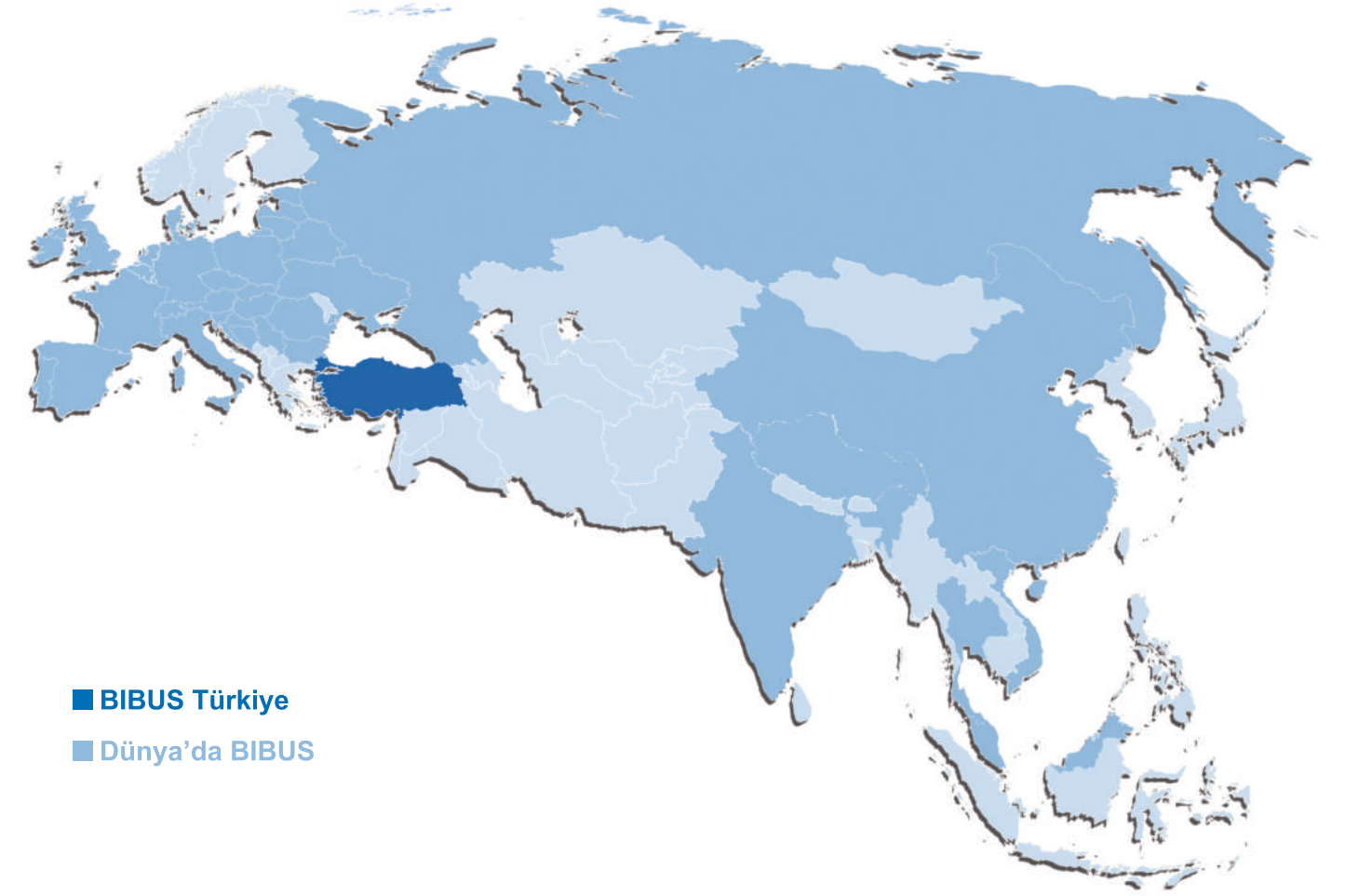




ENDÜSTRİYEL SERİ ELEKTRİKLİ AKTÜATÖRLER

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- Yüksek derecede mühendislik desteği,
- Tedarik desteği,
- Eğitim,
- Sistem entegrasyonu,
- Servis,
- Teknik danışmanlık hizmetleri sunmaktadır.

Vizyon

"Başarınızı Destekliyoruz" sloganıyla faaliyet gösterdiğimiz alanlarda Türkiye'deki lider çözüm ortağı olmak

Misyon

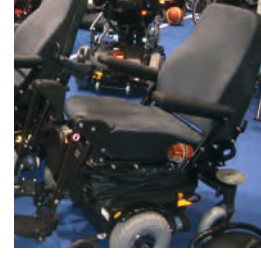
Müşterilerimizi mühendislik, lojistik ve üstün hizmetlerimizle destekleyerek; sektörde başarılı olmaları için tüm gücümüzle çalışmak

İş Alanları

- Pnömatik
- Mekatronik
- Hidrolik
- Çevre Teknolojileri

Ürün Grupları

- Lineer Aktüatörler
- Lineer Raylar ve Yataklamalar
- Darbe Emiciler
- Güç Aktarım Elemanları
- Alüminyum Profil Sistemleri
- Mobil Hidrolik
- Çevre Teknolojileri



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inşaat



su ürünleri



demir çelik



otomotiv

INLINE Endüstriyel Aktüatörler



easyE-35



easyE-35	C*	D	E	F	G	H
Force 24V (dyn. push and pull) [N]	120	400	600	900	1600	2200
Speed at maximum load [mm/s]	33	16	12	7,5	4	3

Force 12V (dyn. push and pull) [N]	-	400	600	900	1600	2200
Speed at maximum load [mm/s]	-	16	9	7,5	3,5	3,5

Current at maximum load: 12VDC (max 14 VDC) = 3,6A, 24VDC (max 28 VDC) = 1,8A

Max. load limited for stroke > 400mm:
1000N (easyE-35)

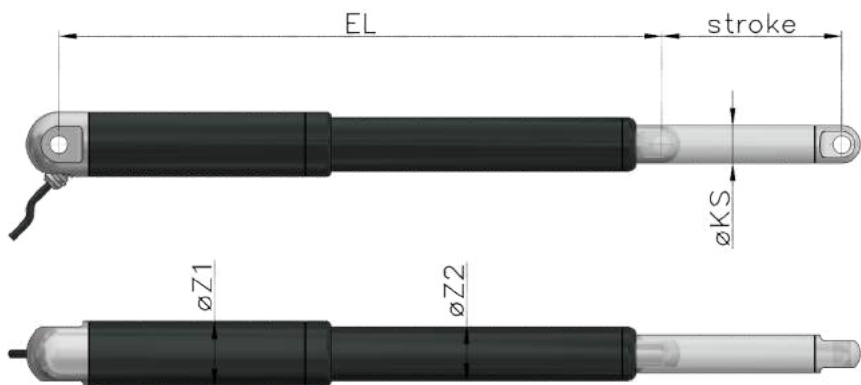
*only 24V DC power supply

Features

- **Stroke Length:** 50, 100, 150, 200, 250, 300, 350, 400, 500 and 750mm (others on request)
- **Cable:** easyE-35: 1m, 2X0.65mm² (AWG19), Ø = 4.8mm, black, Molex Mini-Fit Jr. 6 pin
- **Bending Radius:** 6x cable diameter
- **Materials** Motor and actuator tube are powder coated steel or stainless steel
Piston rod is aluminum (easyE-35) or stainless steel (easyE-50 and easyE-60)
Front and rear brackets are PA, Aluminium or stainless steel
- **Protection Class:** IP66 (standard), harsh environment (according to IP68 and IP69)
- **Max. Static Load/ Self Locking Force** easyE-35: PA brackets: 2000N Alu/AISI: 5400N
Depending on stroke length for push-applications
- **Temperature:** -20°C to +70°C (Storage: -40°C to +70°C)
- **Duty Cycle:** Max. 10% or 2 minutes in use followed by 18 minutes rest

Pleace Note

- Never expose the actuator to hammer strike during installation or in other situations
- Retrofitted bushings should be pressed into the bracket-borings. No hammering
- Power supply without over-current protection can cause serious damage to the actuator at mechanical end-stop or when actuator is overloaded in another way
- Keep piston tube clean
- Longer cable lengths may cause voltage drop which affects the performance of the actuator
- For medical applications (IEC60601-1, ANSI/AAMI/ES60601-1, CAN/CSA-C22.2 No60601-1):
Operating temperature +5°C to +48°C, Relative humidity 20% - 70% atmospheric pressure = 1atm.
Connect to medically approved supply source only and according to guidelines provided with the source.
- Function of the actuator is subject to the settings of the control box. If using your own controller please contact us.
- The dust and water sealing of harsh environment actuators might affect their performance
- All specifications are for 25 °C ambient – low temperature might affect performance
- Depending on load and application, nominal and actual stroke length may differ due to internal disc springs not being fully compressed.
- The combination of gearing and stroke can cause limitations in the use of „End limit FW“ when using the S2-3 controller. See more in the datasheet for S2-3.



Axial backlash: +/- 0,5mm, generally length tolerance +/- 1mm

easyE-35	EL	Clevis rear	Hall	UL/EN60.601	Harsh env.	Emergency lowering/spline	ØZ1	ØZ2	ØKS
Gear ratio: C, D, E, F	stroke+160*	+10	+10	+10	+11	-	Ø35	Ø28	Ø20
Gear ratio: G, H	stroke+170*								

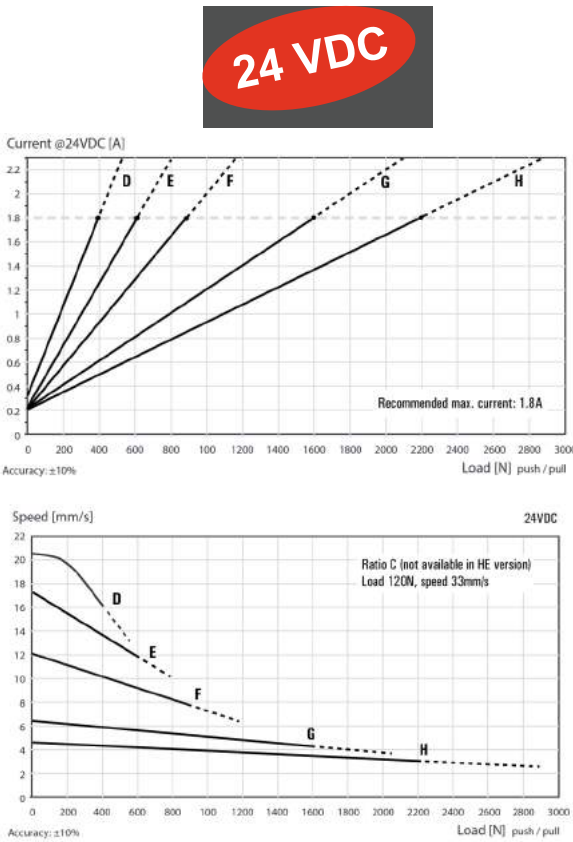
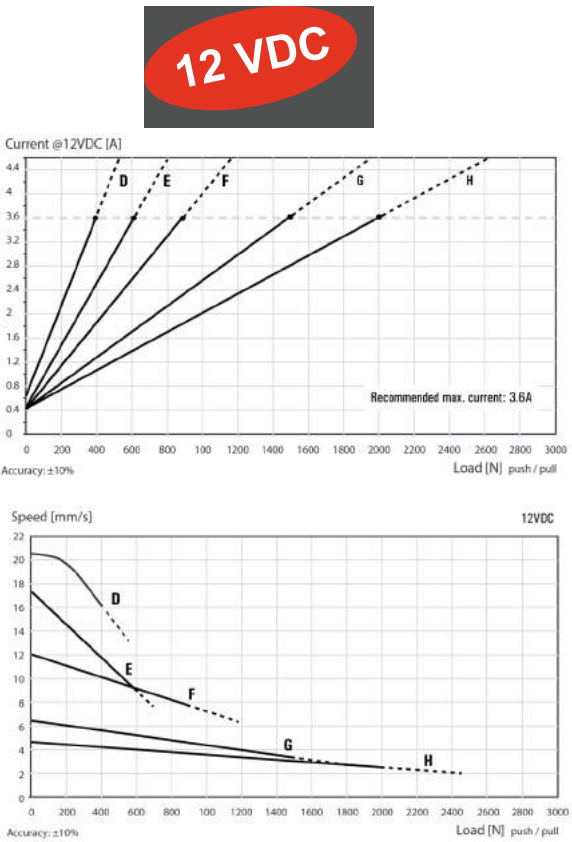
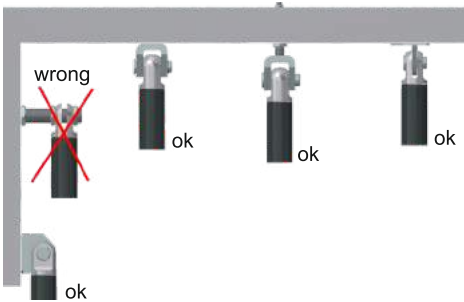
If stroke >400mm: EL+7mm, if stroke >700mm: EL+42mm

**If stroke >750mm: EL+100mm (on request)

***If stroke >400mm: EL+25mm (not Harsh-Environment-version)

Recommended mounting methods

- Do not clamp actuators on tubing
- Always keep both brackets mounted in the same orientation and ensure to flush mount actuator
- Brackets must always be able to rotate on axis in mountings
- Avoid radial forces at all times



easyE-50



easyE-50	C*	D	E	F	G	H
Force 24V (dyn. push and pull) [N]	500	1750	2200	3100	4500	4500
Speed at maximum load [mm/s]	70	20	17	12	6	4

Force 12V (dyn. push and pull) [N]	-	1400	1700	2400	4500	4500
Speed at maximum load [mm/s]	-	14	10	6	3	3,5

Current at maximum load: 12VDC (max 14 VDC) = 16A (ratio C-F), 14A (G), 9A (H), 24VDC (max 28VDC) = 8A (C-F), 7A (G), 4,5A (H)

Max. load limited for stroke > 400mm: 2000N (easyE-50)

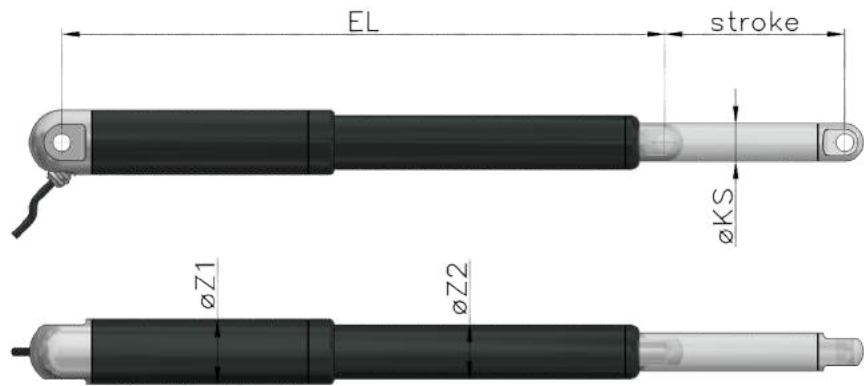
*only 24V DC power supply

Features

- **Stroke Length:** 50, 100, 150, 200, 250, 300, 350, 400, 500 and 750mm (others on request)
- **Cable:** easyE-50: 1m, 2X1.3mm² (AWG16), Ø=6.4mm, black, Molex Mini-Fit Jr. 6 pin
- **Bending Radius:** 6x cable diameter
- **Materials:** Motor and actuator tube are powder coated steel or stainless steel
Piston rod is aluminum (easyE-35) or stainless steel (easyE-50 and easyE-60)
Front and rear brackets are PA, Aluminium or stainless steel
- **Protection Class:** IP66 (standard), harsh environment (according to IP68 and IP69)
- **Max. Static Load/ Self Locking Force:** easyE-50: PA brackets: 4700N Alu/AISI: 16800N
Depending on stroke length for push-applications
- **Temperature:** -20°C to +70°C (Storage: -40°C to +70°C)
- **Duty Cycle:** Max. 10% or 2 minutes in use followed by 18 minutes rest

Pleace Note

- Never expose the actuator to hammer strike during installation or in other situations
- Retrofitted bushings should be pressed into the bracket-borings. No hammering
- Power supply without over-current protection can cause serious damage to the actuator at mechanical end-stop or when actuator is overloaded in another way
- Keep piston tube clean
- Longer cable lengths may cause voltage drop which affects the performance of the actuator
- For medical applications (IEC60601-1, ANSI/AAMI/ES60601-1, CAN/CSA-C22.2 No60601-1):
Operating temperature +5°C to +48°C, Relative humidity 20% - 70% atmospheric pressure = 1atm.
Connect to medically approved supply source only and according to guidelines provided with the source.
- Function of the actuator is subject to the settings of the control box. If using your own controller please contact us.
- The dust and water sealing of harsh environment actuators might affect their performance
- All specifications are for 25 °C ambient – low temperature might affect performance
- Depending on load and application, nominal and actual stroke length may differ due to internal disc springs not being fully compressed.
- The combination of gearing and stroke can cause limitations in the use of „End limit FW“ when using the S2-3 controller. See more in the datasheet for S2-3.



Axial backlash: +/- 0,5mm, generally length tolerance +/- 1mm

easyE-50	EL	Clevis rear	Hall	UL/EN60.601	Harsh env.	Emergency lowering/spline	ØZ1	ØZ2	ØKS
Gear ratio: C, D, E, F	stroke+240*	-	+15	+15	+14	+23 / +6	Ø50	Ø40	Ø35
Gear ratio: G, H	stroke+255*								

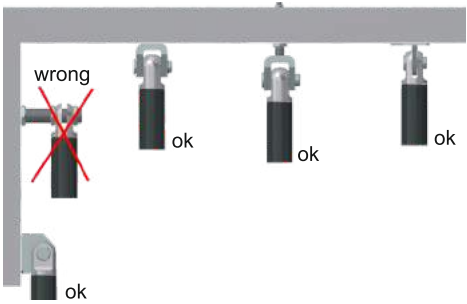
If stroke >400mm: EL+7mm, if stroke >700mm: EL+42mm

**If stroke >750mm: EL+100mm (on request)

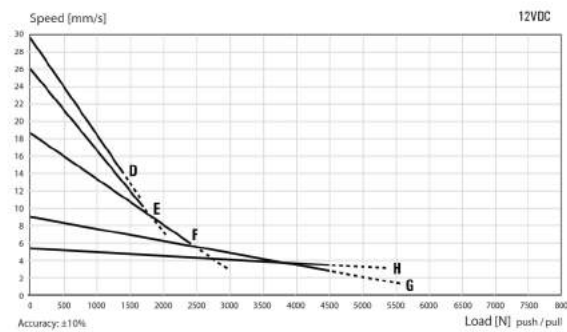
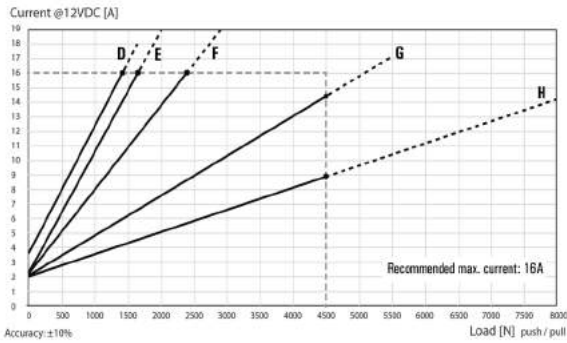
***If stroke >400mm: EL+25mm (not Harsh-Environment-version)

Recommended mounting methods

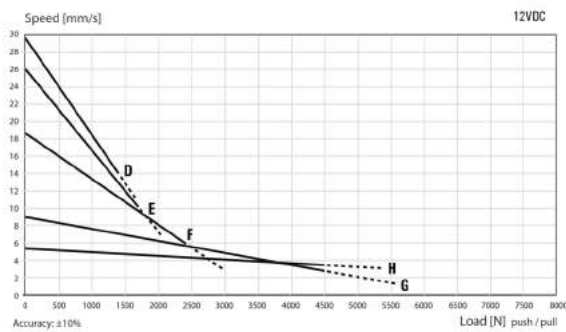
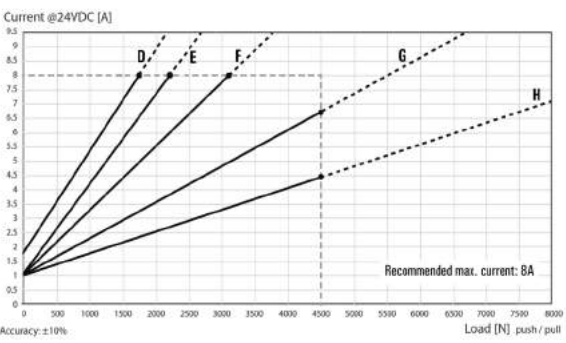
- Do not clamp actuators on tubing
- Always keep both brackets mounted in the same orientation and ensure to flush mount actuator
- Brackets must always be able to rotate on axis in mountings
- Avoid radial forces at all times



12 VDC



24 VDC



easyE-60



easyE-60	D	E	F	G	H
Force 24V (dyn. push and pull) [N]	1900	4300	6600	8100	10000
Speed at maximum load [mm/s]	26	12	8	6	5

Current at maximum load: 24VDC (max 28VDC) = 11,5A

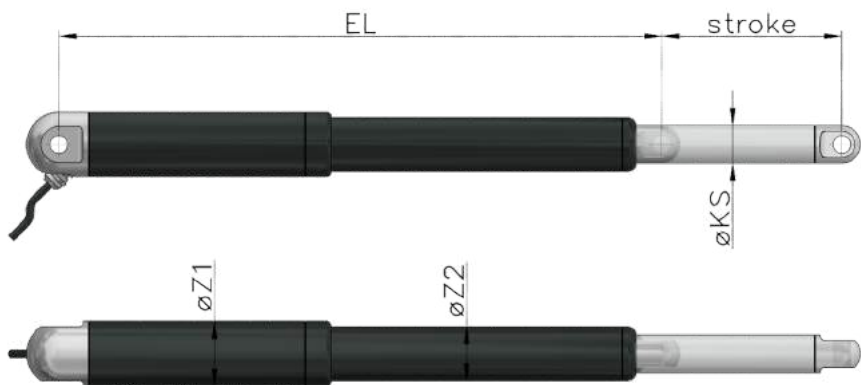
Max. load limited for stroke > 400mm:
 5000N (easyE-60)
 *only 24V DC power supply

Features

- **Stroke Length:** 50, 100, 150, 200, 250, 300, 350, 400, 500 and 750mm (others on request)
- **Cable:** easyE-60: 1m, 2X1.3mm² (AWG16), Ø=6.4mm, black, Molex Mini-Fit Jr. 6 pin
- **Bending Radius:** 6x cable diameter
- **Materials** Motor and actuator tube are powder coated steel or stainless steel
Piston rod is aluminum (easyE-35) or stainless steel (easyE-50 and easyE-60)
Front and rear brackets are PA, Aluminium or stainless steel
- **Protection Class:** IP66 (standard), harsh environment (according to IP68 and IP69)
- **Max. Static Load/ Self Locking Force** easyE-60: Alu/AlSi: 18100N
Depending on stroke length for push-applications
- **Temperature:** -20°C to +50°C (Storage: -40°C to +70°C)
- **Duty Cycle:** Max. 10% or 2 minutes in use followed by 18 minutes rest

Pleace Note

- Never expose the actuator to hammer strike during installation or in other situations
- Retrofitted bushings should be pressed into the bracket-borings. No hammering
- Power supply without over-current protection can cause serious damage to the actuator at mechanical end-stop or when actuator is overloaded in another way
- Keep piston tube clean
- Longer cable lengths may cause voltage drop which affects the performance of the actuator
- For medical applications (IEC60601-1, ANSI/AAMI/ES60601-1, CAN/CSA-C22.2 No60601-1):
Operating temperature +5°C to +48°C, Relative humidity 20% - 70% atmospheric pressure = 1atm.
Connect to medically approved supply source only and according to guidelines provided with the source.
- Function of the actuator is subject to the settings of the control box. If using your own controller please contact us.
- The dust and water sealing of harsh environment actuators might affect their performance
- All specifications are for 25 °C ambient – low temperature might affect performance
- Depending on load and application, nominal and actual stroke length may differ due to internal disc springs not being fully compressed.
- The combination of gearing and stroke can cause limitations in the use of „End limit FW“ when using the S2-3 controller. See more in the datasheet for S2-3.



Axial backlash: +/- 0,5mm, generally length tolerance +/- 1mm

easyE-60	EL	Clevis rear	Hall	UL/EN60.601	Harsh env.	Emergency lowering/spline	ØZ1	ØZ2	ØKS
Gear ratio: all ratios	stroke+358***	-	+15	-	+25	+31 / +10	Ø60	Ø50	Ø35

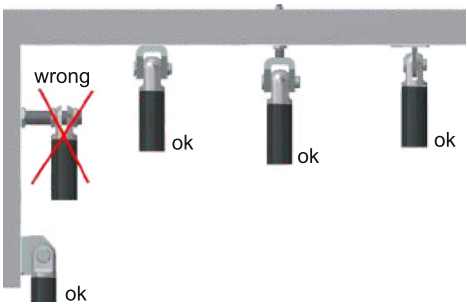
If stroke >400mm: EL+7mm, if stroke >700mm: EL+42mm

**If stroke >750mm: EL+100mm (on request)

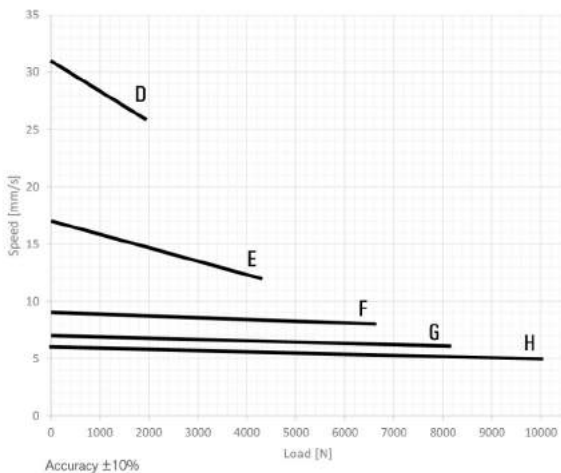
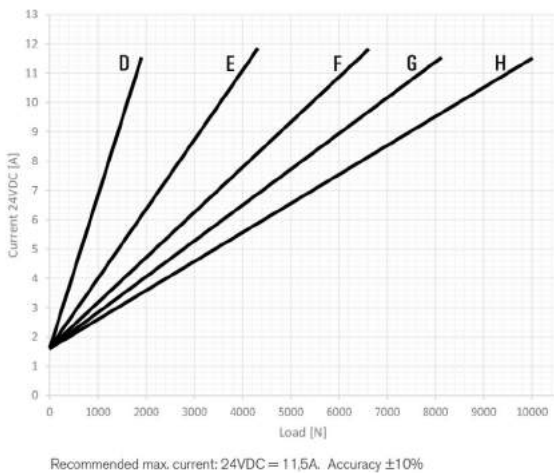
***If stroke >400mm: EL+25mm (not Harsh-Environment-version)

Recommended mounting methods

- Do not clamp actuators on tubing
- Always keep both brackets mounted in the same orientation and ensure to flush mount actuator
- Brackets must always be able to rotate on axis in mountings
- Avoid radial forces at all times



24 VDC



Choose your actuator:

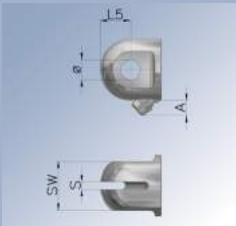
1. Model:
- ☐ easyE-35
 ☐ easyE-50
 ☐ easyE-60
2. Stroke length:
- ☐ 50, 100, 150, 200, 250, 300, 350, 400, 500 and 750mm (others on request)
3. Gear ratio:
- ☐ C, D, E, F, G, H (speed and load see table)
4. Voltage:
- ☐ 12V DC (only easyE-35 and easyE-50)
 ☐ 24V DC
6. Cable length:
- ☐ 1m - 9m (others on request)
7. Connector:
- ☐ no connector
 ☐ Molex minifit
8. Material:
- ☐ Standard steel
 ☐ AISI 316
9. Protection class:
- ☐ IP66 (standard)
 ☐ harsh environment (according to IP68 and IP69)
10. Certification:
- ☐ For medical applications: IEC60601-1, ANSI/AAMI/ES60601-1, CAN/CSA-22.2 No60601-1 (only 24 V DC) (Operation temperature: +5°C to +48°C)
11. Hall sensor:
- ☐ no (standard)
 ☐ yes (cable will change)
12. Low noise:
- ☐ no (standard)
 ☐ yes (not available in stainless steel)
13. Color:
- ☐ Black (standard)
 Available in all RAL colors
14. Connecting parts



Connecting parts “motor side“:

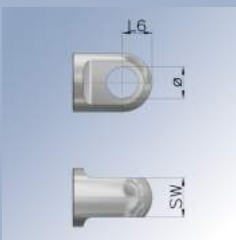
	Code	Ø	L5	SW	A	Material	Max static load
	easyE-35	(mm)	(mm)	(mm)	(mm)		
	A1M	10 ^{+0,2} ₀	17,5	28	6	Alu	5400 N
	B1M	10 ^{+0,2} ₀	17,5	28	-	Polyamid (PA)	2000 N
	C1M	10 ^{+0,2} ₀	17,5	28	6	stainless steel (316)	5400 N
	easyE-50						
	A2M	16 ^{+0,2} ₀	25	40	12,3	Alu	16800 N
	B2M	16 ^{+0,2} ₀	25	40	-	Polyamid (PA)	4700 N
	C2M	16 ^{+0,2} ₀	25	40	12,3	stainless steel (316)	16800 N
	easyE-60						
	A3M	16 ^{+0,2} ₀	30	50	12,3	Alu	18100 N
	C3M	16 ^{+0,2} ₀	30	50	12,3	stainless steel (316)	18100 N

with spherical bearings 	Code	Ø	L5	SW	A	Material	Max static load
	easyE-35	(mm)	(mm)	(mm)	(mm)		
	E1M	8 ⁰ _{-0,008}	17,5	28	-	Alu	5400 N
	easyE-50						
	E2M	12 ⁰ _{-0,008}	25	40	-	Alu	11000 N
	easyE-60						
	E3M	15 ⁰ _{-0,008}	30	50	12	Alu	11000 N
	J3M	15 ⁰ _{-0,008}	30	50	12	stainless steel (316)	11000 N

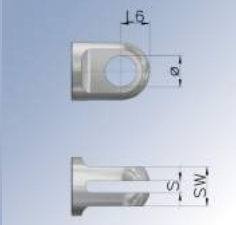
	Code	Ø	L5	SW	A	S	Material	Max static load
	easyE-35	(mm)	(mm)	(mm)	(mm)	(mm)		
	F1M	10 ^{+0,2} ₀	17,5	28	6	6,2	Alu	5400 N
	G1M	10 ^{+0,2} ₀	17,5	28	-	4,2	Polyamid (PA)	2000 N
	H1M	10 ^{+0,2} ₀	17,5	28	6	6,2	stainless steel (316)	5400 N
	easyE-50							
	F2M	16 ^{+0,2} ₀	25	40	12,3	6,2	Alu	16800 N
	G2M	16 ^{+0,2} ₀	25	40	-	6,2	Polyamid (PA)	4700 N
	H2M	16 ^{+0,2} ₀	25	40	12,3	6,2	stainless steel(316)	16800 N
	easyE-60							
	F3M	16 ^{+0,2} ₀	30	50	14	8,2	Alu	18100 N
	H3M	16 ^{+0,2} ₀	30	50	14	8,2	stainless steel(316)	18100 N

PA-connecting parts are not available for gear ratio G and H

Connecting parts “piston rod side“:

	Code	Ø	L6	SW	Material	Max static load
	easyE-35	(mm)	(mm)	(mm)		
	A1K	10 ^{+0,2} ₀	10	13	Alu	5400 N
	B1K	10 ^{+0,2} ₀	10	13	Polyamid (PA)	2000 N
	C1K	10 ^{+0,2} ₀	10	13	stainless steel (316)	5400 N
	easyE-50					
	A2K	16 ^{+0,2} ₀	15	20	Alu	16800 N
	B2K	16 ^{+0,2} ₀	15	20	Polyamid (PA)	4700 N
	C2K	16 ^{+0,2} ₀	15	20	stainless steel (316)	16800 N
	easyE-60					
	A3K	16 ^{+0,2} ₀	17,5	25	Alu	18100 N
	C3K	16 ^{+0,2} ₀	17,5	25	stainless steel (316)	18100 N

with spherical bearings 	Code	Ø	L6	SW	Material	Max static load
	easyE-35	(mm)	(mm)	(mm)		
	E1K	8 ⁰ _{-0,008}	12	18	Alu	5400 N
	easyE-50					
	E2K	12 ⁰ _{-0,008}	15	20	Alu	11000 N
	easyE-60					
	E3K	15 ⁰ _{-0,008}	20	28	Alu	11000 N
	J3K	15 ⁰ _{-0,008}	20	28	stainless steel (316)	11000 N

	Code	Ø	L6	SW	S	Material	Max static load
	easyE-35	(mm)	(mm)	(mm)	(mm)		
	F1K	10 ^{+0,2} ₀	10	15	6,2	Alu	5400 N
	G1K	10 ^{+0,2} ₀	10	13	4,2	Polyamid (PA)	2000 N
	H1K	10 ^{+0,2} ₀	10	15	6,2	stainless steel (316)	5400 N
	easyE-50						
	F2K	16 ^{+0,2} ₀	15	20	6,2	Alu	16800 N
	G2K	16 ^{+0,2} ₀	15	20	6,2	Polyamid (PA)	4700 N
	H2K	16 ^{+0,2} ₀	15	20	6,2	stainless steel (316)	16800 N
	easyE-60						
	F3K	16 ^{+0,2} ₀	17	25	8,2	Alu	18100 N
	H3K	16 ^{+0,2} ₀	17	25	8,2	stainless steel (316)	18100 N

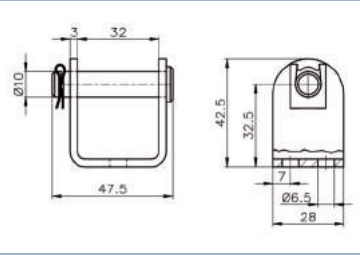
PPA-connecting parts are not available for gear ratio G and H

Brackets

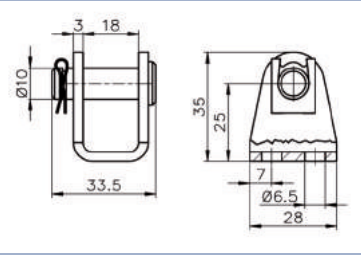
For the fixation of the easyE-line actuators we offer the following brackets:

easyE-35

EEL900BA35-1MS (Motor-Side)
 Maximum load: 2200N, material: steel, zinc plated

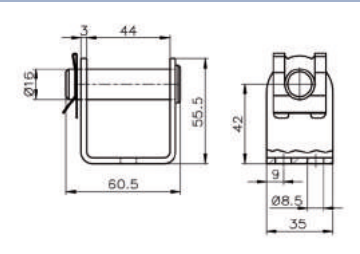



EEL900BA35-1KS (Piston rod-Side)
 Maximum load: 2200N, material: steel, zinc plated

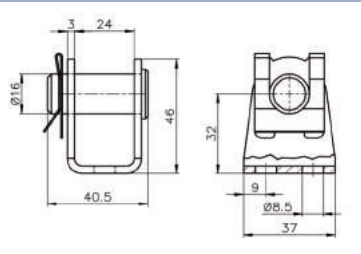



easyE-50

EEL900BA50-1MS (Motor-Side)
 Maximum load: 4500N, material: steel, zinc plated

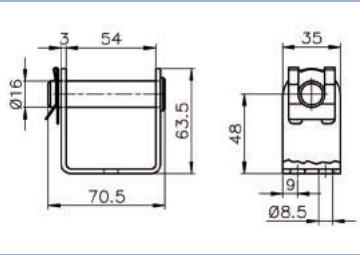



EEL900BA50-1KS (Piston rod-Side)
 Maximum load: 4500N, material: steel, zinc plated

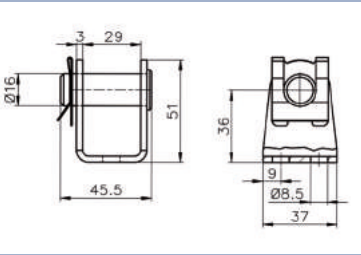



easyE-60

EEL900BA60-1MS (Motor-Side)
 Maximum load: 10000N, material: steel, zinc plated

EEL900BA60-1KS (Piston rod-Side)
 Maximum load: 10000N, material: steel, zinc plated

Controllers:

EEL-S1

For 1-3 actuators



FEATURES:

- Plug and play solution
- Handset or external switches
- for easyE-35 and easyE-50

TECHNICAL DETAILS:

- Supply: 230V
- Output voltage: 24V

EEL-S2-1

For 1 actuator



FEATURES:

- Adjustable start and stop ramp
- Adjustable current limit
- Continuous-mode, impulse-mode
- Easy interfacing to PLC etc.
- DIN-rail fittable
- Hall sensors not supported

TECHNICAL DETAILS:

- Supply: 10 to 35VDC
- Output voltage = supply voltage
- Over voltage protection: 40 V
- Idle current: Approx. 15 mA
- Driving current: 10 A continuous, 16 A with duty cycle 50%, Max 16 A on duty 2 min

EEL-S2-2

For 1 actuator



FEATURES:

- Precise position control from analog voltage input
- Adjustable start and stop ramp
- Settable current limit
- High momentary load capacity
- DIN-rail base fittable
- "Position reached" - signal
- Hall sensors necessary

TECHNICAL DETAILS:

- Supply: 10 to 35VDC
- Output voltage = supply voltage
- Actuator current continuous max: 15A
- Current limit adj.: 0.1-20A
- Overheat limit: 100°C
- Hall input freq.: Max 1kHz
- Input control logic (pos.): High=4-30V, Low=0-1V or open

EEL-S2-3

For 2 actuators



FEATURES:

- Synchronized operation of 2 actuators
- Current and temperature protection
- Settable drive speed
- Adjustable start- and stop ramp
- Easy setting with serial interface
- Autobalance feature
- Hall sensors necessary

TECHNICAL DETAILS:

- Supply: 10 to 35VDC
- Output voltage = supply voltage
- Quiescent current: 15mA
- Motor current: 2x10A cont. 2x20A, 25% duty
- Current limit: 1-20A
- Pulse input freq. max.: 1kHz
- Pulse inputs pull- up/down: 10kO
- Control inputs: 0-1V=OFF; 4-30V=ON

EEL-S3

EEL-S4

For 1-4 actuators



FEATURES:

- Battery powered for mobile use
- 24VDC NiMh or Li-Ion battery
- Customized colors and foil design
- Wired handset

EEL-S3:

- 1 actuator
- up- and down function

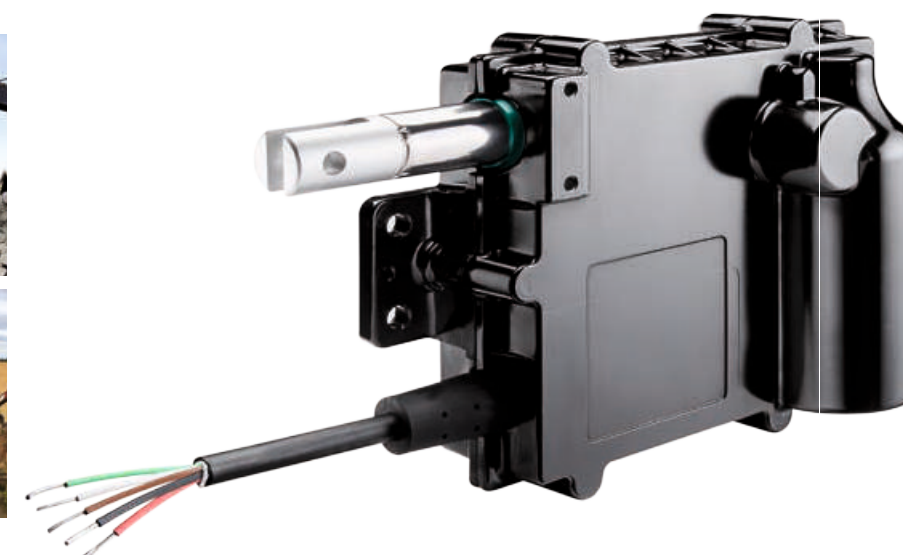
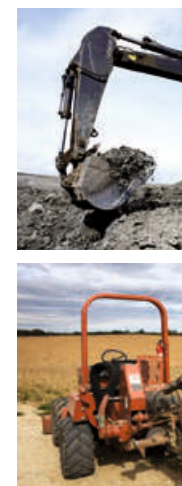
EEL-S4:

- Adjustable current limit in and out
- Adjustable calibration speed and current
- Adjustable virtual min/max-position
- Individual or synchronous operation for drive 1-4 actuators

TECHNICAL DETAILS:

- Supply: 24VDC NiMH or Li-Ion battery
- Output voltage: 24V
- Idle current: < 5mA
- Current limit: 8A/ch max. total 12A
- Ramps 0-3 sec
- Connector type Molex Mini-Fit 6 pin

Paralel Endüstriyel Aktüatörler(DC)



Quick-Attach



Single-User Maintenance and Repair



Roadwork and Construction Site Equipment



Utility Vehicles



Railroad Equipment



Emergency and Rescue Vehicles



Logistic Systems



Switch Gears



Electrak® HD Technical Features



Standard Features

- Onboard electronics with many optional functions
- Static load up to 18 kN (4050 lbf)
- Dynamic load up to 16 kN (3584 lbf)
- Stroke up to 1000 mm
- Speed up to 71 mm/s (2.8 in/s)
- Protection class static IP67 / IP69K and dynamic IP66 and tested for 500 hour salt spray resistance

General Specifications

Screw type	ball
Nut type	load lock ball nut
Manual override	yes
Anti-rotation	yes
Static load holding brake	yes
Safety features	Electrak monitoring package: current monitoring voltage monitoring temperature monitoring load trip point calibration internal end-of-stroke limit switches ⁽¹⁾ end-of-stroke dynamic braking
Electrical connections ⁽²⁾	cable(s) with flying leads
Compliances	CE

(1) Dynamic braking is included at the ends of stroke for all Electrak HD actuators. Dynamic braking offered throughout the entire stroke length only on low-level switching and J1939 options.
(2) There are one or two cables depending on the control option used. The cable(s) enters the actuator via a connector. The replacement of an actuator can be completed by unplugging the old actuator and plugging in the new one.

Optional Mechanical Features

- Variety of front and rear adapters
- Alternative adapter orientation

Optional Electronic Control Features

- J1939 CAN bus
- Synchronization option
- Low-level switching
- End-of-stroke indication output
- Analog position output
- Digital position output

Control Option Combinations

EXX	Electrak Monitoring Package only
ELX	EXX + End-of-Stroke Indication Output
EXP	EXX + Analog Position Output
EXD	EXX + Digital Position Output
ELP	ELX + Analog Position Output
ELD	ELX + Digital Position Output
LXX	EXX + Low-Level Signal Motor Switching
LLX	EXX + LXX + End-of-Stroke Indication Output
LXP	EXX + LXX + Analog Position Output
CNO	J1939 CAN Bus Control + Open-Loop Speed Control
SYN	Synchronization Option

Accessories

- Rod end front adapter
- External slot-mounted limit switches

Compatible Controls

Contact customer support at www.thomsonlinear.com/cs

Electrak HD – Technical Specifications

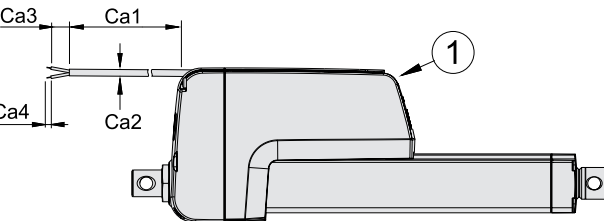
Mechanical Specifications

Max. static load ⁽¹⁾	[kN (lbf)]	18 (4050)
Max. dynamic load (Fx)	[kN (lbf)]	
HDxx-B017	1.7 (382)	
HDxx-B026	2.6 (585)	
HDxx-B045	4.5 (1012)	
HDxx-B068	6.8 (1529)	
HDxx-B100	10 (2248)	
HDxx-B160	16 (3584)	
Speed @ no load/max. load ⁽²⁾	[mm/s (in/s)]	
HDxx-B017	71/58 (2.8/2.28)	
HDxx-B026	40/32 (1.6/1.3)	
HDxx-B045	24/19 (0.94/0.75)	
HDxx-B068	18/14 (0.71/0.55)	
HDxx-B100	11/9 (0.43/0.35)	
HDxx-B160	7/5 (0.27/0.21)	
Min. ordering stroke (S) length	[mm]	50
Max. ordering stroke (S) length ⁽³⁾	[mm]	1000
Ordering stroke length increments	[mm]	50
Operating temperature limits	[°C (F)]	- 40 – 85 (- 40 – 185)
Full load duty cycle @ 25 °C (77 °F)	[%]	25 ⁽⁴⁾
End play, maximum	[mm (in)]	1.2 (0.047)
Restraining torque	[Nm (lbf-in)]	0
Protection class - static		IP67, IP69K
Protection class - dynamic		IP66
Salt spray resistance	[h]	500

(1) Max. static load at fully retracted stroke.
(2) For units with the synchronization option, the speed is 25% lower at any load.
(3) 500 mm max. for 16 kN
(4) For HDxx-B100 and HDxx-160, unidirectional load, the duty cycle is 15%.
(5) Do not use PWM voltage for speed control to avoid damaging the onboard electronics

Electrical Specifications

Available input voltages ⁽⁵⁾	[Vdc]	12, 24
Input voltage tolerance	[Vdc]	
HD12 (12 Vdc input voltage)		9 - 16
HD24 (24 Vdc input voltage)		18 - 32
Current draw @ no load/max. load	[A]	
HD12-B017		3/18
HD24-B017		1.5/9
HD12-B026		3/18
HD24-B026		1.5/9
HD12-B045		3/18
HD24-B045		1.5/9
HD12-B068		3/20
HD24-B068		1.5/10
HD12-B100		3/18
HD24-B100		1.5/9
HD12-B160		3/20
HD24-B160		1.5/10
Motor leads cross section	[mm² (AWG)]	2 (14)
Signal leads cross section	[mm² (AWG)]	0.5 (20)
Standard cable lengths (Ca1)	[m (in)]	0.3, 1.5, 5 (11.8, 59, 197)
Cable diameter (Ca2)	[mm (in)]	7.5 (.295)
Flying lead length (Ca3)	[mm (in)]	76 (3)
Stripped lead length (Ca4)	[mm (in)]	6 (0.25)



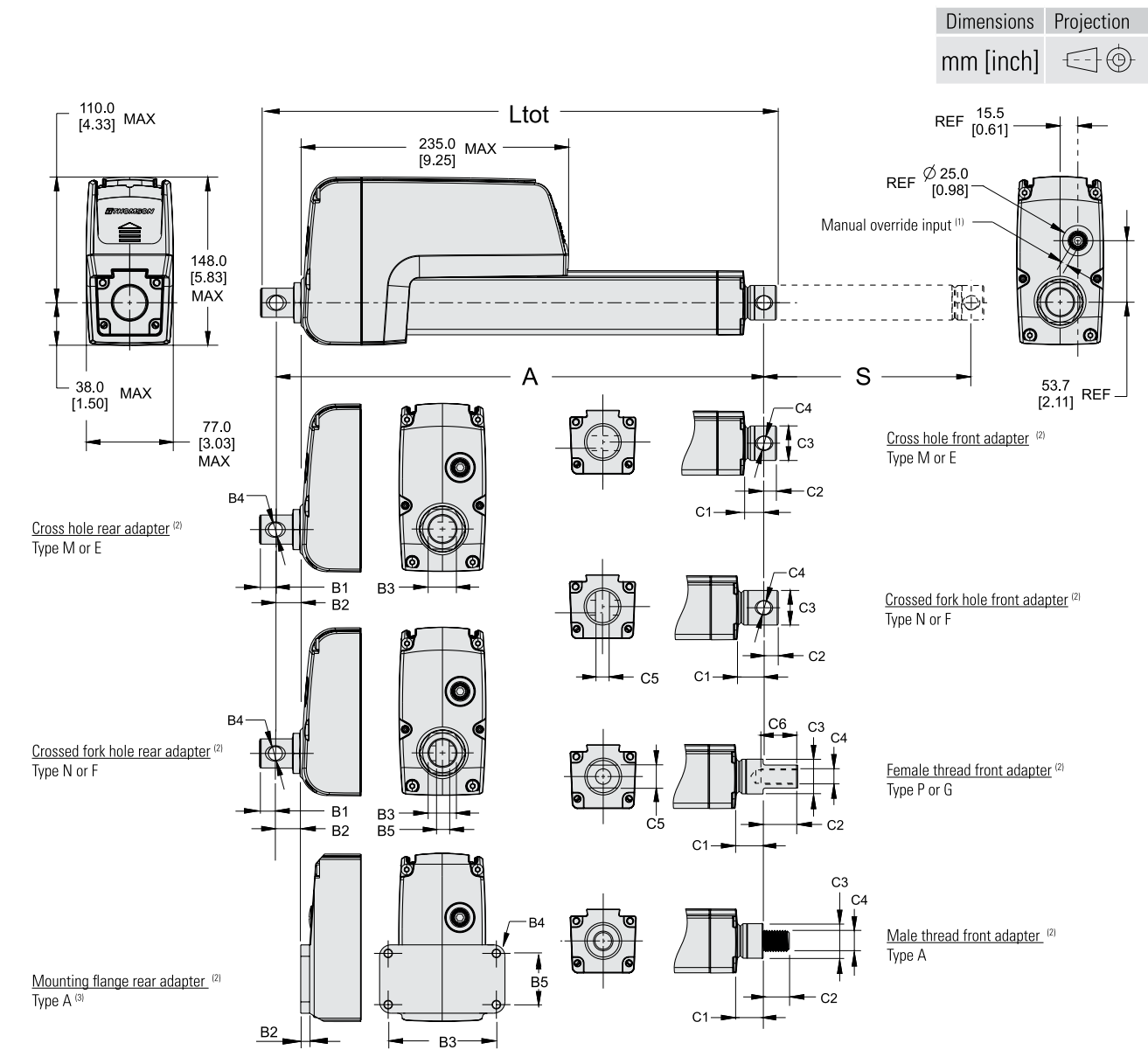
The drawing shows the cables exiting the cable slots at the end of the actuator housing, which is the shipping position. The user can adjust the exit point to be anywhere between the connector (1) in the front of the housing and the end of the cable slots.

Actuator Weight [kg]

Maximum Dynamic Load (Fx) [kN (lbf)]	Ordering stroke (S) [mm]																			
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
1.7 (382)	6.4	6.5	6.7	7.0	7.2	7.5	7.7	8.0	8.2	8.5	8.7	9.0	9.2	9.5	9.7	10.0	10.2	10.5	10.7	11.0
2.6 (585)	6.4	6.5	6.7	7.0	7.2	7.5	7.7	8.0	8.2	8.5	8.7	9.0	9.2	9.5	9.7	10.0	10.2	11.6	11.9	12.2
4.5 (1012)	6.4	6.5	6.7	7.0	7.2	7.5	7.7	8.0	8.2	8.5	8.7	9.0	9.2	10.4	10.7	11.0	11.3	11.6	11.9	12.2
6.8 (1592)	6.4	6.5	6.7	7.0	7.2	7.5	7.7	8.0	8.2	8.5	9.5	9.8	10.1	10.4	10.7	11.0	11.3	11.6	11.9	12.2
10 (2248)	6.6	6.7	7.0	7.2	7.5	7.7	8.0	8.2	9.1	9.4	9.7	10.0	10.3	10.6	10.9	11.2	11.5	11.8	12.1	12.4
16 (3584)	6.9	7.0	7.3	7.5	7.8	8.0	8.3	8.5	9.1	9.4	-	-	-	-	-	-	-	-	-	-

Conversion Factors: Millimeter to inch: 1 mm = 0.03937 in, kilogram to pound: 1 kg = 2.204623 lbf

Electrak® HD – Dimensions



Rear and Front Adapter Dimensions [mm]													
	Rear Adapter Types						Front Adapter Types						
	M	E	N	F	A ⁽³⁾		M	E	N	F	P	G	A
B1	13.4	13.4	13.4	13.4	-	C1	see table on next page						16.5
B2	21.6	21.6	21.6	21.6	7.8	C2	10.9	10.9	12.9	12.9	30.0	30.0	20.0
B3	25.4	25.4	25.4	25.4	95.0	C3	see table on next page						
B4	12.2	12.8	12.2	12.8	6.6	C4	12.2	12.8	12.2	12.8	M12 × 1.75	1/2-20 UNF-2B	M16 × 2
B5	-	-	8.2	8.2	45.0	C5	-	-	8.2	8.2	19.0	19.0	-
						C6	-	-	-	-	35.0	35.0	-

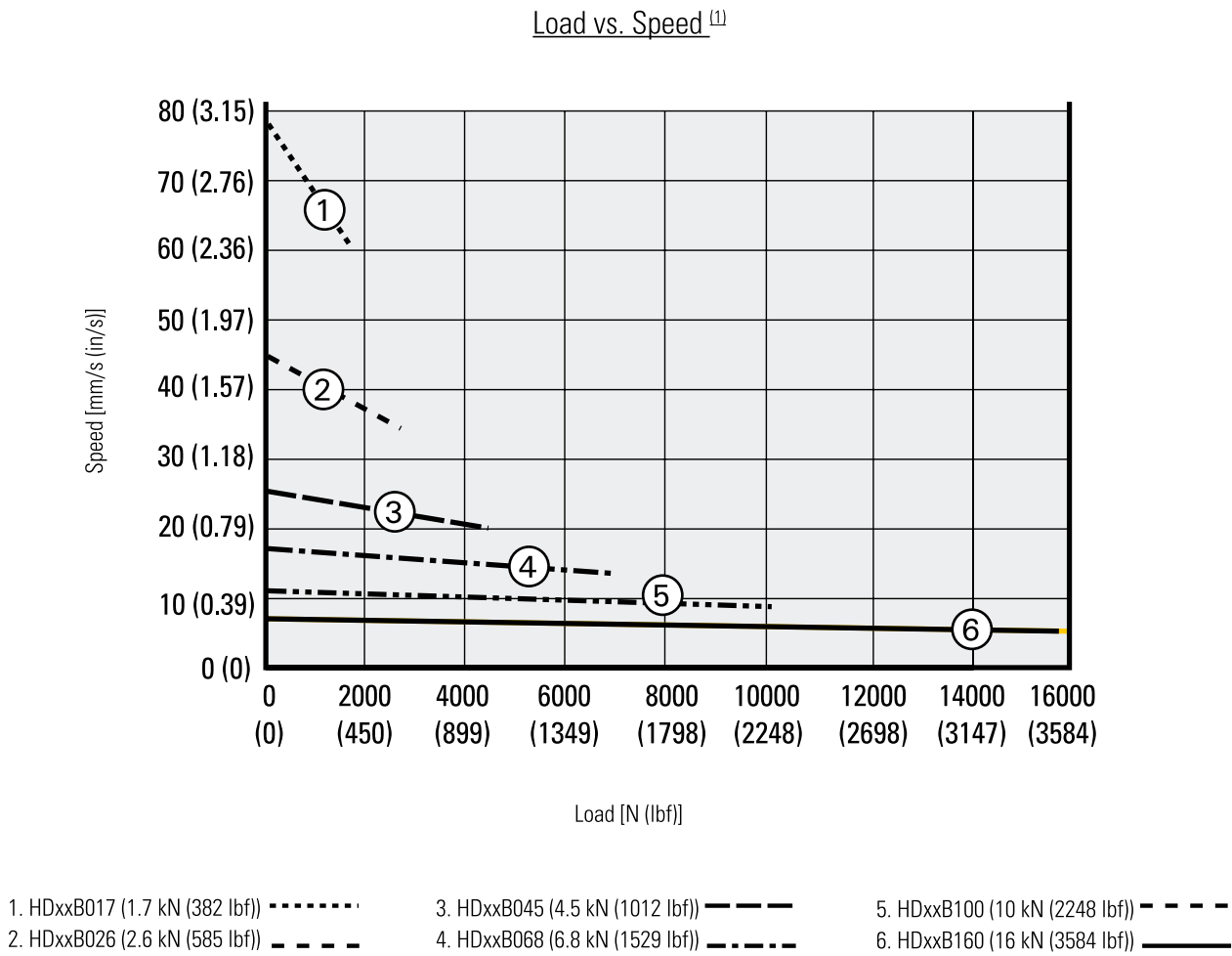
(1) The input hole is covered with a plastic threaded plug. When removed, a 6 mm socket can be inserted and used as a crank.
(2) All adapters shown in the standard orientation.
(3) Rear mounting flange type A can not be ordered with a higher maximum static load capacity than 10 kN or/and a maximum stroke of 300 mm.

Electrak® HD – Dimensions

Maximum Dynamic Load and Stroke Relationships						
Maximum Dynamic Load (Fx) - kN (lbf.)	Total Length (Ltot), Retracted Length (A) and Front Adapter Dimensions [mm]		Ordering Stroke (S) [mm]			
			50 – 500 ⁽¹⁾	550 – 600	650 – 700	750 – 900
1.7 (382)	Ltot		A + B1 + C2			
	A		S + 150.9 + B2 + C1			
	C1	Type M, E	17.5			
		Type N, F	26.5			
		Type P, G	23.9			
	C3		30.2			
2.6 (585)	Ltot		A + B1 + C2			A + B1 + C2
	A		S + 150.9 + B2 + C1			S + 156.8 + B2 + C1
	C1	Type M, E	17.5			24.0
		Type N, F	26.5			27.0
		Type P, G	23.9			24.9
	C3		30.2			35.0
4.5 (1012)	Ltot		A + B1 + C2		A + B1 + C2	
	A		S + 150.9 + B2 + C1		S + 156.8 + B2 + C1	
	C1	Type M, E	17.5		24.0	
		Type N, F	26.5		27.0	
		Type P, G	23.9		24.9	
	C3		30.2		35.0	
6.8 (1529)	Ltot		A + B1 + C2		A + B1 + C2	
	A		S + 150.9 + B2 + C1		S + 156.8 + B2 + C1	
	C1	Type M, E	17.5		24.0	
		Type N, F	26.5		27.0	
		Type P, G	23.9		24.9	
	C3		30.2		35.0	
10 (2248)	Ltot		A + B1 + C2	A + B1 + C2		
	A		S + 180.9 + B2 + C1	S + 182 + B2 + C1		
	C1	Type M, E	17.5	24.0		
		Type N, F	26.5	27.0		
		Type P, G	23.9	24.9		
	C3		30.2	35.0		
16 (3584)	Ltot		A + B1 + C2	strokes not available for this model		
	A		S + 182 + B2 + C1			
	C1	Type M, E	24.0			
		Type N, F	27.0			
		Type P, G	24.9			
	C3		35.0			

(1) For a unit with 50 mm stroke, A and Ltot dimension are the same as for a unit with 100 mm stroke.

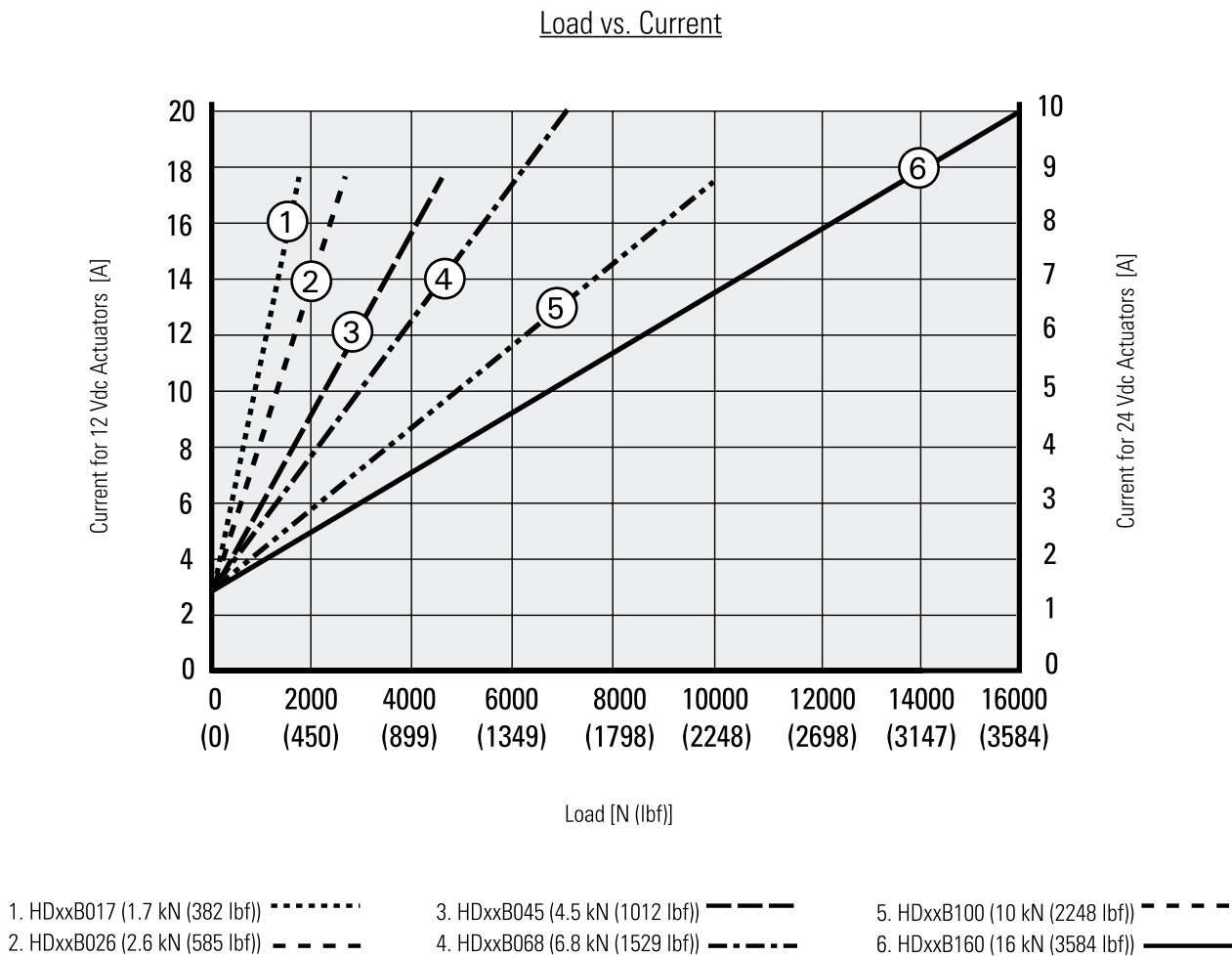
Electrak® HD – Performance Diagrams



¹ Curves valid for all units except those with the synchronization option, where the speed at any load is 25% lower than for those without.

Note! Curves were generated at an ambient temperature of 21°C (70°F). Different ambient temperature and individual actuator characteristics can produce slightly different values.

Electrak® HD – Performance Diagrams



Note! Curves were generated at an ambient temperature of 21°C (70°F). Different ambient temperature and individual actuator characteristics can produce slightly different values.

Electrak® HD – Ordering Key

Ordering Key							
1	2	3	4	5	6	7	8
HD12	B026-	0300	LXX	2	M	M	S
1. Model and input voltage HD12 = Electrak HD, 12 Vdc HD24 = Electrak HD, 24 Vdc 2. Screw type, dynamic load capacity B017- = ball screw, 1.7 kN (382 lbf) B026- = ball screw, 2.6 kN (585 lbf) B045- = ball screw, 4.5 kN (1012 lbf) B068- = ball screw, 6.8 kN (1529 lbf) B100- = ball screw, 10 kN (2248 lbf) B160- = ball screw, 16 kN (3584 lbf) 3. Ordering stroke length ^{(1) (2)} 0050 = 50 mm ⁽³⁾ 0100 = 100 mm 0150 = 150 mm 0200 = 200 mm 0250 = 250 mm 0300 = 300 mm 0350 = 350 mm 0400 = 400 mm 0450 = 450 mm 0500 = 500 mm 0550 = 550 mm 0600 = 600 mm 0650 = 650 mm 0700 = 700 mm 0750 = 750 mm 0800 = 800 mm 0850 = 850 mm 0900 = 900 mm 0950 = 950 mm 1000 = 1000 mm 4. Electrak Modular Control System options EXX = Electronic Monitoring Package only ELX = EXX + end-of-stroke indication output EXP = EXX + analog (potentiometer) position output EXD = EXX + digital position output ELP = ELX + analog (potentiometer) position output ELD = ELX + digital position output LXX = EXX + low-level signal motor switching LLX = EXX + LXX + end-of-stroke indication output LXP = EXX + LXX + analog (potentiometer) position output CNO = J1939 CAN bus + open-loop speed control SYN = LXX + synchronization option 5. Cable length 1 = 0.3 m long cables 2 = 1.5 m long cables 3 = 5.0 m long cables 6. Rear adapter/mounting flange options A = rear mounting flange ^{(4) (5)} M = cross hole for 12 mm pin E = cross hole for ½ inch pin N = forked cross hole for 12 mm pin F = forked cross hole for ½ inch pin 7. Front adapter options A = metric M16 male thread M = cross hole for 12 mm pin E = cross hole for ½ inch pin N = forked cross hole for 12 mm pin F = forked cross hole for ½ inch pin P = metric M12 female thread G = inch 1/2-20 UNF-2B female thread 8. Adapter orientation S = standard M = 90 ° turned 9. Connection options D = flying leads (1) Other stroke lengths available upon request. Please contact customer support. (2) 500 mm is the max. stroke length for 16 kN units. (3) 50 mm stroke units will have same retracted length and envelope size as a 100 mm unit. (4) Max. ordering stroke for the rear mounting flange type A is 300 mm. (5) Max. dynamic load capacity for the rear mounting flange type A is 10 kN.							

Electrak® HD – Electrical Connections

Option Type EXX		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
F	Fuse	
S1	Double pole double throw switch	
Control option EXX contains Electrak Monitoring Package features, guaranteeing safe operation of the actuator and equipment. With control option EXX, the polarity of the motor voltage is switched by a customer-supplied switch (switch, relay, etc.) to make the actuator extend or retract. The switch, power supply, wiring and all other components must be able to handle the motor current for the actuator model and load being used, as well as the inrush current (up to three times the max. continuous current for the max. load being used for up to 150 milliseconds).		
Option Type ELX		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Output contact type		potential free
Limit switch max. switch voltage	[Vdc]	140
Limit switch max. switch current	[mA]	350
Limit switch max. switch power	[W]	5
F	Fuse	
S1	Double pole double throw switch	
Control option ELX works as option EXX but also has two outputs that indicate when the extension tube is in its fully extended or retracted position.		

Electrak® HD – Electrical Connections

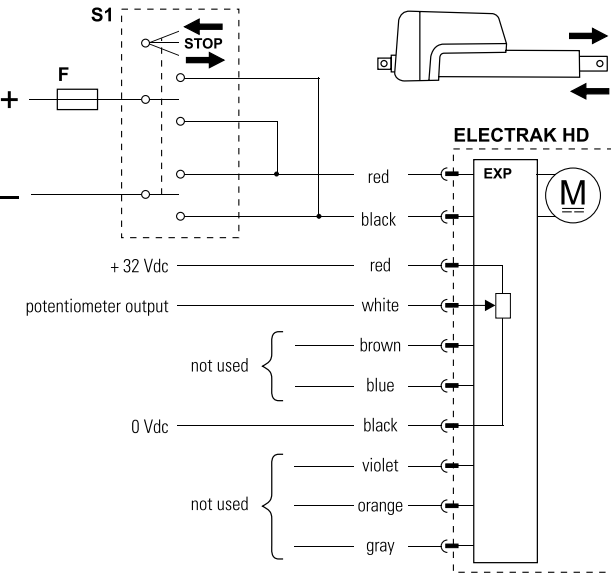
Electrak® HD – Electrical Connections

Option Type EXP		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Potentiometer type		wire-wound
Potentiometer max. input voltage	[Vdc]	32
Potentiometer max. power	[W]	1
Potentiometer linearity	[%]	± 0.25
Potentiometer output resolution	[ohm/mm]	
50 - 100 mm stroke		65.6
150 - 250 mm stroke		32.8
300 - 500 mm stroke		19.7
550 - 1000 mm stroke		9.8

Option Type EXD		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Encoder type		hall effect
Encoder input voltage	[Vdc]	4 - 24
Encoder output voltage levels	[Vdc]	
low (logical zero), typical / max.		0.1 / 0.25
Encoder resolution	[mm/pulse]	
HDxx-B017		0.28
HDxx-B026		0.15
HDxx-B045		0.09
HDxx-B068		0.07
HDxx-B100		0.04
HDxx-B160		0.03

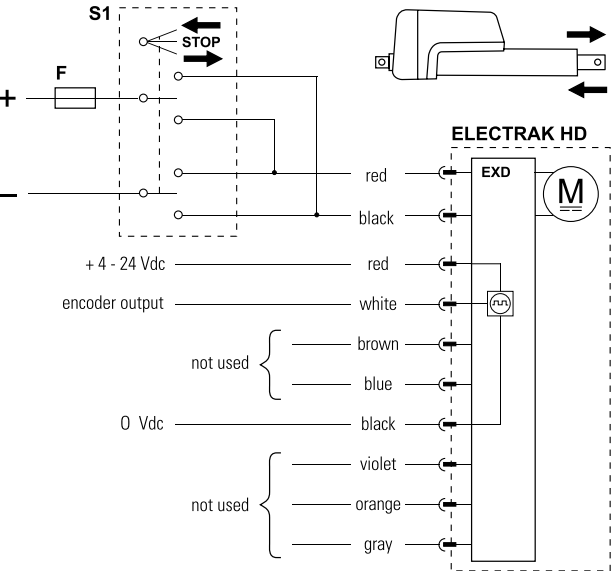
Option Type ELP		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Output contact type		potential free
Max. output voltage	[Vdc]	140
Max. output current	[mA]	350
Max. output power	[W]	5
Potentiometer type		wire-wound
Potentiometer max. input voltage	[Vdc]	32
Potentiometer max. power	[W]	1
Potentiometer linearity	[%]	± 0.25
Potentiometer output resolution	[ohm/mm]	
50 - 100 mm stroke		65.6
150 - 250 mm stroke		32.8
300 - 500 mm stroke		19.7
550 - 1000 mm stroke		9.8

Option Type ELD		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Output contact type		potential free
Max. output voltage	[Vdc]	140
Max. output current	[mA]	350
Max. output power	[W]	5
Encoder type		hall effect
Encoder input voltage	[Vdc]	4 - 24
Encoder output voltage levels	[Vdc]	
low (logical zero), typical / max.		0.1 / 0.25
Encoder resolution	[mm/pulse]	
HDxx-B017		0.28
HDxx-B026		0.15
HDxx-B045		0.09
HDxx-B068		0.07
HDxx-B100		0.04
HDxx-B160		0.03



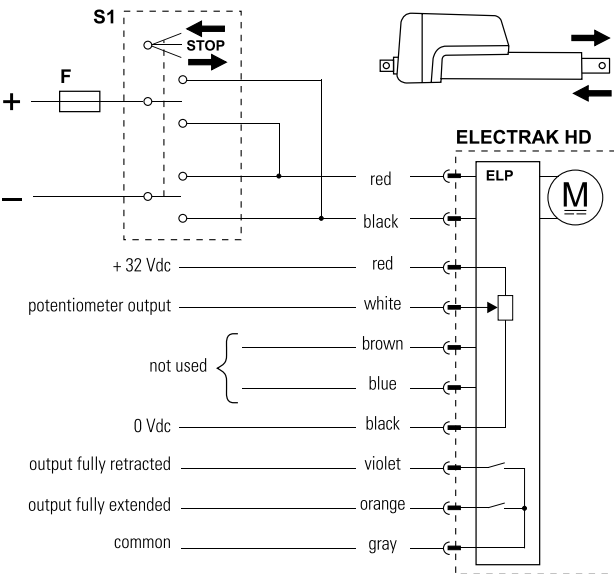
F Fuse
S1 Double pole double throw switch

Control option EXP works as option EXX but also has an analog (potentiometer) output that will provide feedback on the extension tube position.



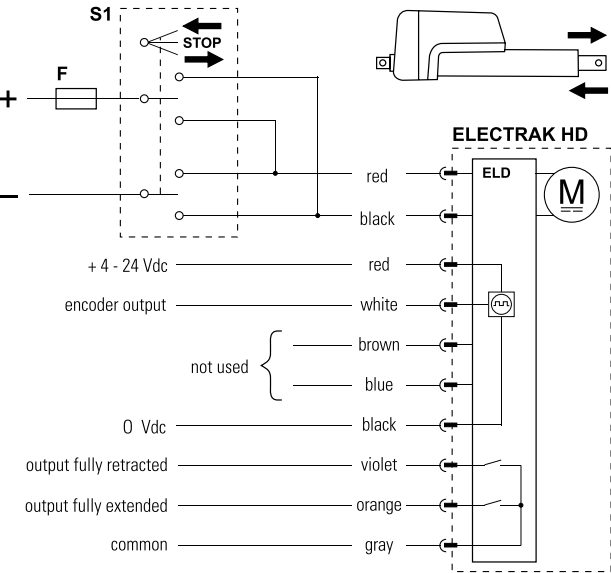
F Fuse
S1 Double pole double throw switch

Control option EXD works as option EXX but also has a single-channel encoder output that will provide feedback on the extension tube position.



F Fuse
S1 Double pole double throw switch

Control option ELP works as option EXP but also has two outputs that indicate when the extension tube is in its fully extended or retracted position.



F Fuse
S1 Double pole double throw switch

Control option ELD works as option EXD but also has two outputs that indicate when the extension tube is in its fully extended or retracted position.

Electrak® HD – Electrical Connections

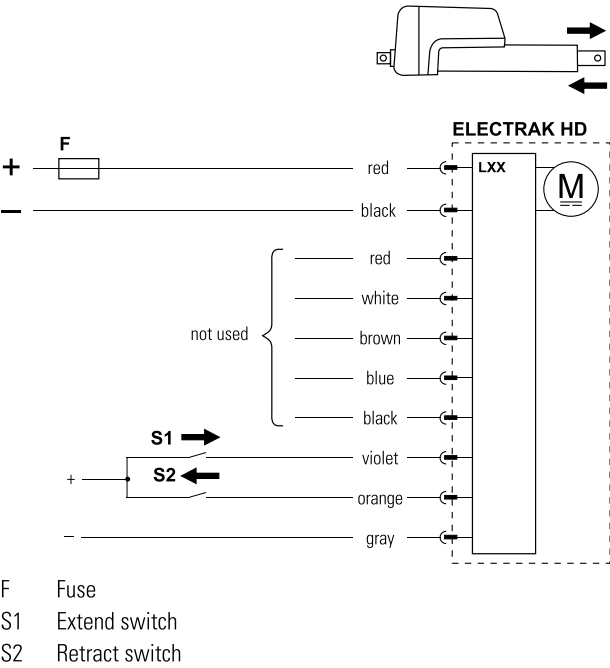
Electrak® HD – Electrical Connections

Option Type LXX		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Extend / retract input voltage	[Vdc]	9 - 32
Extend / retract input current	[mA]	6 - 22

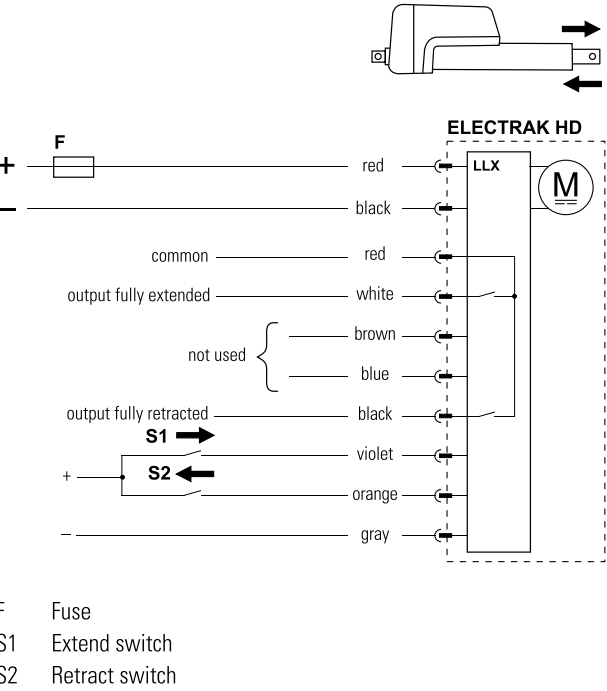
Option Type LLX		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Output contact type		potential free
Max. switched output voltage	[Vdc]	140
Max. output current	[mA]	350
Max. output power	[W]	5
Extend / retract input voltage	[Vdc]	9 - 32
Extend / retract input current	[mA]	6 - 22

Option Type LXP		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Potentiometer type		wire-wound
Potentiometer max. input voltage	[Vdc]	32
Potentiometer max. power	[W]	1
Potentiometer linearity	[%]	± 0.25
Potentiometer output resolution	[ohm/mm]	
50 - 100 mm stroke		65.6
150 - 250 mm stroke		32.8
300 - 500 mm stroke		19.7
550 - 1000 mm stroke		9.8
Extend / retract input voltage	[Vdc]	9 - 32
Extend / retract input current	[mA]	6 - 22

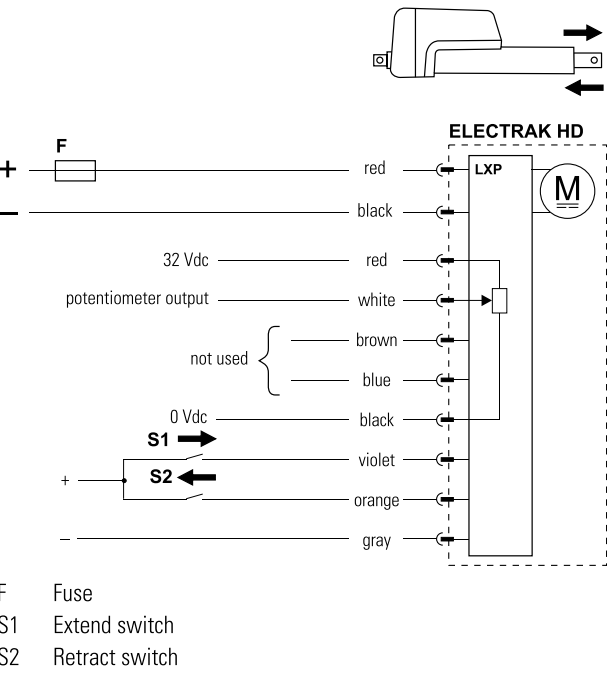
Option Type CNO		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Command data includes:		
• position		
• speed		
• current		
Feedback data includes:		
• position		
• speed		
• current		
• other diagnostic information		



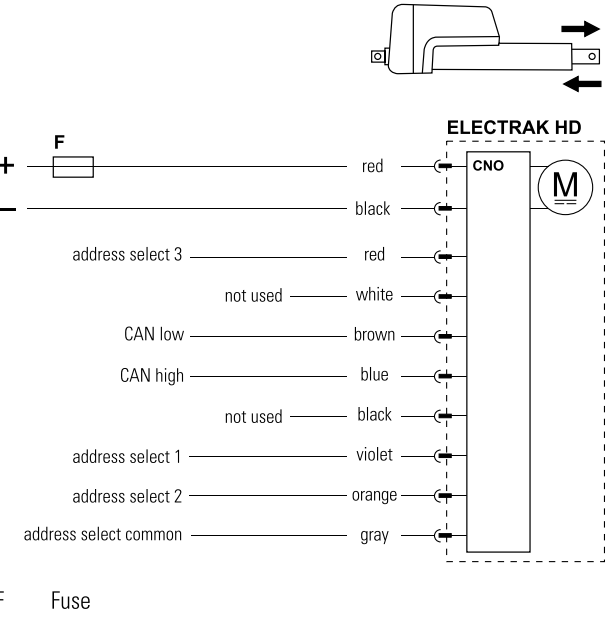
Control option LXX has all the basic Electrak Monitoring Package features included in control option EXX, but the polarity of the motor voltage is switched by the onboard electronics instead. The customer-supplied switches used to command the actuator to extend or retract only need to handle low-level signals. However, the power supply and wiring that supply the actuator must be able to handle the motor current for the actuator model and load being used, as well as the inrush current (up to one and a half times the max. continuous current for the max. load being used for up to 150 milliseconds).



Control option LLX works as option LXX but also has two outputs that indicate when the extension tube is in its fully extended or retracted position.



Control option LXP works as option LXX but also has an analog (potentiometer) output that will provide feedback on the extension tube position.



Control option CNO has a J1939 CAN bus control interface that controls and monitors the actuator. Extend and retract commands are sent via CAN messages on the CAN low and CAN high pins. Address select 1, 2 and 3 pins can be used as a BCD encoded adder to the default address. This can be used when multiple J1939 actuators are located on a single bus.

Electrak® HD – Electrical Connections

Option Type SYN		
Actuator supply voltage	[Vdc]	
HD12		9 - 16
HD24		18 - 32
Extend / retract input voltage	[Vdc]	9 - 32
Extend / retract input current	[mA]	6 - 22
Number of synchronized actuators		2 - 4
Max. actuator speed difference	[%]	25

Control option SYN works as option LXX but also has a synchronization feature, allowing two or more actuators having the SYN option to run in integrated motion.

Uneven loading is acceptable as long as no individual actuator is loaded beyond its rated load.

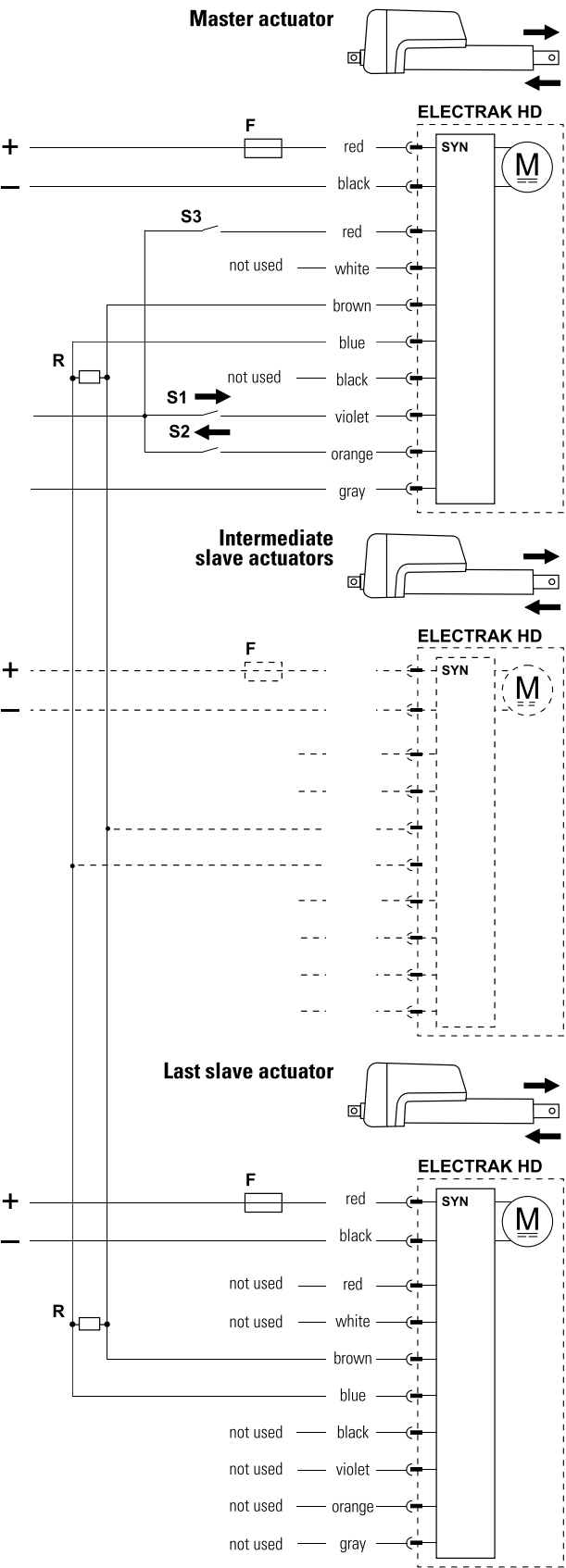
When using the low-level extend and retract inputs on the master actuator, the slave(s) will follow. If there is a need to run an actuator individually, it is possible to put it into an override state by closing a switch (S3) connected to the red lead as shown in the wiring diagram.

Note: Ensure that supply voltage to each actuator is within ± 1 volt.

Note: For units with the synchronization option, the speed at a given load is 25% lower than for those without. This is true irrespective of the unit being in synchronization or override mode, or simply run individually.

Note: Only two resistors are needed. They act as terminating resistors for the communication leads. One will be on the first unit of the bus, the other will be on the last.

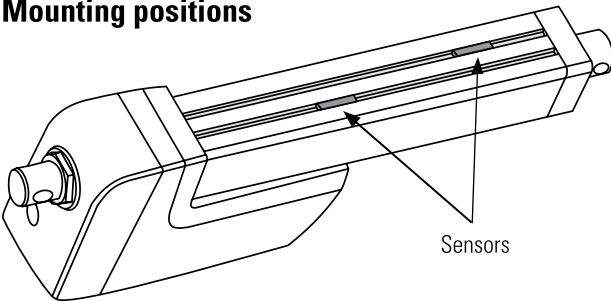
- F Fuses
- S1 Extend switch
- S2 Retract switch
- S3 Override switch
- R Resistors 120 Ohm



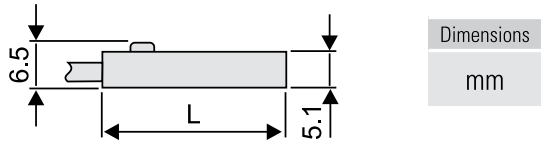
Electrak® HD – Accessories

Limit Switches for Cover Tube Mounting		
Sensor type	solid state	reed switch
Contact type	normally open (N.O.)	
Output type	PNP	contact
Voltage	[VDC/AC]	10 - 30 / - 5 - 115 / 5 - 115
Max. current	[mA]	100
Hysteresis	[mm (in)]	1.5 (0.06) 1.0 (0.04)
Operating temperature	[°C]	- 25 to + 85 - 25 to + 85
Lead cross section	[mm²]	3 × 0.14 2 × 0.14
Length (L)	[mm (in)]	25.3 (1.0) 30.5 (1.2)
Protection class		IP69K IP67
LED indicator		yes
Connection	2 m cable with flying leads	
p/n	840-9131	840-9132

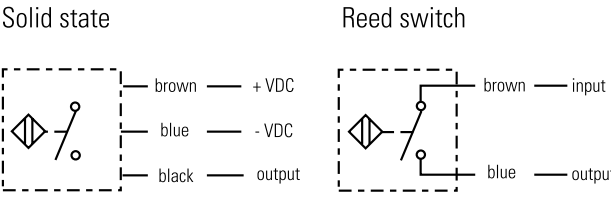
Mounting positions



Dimensions



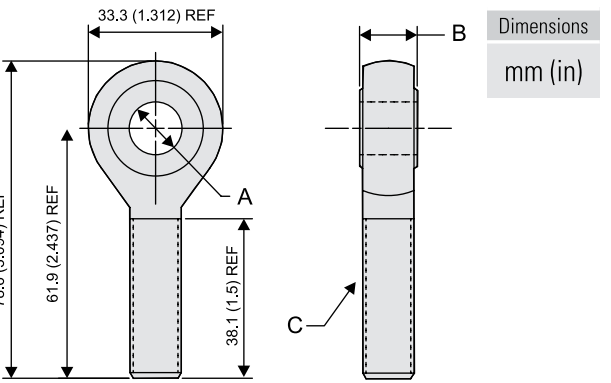
Connection



The limit switches are mounted in the cover tube slots and will be switched by a magnet mounted inside of the actuator on the extension tube.

Rod End Front Adapter		
Type	metric	inch
Material	Cadmium-plated steel	
Dimensions		
A	12.0 ± 0.1 mm	0.5 in
B	14.3 ± 0.1 mm	0.625 in
C	M12	1/2-20 UNF
p/n	756-9021	756-9007

Dimensions



The rod end front adapter comes in one metric and one imperial version. The metric adapter can be mounted to the front of the extension tube if the actuator is equipped with the metric female thread front adapter option (type P), while the inch adapter requires the inch female thread option (type G).

Wire Harness Kits	
Part Number	Description
954-9364	0.3 m Power Only (EXX)
954-9365	1.5 m Power Only (EXX)
954-9366	5.0 m Power Only (EXX)
954-9367	0.3 m Power and 8-Wire Signal (ELX, ELP, ELD, LXX, LLX, LXP, CNO, SYN)
954-9368	1.5 m Power and 8-Wire Signal (ELX, ELP, ELD, LXX, LLX, LXP, CNO, SYN)
954-9369	5.0 m Power and 8-Wire Signal (ELX, ELP, ELD, LXX, LLX, LXP, CNO, SYN)
954-9370	0.3 m Power and 3-Wire Signal (EXP, EXD)
954-9471	1.5 m Power and 3-Wire Signal (EXP, EXD)
954-9372	5.0 m Power and 3-Wire Signal (EXP, EXD)

Max Jac® – Technical Features



Standard Features

- Designed for industrial applications
- Rugged aluminium housing with IP69K
- High efficiency
- Long life
- Hard coat anodizing for high corrosion resistance
- Virtually maintenance free
- Worm or ball screw models
- Non-contact analog position feedback signal

General Specifications	
Screw type	worm or ball
Nut type	lead or ball
Manual override	no
Anti-rotation	no
Static load holding brake	no (self-locking)
worm screw models	no
ball screw models	
Safety features	none
Electrical connections	flying leads or cable with AMP Superseal connector
Compliances	CE

Optional Electrical Features

Digital feedback

Compatible Controls

Contact customer support at www.thomsonlinear.com/cs

Max Jac® – Technical Specifications

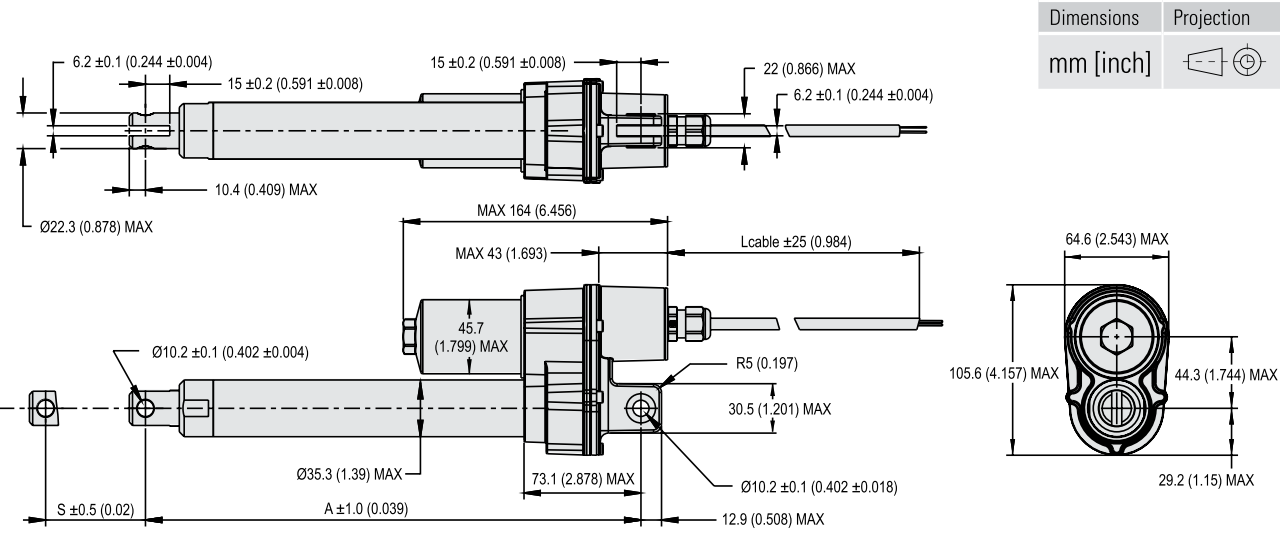
Mechanical Specifications		
Max. static load ⁽¹⁾	[N (lbf)]	2000 (450)
MXxxW (worm screw)		100 - 350 (22 - 79)
MXxxB (ball screw) ⁽²⁾		
Max. dynamic load (Fx)	[N (lbf)]	500 (112)
MXxxW (worm screw)		800 (180)
MXxxB (ball screw)		
Speed @ no load/max. load	[mm/s (in/s)]	33 / 19 (1.3 / 0.75)
MXxxW (worm screw)		60 / 30 (2.4 / 1.2)
MXxxB (ball screw)		
Min. ordering stroke (S) length	[mm]	50
Max. ordering stroke (S) length	[mm]	200
MXxxW (worm screw)		300
MXxxB (ball screw)		
Ordering stroke length increments	[mm]	50
Operating temperature limits	[°C (F)]	- 40 – 85 (- 40 – 185)
Duty cycle, maximum ⁽³⁾	[%]	load dependent
MXxxW (worm screw)		load dependent
MXxxB (ball screw)		
End play, maximum	[mm (in)]	0.3 (0.012)
Restraining torque	[Nm (lbf-in)]	2 (1.48)
Protection class - static		IP66/IP69K
Salt spray resistance	[h]	500

(1) Max. static load at fully retracted stroke
(2) The static force (i.e. the back-driving force) for a ball screw unit varies and is dependent on the number of cycles it has been running and at which loads.
(3) See "Duty cycle vs. load" chart in the Glossary section.

Electrical Specifications		
Available input voltages	[Vdc]	12, 24
Input voltage tolerance	[%]	+15 / -10
Current draw @ no load/max. load	[A]	1.2/8.0
MX12W (12 Vdc input, worm screw)		0.8/3.8
MX24W (24 Vdc input, worm screw)		1.1/7.4
MX12B (12 Vdc input, ball screw)		0.7/3.5
MX24B (24 Vdc input, ball screw)		
Inrush/stall current @ max. load	[A]	18.0
MX12W (12 Vdc input, worm screw)		9.0
MX24W (24 Vdc input, worm screw)		18.0
MX12B (12 Vdc input, ball screw)		19.0
MX24B (24 Vdc input, ball screw)		
Cable lengths, standard ⁽¹⁾	[mm (in)]	300 (12), 1600 (63)
Cable diameter ⁽¹⁾	[mm (in)]	6.2 (0.244)
Cable leads cross section ⁽¹⁾	[mm² (AWG)]	1 (18)

(1) The same cable is used both for the input voltage and the feedback signals.

Max Jac® – Dimensions

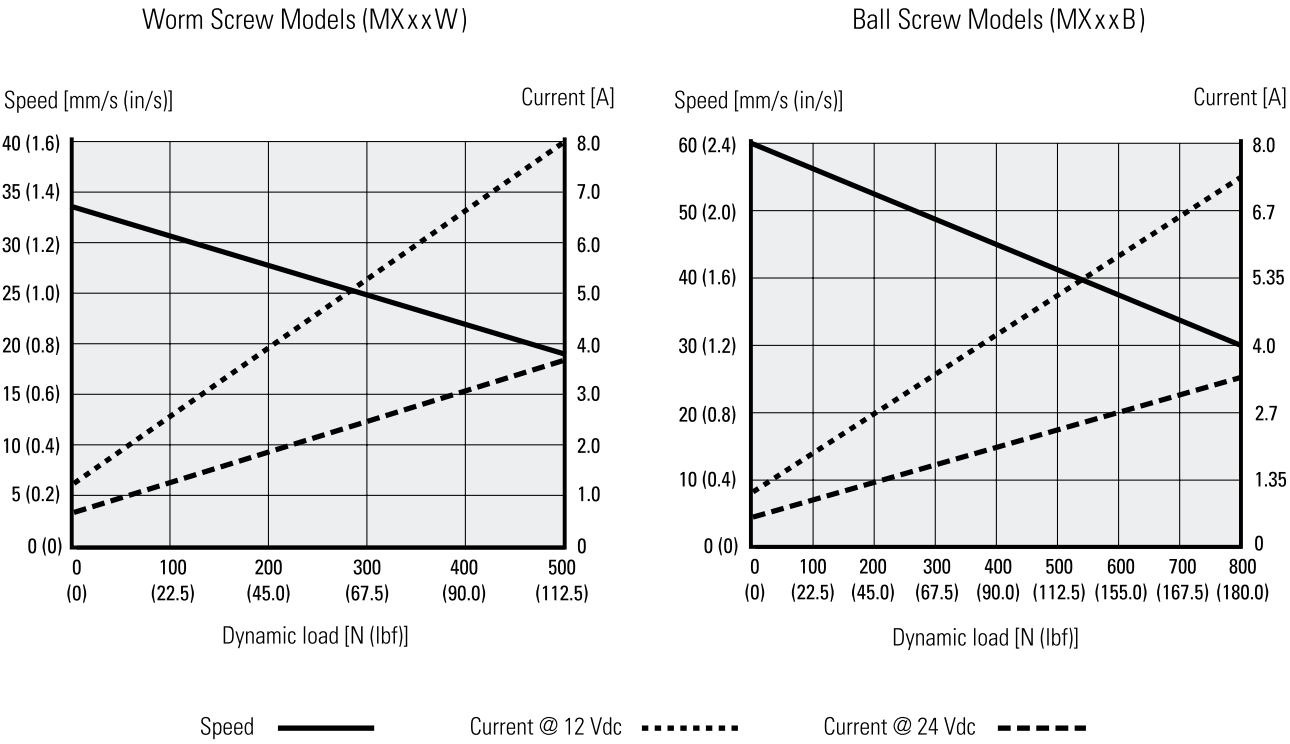


Stroke, Retracted Length and Weight Relationships							
Ordering stroke (S)	[mm]	50	100	150	200	250*	300*
Retracted length (A)	[mm]	206	256	306	356	406	456
	[in]	8.11	10.08	12.05	14.02	15.98	17.95
Weight	[kg]	1.5	1.7	1.9	2.1	2.2	2.4
	[lbf]	3.3	3.8	4.2	4.6	4.8	5.3

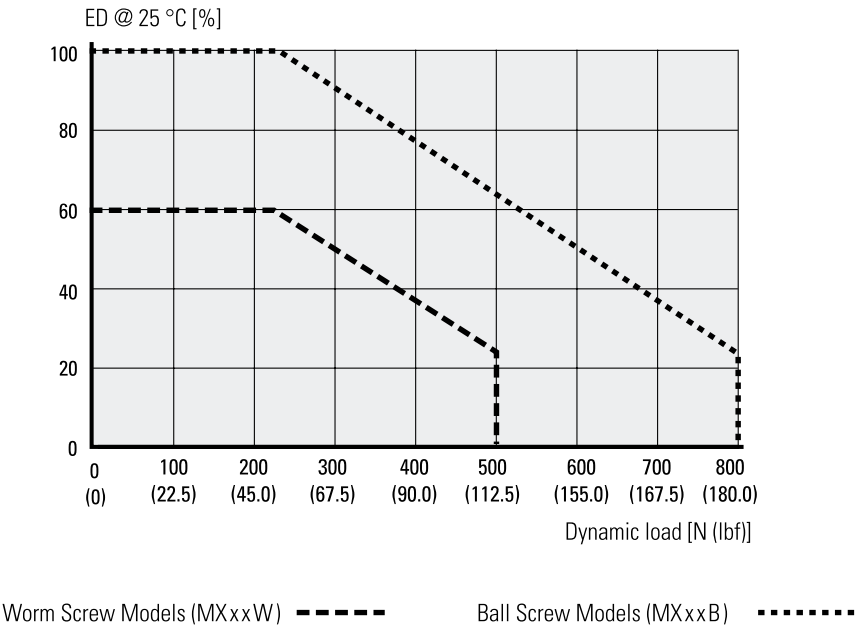
* Stroke not possible for MSxxW1 (worm screw) models.

Max Jac® – Performance Diagrams

Speed and Current vs. Load



Duty Cycle vs. Load

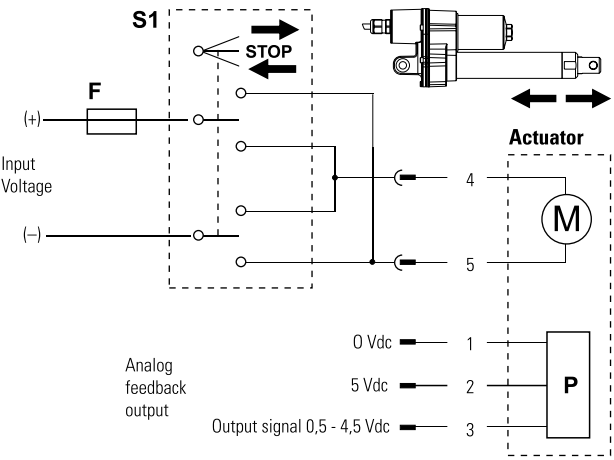


Max Jac® – Ordering Key

Ordering Key				
1	2	3	4	5
MX12	W1	M05	P	0
1. Model and input voltage MX12 = Max Jac, 12 Vdc MX24 = Max Jac, 24 Vdc		4. Options P = analog feedback (standard) E = digital encoder feedback		
2. Dynamic load capacity, screw type and maximum speed W1 = 500 N (112 lbf), worm screw, 35 mm/s (1.38 in/s) B8 = 800 N (180 lbf), ball screw, 55 mm/s (2.17 in/s)		5. Connector option 0 = 300 mm (12 in) long flying leads 1 = 300 mm (12 in) long cable and AMP Superseal connector 2 = 1600 mm (63 in) long cable and AMP Superseal connector		
3. Ordering stroke length M05 = 50 mm (1.969 in) M10 = 100 mm (3.937 in) M15 = 150 mm (5.906 in) M20 = 200 mm (7.874 in) M25 = 250 mm (9.843 in) ⁽¹⁾ M30 = 300 mm (11.811 in) ⁽¹⁾		(1) Stroke not possible for MSxxW1 (worm screw) models.		

Max Jac® – Electrical Connections

Option Analog Feedback		
Actuator supply voltage	[Vdc]	
MX12		12
MX24		24
Analog feedback type		non-contact
Analog feedback input voltage	[Vdc]	5
Analog feedback output voltage	[Vdc]	0.5 - 4.5
Analog feedback output linearity	[%]	± 1

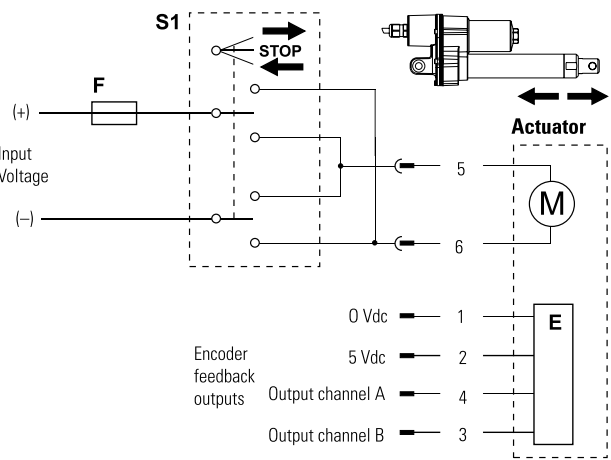


- M Actuator motor
- S1 Double pole double throw (DPDT) switch
- F Fuse
- P Analog feedback device

Connect lead 5 to positive and 4 to negative to extend the actuator. Change polarity to retract the actuator. The analog feedback device is supplied between leads 1 and 2, and the output signal is generated on lead 3.

Keep in mind that the actuator voltage must be switched off when reaching the ends of stroke or due to a mid-stroke overload to avoid causing damage to the actuator.

Option Encoder Feedback		
Actuator supply voltage	[Vdc]	
MX12		12
MX24		24
Encoder type		incremental
Number of encoder channels		2
Encoder input voltage	[Vdc]	5
Encoder output resolution	[pulse/mm]	
MX12W		9.86
MX12B		5.84

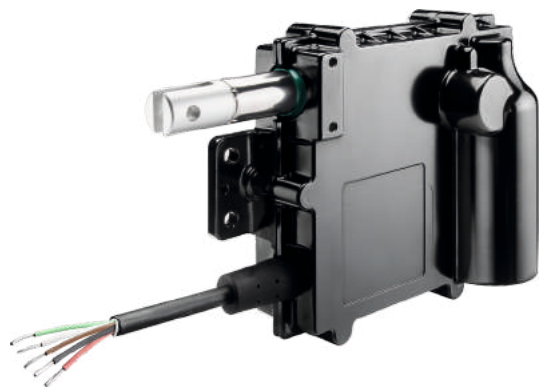


- M Actuator motor
- S1 Double pole double throw (DPDT) switch
- F Fuse
- E Encoder feedback device

Connect lead 6 to positive and 5 to negative to extend the actuator. Change polarity to retract the actuator. The encoder feedback device is supplied between leads 1 and 2, and the output signal train from channel A is generated on lead 4 and channel B on lead 3.

Keep in mind that the actuator voltage must be switched off when reaching the ends of stroke or due to a mid-stroke overload to avoid causing damage to the actuator.

Electrak® Throttle – Technical Features



Standard Features

- Designed for industrial applications
- Rugged aluminium housing with IP69K/IP67 ingress protection
- E-coated housing for corrosion resistance
- Minimal maintenance
- Integrated electronic options
- High end features at a low cost
- Integrated mounting holes

General Specifications

Screw type	worm
Nut type	worm
Manual override	no
Anti-rotation	yes
Static load holding brake	no (self-locking)
Safety features	end-of-stroke overload protection mid stroke overload protection motor auto reset thermal switch ⁽¹⁾
Electrical connections	cable with flying leads or Deutsch connector
Compliances	CE

(1) no thermal switch on units with temperature rating E.

Optional Mechanical Features

Adapter orientation
Right angle cable exit
Extended operating temperature range

Optional Electrical Features

Analog position feedback
Internal end-of-stroke limit switches
CAN bus J1939

Compatible Controls

Contact customer support at www.thomsonlinear.com/cs

Electrak® Throttle – Technical Specifications

Mechanical Specifications

Max. static load ⁽¹⁾ ETxx-084 ⁽²⁾ ETxx-174	[N (lbf)]	90 (20) 260 (60)
Max. dynamic load (Fx) ETxx-084 ⁽²⁾ ETxx-174	[N (lbf)]	45 (10) 130 (30)
Speed @ no load/max. load ETxx-084 ⁽²⁾ ETxx-174	[mm/s (in/s)]	96/83 (3.7/3.3) 48/37(1.9/1.45)
Ordering stroke (S) length	[mm(in)]	50.8 (2)
Retracted length	[mm(in)]	184.7 (7.27)
Operational life	[cycles]	500 000
Operating temperature limits ETxx-xxx-xS ETxx-xxx-xE	[°C (F)]	- 40 – 85 (- 40 – 185) - 40 – 125 (- 40 – 257)
Full load duty cycle @ 25 °C (77 °F)	[%]	50
End play, maximum	[mm (in)]	1.5 (0.06)
Restraining torque	[Nm (lbf-in)]	0
Protection class - static		IP69K, IP65
Weight	[kg (lbf)]	1.11 (2.5)
Salt spray resistance	[h]	500

(1) Max. static load at fully retracted stroke.

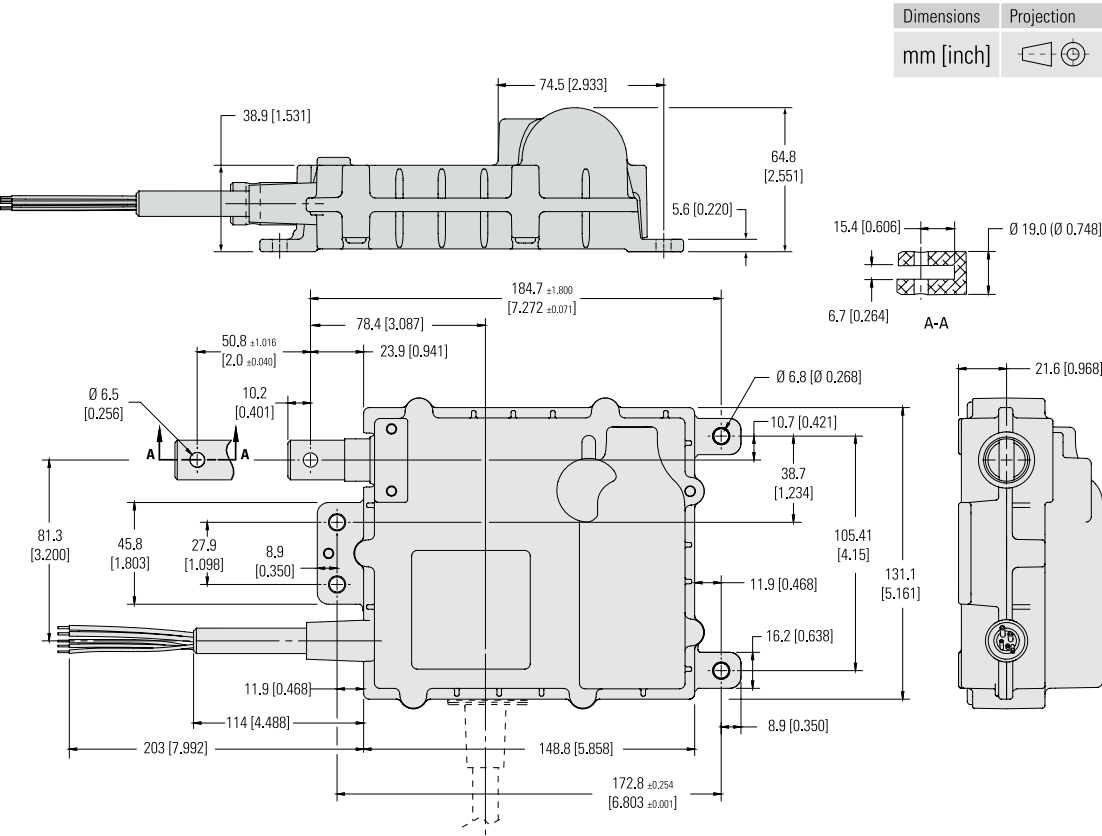
(2) The ETxx-084 (high speed version) can only be ordered in combination with operating temperature rating E.

Electrical Specifications

Available input voltages	[Vdc]	12, 24
Input voltage tolerance	[%]	± 10
Current draw @ no load/max. load ⁽¹⁾ ET12 (12 Vdc input voltage) ET24 (24 Vdc input voltage)	[A]	1.5/4 0.75/2
Motor cable length	[m (in)]	165 (6.5)
Motor cable diameter	[mm (in)]	11.5 (0.45)
Motor cable leads cross section	[mm² (AWG)]	1 (18)

(1) Max. current draw ratings do not include motor inrush current. Typical inrush current values are 12 A at 12 VDC and 6 A at 24 VDC.

Electrak® Throttle – Dimensions



Electrak® Throttle – Ordering Key

Ordering Key

1	2	3	4	5	6	7
ET12-	174-	S	S	NP	1	S

1. Model and input voltage
ET12 - = Electrak® Throttle, 12 Vdc
ET24 - = Electrak® Throttle, 24 Vdc

2. Max. dynamic load and speed version
084 - = 45 N (10 lbf), high speed ⁽¹⁾
174 - = 130 N (30 lbf), standard speed

3. Harness orientation
S = parallel to adapter
R = rotated 90° in housing

4. Temperature rating
S = standard: -40 (-40) to +85 (+185) °C (F)
E = high temperature: -40 (-40) to +125 (+257) °C (F)

5. Control option
NP = analog position feedback sensor
FN = end-of-stroke limit switches
FP = analog position feedback and end-of-stroke limit switches
CN = CANBUS SAE J1939

6. Connector option
1 = flying leads
2 = Deutsch DTM04-6P connector

7. Adapter option
S = standard adapter orientation
M = adapter rotated 90°

S

R

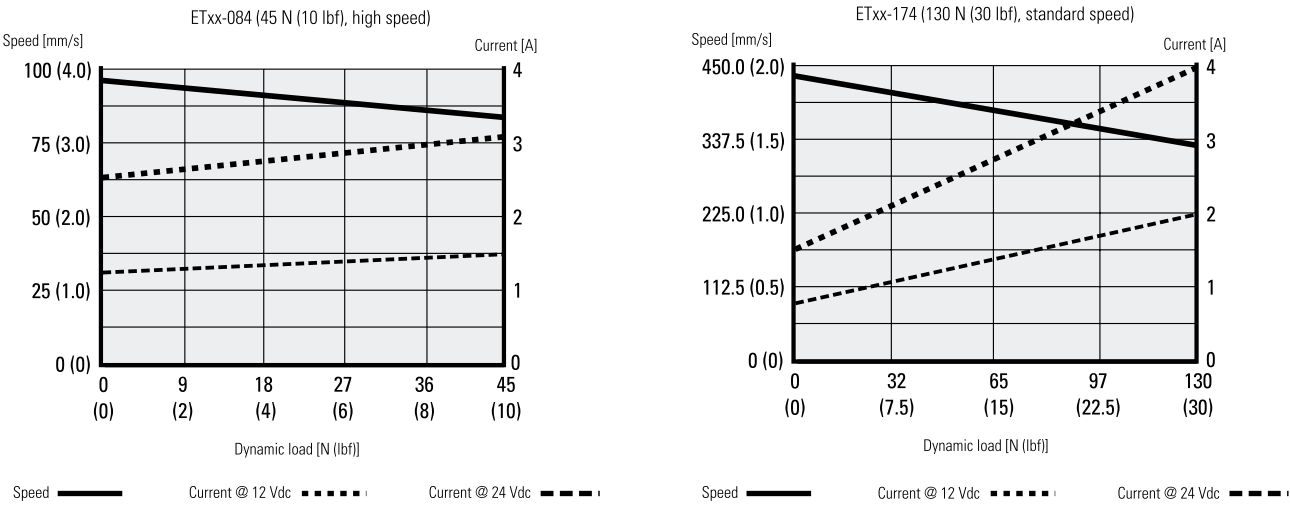
S

M

⁽¹⁾ Can only be ordered with high temperature rating (code E in position 4). Note that there is no thermal switch to protect the motor on the high temperature rated models.

Electrak® Throttle – Performance Diagrams

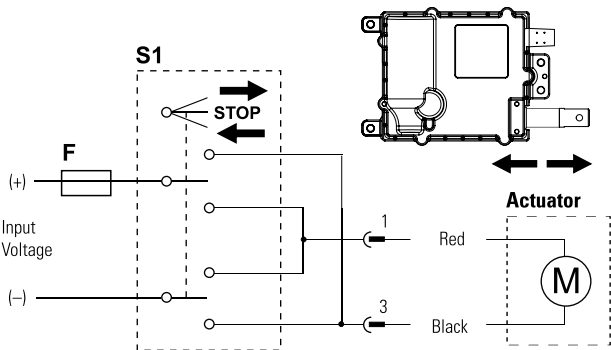
Speed and Current vs. Load



Electrak® Throttle – Electrical Connections

Electrak® Throttle – Electrical Connections

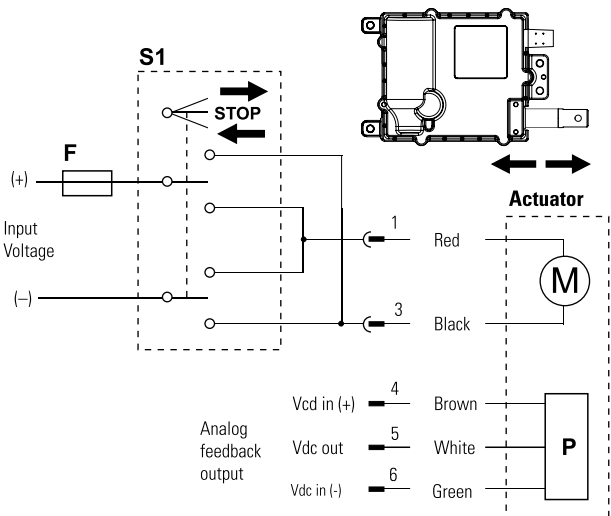
Option End-of-Stroke Limit Switches		
Actuator supply voltage	[Vdc]	
ET12		12
ET24		24



- M Actuator motor
S1 Double pole double throw (DPDT) switch
F Fuse

Connect black lead (connector pin 3) to positive and red lead (pin 1) to negative to extend the actuator. Change polarity to retract the actuator. When reaching the ends of stroke, the internal limit switches automatically will stop motion. A clutch is included as a safety feature to stop the motion in case of mid stroke overload.

Option Analog Feedback		
Actuator supply voltage	[Vdc]	
ET12		12
ET24		24
Analog feedback type		non-contact
Analog feedback input voltage, max.	[Vdc in]	32
Analog feedback output voltage	[Vdc out]	
fully retracted		< 5 % of VDC in
fully extended		> 75 % of VDC in
Analog feedback output current, max.	[mA]	1
Analog feedback output linearity	[%]	± 1

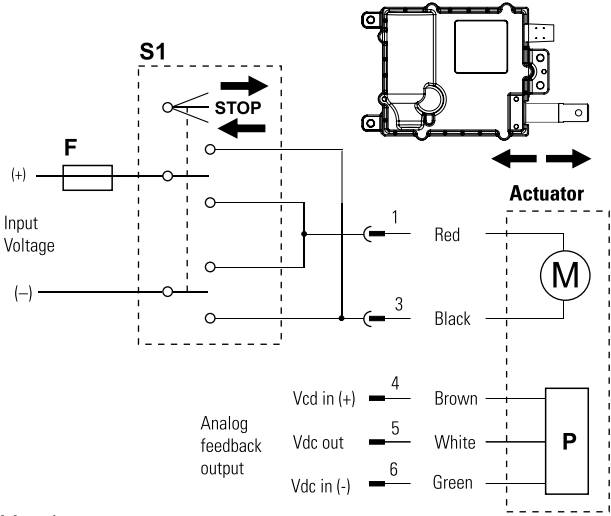


- M Actuator motor
S1 Double pole double throw (DPDT) switch
F Fuse
P Analog feedback device

Connect black lead (connector pin 3) to positive and red lead (pin 1) to negative to extend the actuator. Change polarity to retract the actuator. If the actuator should reach the mechanical end of stroke, the built in clutch will stop the motion. The clutch, however, is a safety feature and should not be used as end of stroke control during normal operation.

The analog feedback device is supplied between brown lead (connector pin 4) and green lead (pin 6), while the output signal is on white lead (pin 5).

Option Analog Feedback + End-of-Stroke Limit Switches		
Actuator supply voltage	[Vdc]	
ET12		9 - 16
ET24		18 - 32
Analog feedback type		non contact
Analog feedback input voltage, max.	[Vdc in]	32
Analog feedback output voltage	[Vdc out]	
fully retracted		< 5 % of VDC in
fully extended		> 75 % of VDC in
Analog feedback output current, max.	[mA]	1
Analog feedback output linearity	[%]	± 1

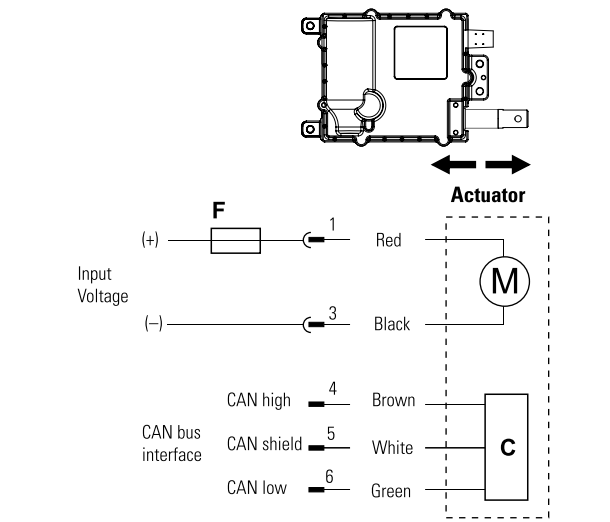


- M Actuator motor
S1 Double pole double throw (DPDT) switch
F Fuse
P Analog feedback device

Connect black lead (connector pin 3) to positive and red lead (pin 1) to negative to extend the actuator. Change polarity to retract the actuator. When reaching the ends of stroke, the internal limit switches automatically will stop motion. A clutch is included as a safety feature to stop the motion in case of mid stroke overload.

The analog feedback device is supplied between brown lead (connector pin 4) and green lead (pin 6), while the output signal is on white lead (pin 5).

Option CAN bus SAE J1939		
Actuator supply voltage	[Vdc]	
ET12		12
ET24		24
CAN bus signal information		see user manual



- M Actuator motor
S1 Double pole double throw (DPDT) switch
F Fuse
C CAN bus device

Connect red lead to (connector pin 1) to positive and black (pin 3) to negative to power up the actuator. A clutch is included as a safety feature to stop the motion in case of mechanical overload.

The actuator is controlled via the CAN bus interface on brown lead (connector pin 4), white lead (pin 5) and green lead (pin 6).

Ekonomik Seri

Endüstriyel Aktüatörler





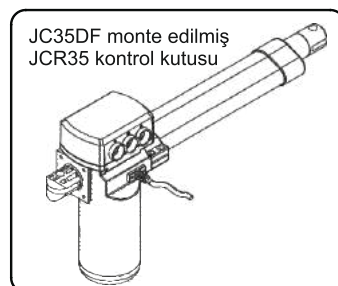
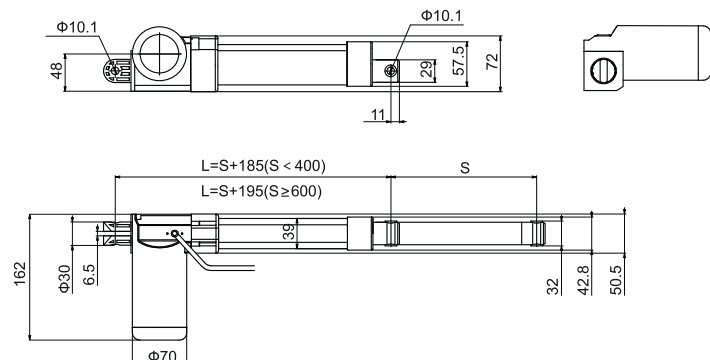
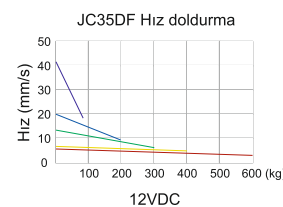
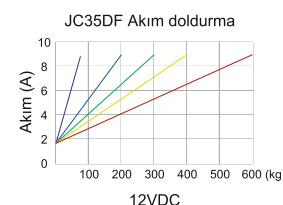
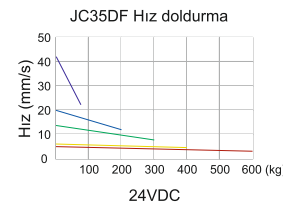
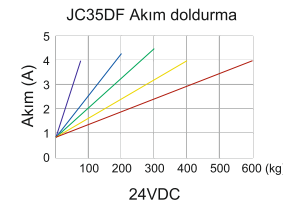
JC35DF

Özellikler

- Güçlü ve sağlam tasarım
- Düşük ses, IP66
- Tıbbi, mobilya ve endüstriyel alanlar için ideal
- JCR35 ile montaj yapılabilir

Teknik Özellikler

Dinamik Yük Kapasitesi (itme)	6000N	4000N	3000N	2000N	1000N
Dinamik Yük Kapasitesi (çekme)	4000N	4000N	3000N	2000N	1000N
Statik Yük Kapasitesi (itme)*	6000N	4000N	3000N	2000N	1000N
Statik Yük Kapasitesi (çekme)*	4000N	4000N	3000N	2000N	1000N
Giriş Voltajı (VDC)	24				
Tam Yükte Hızı (mm/s)	3	4	6	9	20
Strok Ölçüsü (mm)	100~400 (Seçenek >400)				
Montaj Tipi	H tipi, V tipi ve 45 derece tipi				
Renk Seçeneği	Siyah veya Gri				
Limit Siviç	Var				
Aşırı Yük Koruması	Var				
Çevrim	10%, max 2dk. sürekli kullanım				
IP Sınıfı	IP66				
Çalışma Sıcaklığı	+5°C ~ +40°C				
Ekstra Özellikler	• Hall sensör seçeneği • Reed siviç seçeneği • Sadece itme seçeneği • Röle serbest seçeneği				
Standart	CE / UL60601 / EN60601				



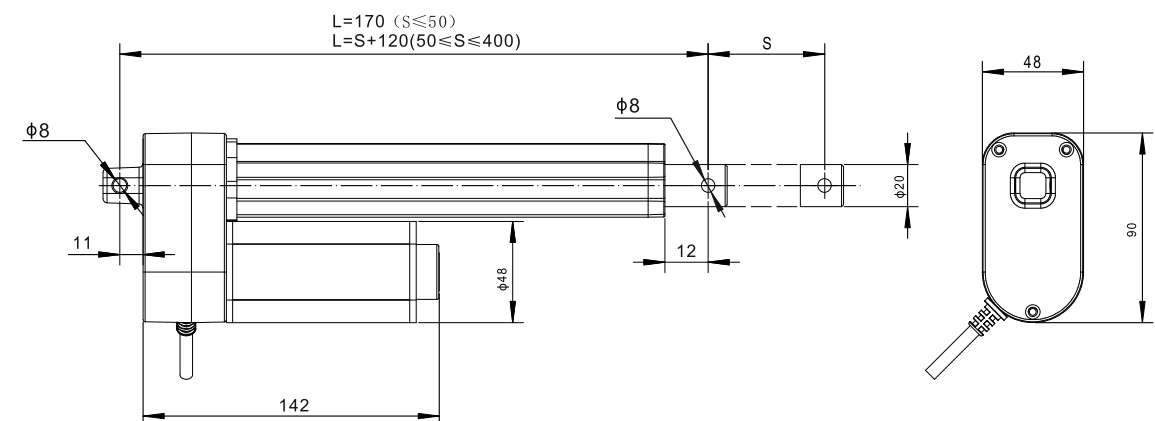
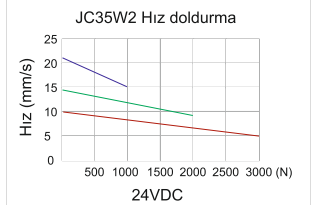
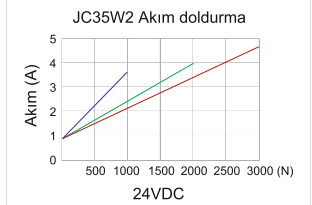
JC35W2

Özellikler

- 3000N'a kadar yük kapasitesi
- IP66

Teknik Özellikler

Dinamik Yük Kapasitesi (itme)	1000N	2000N	3000N
Dinamik Yük Kapasitesi (çekme)	1000N	2000N	3000N
Statik Yük Kapasitesi (itme)*	1200N	2400N	3500N
Statik Yük Kapasitesi (çekme)*	1200N	2400N	3500N
Giriş Voltajı (VDC)	24		
Tam Yükte Hızı (mm/s)	14	8,5	5
Strok Ölçüsü (mm)	100~400 (Seçenek >400)		
Renk Seçeneği	Gri		
Limit Siviç	Var		
Aşırı Yük Koruması	Var		
Çevrim	10%, max 2dk. sürekli kullanım		
IP Sınıfı	IP54/IP66		
Çalışma Sıcaklığı	0°C ~ +50°C		
Ekstra Özellikler	Hall sensör seçeneği		
Standart	CE / EN60601-1		





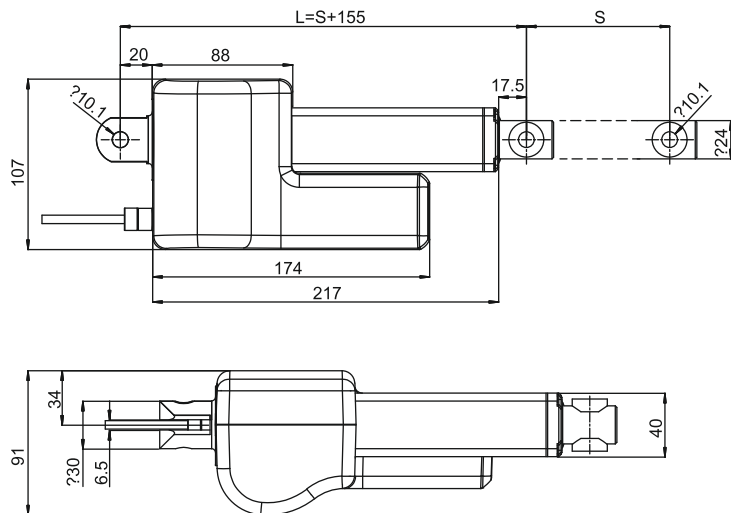
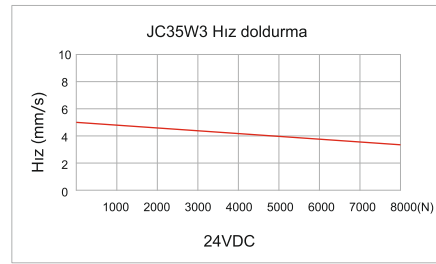
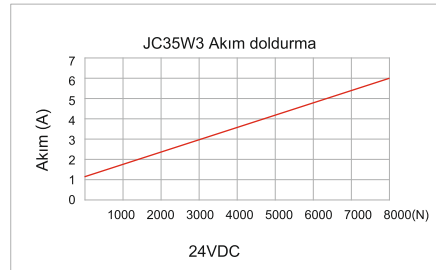
JC35W3

Özellikler

- Güçlü ve sağlam tasarım
- Maksimum yük kapasitesi 8000N
- Ip66

Teknik Özellikler

Dinamik Yük Kapasitesi (itme)	8000N
Dinamik Yük Kapasitesi (çekme)	4000N
Statik Yük Kapasitesi (itme)*	8000N
Statik Yük Kapasitesi (çekme)*	4000N
Giriş Voltajı (VDC)	24
Tam Yükte Hızı (mm/s)	3.5
Strok Ölçüsü (mm)	100~250 (Seçenek >400)
Renk Seçeneği	Gri
Limit Siviç	Var
Çevrim	10%, max 2dk. sürekli kullanım
IP Sınıfı	IP54/IP66
Çalışma Sıcaklığı	+5°C ~ +45°C
Ekstra Özellikler	• Hall sensör seçeneği • Anti-pinch seçeneği



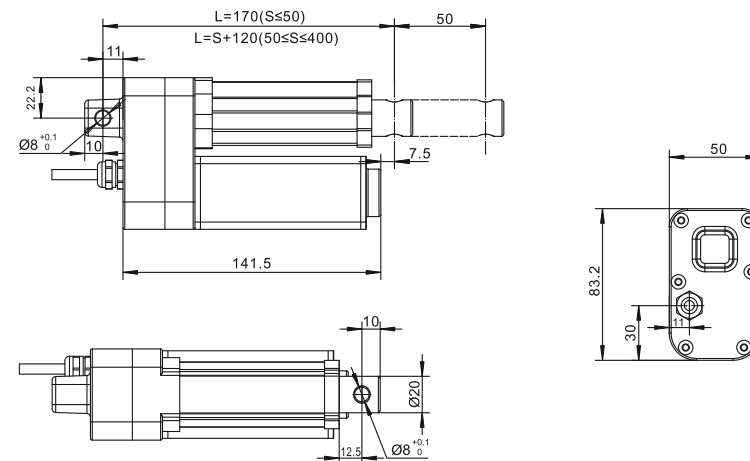
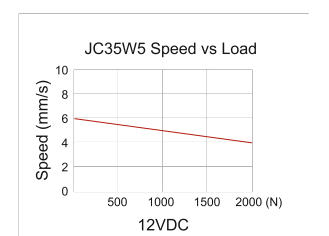
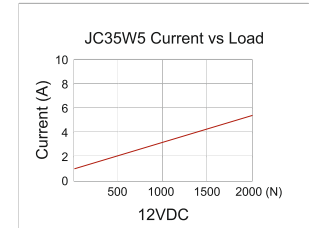
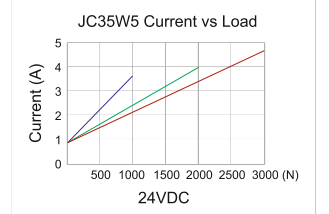
JC35W5

Özellikler

- 3000N (24V) 、2000N (12V) için kullanılabilir ve alt yapılandırma
- Daha yüksek hız ve IP Sınıfı, ayrıca daha düşük akım

Teknik Özellikler

Dinamik Yük Kapasitesi (itme)	3000N
Dinamik Yük Kapasitesi (çekme)	3000N
Statik Yük Kapasitesi (itme)*	3000N
Statik Yük Kapasitesi (çekme)*	3000N
Giriş Voltajı (VDC)	24/12
Tam Yükte Hızı (mm/s)	5.5
Strok Ölçüsü (mm)	50~300 (Seçenek >300)
Renk Seçeneği	Siyah
Limit Siviç	Var
Çevrim	10%, max 2dk. sürekli kullanım
IP Sınıfı	IP67'e kadar
Çalışma Sıcaklığı	-35°C ~ +75°C
Ekstra Özellikler	• Hall sensör seçeneği





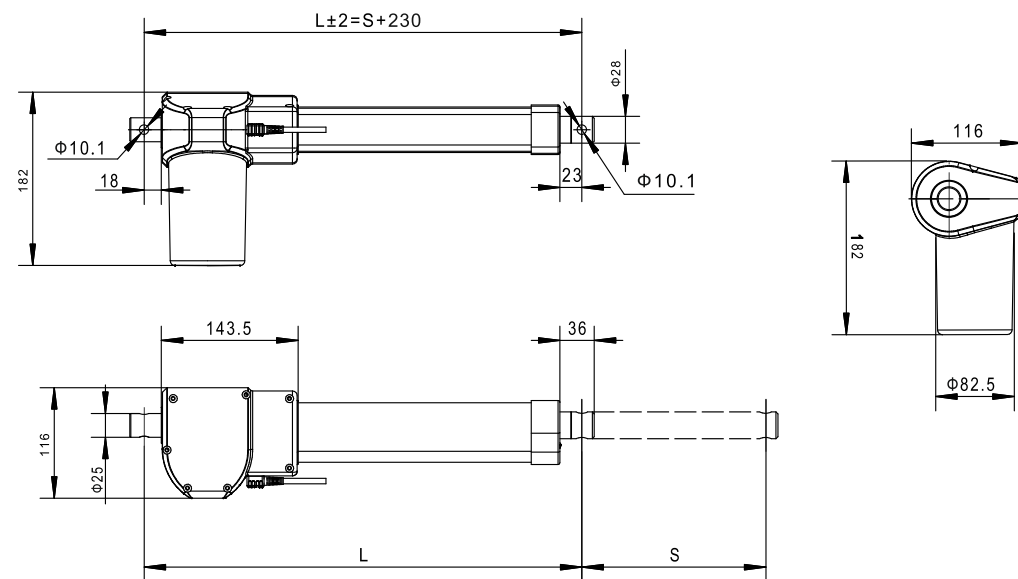
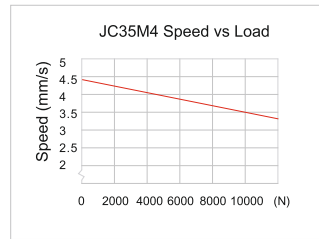
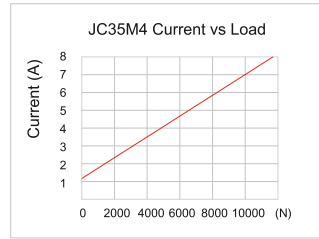
JC35M4

Özellikler

- Güçlü ve sessiz tasarım
- Maksimum 10.000N itme kapasitesi
- Acil durumda manuel boşaltma

Teknik Özellikler

Dinamik Yük Kapasitesi (itme)	3000N
Statik Yük Kapasitesi (itme)*	3000N
Giriş Voltajı (VDC)	24
Tam Yükte Hızı (mm/s)	5.5
Strok Ölçüsü (mm)	≤300
Renk Seçeneği	Gri
Limit Siviç	Var
Çevrim	10%, max 2dk. sürekli kullanım
IP Sınıfı	IP66
Çalışma Sıcaklığı	+5°C ~ +40°C
Ekstra Özellikler	• Hall sensör seçeneği • Manuel işlem seçeneği • Sadece itme seçeneği



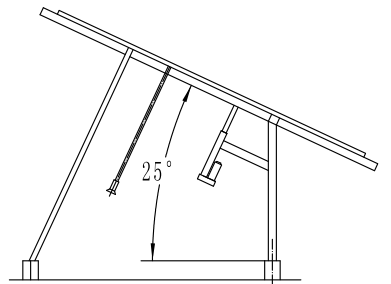
JC35SA1

Özellikler

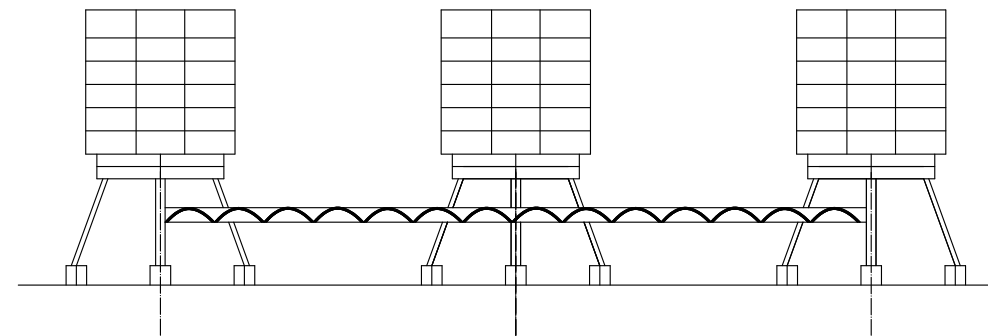
- The strong and long service life design, also the low-power consumption
- The high precision feedback of the stroke length, apply for large solar tracker

Teknik Özellikler

Dinamik Yük Kapasitesi (itme)	12000N
Dinamik Yük Kapasitesi (çekme)	12000N
Statik Yük Kapasitesi (itme)*	20000N
Statik Yük Kapasitesi (çekme)*	20000N
Giriş Voltajı (VDC)	24
Tam Yükte Hızı (mm/s)	2.2±10%
Strok Ölçüsü (mm)	800±7.5mm
Renk Seçeneği	Siyah
Limit Siviç	Var
Aşırı Yük Koruması	Kontrol kutusundan ayarlayın
İsteğe Bağlı Motor Seçeneği	DC Fırçalı Motor / DC Fırçasız Motor
IP Sınıfı	IP66
Çalışma Sıcaklığı	-35°C ~ +65°C
Opsiyonel Özellik	Hall Sensör



Yandan Görünüş



Önden Görünüş

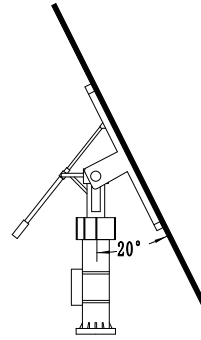


JC35SA2

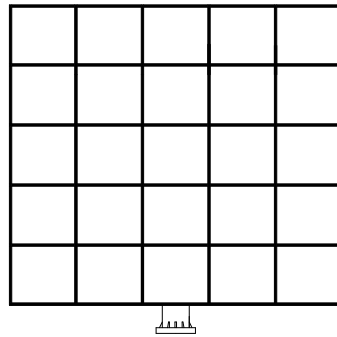
Özellikler

- The long service design and high IP Grade
- High precise of positioning and repositioning
- Apply to photothermal solar tracking bracket

Teknik Özellikler	
Dinamik Yük Yüksek Hızda (itme)	850N
Dinamik Yük Yüksek Hızda (çekme)	850N
Dinamik Yük Düşük Hızda (itme)	3500N
Dinamik Yük Düşük Hızda (çekme)	3500N
Giriş Voltajı (VDC)	24
Yüksek Hızı (mm/s)	4
Düşük Hızı (mm/s)	1.2
Statik Yük (N)	15000N
Strok Ölçüsü (mm)	100-600 □ Özel ölçü kabul edilebilir.
Renk Seçeneği	Siyah
Aşırı Yük Koruması	Kontrol kutusundan ayarlayın
İsteğe Bağlı Motor Seçeneği	Step Motor
Mil	Vidalı
IP Sınıfı	IP66
Çalışma Sıcaklığı	-35°C ~ +65°C



Yandan Görünüş



Önden Görünüş

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• S2-1 #2 Nasıl Kullanılır	YouTube	YouTube
• S2-1 #3 Molex olmadan bağlantı nasıl yapılır	YouTube	YouTube
• S2-1 #4 Hall Sensör'lü aktüatör bağlantısı	YouTube	YouTube
• S2-1 #5 PLC ile Bağlamak	YouTube	YouTube
• S2-1 #6 Acil durdurma butonuna bağlama	YouTube	YouTube
• S2-1 #7 LED Işıkların anlamları	YouTube	YouTube
• S2-2 #1 İlk Bağlantı ve dairesel potansiyometre ile kontrol	YouTube	YouTube
• S2-2 #2 Jumper kullanarak "öğrenme" çevrimi (kalibrasyon)	YouTube	YouTube
• S2-2 #3 "Configuration Tool" yazılımını kurma	YouTube	YouTube
• S2-2 #4 Parametreleri okuma ve kaydetme	YouTube	YouTube
• S2-2 #5 Config Tool ile Aralık ölçekleme	YouTube	YouTube
• S2-2 #6 Pozisyona ulaştı LED'i	YouTube	YouTube
• S2-2 #7 Acil durdurma butonuna bağlama	YouTube	YouTube
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• S2-2 #10 LED'lerin anlamları	YouTube	YouTube
• S2-2 #11 Geçici olarak durdurma fonksiyonu	YouTube	YouTube
• S2-3 #1 Aktüatörlerin bağlanması	YouTube	YouTube
• S2-3 #2 Butonlarla kalibrasyon (öğrenme) rutini	YouTube	YouTube
• S2-3 #3 Jumper kullanarak kalibrasyon (öğrenme) rutini	YouTube	YouTube
• S2-3 #4 Config Tool Light yazılımı kurulumu	YouTube	YouTube
• S2-3 #5 Config Tool parametre okuma ve ayarlama	YouTube	YouTube
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• S2-3 #7 "Monitoring" fonksiyonunun kullanımı	YouTube	YouTube
• S2-3 #8 Hall sinyal testi	YouTube	YouTube
• S2-3 #9 Hall sinyali hesabı	YouTube	YouTube
• S2-3 #10 Yumuşak duruş için "Auto balance" özelliği kullanımı	YouTube	YouTube
• S2-3 #11 LED'lerin anlamları	YouTube	YouTube

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