The electric actuator is made by M-System.

No time- and money-consuming air source equipment is required!

Electric control valve is ready to operate immediately after connecting signal and power supply!

Directly connected to various open networks to save wiring efforts to a great extent!

Open Network Supported

Guidance: Page 8

CC-Link
DeviceNet
LONWORKS
Modbus

M-System’s electric actuator

• Opening position feedback
• Opening position input error
• Motor lock alarm
• Maintenance information
  (Motor activation count and integrated operation distance)
• Others

PLC
• Opening position setting
• Forced opening and closing
• Alarm reset
• Maintenance information and reset
• Others

PLC

M-System’s electric actuator

• Energy saving
• Space saving
• Shorter installation work time

Furthermore,

many more advantages!

High function and high performance

• High thrust (5000 N)
• High resolution (1/1000)
• A battery-driven model is available as well.

WYECO AUTO VALVES CO., LTD.
M-SYSTEM CO., LTD.
Electric control valves are ready to start as

**PNEUMATIC**

A compressor entails equipment costs as well as troublesome maintenance work! What is more, it results in high electricity bills!

The pneumatic control valve requires complicated equipment and consumes plenty of power.

Replace the existing pneumatic valve with an electric valve.

**The electric control valve connects to various open networks directly.**

A number of electric control valves with open network capability connect in a daisy-chain layout, which saves wiring effort. Various operating information on electric control valves can be collected through a single network.

**The electric control valve connects to various open networks directly.**

**PLC**

- Opening position feedback
- Opening position input error
- Motor lock alarm
- Maintenance information (Motor activation count and integrated operation distance)
- Others

**PLC → Electric control valve**

- Opening position setting
- Forced opening and closing
- Alarm reset
- Maintenance information and reset
- Others

**Electric control valve → PLC**

For open networks, refer to Guidance 2 on page 8. (*2) Contact us for details.
soon as connecting the signal and power cables.

The electric control valve does not require incidental equipment, and consumes less power.

Then you can eliminate incidental equipment.

The stepping motor is adopted for the drive block.

Digital control unit
- Features
  - Instant zero/span position setup
  - Flexible opening/closing speed settings
  - Opening position output
  - Lock alarm output

Stepping motor
- High thrust 5000 N
- High resolution 1/1000

M-System’s electric actuator
- The stepping motor has high thrust and a resolution of 1/1000.
- Battery for fail-safe operation is optional.
- Customers can choose models provided with a battery as well as functions of emergency actions (i.e., Full Closed, Full Open, Hold Position or Target Value) in times of loss of power.

No incidental equipment

Control signal 4-20 mA DC or Open network

Power source

The data surveyed by M-System.

(*3) Maximum power consumption: 240 VA
Stanby power: 20 VA

(*4) The data is provided on the condition that M-System’s PSN1 Electric Actuator is used.

The stepping motor consists of a stator with windings and a rotor using a powerful neodymium magnet. Energizing the stator windings to generate a magnetic force is called excitation. By sequentially exciting the multiple stator windings, the motor rotates stepwise, utilizing the action of attraction and repulsion between the magnetic poles of the stator and rotor. The constant mechanical accuracy (motor structure and rotation angle of a stepping motor) is always determined by the command pulse signal. The stepping motor has high thrust and a resolution of 1/1000.

Customers can choose models provided with a battery as well as functions of emergency actions (i.e., Full Closed, Full Open, Hold Position or Target Value) in times of loss of power.

M-System’s electric actuator

Guidance 3

Open Network

1. Those specified by organizations and associations in consultation and recognized as official standards.
2. Those developed by specific manufacturers and organizations and established as de facto standards as a result of promotion activities.

An open network is an industrial network, the specifications of which are made public and can be commonly used by many users and manufacturers.

Both types have well-organized and integrated specifications and are available to everyone for many purposes. Either one can be used in various fields including process automation and other control valve applications.

Open networks are roughly divided into the following two types.

1. Those specified by organizations and associations in consultation and recognized as official standards.
2. Those developed by specific manufacturers and organizations and established as de facto standards as a result of promotion activities.

Both types have well-organized and integrated specifications and are available to everyone for many purposes. Either one can be used in various fields including process automation and other control valve applications.

An open network is an industrial network, the specifications of which are made public and can be commonly used by many users and manufacturers.

Both types have well-organized and integrated specifications and are available to everyone for many purposes. Either one can be used in various fields including process automation and other control valve applications.

An open network is an industrial network, the specifications of which are made public and can be commonly used by many users and manufacturers.

Both types have well-organized and integrated specifications and are available to everyone for many purposes. Either one can be used in various fields including process automation and other control valve applications.

An open network is an industrial network, the specifications of which are made public and can be commonly used by many users and manufacturers.

Both types have well-organized and integrated specifications and are available to everyone for many purposes. Either one can be used in various fields including process automation and other control valve applications.
The electric control valve is a compact structure and it ensures high performance.

The electric control valve has a very simple structure compared to the pneumatic control valve.

The electric actuator section is small, which makes it possible to narrow the distance between pipes.

After installation, the electric control valve will be operational by just providing power supply and connecting signal input (or connecting a network).
Bellows Type
H1
For toxic/fluid, precious/fluid, non-leakable/fluid and high temperature.

Extremely micro flow capacity
Globe style control valve
Providing excellent system regulation.
For laboratory or trial production applications requiring high accuracy control of extremely micro flow.

Flow Rate Curve

Specifications

Flow Coefficient Cv

Body type
Globe style

Rating
Flange end    ANSI 150–600
Thread end   ANSI 2500

End connection
Flange RF, RTJ, NPT end
Internal thread 1/4NPT, 1/2NPT, 3/4NPT
Butt Weld, Socket Weld

Material
Body/Bonnet
Standard  316ss

Trim
Standard  316ss

Gland Packing
Standard   PTFE V-ring
Optional  Graphite

Gasket
Standard  Gylon
Optional 316ss graphite

Electric Actuator
MSP Series
(Made by M-SYSTEM)

Bonnet type
Standard  Plane bonnet

Leakage
Standard  Class  IV
Optional  Class  V

Trim type
Micro Contour plug
Plug
Equal percentage
Linear

Micro Flow Control Valve
The accurate and stable control with WYECO’s Electric Control Valves ensures the reliable and profitable operation of your plant.

Application Examples of WYECO’s Electric Control Valve

Waste Incineration Plants
Use Incinerator
Merit High-performance/High precision control

Dyeing and Finishing Plant
Use Dyeing machine temperature control
Merit High-performance/High precision control

Pharmaceutical Industry
Use Sterilizer/Other apparatus
Merit High-performance/ Improvement of control performance

Food Industry
Use Sterilizer/Other apparatus
Merit High-performance/High precision control

Gas Industry
Use Air separation unit
Merit High-performance/High precision control

Steel Industry
Use Oxygen injection control
Merit High-performance/High precision control

Petrochemical Plant
Use Hydrodesulfurization
Merit High-performance/High precision control

Semiconductor Factories
Use Flow-rate control of photoresist solution/ Other apparatus
Merit High-performance/High precision control

Water Purification Plants
Use Treated water line/Ozone injection/ Other apparatus
Merit High-performance/High precision control

Power Plant
Use Boiler unit/Feed water system/Other apparatus
Merit High-performance/High precision control

Engineering Industry
Use Organic solvent production line
Merit High-performance/High precision control

Pulp and Paper Mills
Use Boiler unit/Dryer/Drainage process/ Cardboard making machine/Other apparatus
Merit High-performance/Improvement of control performance
The electric control valve is a compact structure and it ensures high performance.

Extension Type

For cryogenic fluid, e.g. Liquid Nitrogen (LN2).

ISO STANDARD TYPE BONNET (IEC standard type also available) Unit : mm

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>L ANSI H1 JIS H1 H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL150</td>
<td>CL300 CL150 CL300 10K 20K CL150 CL300</td>
</tr>
<tr>
<td>15A</td>
<td>130 130 45 48 48 48 595 595</td>
</tr>
<tr>
<td>20A</td>
<td>150 150 49 59 50 50 595 595</td>
</tr>
<tr>
<td>25A</td>
<td>160 160 54 62 63 63 595 595</td>
</tr>
<tr>
<td>40A</td>
<td>200 200 64 78 70 70 603 603</td>
</tr>
<tr>
<td>50A</td>
<td>230 230 76 83 78 78 646 646</td>
</tr>
<tr>
<td>65A</td>
<td>290 290 89 95 88 88 692 692</td>
</tr>
<tr>
<td>80A</td>
<td>310 310 95 105 93 100 777 777</td>
</tr>
<tr>
<td>100A</td>
<td>350 350 115 127 105 113 907 907</td>
</tr>
</tbody>
</table>

ISO EXTENSION TYPE BONNET (IEC extension type also available) Unit : mm

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>L ANSI H1 JIS H1 H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL150</td>
<td>CL300 CL150 CL300 10K 20K CL150 CL300</td>
</tr>
<tr>
<td>15A</td>
<td>130 130 45 48 48 48 756 756</td>
</tr>
<tr>
<td>20A</td>
<td>150 150 49 59 50 50 766 766</td>
</tr>
<tr>
<td>25A</td>
<td>160 160 54 62 63 63 776 776</td>
</tr>
<tr>
<td>40A</td>
<td>200 200 64 78 70 70 782 782</td>
</tr>
<tr>
<td>50A</td>
<td>230 230 76 83 78 78 795 795</td>
</tr>
<tr>
<td>65A</td>
<td>290 290 89 95 88 88 907 907</td>
</tr>
<tr>
<td>80A</td>
<td>310 310 95 105 93 100 1037 1037</td>
</tr>
<tr>
<td>100A</td>
<td>350 350 115 127 105 113 1076 1076</td>
</tr>
</tbody>
</table>

**Design Features**

- Plug design : Contour Plug, V-plug
- Balanced / Unbalanced Plug
- Quick-Change
- Reduced Capacity
- Leakage Class : Leakage IV, V (Metal Seat) and VI (Soft Seat)
- Low Emission Packing
- Bonnet Type : Standard / Extension / Bellows Seal

(*5) Please contact us for other types of plug.
Bellows Type
For toxic fluid, precious fluid, non-leakable fluid and high temperature.

Micro Flow Control Valve
Extremely micro flow capacity
Globe style control valve
Providing excellent system regulation.
For laboratory or trial production applications requiring high accuracy control of extremely micro flow.

Specifications

<table>
<thead>
<tr>
<th>Body type</th>
<th>Globe style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>ANSI 150-600</td>
</tr>
<tr>
<td>Thread end</td>
<td>ANSI2500</td>
</tr>
<tr>
<td>End connection</td>
<td>Flange RF, RTJ, NPT end</td>
</tr>
<tr>
<td></td>
<td>Internal thread 1/4NPT, 1/2NPT, 3/4NPT</td>
</tr>
<tr>
<td></td>
<td>Butt Weld, Socket Weld</td>
</tr>
<tr>
<td>Material</td>
<td>Body/Bonnet</td>
</tr>
<tr>
<td></td>
<td>Standard 316ss</td>
</tr>
<tr>
<td></td>
<td>Trim</td>
</tr>
<tr>
<td></td>
<td>Standard 316ss</td>
</tr>
<tr>
<td>Gland Packing</td>
<td>Standard PTFE V-ring</td>
</tr>
<tr>
<td></td>
<td>Optional Graphite</td>
</tr>
<tr>
<td>Gasket</td>
<td>Standard Gylon</td>
</tr>
<tr>
<td></td>
<td>Optional 316ss graphite</td>
</tr>
</tbody>
</table>

Flow Coefficient Cv

<table>
<thead>
<tr>
<th>Rated Cv NA</th>
<th>Orifice Dia. (mm)</th>
<th>Rangeability</th>
<th>Stroke (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3</td>
<td>4</td>
<td>25 : 1</td>
<td>16</td>
</tr>
<tr>
<td>0.2</td>
<td>4</td>
<td>25 : 1</td>
<td>16</td>
</tr>
<tr>
<td>0.1</td>
<td>4</td>
<td>25 : 1</td>
<td>40 : 1</td>
</tr>
</tbody>
</table>
Guidance 1 Stepping Motor

A stepping motor rotates by a constant angle per pulse.

A stepping motor, also called a pulse motor, is a motor that rotates in synchronization with a command pulse signal. The principle of rotation of a simplified 2-phase, 8-pole stepping motor model is shown in the figure below. A stepping motor consists of a stator with windings and a rotor using a powerful neodymium magnet. Energizing the stator windings to generate a magnetic force is called excitation. By sequentially exciting the multiple stator windings based on the command pulse, the motor rotates stepwise, utilizing the action of attraction and repulsion between the magnetic poles of the stator and rotor. The rotation angle of a stepping motor is always determined by the constant mechanical accuracy (motor structure and machining accuracy) for each command pulse signal. Therefore, a stepping motor performs highly accurate positioning control.

Guidance 2 Open Network

An open network is an industrial network, the specifications of which are made public and can be commonly used by many users and manufacturers. Open networks are roughly divided into the following two types.
1. Those specified by organizations and associations in consultation and recognized as official standards.
2. Those developed by specific manufacturers and organizations and established as de facto standards as a result of promotion activities.

Both types have well-organized and integrated specifications and are available to everyone for many purposes. Either one can connect different manufacturers' devices (multivendor devices) and brings many benefits to users. Currently, many types of open networks are expanding their tempo of popularization according to the applicable field and country in the market.

Guidance 3 Model Number for WYECO 8000 Series

Example: 80-25J14

<table>
<thead>
<tr>
<th>TRIM TYPE</th>
<th>BODY SIZE</th>
<th>END CONNECTION</th>
<th>BODY MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 CONTOUR</td>
<td>15 1/2&quot;</td>
<td>J1 JIS 10K</td>
<td>3 CF8</td>
</tr>
<tr>
<td>81 V-PLUG</td>
<td>20 3/4&quot;</td>
<td>J2 JIS 20K</td>
<td>4 CF8M</td>
</tr>
<tr>
<td>82 V-CAGE</td>
<td>25 1&quot;</td>
<td>A1 ANSI 150LB</td>
<td>S WCB</td>
</tr>
<tr>
<td>83 MULTI-HOLE PLUG</td>
<td>40 1-1/2&quot;</td>
<td>A2 ANSI 300LB</td>
<td>F FC250</td>
</tr>
<tr>
<td>84 MULTI-HOLE CAGE</td>
<td>50 2&quot;</td>
<td>A3 ANSI 600LB</td>
<td>6 CF3M</td>
</tr>
<tr>
<td>85 TWO STAGE</td>
<td>65 2-1/2&quot;</td>
<td>P1 PN16</td>
<td>H HastelloyC</td>
</tr>
<tr>
<td>86 3&quot;</td>
<td>80 3&quot;</td>
<td>P4 PN40</td>
<td>M Monel</td>
</tr>
<tr>
<td>87 4&quot;</td>
<td>04 4&quot;</td>
<td>0 Other</td>
<td>0 Other</td>
</tr>
<tr>
<td>88 5&quot;</td>
<td>05 5&quot;</td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td>89 6&quot;</td>
<td>06 6&quot;</td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td>90 8&quot;</td>
<td>08 8&quot;</td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td>91 10&quot;</td>
<td>10 10&quot;</td>
<td>Other</td>
<td>Other</td>
</tr>
</tbody>
</table>

(“”) Driven with Diaphragm motors.