

Final Control Elements

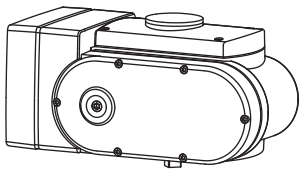
Lloyd's Register approved

SERVO-TOP II ELECTRONIC ACTUATOR

(Lloyd's Register approved, rotary type; max. torque 200 N·m)

General Functions

- Lloyd's Register approved (Environmental categories ENV3)
- Control valve actuator drive
- High resolution stepping motor



MODEL: PRP-[1][2]-[3]/LR

ORDERING INFORMATION

- Code number: PRP-[1][2]-[3]/LR
- Specify a code from below for each [1] through [3].
(e.g. PRP-01A-L3/LR)
Use Ordering Information Sheet (No. ESU-4823).

PARAMETER	FACTORY SETTING
Action	Reverse
Operation at input failure	Hold position at input failure
Output stem position at full-closed	0°
Output stem position at full-open	90°
Ex-factory stem position	90°
Opening/closing speed	01: 100 N·m, 12 sec./90° 03: 100 N·m, 24 sec./90° 11: 200 N·m, 16 sec./90° 13: 200 N·m, 24 sec./90°
Deadband	0.5%
Restart limiting timer	2 sec.
Resolution	1/200

[1] TORQUE, OPERATION TIME

- 01:** 100 N·m, 12 sec./90°
- 03:** 100 N·m, 24 sec./90°
- 00:** Refer to the instruction manual for torque.
Use specified operation time.
- 11:** 200 N·m, 16 sec./90°
- 13:** 200 N·m, 24 sec./90°
- 10:** Refer to the instruction manual for torque.
Use specified operation time.

[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

K3: 100 - 120 V AC

(Operational voltage range 90 - 132 V, 47 - 66 Hz)

L3: 200 - 240 V AC

(Operational voltage range 180 - 264 V, 47 - 66 Hz)

OPTIONS

Standards & Approvals

/LR: Lloyd's Register approved
(Environmental categories ENV3)

RELATED PRODUCTS (Products sold separately)

- Programming Unit (model: PU-2x)

GENERAL SPECIFICATIONS

Degree of protection: IP66

Action: Reverse or direct (In "reverse" action, the output stem turns counterclockwise (seen from the indicator) with an input signal increase.)

Field selectable with DIP switches

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

Terminal block: 7.62 mm pitch; M3 screw terminals (torque 0.8 N·m)

Housing material: Diecast aluminum

Coating: Baked acrylic resin

Drive: Stepping motor

Insulation class: E

Full-open and full-closed positions: -5 to +95°; minimum span 45°; field adjustable with control buttons

Deadband adjustment: 0.1 - 5.0 % (Deadband width affects the resolution. See Resolution in Performance section.)

Isolation: Signals to power to sequential signals to metallic housing

Fuse: 3 A (replaceable)

Manual operation: Available (10 turns/90°)

INPUT SPECIFICATIONS

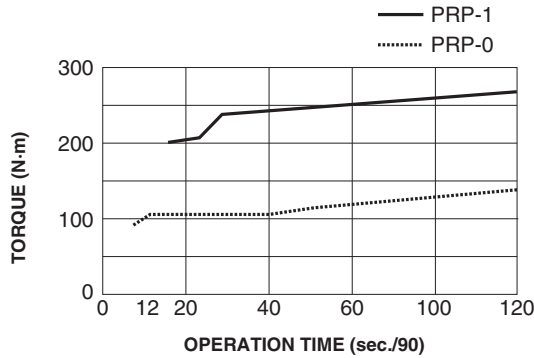
■ **DC Current:** Input resistor incorporated (250 Ω)

■ **Forced Operation:** External contact signal input terminals provided for compulsory opening or closing operation

Rating: 5 V DC @ 2.5 mA

OUTPUT SPECIFICATIONS

- **Position Signal:** 4 - 20 mA DC
- Load resistance:** $\leq 300 \Omega$
- **Sequential Control Signal:** "Full-open", "full-closed" and "alarm"
- Open collector:** 30 V DC @ 100 mA max.
- **Speed & torque**



Note) Operational torque for PRP-0 is 100 N-m.
Operational torque for PRP-1 is 200 N-m.

STANDARDS & APPROVALS

Approval: Lloyd's Register approved
Lloyd's Register Type Approval System, Test Specification Number 1, 2015
Environmental categories ENV 3

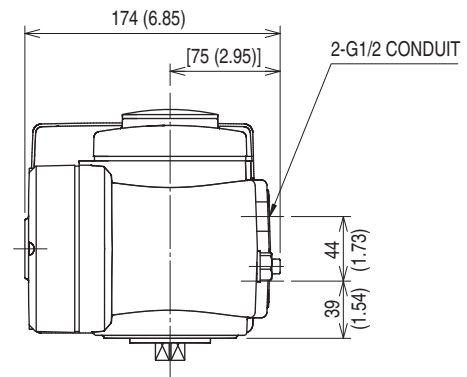
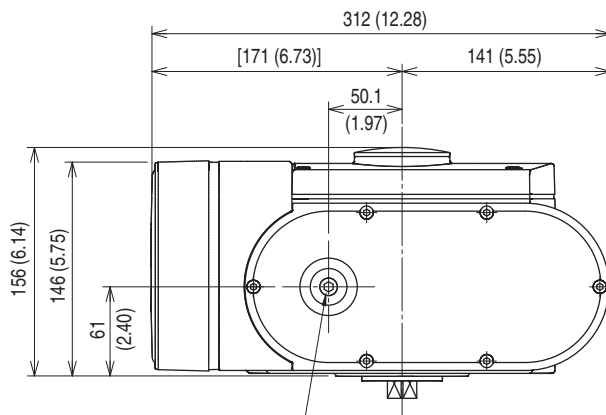
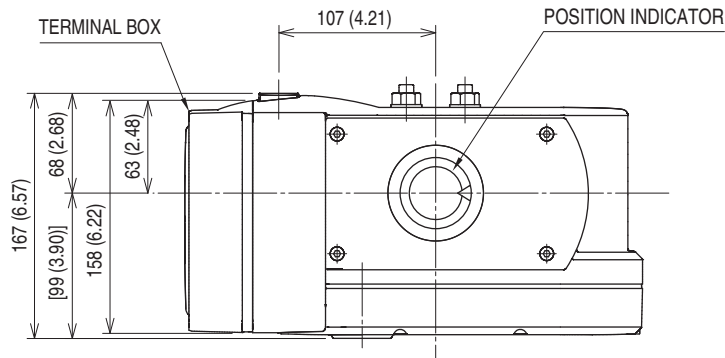
INSTALLATION

- Power consumption:** Approx. 180 VA
- Stand-by consumption:** Approx. 18 VA
- Operating temperature:** 5 to 70°C (From Environmental categories ENV3)
- Operating humidity:** 30 to 85 %RH (non-condensing)
- Vibration:** Test condition (From Environmental categories ENV3)
 1. Acceleration: 0.7 G (6.9 m/s²)
 2. Frequency: 30 Hz
 3. Endurance: 90 min. for each direction
 4. Direction: X, Y, Z
- Passed above tests.
- Mounting position:** All directions
- Do not mount the actuator with its output stem on the upside if the actuator is to be exposed to dripping water.
- Weight:** Approx. 10.8 kg (23.8 lb)

PERFORMANCE

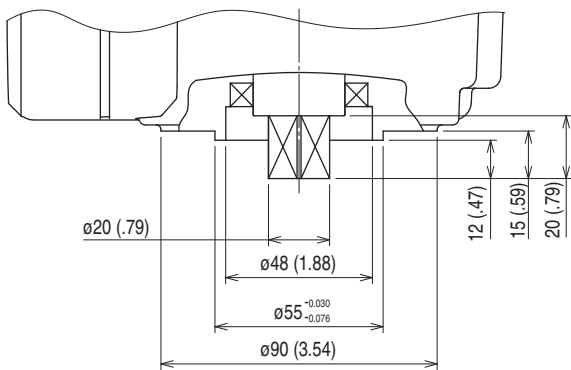
- Resolution:** 1/200 with 0.5 % deadband (factory setting);
1/1000 with 0.1 % deadband
- Insulation resistance:** $\geq 100 \text{ M}\Omega$ with 500 V DC (signal to power to sequential signals to metallic housing)
- Dielectric strength:** 2000 V AC @ 1 minute
(signal or metallic housing to power to sequential signals)
500 V AC @ 1 minute (signal to metallic housing)

EXTERNAL DIMENSIONS unit: mm (inch)

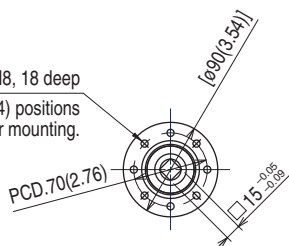


OUTPUT STEM DETAIL

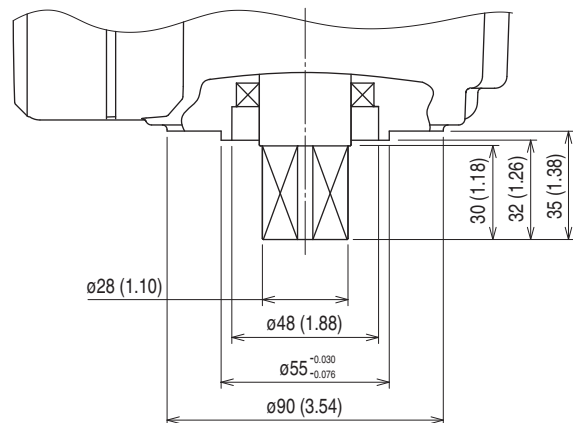
• PRP-0



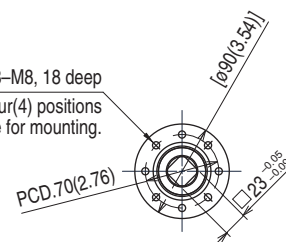
8-M8, 18 deep
Use four(4) positions
suitable for mounting.



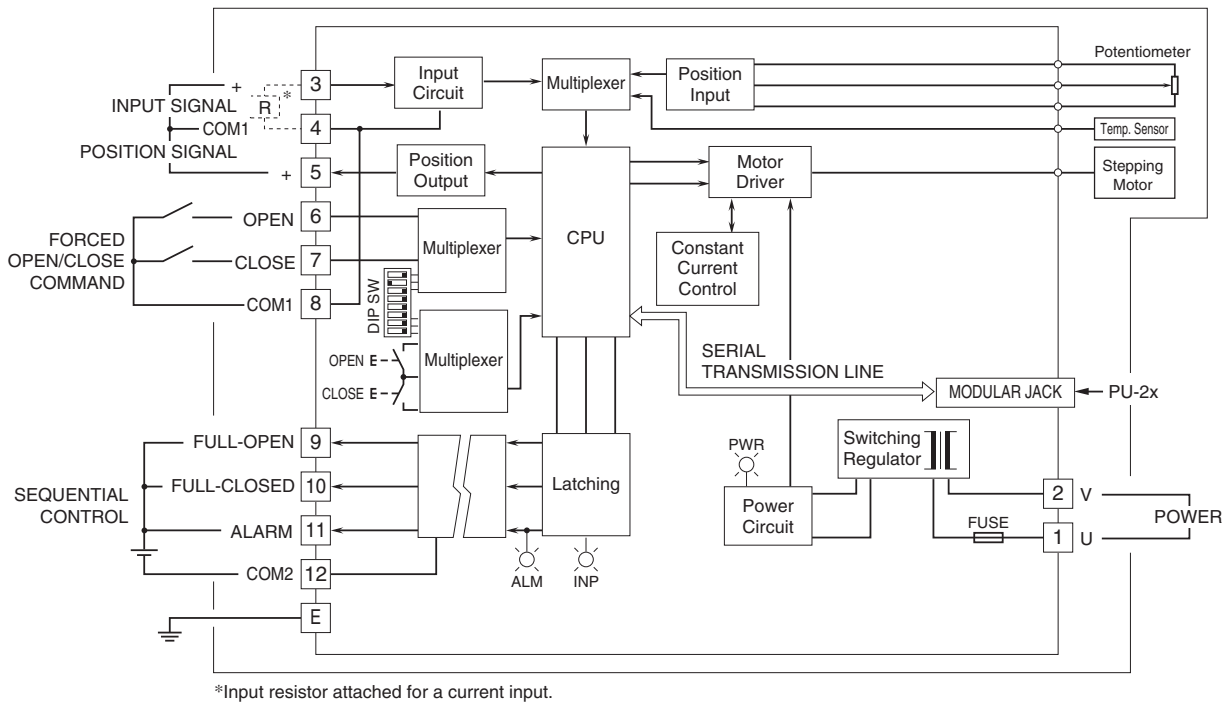
• PRP-1



8-M8, 18 deep
Use four(4) positions
suitable for mounting.



SCHEMATIC CIRCUITRY



Specifications are subject to change without notice.