

## Final Control Elements

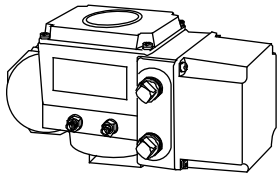
H: 220 V AC

### SERVO-TOP VALVE ACTUATOR TYPE C

(rotary type)

#### Functions & Features

- Lightweight, compact design
- Simple adjustments
- ISO standard flange



### MODEL: CRP-[1]1-[2][3][4]

#### ORDERING INFORMATION

- Code number: CRP-[1]1-[2][3][4]

Specify a code from below for each [1] through [4].  
(e.g. CRP-241-AB/K)

#### [1] TORQUE, OPERATION TIME

- 01:** 68.6 N·m, 12 sec./90° (7 kgf·m)  
(DISCONTINUED; replace with MODEL PRP.)
- 03:** 68.6 N·m, 24 sec./90° (7 kgf·m)  
(DISCONTINUED; replace with MODEL PRP.)
- 11:** 196 N·m, 12 sec./90° (20 kgf·m)  
(DISCONTINUED; replace with MODEL PRP.)
- 13:** 196 N·m, 24 sec./90° (20 kgf·m)  
(DISCONTINUED; replace with MODEL PRP.)
- 22:** 588 N·m, 18 sec./90° (60 kgf·m)
- 24:** 588 N·m, 36 sec./90° (60 kgf·m)

#### SPAN

- 1: 45° - 90°

#### [2] POSITION SETPOINT INPUT

##### Current

A: 4 - 20 mA DC (Input resistance 250 Ω)

##### Voltage

6: 1 - 5 V DC (Input resistance 1 MΩ min.)

#### [3] POWER INPUT

##### AC Power

- B: 100 V AC  
C: 110 V AC  
G: 200 V AC

#### [4] OPTIONS

##### Adaptor

blank: without

/K: Adaptor for Kitamura Valve

#### GENERAL SPECIFICATIONS

**Degree of protection:** IP55

**Action:** Direct or reverse; field selectable with DIP switches (factory set to "reverse")

**Operation at abnormally low input:** Open, close or stop; field selectable with DIP switches (factory set to "stop")

**Detectable input drop level:** 0.37 ±0.1 V DC; converted into voltage

**Wiring conduits:** G 1/2 female thread (two)

**Terminal board:** M3 screw (leadwire size 2 mm<sup>2</sup> max.; torque 0.5 N·m)

**Housing material:** Aluminum alloy

**Drive:** reversible AC motor (15-minute continuous rating)

**Insulation class:** E (thermal protector incorporated; 120 ±5°C or 248 ±9°F)

**Power control element:** Semiconductor switch

**Position detection:** Potentiometer

**Span:** 90 degrees (100 degrees max.)

**Deadband adjustment:** 0.5 - 5.5 % (factory set to approx. 1.5 %)

**Re-start limiting timer:** Approx. 1.5 seconds

**Mechanical limiter:** Fixed to 90 degrees position

**Isolation:** Input or output to power to ground

**Zero adjustment:** 0 - 25 %

**Span adjustment:** 50 - 100 %

#### OUTPUT SPECIFICATIONS

##### ■ Operation Time & Torque(50 / 60 Hz, with no load)

CRP-221: 18 / 15 sec. ±15 %; 588 N·m (434.0 ft·lbf)

CRP-241: 36 / 30 sec. ±15 %; 588 N·m (434.0 ft·lbf)

##### ■ Position Signal: 4 - 20 mA DC

Load resistance: ≤ 300 Ω

#### INSTALLATION

##### Power input

•AC: Operational voltage range: rating ±10 %, 50/60 Hz

##### Power Consumption

Power code B

CRP-221: 253 VA (50 Hz), 259 VA (60 Hz)

CRP-241: 215 VA (50 Hz), 198 VA (60 Hz)

Power code C

CRP-221: 303 VA (50 Hz), 273 VA (60 Hz)

CRP-241: 273 VA (50 Hz), 182 VA (60 Hz)

**Power code G**

CRP-221: 280 VA (50 Hz), 188 VA (60 Hz)

CRP-241: 320 VA (50 Hz), 238 VA (60 Hz)

**Power code H**

CRP-221: 394 VA (50 Hz), 249 VA (60 Hz)

CRP-241: 425 VA (50 Hz), 291 VA (60 Hz)

**Operating temperature:** -10 to +50°C (14 to 122 °F)

**Operating humidity:** 30 to 85 %RH (non-condensing)

**Vibration:** ≤ 2 G (19.6 m/s<sup>2</sup>)

**Mounting position:** All directions

**Weight:** 15 kg (33.1 lb)

## PERFORMANCE

**Resolution:** 0.68° (CRP - 22) 0.45°(CRP - 24)

**Insulation resistance:** ≥ 100 MΩ with 500 V DC

**Dielectric strength:** 1500 V AC @ 1 minute (input or output or power to ground)

## FUNCTIONS

**•Lock Detection**

When the valve stroke does not come into deadband range for longer than 2 minutes (approx.) due to motor locking or some other reasons, the CRP stops power supply to the motor.

In order to reset the lock, apply 0 % and 100 % input repeatedly or turn the power supply off and on.

**•Overload Protection**

In order to protect the motor from frequent control operations at high load (load rate ≥ 50 %), the CRP is equipped with a thermal protector in its motor.

When the thermal protector is activated, the motor must be cooled down at least for 30 minutes before restarting.

**•Electrical Stroke Limits**

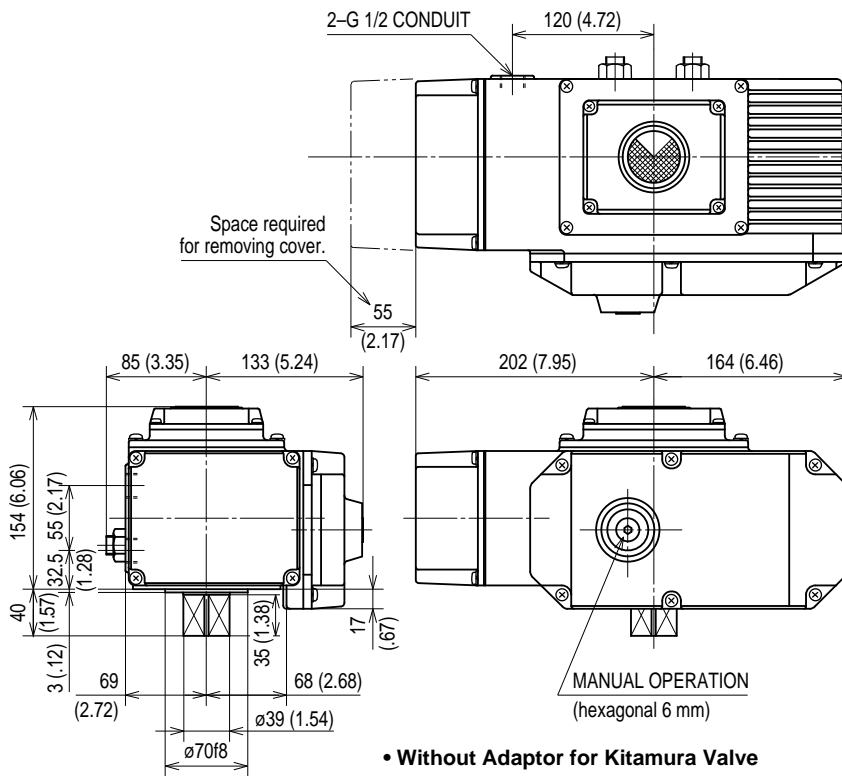
The valve operation can be limited within specific electrical limits without utilizing mechanical limit switches.

Both limits are relative to the operation range adjusted with zero/span adj. The lower limit is fixed to 3.8 mA, while the higher limit is fixed to 20.2 mA.

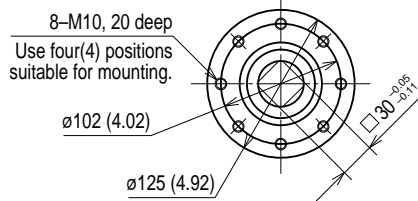
**•Manual Operation Handle**

The CRP is manual operated in 25 turns.

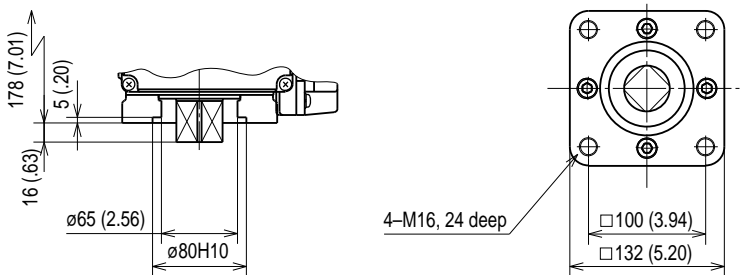
## DIMENSIONS unit: mm (inch)



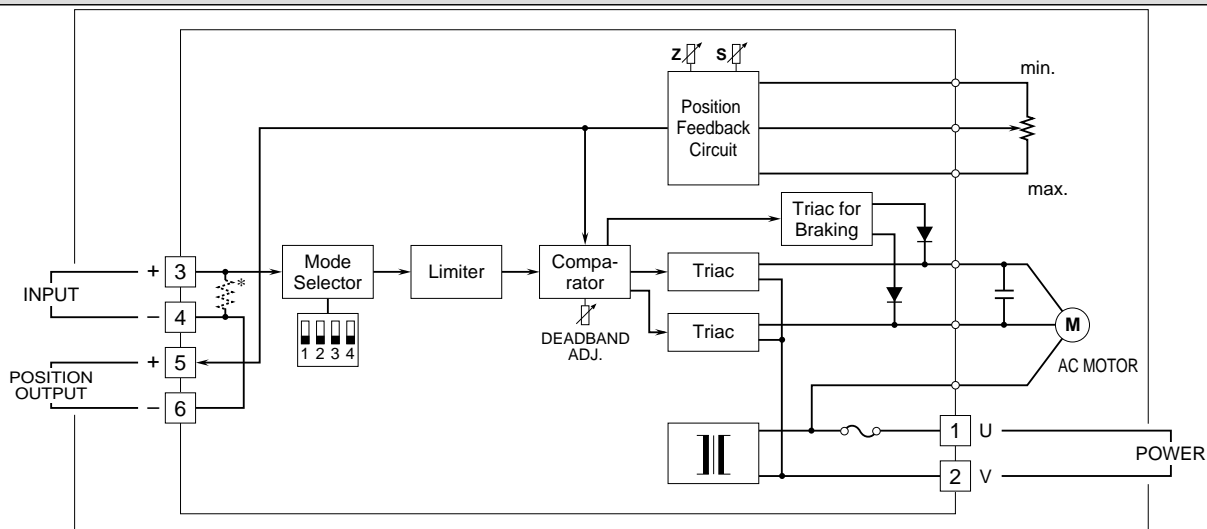
### • Without Adaptor for Kitamura Valve



### • With Adaptor for Kitamura Valve



**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\*Input shunt resistor incorporated for current input.



Specifications are subject to change without notice.