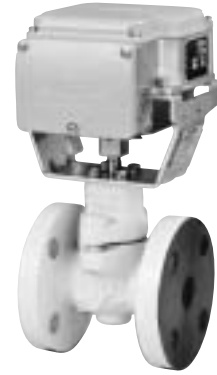


VY5100

Actival Motorized Two-Way Valve

The Actival VY5100 is a series of motorized two-way valves with flange connections. The valve and actuator are integrated in a single unit. The valve body can be used for the control of chilled/hot water and steam.

The 4 to 20mAdc and 2 to 10Vdc input methods provide proportional control with a direct digital controller.



Specifications

| Rating and material | | JIS10K-FC200 | JIS10K-SCS13A | JIS20K-FCD450 | | | | | | | | | |
|---|---------------|--|-------------------------------------|--|---------------|-----|------|-----|-----|------|------|-----|------|
| Valve body pressure rating | | JIS 10K (Max. pressure: 1.0 Mpa) | | JIS 20K (Max. pressure: 1.96 Mpa) | | | | | | | | | |
| Close-off ratings | | 1.0MPa (0.7MPa for valve size 80A) | | 980kPa (686kPa for 80A) | | | | | | | | | |
| Piping connections | | JIS 10K flanged connection | | JIS 20K flanged connection | | | | | | | | | |
| | | Flat face (FF): FC200 body | Large raised face (RF): SCS13A body | Large raised face (RF) | | | | | | | | | |
| Valve materials | Body | Gray cast iron | Stainless steel | Ductile cast iron | | | | | | | | | |
| | Plug and stem | Stainless steel (equivalent to JIS SCS) | | | | | | | | | | | |
| | Seat ring | Heat-resistant PTFE | | | | | | | | | | | |
| | Gland packing | Inorganic fiber | | | | | | | | | | | |
| | Gasket | Non-asbestos joint sheet | | | | | | | | | | | |
| Allowable fluid temperature | | 0 to 175°C | | | | | | | | | | | |
| Applicable fluids | | Chilled/hot water, hot water (in high temperature), or steam | | Chilled/hot water, hot water (in high temperature) | | | | | | | | | |
| Power | | 24Vac ±15% 50/60Hz | | | | | | | | | | | |
| Power consumption | | F motor type: 7VA. Other types: 8VA | | | | | | | | | | | |
| Timing | | 63s (50Hz) / 53s (60Hz) ±5s | | | | | | | | | | | |
| Ambient temperature | | -20 to +50°C (for fluid temperature 0 to 150°C) -20 to +40°C (for fluid temperature 150 to 175°C) | | | | | | | | | | | |
| Ambient humidity | | 5 to 95% RH | | | | | | | | | | | |
| Actuator materials | Case | Aluminum alloy casting | | | | | | | | | | | |
| | Cover | Plastic (polycarbonate resin) | | | | | | | | | | | |
| | Yoke | Steel plate | | | | | | | | | | | |
| Control signal | | Nominal 13Ω feedback potentiometer, nominal 135Ω resistance input, 4–20mAdc input (input impedance: 100Ω), and 2–10Vdc input (input impedance: 150kΩ or more). | | | | | | | | | | | |
| Analog output (only with 4–20mAdc and 2–10Vdc inputs) | | Range: 2Vdc (0%) to 10Vdc (100%) Max. load: 10kΩ or more (max. 1mA) | | | | | | | | | | | |
| Protective structure | | Splash-proof (equivalent to IP54) | | | | | | | | | | | |
| Mass | Model | JIS10K-FC200, JIS10K-SCS13A | | | JIS20K-FCD450 | | | | | | | | |
| | Valve size | 15A | 25A | 40A | 50A | 65A | 80A | 15A | 25A | 40A | 50A | 65A | 80A |
| | Mass (kg) | 4.6 | 6.6 | 10.0 | 11.5 | 16 | 18.5 | 5.4 | 7.8 | 10.6 | 12.8 | 19 | 23.5 |

Selection Guide

| Segment | Model No. selection | | | | Description | | |
|---------|--------------------------------|------|---|------------|-------------|--|-----|
| I | Basic No. | VY51 | ↓ | ↓ | ↓ | Motorized two-way valve with flanged connection | |
| | Actuator/valve control signal | 1 | ○ | ○ | ○ | Nominal 135Ω feedback potentiometer (F motor type) | |
| | | 2 | ○ | ○ | ○ | Nominal 135Ω resistance input | |
| | | 3 | ○ | ○ | ○ | 4–20mAdc input with 2–10Vdc feedback signal | |
| III | Actuator/valve rating/material | 4 | ○ | ○ | ○ | 2–10Vdc input with 2–10Vdc feedback signal | |
| | | 0 | ○ | – | – | JIS10K-FC200 (for water) | |
| | | 1 | – | ○ | – | JIS10K-SCS13A (for water) | |
| | | 2 | – | – | ○ | JIS20K-FCD450 (for water) | |
| | | 5 | ○ | – | – | JIS10K-FC200 (for steam) | |
| | | 6 | – | ○ | – | JIS10K-SCS13A (for steam) | |
| IV | Actuator type | J | ○ | ○ | ○ | Splash-proof (IP54), standard torque type, and actuator with terminal block.(valve sizes 15A to 80A) | |
| V | Option | 00 | ○ | ○ | ○ | None | |
| VI | Valve size and Cv value | | | Valve size | CV value | | |
| | | 11 | ○ | ○ | ○ | 15A (1/2 B) | 1.0 |
| | | 12 | ○ | ○ | ○ | | 2.5 |
| | | 13 | ○ | ○ | ○ | | 6.0 |
| | | 14 | ○ | ○ | – | 15A (1/2 B) | 1.6 |
| | | 15 | ○ | ○ | – | | 4.0 |
| | | 21 | ○ | ○ | ○ | 25A (1B) | 10 |
| | | 22 | ○ | ○ | ○ | | 16 |
| | | 41 | ○ | ○ | ○ | 40A (1 1/2B) | 25 |
| | | 42 | ○ | ○ | ○ | | 40 |
| | | 51 | ○ | ○ | ○ | 50A (2B) | 65 |
| | | 61 | ○ | ○ | ○ | 65A (2 1/2B) | 95 |
| 81 | ○ | ○ | ○ | 80A (3B) | 125 | | |

• A circle (○) denotes availability.

Accessories (sold separately)

| Model No. | Description |
|--------------|--------------------------|
| AT72-J1 | Power supply transformer |
| 83104346-003 | Seal connector |
| 83161792-001 | Auxiliary switch* |
| 83161793-001 | Auxiliary potentiometer* |

*Either an auxiliary switch or an auxiliary potentiometer can be added, but not both.

Dimensions (Unit: mm)

Example: JIS 10K-FC200

Note: To open the top cover, leave a space at least 300mm wide.

| Nominal size (mm) | L | L ₁ | H | H ₁ | D | C | t | h | N |
|-------------------|-----|----------------|-----|----------------|-----|-----|----|----|---|
| 15 | 108 | 50 | 213 | 75 | 95 | 70 | 16 | 15 | 4 |
| 25 | 127 | 60 | 228 | 90 | 125 | 90 | 18 | 19 | 4 |
| 40 | 165 | 82.5 | 241 | 103 | 140 | 105 | 20 | 19 | 4 |
| 50 | 178 | 89 | 245 | 107 | 155 | 120 | 20 | 19 | 4 |
| 65 | 190 | 90 | 262 | 124 | 175 | 140 | 22 | 19 | 4 |
| 80 | 203 | 100 | 263 | 125 | 185 | 150 | 22 | 19 | 8 |

ACTUATORS