

Final Control Components

Electric Actuators



This symbol identifies those products which contain less than the maximum levels of the 10 restricted substances specified by the RoHS Directive.



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Electric Actuator**
MSP Series

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Electric Actuator**
MSP10, PSP10, PSP20

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Electric Actuator**
PSN Series

PAGE 18 CE



**Compact Rotary Motion
Electric Actuator**
MRP Series

PAGE 20 CE UK CA



**Rotary Motion
Electric Actuator**
MRP10, PRP10, PRP11

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Electric Actuator**
PRP Series

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Position Sensor

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Valve Positioner
MEX Series

PAGE 30



**Manual Loading
Station**

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Check out the product videos on our website!

► https://www.mgco.jp/video_e/



STEPTOP Electric Actuator
Revolution of Electric Control Valves



Free from Requirements of Instrument Air Systems
Control Valves with STEPTOP Electric Actuators



STEPTOP Electric Actuator
1/1000 Resolution Demo Kit



Control Valves with STEPTOP Electric Actuators
Application Examples Pulp & Paper Mill

Linear motion electric actuators lineup



Thrust 150 N 300 N 500 N 700 N 780 N

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position
Sensor

Valve
Positioner
MEX Series

Manual
Loading
Station

LINEAR MOTION ELECTRIC ACTUATOR

ROTARY MOTION ELECTRIC ACTUATOR

Open network interface
CC-Link DeviceNet



MSP4

CE UK IP66

PAGE 11

150 N ●
33.7 lbf

300 N ●
67 lbf

500 N ●
112 lbf

700 N ●
157 lbf

600 N ●
135 lbf

Open network interface
CC-Link DeviceNet



MSP5

CE UK IP66

PAGE 11

150 N ●
33.7 lbf

300 N ●
67 lbf

500 N ●
112 lbf

700 N ●
157 lbf

Open network interface
Modbus
Auto-setup function



MSP40

IP66

PAGE 12

Open network interface
Modbus
Auto-setup function



MSP50

IP66

PAGE 12

150 N ●
33.7 lbf

300 N ●
67 lbf

700 N ●
157 lbf

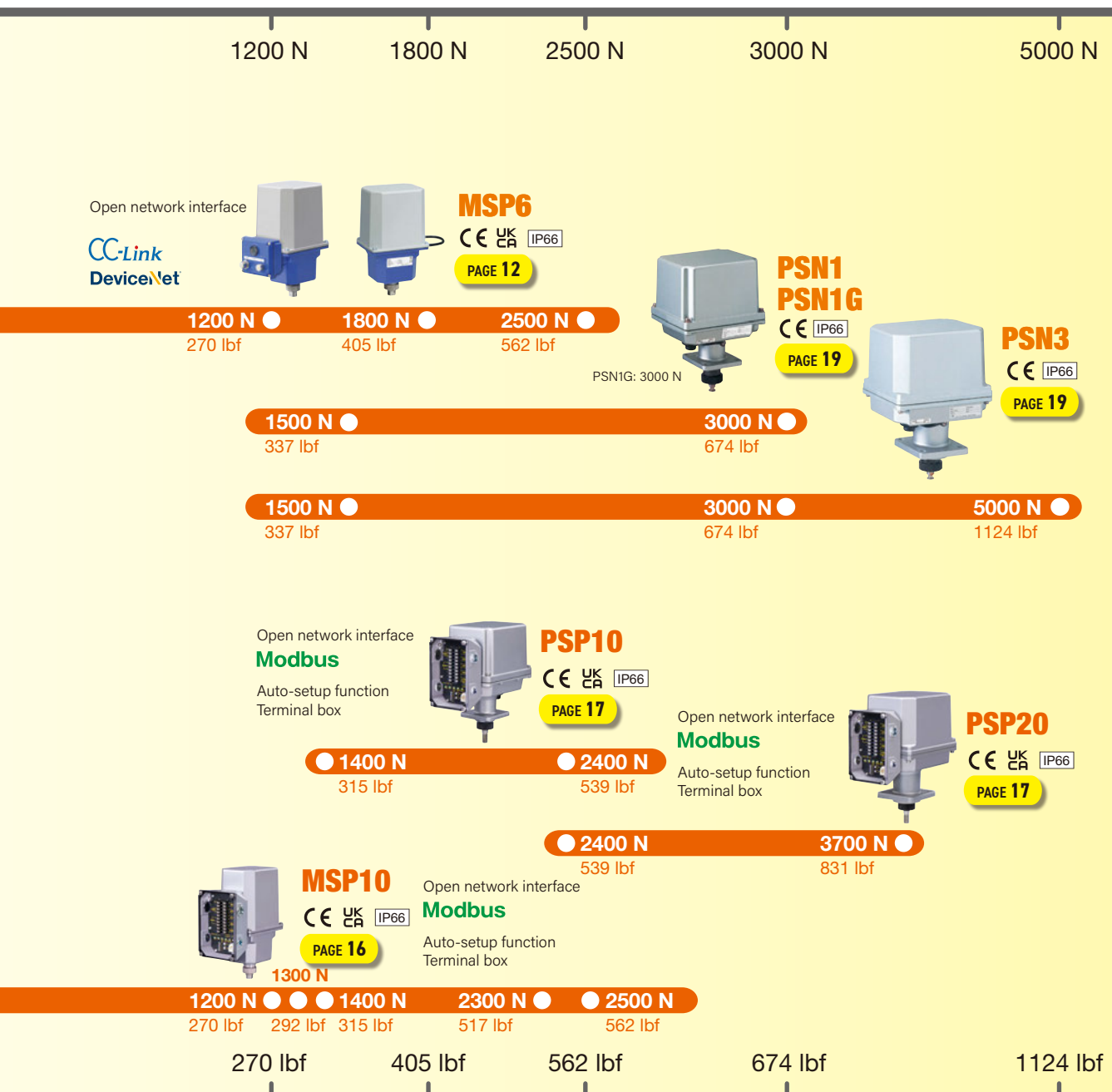
450 N ●
101 lbf

600 N ●
135 lbf

740 N ●
166 lbf

780 N ●
175 lbf

Thrust 33.7 lbf 67 lbf 112 lbf 157 lbf 175 lbf



MSP Series

MSP10
PSP10
PSP20

PSN Series

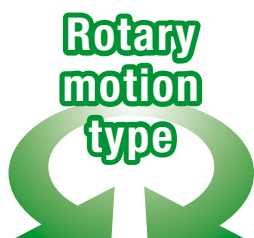
MRP Series

MRP10
PRP10
PRP11

PRP Series

Position
SensorValve
Positioner
MEX SeriesManual
Loading
Station

Rotary motion electric actuators lineup



Torque 5 N·m 10 N·m 16 N·m 24 N·m 33 N·m 50 N·m

MRP4

CE UK IP66

PAGE 21

Open network interface

CC-Link
DeviceNet



5 N·m
3.69 lbf-ft

MRP5

CE UK IP66

PAGE 21

Open network interface

CC-Link
DeviceNet



10 N·m
7.38 lbf-ft

MRP6

CE UK IP66

PAGE 21

Open network interface

CC-Link
DeviceNet



10 N·m
7.38 lbf-ft

16 N·m
11.8 lbf-ft

24 N·m
17.7 lbf-ft

33 N·m
24.3 lbf-ft

MRP10

CE UK IP66

PAGE 24

Open network interface

Modbus
Terminal box



6 N·m
4.43 lbf-ft

16 N·m
11.8 lbf-ft

35 N·m
25.8 lbf-ft

50 N·m
36.9 lbf-ft

Torque 3.69 lbf-ft 7.38 lbf-ft 11.8 lbf-ft 17.7 lbf-ft 24.3 lbf-ft 36.9 lbf-ft

MSP
Series

MSP10
PSP10
PSP20

PSN
Series

MRP
Series

MRP10
PRP10
PRP11

PRP
Series

Position
Sensor

Valve
Positioner
MEX Series

Manual
Loading
Station

LINEAR MOTION ELECTRIC ACTUATOR

ROTARY MOTION ELECTRIC ACTUATOR

70 N·m

100 N·m

200 N·m

600 N·m



PRP-0

CE IP66
PAGE 27

100 N·m
73.8 lbf-ft



PRP-1

CE IP66
PAGE 27

200 N·m
148 lbf-ft



PRP-2

CE IP66
PAGE 29

600 N·m
443 lbf-ft



NEW PRP10

CE UK IP66

Open network interface
Modbus

Terminal box
PAGE 25

100 N·m
73.8 lbf-ft



NEW PRP11

CE UK IP66

Open network interface
Modbus

Terminal box
PAGE 25

200 N·m
148 lbf-ft

EAR70

Reversible AC motor type

CE IP66

70 N·m
51.6 lbf-ft



51.6 lbf-ft

73.8 lbf-ft

148 lbf-ft

443 lbf-ft

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

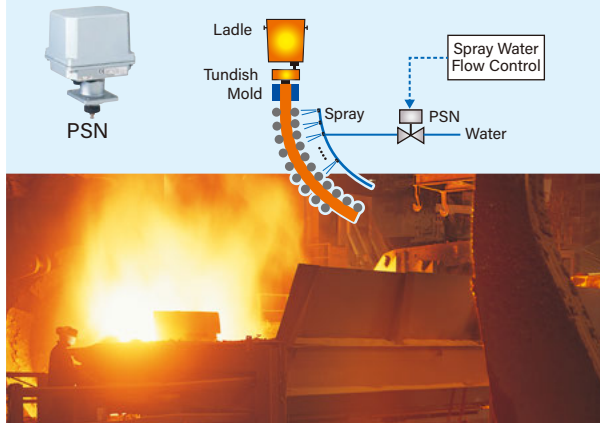
Valve Positioner
MEX Series

Manual Loading Station

Application examples in various demanding process fields

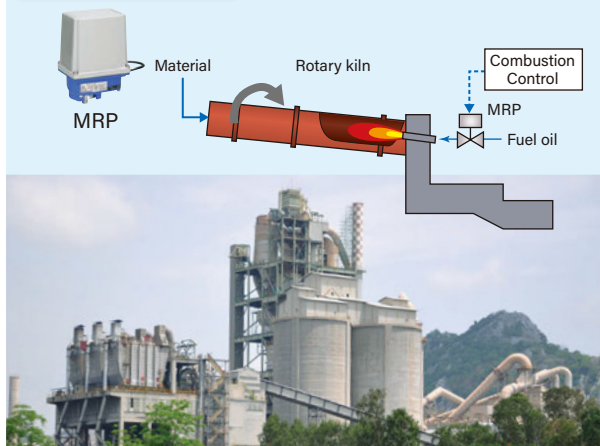
STEEL

Water Flow Control
in Continuous Casting Line



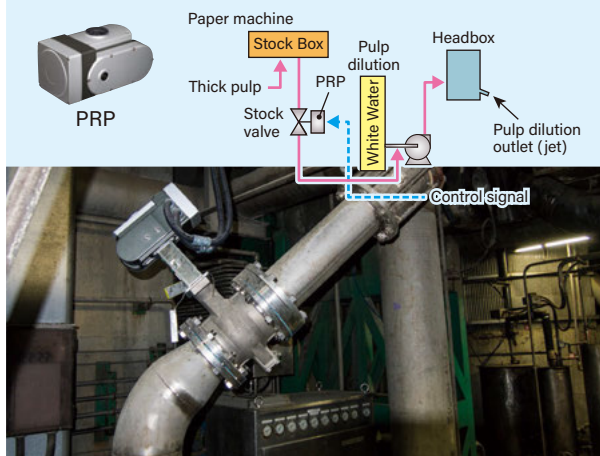
CEMENT

Fuel Flow Control in Rotary Kiln



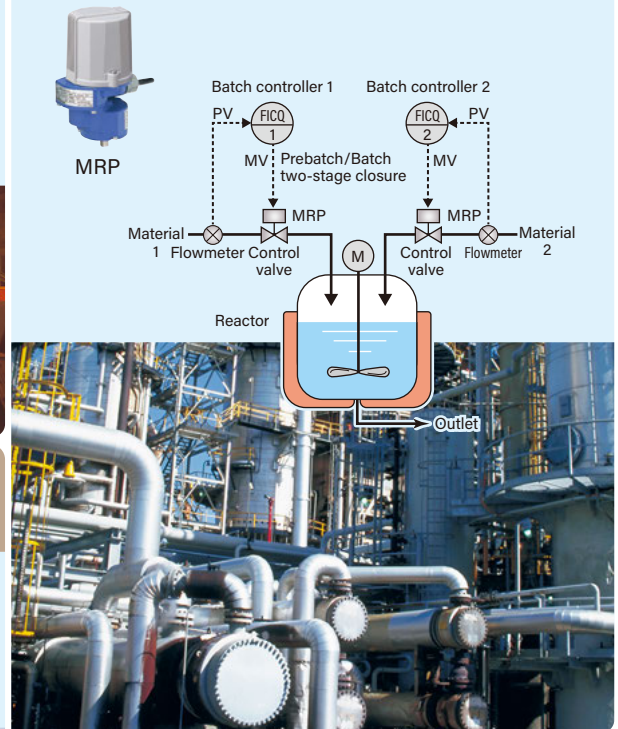
PAPER

Basis Weight Control



CHEMICAL

Batch Control



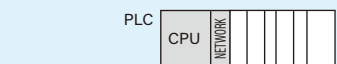
PAPER

Paper Profile Control



MRP4C

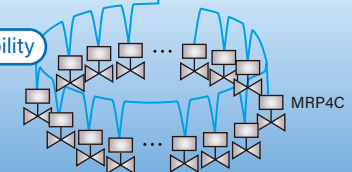
CP Control (Consistency Profiling):
Basis weight control applied in CP (Cross Paper) direction.
Called also CD (Cross Direction) profile control.



Saving a great amount
of wiring time and costs

Single daisy chained
cable only

Network Capability



CP control unit.
Image by Kobayashi
Engineering Works Ltd.

MSP
Series

MSP10
PSP10
PSP20

PSN
Series

MRP
Series

MRP10
PRP10
PRP11

PRP
Series

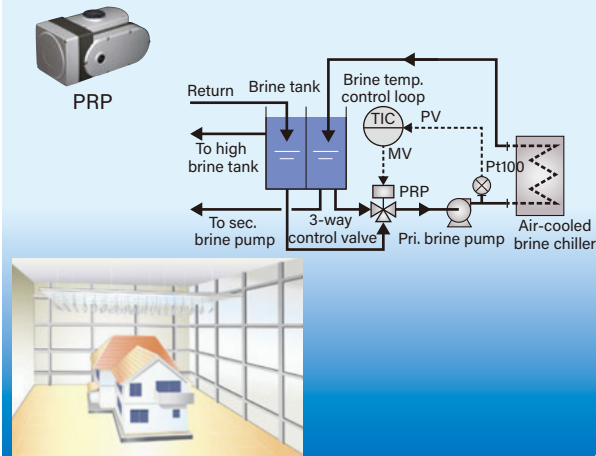
Position
Sensor

Valve
Positioner
MEX Series

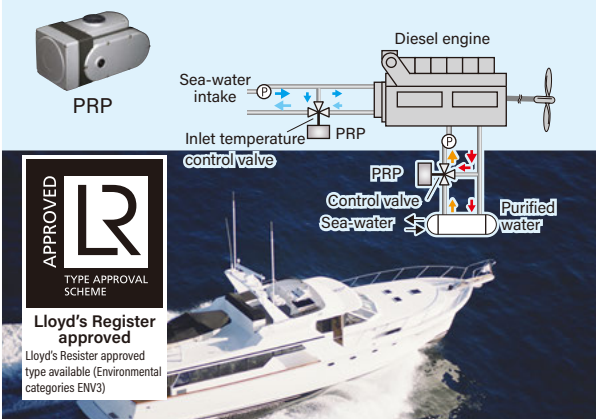
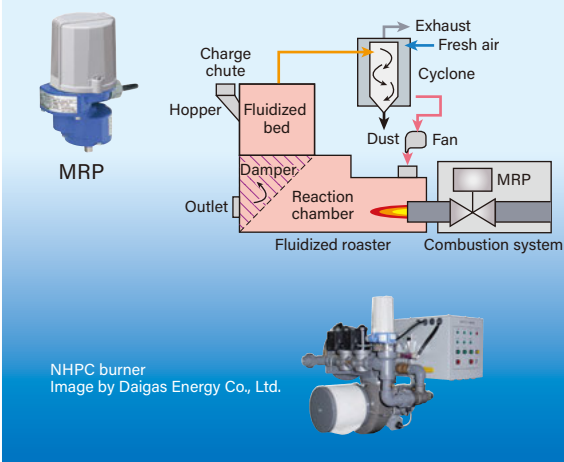
Manual
Loading
Station

LINEAR MOTION ELECTRIC ACTUATOR

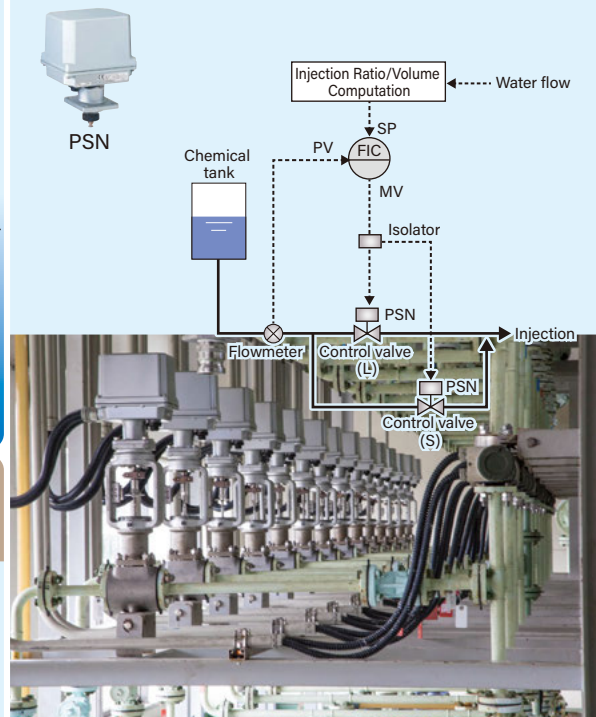
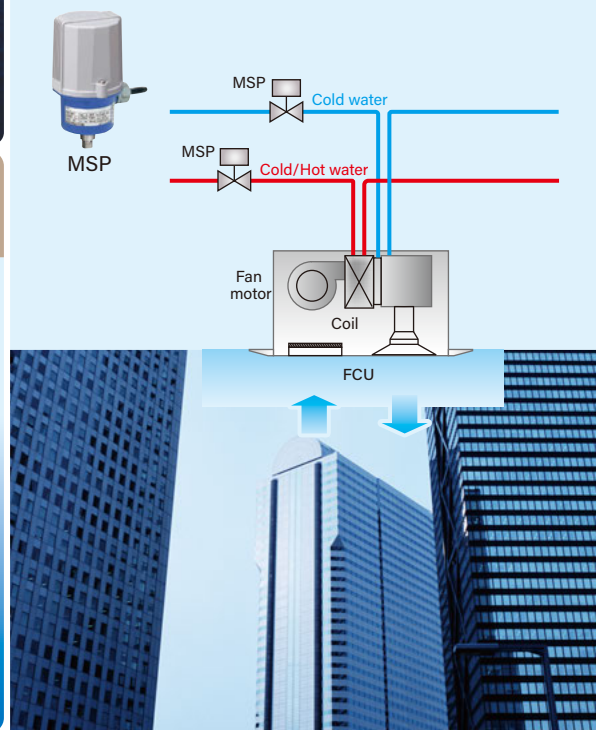
ROTARY MOTION ELECTRIC ACTUATOR

**ENVIRONMENTAL
TEST CHAMBER**Brine Temperature Control
in an Environmental
Test Chamber**SHIP**

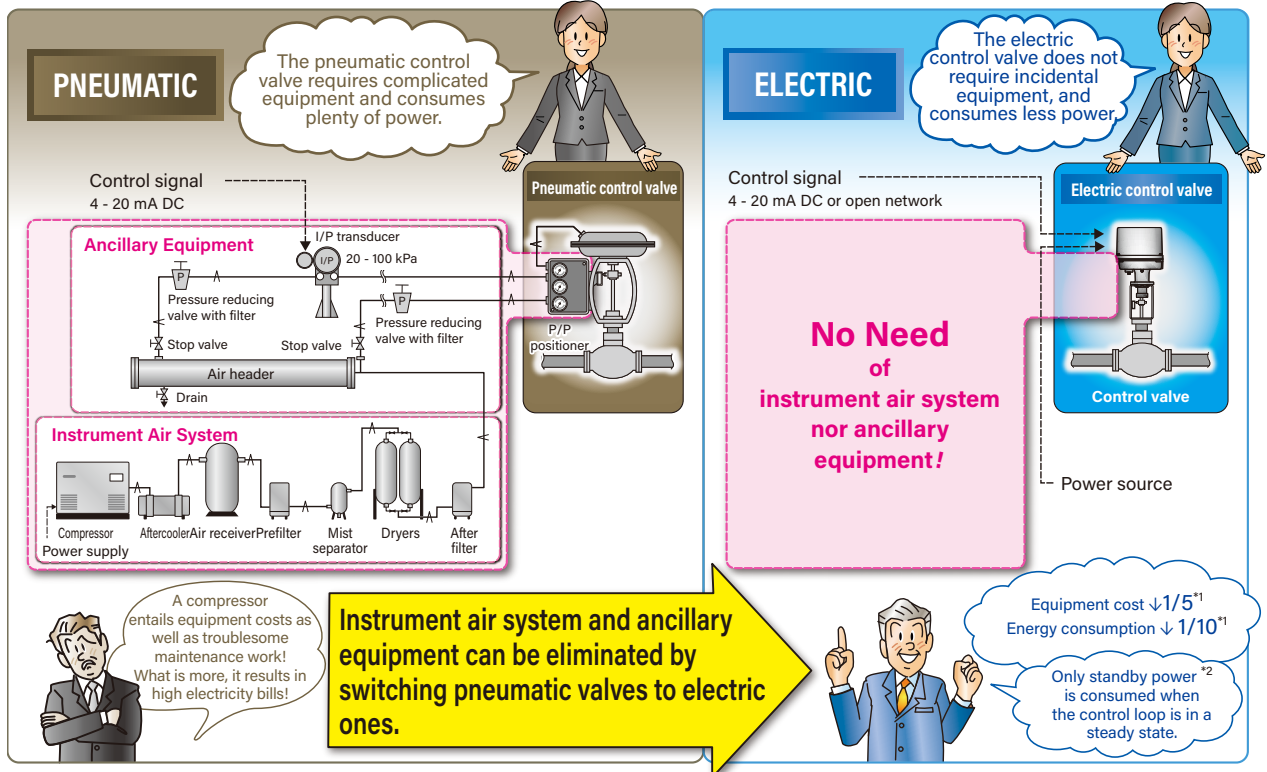
Diesel Engine Cooling System

**FOOD**Gas Flow Control in Combustion
System for Roasting Machine**WATER
TREATMENT**

Chemical Injection Ratio Control

**BUILDING
HVAC**Cold/Hot Water Control
for Fan Coil UnitMSP
SeriesMSP10
PSP10
PSP20PSN
SeriesMRP
SeriesMRP10
PRP10
PRP11PRP
SeriesPosition
SensorValve
Positioner
MEX SeriesManual
Loading
Station

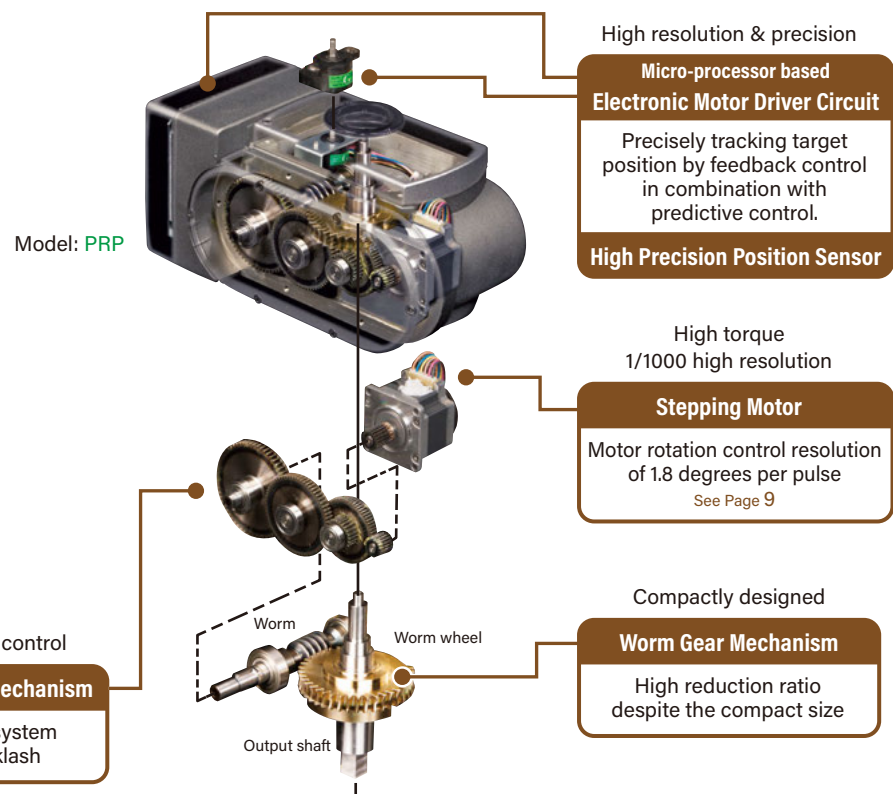
Electric valves can reduce the equipment cost to 1/5*1 and



*1. The data surveyed by us.

*2. Maximum power consumption: 240 VA Standby power: 20 VA
The data is provided on the condition that the PSN1 Electric Actuator is used.

Mechanism that achieves high precision and high resolution control



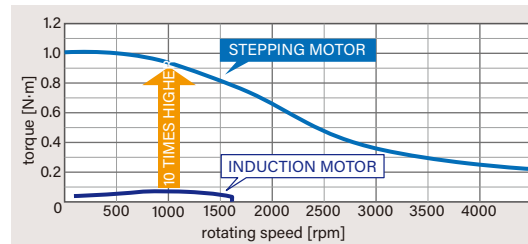
the energy consumption to $1/10^{*1}$ compared from those of pneumatic valves

Features of stepping motors

Comparing to an induction motor

A stepping motor has the following advantages compared to an induction motor. It is most suitable as an actuating drive for small mechanisms including control valves.

- High torque for small size (approx. 10 times greater than an induction motor of the same mass)
- High torque at startup; with little torque variation during acceleration
- Variable rotating speed
- Rotating speed unaffected by load changes
- High precision positioning by acceleration/deceleration control
- Unaffected by voltage or frequency variations by the power source

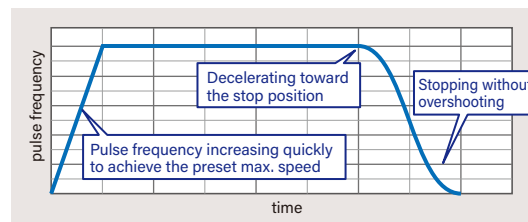


Predictive control enabling the motor to stop without overshooting

Basic rotating step per pulse of the two-phase stepping motor employed by the electric actuators is 1.8 degrees, thus requiring 200 pulses to complete a full 360-degree rotation.

The exact number of pulses is controlled by a micro-processor.

The "Predictive Control" employed as a part of its control algorithm enables the actuator to smoothly stop at an exact position (angle) without overshooting.



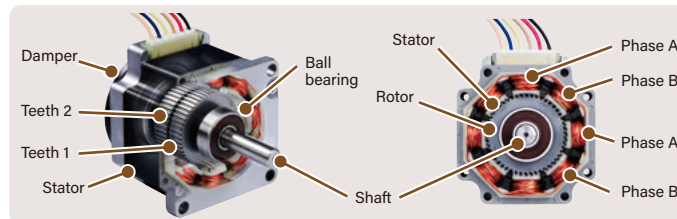
Mechanism of stepping motors

The below illustrations show cross section images of a stepping motor, called also "stepper motor" or "step motor." The stepping motor consists of two major components: a stator (stationary part) and a rotor (rotating part).

The rotor is a permanent magnetic rotating shaft, surrounded by eight electromagnets or coils of two phases (A and B).

Each electromagnet is energized in turn, attracting and repulsing the rotor to rotate its shaft.

The motor shaft is connected to a damper that enhances the torque characteristics of the motor at high speed.



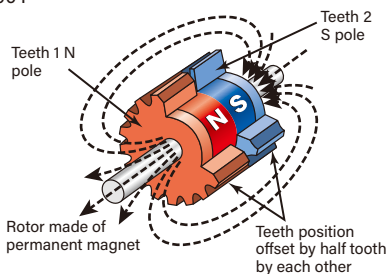
How a stepping motor works 1/1000 Resolution

The N pole and S pole toothed gears are engaged with an offset of half tooth. The bottom of a N pole tooth is aligned with the top of a S pole tooth.

Each pulse moves the shaft by a quarter (1/4) tooth pitch while the N pole teeth and the S pole teeth are attracted and repulsed in turn. Each of those rotations is called a "step".

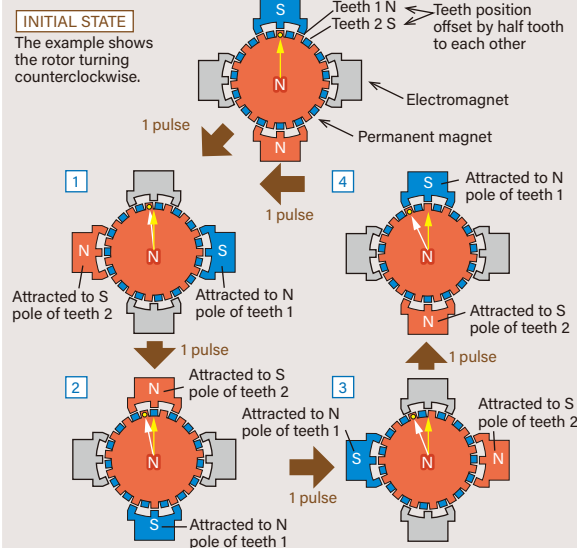
The motor has 50 teeth around the wheel, turning 1.8 degrees per step, requiring 200 pulses to make a complete rotation with an integer number of steps. In this way the motor can be turned by a precise mechanical angle in high resolution.

The motor shaft rotates more than 100 times while the actuator travels the entire stroke/span. The calculated resolution is greater than $1/20000^{*}$.



* The nominal resolution described in the actuator data sheet is 1/1000, considering additional influencing factors such as the accuracy of the position detecting sensor, backlash of the reducing gear mechanism.

Simplified Stepping Motor Operation



• The actuator rotor has 50 teeth. The above is a simplified example with 15 teeth.

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

Compact Linear Motion Electric Actuator

LINEAR MOTION

MSP Series

High resolution of 1/1000

Long life operation

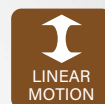
Open network capable actuator

Stepping motor drive

Mechanical contacts reduced to the limit ensures long operating life.

Open network capable

Wiring cost can be reduced by the daisy-chained cable connection. Consul with us for open networks other than CC-Link, DeviceNet or Modbus.


2500 N
562 lbf
 MAX THRUST

40 mm
1.57 in
 MAX STROKE

AC
DC
 POWERED


IP66



Compliance/approval depends upon models.

Compact size**Control circuit**

- Electronic limiter for full-open/-closed positions for easy calibration
- Overload protection functions

Stepping motor**Network terminal box**
(network interface option)**Screw****Network cable connection****Power input connection****Seal-spring**

- Spring mechanism for both extending and retracting directions
- Constant sealing pressure (MSP4 for single direction only)

Output stem

Transparent image of MSP5D

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

LINEAR MOTION ELECTRIC ACTUATOR

ROTARY MOTION ELECTRIC ACTUATOR

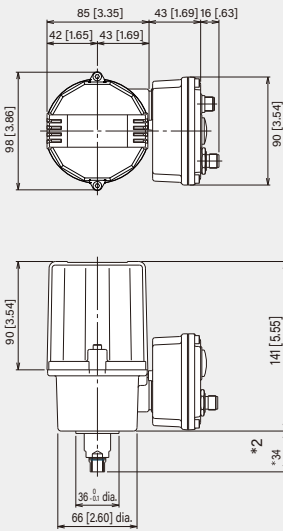
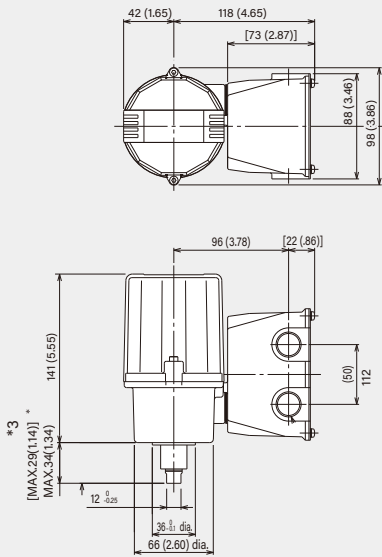
Linear motion MSP Series

Common specifications: Analog I/O type

Input signal	: 4 - 20 mA or 1 - 5 V DC
Power input	: 24 V AC (only for MSP6, not selectable for CE) 100 - 120 V AC (not selectable for CE and UKCA) 200 - 240 V AC (not selectable for CE and UKCA) 24 V DC
Full-open/-closed signals	: Limit switch contact (Option)
Forced open/close signal	: Dry contact inputs (Option)
Manual operation function	: Option (MSP4, MSP5)
Degree of protection	: IP66
Wiring	: Cable, terminal box (Option)
Drive	: Stepping motor
Position detection	: Potentiometer
Position output	: 1 - 5 V DC (Not isolated)
Operating temperature	: -5 to +55°C (23 to 131°F)
Vibration	: 0.5 G (4.9 m/s ²) max.

Common specifications: Open network capable type

Power input	: 24 V DC
Degree of protection	: IP66, IP67 (MSPxD connector)
Wiring conduit	: Microconnector (MSP4C, MSP5C, MSP6C, MSP4D, MSP5D, MSP6D)
Drive	: Stepping motor
Position detection	: Potentiometer
Operating temperature	: -5 to +55°C (23 to 131°F)
Vibration	: 0.5 G (4.9 m/s ²) max.

MSP Series			
External view		     	
Model No.	Analog type	MSP4   —	
	Network capable type	MSP4C2 MSP4C   MSP4D   (IP67 connector) MSP5C2 MSP5C   MSP5D   (IP67 connector)	
Operation time @10 mm		5 sec. / 150 N (33.5 lbf) 9 sec. / 300 N (67 lbf) 18 sec. / 700 N (157 lbf) 24 sec. / 500 N (112 lbf) 30 sec. / 700 N (157 lbf)	
Stroke		15 mm (0.59") 20 mm (0.79")	
Approx. weight		1.2 kg [2.65 lb] (DC powered MSPx), 1.4 kg [3.09 lb] (AC powered MSPx), 1.5 kg [3.3 lb] (MSPxC, MSPxD), 1.8 kg [4.0 lb] (MSPxC2)	
Resolution		1/1000 or 0.015 mm, whichever is greater, with 0.1 % deadband setting	
External dimensions*1 (unit: mm [inch])		MSPxC, MSPxD  MSPxC2  *29 [1.14] max. for the stroke 5 - 10 mm *29 [1.14] max. for the stroke 5 - 10 mm	

*1. Dimensions for network capable types. *2. 50 [1.97] max. for MSP5C, MSP5D (40 [1.57] max. for 5-10 mm stroke)

*3. 50 [1.97] max. for MSP5C2 (40 [1.57] max. for 5-10 mm stroke)

MSP Series

LINEAR MOTION ELECTRIC ACTUATOR

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner MEX Series

Manual Loading Station

Linear motion MSP Series

Common specifications: Modbus type with auto-setup function

Input signal : 4 - 20 mA or 1 - 5 V DC

Power input : 24 V DC

Degree of protection : IP66

Wiring conduit : 4-G 1/2

Drive : Stepping motor

Position detection : Conductive potentiometer

Position output : 4 - 20 mA DC or 20 - 4 mA DC (non-isolated)
1 - 5 V DC or 5 - 1 V DC (non-isolated)

Alarm output (triggered when the output stem is locked)

• Output type : Photo MOSFET relay

• Rated load : 160 V 150 mA AC/DC at peak

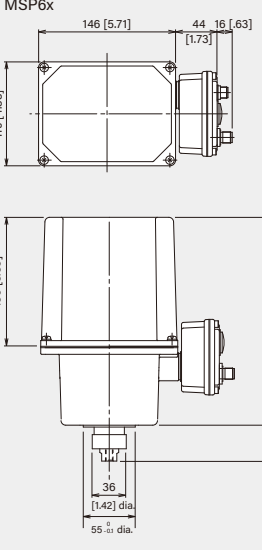
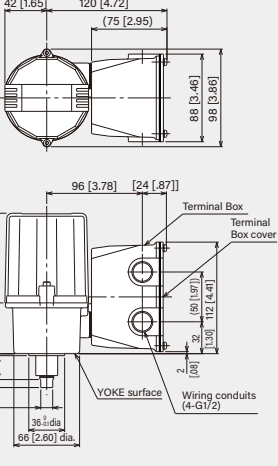
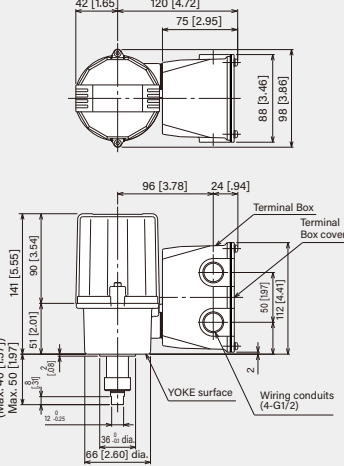
• ON resistance : 8 Ω max.

• Leakage current during opening/closing : 2 μA max.

Operating temperature : -5 to +55°C (23 to 131°F)

Vibration resistance (Sweep endurance test (IEC 61298-3 compliant))

• Acceleration : 19.6 m/s² (2 G)

MSP Series			
External view			
			
Model No.	Analog type	MSP6 	
	Network capable type	CC-Link MSP6C  DeviceNet MSP6D  (IP67 connector)	Modbus Auto-Setup Function MSP40 
Operation time (10 mm / max. thrust)	5 sec. / 600 N (135 lbf) 8 sec. / 1200 N (270 lbf) 15 sec. / 2500 N (562 lbf)		5 sec. / 150 N (33.5 lbf) 9 sec. / 300 N (67 lbf) 18 sec. / 700 N (157 lbf)
	9 sec. / 600 N (125 lbf) 18 sec. / 1200 N (270 lbf) 24 sec. / 1800 N (405 lbf) 36 sec. / 2500 N (562 lbf)		5 sec. / 150 N (33.5 lbf) 9 sec. / 300 N (67 lbf) 18 sec. / 700 N (157 lbf)
Stroke	40 mm (1.57")		15 mm (0.59")
Approx. weight	3.5 kg [7.7 lb] (DC powered MSP6) 3.6 kg [7.9 lb] (AC powered MSP6) 2.8 kg [6.17 lb] (MSP6C, MSP6D)		1.9 kg (4.2 lb)
Resolution	1/1000 or 0.015 mm (MSP6, MSP6D 0.02 mm), whichever is greater, with 0.1 % deadband setting		
External dimensions*1 (unit: mm [inch])			
			
Accessory	Yoke set Model: YSS 		Programming Unit Model: PU-2A 

*1. Dimensions for network capable types

Video Library



Control Valves with STEPTOP Electric Actuators Application Examples Pulp & Paper Mill

This video introduces our STEPTOP electric actuators, with a focus on application examples in pulp and paper mills.

https://www.mgco.jp/video_e/stepstop_application/



Free from Requirements of Instrument Air Systems Control Valves with STEPTOP Electric Actuators

This video introduces common air systems and how electric control valves with STEPTOP actuators are revolutionizing the control valve industry.

https://www.mgco.jp/video_e/e_actuators_stepstop/



STEPTOP Electric Actuator Revolution of Electric Control Valves

The video compares the control result of an electric control valve with that of a pneumatic control valve, both installed in an actual flow control loop.

https://www.mgco.jp/video_e/e_actuators/index.html



STEPTOP Electric Actuator 1/1000 Resolution Demo Kit

The 1/1000 Resolution Demo Kit demonstrates STEPTOP's performance at a glance and shows the innovation in electric control valve technology.

https://www.mgco.jp/video_e/actuators/index.html

Collaboration Maps

The "Map" brochures explain the functions and applications of electric actuators with "manga" style illustrations.

ASAHI YUKIZAI CORPORATION



Japan

TOKO VALEX CO., LTD.



Japan

Dalian Shuntian Xingda Special Valve Co., Ltd.



China

Wuxi KELK Apparatus & Valve CO., LTD.



China

WYECO AUTO VALVES CO., LTD.



Taiwan

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

Linear Motion Electric Actuator

LINEAR MOTION

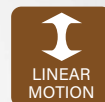
MSP10, PSP10, PSP20

High resolution 1/1000
Modbus communication
Easy installation and maintenance

Auto-setup function

The time and effort required to adjust the valve opening is greatly reduced.

Those for maintenance work can be also saved.



3700 N
831 lbf
MAX THRUST

60 mm
2.36 in
MAX STROKE

24 V
DC
POWERED



IP66



Compliance/approval depends upon models.

Modbus communication

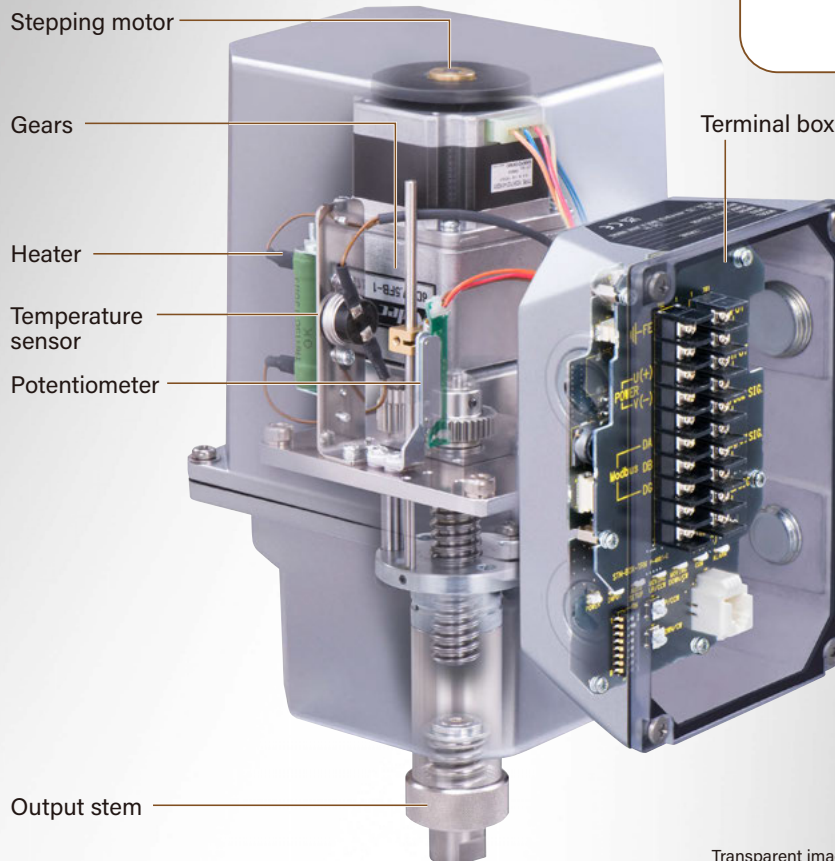
Directly connectable to PLC/PC network.

Actuators' operation data can be accumulated while in the normal operation.

Modbus

Convenient terminal box

Terminal blocks, switches, buttons and LEDs are all housed in the terminal box for the ease of installation and maintenance.



Transparent image of MSP10

MSP
Series

MSP10
PSP10
PSP20

PSN
Series

MRP
Series

MRP10
PRP10
PRP11

PRP
Series

Position
Sensor

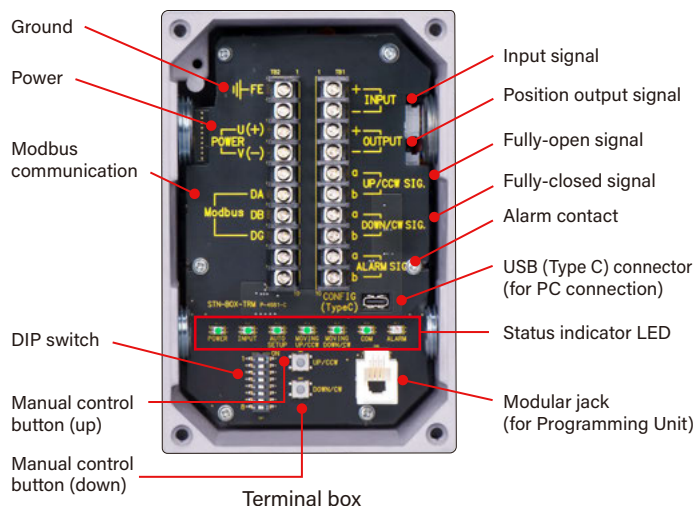
Valve
Positioner
MEX Series

Manual
Loading
Station

LINEAR MOTION ELECTRIC ACTUATOR

ROTARY MOTION ELECTRIC ACTUATOR

All control circuits housed in the terminal box



1. Easy wiring

The terminal box is separate from the main unit to make wiring work easier.

2. Operation can be checked at a glance

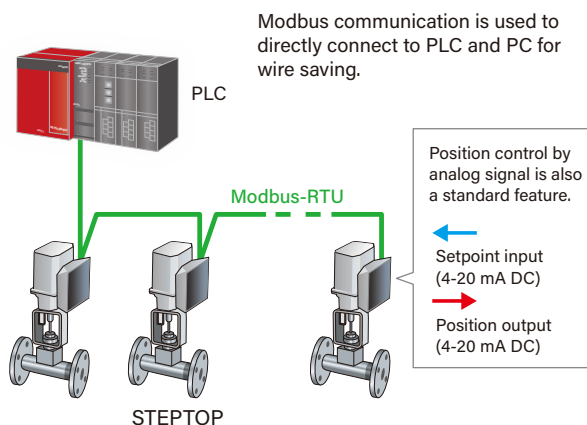
LEDs for operating status indication can be checked through the rugged, transparent polycarbonate cover.

3. Easy parameter setting

Various parameters can be set with DIP switches or by using the Programming Unit (PU-2A) connected to the modular jack in the terminal box, without opening the cover of the main actuator body. In addition, parameters can also be set from a PC using the configurator software (Model: STCFG).^{*1}

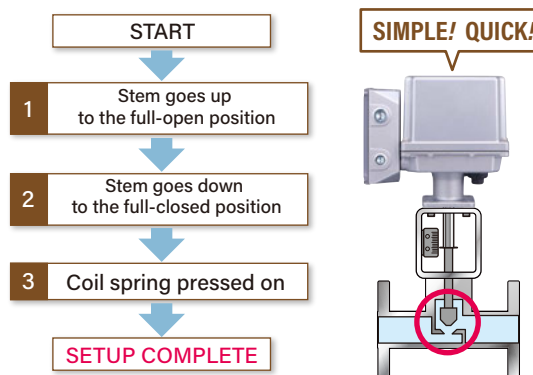
^{*1}. The configurator software (Model: STCFG) can be downloaded for free from our website.

Modbus communication enables position control and checking of diagnostic information



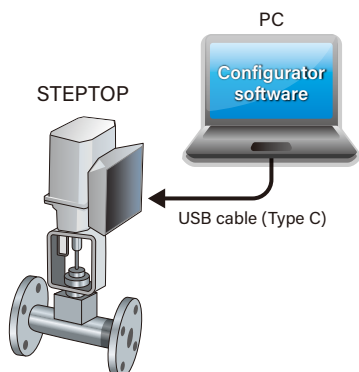
Auto-setup function as a standard feature

Simply operate the DIP switch in the terminal box to start auto setup and save time with configuration and maintenance work.



Diagnostic information is useful for predictive and preventative maintenance

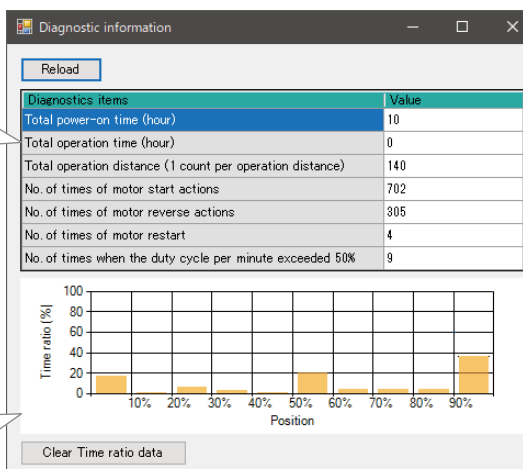
You can monitor the operating status of the actuator via the PC Configurator Software (Model: STCFG) on screen or via Modbus, such as the actuator total operation time and distance and motor start frequency.



Diagnostics items

- Total power-on time (hour)
- Total operation time (hour)
- Total operation distance (1 count per operation distance)
- No. of times of motor start actions
- No. of times of motor reverse actions
- No. of times of motor restart
- No. of times when the duty cycle per minutes exceeded 50%
- Duty cycle (%) per minute
- Motor deadlock error

The graph shows which opening position is mainly used.



DIAGNOSTIC INFORMATION WINDOW

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

Linear motion MSP10

Main specifications

■ GENERAL SPECIFICATIONS

Degree of protection : IP66
 Wiring conduits : G 1/2 female thread and G 3/4 female thread (total four)
 Drive : Stepping motor
 Position detection : Conductive potentiometer
 Isolation : Power voltage or I/O signal to retract/UP signal position to extend/DOWN signal position to alarm signal to Modbus communication to metallic housing

Protective functions

- Automatically stops when thrust at lock (abnormal thrust increase)
- A heater is incorporated to use under cold areas.

■ MODBUS COMMUNICATION

Communication : Half-duplex, asynchronous, no procedure
 Standard : TIA/EIA-485-A compatible
 Transmission distance : 500 meters max.

■ INPUT SPECIFICATIONS

Input signal : 4 - 20 mA DC or 20 - 4 mA DC (non-isolated)
 1 - 5 V DC or 5 - 1 V DC (non-isolated)

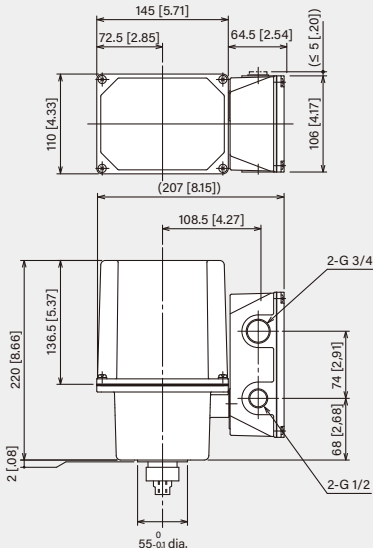
■ OUTPUT SPECIFICATIONS

Output signal : 4 - 20 mA DC or 20 - 4 mA DC (non-isolated)
 1 - 5 V DC or 5 - 1 V DC (non-isolated)

Alarm output (triggered when the output stem is locked), retract/UP signal position, extend/DOWN signal position : Photo MOSFET relay

■ INSTALLATION

Power input : 24 V DC
 Operating temperature : -15 to +66°C (5 to 150.8°F)
 (No direct sunlight, radiant heat or heat transfer.)
 Vibration resistance (Sweep endurance test (IEC 61298-3 compliant))
 · Acceleration : 19.6 m/s² (2 G)
 Mounting orientation : DO NOT mount upside-down
 Approx. weight : 4 kg (8.820 lb)

	MSP10			
External view				
Model No.	MSP10    			
Output stem operation distance	20 mm [.79"] (adjustable to 10 mm [.39"]) Max. stroke ≤ 20.0 mm [.79"] or 40 mm [1.57"] (adjustable to 20 mm [.79"]) Max. stroke ≤ 40.0 mm [1.57"]			
Operation time*1 @20 mm [.79"] /thrust (thrust at lock)	3.2 sec. / 450 N (500 N) 4 sec. / 600 N (620 N) 5.7 sec. / 740 N (790 N) 7.4 sec. / 780 N (790 N)	7 sec. / 1200 N (1500 N) 8.4 sec. / 1300 N (1500 N) 10 sec. / 1400 N (1500 N)	13.5 sec. / 2500 N (2700 N) 15.2 sec. / 2500 N (2700 N) 16.5 sec. / 2500 N (2700 N) 19.5 sec. / 2300 N (2700 N)	
External dimensions (unit: mm [inch])				
Accessory	Programming Unit Model: PU-2A  			

*1. Operation time can be changed on site using the configuration software (Model: STCFG) or the Programming Unit (Model: PU-2A). Be sure to confirm the data sheet.

MSP
SeriesMSP10
PSP10
PSP20PSN
SeriesMRP
SeriesMRP10
PRP10
PRP11PRP
SeriesPosition
SensorValve
Positioner
MEX SeriesManual
Loading
Station

LINEAR MOTION ELECTRIC ACTUATOR

ROTARY MOTION ELECTRIC ACTUATOR

Linear motion PSP10, PSP20

Main specifications

■ GENERAL SPECIFICATIONS

Degree of protection	: IP66
Wiring conduits	: G 1/2 female thread and G 3/4 female thread (total four)
Drive	: Stepping motor
Position detection	: Conductive potentiometer
Isolation	: Power voltage or I/O signal to retract/UP signal position to extend/DOWN signal position to alarm signal to Modbus communication to metallic housing

Protective functions

- Automatically stops when thrust at lock (abnormal thrust increase)
- A heater is incorporated to use under cold areas.

■ MODBUS COMMUNICATION

Communication	: Half-duplex, asynchronous, no procedure
Standard	: TIA/EIA-485-A compatible
Transmission distance	: 500 meters max.

■ INPUT SPECIFICATIONS

Input signal	: 4 - 20 mA DC or 20 - 4 mA DC (non-isolated) 1 - 5 V DC or 5 - 1 V DC (non-isolated)
--------------	--

■ OUTPUT SPECIFICATIONS

Output signal	: 4 - 20 mA DC or 20 - 4 mA DC (non-isolated) 1 - 5 V DC or 5 - 1 V DC (non-isolated)
---------------	--

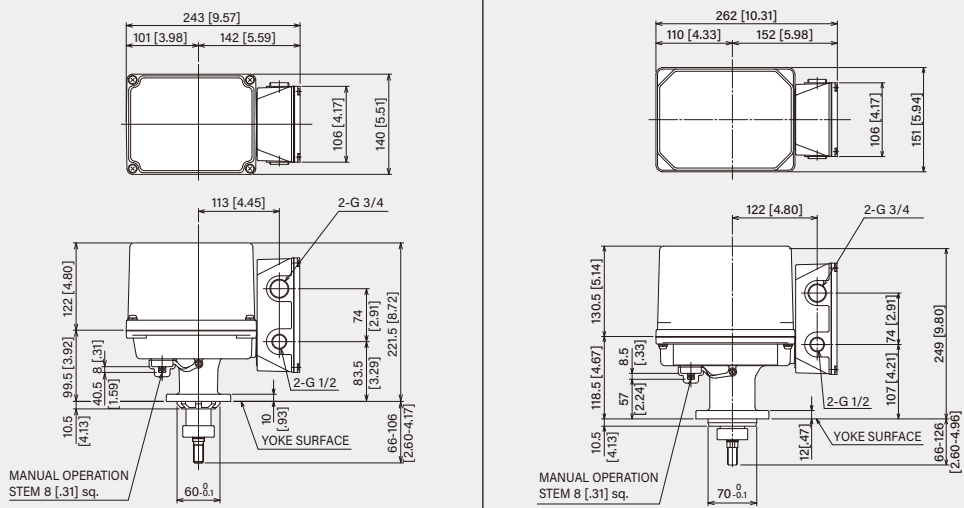
Alarm output (triggered when the output stem is locked), retract/UP signal position, extend/DOWN signal position : Photo MOSFET relay

■ INSTALLATION

Power input	: 24 V DC
Operating temperature	: -25 to +66°C (-13 to +150.8°F) (PSP10) -15 to +66°C (5 to 150.8°F) (PSP20) (No direct sunlight, radiant heat or heat transfer.)

Vibration resistance (Sweep endurance test (IEC 61298-3 compliant))

· Acceleration	: 19.6 m/s ² (2 G)
Mounting orientation	: DO NOT mount upside-down
Approx. weight	: 6.3 kg (13.9 lb) (PSP10), 9 kg (19.8 lb) (PSP20)

	PSP10, PSP20																	
External view																		
Model No.	PSP10 CE UK CA IP66  PSP20 CE UK CA IP66 																	
Output stem operation distance	40 mm [1.57"] (adjustable to 20 mm [.79"]) Max. stroke ≤ 40.0 mm [1.57"]																	
Operation time*1 /thrust (thrust at lock)	<table><tr><td>5.6 sec. / 1400 N (2000 N)</td><td>5.6 sec. / 2400 N (3200 N)</td><td>14 sec. / 2400 N (4000 N)</td><td>14 sec. / 3700 N (7000 N)</td></tr><tr><td>8.7 sec. / 1400 N (2000 N)</td><td>8.7 sec. / 2400 N (3400 N)</td><td>17 sec. / 2400 N (4000 N)</td><td>17 sec. / 3700 N (7000 N)</td></tr><tr><td>12 sec. / 1400 N (2000 N)</td><td>12 sec. / 2400 N (3600 N)</td><td>23 sec. / 2400 N (4000 N)</td><td>23 sec. / 3700 N (7000 N)</td></tr><tr><td>20.5 sec. / 1400 N (2000 N)</td><td>20.5 sec. / 2400 N (3800 N)</td><td></td><td></td></tr></table>		5.6 sec. / 1400 N (2000 N)	5.6 sec. / 2400 N (3200 N)	14 sec. / 2400 N (4000 N)	14 sec. / 3700 N (7000 N)	8.7 sec. / 1400 N (2000 N)	8.7 sec. / 2400 N (3400 N)	17 sec. / 2400 N (4000 N)	17 sec. / 3700 N (7000 N)	12 sec. / 1400 N (2000 N)	12 sec. / 2400 N (3600 N)	23 sec. / 2400 N (4000 N)	23 sec. / 3700 N (7000 N)	20.5 sec. / 1400 N (2000 N)	20.5 sec. / 2400 N (3800 N)		
5.6 sec. / 1400 N (2000 N)	5.6 sec. / 2400 N (3200 N)	14 sec. / 2400 N (4000 N)	14 sec. / 3700 N (7000 N)															
8.7 sec. / 1400 N (2000 N)	8.7 sec. / 2400 N (3400 N)	17 sec. / 2400 N (4000 N)	17 sec. / 3700 N (7000 N)															
12 sec. / 1400 N (2000 N)	12 sec. / 2400 N (3600 N)	23 sec. / 2400 N (4000 N)	23 sec. / 3700 N (7000 N)															
20.5 sec. / 1400 N (2000 N)	20.5 sec. / 2400 N (3800 N)																	
External dimensions (unit: mm [inch])																		
Accessory	Programming Unit Model: PU-2A CE 																	

*1. @20 mm for PSP10, @40 mm for PSP20.

Operation time can be changed on site using the configuration software (Model: STCFG) or the Programming Unit (Model: PU-2A). Be sure to confirm the data sheet.

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

Linear Motion Electric Actuator

LINEAR MOTION

PSN Series

High resolution of 1/1000
 Programmable opening/closing speed
 Brushless angle sensor

Long life and high precision

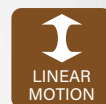
Stepping motor drive realizes long life and high precision control.

Quick start

The actuator starts quickly with a minimal deviation of input signal from valve position.

Open network capable

Contact us for details.



5000 N
1124 lbf
 MAX THRUST

60 mm
2.36 in
 MAX STROKE

AC
DC
 POWERED



IP66



Compliance/approval depends upon models.

MSP
Series

MSP10
PSP10
PSP20

PSN
Series

LINEAR MOTION ELECTRIC ACTUATOR

MRP
Series

MRP10
PRP10
PRP11

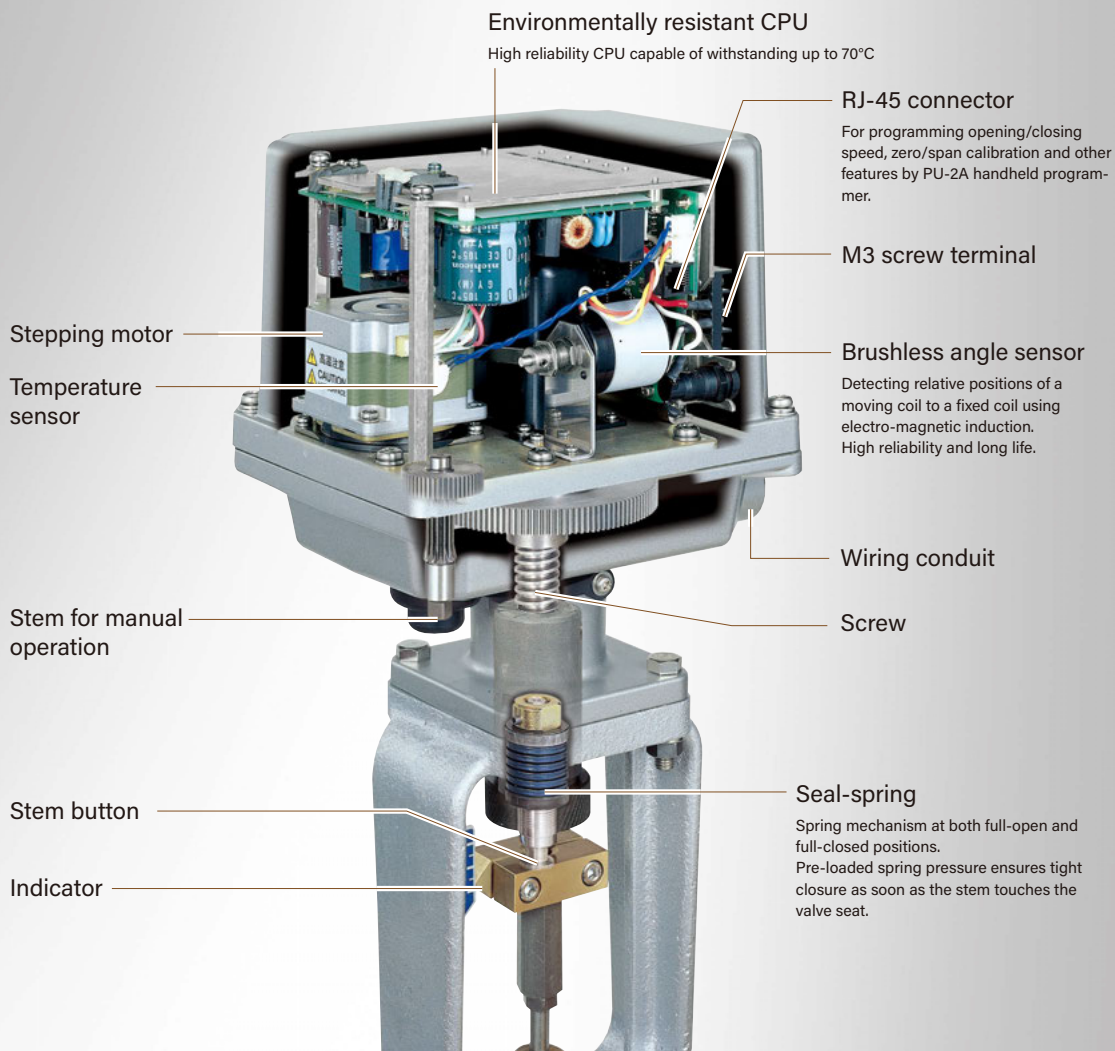
PRP
Series

ROTARY MOTION ELECTRIC ACTUATOR

Position
Sensor

Valve
Positioner
MEX Series

Manual
Loading
Station



Transparent image of PSN1

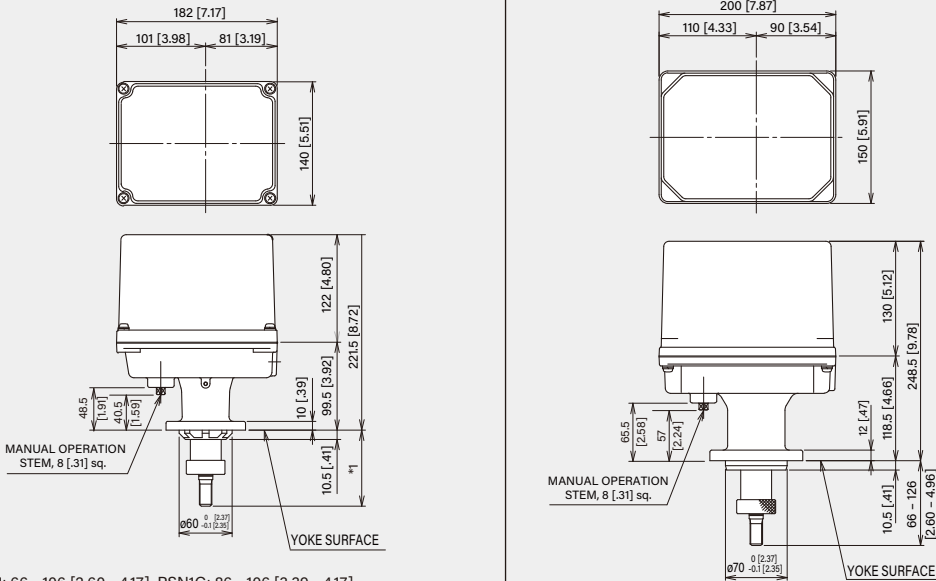
Linear motion PSN Series

Common specifications: PSN1, PSN3

Input signal	: 4 - 20 mA or 1 - 5 V DC
Power input	: 100 - 120 V AC (not selectable for CE) 200 - 240 V AC 24 V DC
Degree of protection	: IP66
Wiring conduits	: G 1/2 female thread (two) G 3/4 female thread (two)
Drive	: Stepping motor
Position detection	: Brushless angle sensor
Manual operation	: Available
Position signal	: 4 - 20 mA DC
Vibration	: ≤ 2 G (19.6 m/s ²)

Main specifications: PSN1G

Input signal	: 4 - 20 mA or 1 - 5 V DC
Power input	: 24 V DC
Degree of protection	: IP66
Wiring conduits	: G 1/2 female thread (two)
Drive	: Stepping motor
Manual operation	: Available
Position signal	: 4 - 20 mA DC
Vibration (Sweep endurance test)	: Acceleration : 1 G (9.8 m/s ²)

	PSN Series			
External view				
Model No.	PSN1   	PSN1G  	PSN3   	
Stroke	0 to 40 mm (0" to 1.57")	—	0 to 60 mm (0" to 2.36")	
Output stem operation distance	—	0 to 20 mm (0" to .79")	—	
Max. thrust	3000 N	3200 N (reference value)	5000 N	
Opening/closing speed adjustment	0.30 – 5.65 mm/s	—	0.22 – 4.02 mm/s	
Operation speed (20 mm)	—	7.5 sec. / 3200 N (reference value)	—	
Operating temperature	-25 to +55°C (-13 to +131°F)	-25 to +66°C (-13 to +150.8°F)	-15 to +55°C (5 to 131°F)	
Approx. weight	5.9 kg (13.0 lb)	5.7 kg (12.57 lb)	8.9 kg (18.7 lb)	
Resolution	0.04 mm	0.02 mm	0.06 mm	
External dimensions (unit: mm [inch])	 *1. PSN1: 66 - 106 [2.60 - 4.17], PSN1G: 86 - 106 [3.39 - 4.17]			
Accessory	Battery	Model: PSN-BAT	Battery	Model: PSN-BAT
	Manual Operation Spanner		Model: HPSN2 	
	Programming Unit		Model: PU-2A  	

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

Compact Rotary Motion Electric Actuator

ROTARY MOTION

MRP Series

High resolution of 1/1000

Long life operation

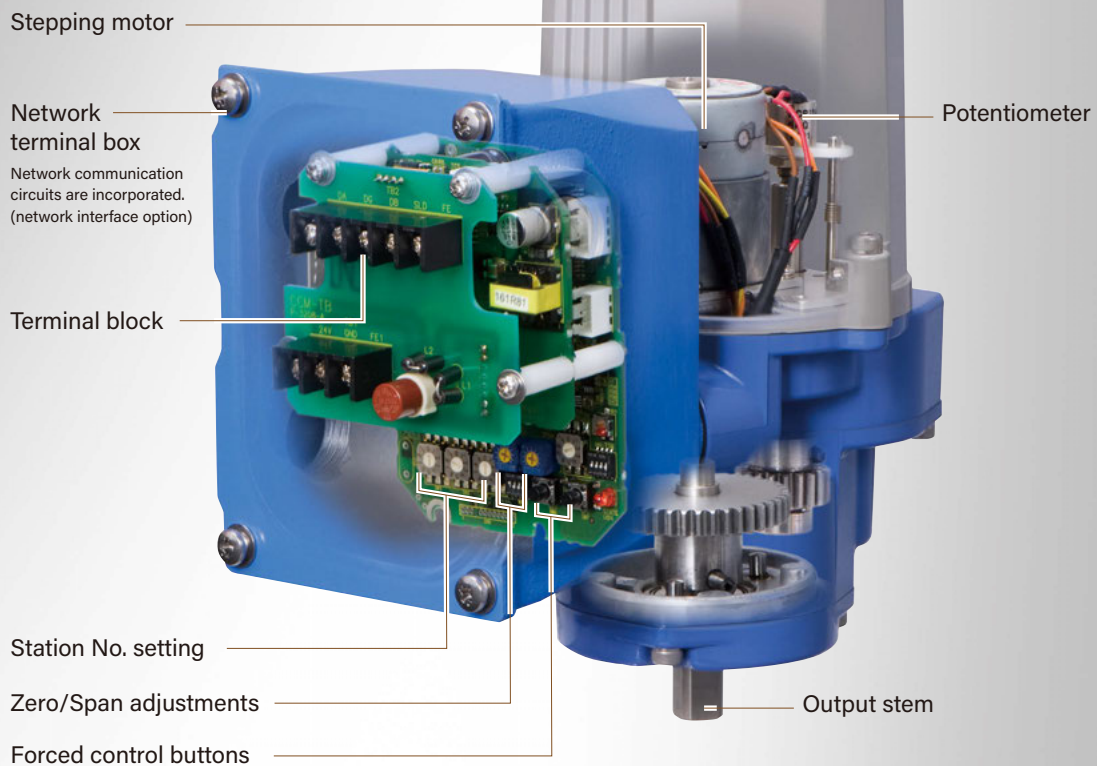
Open network capable actuator

Stepping motor drive

Mechanical contacts reduced to the limit ensures long operating life.

Open network capableWiring cost can be reduced by the daisy-chained cable connection.
Consult with us for open networks other than CC-Link or DeviceNet.**Compact Size**

Compliance/approval depends upon models.



Transparent image of MRP5C2

MSP
SeriesMSP10
PSP10
PSP20PSN
Series

LINEAR MOTION ELECTRIC ACTUATOR

MRP
SeriesMRP10
PRP10
PRP11PRP
Series

ROTARY MOTION ELECTRIC ACTUATOR

Position
SensorValve
Positioner
MEX SeriesManual
Loading
Station

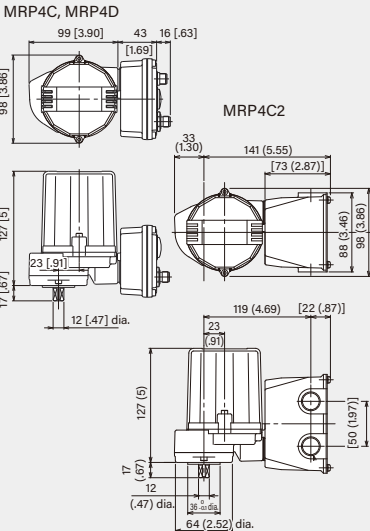
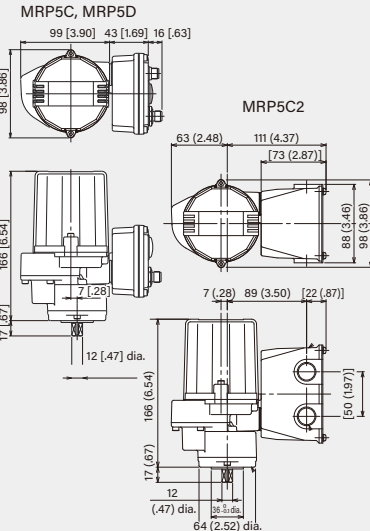
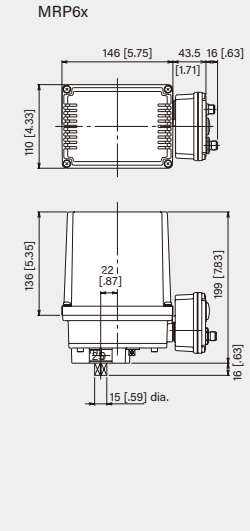
Rotary motion MRP Series

Common specifications: Analog I/O type

Input signal	: 4 - 20 mA or 1 - 5 V DC
Power input	: 100 - 120 V AC (Not selectable for CE and UKCA) 200 - 240 V AC (Not selectable for CE and UKCA) 24 V DC
Degree of protection	: IP66
Wiring	: Cable Terminal box (Option)
Drive	: Stepping motor
Position detection	: Potentiometer
Position output	: 1 - 5 V DC (not isolated)
Full-open/-closed signals	: Limit switch contact (Option)
Forced open/close signal	: Dry contact (Option)
Operating temperature	: -5 to +55°C (23 to 131°F)
Vibration	: 0.5 G (4.9 m/s ²) max.

Common specifications: Open network capable type

Power input	: 24 V DC
Degree of protection	: IP66, IP67 (MRPx connector)
Wiring conduit	: Microconnector (MRP4C, MRP5C, MRP6C, MRP4D, MRP5D, MRP6D) With terminal box (MRP4C2, MRP5C2)
Drive	: Stepping motor
Position detection	: Potentiometer
Operating temperature	: -5 to +55°C (23 to 131°F)
Vibration	: 0.5 G (4.9 m/s ²) max.

		MRP Series							
External view		 MRP4 MRP4C2 MRP4C MRP4D		 MRP5 MRP5C2 MRP5C MRP5D		 MRP6 MRP6C MRP6D			
Model No.	Analog type								
	Network capable type	 MRP4C				 MRP5C			
Operation time (90°) /torque		7 sec. /5 N·m (3.69 lbf·ft) 13 sec. /5 N·m (3.69 lbf·ft)		12 sec. /5 N·m (3.69 lbf·ft)		13 sec. /10 N·m (7.38 lbf·ft)		22 sec. /10 N·m (7.38 lbf·ft)	
Span		45 to 90 degrees, 90 to 180 degrees				45 to 90 degrees		45 to 90 degrees, 90 to 180 degrees	
Approx. weight (network capable type)		1.3 kg [2.87 lb] (1.4 kg [3.1 lb], 1.7 kg [3.7 lb] (MRP4C2))				1.7 kg [3.7 lb] (1.8 kg [4.0 lb], 2.0 kg [4.4 lb] MRP5C2))		2.8 kg (3.0 kg)	
Resolution		1/1000 or 0.09°, whichever is greater, with 0.1 % deadband setting							
External dimensions*1 (unit: mm [inch])									

*1. Applicable to network capable type

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

Rotary Motion Electric Actuator

ROTARY MOTION

NEW

MRP10, PRP10, PRP11

High resolution 1/1000
Modbus communication
Easy installation and maintenance

Convenient terminal box

Terminal blocks, switches, buttons and LEDs are all housed in the terminal box for the ease of installation and maintenance.



200 N·m
148 lbf·ft
MAX TORQUE

90°
MAX ANGLE

24 V
DC
POWERED

Modbus communication

Directly connectable to PLC/PC network
Actuators' operation data can be accumulated while in the normal operation.



IP66

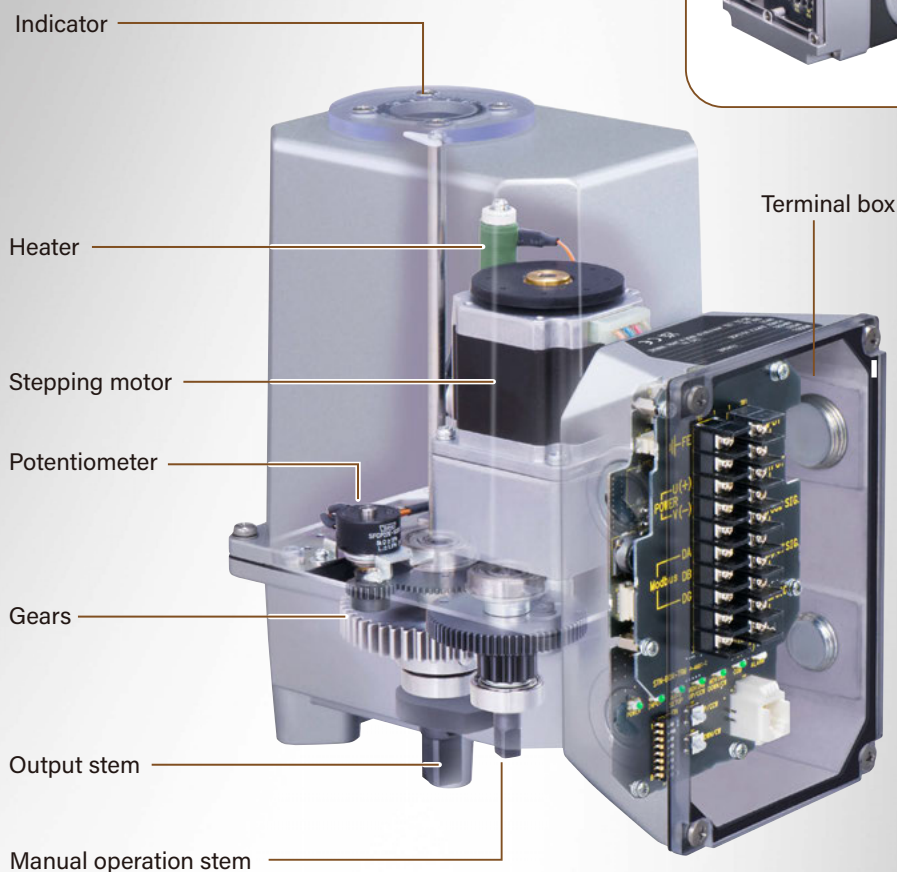


Compliance/approval depends upon models.

Modbus



PRP10



Transparent image of MRP10

MSP
Series

MSP10
PSP10
PSP20

PSN
Series

LINEAR MOTION ELECTRIC ACTUATOR

MRP
Series

MRP10
PRP10
PRP11

PRP
Series

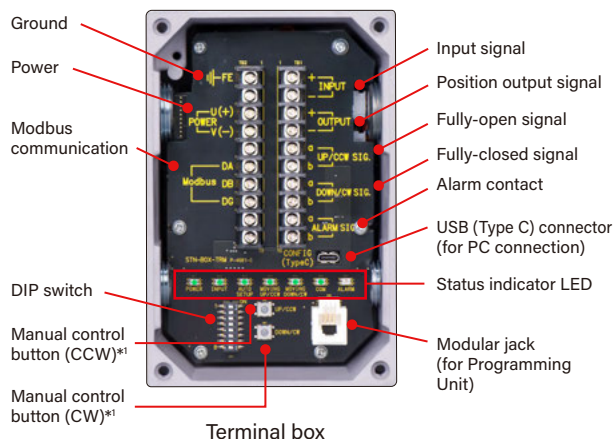
ROTARY MOTION ELECTRIC ACTUATOR

Position
Sensor

Valve
Positioner
MEX Series

Manual
Loading
Station

All control circuits housed in the terminal box



1. Easy wiring

The terminal box is separate from the main unit to make wiring work easier.

2. Operation can be checked at a glance

LEDs for operating status indication can be checked through the rugged, transparent polycarbonate cover.

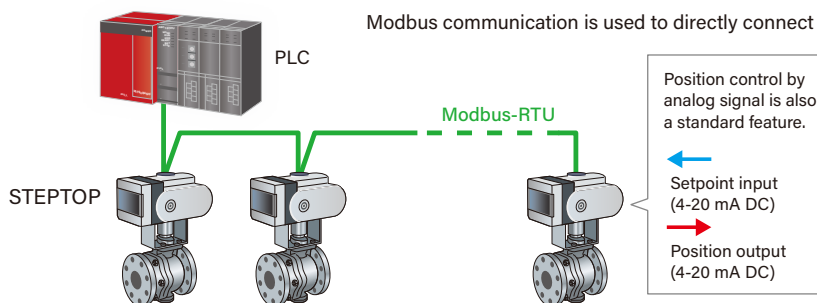
3. Easy parameter setting

Various parameters can be set with DIP switches or by using the Programming Unit (PU-2A) connected to the modular jack in the terminal box, without opening the cover of the main actuator body. In addition, parameters can also be set from a PC using the configurator software (Model: STCFG).^{*2}

*1. Indicates the direction in which the output stem rotates when viewed from the top of the product cover.

*2. The configurator software (Model: STCFG) can be downloaded for free from our website.

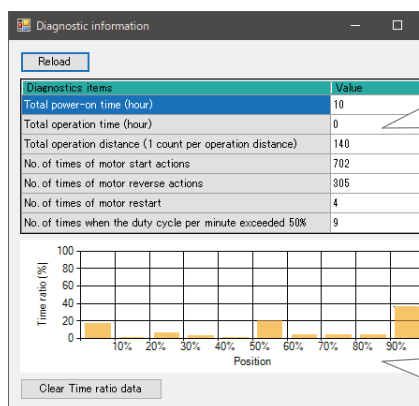
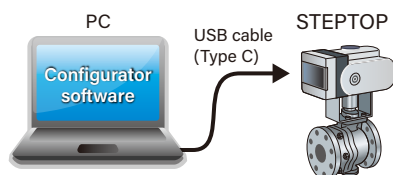
Modbus communication enables position control and checking of diagnostic information



Diagnostic information improves equipment maintainability and reduces costs

Diagnostic information is more than just real-time condition monitoring; it is important data for determining the timing and type of necessary maintenance. Because it can be used for both predictive and preventive maintenance, diagnostic information helps minimize downtime and extend the service life of equipment.

Actuator operating status can be checked from the STEPTOP PC Configurator Software (Model: STCFG) screen or via Modbus.

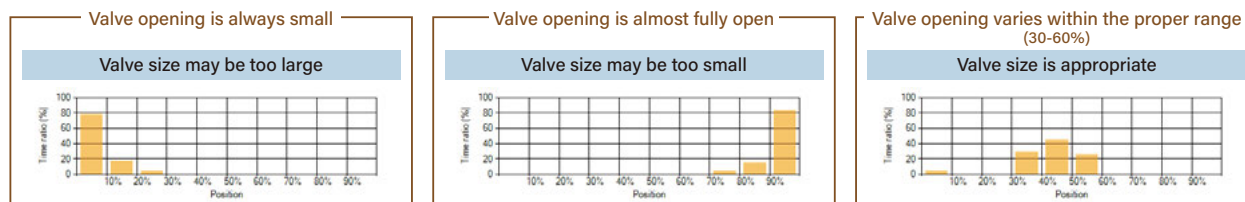


Diagnostics items

- Total power-on time (hour)
- Total operation time (hour)
- Total operation distance (1 count per operation distance)
- No. of times of motor start actions
- No. of times of motor reverse actions
- No. of times of motor restart
- No. of times when the duty cycle per minutes exceeded 50%
- Duty cycle (%) per minute
- Motor deadlock error

Opening data analysis example

Opening position distribution data displays the distribution of the output stem open position to operating hours and can be used as a reference when considering valve sizing optimization.



Benefits of valve optimization

- Improved control accuracy : Greater flow control stability and improved process characteristics
- System stabilization : Reduced problems by preventing overloads and abnormal operation
- Energy conservation : Reduced energy loss due to improperly sized valves
- Extended equipment life : Optimized operation for reduced valve and actuator wear
- Cost reductions : Reduced frequency of unnecessary maintenance and replacement cost

Rotary motion MRP10

Main specifications

■ GENERAL SPECIFICATIONS

Degree of protection	: IP66
Wiring conduits	: G 1/2 female thread and G 3/4 female thread (total four)
Drive	: Stepping motor
Position detection	: Conductive potentiometer
Isolation	: Power voltage or I/O signal to full-open signal position to full-close signal position to alarm signal to Modbus communication to metallic housing

Protective functions

- Automatically stops when torque at lock (abnormal thrust increase)
- A heater is incorporated to use under cold areas.

■ MODBUS COMMUNICATION

Communication	: Half-duplex, asynchronous, no procedure
Standard	: TIA/EIA-485-A compatible
Transmission distance	: 500 meters max.

■ INPUT SPECIFICATIONS

Input signal	: 4 - 20 mA DC or 20 - 4 mA DC (non-isolated) 1 - 5 V DC or 5 - 1 V DC (non-isolated)
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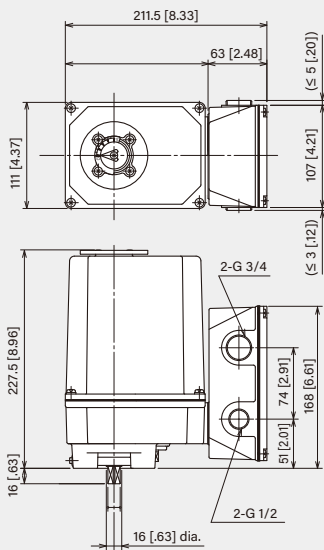
■ OUTPUT SPECIFICATIONS

Output signal	: 4 - 20 mA DC or 20 - 4 mA DC (non-isolated) 1 - 5 V DC or 5 - 1 V DC (non-isolated)
---------------	--

Alarm output (triggered when the output stem is locked), **full-open signal**, **full-close signal** : Photo MOSFET relay

■ INSTALLATION

Power input	: 24 V DC
Operating temperature	: -25 to +66°C (-13 to +150.8°F) (No direct sunlight, radiant heat or heat transfer.)
Vibration resistance (Sweep endurance test (IEC 61298-3 compliant))	· Acceleration : 19.6 m/s ² (2 G)
Mounting orientation	: DO NOT mount upside-down
Approx. weight	: 4.4 kg (9.7 lb)

	MRP10
External view	
Model No.	MRP10 CE UK IP66
Operation torque (approx. torque at lock) / operation time (90 degrees)	6 N·m (8 N·m) / 2.5 sec. 16 N·m (18 N·m) / 3.5 sec. 35 N·m (44 N·m) / 7.5 sec. 50 N·m (55 N·m) / 9.5 sec.
External dimensions (unit: mm [inch])	
Accessory	Programming Unit Model: PU-2A CE

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

Rotary motion PRP10, PRP11

Main specifications

■ GENERAL SPECIFICATIONS

Degree of protection	: IP66
Wiring conduits	: 2-G 1/2
Drive	: Stepping motor
Position detection	: Conductive potentiometer
Isolation	: Power voltage or I/O signal to full-open signal to full-close signal to alarm signal to communication to metallic housing

Protective functions

- Automatically stops when torque at maximum
- A heater is incorporated to use under cold areas.

■ MODBUS COMMUNICATION

Communication	: Half-duplex, asynchronous, no procedure
Standard	: TIA/EIA-485-A compatible
Transmission distance	: 500 meters max.

■ INPUT SPECIFICATIONS

Input signal	: 4 - 20 mA DC or 20 - 4 mA DC (non-isolated)
	: 1 - 5 V DC or 5 - 1 V DC (non-isolated)

■ OUTPUT SPECIFICATIONS

Output signal	: 4 - 20 mA DC or 20 - 4 mA DC (non-isolated)
	: 1 - 5 V DC or 5 - 1 V DC (non-isolated)

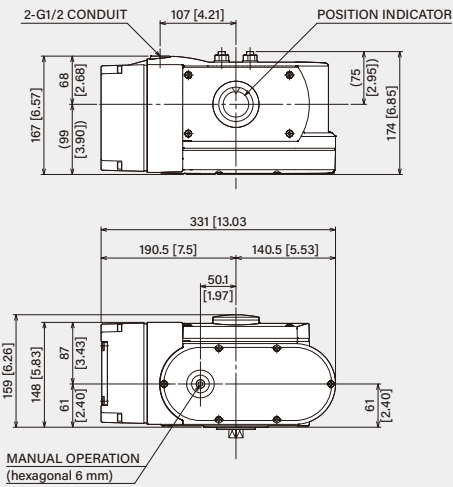
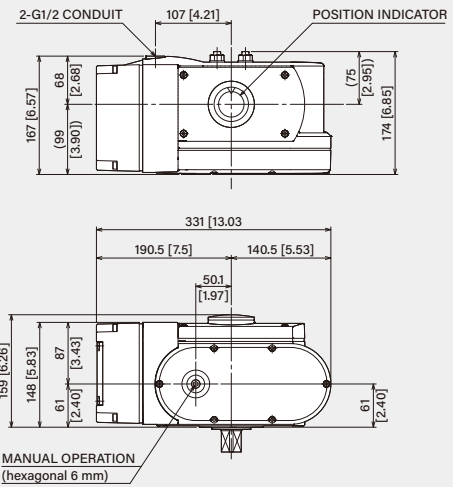
Alarm output (triggered when the output stem is locked), full-open signal, full-close signal : Photo MOSFET relay

■ INSTALLATION

Power input	: 24 V DC
Operating temperature	: -25 to +66°C (-13 to +150.8°F)
	(No direct sunlight, radiant heat or heat transfer.)

Vibration resistance (Sweep endurance test (IEC 61298-3 compliant))

· Acceleration	: 19.6 m/s ² (2 G)
Mounting orientation	: DO NOT mount upside-down
Approx. weight	: 10.8 kg (23.81 lb) for PRP10
	: 11 kg (24.25 lb) for PRP11

	PRP10, PRP11	
External view		
Model No.	PRP10    	PRP11    
Operation torque (max. torque) / operation time (90 degrees)	100 N·m (110 N·m) / 12 sec. 100 N·m (110 N·m) / 24 sec. 100 N·m (120 N·m) / 34 sec.	200 N·m (210 N·m) / 16.5 sec. 200 N·m (210 N·m) / 24 sec. 200 N·m (220 N·m) / 34 sec.
External dimensions (unit: mm [inch])		
Accessory	Programming Unit Model: PU-2A  	

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

Rotary Motion Electric Actuator

ROTARY MOTION

PRP Series

High resolution of 1/1000

High speed operation 8.5 sec./90°

Freely selectable opening/closing speed

Long life and high precision

Stepping motor drive realizes long life and high precision control.

IP66

IP66 degree of protection

Open network capable

Contact us for details.

Lloyd's Register type approval

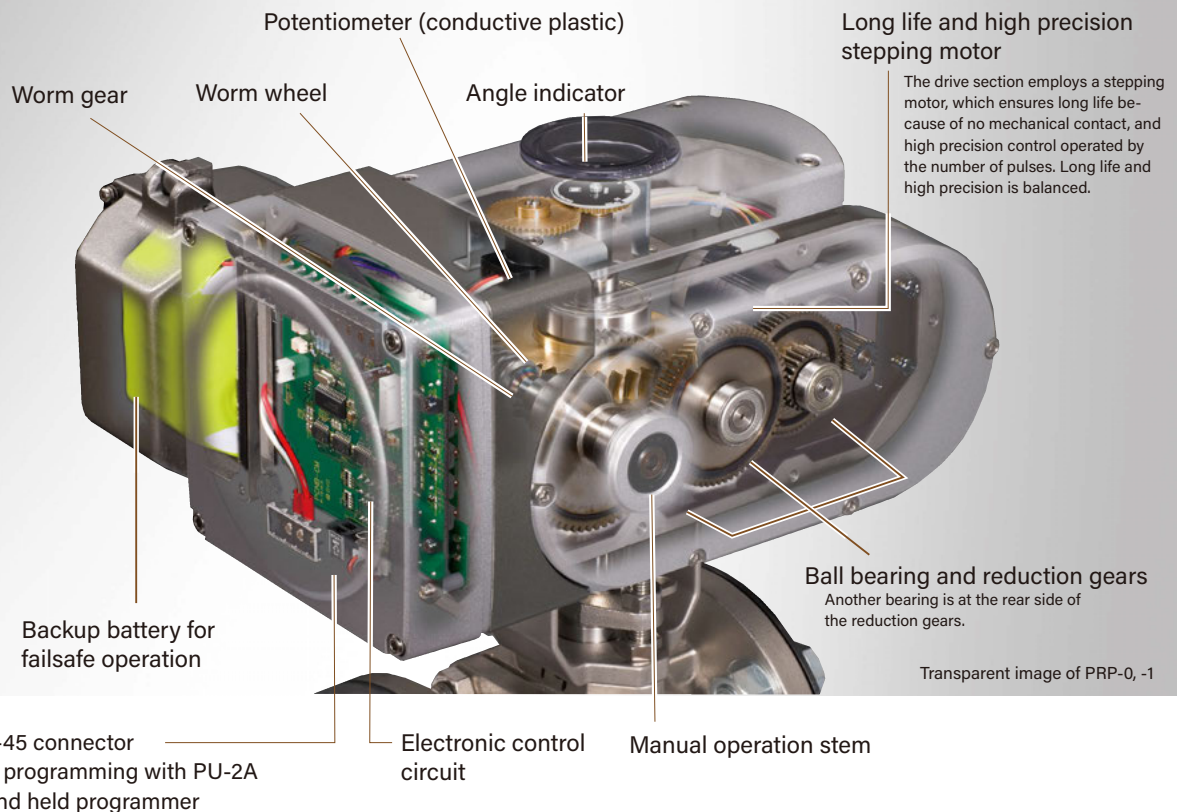
Lloyd's Register approved type available (Environmental categories ENV3)



Actuator mounting dimensions compliant with ISO 5211/ Table 1, 2 F7 (PRP-1)



Compliance/approval depends upon models.



User-configurable items:

- Full-closed/open position
- Opening/closing speed
- Closed/open side limiter
- Full-closed/open signal
- Split range and point
- Deadband
- Restart limiting timer

High speed opening/closing 8.5 to 125 sec./90°

Opening/closing speed can be changed on site.

Heater with temperature sensor contributing to energy saving

A typical countermeasure for cold environment is a heater working on for 24 hours/365 days, which inevitably wastes energy to some extent. The PRP is equipped with a temperature sensor attached to its stepping motor, and supplies current to the motor to heat it to maintain the internal temperature.

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position Sensor

Valve Positioner
MEX Series

Manual Loading Station

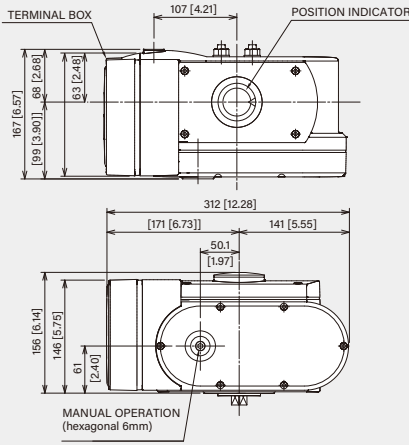
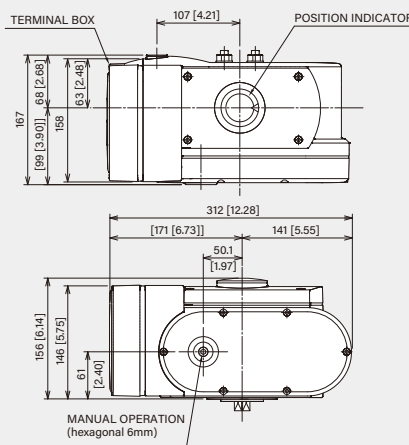
LINEAR MOTION ELECTRIC ACTUATOR

ROTARY MOTION ELECTRIC ACTUATOR

Rotary motion PRP Series

Common specifications: PRP Series

Input signal	: 4 - 20 mA DC or 1 - 5 V DC	Position output	: 4 - 20 mA DC
Power input	: 100 - 240 V AC (Not selectable for CE) 200 - 240 V AC	Operating temperature	: -20 to +55°C (-4 to +131°F) (Standard models) 5 to 70°C (41 to 158°F) (Lloyd's Register approved)
Degree of protection	: IP66	Vibration (Passed test condition below)	
Wiring conduits	: G 1/2 female thread (two)	· Acceleration	: 2 G (19.6 m/s ²) (Standard models) 0.7 G (6.9 m/s ²) (Lloyd's Register approved)
Drive	: Stepping motor	Approx. weight	: 10.8 kg (23.81 lb)
Position detection	: Potentiometer		
Manual operation	: Available		

	PRP Series	
External view		
Model No. Standard models	PRP-0x   	PRP-1x   
Model No. Lloyd's Register approved (Environmental categories ENV3)	PRP-0xx-xx/LR	PRP-1xx-xx/LR
Operational angle	90°	
Max. torque	100 N·m	200 N·m
Operation time (90°)	12 sec. (PRP-01) 24 sec. (PRP-03) 8.5 - 125 sec. (PRP-00)	16 sec. (PRP-11) 24 sec. (PRP-13) 16 - 125 sec. (PRP-10)
Resolution	1/200 with 0.5 % deadband (factory setting); 1/1000 with 0.1 % deadband	
External dimensions (unit: mm [inch])		
Accessory	Battery Model: PSN-BAT	Programming Unit Mode: PU-2A  

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position
SensorValve
Positioner
MEX SeriesManual
Loading
Station

Rotary Motion Electric Actuators EAR Series



Insulation class B (130°C)

AC reversible motor enhances reliability against heat.

Suitable for outdoor environment

IP66 degree of protection

Resistant to vibration

Normal operation confirmed in vibration testing for 2 G in three dimensions

(Note) Refer to data sheet for external dimensions.

Input signal	: 4 - 20 mA or 1 - 5 V DC
Power supply voltage	: 100 V AC±10% 200 V AC±10%
Position detection	: Potentiometer (conductive plastic)
Manual operation	: Available
Operating temperature	: -10 to +60°C (14 to 140°F)
Sweep endurance test condition (IEC 61298-3 compliant)	
· Acceleration	: 19.6 m/s ² (2 G)
Torque	: 70 N·m
Operational angle	: 90° (direct and reverse rotation)
Approx. weight	: 4.7 kg (10.4 lb)
Linear resolution	: 1/200

PRODUCT	MODEL
EAR Series	EAR70

Rotary Motion Electric Actuator

ROTARY MOTION

PRP-2

High torque 600 N·m
High resolution of 1/1000

High torque 600 N·m

Planetary gear mechanism for speed reduction realizes the high torque of 600 N·m despite its compact size.

Long life and high precision

Stepping motor drive realizes long life and high precision control.

Manual handle locked during motor operation

The worm gear for manual operation is locked to prevent the manual handle from turning during normal operation.

Open network interface

HART 7 Under development



IP66



Angle indicator

Stepping motor

Thermal control

Potentiometer for
position detection

Planetary gear
mechanism

Sun gear

Planetary gears

Ring gear (fixed)

Planetary carrier

Output shaft of
planetary gear mechanism

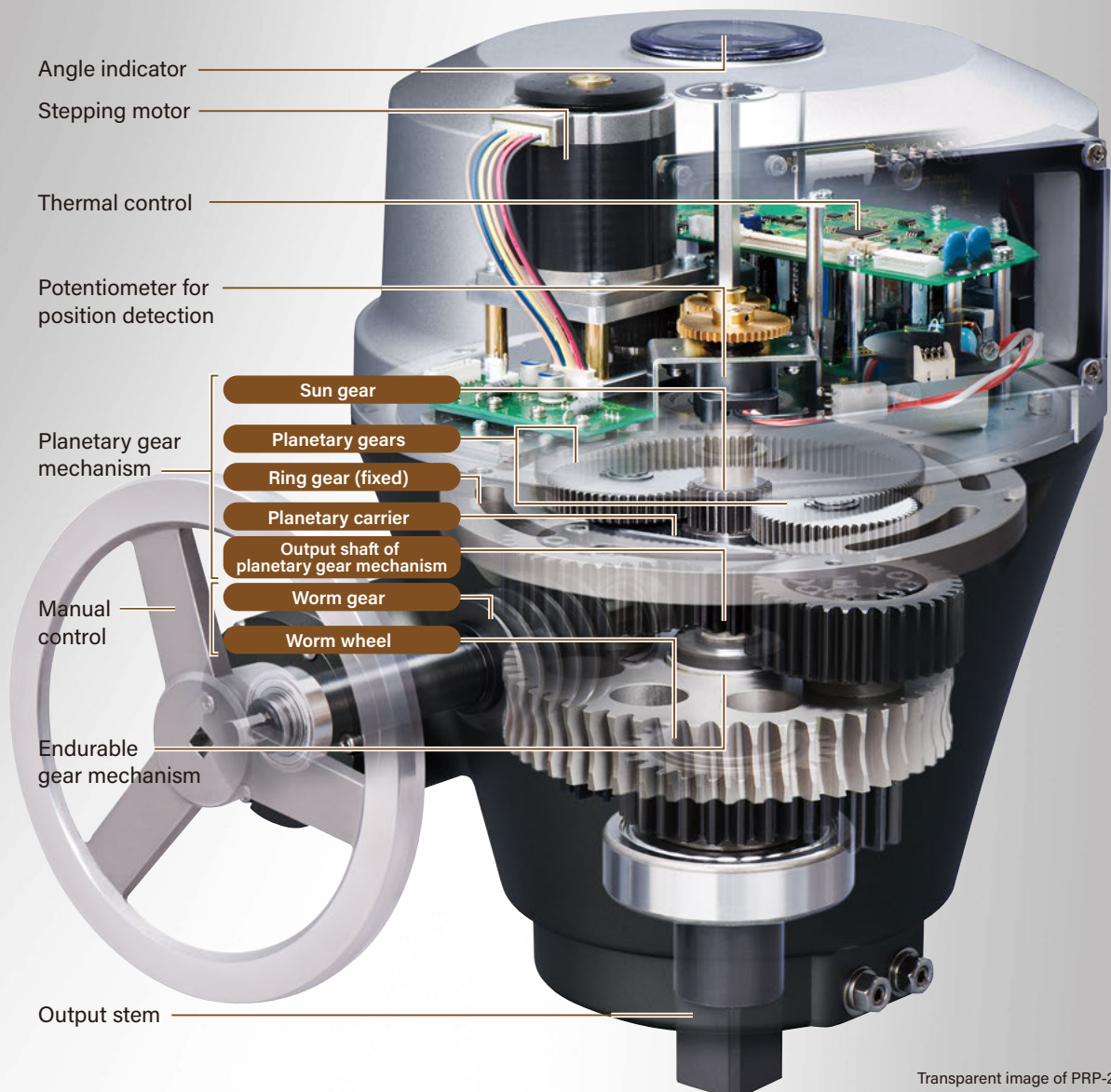
Worm gear

Worm wheel

Manual
control

Endurable
gear mechanism

Output stem



Transparent image of PRP-2

MSP
SeriesMSP10
PSP10
PSP20PSN
SeriesMRP
SeriesMRP10
PRP10
PRP11PRP
SeriesPosition
SensorValve
Positioner
MEX SeriesManual
Loading
Station

Position Sensor

Reliable brushless construction
Robust and compact!

Visit our website
for details.



Long-life brushless angle sensor incorporated

2-wire position transmitters and limit alarms incorporating a brushless angle sensor are lined up.

Flame-proof type 2-wire position transmitters are also available.



Brushless Angle Sensor
Model: **NRA**

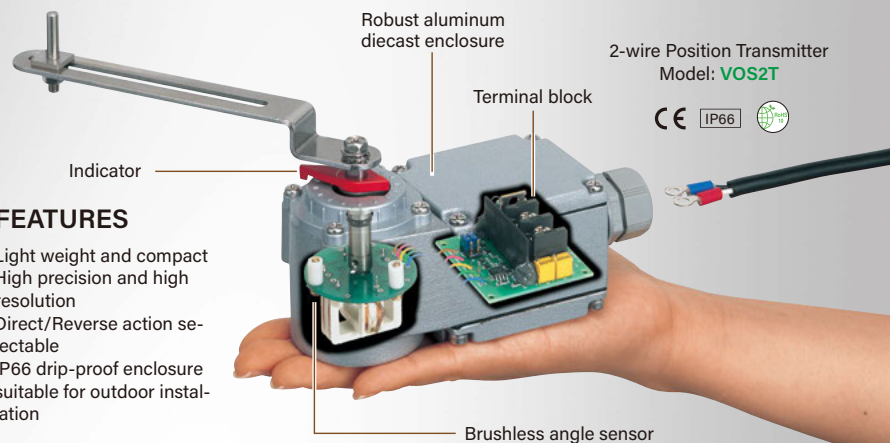
Brushless angle sensor

A type of angle sensor detecting positional relationship between a fixed coil and a movable coil, using the principle of magnetic induction. It has no electrical sliding part, featuring high reliability and long life.

FEATURES

- Light weight and compact
- High precision and high resolution
- Direct/Reverse action selectable
- IP66 drip-proof enclosure suitable for outdoor installation

The VOS2T is a 2-wire position transmitter incorporating a brushless angle sensor. It detects the rotating angle of pneumatic/electric actuators, and transmits 4 - 20 mA output signal proportional to the angle.



2-wire Position Transmitter
Model: **VOS2T**



Transparent image of VOS2T

MSP
Series

MSP10
PSP10
PSP20

PSN
Series

LINEAR MOTION ELECTRIC ACTUATOR

MRP
Series

MRP10
PRP10
PRP11

PRP
Series

ROTARY MOTION ELECTRIC ACTUATOR

Position
Sensor

Valve
Positioner
MEX Series

Manual
Loading
Station

Valve Positioner MEX Series

Position control using direct/reverse acting motors

Visit our website
for details.



Multiple high performance functions

Deadband adjustment, timer adjustment, electronic limits

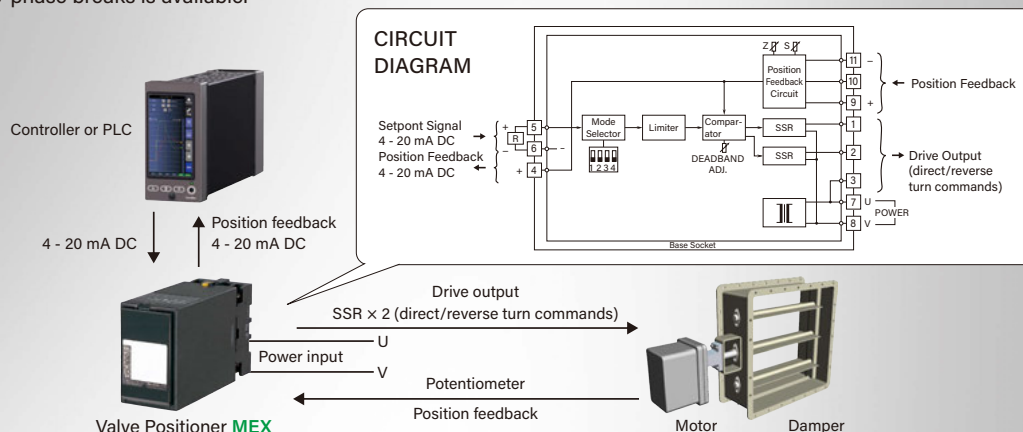
Various mounting options

Panel mount type with manual control function, device built-in type, and other types



High accuracy positioning

A model for high accuracy positioning by employing reverse-phase breaks is available.



The MEX compares a setpoint signal from the controller or PLC and a position feedback signal from the position sensor, and controls SSR or 24 V AC dry contact switches to match both signals.

Manual Loading Station

Visit our website
for details.



Holding the signal before control output failure

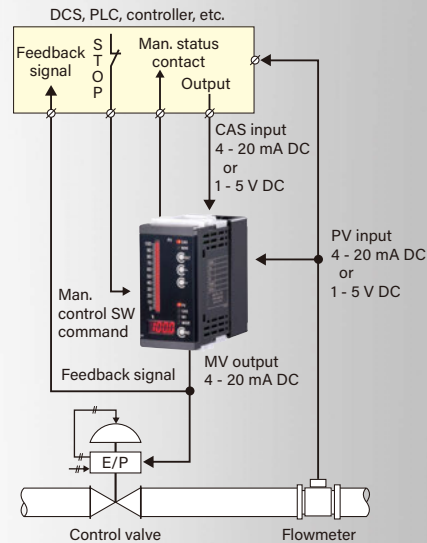
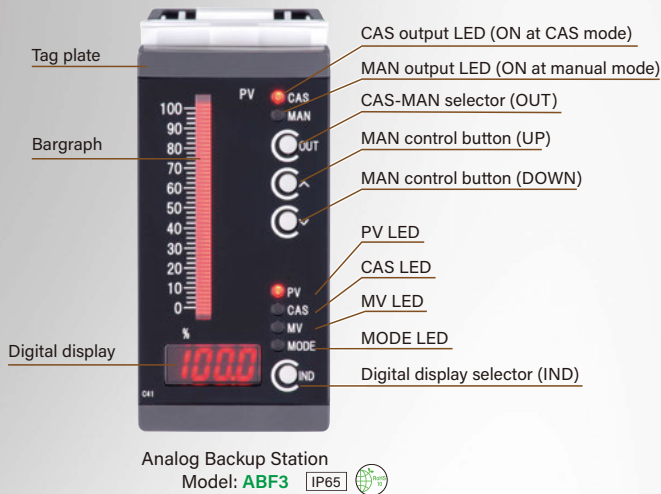
Backup, hold and manipulation of MV output signal

Used as a backup of DCS, PLC or a PID controller.

MV output signal is held when an "abnormality" signal (contact) or manual switching command contact is received.

Final control element can be manually controlled by increasing/decreasing MV output signals using external UP/DOWN switches.

AC
DC
POWERED



IP55



Manual Loader

SM10

Manual loading station with backup

The analog (MV) output (4 - 20 mA or other current/voltage range) of the SM10 can be used to track a cascade (CAS) input (e.g. MV output from an external controller), or to provide a specific value for manual control.

Users can choose their own scaleplate specifications using Scale Plate Designer on our website and confirm the final design at site.

PRODUCT	MODEL
MANUAL LOADER (with 4-digit digital meter, LED bar indicator)	SM10

MSP Series

MSP10
PSP10
PSP20

PSN Series

MRP Series

MRP10
PRP10
PRP11

PRP Series

Position
Sensor

Valve
Positioner
MEX Series

Manual
Loading
Station



Website



Request Info

Your local representative: