

No. 4 Pneumatic Actuator



331-2929 No. 4
Pneumatic Actuator
for frame mounting.



331-2904 No. 4
Pneumatic Actuator with
pivot mounting bracket.



331-2973 No. 4
Pneumatic Actuator with clevis, and crank.
Universal Mounting Plate for extended shaft
or frame mounting.



331-2974 No. 4
Pneumatic Actuator with
non-pivot bracket for unit ventilator.

Description

Designed with a 4-inch (102 mm) stroke, the No. 4 Pneumatic Actuator is a rugged, metal-fabricated device that provides gradual or positive actuation of HVAC and fire/smoke dampers.

Features

- Replaceable diaphragm
- Positioning relay (optional)
- Forward travel stops (optional)
- Hesitation model (provides minimum ventilation without separate damper/actuator)
- Variety of spring ranges for sequencing with other control devices
- Stainless steel actuator shaft

Applications

Recommended for control of outdoor, return air, exhaust, face and bypass, fan discharge, and static pressure control dampers, the No. 4 Pneumatic Actuator also is excellent for controlling specialized dampers and air valves in terminal units, such as unit ventilators and mixing boxes.

The No. 4 actuator hesitation model is frequently used to operate the outdoor air damper on unit ventilators and mixing boxes.

An actuator marked with an asterisk (*) is a component recognized under UL's Damper Actuator category (EMKU2) for use on fire dampers and leakage-related dampers.

Nominal Spring Rating	Max. 121 Thrust lb. (N)				Torque Rating lb.-in (Nm)			
	Full Stroke Forward			Spring Return (No Stroke) 0 psi (0 kPa)	Gradual Operation	2-position Operation or with Positioner		
	15 psi (103 kPa)	18 psi (124 kPa)	25 psi (172 kPa)			15 psi (103 kPa)	18 psi (124 kPa)	25 psi (172 kPa)
3 to 7 psi (21 to 48 kPa)	88 (391)	121 (538)	198 (881)	33 (147)	30 (3.4)	46 (5.2)	46 (5.2)	46 (5.2)
3 to 13 psi (21 to 90 kPa)	22 (98)	55 (245)	132 (587)	33 (147)	30 (3.4)	46 (5.2)	46 (5.2)	46 (5.2)
5 to 10 psi (35 to 90 kPa)	55 (245)	88 (391)	165 (734)	55 (245)	30 (3.4)	77 (8.7)	77 (8.7)	77 (8.7)
8 to 13 psi (55 to 90 kPa)	22 (98)	55 (245)	132 (587)	88 (391)	30 (3.4)	123 (14)	123 (14)	123 (14)
2 to 3, 8 to 13 psi (14 to 20, 55 to 90 kPa) Hesitation	22 (98)	55 (245)	132 (587)	22 (98)	23 (2.6)	—	—	—

Table Notes:

With maximum hysteresis of 2.5 psi (17.2 kPa) @ 90° rotation.

Specifications


Effective Diaphragm Area	11 in. ² (71 cm ²)
Stroke	4-in. (102 mm)
Stroke (hesitation models)	3-in. (76 mm)
Max. Air Pressure	30 psi (207 kPa)
Nominal Spring Ranges	3 to 7 psi (21 to 48 kPa) 3 to 13 psi (21 to 90 kPa) 5 to 10 psi (35 to 69 kPa) 8 to 13 psi (55 to 90 kPa)
Nominal Spring Range (hesitation model)	2 to 3, 8 to 13 psi (14 to 21, 55 to 90 kPa)
Temperature Range	
Operating.....	-20° to 200°F (-29° to 93°C)
Storage.....	-20° to 200°F (-29° to 93°C)

Materials	
Housing (totally enclosed)	Steel, electro-coated epoxy
Shaft	Stainless Steel
Diaphragm	EDPM Rubber
Spring	Steel
Bearing	Delrin
Air Connection	1/8" NPT Female with a dual barb elbow fitting for 1/4" (6 mm) OD tubing
Type of Mounting	Front, bracket, pivot; universal (extended shaft or frame mount)
Shipping Weight (Actuator only)	3.66 lb. (1.66 kg)

Product Ordering

No. 4 Actuator Description ³	Mounting Style	No. 4 Actuator Part Number				
		Nominal Spring Range				
		3-7 psi (21-48 kPa)	3-13 psi (21-90 kPa)	5-10 psi (35-69 kPa)	8-13 psi (55-90 kPa)	Hesitation Model 2-3, 8-13 psi (14-21, 55-90 kPa)
Actuator, Basic with Integral Pivot	Pivot	331-2904¹	331-2905¹	331-2906¹	331-2961¹	331-2909¹
Actuator, Basic with Integral Pivot and Positioning Relay	Pivot	—	—	—	332-2961	—
Actuator with Integral Pivot, Clevis and Clevis Pin for use with frame mounting accessory	Pivot	331-2929	331-2930	331-2931	331-2968	—
Actuator with Integral Pivot, Clevis and Clevis Pin for use with frame mounting accessory. Includes Positioning Relay.	Pivot	—	—	—	332-2968	—
Actuator, Mounting Screws (Non-Pivot)	Front	331-2910	—	331-2917	331-2963	—
Actuator, Bracket (Non-Pivot) with 3" (76 mm) stroke for unit ventilator	Fixed	331-2911	—	331-2934	331-2966	331-2927
Actuator, Bracket (Non-Pivot) with 2-3/8" (60 mm) stroke for unit ventilator	Fixed	—	—	—	—	331-2974
Actuator, Mounting Plate, Ball Joint Connector	Fixed	—	331-3018	—	331-3017	—
Actuator, Mounting Plate, Ball Joint Connector with Positioning Relay	Fixed with Positioning Relay	—	—	—	332-3017	—
Actuator, Integral Pivot with Pivot Post. Mounted on plate for Extended Shaft ² with Clevis and Crank Arm for 3/8" (9.5 mm), 7/16" (11 mm) or 1/2" (13 mm) diameter shaft. Parts for frame mounting (blade drive) included with kit.	Universal Kit ²	331-3000	331-3001	331-3002	331-2973	331-3004
Actuator, Integral Pivot with pivot post and Positioning Relay. Mounted on plate for extended shaft with Clevis and Crank for 3/8" (10 mm), 7/16" (11 mm), 1/2" (13 mm) diameter shaft. Parts for frame mounting (blade drive) included with kit.	Universal Kit ² with Positioning Relay	—	—	—	332-2973	—

If the actuator is inoperative, replace the entire actuator.

	The No. 4 damper actuator part numbers noted above all utilize pneumatic damper actuators that are UL Recognized Components for fire/smoke applications under UL's Damper Actuator category EMKU2, referencing standards UL555 and UL555S. This category covers pneumatic damper actuators used in fire dampers and leakage rated dampers for smoke control.
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Ordering Notes:

- These No. 4 pneumatic basic damper actuator devices are UL component recognized. These same basic damper actuator devices are used in all of the actuator assemblies following the base model in each column.
- When the actuator is ordered with Universal Kit Mounting, the mounting plate, pivot post and hardware, clevis, damper crank, rocker arm, and all screws/nuts are included. Order other frame mounting accessories as required if not supplied by damper manufacturer.
- The No. 4 pneumatic damper actuator contains a replaceable diaphragm with EPDM rubber. See Siemens document #129-089 to replace.