

# LUX120-SR

Proportional, Non-Spring Return, 330°, 100 to 240 VAC, for 2 to 10 VDC or 4 to 20 mA



Technical Data	LUX120-SR
Power supply	100-240 VAC $\pm$ 20% 50/60 Hz
Power consumption	1.5 W (0.5 W)
Transformer sizing	3 VA (Class 2 power source)
Electrical connection	18 GA appliance rated cable 1/2" conduit connector protected NEMA 2 (IP54) 3 ft [1m] 10 ft [3m] 16 ft [5m]
Overload protection	electronic throughout full rotation
Operating range Y	2 to 10 VDC, 4 to 20 mA
Input impedance	100 k $\Omega$ (0.1 mA), 500 $\Omega$
Feedback output U	2 to 10 VDC (max 0.5 mA)
Angle of rotation	endless, adjustable with ZDB-LU
Torque	27 in-lb [3 Nm]
Direction of rotation	reversible with  switch actuator will move: =CCW with decreasing control signal (10 to 2V) =CW with decreasing control signal (10 to 2V)
Manual override	external push button
Running time (per 90 degrees)	150 seconds (2.5 rpm) 95 seconds (1.6 rpm) 75 seconds (1.25 rpm)
Humidity	5 to 95% RH non condensing (EN 60730-1)
Ambient temperature	-22°F to 122°F [-30°C to 50°C]
Storage temperature	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	UL94-5VA
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EEC and 2006/95/EC
Noise level (max)	35dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	1.43 lbs [0.65 kg]

†Rated Impulse Voltage 800V, Type of action 1, Control Pollution Degree 3.

Force min. 27 in-lb for control of damper surfaces up to 6.8 sq. ft.

## Application

For proportional modulation of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications.

The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500  $\Omega$  resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication or master-slave applications.

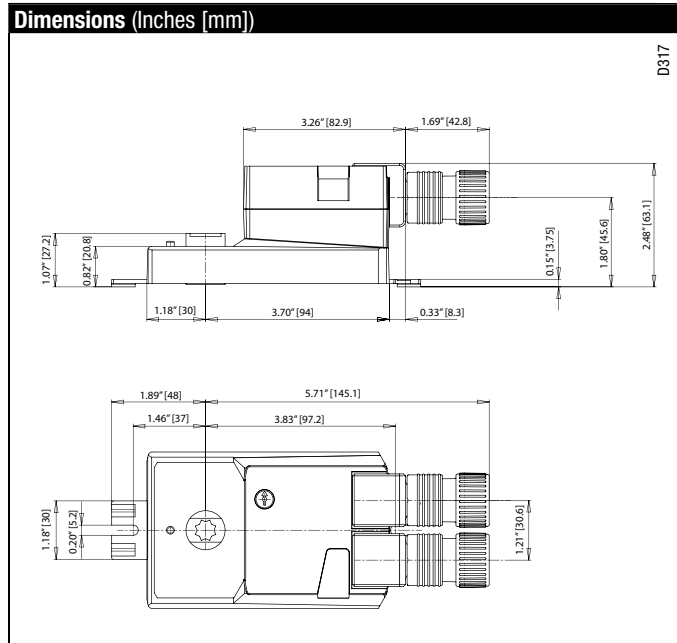
## Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The anti-rotation strap supplied with the actuator will prevent lateral movement.

The LUX120-SR series provides 330° of rotation with angle of rotation limiter, ZDB-LU.

When reaching the damper or actuator end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The LUX120-SR actuators use a brushless DC motor, which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. Power consumption is reduced in holding mode.



M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

### Accessories

K-LU	1/3" to 1/2" [8 to 12 mm] Shaft Clamp
P370	Shaft Mount Auxiliary Switch
SGA24	Min Positioners in NEMA 4 Housing
SGF24	Min Positioners for Flush Panel Mounting
PTA-250	Pulse Width Modulation Interface
IRM-100	Input Rescaling Module
ADS-100	Analog to Digital Switch
ZG-R01	Resistor for 4 to 20 mA Conversion
ZDB-LU	Rotational Limiter

**NOTE:** When using LUX120-SR actuators, only use accessories listed on this page.

### Typical Specification

Proportional control damper actuators shall be electronic type, which require no crank arm and linkage. Actuators must provide proportional damper control in response to a 2 to 10 VDC or, with the addition of a 500 Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. A 2 to 10 VDC feedback signal shall be provided for position indication.

Actuators shall be cUL Approved, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

### Wiring Diagram

#### ✂️ INSTALLATION NOTES

- 1 Provide overload protection and disconnect as required.
- 2 **CAUTION Equipment Damage!**  
Actuators may be connected in parallel. Power consumption and input impedance must be observed.
- 5 Only connect common to neg. (-) leg of control circuits.

#### 📄 APPLICATION NOTES

- ◆ The ZG-R01 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC, up to 2 actuators may be connected in parallel.
- ◆ Meets cULus requirements without the need of an electrical ground connection.

#### ⚠️ WARNING Live Electrical Components!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

