

# CLLA20-10NSR6, CLLA20-10SU6, CLLA20-10SD6

## PRODUCT DATA



CLLA20-10NSR6

CLLA20-10SU6/-10SD6

### GENERAL

The CLLA20-10NSR6/-10SU6/-10SD6 Electric Linear Valve Actuators are designed for modulating control with controllers providing an analog output of 0...10 Vdc or 2...10 Vdc. They operate Honeywell's standard valves in heating, district heating, ventilation, and air conditioning (HVAC) applications. Spring-return models provide a safety position at power failure.

### FEATURES

- Quick and easy installation.
- No separate linkage required.
- No adjustments required.
- Low power consumption.
- Force-limiting end switches.
- Spring-return models.
- Manual operation knob.
- Position feedback signal.
- 0...10 Vdc or 2...10 Vdc signal input selectable.
- Direct / reverse action selectable.
- Stroke position on signal failure selectable.
- Corrosion-resistant design.
- Maintenance-free.

### 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 temp.	Max. 150 °C (220° C with High-Temperature Kit)

#### Signals

Signal input voltage	y = 0(2)...10 Vdc, R <sub>i</sub> = 100kΩ
Output impedance	1 kΩ max.
Position feedback signal	x = 2...10 Vdc
Output load	1 mA max.

#### Safety

Protection class	III 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. Two additional knock-outs M18 and M20 to access auxiliary switch and potentiometer

#### Weight

CLLA20-10NSR6	1.3 kg
CLLA20-10SU6/-10SD6	2.4 kg

#### Material

Cover	ABS-FR
Base	glass fiber reinforced plastic
Yoke	aluminum die-cast

#### Noise level

≤45dB(A)

Table 1. Specifications

model number	CLLA20-10NSR6	CLLA20-10SD6	CLLA20-10SU6
supply voltage	24 Vac ± 15%; 50/60 Hz		
power consumption	5 VA	12 VA	
signal input 0(2) Vdc	actuator stem retracted: two-way valve "open," three-way valve port A-AB "closed" <sup>1)</sup>		
signal input 10 Vdc	actuator stem extended: two-way valve "closed," three-way valve port A-AB "open" <sup>1)</sup>		
stroke	20 mm		
run-time at 50 Hz	1 min	1.8 min	
close-off force	≥ 600 N		
spring return time	--	≈ 12 s	
spring return direction	--	stem extends at power failure	stem retracts at power failure

<sup>1)</sup> Factory setting: can be reversed by pressing the left-hand pushbutton (W3) located on the PCB (see Fig. 1 below).

## 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.

The actuator switches off precisely when the specified stem force is reached.

### Manual Operation (CLLA20-10NSR6)

The actuator without spring return is 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.

### Override Option

All actuators have an integrated override function (see also Fig. 2 on page 3). When the override signal is applied, the actuator drives to the fully-open or fully-closed position, regardless of the controller signal.

### Spring Return (CLLA20-10SD6/-10SU6)

The CLLA20-10SD6/-10SU6 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 are delivered with a pre-installed cable gland M20 and two additional knock-outs for M18 and M20. Max. cable length/diameter for field mounting: 200 m / 1.5 mm<sup>2</sup>

**NOTE:** To avoid malfunction, it is necessary to connect 24 Vac power and ground (see Fig. 2 on page 3).

### Action (W3)

The direction of action can be reversed by pressing the left-hand pushbutton (W3) located on the printed circuit board (see Fig. 1). If the corresponding LED is lit, this indicates that the actuator stem will retract at a control signal of 0(2) Vdc (factory setting); if it is dark, the actuator stem will extend at a control signal of 0(2) Vdc.

### Input Signal Range (W2)

The range of the analog input signal Y can be changed by pressing the right-hand pushbutton (W2) located on the printed circuit board (see Fig. 1). If the corresponding LED is lit, this indicates that the actuator is set for 0...10 V operation (factory setting); if it is dark, the actuator is set for 2...10 V operation.

### Input Signal Failure (W1)

Using the potentiometer (W1) located on the printed circuit board (see Fig. 1), the actuator can be adjusted such that in case of a signal input failure (e.g. a broken wire), the actuator will run to any pre-configured position between 0% and 100%. The factory setting is with the actuator stem in the central position (50%).

**NOTE:** The two pushbuttons (W3 and W2) and the potentiometer (W1) are accessible after the cover has been removed and are located at the rear side of the protection sheet of the printed circuit board.

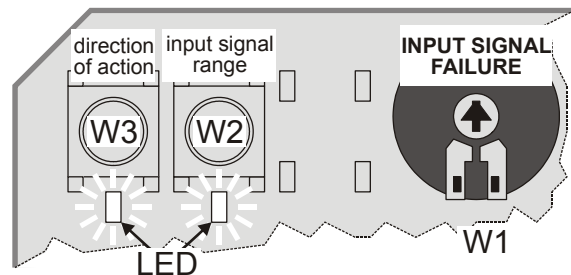


Fig. 1. Pushbuttons and potentiometer (default positions)

### Output Signal "POSITION"

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 is delivered with the unit.

Part number: 43191680-205

### High-Temperature Kit

(for applications medium temperatures of 150...220 °C)

order number High-Temperature Kit	valve	DN
43196000-001	CLVT2W...P16, CLVT3W...P16, CLVF2W...P16, CLVF3W...P16, CLVF3W...P6	15...50 15...32
43196000-002	CLVF2W...P16, CLVF3W...P16, CLVF3W...P6	40...80

## CLOSE-OFF PRESSURE RATINGS

Table 2. Close-off pressure ratings

stem force	600 N							
stroke	20 mm							
valve size (mm)	15	20	25	32	40	50	65	80
VALVES	close-off pressure ratings (in kPa)							
CLVT2W/3W (P16)	1600	1600	1000	700	460	260	--	--
CLVF2W (P16)	1600 <sup>1)</sup> , 1000 <sup>2)</sup>	1000	1000	600	350	200	120	50
CLVF3W2.5-100 (P6)	600	600	600	600	480	260	160	100
CLVF3W160/250/360 (P16)	1000	1000	1000	790	480	260	160	100

<sup>1)</sup> kvs 0.25 – 1.0; <sup>2)</sup> kvs 2.5 – 4.0

For details on the valves, see following documents:

CLVT2W/3W (PN16)	EN0Z-0928GE51
CLVF2W (PN16)	EN0Z-0925GE51
CLVF3W2.5-100 (PN6/16)	EN0Z-0927GE51
CLVF3W160/250/360 (PN16)	EN0Z-0924GE51

## WIRING

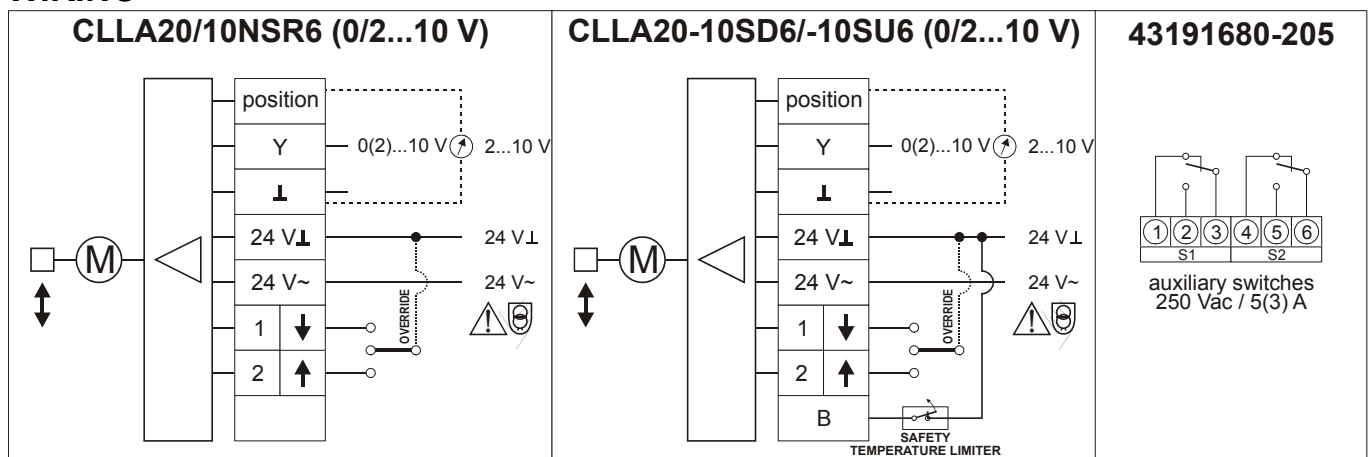


Fig. 2. Wiring

## DIMENSIONS

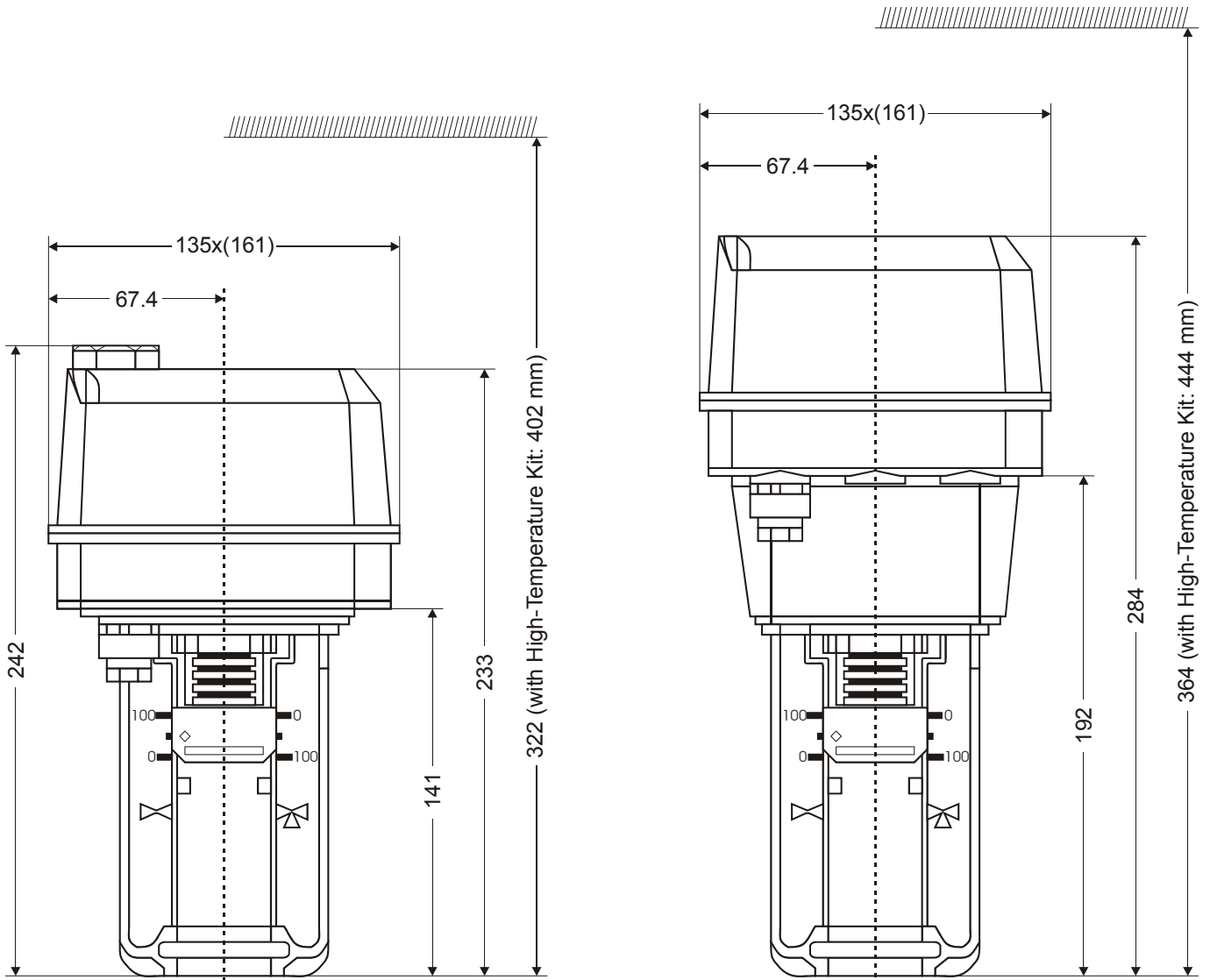


Fig. 3. CLA20-10NSR6 (left) and CLLA20-10SD6 / CLLA20-10SU6 (right), dimensions (in mm)

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