



# DA-020S Series

20 lb-in (2 Nm) Spring Return Damper Actuators



## Overview

The DA-020S Series of direct-coupled, spring return electronic damper actuators are 24 Vac/dc and 120 Vac rated and available in 2-position, floating and 2 to 10 Vdc control.

## Applications

- The small footprint and torque make this actuator ideal for small HVAC dampers, economizer units, or residential zone dampers requiring fail safe operation

## Features & Benefits

- Bi-directional, fail-safe spring return
- Modulating actuators contain built-in feedback
- Pre-cabled
- Plenum rated
- Small footprint for installation flexibility
- Quiet operation
- UL, cUL, CE rated
- Signal inversion capability on modulating type (2 to 10 Vdc/10 to 2 Vdc)

## Model Selection

DA-020S024DXXXP	24V, Digital (2-Position), Plenum Cable
DA-020S024DX2XP	24V, Digital (2-Position), 2 Auxiliary Switches, Plenum Cable
DA-020S024FXXXP	24V, Floating (3-Position), Plenum Cable
DA-020S024FX2XP	24V, Floating (3-Position), 2 Auxiliary Switches, Plenum Cable
DA-020S024QXXXP	24V, Proportional 2-10V, Plenum Cable
DA-020S024QX2XP	24V, Proportional 2-10V, 2 Auxiliary Switches, Plenum Cable
DA-020S120DXXXX	120V, Digital (2-Position), Standard Cable
DA-020S120DX2XX	120V, Digital (2-Position), 2 Auxiliary Switches, Standard Cable

# Product Specifications

## Power Supply

Operating voltage	24 Vac $\pm 20\%$ ; 24 Vdc $\pm 15\%$ 120 Vac $\pm 15\%$
Frequency	50/60 Hz
Power consumption	Vac $\pm 20\%$ / 24 Vdc $\pm 15\%$
<input type="checkbox"/> DA-020S024Dxxxx	Running: 6.5 VA (4.5W) Holding: 4 VA (2.5W)
<input type="checkbox"/> DA-020S024Fxxxx	Running: 4 VA (2.5W) Holding: 3 VA (1.5W)
<input type="checkbox"/> DA-020S024Qxxxx	4.5 VA (3W) 3.5 VA (2W)
Power consumption	120 Vac $\pm 15\%$
<input type="checkbox"/> DA-020S120Dxxxx	Running: 10 VA Holding: 7 VA

## Equipment Rating

24 Vac	Class 2, in accordance with UL/CSA Class III per IEC 60536
120 Vac	Double insulation

## Auxiliary Switch Rating

Fixed dual end switches	
<input type="checkbox"/> AC rating	24 Vac to 250 Vac/24 Vdc, 6A resistive/2 FLA/12 LRA

## Control Signal

Input signal (wires 8–2)	
<input type="checkbox"/> Voltage input signal (DA-020S024QXXXP)	2 to 10 Vdc (max. 35 Vdc)
<input type="checkbox"/> Input resistance	>100K ohms

## Feedback Signal

Position output signal (wires 9–2)	
Voltage output signal (DA-020S024QXXXP)	2 to 10 Vdc
Maximum output current	+1 mA, -0.5 mA

## Function

Running/spring return torque	20 lb-in (2 Nm)
Maximum torque	53 lb-in (6 Nm)
Runtime for 90°	
<input type="checkbox"/> Operating with motor	30 seconds
<input type="checkbox"/> Closing (on power loss) with spring return	15 seconds typical

## Mounting

Nominal angle of rotation \_\_\_\_\_ 90°  
Maximum angular rotation \_\_\_\_\_ 95°  
Shaft size \_\_\_\_\_ 3/8 to 1/2-inch (8 to 13 mm) dia.  
1/4 to 7/16-inch (6 to 11 mm) square  
Minimum shaft length \_\_\_\_\_ 3/4-inch (20 mm)

## Housing

Enclosure \_\_\_\_\_ NEMA 1, IP40  
Material \_\_\_\_\_ Plenum-rated rugged plastic  
Gear lubrication \_\_\_\_\_ Silicone-free

## Ambient Conditions

Ambient temperature  
☐ Operation \_\_\_\_\_ -25°F to 130°F (-32°C to 55°C)  
☐ Storage and transport \_\_\_\_\_ -40°F to 158°F (-40°C to 70°C)  
Ambient humidity (non-condensing) \_\_\_\_\_ 95% rh

## Agency Certification

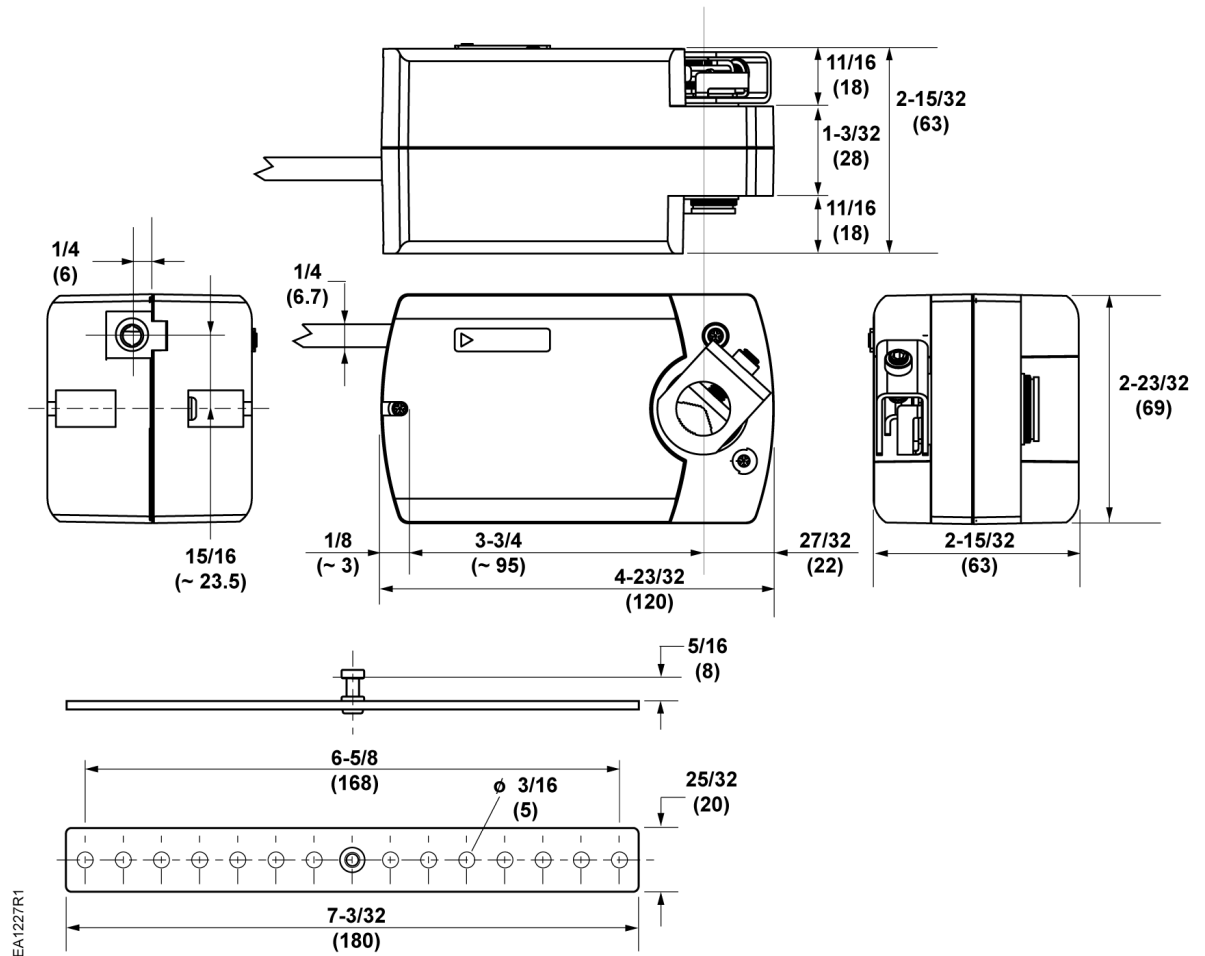
24 Vac \_\_\_\_\_ UL Listed per UL873  
cUL to CSA C22.2 No. 24-93  
C-Tick conformity per AS/NZS3548  
Note: These devices were approved for installation in plenum areas  
by Underwriters Laboratories, Inc. (UL) per UL 1995.  
CE Conformity 120 Vac \_\_\_\_\_ EMC and Low Voltage Directives

## Miscellaneous

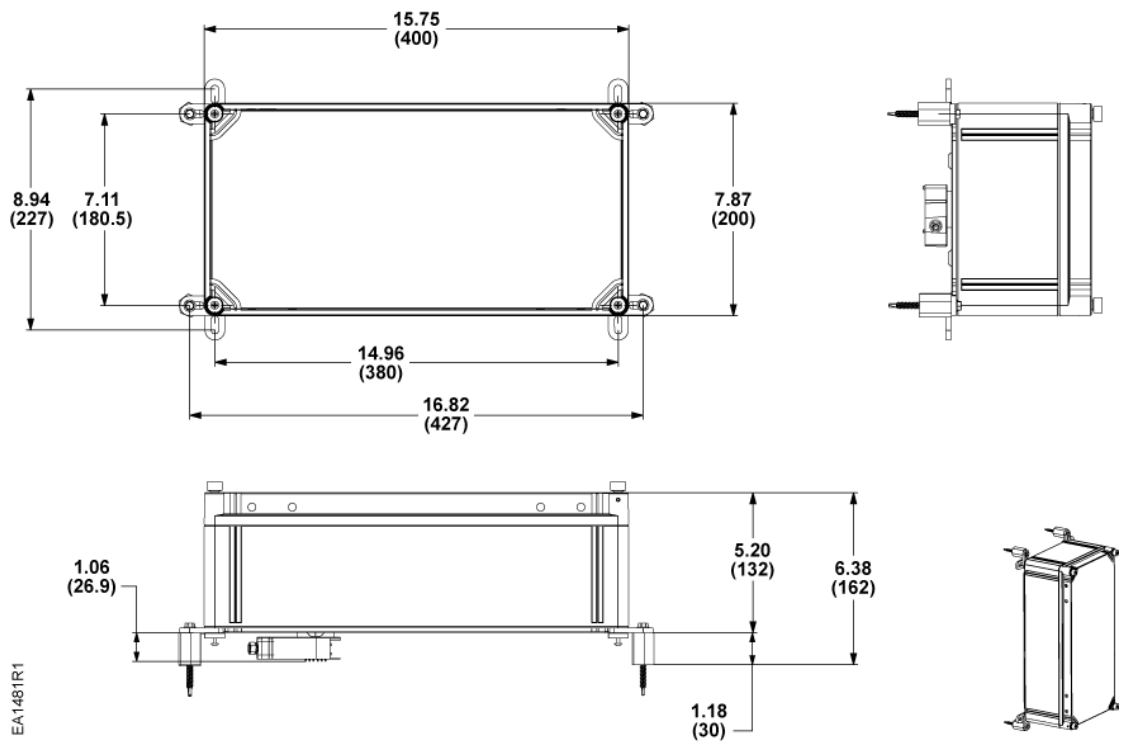
Pre-cabled connection \_\_\_\_\_ 18 AWG (0.75 mm<sup>2</sup>)  
Cable length \_\_\_\_\_ 3 feet (0.9 m) length  
Life cycle \_\_\_\_\_ Designed for minimum of 60,000 full stroke cycles and a minimum of 1.5  
million repositions at rated torque and temperature  
Dimensions \_\_\_\_\_ 4-23/32" H × 2-22/32" W × 2-15/32" D (120 × 69 × 63 mm)  
☐ DA-020S120DXXXX (only) \_\_\_\_\_ 5-1/2" H × 2-22/32" W × 2-15/32" D (138.5 × 69 × 63 mm)  
☐ DA-020Sxxxxx2xx \_\_\_\_\_ 6-3/16" H × 2-22/32" W × 2-15/32" D (156.7 × 69 × 63 mm)  
Weight \_\_\_\_\_ 1.06 lbs (0.48 kg)

# Dimensions

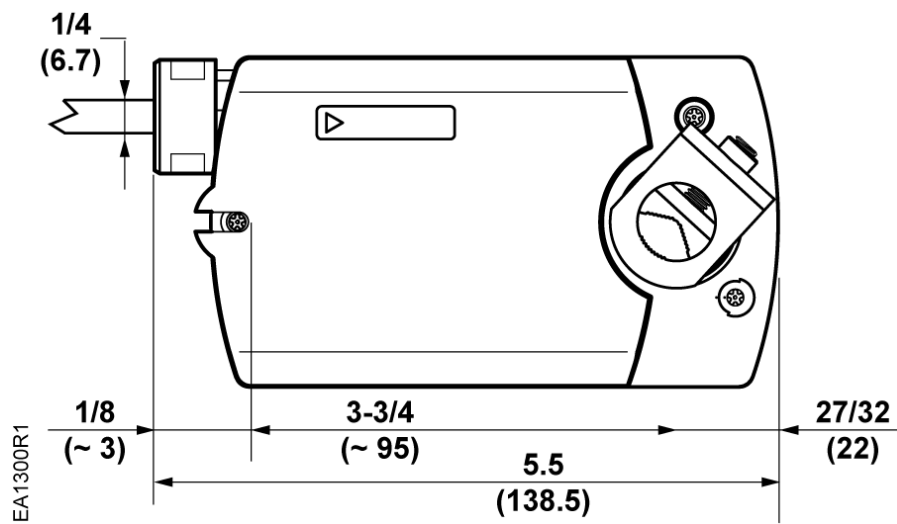
DA-020S024DXXXP, DA-020S024FXXXP, DA-020S024QXXXP Actuator and Mounting Bracket



DA-ASK75.7U Weather Shield in Inches (Millimeters).



DA-020S120DXXXX Actuator Only



DA-020Sxxxxx2xx with Conduit Adapter

