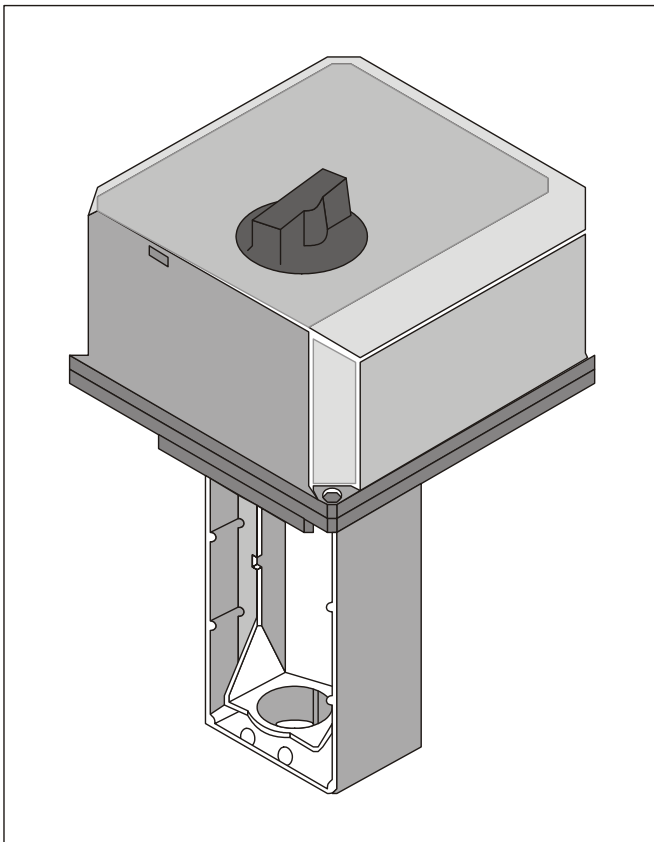


# CLLA20-10NSR18, CLLA38-10NSR18

## PRODUCT DATA



### GENERAL

These actuators enable modulating control in conjunction with controls providing an analog output. The direction of movement is reversible by means of an internal selector plug. They operate CentraLine's standard valves in heating, ventilation, and air conditioning (HVAC) applications.

### FEATURES

- Quick and easy installation.
- No separate linkage required.
- No adjustments required.
- Force-limiting end switches.
- Manual operation knob.
- Synchronous motor
- Position feedback signal.
- 0...10 Vdc or 2...10 Vdc 0...20 mA or 4...20 mA 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, 0(4)...20 mA
Input impedance	R <sub>i</sub> = 100 kΩ (V), R <sub>i</sub> = 500 Ω (mA)
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	M20x1.5 and extra knock-out

#### Weight

2.0 kg

#### Material

Cover	ABS-FR
Yoke and base	aluminum die-cast

#### Noise level

≤45dB(A)

**Table 1. Specifications**

model number	CLLA20-10NSR18	CLLA38-10NSR18
supply voltage	24 Vac ± 15%; 50/60 Hz	
power consumption	14 VA (50 Hz) / 16 VA (60 Hz)	
signal input 0(2) Vdc (0/4 mA)	actuator stem retracted: 2-way valve "open," 3-way valve port A-AB "closed" <sup>1)</sup>	
signal input 10 Vdc (20 mA)	actuator stem extended: 2-way valve "closed," 3-way valve port A-AB "open" <sup>1)</sup>	
stroke	20 mm	38 mm
run-time at 50 Hz	1.9 min	3.5 min
close-off force	1800 N	

<sup>1)</sup> Factory setting: can be reversed by repositioning jumper plug (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 worm gear transmission. The actuator stem is connected with the valve stem by a button-keyed retainer connection. Via installed microswitches, the internal force sensor switches off the actuator precisely when the specified stem force is reached.

### Manual Operation

The actuators are equipped with a manual operation knob used in case of power failure. Manual operation is permitted only after the power supply has been switched off or disconnected. To operate, push the manual operation knob down and turn clockwise to move the stem upward and counterclockwise to move the stem downward. If the actuator returns to automatic control, the manual operation knob unlocks automatically.

**NOTE:** Manual operation allows a very high closing force capable of jamming the actuator spindle and exceeding the rating of the force switches, so that the motor cannot move. Therefore, after a manual close-off operation, it is necessary to release the spindle one turn by turning the manual operator knob, thus ensuring that the manual operator will automatically disengage on power resumption.

### Override Option

All actuators have an integrated override function (see also Fig. 3 on page 4). When the override signal is applied, the actuator drives to the fully-open or fully-closed position, regardless of the controller signal.

### Electrical Installation

24 V~ and 24 V⊥ (see Fig. 3.) must be applied under all operating conditions.

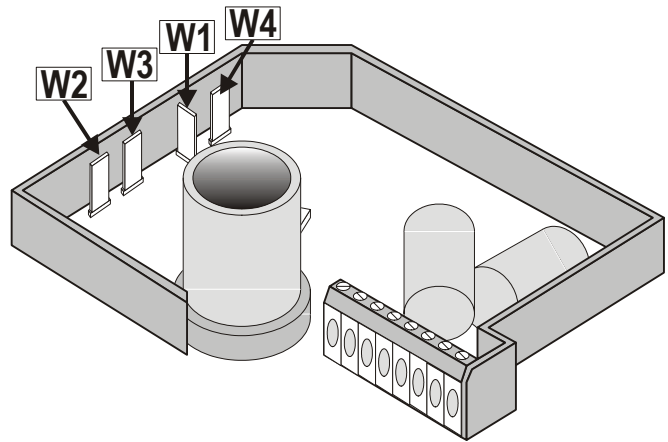
Cable length/diameter for field mounting:

- Max. 200 m / 1.5 mm<sup>2</sup>

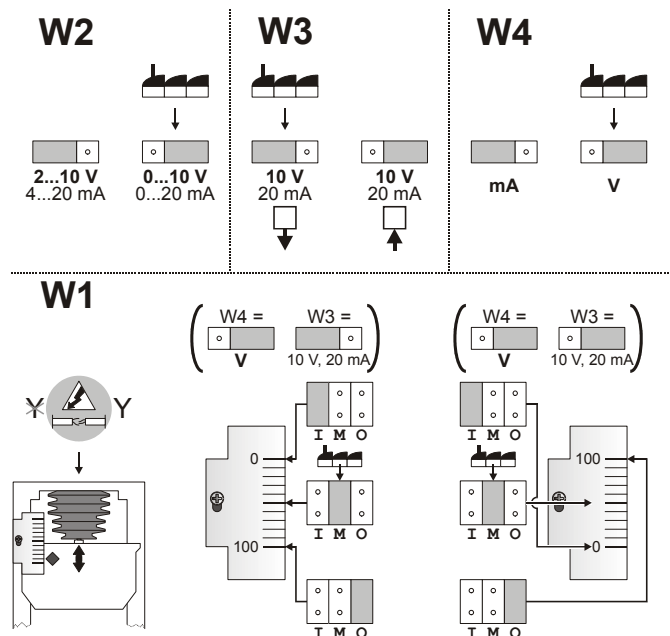
### Action (W3)

The direction of action can be selected by changing the position of jumper plug W3 (Fig. 1.). The factory set is: stem extends at increasing signal (direct acting).

**NOTE:** Jumper plugs W1, W2, W3, and W4 are accessible after the cover has been removed. They are located on top side of the printed circuit board (see Fig. 1).



**Fig. 1. Location of jumper plugs W1, W2, W3, W4**



**Fig. 2. Effects of jumper plugs W1, W2, W3, W4**

### Input Signal (W4)

The Vdc- or mA-input signal is selected by shifting jumper plug W4 (see Fig. 1). The factory setting of W4 is "Vdc". No external resistor for mA-input signal is necessary.

### Input Signal Range (W2)

The range of the analog input signal Y (0...10 Vdc / 0...20 mA or 2...10 Vdc / 4...20 mA) can be selected by changing the position of jumper plug W2 (Fig. 1.). The factory setting is 0...10 Vdc.

### 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.

### Input Signal Failure (W1)

In case of a signal input (Y) e. g. a broken wire, the actuator will run to one of the following three positions (possible only if W4 has been set to the "V" position):

- 0%: actuator stem position for 0(2) Vdc
- 50%: actuator stem in central position
- 100%: actuator stem position for 10 Vdc

The factory setting of W1 is "50%".

### 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 M20x1.5 is delivered with the unit.

Part number: 43191680-002

### High-Temperature Kit

(for applications with 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
43196000-038	CLVF2W...P16, CLVF3W...P16	100...150

## CLOSE-OFF PRESSURE RATINGS

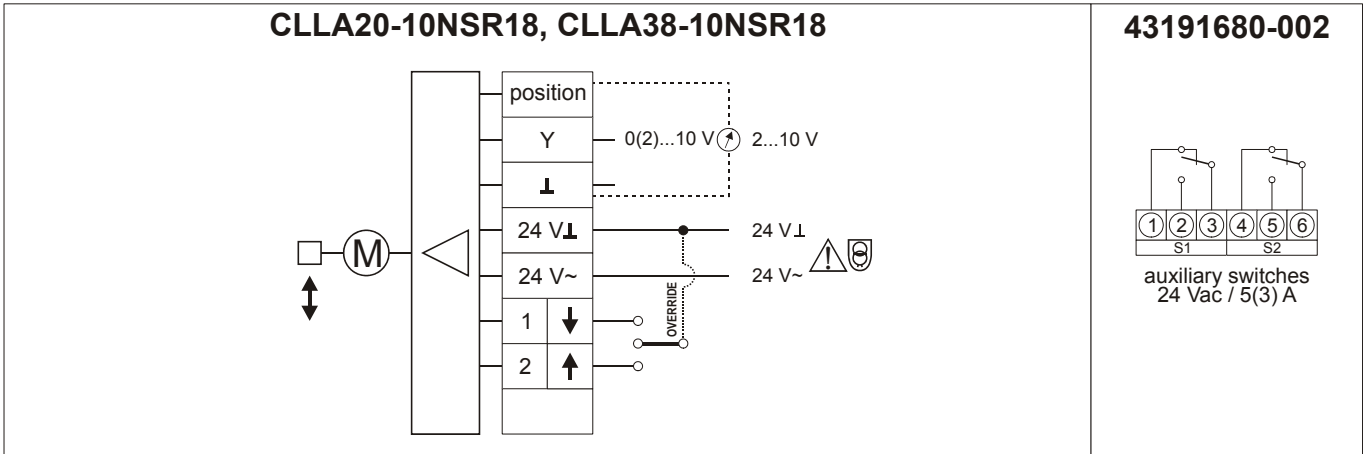
Table 2. Close-off pressure ratings

stem force	1800 N											
	20 mm								38 mm			
stroke												
valve size (mm)	15	20	25	32	40	50	65	80	80	100	125	150
VALVES	close-off pressure ratings (in kPa)											
CLVF3W140-310P6	--	--	--	--	--	--	--	--	--	150	120	80
CLVF2W0.6-6.3P16	1600	1600	1600	1600	1300	750	470	230	--	--	--	--
CLVF3W2.5-100P16	*	*	*	1000	1000	1000	650	400	--	--	--	--
CLVF3W2.5-100P6	*	*	*	*	600	600	600	400	--	--	--	--
CLVF3W160/250/360P16	--	--	--	--	--	--	--	--	--	150	120	80
*Use 600-N actuator												

For details on the valves, see following documents:

CLVF3W140/220/310 (PN6)	EN0Z-0926GE51
CLVF2W (PN16)	EN0Z-0925GE51
CLVF3W2.5-100 (PN6/16)	EN0Z-0927GE51
CLVF3W160/250/360 (PN16)	EN0Z-0924GE51

# WIRING



**Fig. 3. Wiring**

## DIMENSIONS

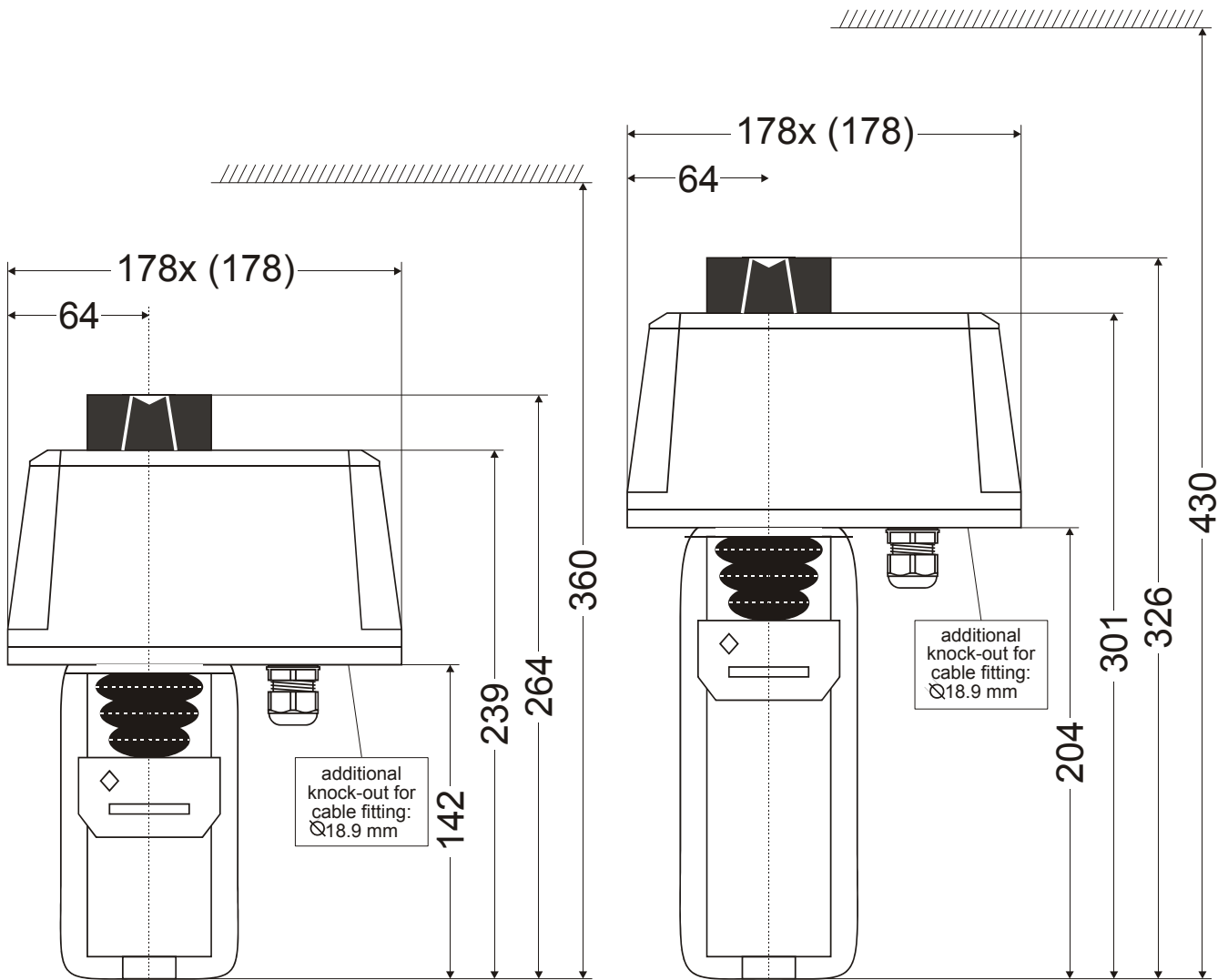


Fig. 4. CLLA20-10NSR18 (left) and CLLA38-10NSR18 (right), dimensions (in mm)

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