

Actuator

ID10

ID10 features various load capability and speed performance, which is suitable for industry field, agricultural and construction machinery and recreational vehicle that requires quick movement. User can choose ACME screw or Ball screw on demand.



Features and Options

Main applications: Industry, Agriculture

Standard features:

- Input voltage: 12 / 24 / 48V DC
- Max. rated load: 3,500N (ACME screw) / 7,000N (Ball screw)
- Max. static load: 7,500N (ACME screw) / 13,600N (Ball screw)
- Max. speed at no load: 72.1mm/sec (Typical value)
- Stroke: 102 / 153 / 203 / 254 / 305 / 457 / 610mm
- IP level: IP54 (Static; non-action)
- Overload protection by clutch
- Extension tube material: Electroplated steel (ACME screw) or stainless steel (Ball screw)
- Color: Black
- Duty cycle: 25%, max. 2 min. continuous operation in 8 min.
- Operating ambient temperature: -25°C~+65°C
- Certified: CE Marking, EMC Directive 2014/30/EU

Options:

- Positioning signal feedback with Hall effect sensor x 1
- Analog and absolute positioning feedback with Potentiometer (POT)
- Preset limit switches
- IP level: IP65, IP66/IP69K (Static; non-action)
- Manual drive socket (Please refer to Page 13)

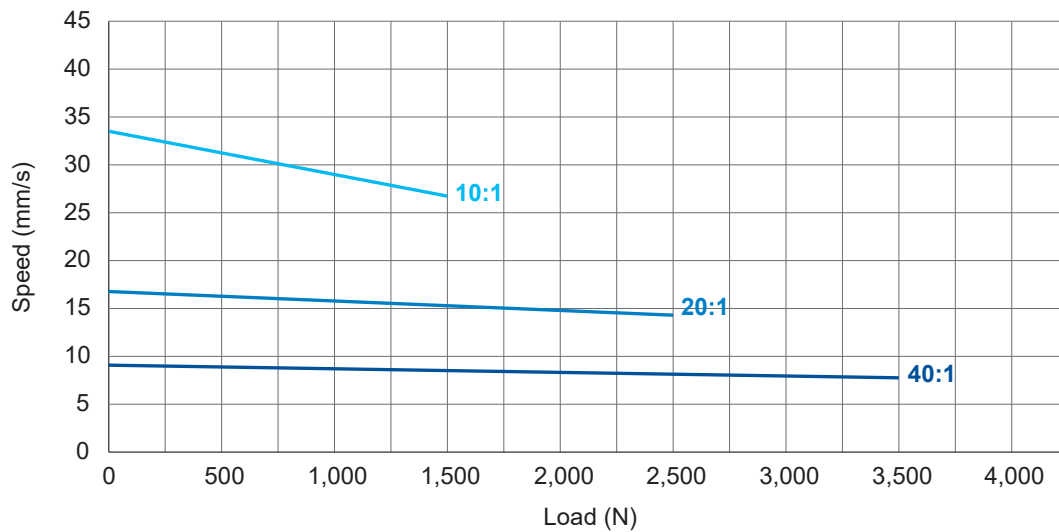
Performance Data

ACME screw type

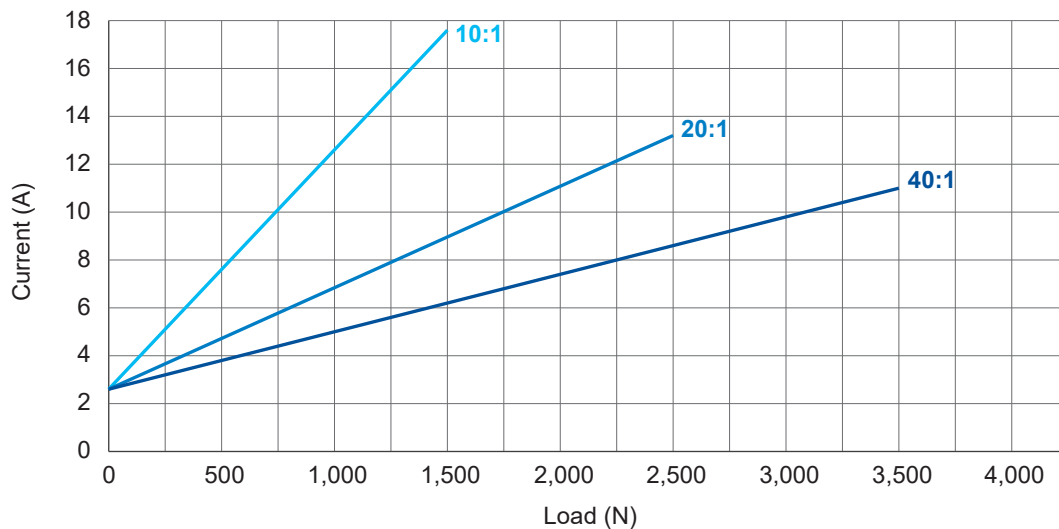
- 12V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	* Typical speed (mm/s)		* Typical current (A)	
			No load	Full load	No load	Full load
ID10-12-G5A-10	10:1	1500	33.5	26.7	2.6	17.6
ID10-12-G5A-20	20:1	2500	16.8	14.3	2.6	13.2
ID10-12-G5A-40	40:1	3500	8.4	7.3	2.6	11.0

Speed VS. Load



Current VS. Load

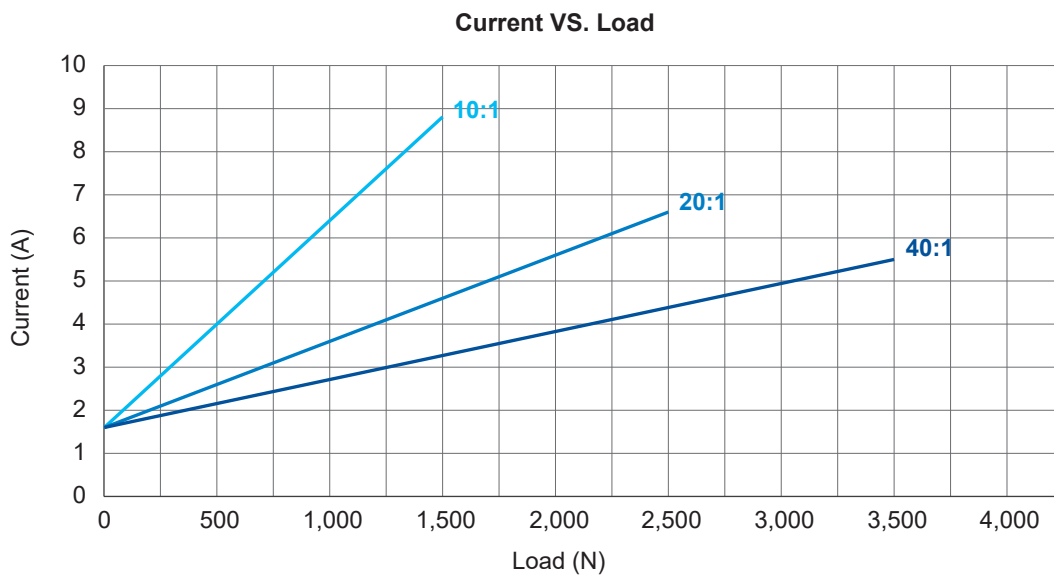
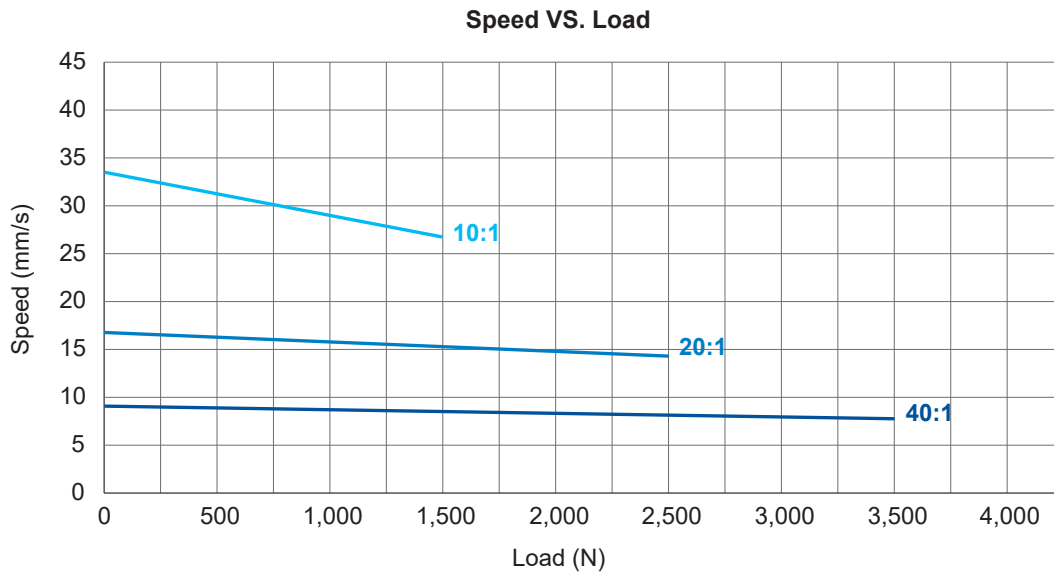


Remarks:

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

● 24V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	* Typical speed (mm/s)		* Typical current (A)	
			No load	Full load	No load	Full load
ID10-24-G5A-10	10:1	1500	33.5	26.7	1.6	8.8
ID10-24-G5A-20	20:1	2500	16.8	14.3	1.6	6.6
ID10-24-G5A-40	40:1	3500	8.4	7.3	1.6	5.5



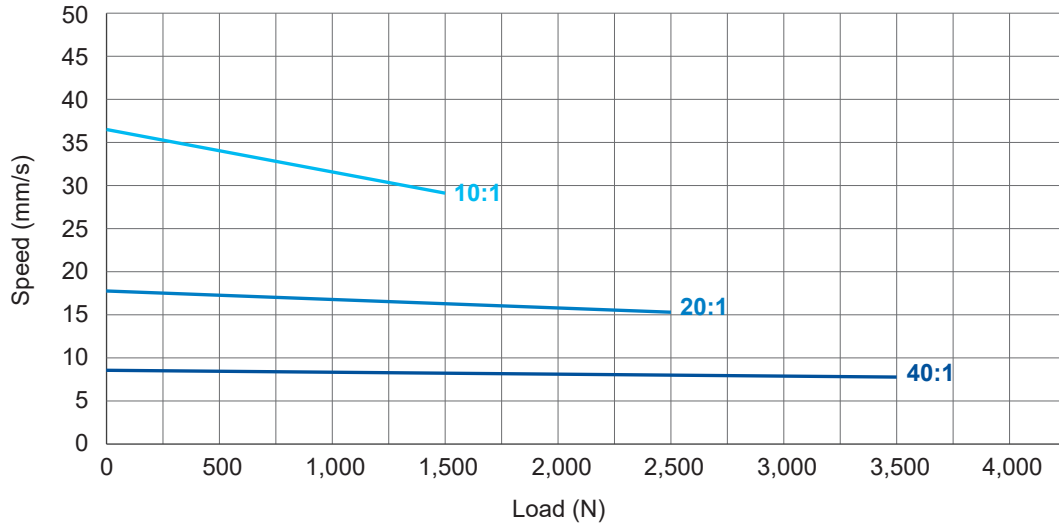
Remarks:

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

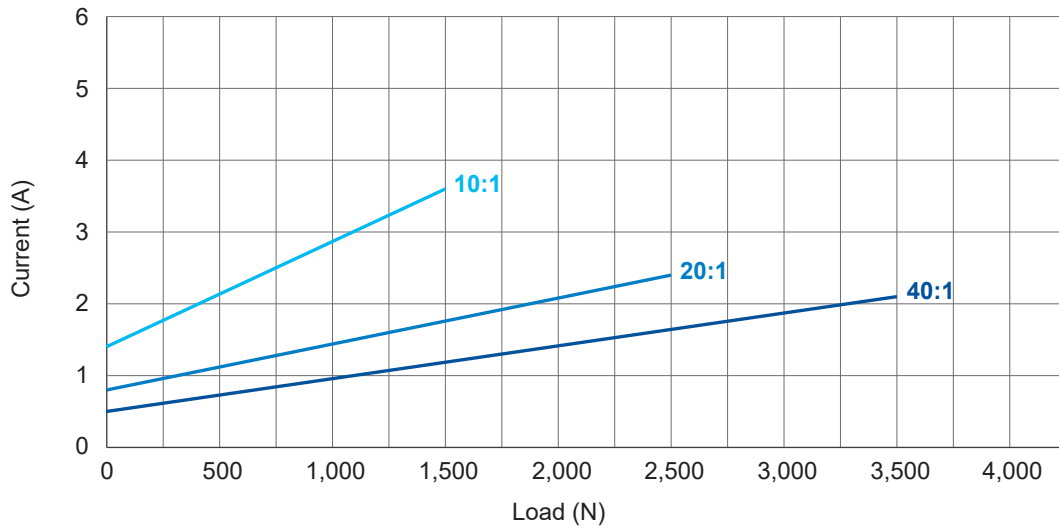
● 48V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	* Typical speed (mm/s)		* Typical current (A)	
			No load	Full load	No load	Full load
ID10-48-G5A-10	10:1	1500	36.5	29.1	1.4	3.6
ID10-48-G5A-20	20:1	2500	17.8	15.3	0.8	2.4
ID10-48-G5A-40	40:1	3500	8.6	7.8	0.5	2.1

Speed VS. Load



Current VS. Load



Remarks:

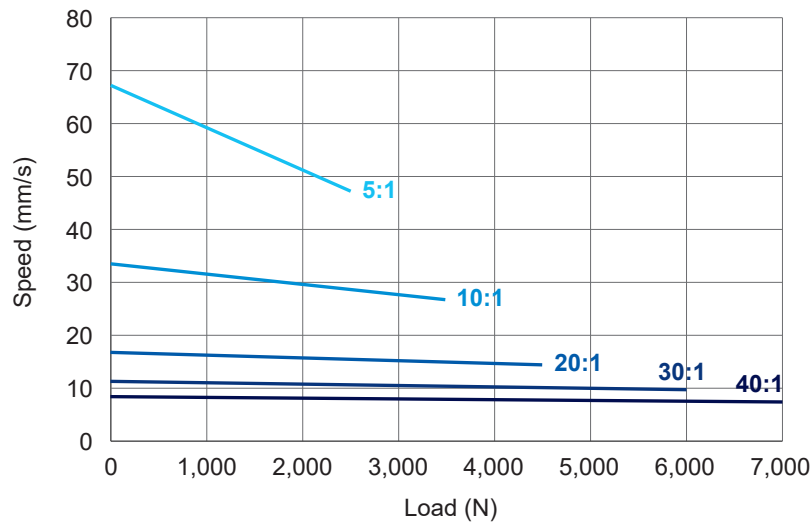
- * The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

Ball screw type

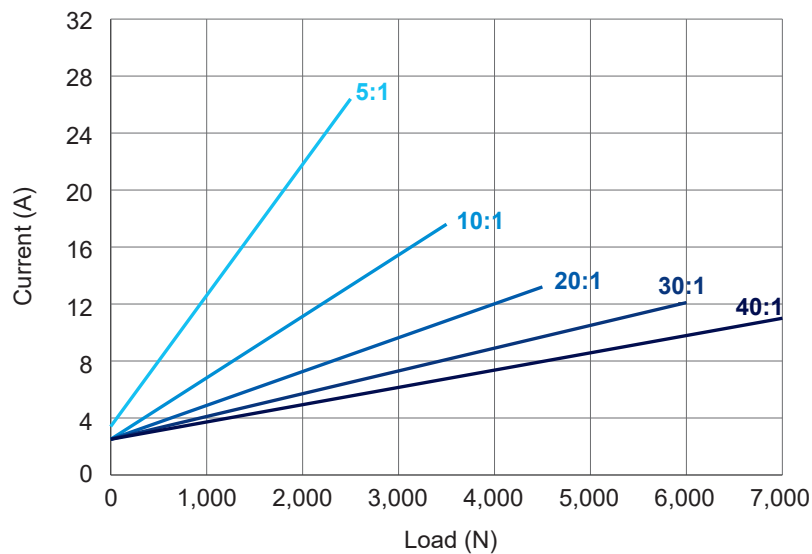
• 12V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	* Typical speed (mm/s)		* Typical current (A)	
			No load	Full load	No load	Full load
ID10-12-G5B-05	5:1	2500	67.1	47.2	3.4	26.4
ID10-12-G5B-10	10:1	3500	33.5	26.7	2.6	17.6
ID10-12-G5B-20	20:1	4500	16.8	14.3	2.6	13.2
ID10-12-G5B-30	30:1	6000	11.2	9.8	2.6	12.1
ID10-12-G5B-40	40:1	7000	8.4	7.4	2.6	11.0

Speed VS. Load



Current VS. Load



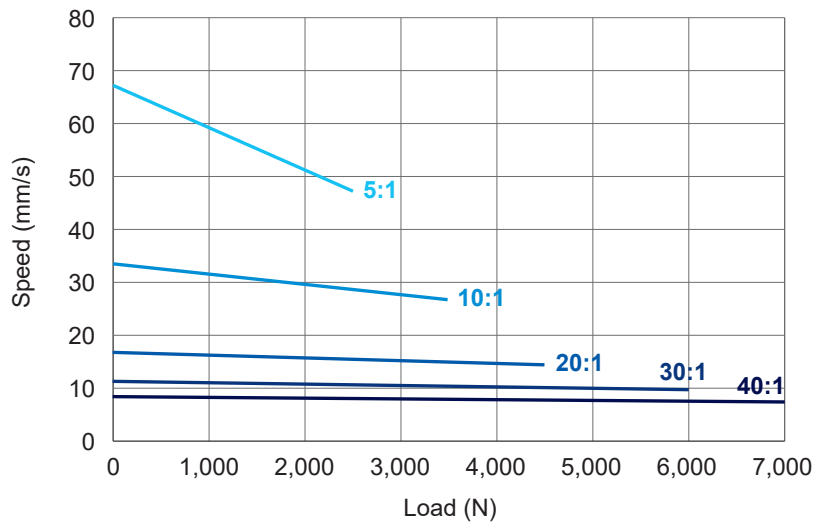
Remarks:

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

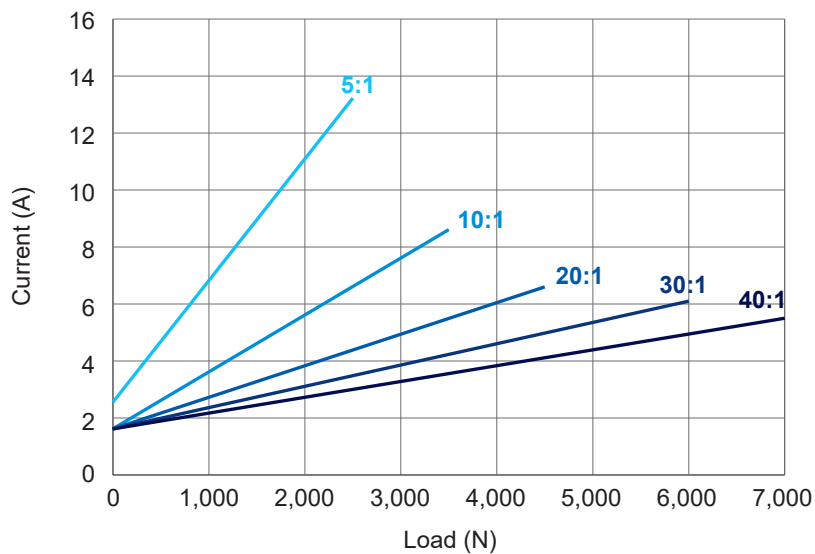
● 24V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	* Typical speed (mm/s)		* Typical current (A)	
			No load	Full load	No load	Full load
ID10-24-G5B-05	5:1	2500	67.1	47.2	2.6	13.2
ID10-24-G5B-10	10:1	3500	33.5	26.7	1.6	8.6
ID10-24-G5B-20	20:1	4500	16.8	14.3	1.6	6.6
ID10-24-G5B-30	30:1	6000	11.2	9.8	1.6	6.1
ID10-24-G5B-40	40:1	7000	8.4	7.4	1.6	5.5

Speed VS. Load



Current VS. Load

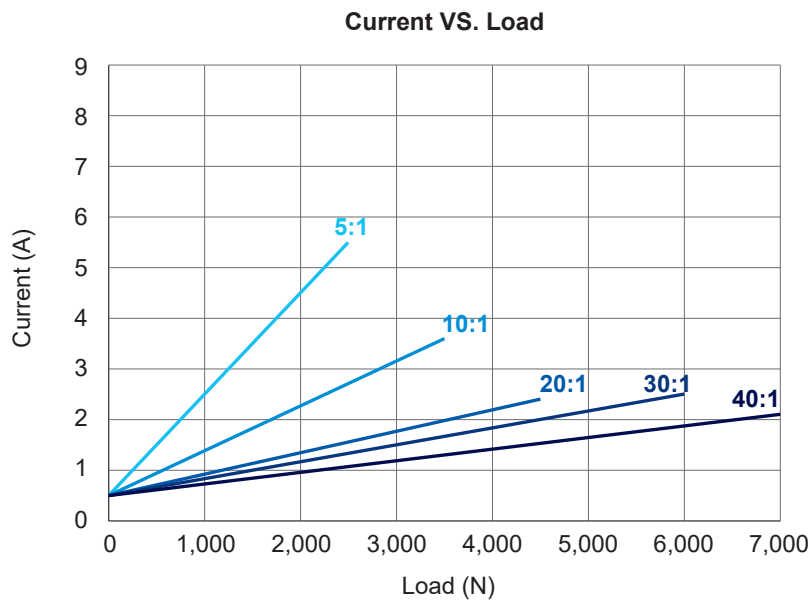
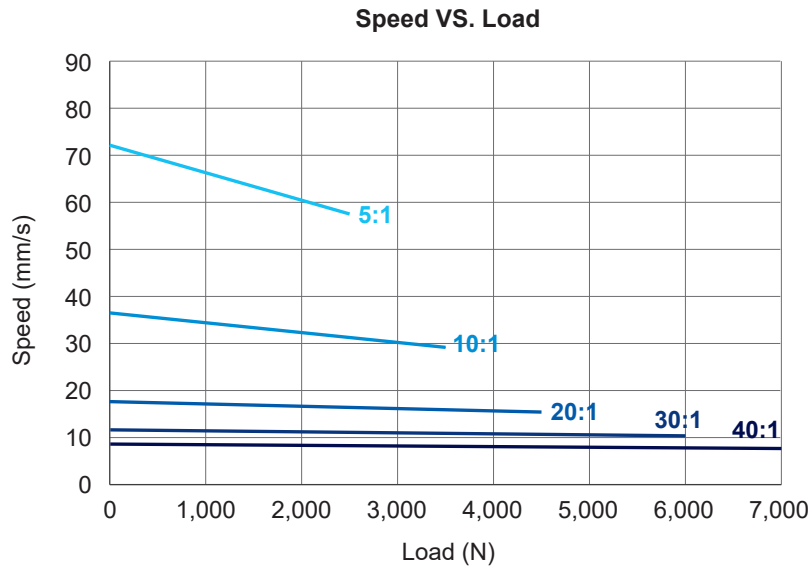


Remarks:

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

● 48V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	* Typical speed (mm/s)		* Typical current (A)	
			No load	Full load	No load	Full load
ID10-48-G5B-05	5:1	2500	72.1	57.5	0.5	5.5
ID10-48-G5B-10	10:1	3500	36.5	29.1	0.5	3.6
ID10-48-G5B-20	20:1	4500	17.8	15.3	0.5	2.4
ID10-48-G5B-30	30:1	6000	11.7	10.3	0.5	2.5
ID10-48-G5B-40	40:1	7000	8.6	7.8	0.5	2.1



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

1. ACME screw type

1.1 Retracted length (A)

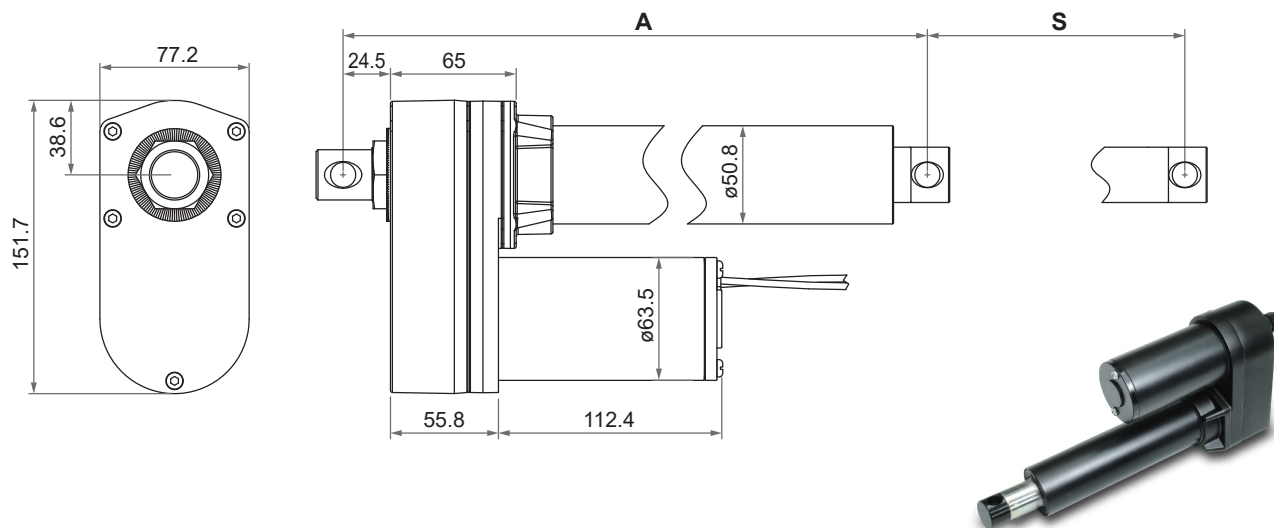
Option	Stroke (S)						
	102 (4")	153 (6")	203 (8")	254 (10")	305 (12")	457 (18")	610 (24")
Basic	262	313	364	414	465	668	821
With positioning feedback	302	353	404	454	505	708	861
With limit switches	359	410	460	511	613	765	918

(Tolerance: ±5mm)

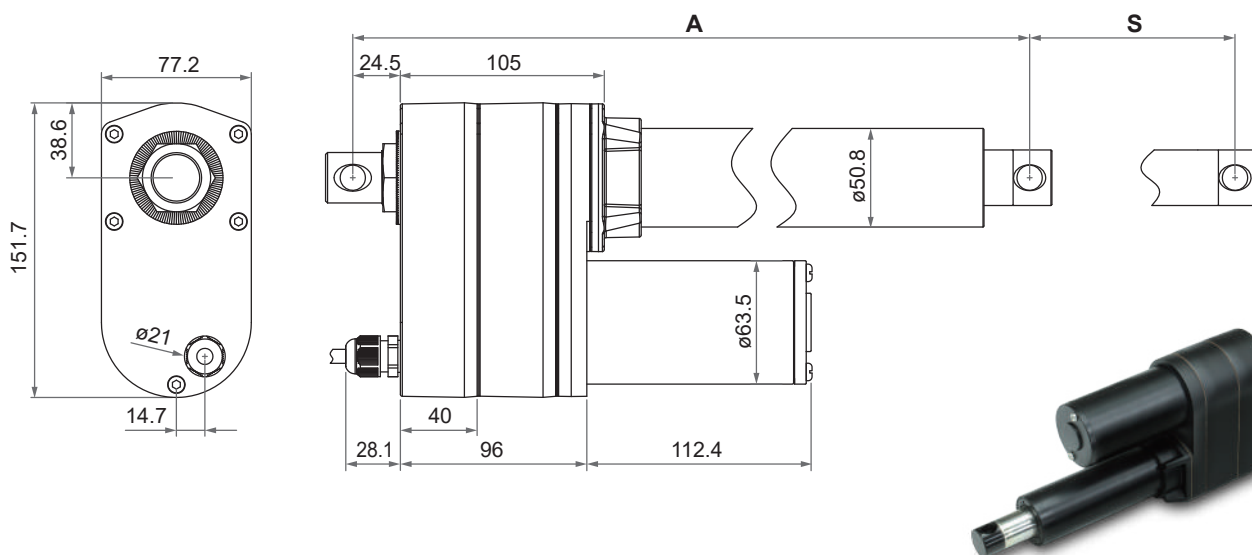
1.2 Drawing

1.2.1 IP54 (Standard) or IP65 (Option)

- Basic (Without limit switch nor positioning feedback)



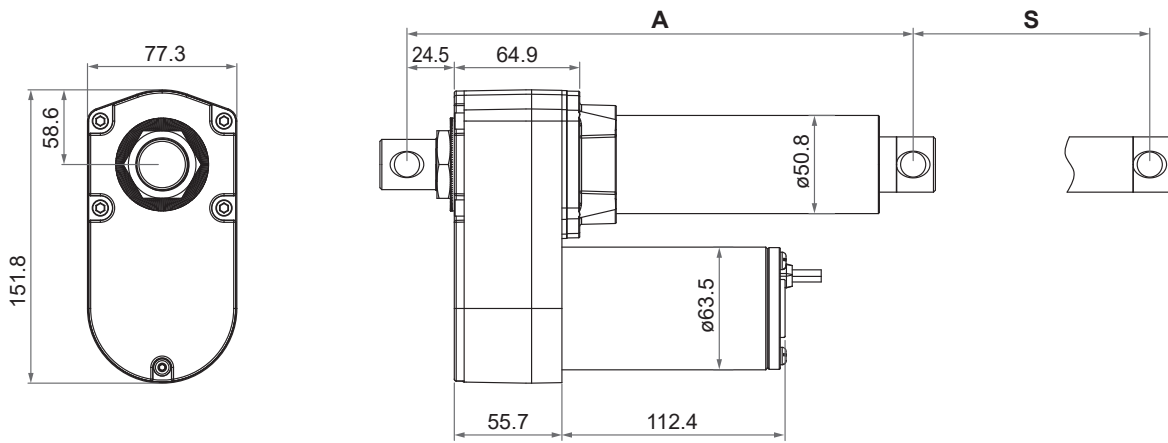
- With limit switches or positioning feedback



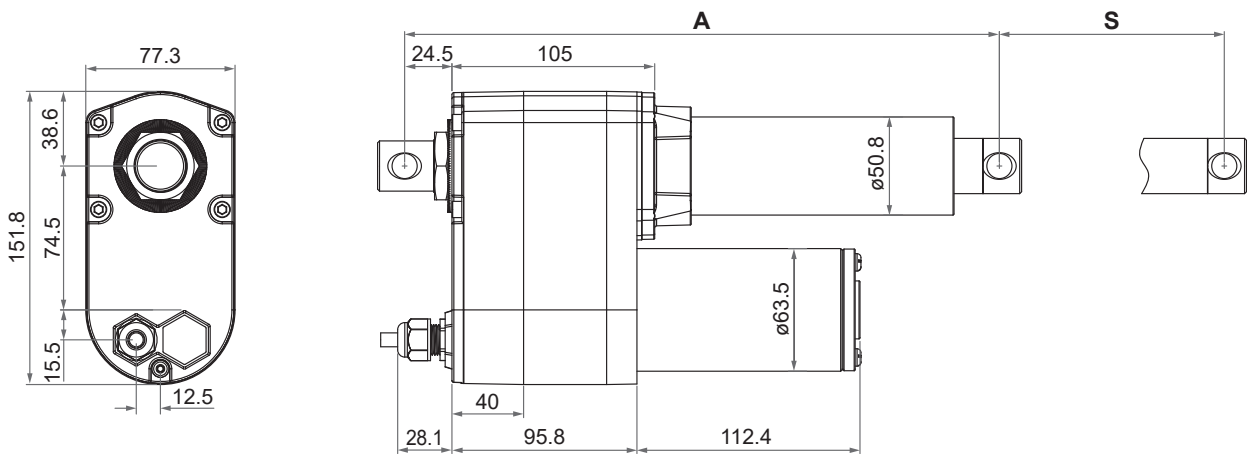
Unit: mm

1.2.2 IP66/IP69K (Option)

- Basic (without limit switch nor positioning feedback)



- With limit switches or positioning feedback



2. Ball screw type

2.1 Retracted length (A)

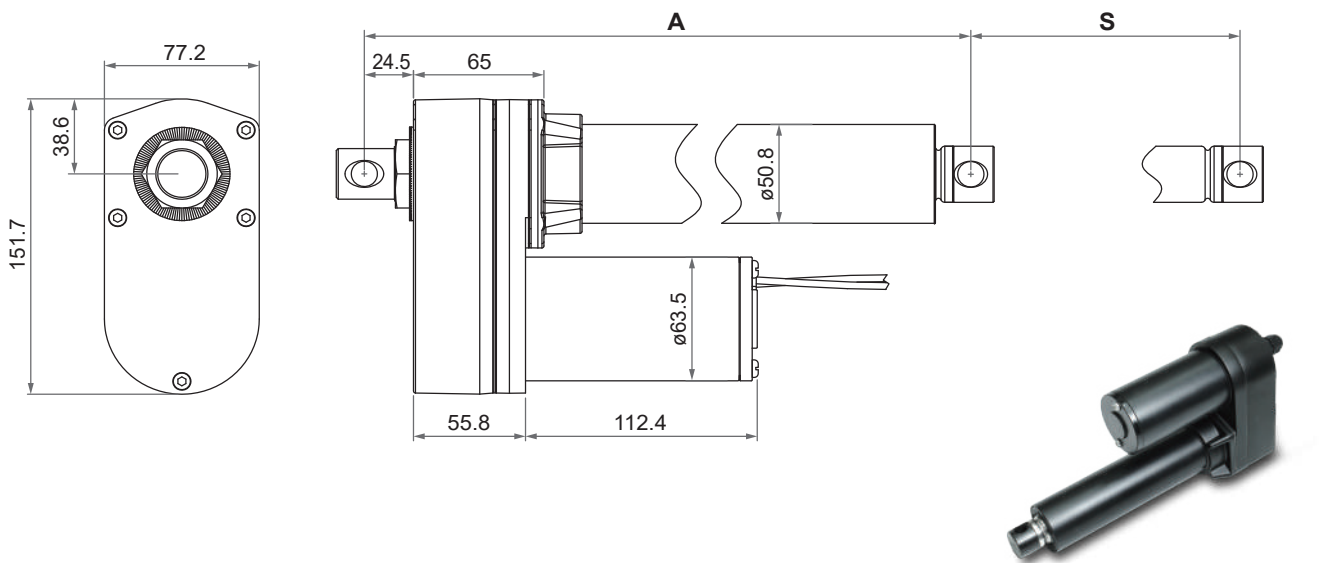
Option	Stroke (S)						
	102 (4")	153 (6")	203 (8")	254 (10")	305 (12")	457 (18")	610 (24")
Basic	302	353	404	455	506	735	888
With positioning feedback	342	393	444	495	546	775	928
With limit switches	399	450	501	552	680	832	985

(Tolerance: ±5mm)

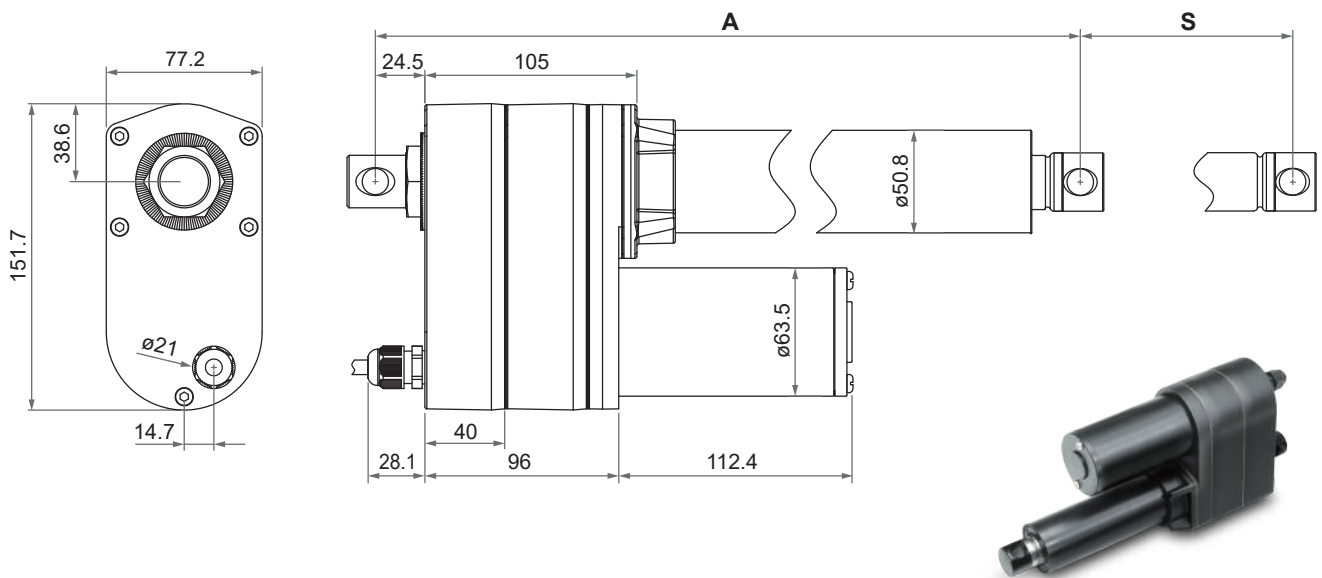
2.2 Drawing

2.2.1 IP54 (Standard) or IP65 (Option)

- Basic (Without limit switch nor positioning feedback)



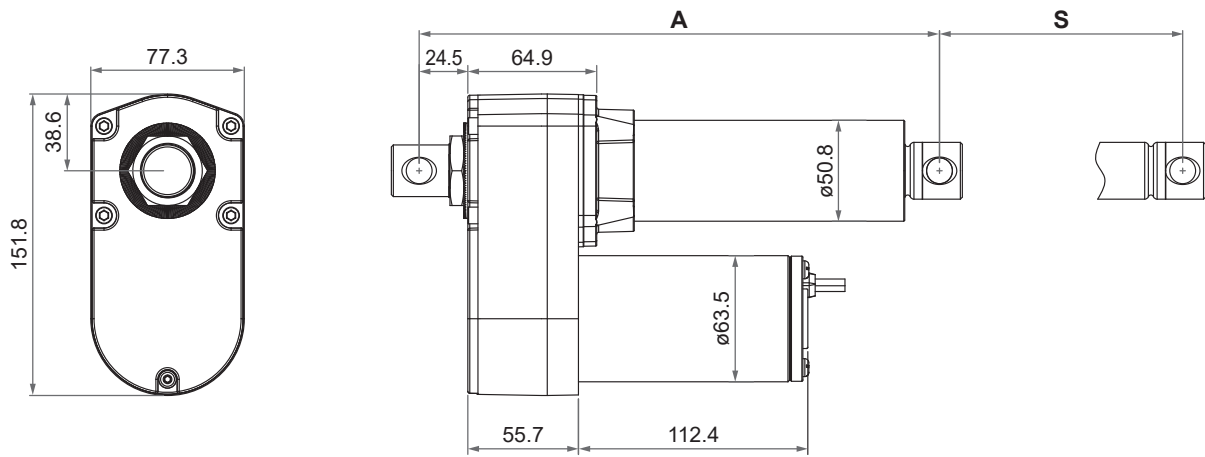
- With limit switches or positioning feedback



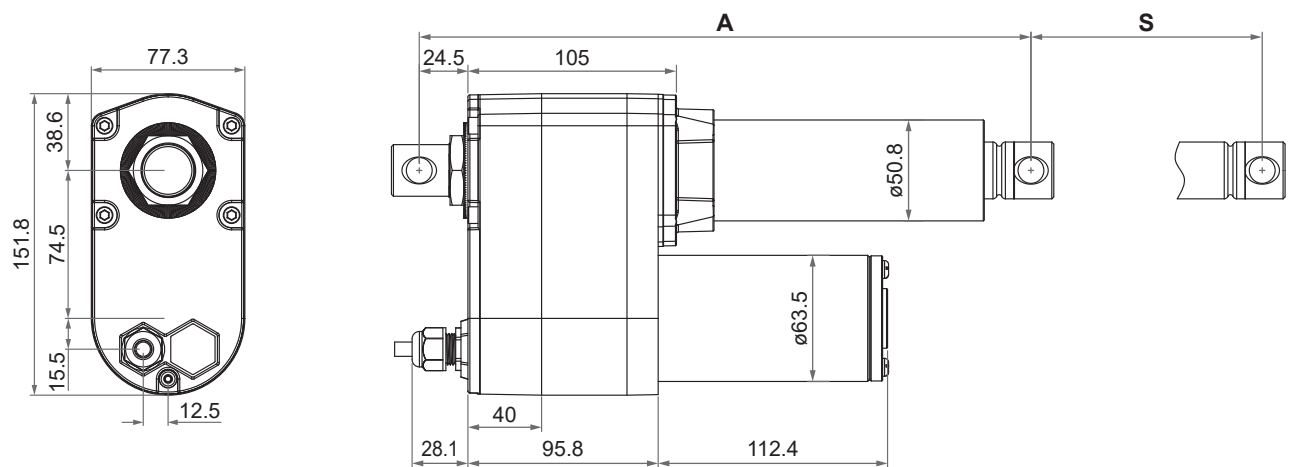
Unit: mm

2.2.2 IP66/IP69K (Option)

- Basic (Without limit switch nor positioning feedback)



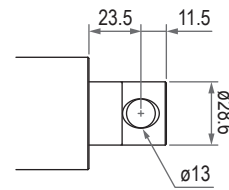
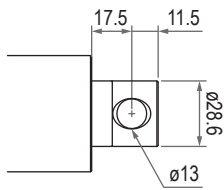
- With limit switches or positioning feedback



3. Front connector

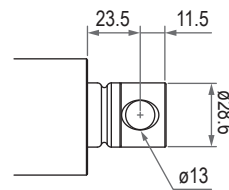
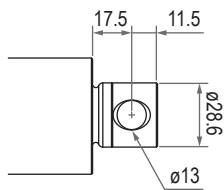
3.1 ACME screw type

- Basic or positioning feedback
- With limit switches or limit switches + positioning feedback

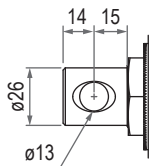


3.2 Ball Screw type

- Basic or positioning feedback
- With limit switches or limit switches + positioning feedback

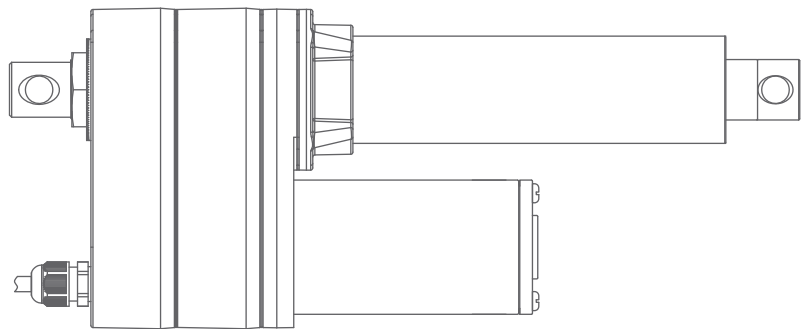
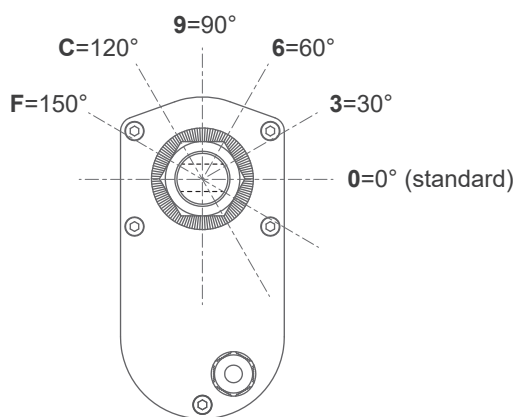


4. Rear connector



Unit: mm

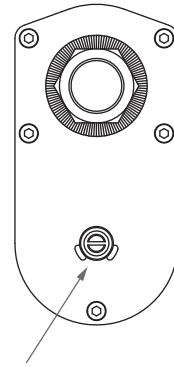
5. Pivot orientation of rear connector



Note: As an example in 0° pivot of rear connector.

6. Manual drive socket

- Available with basic, IP54 and gear ratio 5, 10 or 20:1 options only.
- Not applicable to IP65, IP66/IP69K, limit switch and/or positioning feedback options.
- Power wires outlet at motor cap. (Refer to Page 8 or 10)
- Please refer to “ID10 User Guide” for operation steps.



Drive the hex socket on the motor shaft by wrench or electric screwdriver with 8mm hex key.

Compatibility

Product	Model	ID10 spec
Controller	CI72	Standard
Accessory	MB30 mounting bracket (Fig. 1)	Standard, mounting hole \varnothing 13mm



Fig. 1

Cable with Flying Leads

- **Basic (Without limit switch nor positioning feedback)**

Gear ratio: 5:1, 10:1, 20:1

	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		

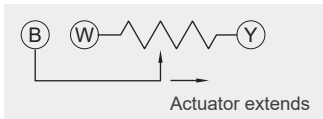
Gear ratio: 30:1, 40:1

	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to "Vdc -" & black wire to "Vdc +" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		


- **With limit switches**

	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		

- **With Potentiometer (POT) absolute positioning feedback**

	Wire color	Definition	Descriptions																
Power wires	Red	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.																
	Black																		
Signal wires	Yellow	Vin	Input voltage 70V max.																
	Blue	POT output	1. Potentiometer specification: <ul style="list-style-type: none"> - 10K ohm, 10 turns. - Tolerance $\pm 5\%$ 2. Output voltage: The voltage (resistance) between blue and white increases linearly from about 0 when the actuator extends, and decreases when it retracts. <div style="text-align: center;">  </div> 3. There are different resolutions according to the stroke length (as table below) <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Stroke (mm)</th> <th>Resistance (tolerance: $\pm 0.3K\Omega$)</th> </tr> </thead> <tbody> <tr> <td>102 (4")</td> <td>0.3 ~ 8.1K</td> </tr> <tr> <td>153 (6")</td> <td>0.3 ~ 8.7K</td> </tr> <tr> <td>203 (8")</td> <td>0.3 ~ 9.2K</td> </tr> <tr> <td>254 (10")</td> <td>0.3 ~ 7.4K</td> </tr> <tr> <td>305 (12")</td> <td>0.3 ~ 8.8K</td> </tr> <tr> <td>457 (18")</td> <td>0.3 ~ 9.4K</td> </tr> <tr> <td>610 (24")</td> <td>0.1 ~ 9.9K</td> </tr> </tbody> </table>	Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$)	102 (4")	0.3 ~ 8.1K	153 (6")	0.3 ~ 8.7K	203 (8")	0.3 ~ 9.2K	254 (10")	0.3 ~ 7.4K	305 (12")	0.3 ~ 8.8K	457 (18")	0.3 ~ 9.4K	610 (24")	0.1 ~ 9.9K
			Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$)															
	102 (4")	0.3 ~ 8.1K																	
153 (6")	0.3 ~ 8.7K																		
203 (8")	0.3 ~ 9.2K																		
254 (10")	0.3 ~ 7.4K																		
305 (12")	0.3 ~ 8.8K																		
457 (18")	0.3 ~ 9.4K																		
610 (24")	0.1 ~ 9.9K																		
White	GND																		

- With single Hall effect sensor positioning feedback

	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		
Signal wires	White	Vin	Voltage input range: 5 ~ 20V
	Yellow	Hall output	High= Input - 1.2V ($\pm 0.6V$) Low= GND Hall signal data:  Hall effect sensor resolution: 20ppi, 1.27mm/pulse (0.787pulses/mm)
	Blue	GND	

Certifications

ID10 actuator is compliant with the following regulations, in terms of the essential conformity requirements of EMC Directive of 2014/30/EU.

Emission	Immunity
EN55014-1:2017+A11:2020	EN 55014-2:2015

Ordering Key

ID10- 24 - G5B - 20 - 102 - 0 0 0 P L 4 0 0

Input voltage	12: 12V DC 24: 24V DC 48: 48V DC
Motor and spindle type	G5A: 4500rpm / 5.08mm pitch / ACME screw G5B: 4500rpm / 5.08mm pitch / Ball screw
Gear ratio	10: 10:1 20: 20:1 40: 40:1 05: 5:1 (Ball screw only) 30: 30:1 (Ball screw only)
Stroke	102: 102mm (4") 153: 153mm (6") 203: 203mm (8") 254: 254mm (10") 305: 305mm (12") 457: 457mm (18") 610: 610mm (24")
Front connector	0: Standard
Rear connector	0: Standard
Pivot orientation of rear connector (Refer to Page 12)	0: 0° (Standard) 3: 30° 6: 60° 9: 90° C: 120° F: 150°
Positioning feedback	0: None H: Hall effect sensor x 1 P: Potentiometer (POT)
Limit switches	0: None L: Limit switches
IP level	4: IP54 (Standard) 5: IP65 9: IP66/IP69K
Option	0: None M: Manual drive socket (Refer to Page 13 for conditions to order)
Cable length	0: 250mm straight 1: 500mm straight 3: 1000mm straight 5: 1500mm straight



More information about installation and usage is provided in ID10 User Guide, which can be downloaded from Moteck website.

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