

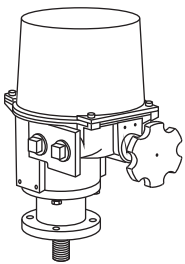
Final Control Elements

SERVO-TOP VALVE ACTUATOR TYPE C

(linear type)

Functions & Features

- Actuator for a control valve
- Lightweight, compact design
- Simple field adjustments
- Torque limiters
- Electronic limiters for the full-open and -closed positions are easy to adjust.
- ISO standard flange



MODEL: CSP-[1]71-[2][3]

ORDERING INFORMATION

- Code number: CSP-[1]71-[2][3]
- Specify a code from below for each [1] through [3].
(e.g. CSP-471-AK4)

[1] MAXIMUM STROKE

- 4: 40 mm (1.57")
- 7: 75 mm (2.95")

OPERATION TIME, MAXIMUM THRUST

7: 34 seconds / 20 mm, 12000 N

OUTPUT STEM TYPE

1: M22 male screw, pitch 1.5

[2] 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

K4: 100 V AC, 50/60 Hz or 110 V AC, 60 Hz

L4: 200 V AC, 50/60 Hz or 220 V AC, 60 Hz

GENERAL SPECIFICATIONS

Environmental protection: IP 56

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

(In "reverse" action with upright mount, the output stem goes up with an input signal increase.)

Operation at abnormally low input: Extend, Retract or Stop; field selectable with DIP switches; default set to Stop.

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

Wiring conduits: G 1 female thread (two)

Material

Body: Aluminum alloy

Cover: Steel

Terminal screws: Nickel-plated steel (torque 0.8 N·m)

Paint color: Munsell N6 (handle: red)

Drive: AC motor (15-minute rating)

Startup current: 3.2A (power input code K4)

1.6A (power input code L4)

Insulation class: B

(thermal protector incorporated; 120 ±5°C)

Power control element: Semiconductor switch

Position detection: Potentiometer

Deadband adjustment: 0.2 - 3.0 % (default set to approx. 1.5 %)

Restart limiting timer adjustment: 0 - 30 sec. (default set to approx. 4 sec.)

Isolation: Signals to power to sequential signals to metallic housing

Zero adjustment: 0 - 25 %

Span adjustment: 50 - 100 %

Torque limiting mechanism: Incorporated

Space heater: Incorporated

Manual operation: Available

INPUT SPECIFICATIONS

- **DC Current:** Input resistor incorporated

OUTPUT SPECIFICATIONS

- **Speed & Thrust** (at rated power input voltage)

Operation time (thrust 10000 N): 34 sec./20 mm (50 Hz), 29 sec./20 mm (60 Hz)

Maximum thrust: 12000 N

- **Position Signal:** 4 - 20 mA DC

Load resistance: 300 Ω maximum

(The output signal increases when the stem retracts.)

■ **Sequential Control Signal:** "Full-open", "full-closed" and "Alarm"

NPN open collector: 30 V DC @ 100 mA max.

Saturation voltage: 1 V DC

INSTALLATION

Supply voltage

Operational voltage range:

Code K4: 100V AC $\pm 10\%$ at 50 Hz, 90 - 121V AC at 60 Hz

Code L4: 200V AC $\pm 10\%$ at 50 Hz, 180 - 242V AC at 60 Hz

Power consumption:

Code K4: 200 VA at rated current

Code L4: 240 VA at rated current

Operating temperature: -10 to +60°C (14 to 140°F)

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

Vibration: $\leq 19.6 \text{ m/s}^2$ (2G) at 50 Hz

Mounting position: Standing to horizontal

Weight: 15 kg (33.1 lb)

PERFORMANCE

Hysteresis: 1 mm or less

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength: 2000 V AC @ 1 minute

(signal to power to sequential signals)

2000 V AC @ 1 minute

(sequential signals to metallic housing)

1500 V AC @ 1 minute

(power to metallic housing)

1000 V AC @ 1 minute

(signal to metallic housing)

TERMINOLOGY

•Torque Limiting Mechanism

Torque switches are equipped to protect the motor from overload caused by foreign objects stuck in the valve.

The switches can be activated within 2 to 98 % range to stop the motor and to output an alarm signal, with the RUN LED flashes in 0.5 sec. intervals.

•Restart Limiting Timer

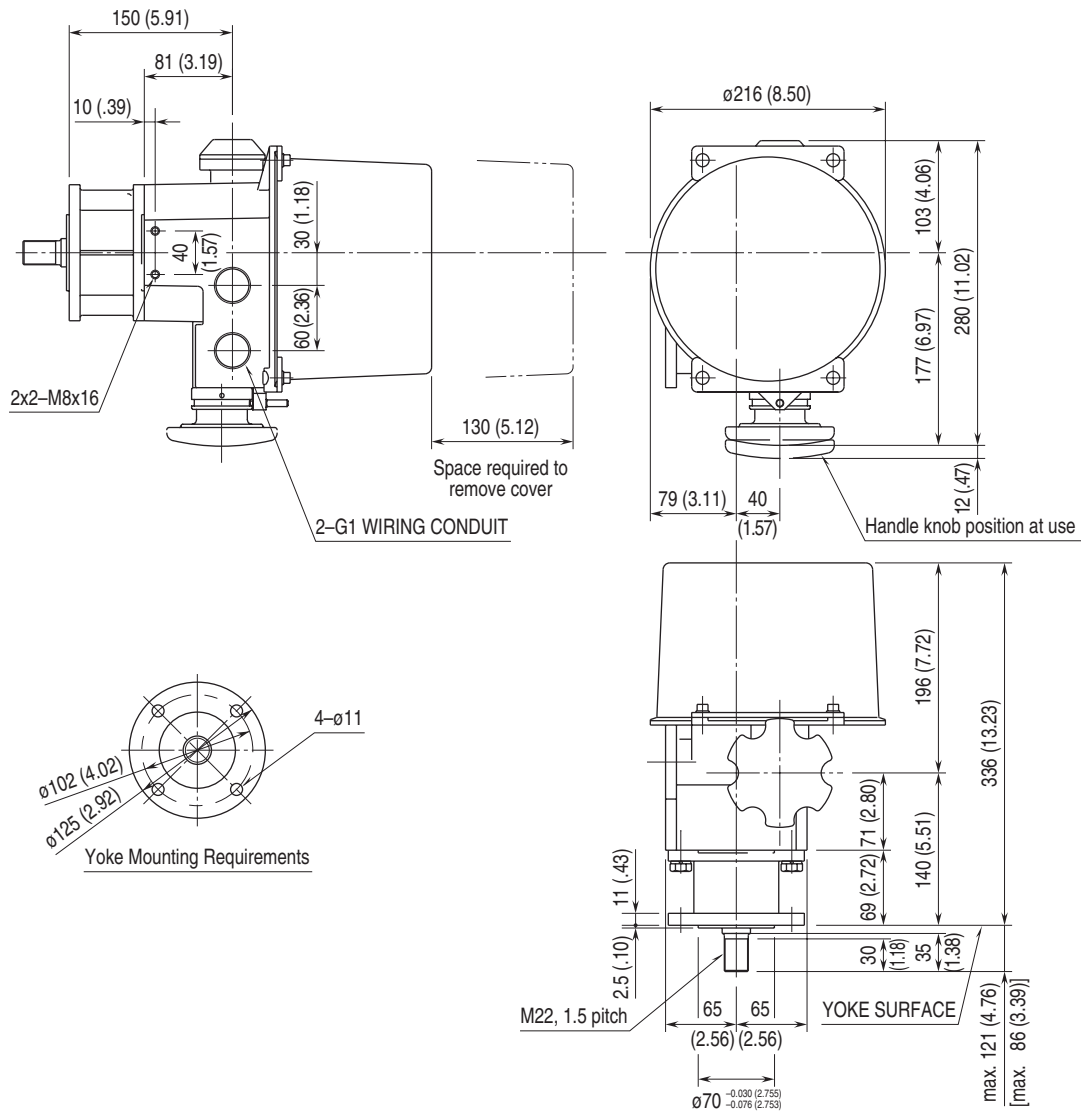
A timer is incorporated to protect the motor and other incorporated components from overheating. The timer prevents the motor from restarting for a certain interval (0 to 30 sec. selectable) once the motor has been stopped within deadband.

• Electronic Limiter

This model is equipped with electronic limiters in order to prevent mechanical locks when the input goes below 0 % or above 100 %.

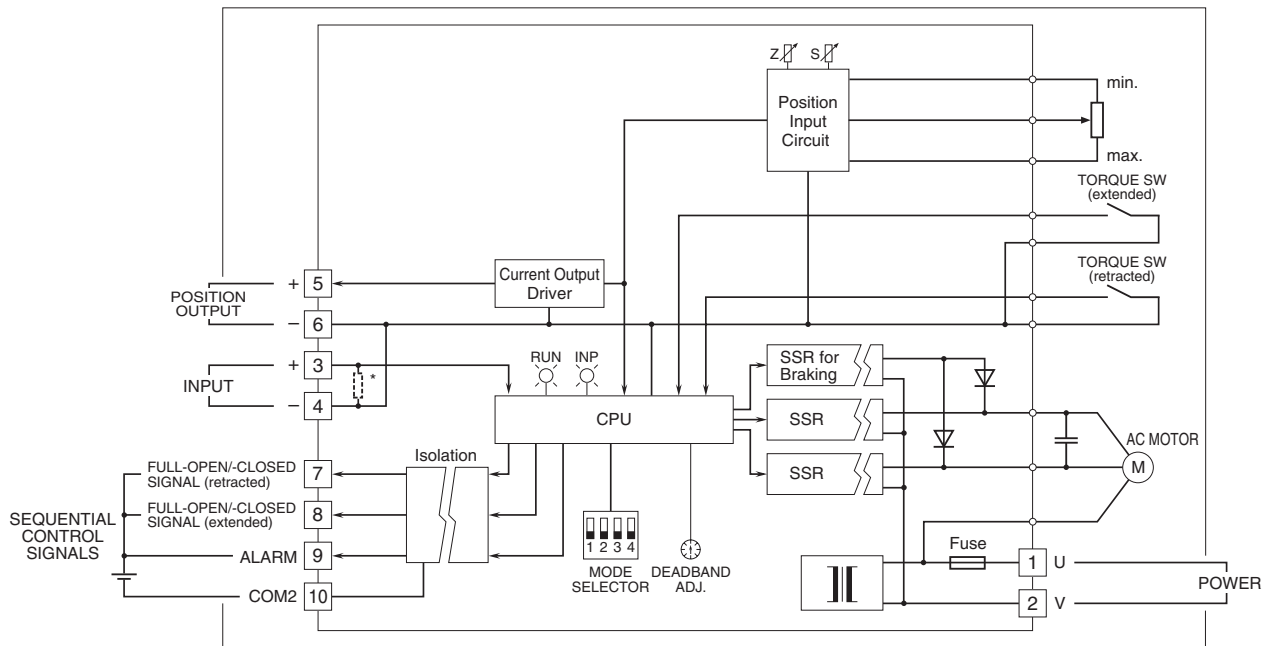
Limiters are set at approx. -1.5 % for the full-closed side, approx. 101.5 % for the full-open side.

EXTERNAL DIMENSIONS unit: mm (inch)



[] for CSP-4

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



* Input shunt resistor incorporated for current input.



Specifications are subject to change without notice.