

Actuator

ALD3

ALD3 features its compact design, which is suitable for various applications that require limited installation space, such as window opener, adjustable car driver set and medical equipment.



Feature

- Main applications: Industrial, home care, furniture, medical
- Input voltage: 12V DC / 24V DC
- Max. load: 1000N (Push / Pull)
- Max. static load: 2500N (Push / Pull)
- Typical speed at no load: 43.9 mm/sec
- Typical speed at full load: 5.5 mm/sec (1000N load)
- Stroke: 50 / 100 / 150 / 200 / 250 / 300 mm
- Noise level: Please refer to Performance Data
- IP Protection level: IP65 (Static: no-action)
- Color: Aluminum grey
- Preset limit switches
- Duty cycle: 25%, max. 1 min. continuous operation in 4 min.
- Ambient operation temperature: -25°C ~ +65°C
- Certified: CE Marking, Electromagnetic Compatibility Directive 2014/30/EU (for ALD3 only), Medical Device Directive 93/42/EEC (for ALD3M only)

Option

- Medical version (ALD3M, approved according to EN60601)
- Quiet version (ALD3Q, noise level ≤ 5 5dB)
- Positioning signal feedback with Hall effect sensor x 1
- Positioning signal feedback with Hall effect sensor x 2
- Analog positioning feedback with Potentiometer (POT)
- Clamp: Clamp connection is available if rear connector is not preferred (*Fig. 1*)
- Mounting bracket (MB22) (*Fig. 2*)



Fig. 1

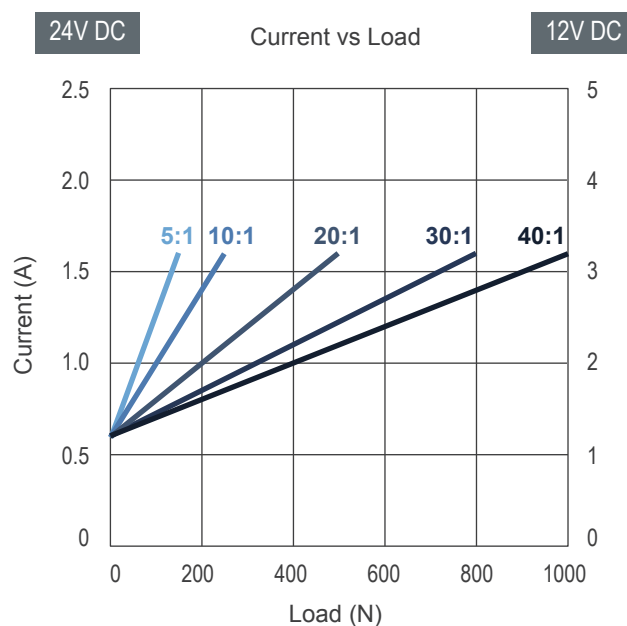
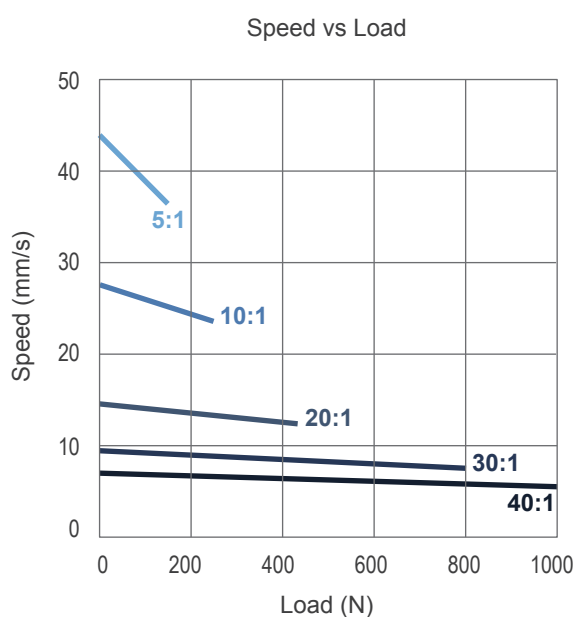


Fig. 2

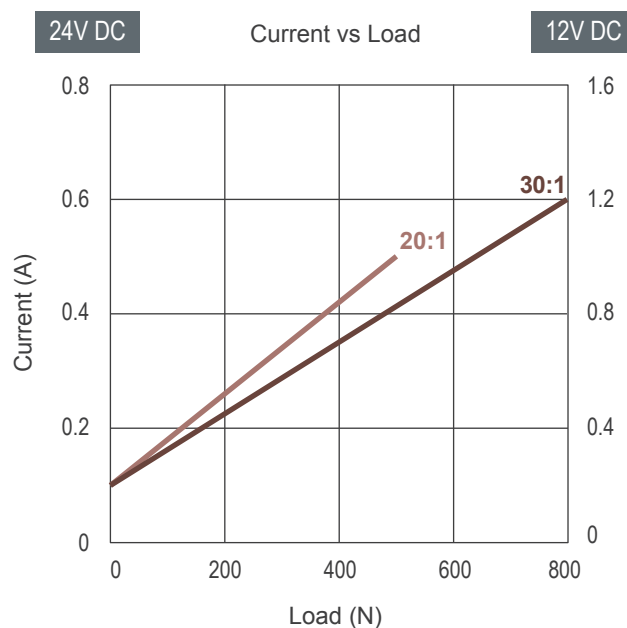
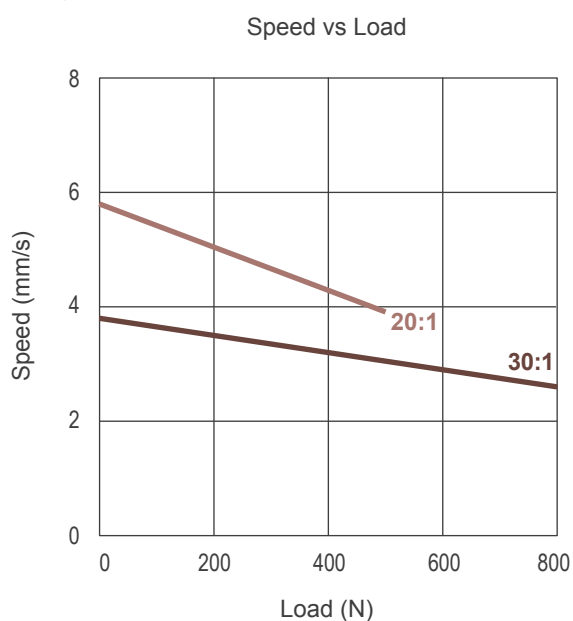
Performance Data

Model No.	Gear Ratio	Push / Pull Max. (N)	Self-locking force Max. (N)	Typical Speed (mm/s)		Typical Current (A)				Noise Level (dB)
				No Load	Full Load	No Load		Full Load		
						24V	12V	24V	12V	
ALD3-XX-05-K3...	5:1	150	2500	43.9	36.5	0.6	1.2	1.6	3.2	≤70
ALD3-XX-10-K3...	10:1	250	2500	27.6	23.5	0.6	1.2	1.6	3.2	≤70
ALD3-XX-20-K3...	20:1	500	2500	14.6	12.3	0.6	1.2	1.6	3.2	≤70
ALD3-XX-30-K3...	30:1	800	2500	9.5	7.5	0.6	1.2	1.6	3.2	≤70
ALD3-XX-40-K3...	40:1	1000	2500	7.0	5.5	0.6	1.2	1.6	3.2	≤70
ALD3Q-XX-20-D3...	20:1	500	2500	5.8	3.9	0.1	0.2	0.5	1.0	≤55
ALD3Q-XX-30-D3...	30:1	800	2500	3.8	2.6	0.1	0.2	0.6	1.2	≤55

ALD3 & ALD3M



ALD3Q



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

Extended length (B) = Retracted length (A) + Stroke (S)

Retracted length (A)

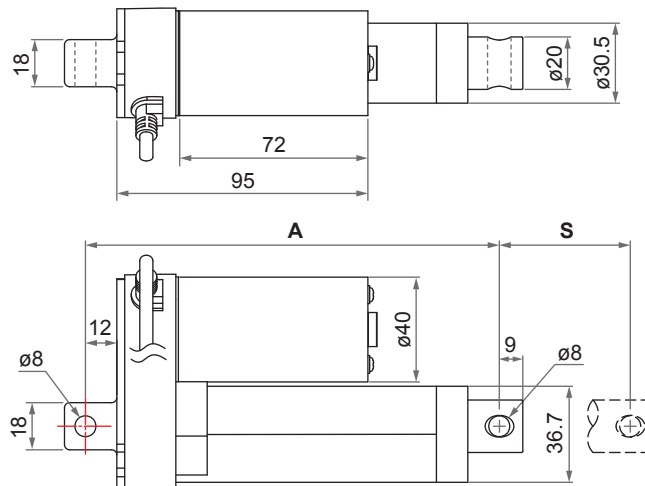
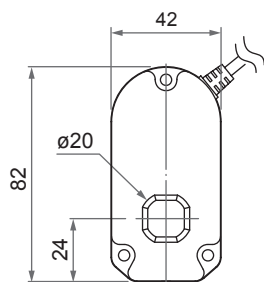
Option	Front connector code	Stroke					
		50	100	150	200	250	300
Standard or hall sensor	1	158	209	260	311	362	413
POT	1	195	246	297	348	399	450

(tolerance: ±3mm)

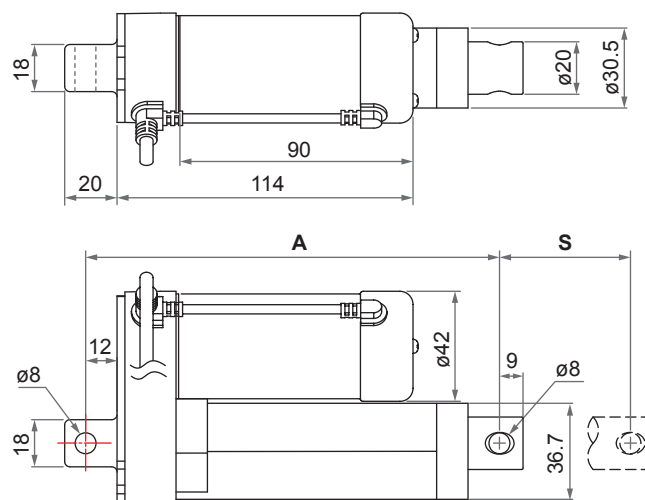
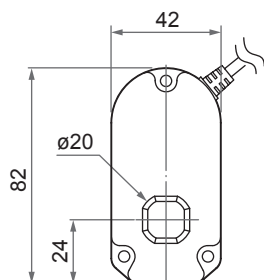
Note: The dimension "A" is shown in page 4 & 5, as indicated in the figure below.

Regular version (ALD3) & Quiet version (ALD3Q)

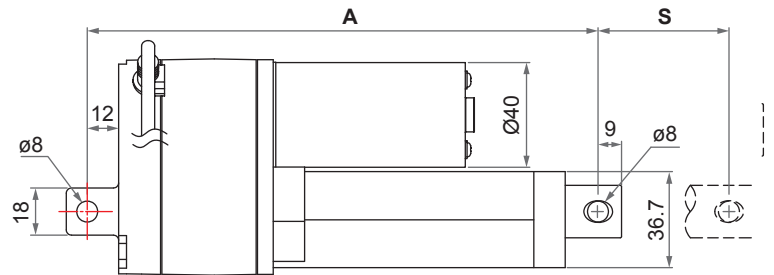
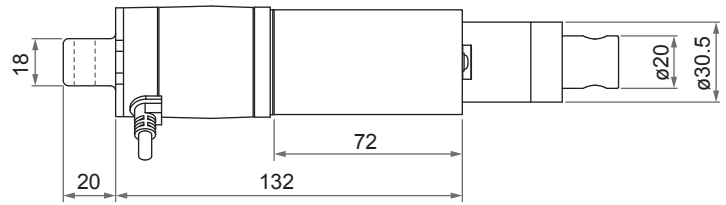
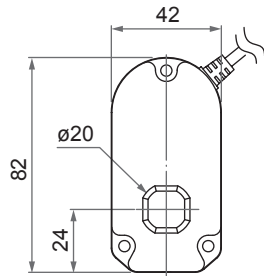
• Basic



• With Hall effect sensor

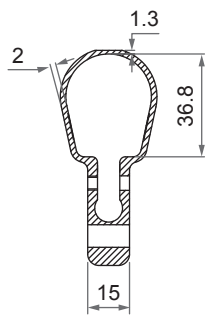
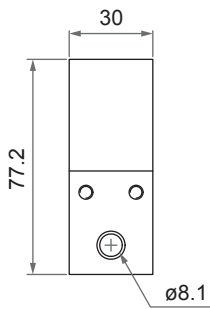


• With Potentiometer

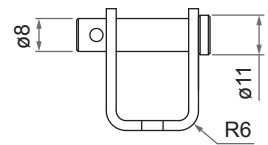
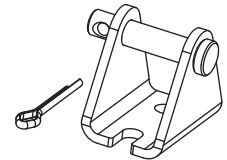
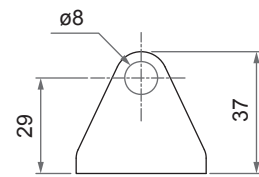
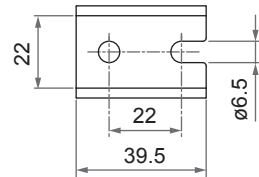


Note: As an example in 0° orientation for rear connector.

• Clamp



• Mounting bracket (MB22)



Compatibility

Product	Model	ALD3 spec
Control box	CI10	- 24V motor - With limit switches option - Without positioning sensor feedback
	CIS1	- 2 Actuator synchronisation - 24V motor - With single Hall effect sensor for positioning
	CIS2	- 2 Actuator synchronisation - 12V motor - With single Hall effect sensor for positioning
Power limit control - adjustable	GS24-5MO	24 Vdc motor < 5 ampere
	GS12-10MO	12 Vdc motor < 10 ampere
	GS12-5MO	12 Vdc motor < 5 ampere

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 1

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

Note:

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

Gear ratio	Resolution (pulses/mm)
5:1	2.27
10:1	3.62
20:1	6.86
30:1	11.0
40:1	14.5

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



• With Hall effect sensor x 2

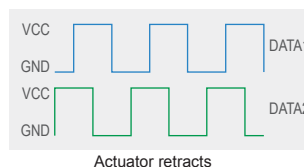
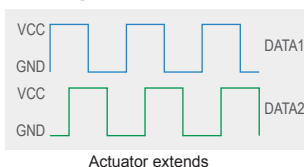
Power		Signal			
Red	Black	White	Yellow	Blue	Green
M+	M-	GND	VCC	DATA1	DATA2

Note:

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

Gear ratio	Resolution (pulses/mm)
5:1	2.27
10:1	3.62
20:1	6.86
30:1	11.0
40:1	14.5

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



● With Potentiometer (POT)

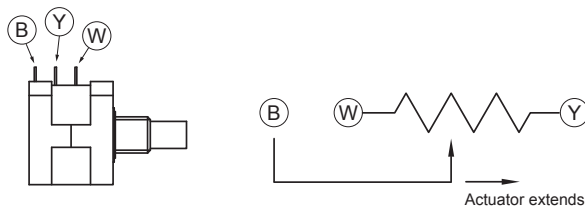
Power		Signal		
Red	Black	White	Yellow	Blue
M+	M-	GND	VCC	Data

Note:

1. Connect Red (M+) to '+' & Black (M-) to '-' of DC power, the actuator will extend.
2. The resistance between blue and white wires increases when the actuator extends, and decreases when it retracts.
3. Potentiometer resistance

Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$)
50	0.3 ~ 9.3K
100	0.3 ~ 9.7K
150	0.3 ~ 8.6K
200	0.3 ~ 9.6K
250	0.3 ~ 9.3K
300	0.3 ~ 9.3K

4. Voltage input range (VCC): 70V/0.007A(10K)
5. Output voltage of signal (Data) = Input voltage of VCC
6. Potentiometer data



Ordering Key

Regular version

ALD3 - 24 - 10 - 100 - HS2 - 65

Input voltage	12: 12V DC 24: 24V DC
Gear ratio	05, 10, 20, 30, 40 (Refer to Performance Data)
Stroke	050: 50 mm 100: 100 mm 150: 150 mm 200: 200 mm 250: 250 mm 300: 300 mm
Positioning feedback	Blank: None HS1: Hall effect sensor x 1 HS2: Hall effect sensor x 2 POT: Potentiometer
IP Protection level	65: IP65

Quiet version

ALD3Q - 24 - 10 - 100 - HS2 - 65

Input voltage	12: 12V DC 24: 24V DC
Gear ratio	20,30 (Refer to Performance Data)
Stroke	050: 50 mm 100: 100 mm 150: 150 mm 200: 200 mm 250: 250 mm 300: 300 mm
Positioning feedback	Blank: None HS1: Hall effect sensor x 1 HS2: Hall effect sensor x 2
IP Protection level	65: IP65

Certifications

Regular version

The ALD3 actuator is compliant with the following regulations, in terms of the essential conformity requirements of EMC Directive of 2014/30/EU.

Emission	Immunity
EN 55014-1:2006+A1:2009+A2:2011	EN 55014-2:1997+A1:2001+A2+:2008 Category I

Medical version

The ALD3M 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 11:2009+A1:2010 GROUP I CLASS B	EN 60601-1:2006+A1:2013

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