

Actuator

MD56



Features

- ◆ MD56 is a powerful but compact actuator that is suitable for wide range of applications including medical, homecare, furniture and industrial...etc. The motor orientation can be chosen in every 30 degrees of whole round, which makes it an ideal solution for applications where installation space is limited.
- ◆ Main applications : medical, homecare, furniture, industrial
- ◆ Input voltage : 24V DC
- ◆ Max. load : 5000N (push) / 3500N (pull)
- ◆ Max. speed at no load : 48 mm/sec
- ◆ Max. speed at full load : 4 mm/sec @ 5,000N
- ◆ Max. current : 6.9A @ 24V DC
- ◆ Stroke : 50~400mm
- ◆ Motor orientation : 360° in steps of every 30°
- ◆ Preset cam type limit switches
- ◆ IP protection level : IPX1
- ◆ Duty cycle : 10% (max. 2 min. continuous operation)
- ◆ Color : Black
- ◆ Certified : IEC60601-1 / EN60601-1 (planning)
- ◆ Noise level : \leq 65dB
- ◆ Working environment temperature : -25 ~ 65°C

Options

- ◆ Positioning feedback with Hall effect sensor
- ◆ Positioning feedback with Reed sensor
- ◆ Positioning feedback with potentiometer (10K/10T)
- ◆ IPX6 Waterproof cover

Compatibility

1. Control box

None

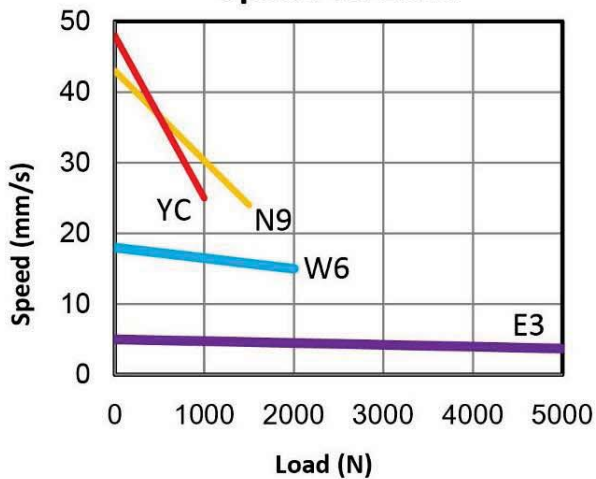
2. Accessory

None

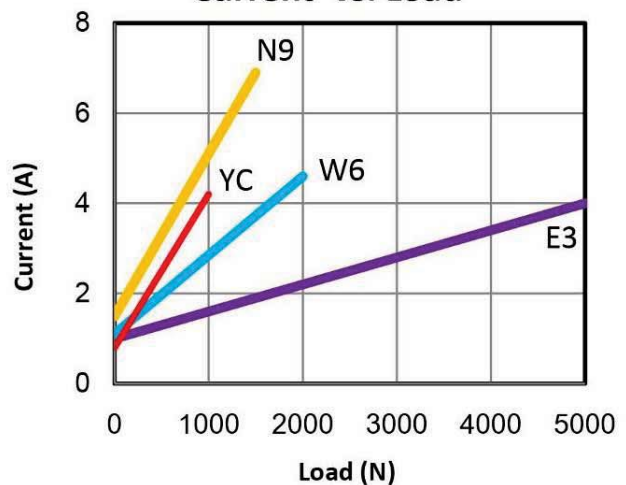
Performance Data

Model No.	Max. Push Load (N)	Max. Pull Load (N)	Typical Speed (mm/s)		Current (A) @ 24V	
			No load	Full load	No load	Full load
MD56-X-24E3-XXX.XXX-XXXX0XX	5,000	3,500	5	4	1.0	4.0
MD56-X-24W6-XXX.XXX-XXXX0XX	2,000	2,000	18	15	1.1	4.6
MD56-X-24N9-XXX.XXX-XXXX0XX	1,500	1,500	43	24	1.5	6.9
MD56-X-24YC-XXX.XXX-XXXX0XX	1,000	1,000	48	25	0.8	4.2

Speed vs. Load



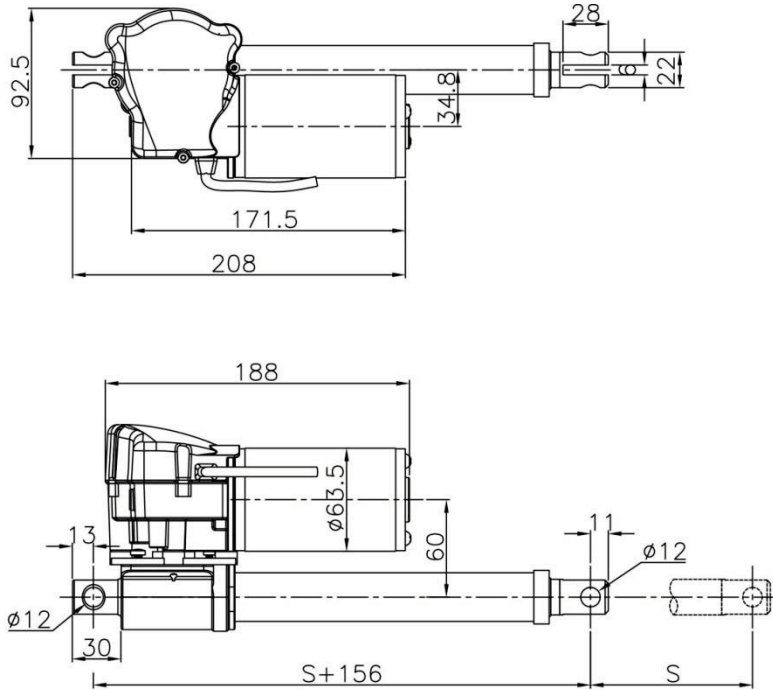
Current vs. Load



Dimensions

1. Standard Type

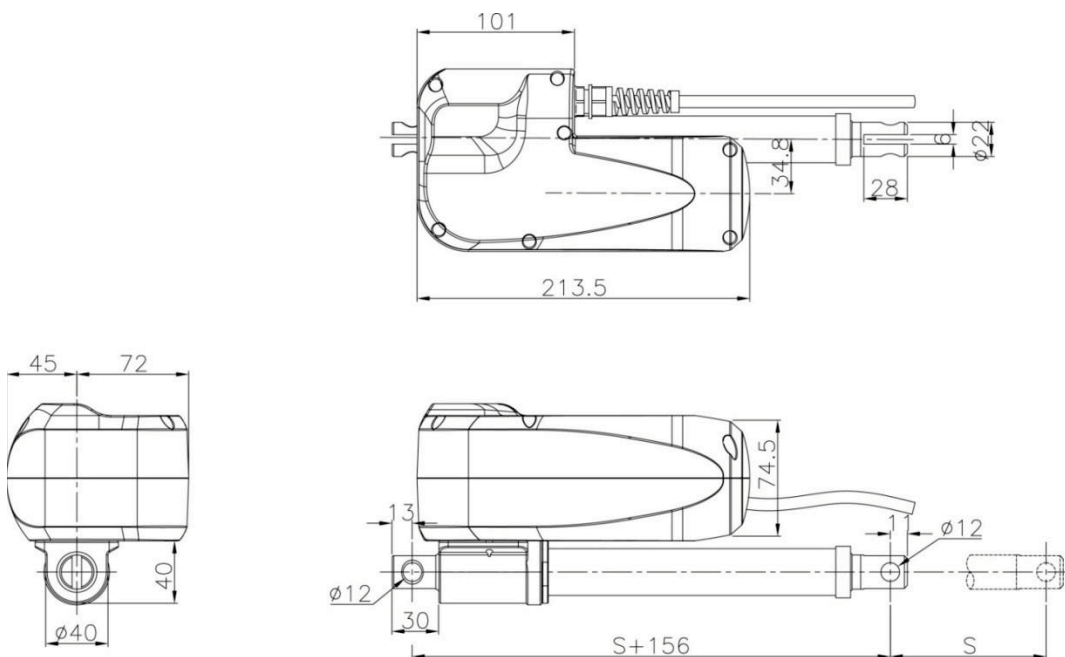
- ◆ Stroke (S) = 50 ~ 400 mm
- ◆ Retracted Length (A) \geq S+156 mm



Unit: mm

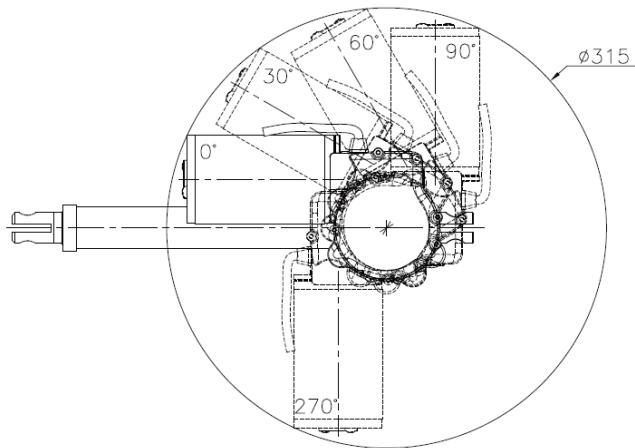
2. With IPX6 waterproof cover

- ◆ Stroke (S) = 50 ~ 400 mm
- ◆ Retracted Length (A) \geq S+156 mm



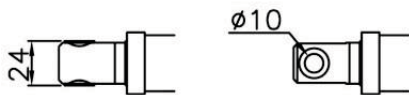
Unit: mm

3. Motor Orientation (360° in steps of every 30°)

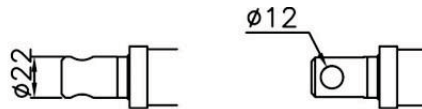


Remarks: This drawing shows orientation definition with example of Standard type.

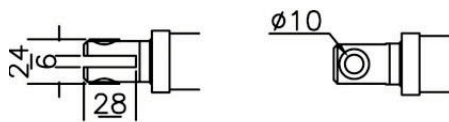
4. Front Connectors



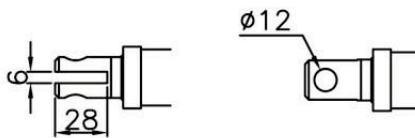
Solid with bushing, $\phi 10$ mm



Solid w/o bushing, $\phi 12$ mm

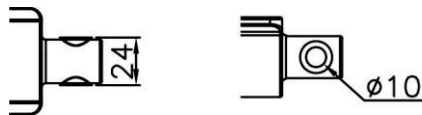


Slot with bushing, $\phi 10$ mm



Slot w/o bushing, $\phi 12$ mm

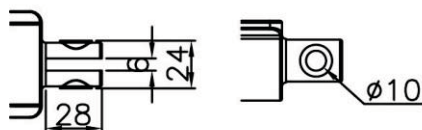
5. Rear Connectors



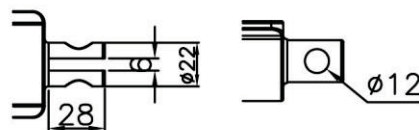
Solid with bushing, $\phi 10$ mm



Solid w/o bushing, $\phi 12$ mm



Slot with bushing, $\phi 10$ mm

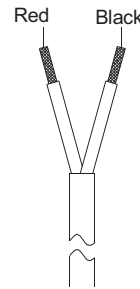


Slot w/o bushing, $\phi 12$ mm

Wiring

1. Standard Type

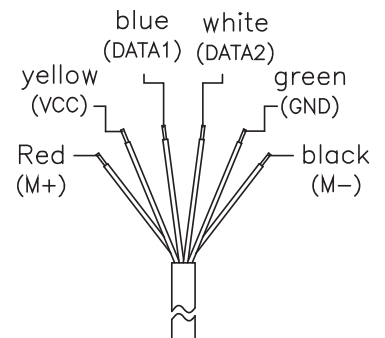
- ◆ Red (+), Black (-) for extension



2. With Hall Effect Sensor

- ◆ Red (+), Black (-) for extension
- ◆ White, Yellow, Blue & Green are positioning signal wires as figure.
- ◆ Signal resolution varies according to different model as following table.

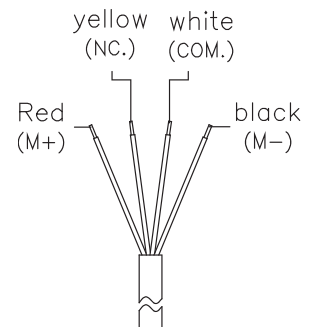
Model	Signal Pulse / mm
MD56-X-XXE3-XXX.XXX-XXXX0XX	9.83
MD56-X-XXW6-XXX.XXX-XXXX0XX	4.92
MD56-X-XXN9-XXX.XXX-XXXX0XX	2.07
MD56-X-XXYC-XXX.XXX-XXXX0XX	1.02



3. With Reed Sensor

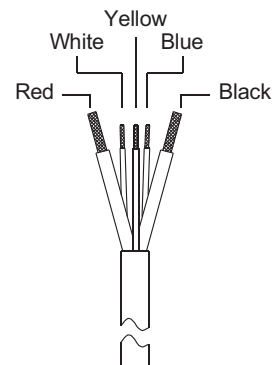
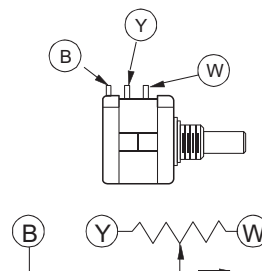
- ◆ Red (+), Black (-) for extension.
- ◆ White & Yellow are positioning signal wires as figure.
- ◆ Signal resolution varies according to different model as following table.

Model	Signal Pulse / mm
MD56-X-XXE3-XXX.XXX-XXXX0XX	2.67
MD56-X-XXW6-XXX.XXX-XXXX0XX	1.33
MD56-X-XXN9-XXX.XXX-XXXX0XX	0.89
MD56-X-XXYC-XXX.XXX-XXXX0XX	0.67



4. With Potentiometer

- ◆ Red (+), Black (-) for extension
- ◆ White, Yellow & Blue are positioning signal wires as figure.
- ◆ The specification of potentiometer is 0~10K Ohm.
- ◆ The resistance value between blue and white wires decreases when actuator extends.



Ordering Key

MD56——24—.— 0

Cover

0 : None (IPX1)
S : With cover (IPX6)

Input Voltage

24 : 24V DC

Motor and Spindle Code

E3, W6, N9, YC
(Refer to paragraph Performance Data)

Retracted Length (mm)

(Refer to paragraph Dimensions)

Extended Length (mm)

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

Front Connector

1 : Solid with bushing, ϕ 10 mm 2 : Solid w/o bushing, ϕ 12 mm
3 : Slot with bushing, ϕ 10 mm 4 : Slot w/o bushing, ϕ 12 mm

Rear Connector

1 : Solid with bushing, ϕ 10 mm 2 : Solid w/o bushing, ϕ 12 mm
3 : Slot with bushing, ϕ 10 mm 4 : Slot w/o bushing, ϕ 12 mm

Pivot Orientation of Rear Connector

0 : 0° 9 : 90°

Positioning Feedback

0 : None H : Hall effect sensor R : Reed sensor P : Potentiometer

Reserved

Motor Orientation

0 : 0° 3 : 30° 6 : 60° 9 : 90° R : 270°

Cable

1 : Straight 750mm, tinned end 2 : Straight 1,500mm, tinned end



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