



Warner Linear B-Track K4x
Rugged Duty Actuator

B-Track K4x

Rugged Duty Actuator DC Motor Ball Screw

Up to 4,000 lbs. (17760 N) Rated Load
0.32 in. (8.1mm)/sec. Travel Speed



The K4x model provides the highest load rating in its class. This model incorporates all of the base K2 features with a ball screw for a 4,000 lb. (17760 N) load capability within a compact package size. The K4x includes a bi-directional wrap spring brake for load holding capability. These units are well suited for the most demanding applications where an alternative to hydraulic or air cylinders is needed or where hydraulic power sources are not available.

Features

- **Protective coatings** and O-ring seals throughout
- **Integral load** holding brake
- **Ball detent overload clutch**
- **Stroke lengths** 2 to 24 inches (50 to 600 millimeters), up to 42 inches (1066 millimeters) possible. Consult factory.
- **Load capacities** up to 4,000 pounds (17760 N)
- **Speed** 0.32 inches (8.1 mm)/sec. travel at full load
- **Heavy wall construction**
- **Double ball bearing motors**
- **Heat treated gears**
- **Rugged extension rod bearing support**

Typical Applications

- Mobile off-highway equipment
- Deck and implement lifts for tractors and mobile applications
- Solar Panels
- Scissor and dump box lifts

Load/Current/Speed/Duty Cycle

- Maximum Static Rating: 5,000 lbs. (22000 N) Static (in-line load)
- Refer to performance chart for load/current/speed capabilities
- Stroke Length Tolerance: +/- .06" (1.52 mm)
- Overload clutch setting: +25% over rated dynamic load
- Duty cycle is time/temperature/load dependent, suggested guidelines are:
 - 50% max on-time/50% off-time for loads up to 50% of capability
 - 25% max on-time/75% off-time for loads between 50%-80% of capability
 - 10% max on-time/90% off-time for loads between 80%-100% of capability

(Load/stroke profiles will allow some adjustment variation from these guidelines)

Operating Environment

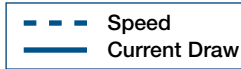
- Ambient temp range: -20° F to +150° F (-29° C to +65° C), -40°F to +176°F (-40°C to +80°C) Upon Request.
- Weather resistant enclosure & seals (IP69K static, IP65 capable, 250 hour salt spray)
- Normal operating voltage: 10-16 vdc (12 vdc Normal)

Control/Connections

- 14 gauge stranded lead wires-UL style 1230 w/PVC insulation Class F 105° C
- Lead wires abrasion protected with spiral covering
- Use momentary contact double pole/double throw switch in powering unit for extend/retract operation. (ON)-OFF-(ON) DPDT
- Connectors:
 - Packard 56 series or Delphi Weather-Pack
 - Packard 56 series with 56 series blades (#2984883 & #2962987)
 - Delphi Weather-Pack series (#121015792 & #12010973) Upon Request

Performance Graphs Imperial & Metric Measurements*

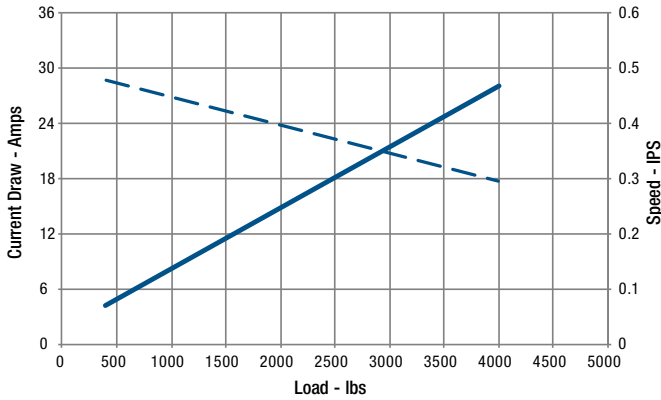
*Performance Chart Measurements are Nominal



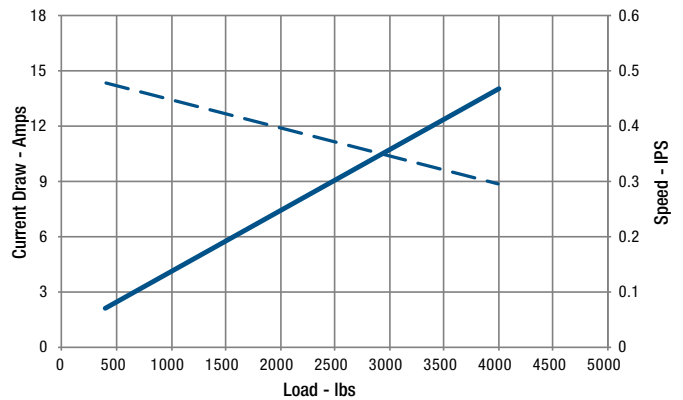
Imperial Measurements*

Load Capacity 4000 lbs.

K4XG30-12VDC



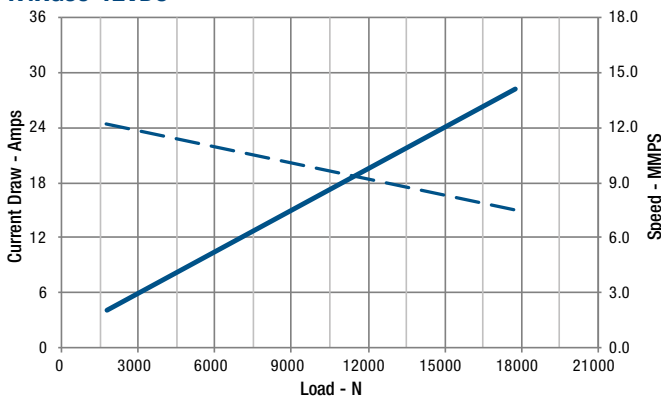
K4XG30-24VDC



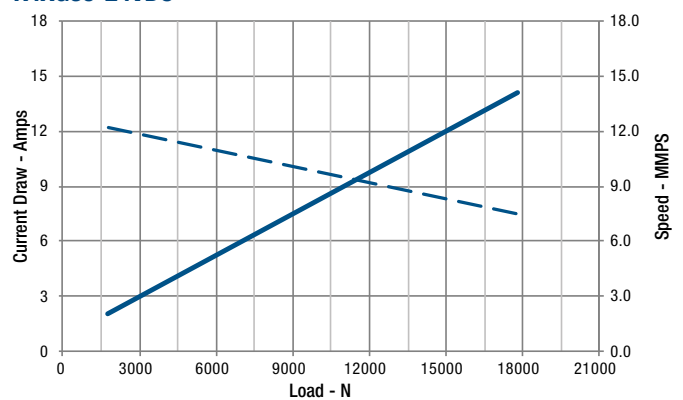
Metric Measurements*

Load Capacity 17750 N

K4XG30-12VDC



K4XG30-24VDC



B-Track Configurator

K4x **EP1.x** **G30** - **12V** - **04** - **R90**

Actuator Model No.
K4x

Gear Ratio
G30 = 30:1

Stroke Length

04	4.00	(100 mm)
06	6.00	(150 mm)
08	8.00	(200 mm)
12	12.00	(300 mm)
18	18.00	(450 mm)
24	24.00	(600 mm)

Control Model

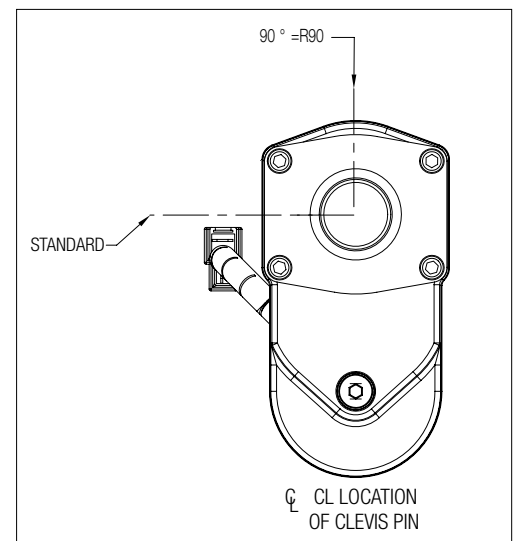
- EP0.4
- EP1.0
- EP1.2
- EP1.4
- EP1.5

Motor Voltage

- 12V - 12 volts
- 24V - 24 volts
- 36V - 36 volts
- 48V - 48 volts

Base Fitting Alignment

- Blank - Standard
- R90 - 90° Fitting



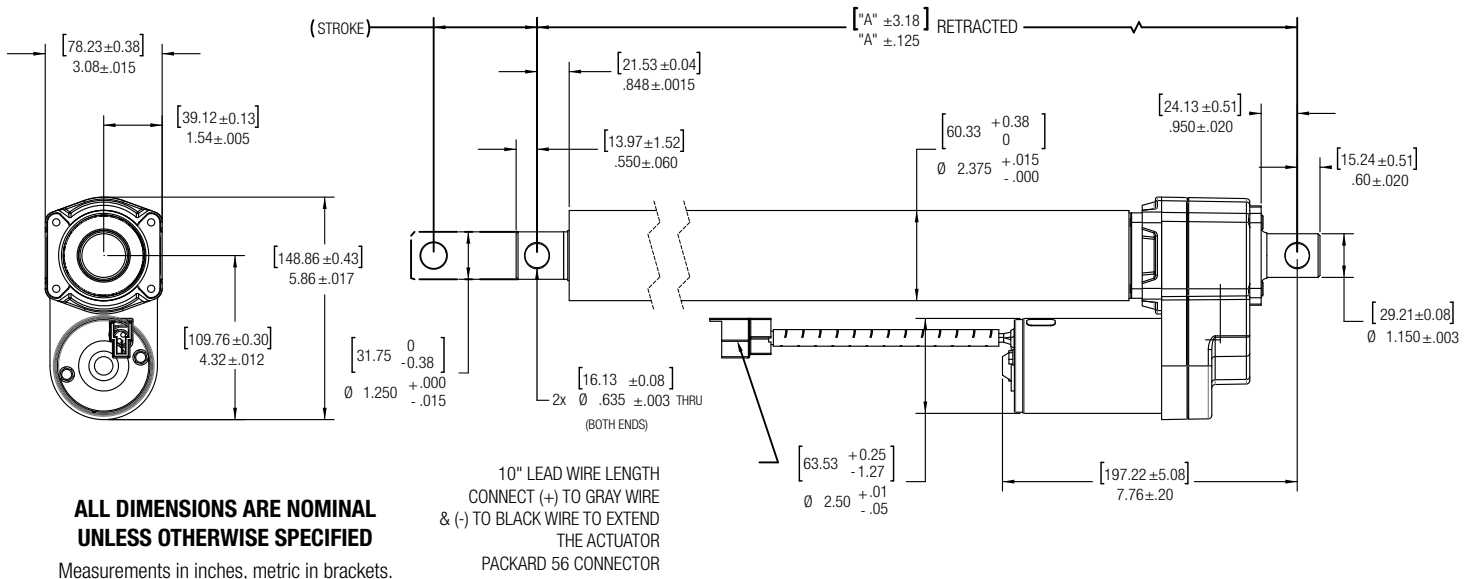
B-Track K4x

Dimensions

B-Track K4x	Stroke	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
		2	50.8	4	101.6	6	152.4	8	203.2	10	254	12	304.8
	A	12.708	322.8	14.708	373.6	16.708	424.4	18.708	475.2	20.708	526.0	22.708	576.8

B-Track K4x	Stroke	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
		14	355.6	16	406.4	18	457.2	20	508	22	558.8	24	609.6
	A	24.708	627.6	26.708	678.4	28.708	729.2	30.708	780.0	32.708	830.8	37.708	957.8

Note: For length under 24", A = 10.708 + stroke. For length 24" and over, A = 13.708 + stroke



EPO.4 Position Feedback

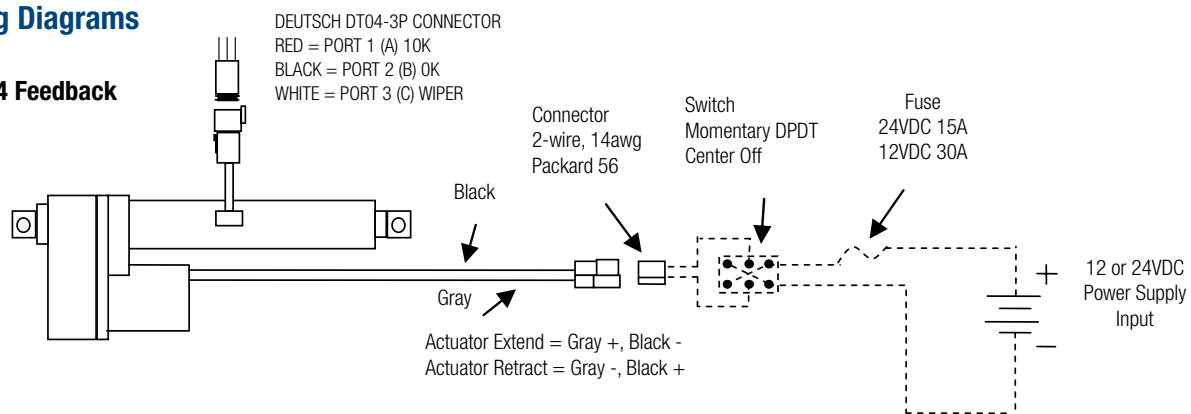


Specifications	
Type:	Membrane Potentiometer
Resistance:	12k ohms ($\pm 20\%$)
Linearity:	5%
Operating Temperature:	-20° F to +165° F (-29° C to 75° C)

The EPO.4 option provides an absolute position feedback. A stylus moves along the linear potentiometer located in the actuators tube when it is extending or retracting, varying the resistance. The simple potentiometer design makes it a robust solution for high vibratory environments, and the overmoulded connector protects it from dust and water ingress.

Wiring Diagrams

EPO.4 Feedback



All dashed lines are customer supplied connections

Operation

As the actuator is extending or retracting, the resistance between the black and white wires will change. When a 10VDC voltage is applied to the red (+) and black (-) wires the output voltage between the black and white wires will vary from approximately 0.5VDC (fully retracted) to 9.5VDC (fully extended), giving a voltage value proportional to the actuator position.

EP1.x Electronic Stroke Limit Control



The EP1.x Limit Switch control provides end of travel positioning through the use of a magnetic switch and motor mounted relay.

The limit switches are mounted in a channel on the actuator cover tube accessible below a durable cover. They are field adjustable.

The Electronic Stroke control package consists of the magnetic sensors and a motor mounted relay within an enclosure suited for harsh environments.

A Zener diode suppression is used on both input and outputs for added protection from electrical spikes. Unit reversing is achieved by reversing input power polarity to the motor.

Specifications

Power:	25 Amps max. @ 12 volts 12.5 Amps max. @ 24 volts
Operating Temperature:	-20° F to +150° F (-29° C to 66° C)

Options

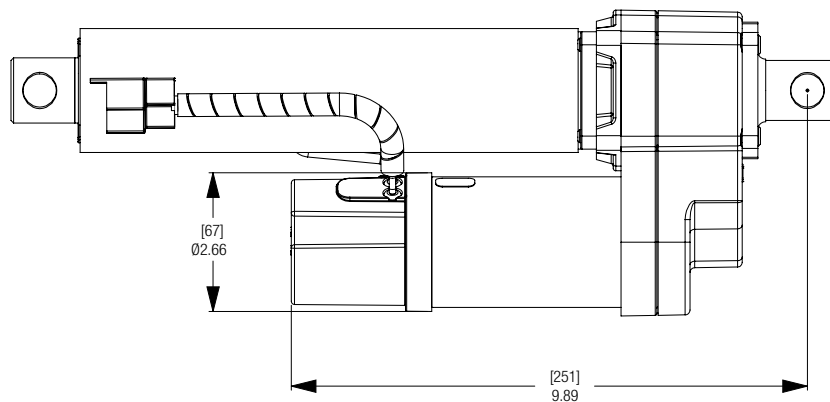
EP1.0	Standard Stroke Limit Control
EP1.2	Same as P1.0 with two 12/24 volt, 0.5 Amps outputs that can be used to signal an external switch, relay, lamp or PLC input.
EP1.2LE	Two +5 VDC 25ma outputs plus a ground to provide a signal when end of travel is reached. This output can be used to power LEDs.
EP1.4	Same as EP1.0, end limit stopping with 0-10K ohm potentiometer output.
EP1.5	Same as EP1.2 with 0-10K potentiometer outputs.



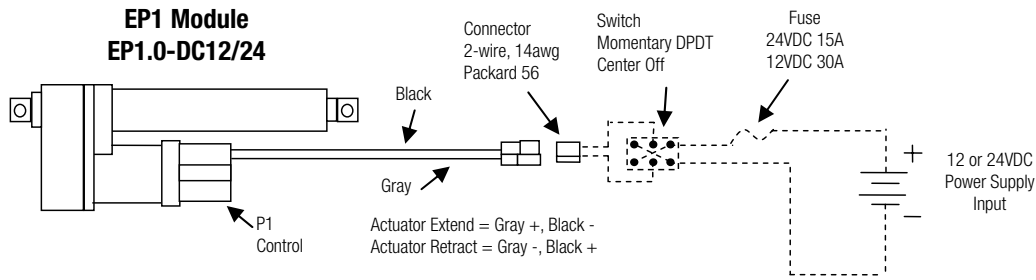
Scan to watch!

How to Adjust the Limit Switches

<https://p.widencdn.net/imzc9v>



EP1 Electronic Stroke Limit Control

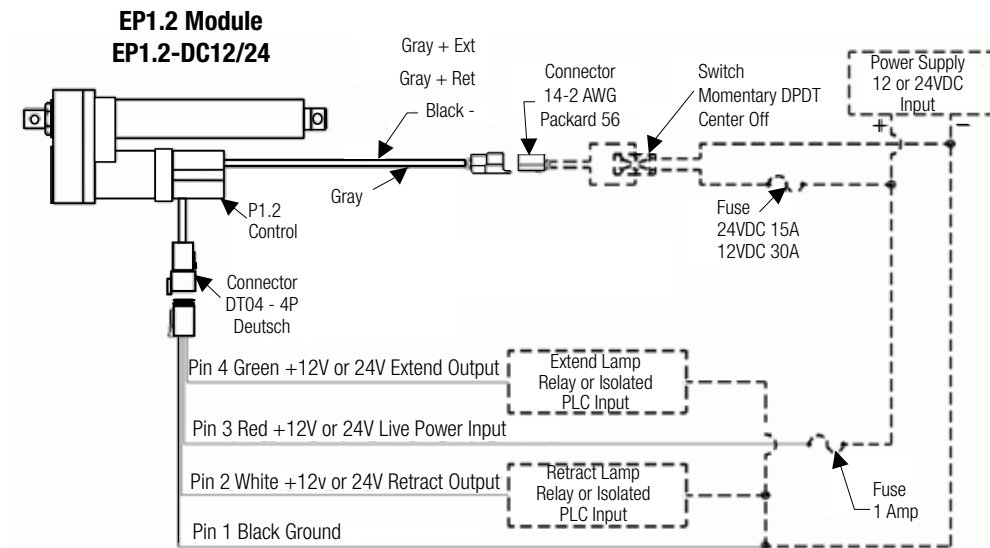


All dashed lines are customer supplied connections

Operation

When the “Customer Supplied Switch” is held in the direction allowing positive 12 or 24VDC to the gray wire and 12 or 24VDC ground to the black wire, the actuator will extend until it reaches the end of stroke. At the end of stroke, which is determined by the factory set location of the Hall effect switches, power will be removed from the actuator by the control.

When the switch is held in the opposite direction so the positive lead of the 12 or 24VDC signal is on the black wire and the 12 or 24VDC ground is on the gray wire, the actuator will retract until it returns to the full home position.



All dashed lines are customer supplied connections

Operation

When the “Customer Supplied Switch” is held in the direction allowing positive 12 or 24VDC to the gray wire and 12 or 24VDC ground to the black wire, the actuator will extend until it reaches the end of stroke. At the end of stroke the “Extend Output” (green wire) will have +12 or 24VDC to ground, indicating it is at the end. This signal can be used to light a lamp, signal a relay coil, or an isolated PLC input that only requires 500mA or less. This output will only be on as long as power is maintained from the “Customer Supplied Switch”.

However, if the output needs to be on even if the “Customer Supplied Switch” is not activated then the “Live Power input” can be used. This will provide power all the

time for the output to remain on whenever the Actuator is at either travel end.

Apply +12 VDC (for 12VDC unit) or +24 VDC (for 24VDC unit) to the red wire of the Deutsch (DT04-4P) 4 pin connector and ground to the black wire. This supply needs to be the same supply as the actuator and will require less than 500mA.

When the switch is held in the opposite direction so the positive lead of the 12 or 24VDC signal is on the black wire and the 12 or 24VDC ground is on the gray wire, the actuator will retract until it returns to full home position. At the full home position, the “Retract Output” (white wire) will have +12 or 24VDC to ground.

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