

## AL0620-P, -P-K, -P-X-K, -P-SD, -P-SU Electric Linear Valve Actuator

### SPECIFICATION DATA



### GENERAL

The AL0620-P series of actuators are designed for modulating control with controllers providing an analog output of 0...10 Vdc or 2...10 Vdc (2 to 10 Vdc signal only for AL0620-P). They operate Trend's standard valves in heating, district heating, ventilating, and air conditioning (HVAC) applications. Spring-return models provide a safety position at power failure.

### FEATURES

- Easy and quick installation
- No separate linkage required
- No adjustments required
- Low power consumption
- Force-limiting end stops
- Spring-return models (AL0620-P-SD/SU)
- Manual operation knob\*
- Position feedback signal\*
- 0...10 Vdc or 2...10 Vdc signal input selectable\*
- Synchronous motor
- Direct / reverse action selectable
- Stroke position on signal failure selectable\*
- Corrosion-resistant design
- Maintenance-free

\* (excluding AL0620-P)

### SPECIFICATIONS

#### Temperature Limits

Ambient operating limits	-10...+50 °C at 5...95% r.h.
Ambient storage limits	-40...+70 °C at 5...95% r.h.
Medium valve temperature	Max. 150 °C

#### Signals

Signal input voltage	y = 2...10 Vdc (all models) or 0...10 Vdc (not AL0620-P) R <sub>i</sub> = 100kΩ
Signal source	1 kΩ max.
Position feedback signal	x = 2...10 Vdc
Load	1 mA max.

#### Safety

Protection class	II as per EN60730-1
Protection standard	IP54 as per EN60529
Flame retardant housing	V0 as per UL94 (with metal cable gland)

**Wiring**

Wiring terminals	1.5 mm <sup>2</sup>
Cable entry	M20 cable gland and two additional knockouts PG11 and PG13.5 for auxiliary switch accessory. Knock-outs only for AL0620-P

**Weight**

non-spring return type	1.3 kg
spring return type	2.4 kg

**Material**

Cover	ABS-FR
Base	glass fiber reinforced plastic
Yoke	aluminum diecast

model number	AL0620-P	AL0620-P-K	AL0620-P-X-K	AL0620-P-SD	AL0620-P-SU
supply voltage	24 Vac ±15%; 50/60 Hz				
power consumption	5 VA		7 VA		11 VA
signal input 0(2) Vdc	Actuator stem retracted. Two-way valve:"open", Three-way valve port A-AB:"closed" *				
signal input 10 Vdc	Actuator stem extended. Two-way valve:"closed", Three-way valve port A-AB:"open" *				
stroke	20 mm				
run time at 50 Hz	1 min		0.5 min		1.8 min
close-off force	≥ 600 N				
spring return time	—			≈12 s	
spring return direction	—			actuator stem extends at power failure	actuator stem retracts at power failure

\* Factory setting; can be reversed (except for AL0620-P) by action selector plug W3.

## OPERATION

### General

The drive of a synchronous motor is converted into linear motion of the actuator stem via a spur gear transmission. The actuator stem is connected with the valve stem by a button-keyed retainer connection.

An integrated spring package limits the stem force to a factory-set value in either direction.

Installed microswitches switch off the actuator precisely when the specified stem force is reached.

### Manual Operation (not available on AL0620-P)

Actuators without spring return are equipped with a manual operation knob used in case of power failure. Manual operation is permitted only after the power supply is switched off or disconnected.

To operate, push the manual operation knob down and turn clockwise to move the stem downward and counterclockwise to move the stem upward. If the actuator returns to automatic control, the manual operation knob unlocks automatically.

In the case of actuators with spring return, the manual operation knob is located under the cover.

### Spring Return

The AL0620-P-SD/SU spring return actuators provide a defined safety position of the valve in case of power failure.

The spring return actuators are shipped from the factory with a shipment stop (to lock the manual operation knob) in order to allow connection of the stem button retainer to the valve stem without power supply.

### Electrical Installation

The actuators (except for AL0620-P) are delivered with a pre-installed cable gland M20 x 1.5 (with strain relief) and two additional knock-outs for PG11 and PG13.5.

AL0620-P has 3 knockouts, 2 x PG13.5 and 1 x PG11.

Max. cable length/diameter for field mounting:

200 m / 1.5 mm<sup>2</sup> or

100 m / 1.5 mm<sup>2</sup> (AL0620-P-X-K)

**NOTE:** To avoid malfunction, it is necessary to connect 24 Vac power and ground (see wiring section on page 4).

### Input Signal Failure (not available on AL0620-P)

By means of selector plug W1\* the actuator can be selected such that in case of a signal input failure (e.g. a broken wire), the actuator will run to one of the three positions:

0%: actuator stem position for 0(2) Vdc

50%: actuator stem in central position

100%: actuator stem position for 10 Vdc

W1 is set by the factory to 50%

### Input Signal Range (not available on AL0620-P)

The range (0 to 10 V or 2 to 10 V) of the analog input signal Y can be changed by changing the position of selector plug W2\*

## Action

The direction of action can be changed by repositioning selector plug W3\*. It is set by the factory such that the stem extends at increasing signal and retracts at decreasing signal.

**NOTE:** \*Jumper plugs W1, W2 and W3 are accessible after the cover has been removed. They are located on the rear side of the protection sheet of the printed circuit board (see TG200904INT and TG200902INT).

## Output Signal "POSITION" (not available on AL0620-P)

An analog output signal 2...10 Vdc "POSITION" is available which represents the actual actuator position. It can be used for remote indication.

When the actuator stem is extended, the output signal is 10 Vdc.

## Accessories

### Auxiliary Switches

The actuators can be equipped on-site with an auxiliary switch unit with two switches. Their switching points are adjustable over the full length of the actuator stroke. The switches can be used to switch pumps or provide remote indication of any stroke position. A cable gland M20 x 1.5 (with strain relief) is delivered with the unit.

Order Code: ACCA-AL06-SW

## CLOSE-OFF PRESSURE RATINGS

stem force		600 N							
stroke		20 mm							
valve size	mm	15	20	25	32	40	50	65	80
	inch	½	¾	1	1 ¼	1 ½	2	2 ½	3
valves		close-off pressure ratings (in kPa)							
V162N		1600	1600	1000	700	460	260		
V162F		1600/1000	1000	1000	600	350	200	120	50
V162X		1600	1600	1000	700	460	260		
V252FP		2500	2500	2500	2500	2500	2500		
V163N		1600	1600	1000	700	460	260		
V163F		1000	1000	1000	790	480	260	160	100
V163X		1600	1600	1000	700	460	260		

For details on the valves, see following Data Sheet No.:

V162N	TA200890	V163F (20 mm)	TA200893
V162F	TA200892	V162X, V163X	TA200897
V163N	TA200891	V252FP	TA200899

DIMENSIONS

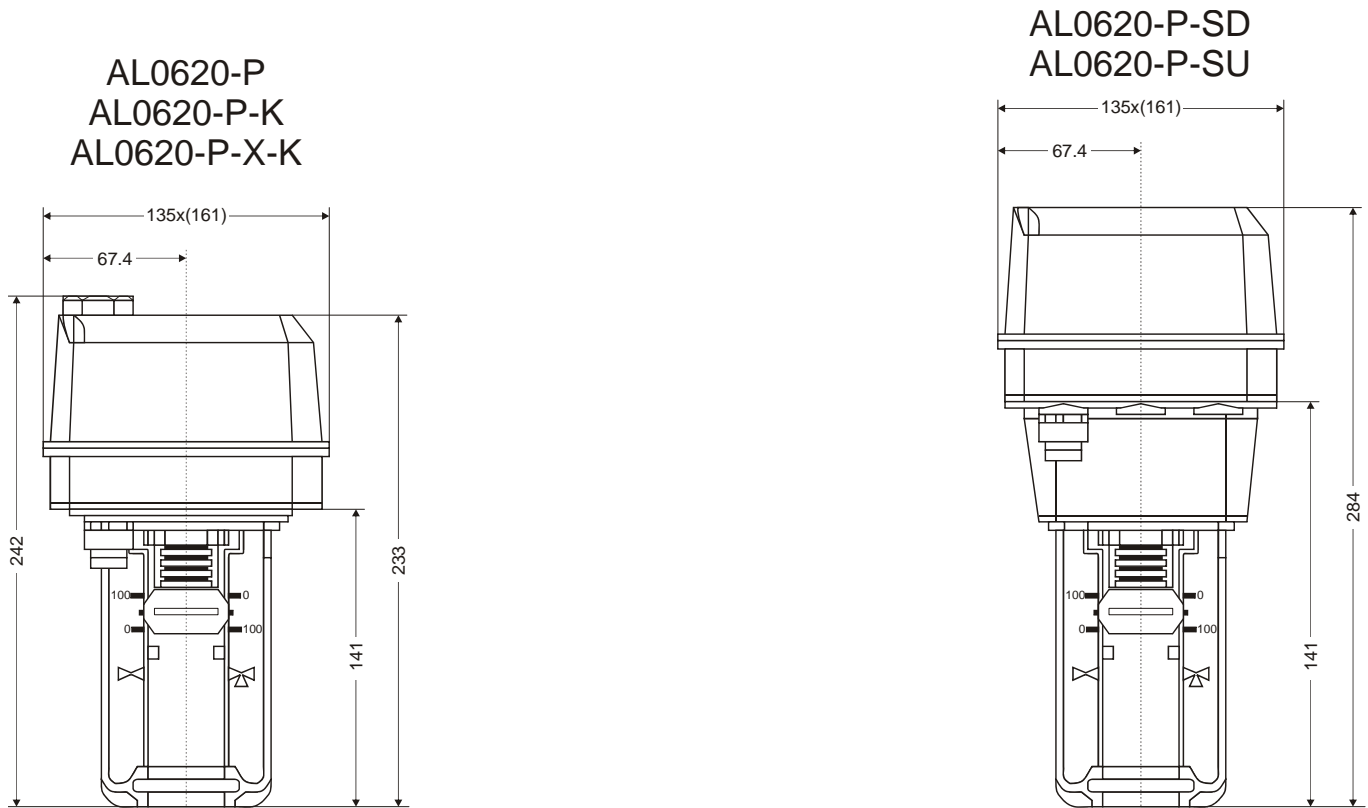
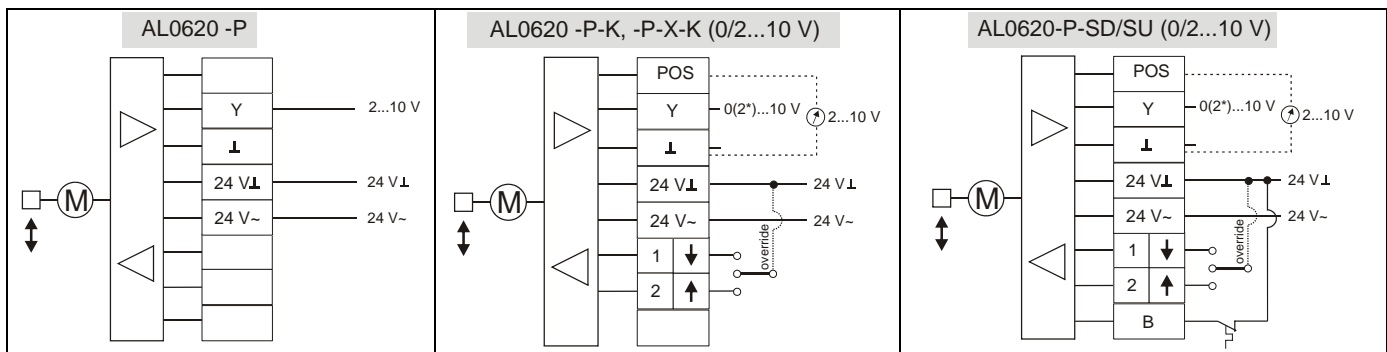
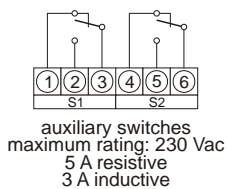


Fig.3. Dimensions (in mm)

WIRING




Accessory  
ACCA-AL06-SW



DISPOSAL

**WEEE Directive:**

 At the end of their useful life the packaging and product should be disposed of by a suitable recycling centre.  
Do not dispose of with normal household waste.  
Do not burn.

Manufactured for and on behalf of the Environmental and Combustion Controls Division of Honeywell Technologies Sarl, Ecublens, Route du Bois 37, Switzerland by its Authorized Representative.

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