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Project Data

Date: 10/04/2024
Project Number: 24184
Project Name: Danville High School
Owner: Danville Community
School Corporation

Customer

A.A. Huber & Sons, Inc.
500 North Jackson Street
Greencastle, IN 46135
United States

Customer PO Number: Contract 21544

Contracting Team

Project Manager: Ryan Jackson
Project Engineer: Dave Moor

Engineer

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Architect

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We are pleased to provide the enclosed submittal for your review

Product Description

The Belimo AFB24-SR spring return, 180 lb-in electronic damper actuator provides proportional, fail-safe control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications.

The actuator is mounted directly to a damper shaft up to 1.05" in diameter by means of its universal clamp. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

The actuator operates in response to a 2 to 10 Vdc, or with the addition of a 500Ω 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. Not to be used for a master-slave application.

Product Specifications

Torque:	180 in-lb (20 Nm) minimum
Motor Running Time:	95 sec. constant
Spring Running Time:	< 20 sec. @ -4°F to 122°F (-20°C to 50°C) < 60 sec. @ -22°F (-30°C)
Angle of Rotation:	95° max.
Direction of Rotation:	Spring; Reversible with CW/CCW mounting Motor; Reversible with built-in switch
Position Indication:	Visual indicator, 0° to 95° (0° is full spring return position)
Manual Override:	5mm hex crank (3/16" Allen) supplied
Control:	Proportional (2-10 Vdc, 4 to 20 mA)
Power Supply:	24 Vac ± 20% 50/60 Hz 24 Vdc +20% / -10%
Power Consumption:	5.5 W (running) 3 W (holding)
Transformer Sizing:	8.5 VA (class 2 power source)
Electrical Connection:	3' (.9m) 18 AWG appliance cable 1/2" conduit connector
Overload Protection:	Electronic throughout 0° to 95° rotation
Ambient Temperature:	-22°F to 122°F (-30°C to 50°C)
Storage Temperature:	-40°F to 176°F (-40°C to 80°C)
Humidity:	max. 95% RH (non-condensing)
Housing:	NEMA type 2, IP54, Enclosure Type2
Material:	Zinc coated metal and plastic casing
Agency Listings:	cULus acc. To UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. To 2004/108/EC & 2006/95/EC
Noise Level:	≤45 dB(A) motor @ 95 seconds ≤62 dB(A) spring return
Servicing:	Maintenance free
Quality standard:	ISO 9001
Weight:	4.6 lbs (2.1 kg)

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ATTENTION: AFB24-SR(-S) and AFX24-SR (-S) cannot be tandem mounted on the same damper or valve shaft. Only On/Off and MFT AF models can be used for tandem mount applications.

Product Features

- Brushless DC motor with Application Specific Integrated Circuit (ASIC) stall protection
- Bi-directional fail-safe spring return
- Unique self-centering shaft coupling
- Manual override
- 180 lb-in (20 Nm) torque
- 5° preload as shipped from factory
- Maintenance free
- UL and CSA listed

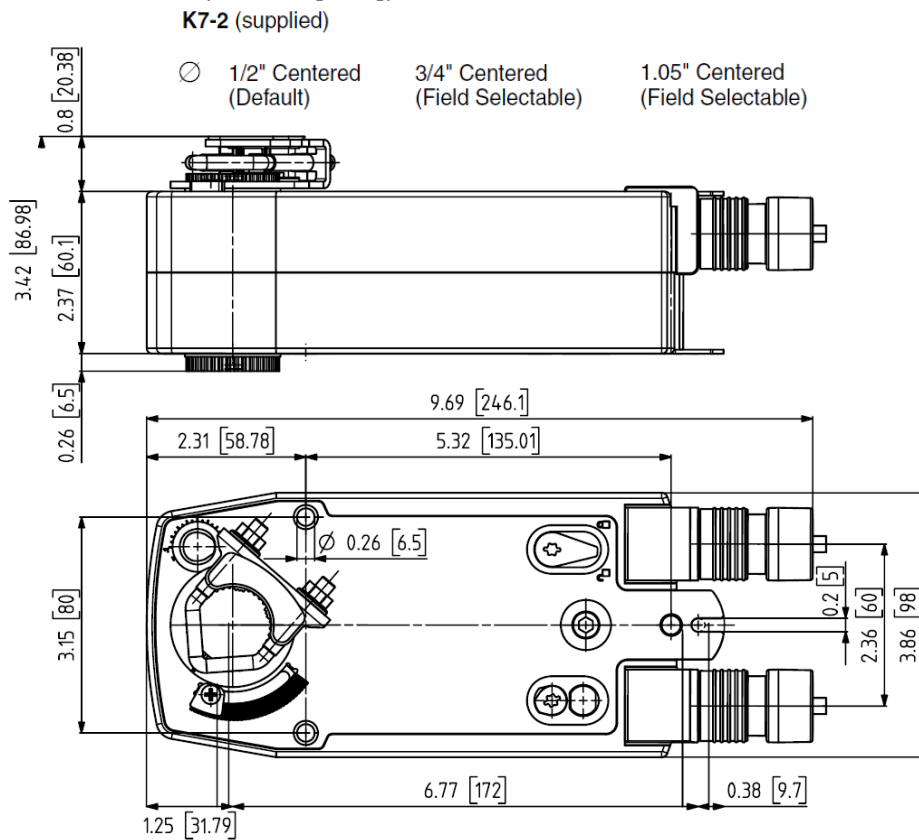
Specifications are subject to change without notice.

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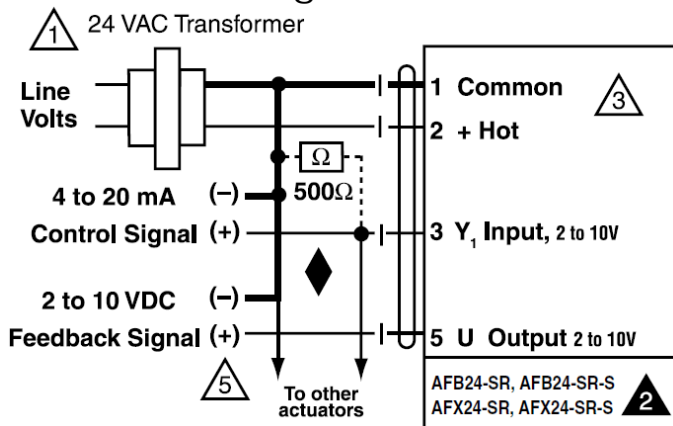
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Toll-Free: 888.652.9663
 Fax: 317.227.1034

Product Dimensions (Inches [mm])



Product Wiring



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. Up to 4 actuators may be connected in parallel if not mechanically mounted to the same shaft. With 4 actuators wired to one 500 Ω resistor. Power consumption must be observed.
- 3 Actuator may also be powered by 24 VDC.
- 4 For end position indication, interlock control, fan startup, etc., AFB24-SR-S and AFX24-SR-S incorporates two built-in auxiliary switches: 2 x SPDT, 3A (0.5A) @250 VAC, UL Approved, one switch is fixed at +10°, one is adjustable 10° to 90°.
- 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.

ATTENTION: AFB24-SR(-S) and AFX24-SR(-S) **cannot** be tandem mounted on the same damper or valve shaft. Only On/Off and MFT AF models can be used for tandem mount applications.

Specifications are subject to change without notice.

Product Description

The Belimo LF24 US spring return, 35 lb-in electronic damper actuator provides On/Off, fail-safe control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications.

The actuator is mounted directly to a damper shaft from 3/8" up to 1/2" in diameter by means of its universal clamp. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

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Product Specifications

Torque:	35 in-lb (4 Nm)
Motor Running Time:	< 40 to 75 sec.
Spring Running Time:	< 25 sec. @ -4°F to 122°F (-20°C to 50°C) < 60 sec. @ -22°F (-30°C)
Angle of Rotation:	95° max. (adjustable)
Direction of Rotation:	Spring; Reversible with CW/CCW mounting Motor; Reversible with built-in switch
Position Indication:	Visual indicator, 0° to 95° (0° is full spring return position)
Manual Override:	5mm hex crank (3/16" Allen) supplied
Control:	On/Off
Power Supply:	24 Vac ± 20% 50/60 Hz 24 Vdc +20% / -10%
Power Consumption:	5 W (running) 2.5 W (holding)
Transformer Sizing:	7 VA (class 2 power source)
Electrical Connection:	3' (.9m) 18 AWG appliance cable 1/2" conduit connector
Overload Protection:	Electronic throughout 0° to 95° rotation
Ambient Temperature:	-22°F to 122°F (-30°C to 50°C)
Storage Temperature:	-40°F to 176°F (-40°C to 80°C)
Humidity:	5 to 95% RH (non-condensing)
Housing:	NEMA type 2, IP54, Enclosure Type2
Material:	Zinc coated steel
Agency Listings:	cULus acc. To UL 873 and CAN/CSA C22.2 No. 24-93
Noise Level:	≤50 dB(A) ≤62 dB(A) spring return
Servicing:	Maintenance free
Quality standard:	ISO 9001
Weight:	3.1 lbs (1.4 kg)

Product Features

- Bi-directional fail-safe spring return
- Unique self-centering shaft coupling
- Manual override
- 90 lb-in (10 Nm) torque
- 5° preload as shipped from factory
- Maintenance free
- UL and CSA listed

Specifications are subject to change without notice.

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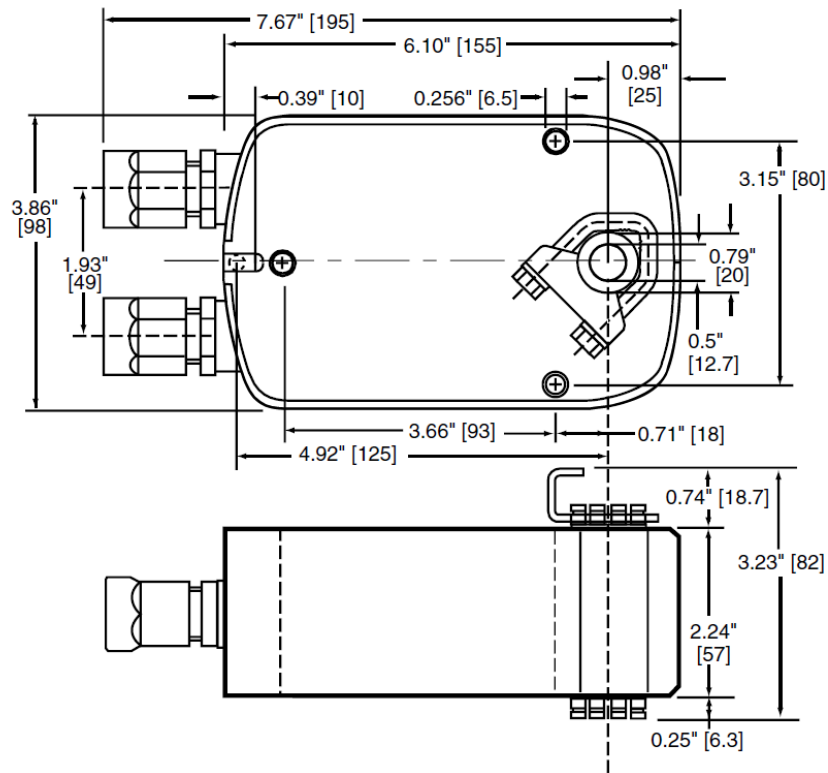
Product Dimensions (Inches [mm])

Standard:

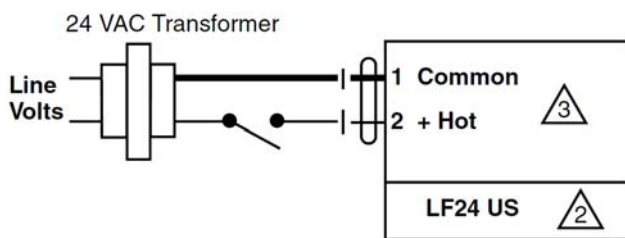
- 3/8" to 1/2"
- 3/8" to 7/16"

Optional

- 1/2" to 3/4"
w/K6-1
accessory



Product Wiring



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.
- 3 Actuators may also be powered by 24 VDC.

APPLICATION NOTES

- ◆ 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.

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