

Product Data Sheet

Actuator 01NS56

01NS56 is a powerful but compact actuator up to 5000N max. thrust 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.



Features

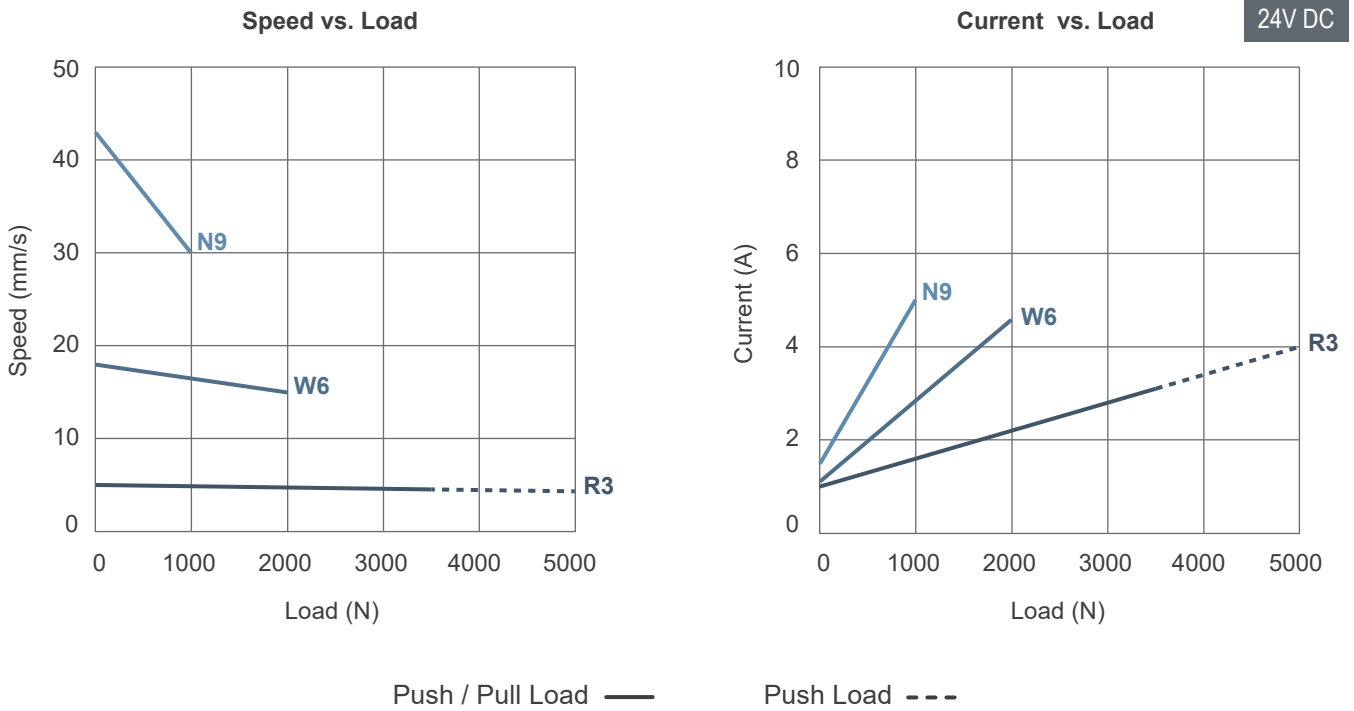
- Main applications: Furniture, homecare, medical, industrial
- Input voltage: 24V DC
- Max. load: 5000N (push) 3500N (pull)
- Typical speed at no load: 43 mm/sec
- Typical speed at full load: 4 mm/sec (5000N load)
- Stroke: 50 ~ 400 mm
- Noise Level: ≤ 65 dB
- Motor orientation: 360° in steps of every 30°
- IP Protection level: IP21
- Color: Black
- Preset cam type limit switches
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Ambient operation temperature: -25°C ~ +65°C
- Certified: CE Marking, EMC Directive 93/42/EEC

Options

- Positioning signal feedback with Hall effect sensor x 2
- Positioning feedback with Reed sensor
- Positioning feedback with Potentiometer (POT)
- IPX6 waterproof case

Performance Data

Model No.	Push Max. (N)	Pull Max. (N)	Typical Speed (mm/s)		Typical Current (A)	
			No Load	Full Load	No Load	Full Load
01NS56-X-24 R3 -XXX.XXX-XXXX0XX	5000	3500	5	4	1.0	4.0
01NS56-X-24 W6 -XXX.XXX-XXXX0XX	2000	2000	18	15	1.1	4.6
01NS56-X-24 N9 -XXX.XXX-XXXX0XX	1000	1000	43	30	1.5	5.0



Remarks:

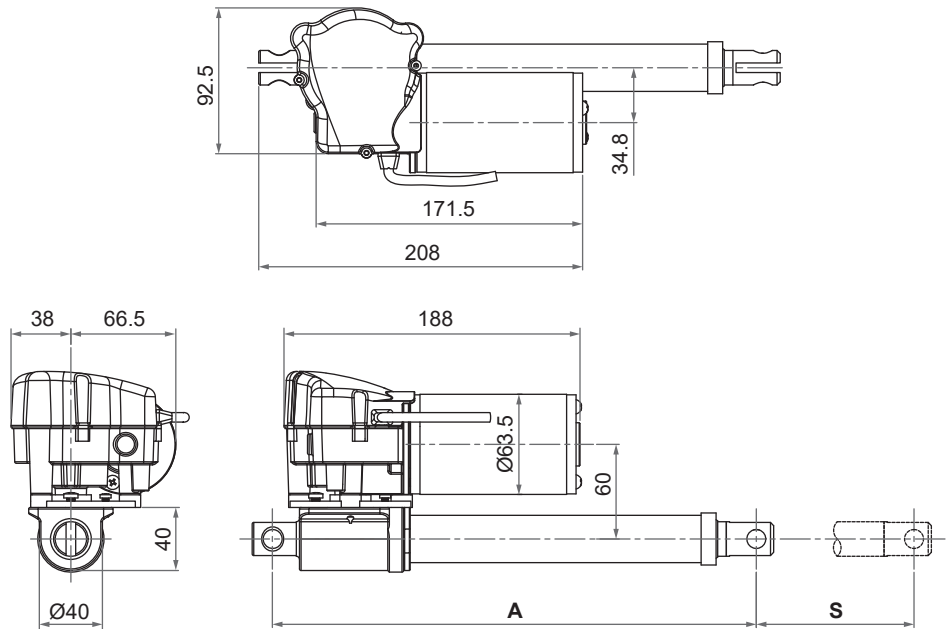
* The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

Dimensions

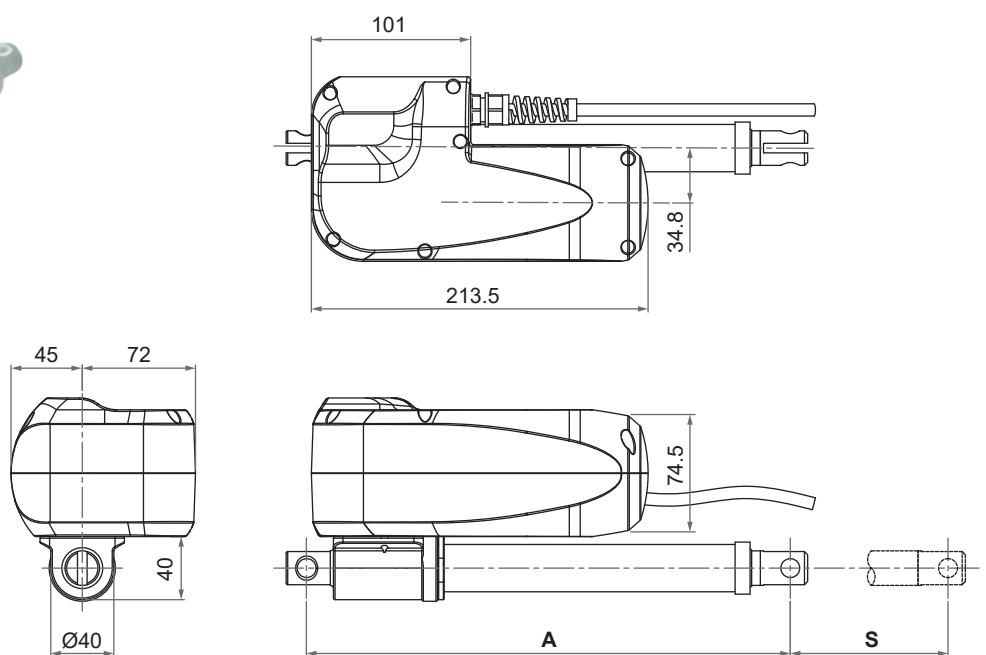
Stroke (S): 50 ~ 400 mm

Retracted length (A): $\geq S+156$ mm (tolerance: ± 3 mm)

• Standard type



• With IPX6 waterproof case



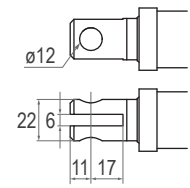
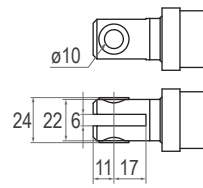
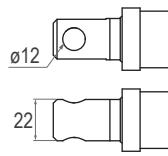
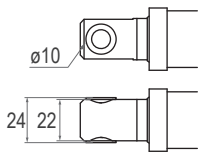
● **Front Connector**

1: Aluminum solid with bushing

2: Aluminum solid w/o bushing

3: Zinc slot with bushing
(only for models with max. load $\leq 2000\text{N}$)

4: Zinc slot w/o bushing
(only for models with max. load $\leq 2000\text{N}$)



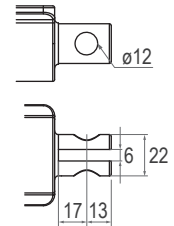
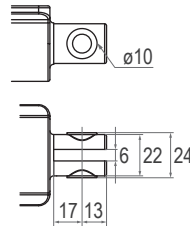
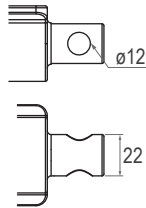
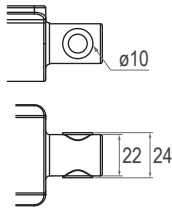
● **Rear Connector**

1: Aluminum solid with bushing

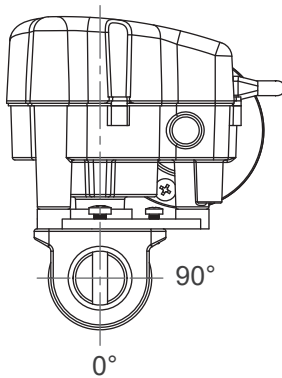
2: Aluminum solid w/o bushing

3: Aluminum slot with bushing
(only for models with max. load $\leq 2000\text{N}$)

4: Aluminum slot w/o bushing
(only for models with max. load $\leq 2000\text{N}$)

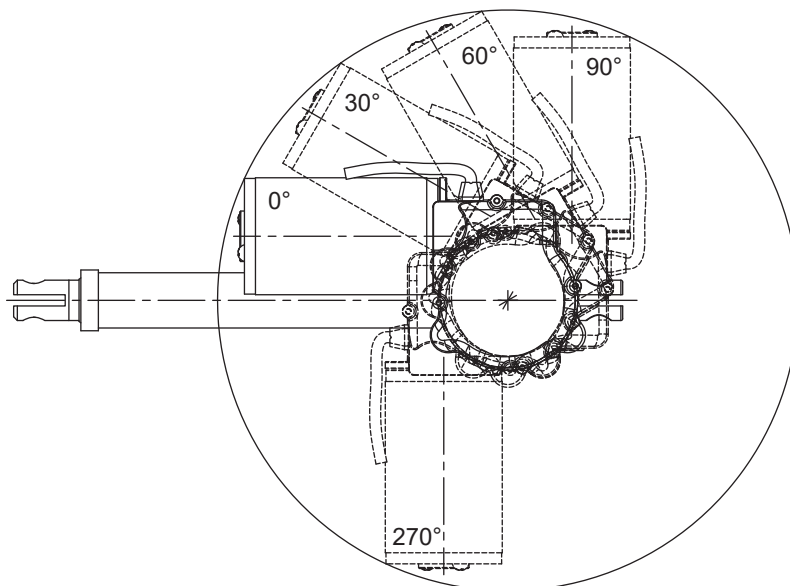


● **Pivot orientation of rear connectors**



Note: Presented with slot type connector as an example.

● **Motor orientation (360° in steps of every 30°)**



Note: This drawing shows orientation definition with example of standard type.

Compatibility

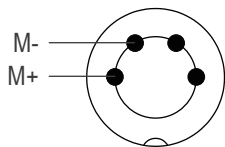
Product	Model	Application condition	MD56 spec
Control box	01NS6X	- Max. $\leq 5A$ current per channels	- Without positioning sensor feedback - 4-pin H-type or V-type DIN plug
	01XV4O-GO	- M1: Max. $\leq 9A$ current	- Without positioning sensor feedback - 4-pin J2-type phone jack plug
	01XV4O-AT (Synchronization)	- Max. 4.5A current 2 channels	- With dual Hall effect sensors - 6-pin H-type or V-type DIN plug

Note:

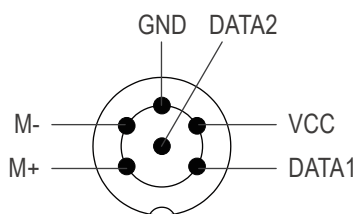
If the current limit of the selected control box is lower than the typical current of the actuator model under full load, the actuator could not be operated in full performance.

Cable Plug

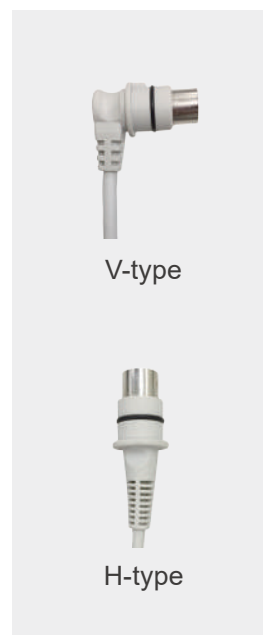
H-type or V-type DIN plug



Without positioning sensor feedback



With dual Hall effect sensors



Wiring

Wire definitions:

• Without positioning sensor feedback

Power	
Red	Black
M+	M-

Note:

1. Connect Red (M+) to '+' & Black (M-) to '-' of DC power, the actuator will extend.



• With Hall effect sensor x 2

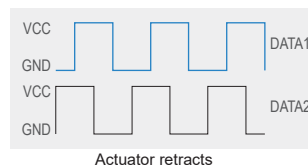
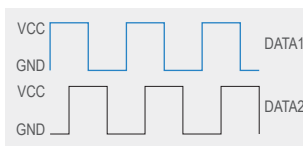
Power		Signal			
Red	Black	Green	Yellow	Blue	White
M+	M-	GND	VCC	DATA1	DATA2

Note:

1. Connect Red (M+) to '+' & Black (M-) to '-' of DC power, the actuator will extend.
2. Hall effect sensor resolution

Model No.	Resolution (pulses/mm)
01NS56-X-24R3-XXX.XXX-XXXH0XX	9.83
01NS56-X-24W6-XXX.XXX-XXXH0XX	4.92
01NS56-X-24N9-XXX.XXX-XXXH0XX	2.07

3. Voltage input range (VCC): 3.5~20V
4. Output voltage of signal (Data) = Input voltage of VCC
5. Hall signal data



• With reed sensor

Power		Signal	
Red	Black	White	Yellow
M+	M-	COM	NC

Note:

1. Connect Red (M+) to '+' & Black (M-) to '-' of DC power, the actuator will extend.
2. Reed sensor resolution

Model No.	Resolution (pulses/mm)
01NS56-X-24R3-XXX.XXX-XXXR0XX	2.67
01NS56-X-24W6-XXX.XXX-XXXR0XX	1.33
01NS56-X-24N9-XXX.XXX-XXXR0XX	0.89

3. Input power rating: 10VA max.
max. input voltage 100V DC(0.1A) and max. input current 1A(10V DC)



• With Potentiometer (POT)

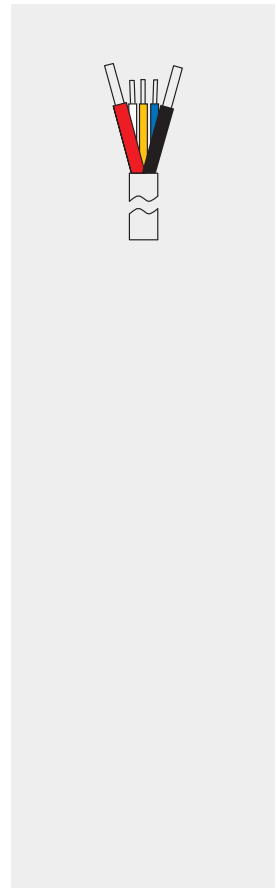
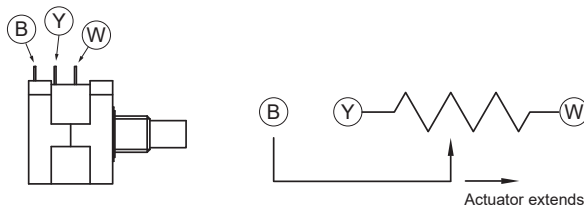
Power		Signal		
Red	Black	White	Yellow	Blue
M+	M-	COM	VCC	DATA

Note:

1. Connect Red (M+) to '+' & Black (M-) to '-' of DC power, the actuator will extend.
2. The resistance value between blue and yellow wires increases when actuator extends, the resistance between blue and white wires decreases at the mean time.
3. Following table shows the resistance allocation for stroke 400 mm. The max. resistance value at its full stroke will be proportional to the stroke specification if the model is less than 400 mm, i.e. the increment of resistance per unit stroke length remains unchanged.

Motor and Spindle code	Resistance value (tolerance: $\pm 0.10K\Omega$)
R3	0.30 ~ 7.50 K Ω
W6, N9	0.30 ~ 7.35 K Ω

4. Input voltage 70V max.
5. Output voltage of signal (Data): Between 0 ~ input voltage of VCC
6. Potentiometer data



Certifications

The 01NS56 actuator is compliant with the following regulations, in terms of the essential conformity requirements of MDD Directive of 93/42/EEC.

Emission	Immunity
EN 60601-1-2:2015 CISPR 11:2015 GROUP 1 CLASS B	EN 60601-1-2:2015 IEC 61000-4-2:2008 IEC 61000-4-3:2006+A1:2007+A2:2010 IEC 61000-4-4:2012 IEC 61000-4-5:2014 IEC 61000-4-6:2013 IEC 61000-4-8:2009

Ordering Key

		01NS56- S - 24R3 - 206 - 256 - 1 1 0 H 0 0 1										
Waterproof case	0: None (IP21) S: Waterproof case (IPX6)											
Motor and Spindle type	24R3 24W6 24N9 (Refer to page 2)											
Retracted length	XXX (Refer to page 3)											
Extended length	XXX (Refer to page 3)											
Front connector	1: Aluminum solid with bushing, Ø10mm 2: Aluminum solid w/o bushing, Ø12mm 3: Zinc slot with bushing, Ø10mm (only for models with max. load ≤2000N) 4: Zinc slot w/o bushing, Ø12mm (only for models with max. load ≤2000N) (Refer to page 4)											
Rear connector	1: Aluminum solid with bushing, Ø10mm 2: Aluminum solid w/o bushing, Ø12mm 3: Aluminum slot with bushing, Ø10mm (only for models with max. load ≤2000N) 4: Aluminum slot w/o bushing, Ø12mm (only for models with max. load ≤2000N) (Refer to page 4)											
Pivot orientation of Rear connector	0: 0° 9: 90° (Refer to page 4)											
Positioning feedback	0: None H: Hall effect sensor x 2 (must go with IPX6 waterproof case) R: Reed sensor P: Potentiometer											
Reserved	0: No meaning											
Motor orientation	0: 0° 9: 90° 3: 30° R: 270° 6: 60° (Refer to page 4)											
Cable length	1: 750 mm straight 2: 1500 mm straight											