TORION
泰瑞恩

Actuator

MD60

Features

◆ MD60 is a quiet and powerful actuator designed for use in a variety of medical and home care applications such as patient hoist and bed.

◆ Main applications：homecare, medical

◆ Input voltage：24V DC

◆ Max. load：6000N (push) / 4000N (pull)

◆ Max. current：4.9 A@24V

◆ Max. speed at no load：22.3 mm/sec

◆ Max. speed at full load：5.0 mm/sec @ 6000N

◆ Stroke：50 ~ 400mm

◆ Duty cycle：10% or 2 min. continuous operation in 20 min.

◆ IP protection level：IPX4

◆ Color：RAL 7035

◆ Certified：EN60601-1-2 / IEC 61000-4-2 / IEC 61000-4-3 / IEC 61000-4-8

◆ Noise level：＜53 dB

◆ Ambient operating temperature：+5°~ 40°C

◆ Preset limit switches

◆ Aluminum outer tubes

◆ Steel extension tube

◆ Rear connector's pivot direction can be chosen in every 30 degrees

Options

◆ Single / dual Hall effect sensor for positioning feedback

◆ Mechanical Push only

◆ Safety nut (additional 8 mm installation length is required)

◆ QR1 quick release：at gearbox, minimum 300N load required

◆ QR2 quick release：at Zinc front connector

◆ MR1 manual release：at Zinc front connector

◆ IPX5 protection level

Compatibility

1. **Control box**

   MD6C, CB2P, CB4P

   (MD6C & CB2P can be easily fixed onto MD60 actuator)

MD60 & MD6C

MD60 & CB2P

2. **Handset**

   HC, HD, HF, HT

3. **Accessory**

   None

Performance Data

| Model No.	Push Max. (N)	Pull Max. (N)	Typical Speed (mm/s)		Current (A) @ 24V	
			No load	Full load	No load	Full load
MD60-24-**A3**-xxx.xxx-Cxx-xxxxxxxx	6,000	4,000	3.1	2.1	0.3	3.0
MD60-24-**A4**-xxx.xxx-Cxx-xxxxxxxx	6,000	4,000	4.2	2.5	0.3	3.5
MD60-24-**A6**-xxx.xxx-Cxx-xxxxxxxx	6,000	4,000	6.2	3.6	0.3	4.0
MD60-24-**A8**-xxx.xxx-Cxx-xxxxxxxx	6,000	4,000	8.3	5.0	0.3	4.5
MD60-24-**AC**-xxx.xxx-Cxx-xxxxxxxx	3,000	2,000	12.5	8.2	0.3	3.5
MD60-24-**AG**-xxx.xxx-Cxx-xxxxxxxx	1,500	1,500	16.6	12.0	0.3	3.0
MD60-24-**K3**-xxx.xxx-Cxx-xxxxxxxx	6,000	4,000	5.8	3.8	0.3	3.5
MD60-24-**K4**-xxx.xxx-Cxx-xxxxxxxx	6,000	4,000	7.2	4.5	0.3	4.2
MD60-24-**K6**-xxx.xxx-Cxx-xxxxxxxx	5,000	4,000	11.1	6.3	0.3	4.9
MD60-24-**K8**-xxx.xxx-Cxx-xxxxxxxx	4,000	4,000	15.4	8.6	0.3	4.7
MD60-24-**KC**-xxx.xxx-Cxx-xxxxxxxx	2,500	2,500	22.3	13.0	0.3	4.7
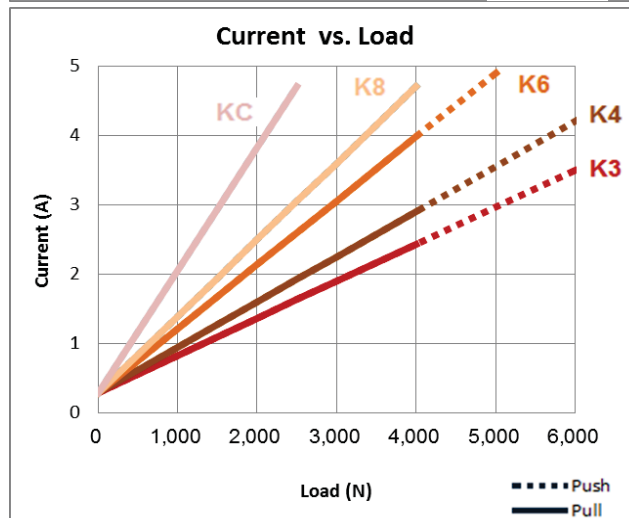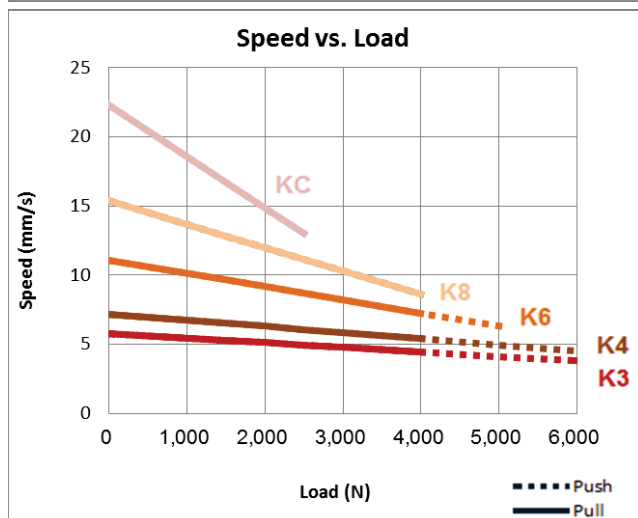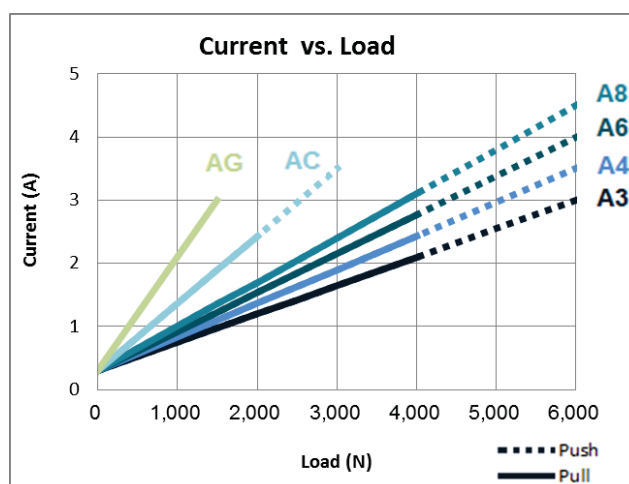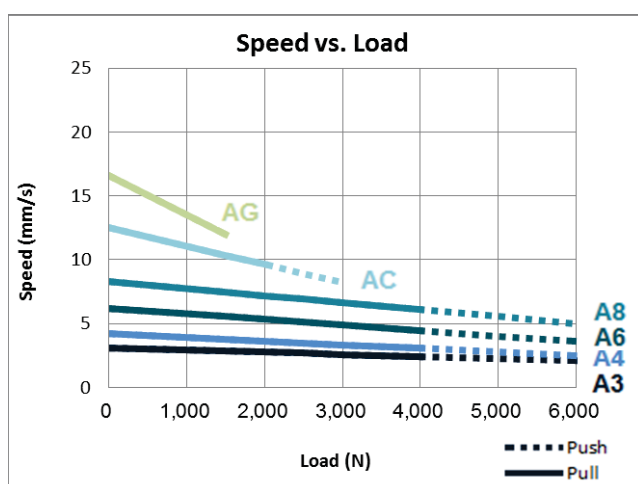
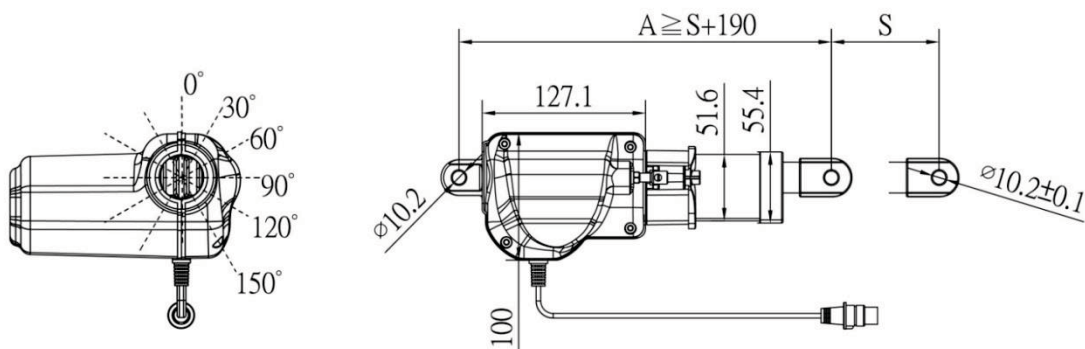# Dimensions

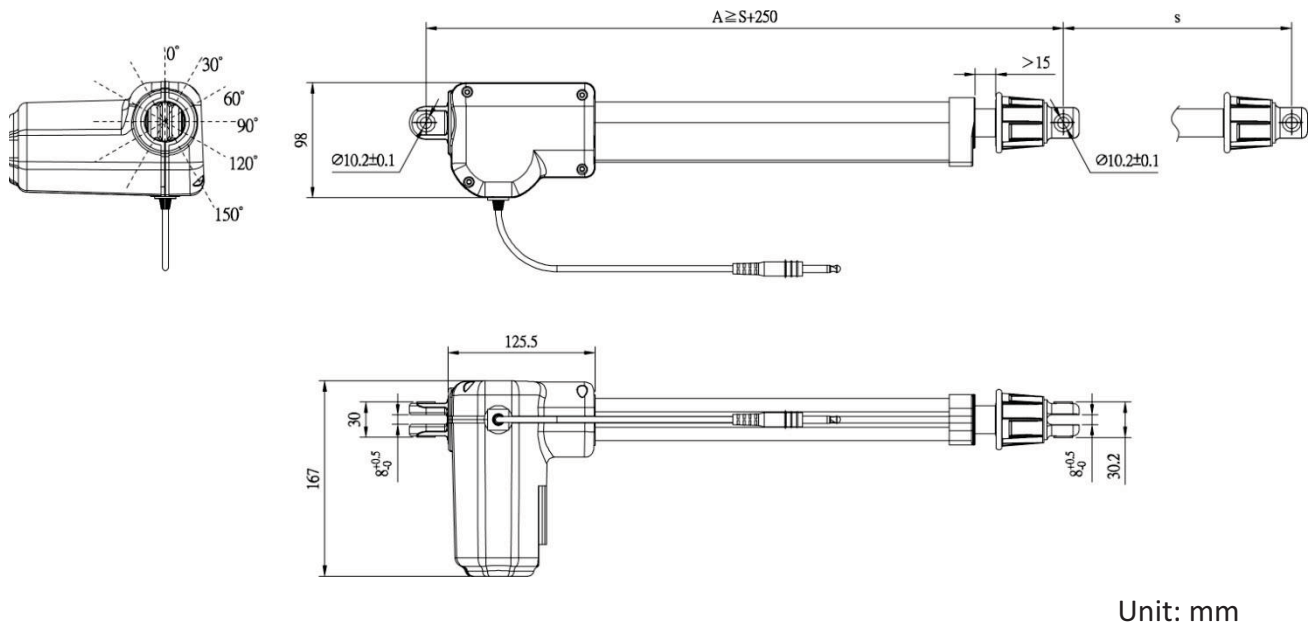## 1. Standard
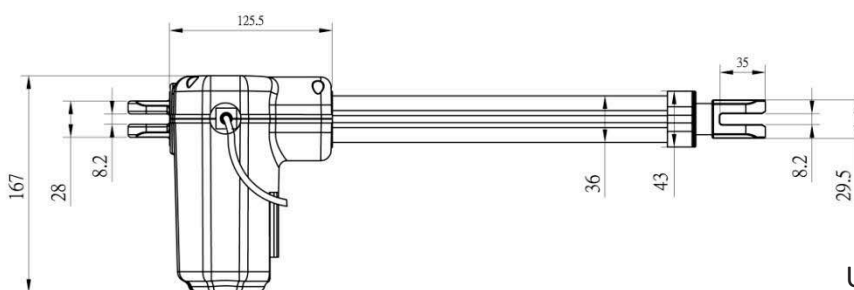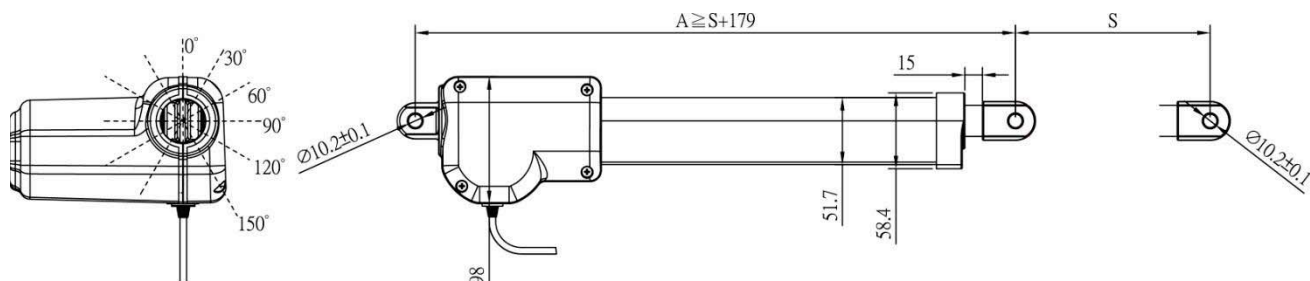
Unit: mm

2. With QR1 Quick Release
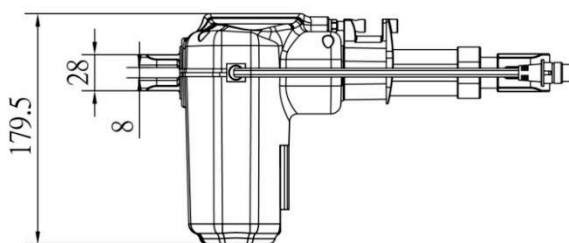
Unit: mm

3. With QR2 Quick Release

Unit: mm
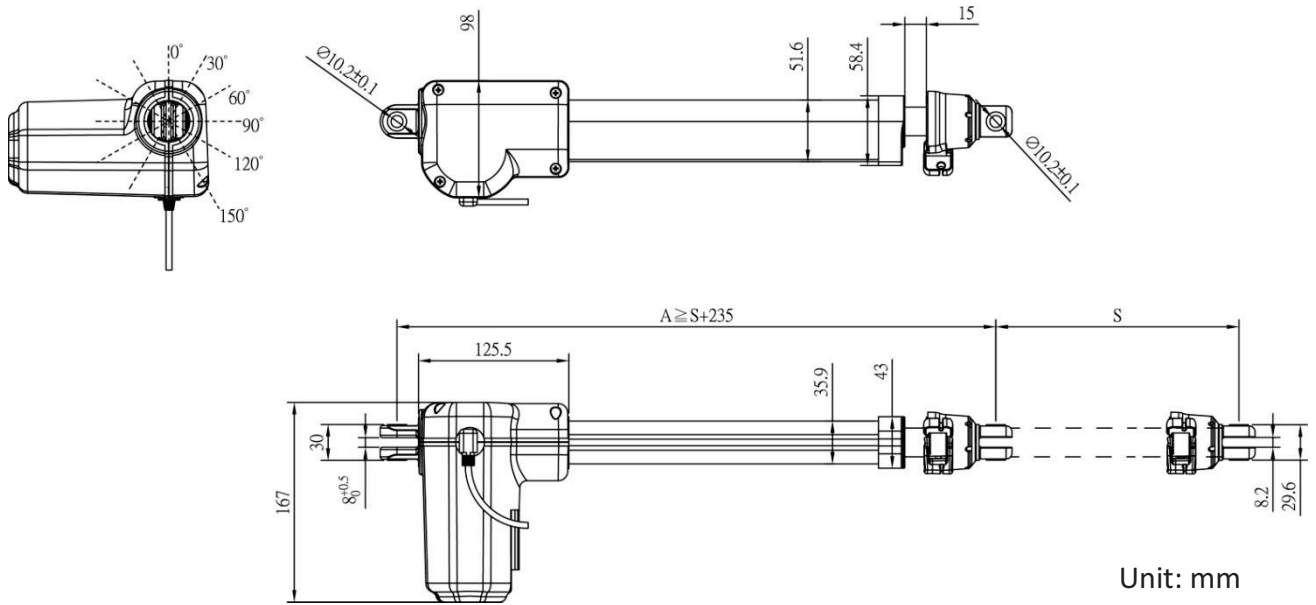
4. With MR1 Manual Release

Unit: mm

5. Installation Length

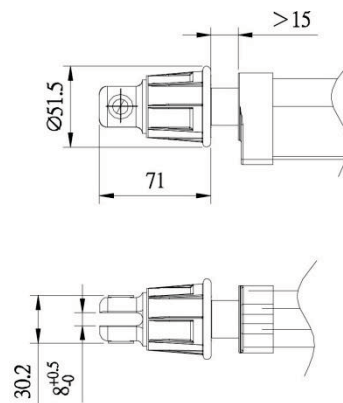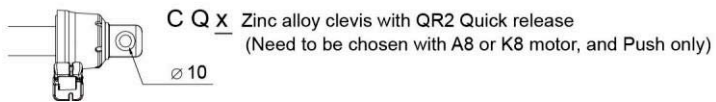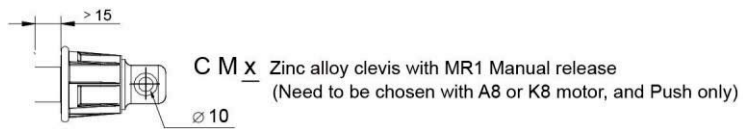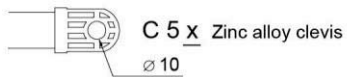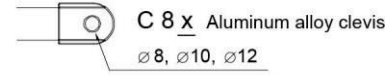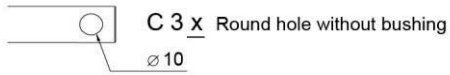| Front Connector	Standard retracted length	with QR1	Description
C3x,C7x	A $\geq$ S+154	A $\geq$ S+165	
C1x,C5x,C8x	A $\geq$ S+179	A $\geq$ S+190	
CQx	A $\geq$ S+235	N/A	with QR2 quick release
CMx	A $\geq$ S+250	N/A	with MR1 manual release
Remarks: 1. A= Retracted Length (unit: mm) 2. S= Stroke (unit: mm) 3. Additional 8 mm retracted length is required if Safety Nut is equipped.			

Front connector with QR2 (CQx)
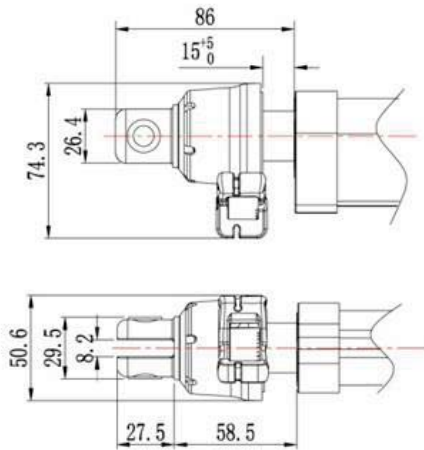
Front connector with MR1 (CMx)

◆ Front Connectors

C 1 x Plastic clevis
∅8, ∅10, ∅12

C 3 x Round hole without bushing
∅10

C 5 x Zinc alloy clevis
∅10

C M x Zinc alloy clevis with MR1 Manual release
(Need to be chosen with A8 or K8 motor, and Push only)
> 15
∅10

C Q x Zinc alloy clevis with QR2 Quick release
(Need to be chosen with A8 or K8 motor, and Push only)
∅10

C 7 x Round hole with Nylon bushing
∅10

C 8 x Aluminum alloy clevis
∅8, ∅10, ∅12

◆ Rear Connectors

C x 1 Aluminum alloy clevis
∅8, ∅10, ∅12

C x 2 Zinc alloy clevis
∅8, ∅10, ∅12

Cable Plug

DIN plug with Moteck V type or H type shape

V type   H type

Phone jack (Φ6.35) with Moteck J1 type or J2 type shape

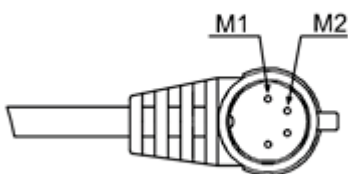J1 type (Φ13.8)   J2 type (Φ16.7)
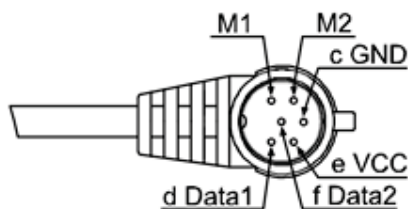
Pin Assignment

No sensor feedback

M1   M2

M1(+) & M2(-) : Extends

1x or 2x Hall sensors for positioning

M1   M2
c GND
d Data1   e VCC   f Data2

M1(+) & M2(-) : Extends
Pin 'Data2' is defined for 2x Hall sensors only

Ordering Key

MD60-☐☐-☐☐-☐☐☐.☐☐☐-**C**☐☐-☐☐☐-☐☐☐-☐☐

Input Voltage
24：24V DC

Motor and Spindle Code
A3, A4, A6, A8, AC, AG, K3, K4, K6, K8, KC
(Refer to paragraph Performance Data)

Retracted Length
(Refer to paragraph Dimensions)

Extended Length
(=Retracted length + Stroke. Refer to Dimensions drawing)

Front Connector
1：Plastic clevis   **3**：Round hole without bushing
5：Zinc alloy clevis   **7**：Round hole with Nylon bushing
8：Aluminum alloy clevis
Q：Zinc alloy clevis with QR2 Quick release
   (Must go with Code A8 or K8, and Push only)
M：Zinc alloy clevis with MR1 Manual release
   (Must go with Code A8 or K8, and Push only)

Rear Connector
1：Aluminum alloy clevis
2：Zinc alloy clevis

Positioning Feedback
Blank：None
HS1：Single Hall effect sensor
HS2：Dual Hall effect sensor

Safety Options
Blank：None
SN：Safety nut
PO：Push only
QR1：QR1 Quick release (Must go with Code A8 or AC)

IP Protection Level
Blank：IPX4
X5：IPX5