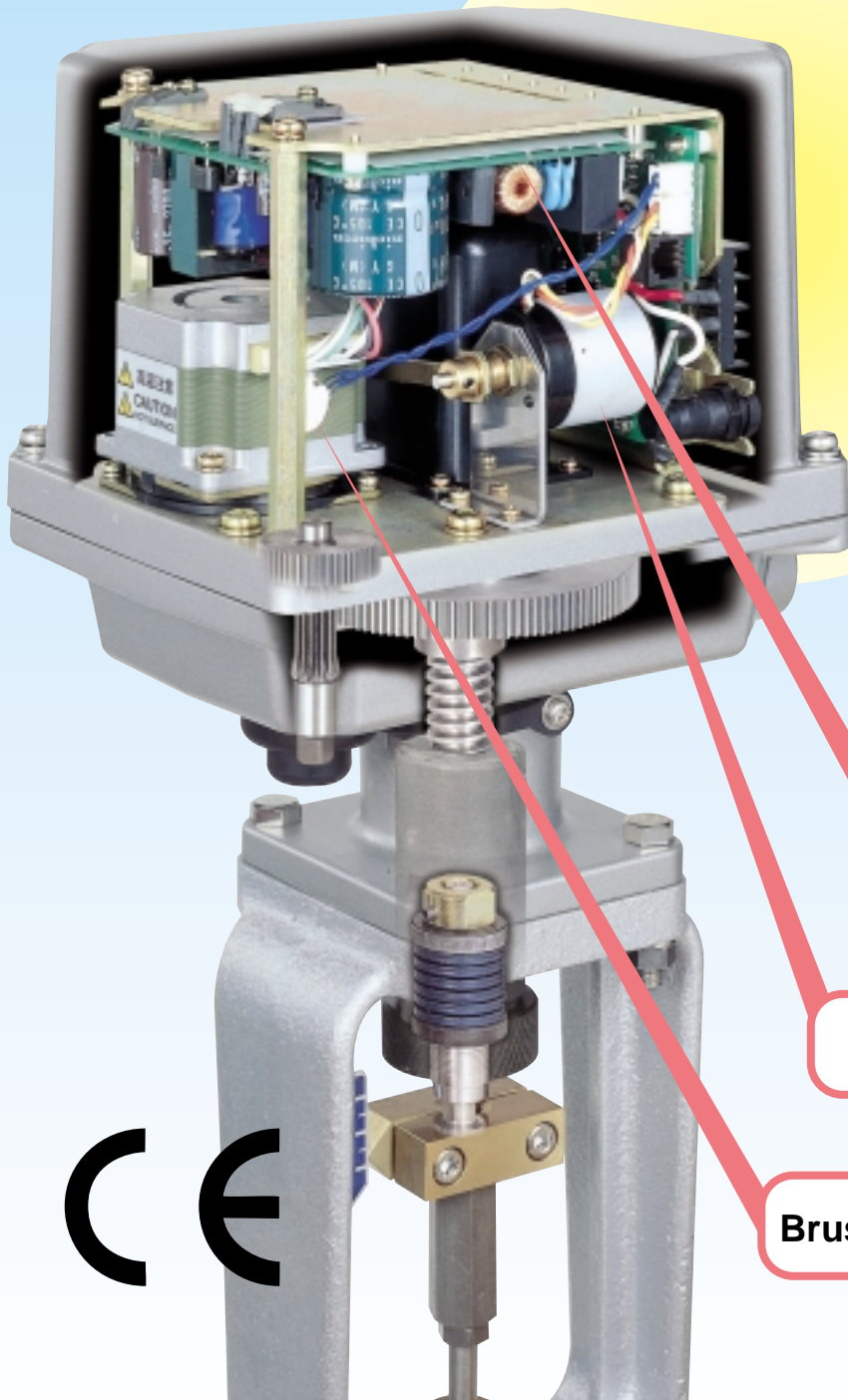


DIGITAL VALVE ACTUATOR

SERVO-TOP II

Made All Possible by
Electronically Controlled Actuator.



- Brushless stepping motor and angle sensor enhance durability and reliability.
- 1/1000 resolution.
- Starts by a small deviation.
- Force caused by flow pressure in valve is absorbed by the screw shaft. (unaffected from the process)
- Opening/closing speed, adjustable with hand held configurator.
- Direct or reverse action selectable.
- Wide split range available.

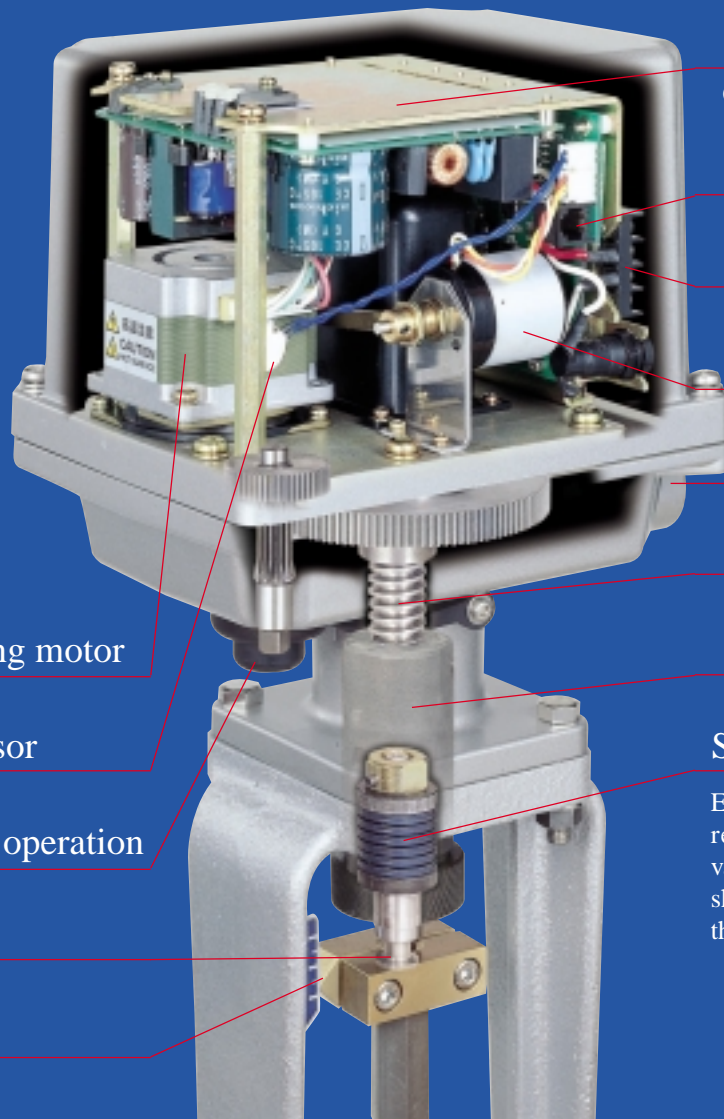
Superb CPU against the harsh environment
(Operating temperature -40 to 70°C)

Brushless angle sensor

Brushless stepping motor



Digital Valve Actuator Servo-Top II



Superb CPU against the harsh environment

Operating temperature – 40 to 70°C

Modular jack

M3 screw terminal block

Brushless angle sensor

Wiring conduit

Screw shaft

Output stem

Sealing spring mechanism

Equipped with the sealing spring to retain the sealing pressure at the valve's closing position. To assure tight shut off, the sealing spring is used at the full open and full closed position.

Brushless stepping motor

Temperature sensor

Stem for manual operation

Stem button

Indicator

Long-life Operation by Brushless Mechanism.

◀ Brushless Angle Sensor

Brushless angle sensor is using the electromagnetic induction to detect the positioning between a fixed coil and a moving coil.

Because it has no sliding mechanical contact, the brushless angle sensor assures the high reliability and long-life operation.

Brushless Stepping Motor ▶

High power stepping motor is brushless, which maintains the high reliability.

Various Safety Features

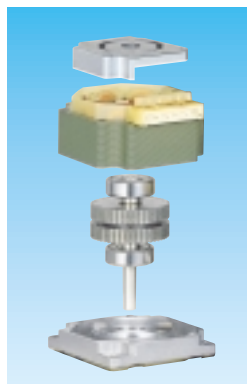
Prevents the Mechanical Defaults.

■ Overload Protection

Overload protection function detects alien substance which valve catches; when detecting it, Servo-Top II outputs an alarm signal and stops power supply to the motor.

■ Restarting Timer

Prevents from hunting in case it detects an abnormal temperature increase in the motor. Adjustable range is within 1 to 30 seconds.

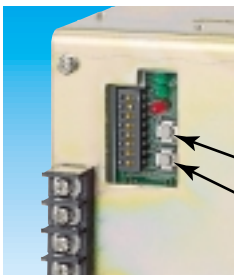


It's Digital, programming is easy to do with numerical values.

#1 Direct data input.



With the programming unit PU-2A connected, the parameters listing on right page can be programmed.

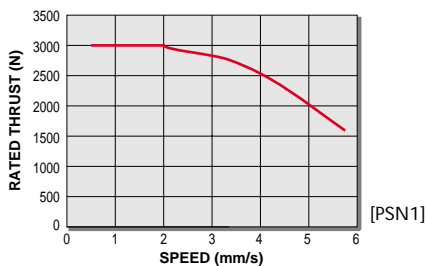


Visually the setting is possible with the buttons inside the unit.

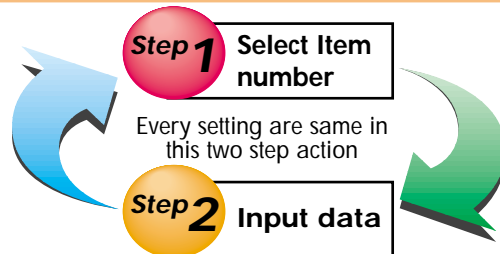
Up button
Down button

#2 Speed adjustable to open and close the valve.

By changing item No. 19 with the hand held programmer (PU-2A), the speed to open and close the valve is adjusted.



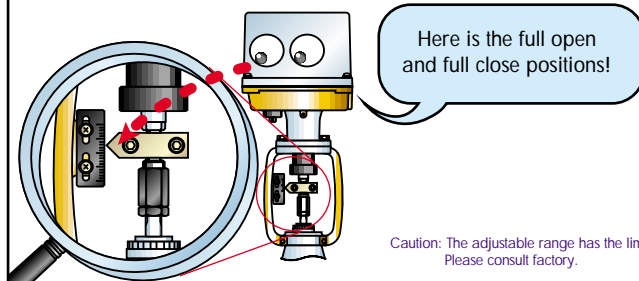
Simply, Two step action takes care of the settings for various parameters for the actuator:



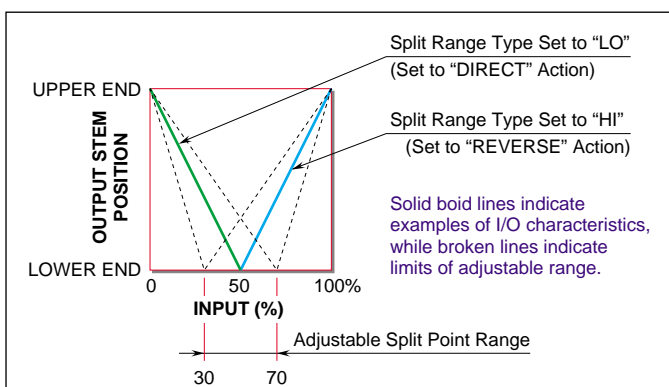
ITEM No.	ITEM	USABLE RANGE	MINIMUM INCREMENT
10	Full-open position	8 – 100	0.1
11	Full-closed position	0 – 92	0.1
12	Full-open limit	75 – 105	0.1
13	Full-close limit	-5 – 25	0.1
14	Full-open output	75 – 100	0.1
15	Full-closed output	0 – 25	0.1
16	Split ON/OFF	0 or 1	
17	Split type LO/HI	0 or 1	
18	Split point	30 – 70	0.1
19	Opening/closing speed limit	1 – 50	1
20	Deadband	0.5 – 5	0.1
21	Restart limiting timer	1 – 30	1

#3 The positioning of full open and full close can be adjustable depending on the size of yoke.

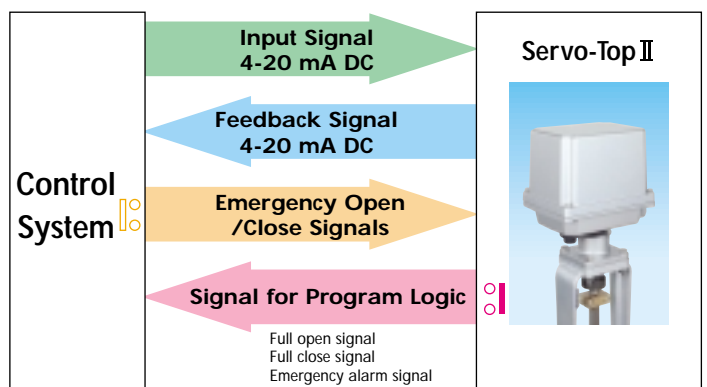
After assembling with the valve, the manual switches are used to force open and close. Commands can be given to memorize the full open and full close positions.



Split Range is Available for Wide Range.



Equipped the Necessary Signals as Standard.



M-SYSTEM WARRANTY

1. What is covered.

M-System Co., Ltd. ("M-System") warrants, to the original purchaser only of new M-System products purchased directly from M-System, or from M-System's authorized distributors or resellers, for its own use not for resale, that the M-System products shall be free from defects in materials and workmanship and shall conform to the specifications set forth in the product catalogue applicable to the M-System products for the Warranty Period (see Paragraph 5 below for the Warranty Period of each product).

THE ABOVE WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THE M-SYSTEM PRODUCTS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

2. What is not covered.

This warranty does not cover any M-System product which has been: (1) modified, altered or subjected to abuse, misuse, negligence or accident; (2) improperly installed or installed in conjunction with any equipment for which it was not designed; or (3) damaged or destroyed by disasters such as fire, flood, lightning or earthquake.

In no event shall M-System be liable for any special, incidental, consequential or other damages, costs or expenses (including, but not limited to, loss of time, loss of profits, inconvenience or loss of use of any equipment).

3. Remedies.

If a defective product is returned to M-System in accordance with the procedures described below, M-System will, at its sole option and expense, either: (1) repair the defective product; (2) replace the defective product; or (3) refund the purchase price for the defective product paid by the purchaser. Except as otherwise provided by applicable state law, these remedies constitute the purchaser's **sole and exclusive** remedies and M-System's sole and exclusive obligation under this warranty.

4. Warranty Procedure.

If the purchaser discovers a failure of the M-System products to conform to the terms of this warranty within the Warranty Period, the purchaser must promptly (and, in any event not more than 30 days after the discovery of such failure) notify the relevant party as described below either by telephone or in writing at the below address to obtain an Authorized Return (AR) number and return the defective product to the relevant party. The designated AR number should be marked on the outside of the return package and on all correspondence related to the defective product. The purchaser shall return, at purchaser's expense, defective products only upon receiving an AR number. In order to avoid processing delays, please be sure to include: copies of the original purchase order and sales invoice; the purchaser's name, address and phone number; the model and serial numbers of the returned product; and a detailed description of the alleged defect.

5. Warranty Period.

- Signal Conditioner: 36 months from the date of purchase.
- M-Rester: 12 months from the date of purchase.
- Valve Actuator: 18 months from the date of shipment from M-System or 12 months from the date of its installation, whichever comes first.
- Other Products: 12 months from the date of purchase.

From the United States of America, Canada and Mexico:
M-SYSTEM TECHNOLOGY, INC.
 15028 Beltway Drive
 Addison, TX 75001
 Phone: (972) 385-2277

From all other countries:
M-SYSTEM CO., LTD.
 5-2-55, Minamitsumori, Nishinari-ku,
 Osaka 557-0063 JAPAN
 Phone: (06) 6659-8201

• Specifications subject to change without notice.

M-SYSTEM CO., LTD.

5-2-55, Minamitsumori, Nishinari-ku, Osaka 557-0063 JAPAN
 Tel: (06)6659-8201 Fax: (06)6659-8510
www.m-system.co.jp

EUROPE

Zinkvallaan 17, B-2620 Hemiksem BELGIUM
 Tel: (03)887-7469 Fax: (03)877-1792

U. S. A. / CANADA / MEXICO

M-SYSTEM TECHNOLOGY, INC.

15028 Beltway Drive, Addison, TX 75001
 Phone: (972)385-2277 Fax: (972)385-2299
 Toll Free: 800-544-3181
www.m-system.com

GENERAL SPECIFICATIONS

Model	PSN1	PSN3
Stroke	3.2-4.0 mm (0.13"-1.57")	4.8-20 mm (0.19"-0.79")
		9.6-40 mm (0.38"-1.57")
		14.4-60 mm (0.57"-2.36")
Sealing spring	1500 N use 3000 N use	1500 N use 3000 N use 5000 N use
Environmental protection	IP 55	
Action	direct or reverse, user-selectable with DIP SW.	
Housing material	Aluminum alloy	
Wiring conduit	G 1/2 female	
Terminal block	M3 screw terminal	
Motor	Stepping motor	
Output stem type	M14 male screw, pitch 15	
Input signal	4-20 mA DC, 1-5 V DC	
	Split ranges can be selected.	
Adjustments	0-25 % for zero, 75-100 % for span, 0.5-5.5 % for deadband	
Emergency operation	External contact for compulsory opening or closing.	
Position output	4-20 mA DC, $\leq 300 \Omega$	
Sequential control output	30 V DC @100 mA (full-open, -closed, or alarm)	
Power input	100-120 V AC* 200-240 V AC* 24 V DC	
Operating temperature	-5 to +55 °C (23 to 131 °F)	
Vibration	2 G max.	
EU norm	EN 50081-2, EN 50082-2	

*CE marking not available.

EXTERNAL DIMENSIONS mm (inch)

