

Bear BA Linear Actuator

Solar Ready & Power Fail Safe

Calscan's Bear BA series of linear actuators are designed for the 21st century zero-emission well site by replacing fuel gas powered pneumatic actuators with electric ones. Advanced electronics and a high efficiency brushless DC motor gives low active and standby energy consumption ideally suited for remote non-grid power sites, such as solar or TEG. When combined with the Bear Fail Safe Controller (FSC) up to 9 standard DC powered electric actuators can be made power fail safe.

Easily installed on standard control valves such as standard ET and D-body valves, BA linear actuators can be used in processes for throttling or on-off control. When throttling the actuator gives improved PID loop performance versus pneumatic actuators because of the precise mechanical gearing system.

Features:

- Explosion Proof Class I Div1 /Zone 1 Certified
- Power and RTU fail safe operation when used with the Bear FSC and Bear UPS
- Fail on Loss of Signal (Open or Closed)
- Actuating Current @ 24DC < 4.2A
- Low quiescent current for solar powered operation <50mA
- Wide 20 to 35VDC or 90 to 264VAC operating range
- Brushless DC Motor with cut-motor protection
- 4-20mA, 0(1)-10 Volt Modulating, or 24DC Digital On/Off Control
- Single Handed Manual Override
- Blockage Detection, Soft Seating, Split Range Operation
- Suitable on 1" and up to 4" Control Valves



www.calscan.net



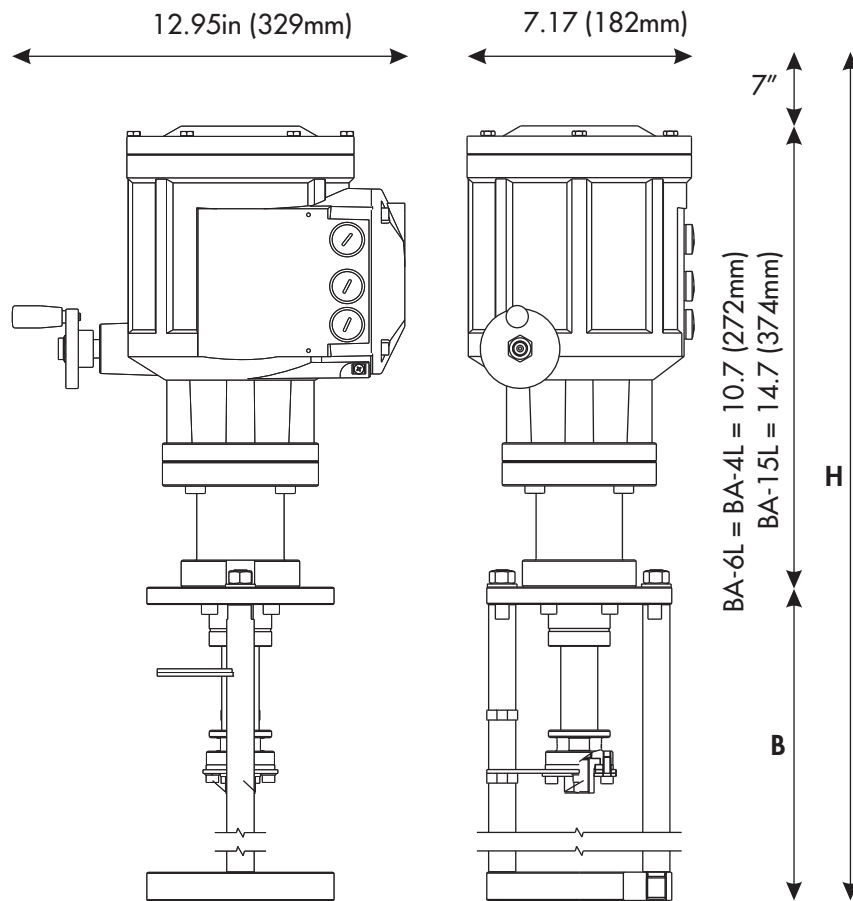
Mechanical Ratings

Thrust and Speed

| Model | Max Continuous Modulating Thrust kN (lbf) - S9 Class D | Max On/Off Seating Thrust kN (lbf) - S2 Class A | Max Speed mm/sec | Min Speed mm/sec | Max Stroke mm |
|--------|---|--|---------------------|---------------------|------------------|
| BA-15L | 10 (2250) | 15 (3300) | 1.5 | 0.3 | 85 |
| BA-6L | 4.0 (900) | 6.0 (1350) | 2.0 | 0.4 | 55 |
| BA-4L | 2.5 (560) | 4.0 (900) | 5.0 | 1.2 | 55 |

Max Continuous and On/Off thrust is at max speed

Dimensions



Brackets

BA-15L

| Bracket Part # | Valve Type | Height in Inches | |
|----------------|--------------|------------------|------|
| | | H | B |
| E | E Body Style | 36.7 | 15 |
| D | D Body Style | 34.2 | 12.5 |

3/4in and 1/2in Stem only

BA-6L and BA-4L

| Bracket Part # | Valve Type | Height in Inches | |
|----------------|----------------------------|------------------|-----|
| | | H | B |
| D2 | D2 Fisher / Norriseal 2275 | 26.5 | 8.8 |
| D3 | D3 Fisher | 26.8 | 9.1 |
| D4 | D4 Fisher | 27.2 | 9.5 |

1/2in and 3/8in Stem only

Technical Data

| | | |
|-----------------------|-------------------------|--|
| Type | | |
| Enclosure Protection | | IP 67 |
| Cable Entries | | Three M20x1.5 shipped with adapters to 1/2in NPT |
| Electrical Connection | | Spring Terminal Board in Separate Terminal Box: 4mm ² (12AWG) |
| Valve Attachment | | DIN 3358, F10 |
| Positioning Accuracy | | < 0.5 % |
| End Position Stop | | Electronically adjustable torque or limit in both directions |
| Approximate Weight | BA-4L & BA-6L BA-15L | 30.8 (14) lbs (kg) 33.1 (15) |

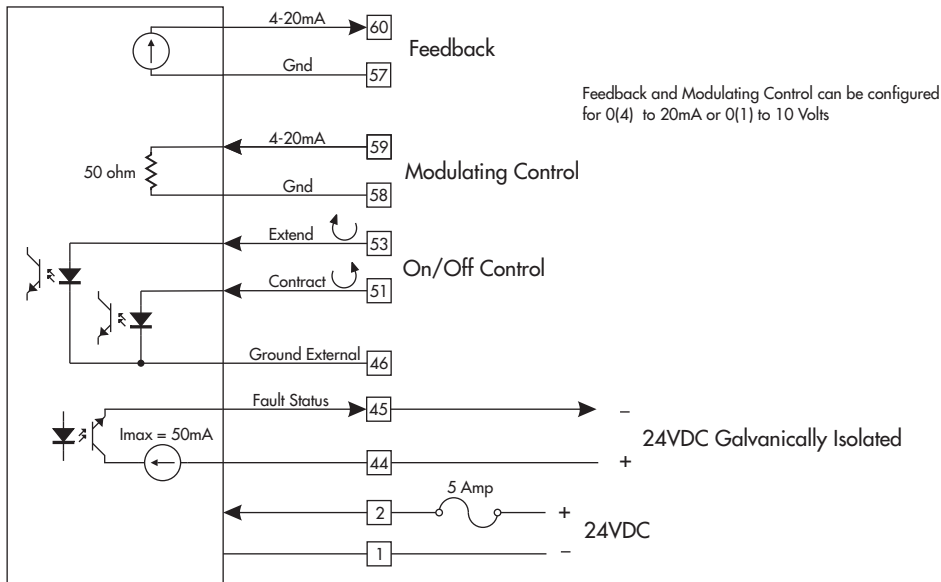
Certification

Hazardous Location: II 2G Ex db IIB T4 Gb -20°C < Ta < 60°C

EN 60079-0:2012 + A11:2013
EN 60079-1:2014
EN 60079-7:2015
EN 13463-1:2009

General Requirements
Flameproof enclosure "d"
Increased Safety "e"
Non-electrical equipment for use in potentially explosive atmospheres, Part1:Basic methods and requirements

Electrical Connections



Nominal Electrical Ratings

| Parameter | Min | Max | Unit | |
|--|----------------------------|--------------|----------|----|
| DC Supply Voltage | 20 | 35 | VDC | |
| AC Supply (47 to 63Hz) | 90 | 264 | VAC | |
| Quiscent (Idle) Current | | <50 | mA | |
| 24DC Operating Current (Fused to 5 Amps) | 0.5 | <4.5 | A | |
| 230VAC Operating Current | BA-15L BA-6L & BA-4L | 0.60 0.30 | A | |
| Operating Temperature | General Purpose Ex Div1 | -40 -20 | 60 60 | °C |

| Outputs: Fault Status | Min | Max | Unit |
|-----------------------------|-----|-----|------|
| Voltage Range (On) | 17 | 35 | V |
| Sinking or Sourcing Current | 0 | 50 | mA |

| Actuator Control Lines | Min | Max | Unit |
|------------------------|-----|-----|------|
| Voltage Range | 0 | 35 | V |

Ordering Information

| BA | Actuator Model | Power | Control | Feedback | Stem | Bracket |
|----|--------------------|---------------------------------------|---|--|---|--|
| | -15L -6L -4L | -DC = 24VDC -AC = 90-264 VAC | -D = Digital Logic -C4 = 4-20mA -C0 = 0-20mA -V1 = 1-10V -V0 = 0-10V | -N = None -C4 = 4-20mA -C0 = 0-20mA -V1 = 1-10V -V0 = 0-10V | -3 = 3/4in -2 = 1/2in -1 = 3/8in | - Blank = none - C = Custom - ? = See Brackets Above for List |

Calscan Solutions
 4188 93 St NW
 Edmonton, Alberta
 Canada
 T6E 5P5
 Ph:780-944-1377
 www.calscan.net

