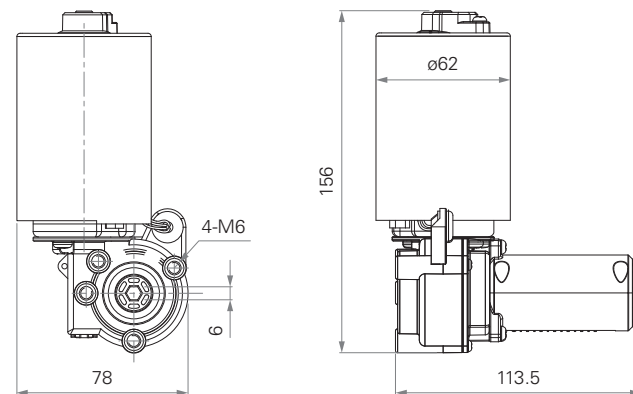
Standard Dimension

(mm)

Without TES2



With TES2



General Features

Max. rated torque

7.4Nm

Max. speed at max. load

72RPM ($\pm 5\%$)

Max. speed at no load

262.5RPM ($\pm 5\%$)

Certificate

UL962

Options

Hall sensors

Voltage

12, 24V DC or 24V DC (PTC)

**Operational temperature range
at full performance**

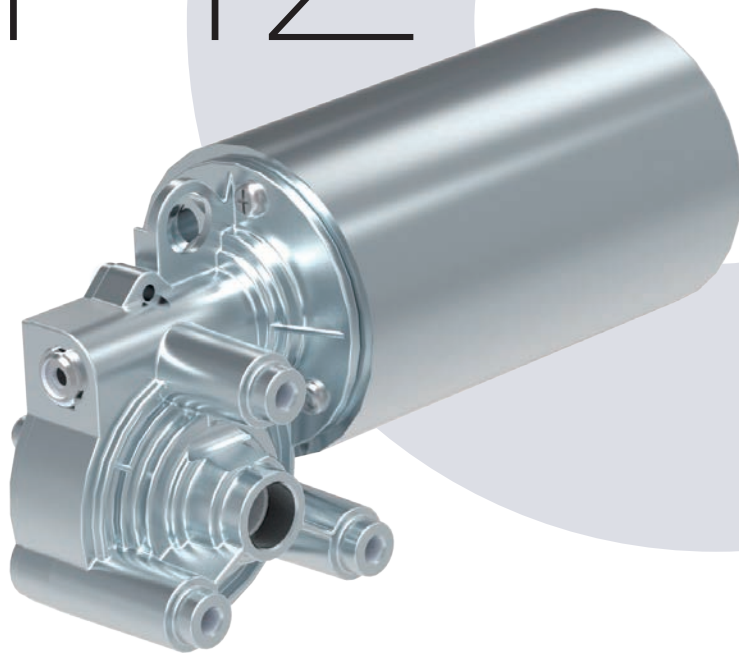
$+5^{\circ}\text{C} \sim +45^{\circ}\text{C}$

Hexagon hole for the shaft by 6 or 9.1mm diameter

Low noise

TGM2

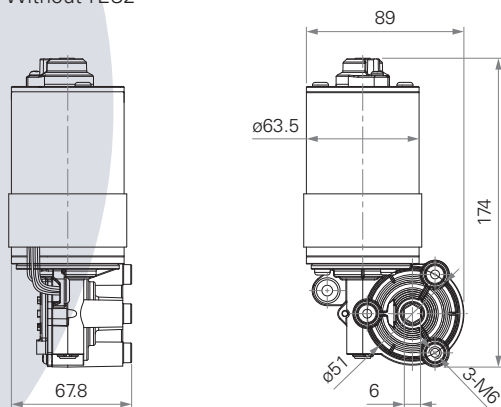
series



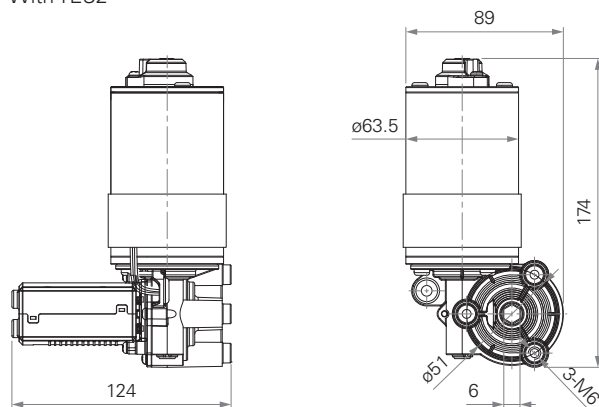
Standard Dimension

(mm)

Without TES2



With TES2



General Features

Max. rated torque	18.3Nm
Max. speed at max. load	51RPM ($\pm 5\%$)
Max. speed at no load	108RPM ($\pm 5\%$)

Options

Voltage

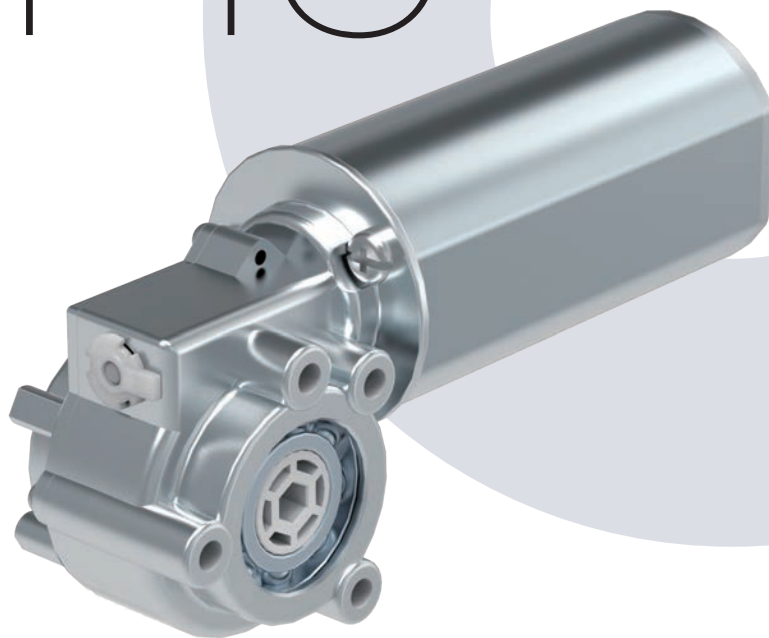
Low noise

Hall sensors

12V DC or 24V DC
(thermal protector)

TGM3

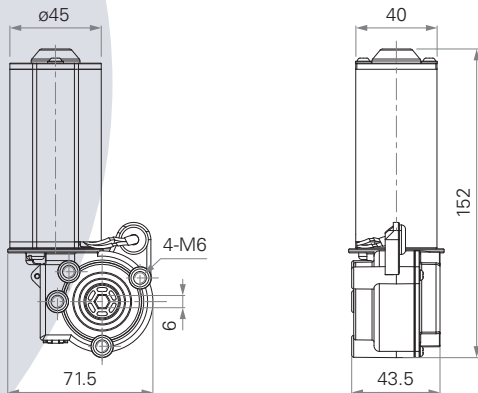
series



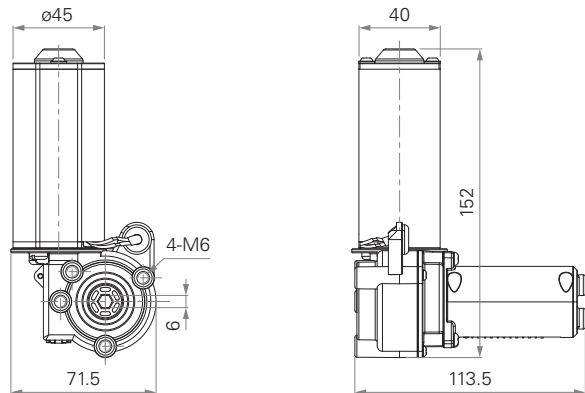
Standard Dimension

(mm)

Without TES2



With TES2



General Features

Max. rated torque	4.6Nm
Max. speed at max. load	61RPM (±5%)
Max. speed at no load	259RPM (±5%)
Options	Hall sensors

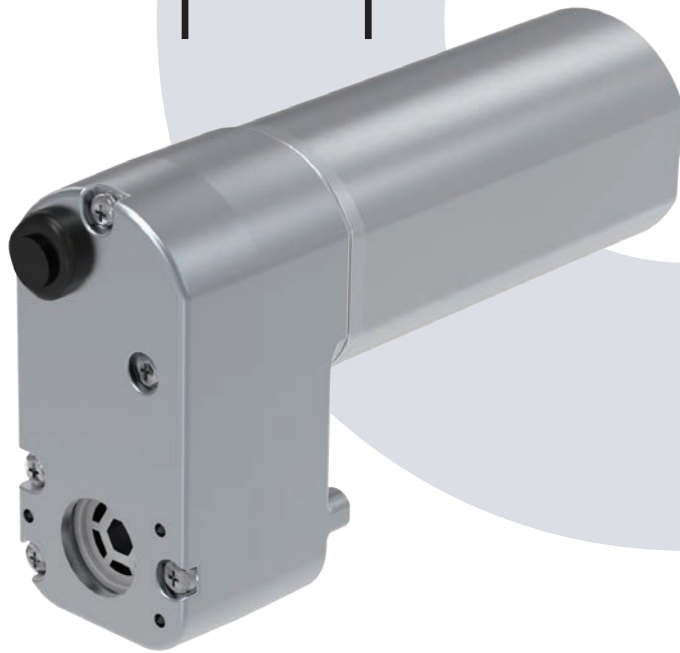
Voltage	24V DC
Operational temperature range at full performance	+5°C~+45°C

Hexagon hole for the shaft by 6mm diameter

Low noise

TGM4

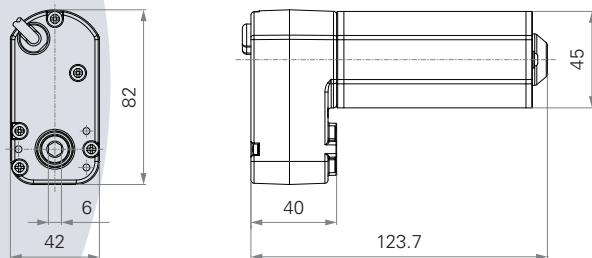
series



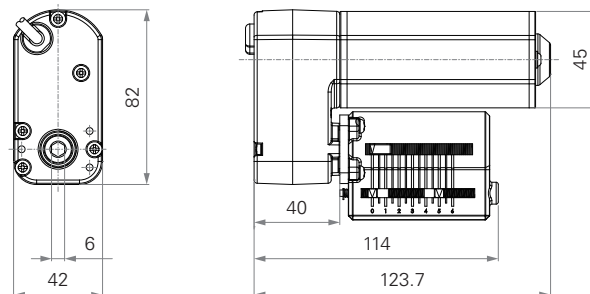
Standard Dimension

(mm)

Without TES2



With TES2



General Features

Max. rated torque	6Nm
Max. speed at max. load	98RPM ($\pm 5\%$)
Max. speed at no load	219RPM ($\pm 5\%$)
Options	Hall sensors

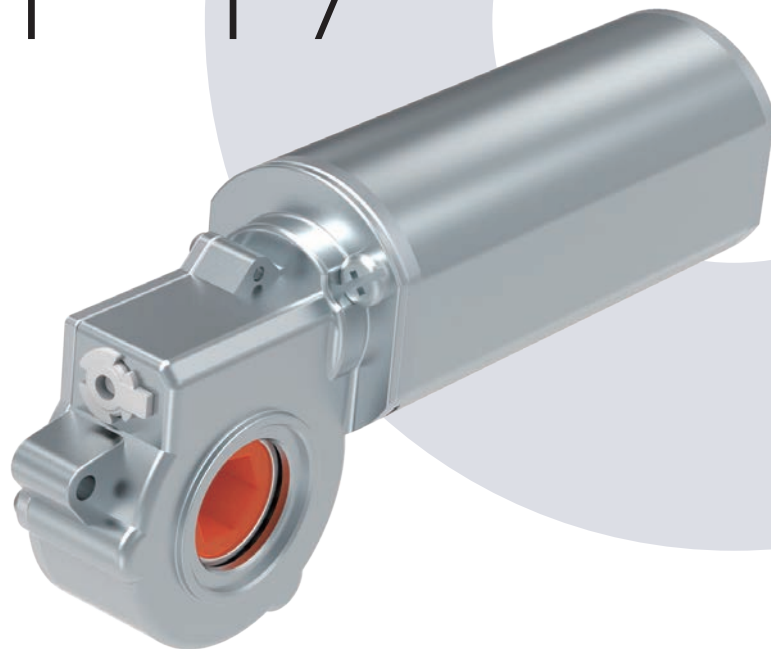
Voltage	24V DC
Operational temperature range at full performance	+5°C~+45°C

Hexagon hole for the shaft by 9mm diameter

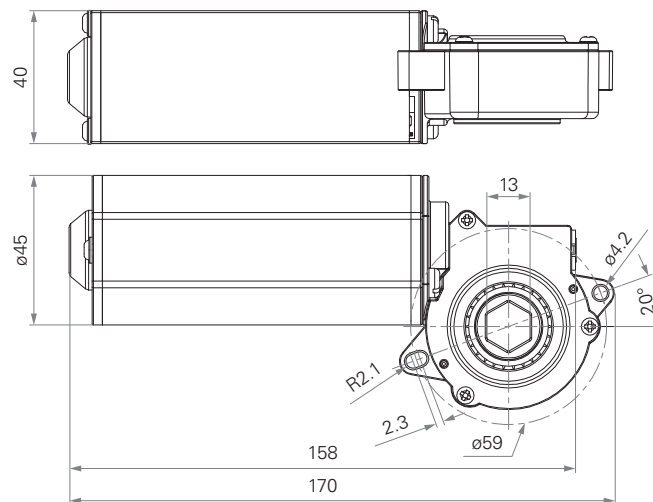
Low noise

TGM7

series



(mm)

**Max. rated torque**

7.2Nm

Max. speed at max. load

78RPM ($\pm 5\%$)

Max. speed at no load

355RPM ($\pm 5\%$)

Options

Hall sensors

Voltage

24V DC

**Operational temperature range
at full performance**

+5°C~+45°C

Low noise

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TiMOTION uses FSC certificated paper in order to help care for our forests, as well as the people and wildlife who call them home.



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