GLIDEFORCE

LINEAR ACTUATOR
MEDIUM DUTY SERIES

Product Data Sheet

Medium duty line of compact actuators with high load capacity for use in space restricted applications.

Standard Features:

- Compact design
- All aluminum frame and extension tube
- Nominal stroke lengths: 4” [100mm], 6” [150mm], 8” [200mm], 10” [250mm], 12” [300mm]
- Input voltages available: 12VDC, 24VDC, 48VDC
- Gear ratios available: 10:1, 20:1(standard), 30:1, 40:1, 50:1
- Dynamic load range: from 112 lbf [500 Newtons] to 562 lbf. [2,500 Newtons]
- Maximum static load: 337 lbf [1,500 Newtons] (10:1 gear ratio)
  1,012 lbf [4,500 Newtons] (20, 30, 40, 50:1 gear ratios)
- Maximum current draw: 4.6 Amps @ 12 VDC
- Speed at no load: 0.24 in/sec [6.1 mm/sec] –to- 1.08 in/sec [27.5 mm/sec]
- Speed at full load: 0.17 in/sec [4.4 mm/sec] –to- 0.77 in/sec [19.5 mm/sec]
- Standard preset limit switches at both ends of stroke
- Noise level: ≤70dB
- Mounting hole diameter (both ends): 3/8” [10mm] (standard), 8mm is available
- Duty cycle: 25% or 1 min continuous operation in 4 min.
- Working temperature: -13F [-25C] to +149F [+65C]
- IP rating: IP65, (IP69K – Special Order)
- Certified: CE marking, EMC Directive 2014/30/EU

Accessories:

- Mounting brackets
- Wired and wireless controllers
- Direction reversing relays
- Direction reversing switches

concentric™ INTERNATIONAL

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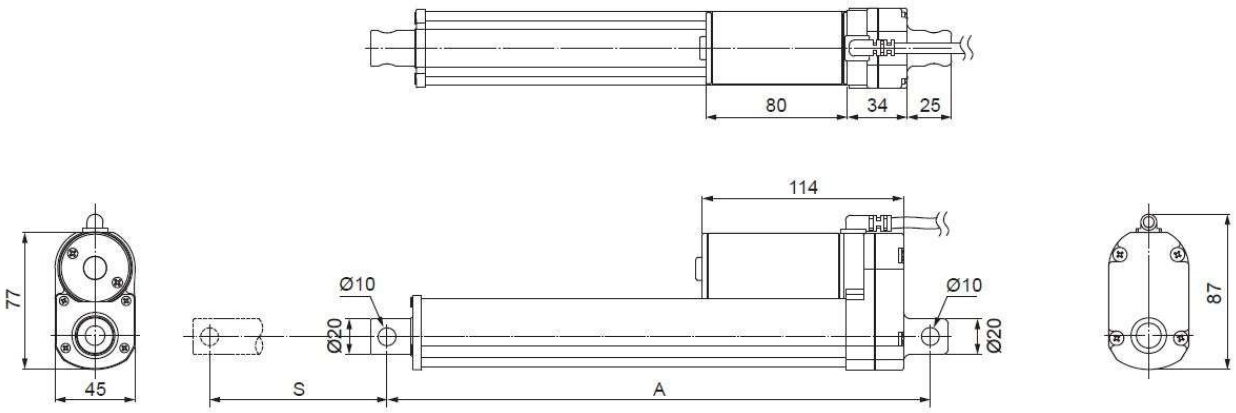
Rev. 20241017

Dimensions – Without Potentiometer, With or Without Hall Effect Sensors

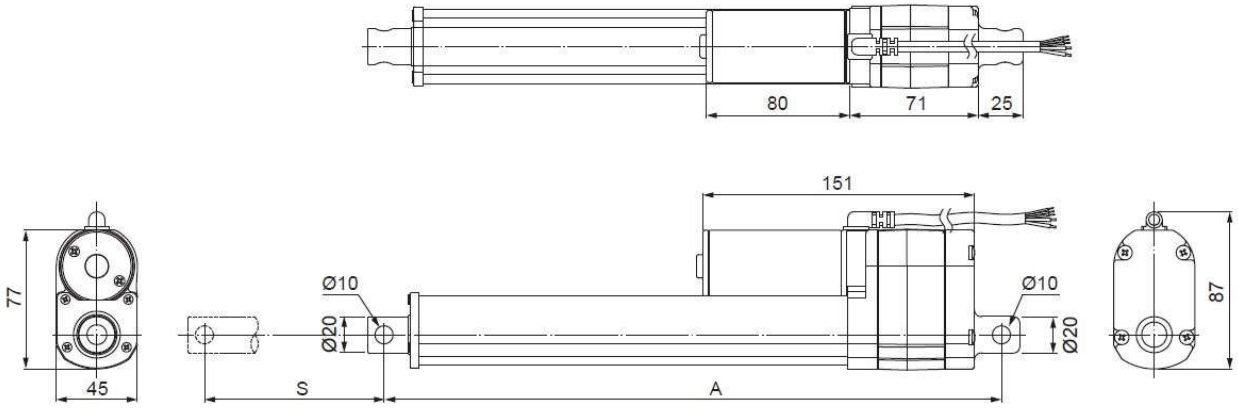


Unit: mm

Nominal Stroke	4”		6”		8”		10”		12”	
	in	mm	in	mm	in	mm	in	mm	in	mm
Actual Stroke (S)	3.94	100	5.91	150	7.87	200	9.84	250	11.81	300
Retracted Length (A)	8.07	205	10.04	255	12.01	305	13.98	355	15.94	405
Extended Length	12.01	305	15.94	405	19.88	505	23.82	605	27.76	705

Tolerance: ± 0.12” [3 mm]

Dimensions – With Potentiometer



Unit: mm

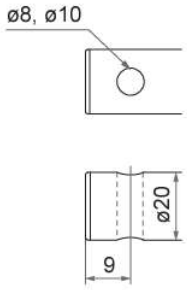
Nominal Stroke	4”		6”		8”		10”		12”	
	in	mm	in	mm	in	mm	in	mm	in	mm
Actual Stroke (S)	3.94	100	5.91	150	7.87	200	9.84	250	11.81	300
Retracted Length (A)	9.53	242	11.50	292	13.46	342	15.43	392	17.40	442
Extended Length	13.47	342	17.41	442	21.33	542	25.27	642	29.21	742

Tolerance: ± 0.12” [3 mm]

End Connector Option

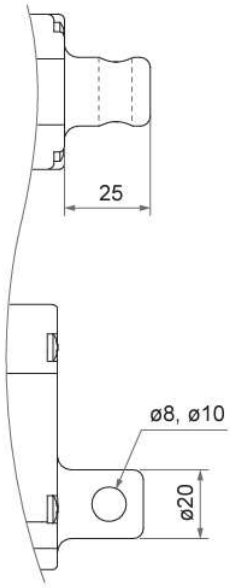
- **Front connector**

  Drilled hole, ø10mm
  Drilled hole, ø8mm



- **Rear connector**

  Drilled hole, ø10mm
  Drilled hole, ø8mm



Unit: mm

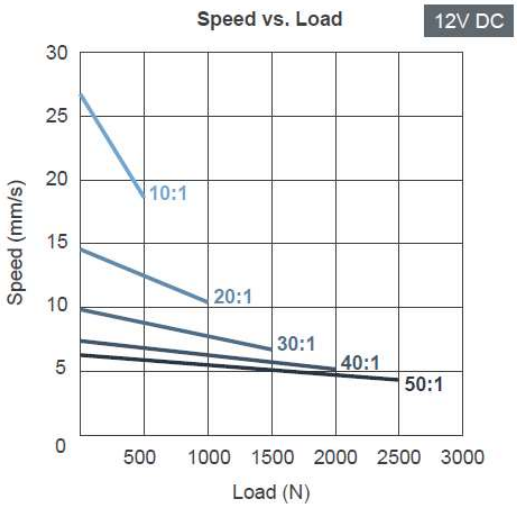
Contact Concentric Sales for ordering details

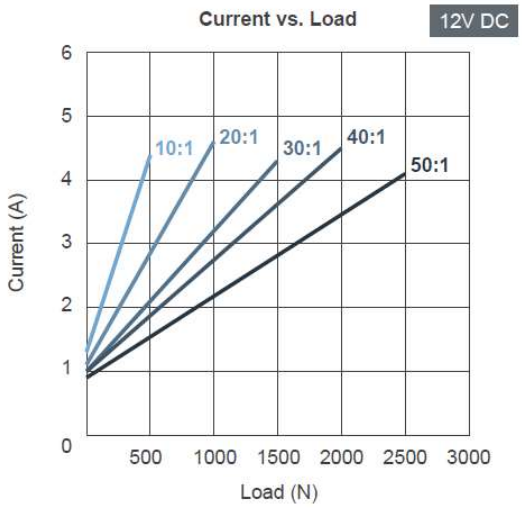
Performance Data

12V

Gear Ratio	Max Load/Dynamic		Self-Locking Ability		Speed/No Load/12V		Speed/Max Load/12V	
	lbf. [US]	Newtons	lbf. [US]	Newtons	inches /sec	mm/sec	inches /sec	mm/sec
10:1	112	500	337	1500	1.06	26.8	0.73	18.6
20:1	225	1000	1012	4500	0.58	14.7	0.41	10.4
30:1	337	1500	1012	4500	0.39	9.9	0.27	6.8
40:1	450	2000	1012	4500	0.29	7.4	0.20	5.1
50:1	562	2500	1012	4500	0.24	6.2	0.17	4.4

Gear Ratio	Typical Current (A)	
	No Load	Full Load
	12 VDC	12 VDC
10:1	1.3	4.4
20:1	1.1	4.6
30:1	1.0	4.3
40:1	1.0	4.5
50:1	0.9	4.1





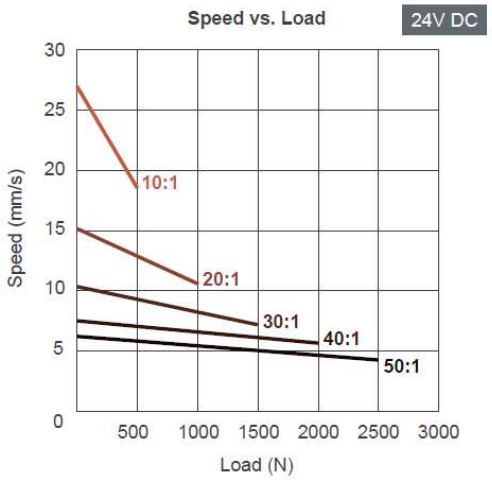
The typical speed or typical current means the average value, neither upper nor lower limit.
The Performance Curves are made with typical values.

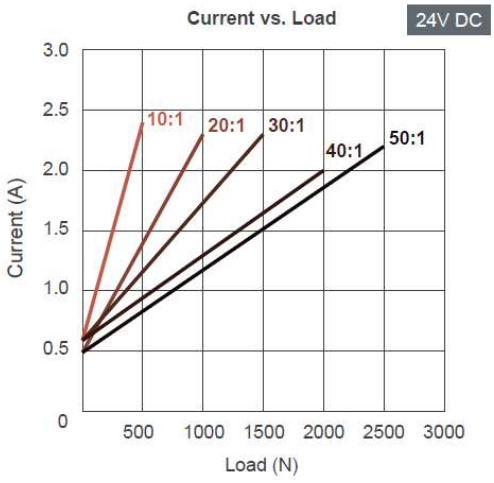
Performance Data

24V

Gear Ratio	Max Load/Dynamic		Self-Locking Ability		Speed/No Load/24V		Speed/Max Load/24V	
	lbf. [US]	Newtons	lbf. [US]	Newtons	inches /sec	mm/sec	inches /sec	mm/sec
10:1	112	500	337	1500	1.06	27.0	0.74	18.7
20:1	225	1000	1012	4500	0.59	15.1	0.42	10.7
30:1	337	1500	1012	4500	0.41	10.3	0.28	7.2
40:1	450	2000	1012	4500	0.30	7.6	0.22	5.7
50:1	562	2500	1012	4500	0.24	6.1	0.17	4.4

Gear Ratio	Typical Current (A)	
	No Load	Full Load
	24 VDC	24 VDC
10:1	0.6	2.4
20:1	0.5	2.3
30:1	0.6	2.3
40:1	0.6	2.3
50:1	0.5	2.3





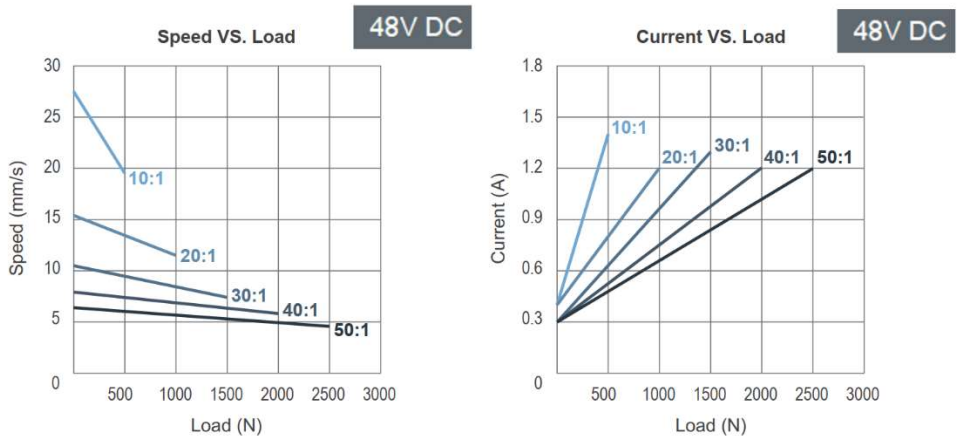
The typical speed or typical current means the average value, neither upper nor lower limit. The Performance Curves are made with typical values.

Performance Data

48V

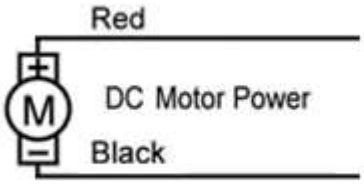
Gear Ratio	Max Load/Dynamic		Self-Locking Ability		Speed/No Load/48V		Speed/Max Load/48V	
	lbf. [US]	Newtons	lbf. [US]	Newtons	inches /sec	mm/sec	inches /sec	mm/sec
10:1	112	500	337	1500	1.08	27.5	0.77	19.5
20:1	225	1000	1012	4500	0.61	15.4	0.45	11.5
30:1	337	1500	1012	4500	0.41	10.5	0.29	7.4
40:1	450	2000	1012	4500	0.31	7.9	0.23	5.8
50:1	562	2500	1012	4500	0.25	6.4	0.18	4.6

Gear Ratio	Typical Current (A)	
	No Load	Full Load
	48 VDC	48 VDC
10:1	0.4	1.4
20:1	0.4	1.2
30:1	0.3	1.3
40:1	0.3	1.2
50:1	0.3	1.2



The typical speed or typical current means the average value, neither upper nor lower limit.
The Performance Curves are made with typical values.

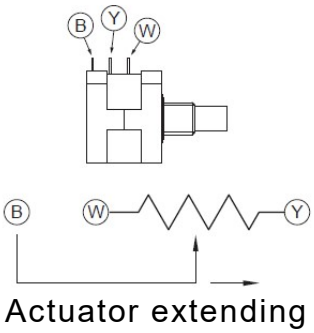
Electrical



Without Potentiometer or with Hall sensors
Red + // Black - : Extend
Red - // Black + : Retract

With Potentiometer *
Red - // Black + : Extend
Red + // Black - : Retract

* Notice the wire functions are reversed with potentiometer-equipped actuators

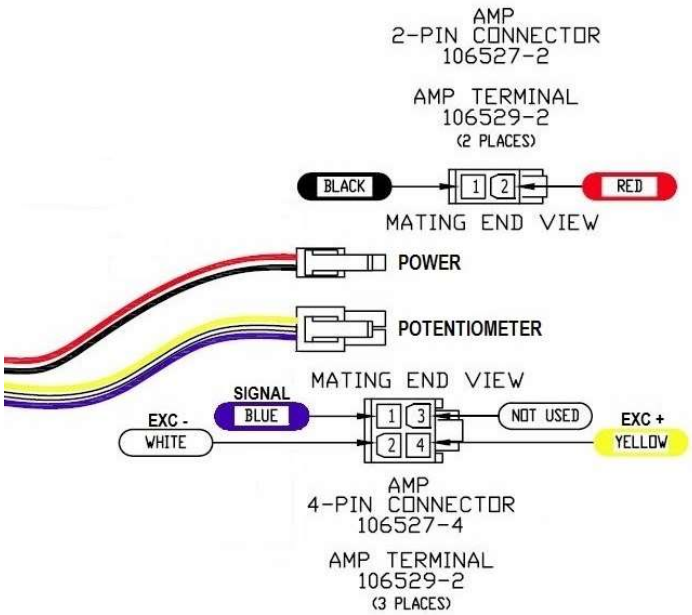


When fully retracted, the potentiometer reading will be in or near the range of 0 - 600Ω (between the blue and the white wires).

When fully extended, the potentiometer reading will be in or near the range of 8K - 10KΩ (between the blue and the white wires).

Input voltage: 70v maximum

Connector Wiring (potentiometer-equipped actuators only)

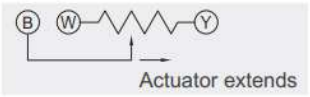


Electrical Continued

- **Basic, without positioning feedback & flying leads**

	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		

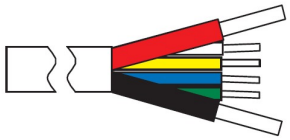
- **With potentiometer (POT) absolute positioning feedback**

	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to retract the actuator. Switch the polarity of DC input to extend it.
	Black		
Signal wires	Yellow	Vin	Input voltage 70V max.
	Blue	POT output	1. Potentiometer specification: - 10K ohm, 10 turns. - Tolerance ±5% 2. Output voltage: The voltage between Blue and White increases linearly from about 0 when the actuator extends, and decreases when it retracts.  3. There are different resolutions according to the stroke length (as table below)
	White	GND	

Stroke	Resistance (tolerance: ±0.3KΩ)
100mm	0.3 ~ 8.8K
150mm	0.3 ~ 9.6K
200mm	0.3 ~ 8.9K
250mm	0.3 ~ 9.5K
300mm	0.3 ~ 9.5K

Electrical Continued

With Hall sensors and flying leads

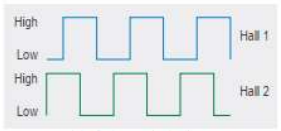


Red	Motor Power
Black	Motor Power
White	GND
Yellow	Vin Hall sensor power
Blue	Hall 1 data
Green	Hall 2 data

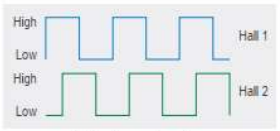
Recommended 10K pullup resistors at Hall 1 Data and Hall 2 Data to Vin.

- **With dual Hall effect sensor positioning feedback**

	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" to extend the actuator. Switch the polarity of DC input to retract it.
	Black		
Signal wires	Yellow	Vin	Sensor input voltage (range: 3.5 ~ 20V)
	Blue	Hall 1 output	High= [Vin – 1.2V] (±0.6V) Low= GND Hall signal data: when the actuator is extending, the Hall 2 wave signal leads Hall 1.
	Green	Hall 2 output	
	White	GND	



Actuator extends



Actuator retracts

Hall effect sensor resolution:

Gear Ratio	Resolution	
	pulses/mm	pulses/inch
10:1	2.56	65.02
20:1	4.75	120.65
30:1	7.16	181.86
40:1	9.66	245.36
50:1	11.82	300.23

Ordering Key

MD □□ □□ □□ ▭ - □

Input Voltage
12 : 12 VDC
24 : 24 VDC
48 : 48 VDC

Gear Ratio
10 : 10:1
20 : 20:1 – Standard gear ratio
30 : 30:1
40 : 40:1
50 : 50:1

Not all gear ratios stocked*

Stroke (nominal)
04 : 4” [100 mm]
06 : 6” [150 mm]
08 : 8” [200 mm]
10 : 10” [250 mm]
12 : 12” [300 mm]

Additional stroke lengths available*

Option
Blank : Without Hall Sensor or Potentiometer
H2 : Dual Hall Sensor
P: Potentiometer

IP Rating
<Blank> : IP65
69 : IP69K

- Not all combinations stocked

*Contact Concentric Sales for custom options. Options can include, and are not limited to custom cable lengths, specific electrical connectors, motor speed options, single Hall sensor configurations, and custom stroke lengths.

Concentric International
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www.concentricintl.com
Rev. 20241017

Certifications

Glideforce medium duty actuators are compliant with the following regulations, in terms of the essential conformity requirements of the EMC Directive of 2014/30/EU

Emission	Immunity
EN 61000-6-3:2007 + A1:2011	EN 61000-6-1:2007 IEC 61000-4-2:2008 IEC 61000-4-3:2006+A1:2007+A2:2010 IEC 61000-4-8:2009

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