

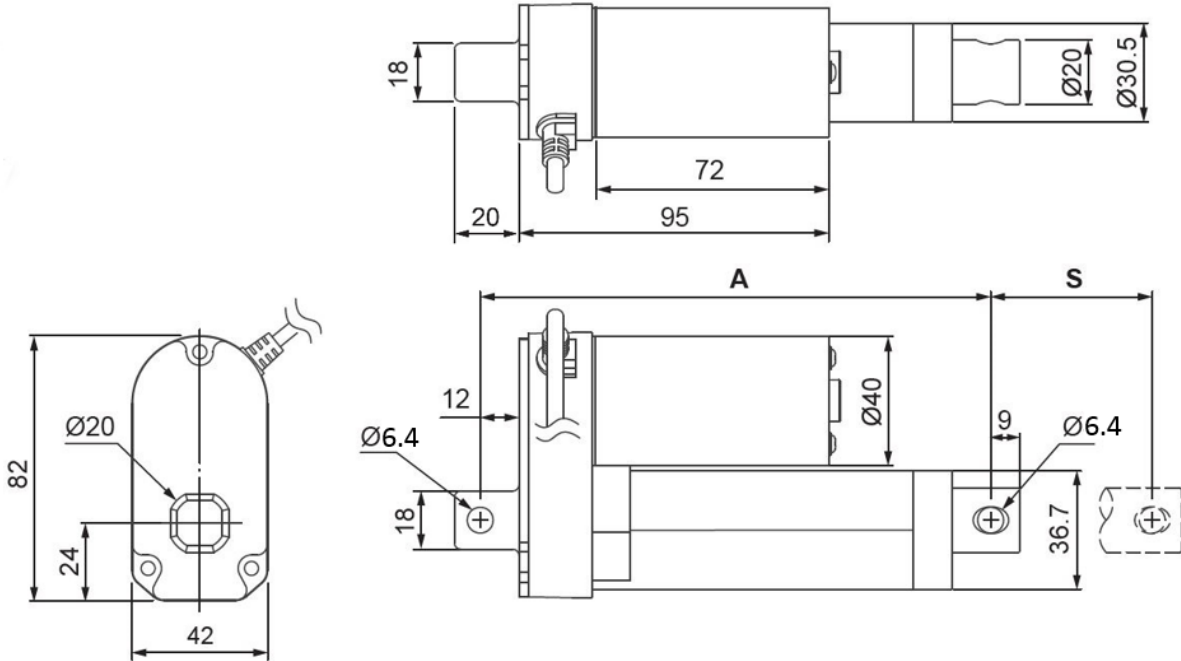
Product Data Sheet**Standard Features:**

- Compact design
- All aluminum frame and extension tube
- Nominal stroke lengths: 2" [50mm], 4" [100mm], 6" [150mm], 8" [200mm], 10" [250mm], 12" [300mm]
- Input voltage: 12VDC, 24VDC
- Gear ratios available: 20:1, 30:1
- Dynamic load range: 112 lbs. [500 Newtons] –to- 180 lbs. [800 Newtons] (push/pull)
- Maximum static load: 562 lbs. [2,500 Newtons]
- Maximum current draw: 1.2 Amps @ 12 VDC
- Speed at no load: 0.15 in/sec [3.8 mm/sec] –to- 0.23 in/sec [5.8 mm/sec]
- Speed at full load: 0.10 in/sec [2.6 mm/sec] –to- 0.15 in/sec [3.9 mm/sec]
- Standard preset limit switches at both ends of stroke
- Noise level: ≤55dB
- Mounting hole diameter (both ends): 1/4" [6.4mm]
- Duty cycle: 25% or 1 min continuous operation in 4 min.
- Working temperature: -13F [-25C] to +149F [+65C]
- IP rating: IP65

Accessories:

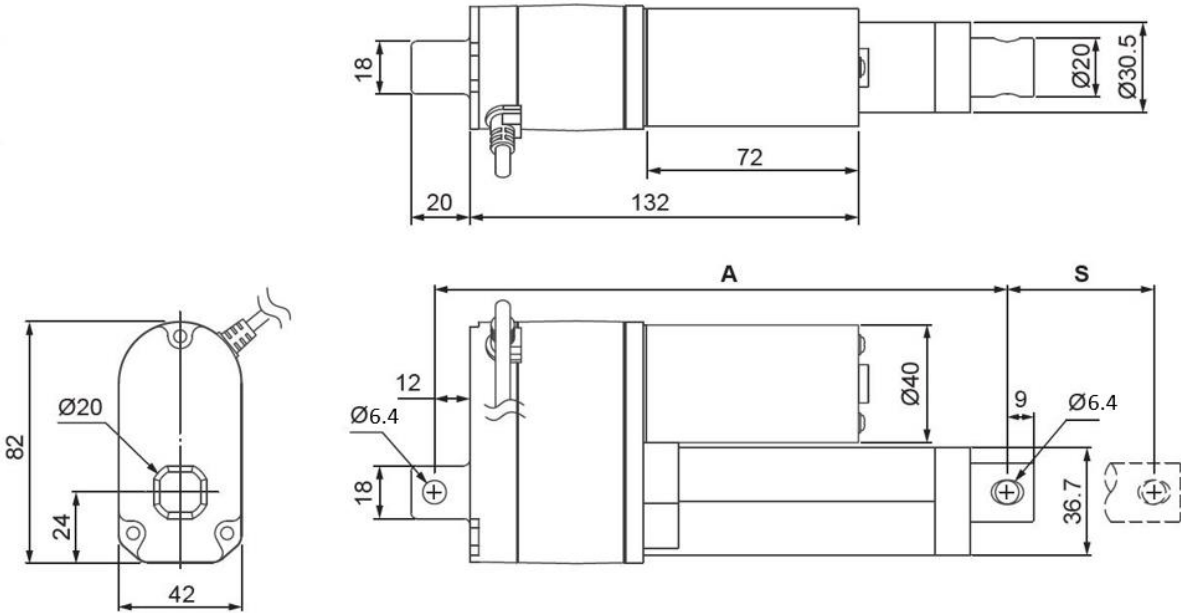
- Mounting brackets
- Direction reversing switches
- Wired and wireless controllers
- Direction reversing relays

Dimensions – Actuator without Potentiometer



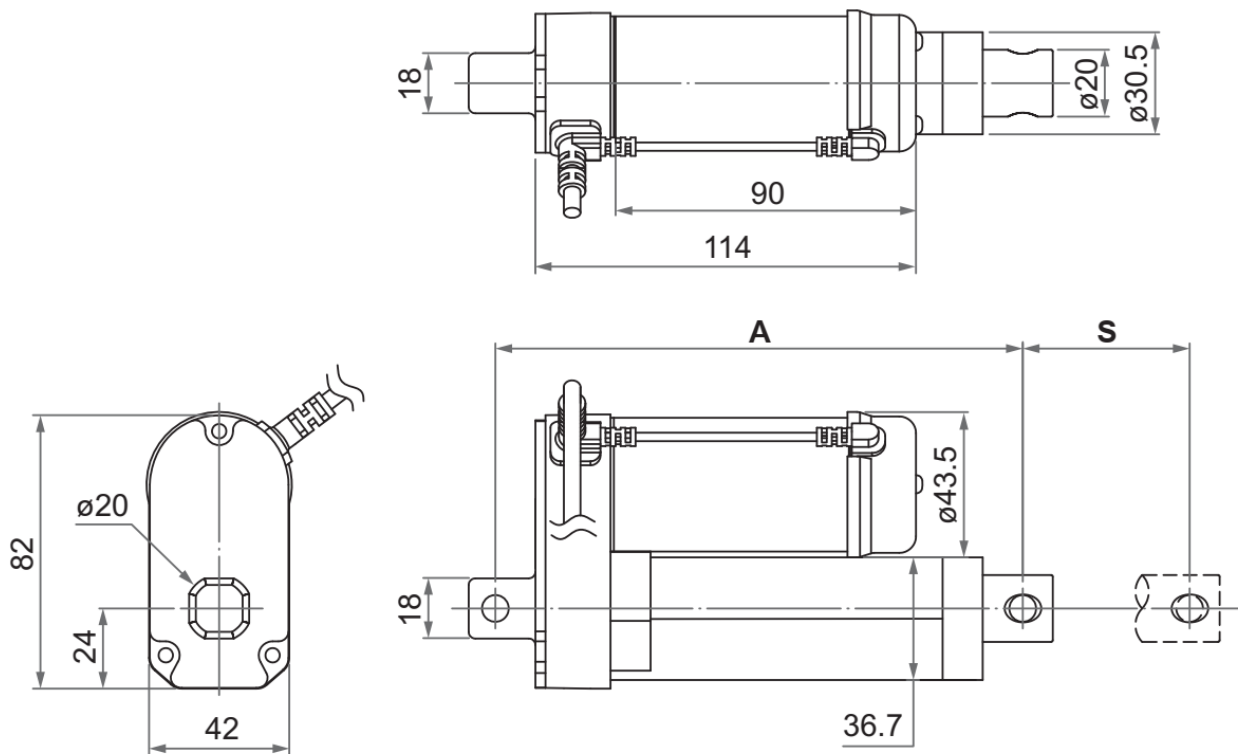
Nominal Stroke	2"		4"		6"		8"		10"		12"	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
Actual Stroke	1.97	50	3.94	100	5.91	150	7.87	200	9.84	250	11.81	300
Retracted Length (A)	6.22	158	8.23	209	10.24	260	12.24	311	14.25	362	16.26	413
Extended Length (B)	8.19	208	12.17	309	16.14	410	20.19	511	24.09	612	28.07	713

Dimensions – Actuator with Potentiometer



Nominal Stroke	2"		4"		6"		8"		10"		12"	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
Actual Stroke	1.97	50	3.94	100	5.91	150	7.87	200	9.84	250	11.81	300
Retracted Length (A)	7.68	195	9.69	246	11.69	297	13.70	348	15.71	399	17.72	450
Extended Length (B)	9.65	245	13.62	346	17.60	447	21.57	548	25.55	649	29.53	750

Dimensions – Actuator with Hall effect sensor

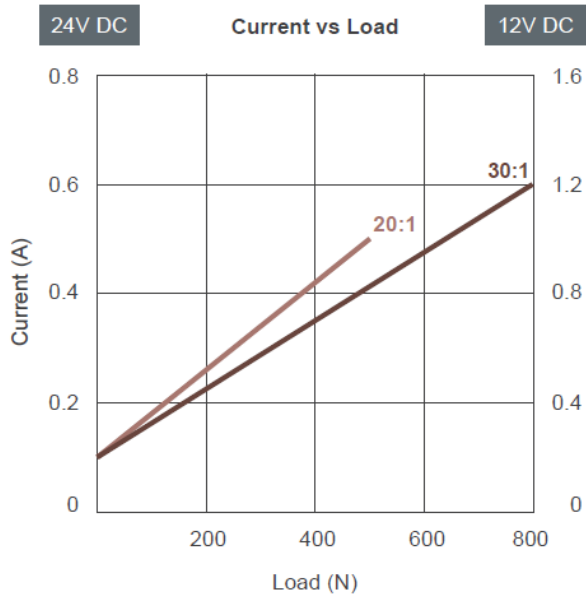
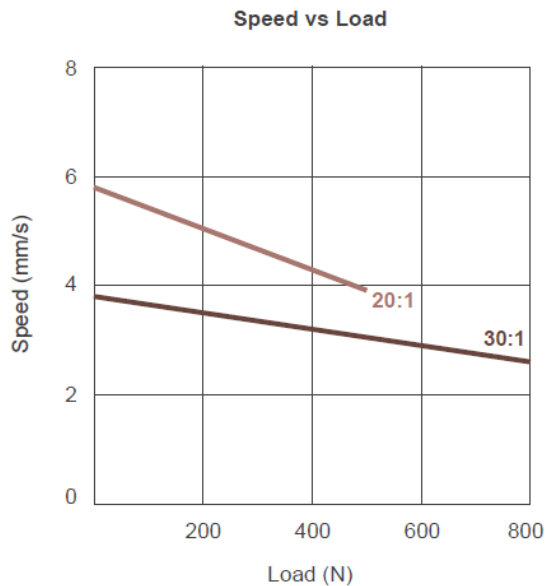


Nominal Stroke	2"		4"		6"		8"		10"		12"	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
Actual Stroke (S)	1.97	50	3.94	100	5.91	150	7.87	200	9.84	250	11.81	300
Retracted Length (A)	6.22	158	8.23	209	10.24	260	12.24	311	14.25	362	16.26	413
Extended Length	8.19	208	12.17	309	16.14	410	20.19	511	24.09	612	28.07	713

Performance Data

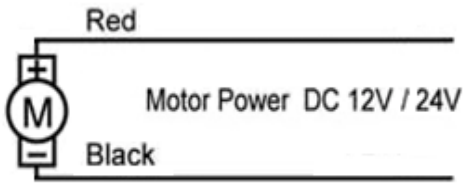
Gear Ratio	Max Load/Dynamic		Self-Locking Force Maximum		Speed/No Load		Speed/Max Load	
	Lbs. [US]	Newtons	Lbs. [US]	Newtons	inches/sec	mm/sec	inches/sec	mm/sec
20:1	112	500	562	2500	0.23	5.8	0.15	3.9
30:1	180	800	562	2500	0.15	3.8	0.10	2.6

Gear Ratio	Typical Current (A)			
	No Load		Full Load	
	12 VDC	24 VDC	12 VDC	24 VDC
20:1	0.2	0.1	1.0	0.5
30:1	0.2	0.1	1.0	0.6



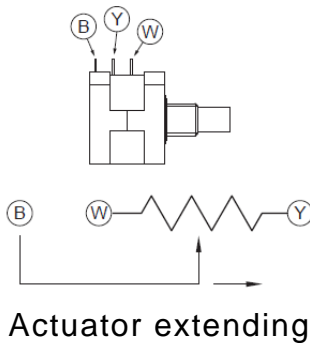
Note: The typical speed and typical current are the average values – not the upper or lower limit. The performance curves are made with typical values.

Electrical



Red + // Black - : Extend
Red - // Black + : Retract

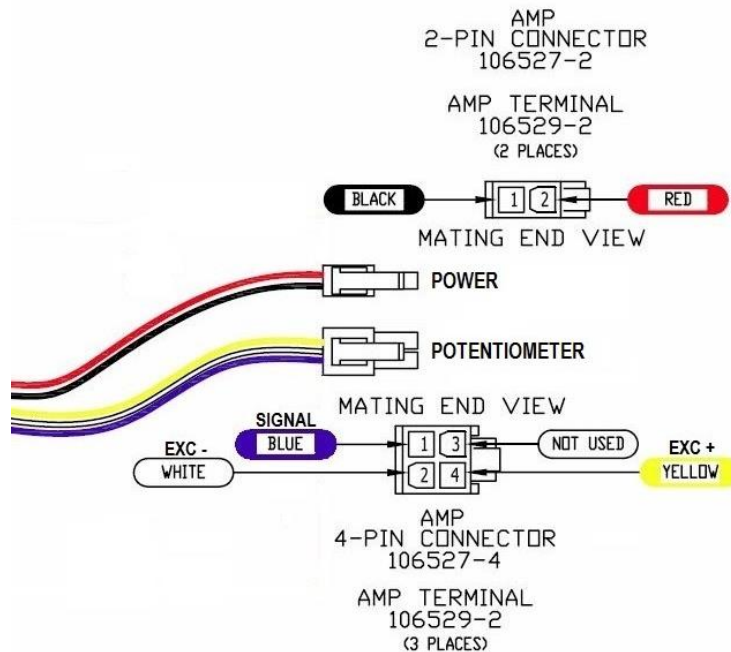
With potentiometer this functionality is reversed:
Red + // Black - : Retract
Red - // Black + : Extend



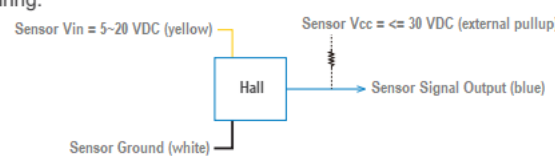

Potentiometer Notes:
When fully retracted, the potentiometer reading between the blue and white wires will be in or near the range of 0 - 600Ω. When fully extended, this potentiometer reading will be in or near the range of 8.3 KΩ - 10KΩ.

Stroke Length	Typical potentiometer range (+/- 300Ω)
2	300Ω - 9.3KΩ
4	300Ω - 9.7KΩ
6	300Ω - 8.6KΩ
8	300Ω - 9.6KΩ
10	300Ω - 9.2KΩ
12	300Ω - 9.2KΩ

Connector Wiring with Potentiometer



Electrical with single Hall effect sensor

	Wire color	Definition	Descriptions												
Motor Power	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	Voltage input range: 5 ~ 20V												
	Blue	Hall output	<p>The signal wire output should connect the pull-up resistor to the operating voltage (Vcc) of the system. (10KΩ resistor is recommended)</p> <p>Wiring:</p>  <p>High= Determined by Vcc and the pull-up resistor. Low= GND</p> <p>Hall signal data:</p>  <p>Hall effect sensor resolution:</p> <table border="1"> <thead> <tr> <th>Gear ratio</th> <th>Resolution (pulses/mm)</th> </tr> </thead> <tbody> <tr> <td>5:1</td> <td>2.27</td> </tr> <tr> <td>10:1</td> <td>3.62</td> </tr> <tr> <td>20:1</td> <td>6.86</td> </tr> <tr> <td>30:1</td> <td>10.57</td> </tr> <tr> <td>40:1</td> <td>14.27</td> </tr> </tbody> </table>	Gear ratio	Resolution (pulses/mm)	5:1	2.27	10:1	3.62	20:1	6.86	30:1	10.57	40:1	14.27
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	5:1	2.27													
10:1	3.62														
20:1	6.86														
30:1	10.57														
40:1	14.27														
White	GND														



Signal		
White	Yellow	Blue
GND	Vin	Data 1

Gear Ratio	Signal Resolution	
	Pulses / in	Pulses / mm
5:1	57.66	2.27
10:1	91.94	3.62
20:1	174.24	6.68
30:1	268.48	10.57
40:1	362.46	14.27

Electrical with dual Hall effect sensors

	Wire color	Definition	Descriptions																		
Motor Power	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	Voltage input range: 5 ~ 20V																		
	Blue	Hall 1 output	<p>The signal wires output should connect the pull-up resistor to the operating voltage (Vcc) of the system. (10KΩ resistor is recommended)</p> <p>Wiring:</p> <p>High= Determined by Vcc and the pull-up resistor. Low= GND</p> <p>Hall signal data:</p> <p>- A type</p> <p>- B type</p> <p>Hall effect sensor resolution:</p> <table border="1"> <thead> <tr> <th>Gear ratio</th> <th>Resolution (pulses/mm)</th> <th>Hall signal data type</th> </tr> </thead> <tbody> <tr> <td>5:1</td> <td>2.27</td> <td>B type</td> </tr> <tr> <td>10:1</td> <td>3.62</td> <td>A type</td> </tr> <tr> <td>20:1</td> <td>6.86</td> <td>A type</td> </tr> <tr> <td>30:1</td> <td>10.57</td> <td>A type</td> </tr> <tr> <td>40:1</td> <td>14.27</td> <td>B type</td> </tr> </tbody> </table>	Gear ratio	Resolution (pulses/mm)	Hall signal data type	5:1	2.27	B type	10:1	3.62	A type	20:1	6.86	A type	30:1	10.57	A type	40:1	14.27	B type
	Gear ratio	Resolution (pulses/mm)		Hall signal data type																	
	5:1	2.27	B type																		
10:1	3.62	A type																			
20:1	6.86	A type																			
30:1	10.57	A type																			
40:1	14.27	B type																			
Green	Hall 2 output																				
	White	GND																			

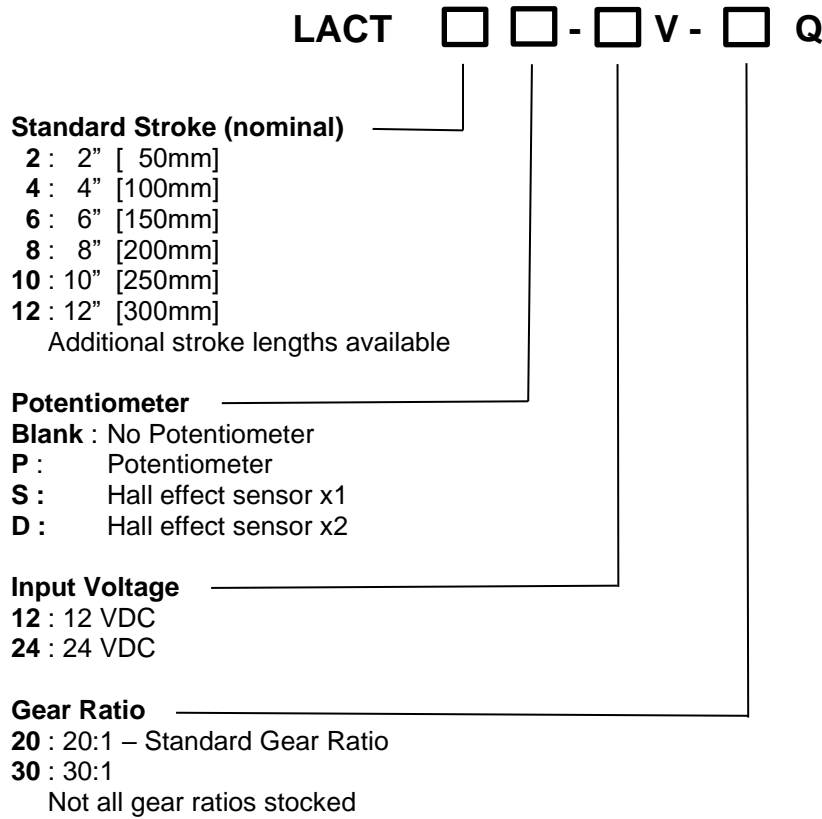
Electrical With dual Hall effect sensors continued



Signal			
White	Yellow	Blue	Green
GND	Vin	Data 1	Data 2

Gear Ratio	Signal Resolution	
	Pulses / in	Pulses / mm
5:1	57.66	2.27
10:1	91.94	3.62
20:1	174.24	6.68
30:1	268.48	10.57
40:1	362.46	14.27

Ordering Key



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