

# Intelligent Component Series ACTIVAL™ Electro-Mechanical Actuator for Model VY530X Control Ball Valve

## ■ General

Model MY5390A actuator is designed specifically for Models VY5302 two-way and VY5303 three-way proportional control ball valves, which control the chilled/hot water in heating, ventilation and air conditioning (HVAC) applications.

One-touch lever-locking mechanism allows easy assembly with the valve.

ACTIVAL Model MY5390A has a reversible synchronous motor, which operates at a low voltage of 24 V AC.

Model MY5390A communicates with a controller via SAnet (Azbil Corporation's communication protocol).



## ■ Features

- Compact and lightweight:  
Small-size body can be installed in a limited space.
- Easy and simple mounting onto Model VY5302/VY5303 valve:  
Model MY5390A actuator can be mounted onto Model VY5302/VY5303 valve without any tools and no adjustment is required (one-touch lever-locking mechanism).
- IEC IP54:  
Dust-proof and splash-proof enclosure enables to be installed in an AHU (air handling unit).  
\* To keep IP54 protection, the seal connector is required.
- Easy manual override and highly-visible position indicator:  
The actuator is manually operable using the manual lever which also is the position indicator by pointing the scale on the actuator.
- 90° stroke in 60 seconds (50 Hz) / 50 seconds (60 Hz) operating time.
- SAnet communication:  
Intelligent Component Series ACTIVAL communicates with a controller via SAnet, and thus position control signal/position feedback signal is input/output from/to the controller.
- Sub-DI and sub-DO for wire saving:  
Sub-DIO (digital input and output) provided takes signals, including humidifying output and differential pressure switch of neighboring devices, leading to wire saving.



**Safety Instructions**

Please read instructions carefully and use the product as specified in this manual. Be sure to keep this manual near by for ready reference.




**Usage Restrictions**













This product is targeted for general air conditioning. Do not use this product in a situation where human life may be affected. If this product is used in a clean room or a place where reliability or control accuracy is particularly required, please contact Azbil Corporation's sales representative. Azbil Corporation will not bear any responsibility for the results produced by the operators.

**Warnings and Cautions**

 <b>WARNING</b>	Alerts users that improper handling may cause death or serious injury.
 <b>CAUTION</b>	Alerts users that improper handling may cause minor injury or material loss.

**Signs**

	Alerts users to possible hazardous conditions caused by erroneous operation or erroneous use. The symbol inside $\triangle$ indicates the specific type of danger. (For example, the sign on the left warns of the risk of electric shock.)
	Notifies users that specific actions are prohibited to prevent possible danger. The symbol inside $\ominus$ graphically indicates the prohibited action. (For example, the sign on the left means that disassembly is prohibited.)
	Instructs users to carry out a specific obligatory action to prevent possible danger. The symbol inside $\bullet$ graphically indicates the actual action to be carried out. (For example, the sign on the left indicates general instructions.)

 <b>CAUTION</b>	
	Provide a circuit protector (e.g., a fuse or circuit breaker) for the power source. Failure to do so may cause a short circuit leading to fire or device failure.
	Install, wire, and use this product under the conditions specified by this manual. Failure to do so may cause fire or device failure.
	Do not put a load or weight on this product. Doing so may damage the product.
	Installation and wiring of the actuator must be performed by personnel qualified to do instrumentation and electrical work. Mistakes in installation or wiring may cause fire or electric shock.
	Before wiring, setting, maintenance, or replacement, be sure to turn off the power to this product. Failure to do so may result in electric shock or device failure.
	After the actuator is installed, make sure that the lock lever is closed (locked). If the lever is not locked, the actuator may fall out, resulting in injury.
	All wiring must comply with applicable codes and ordinances. Otherwise there is a danger of fire.
	For wiring, strip the insulation from cables as specified in this manual. If the length of exposed wire is longer than specified, it may cause electric shock or short circuit between adjacent terminals. If it is too short, it may not make proper contact.
	After wiring, setting, engineering, maintenance, or replacement work, be sure to reattach the cover. Failure to do so may result in electric shock.
	Before setup or engineering work, be sure to turn off power that is supplied from external devices to the output terminals. Failure to do so may cause electric shock..
	Do not touch the moving parts of this product. Doing so may result in injury.

Trademark information:  
ACTIVAL, Inflex, and savic are trademarks of Azbil Corporation in Japan or in other countries.

■ System Configurations

● Connection example of savic-net™ G5 system

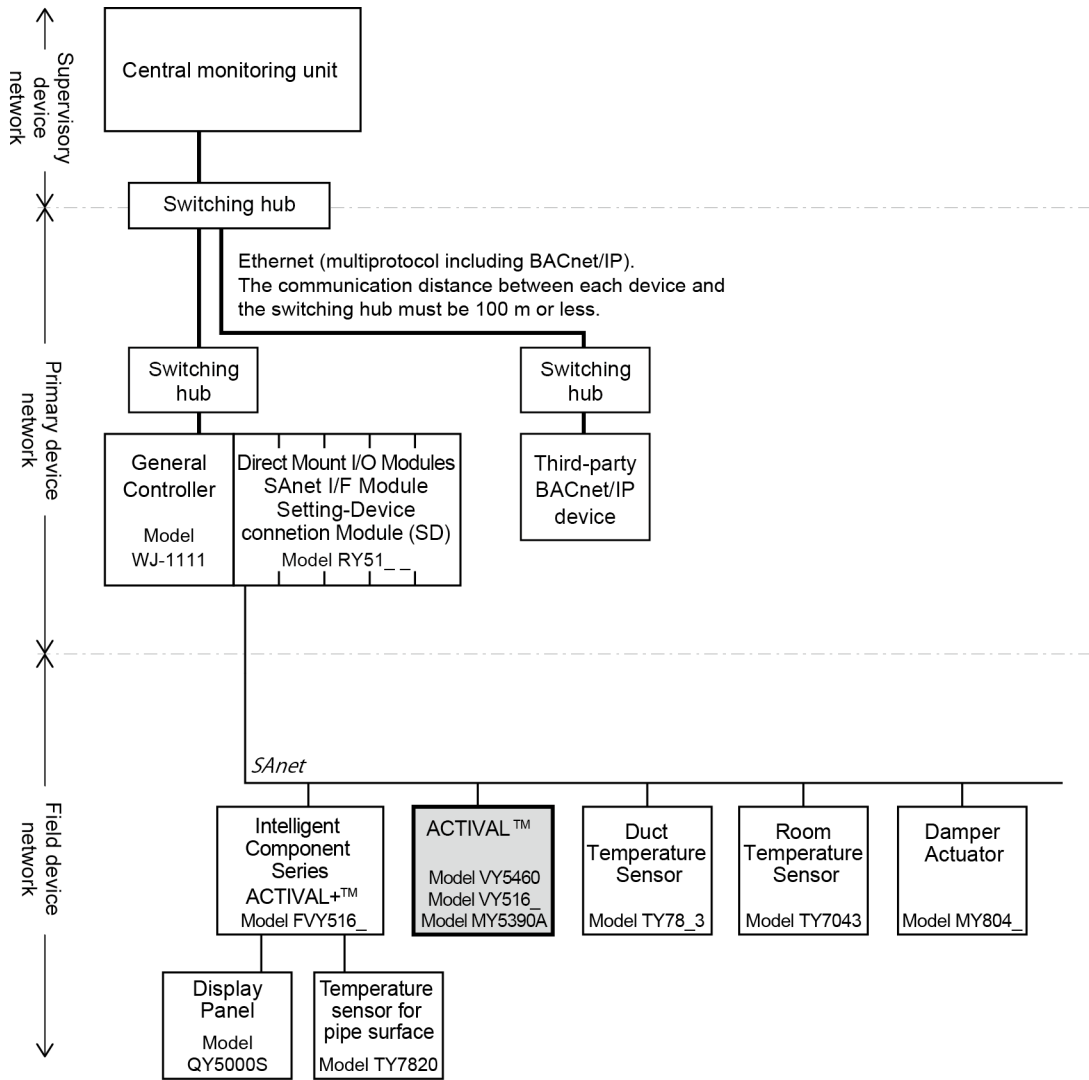


Figure 1. System configuration example: SAnet connection in savic-net™ G5 system

● Connection example of savic-net™ FX system

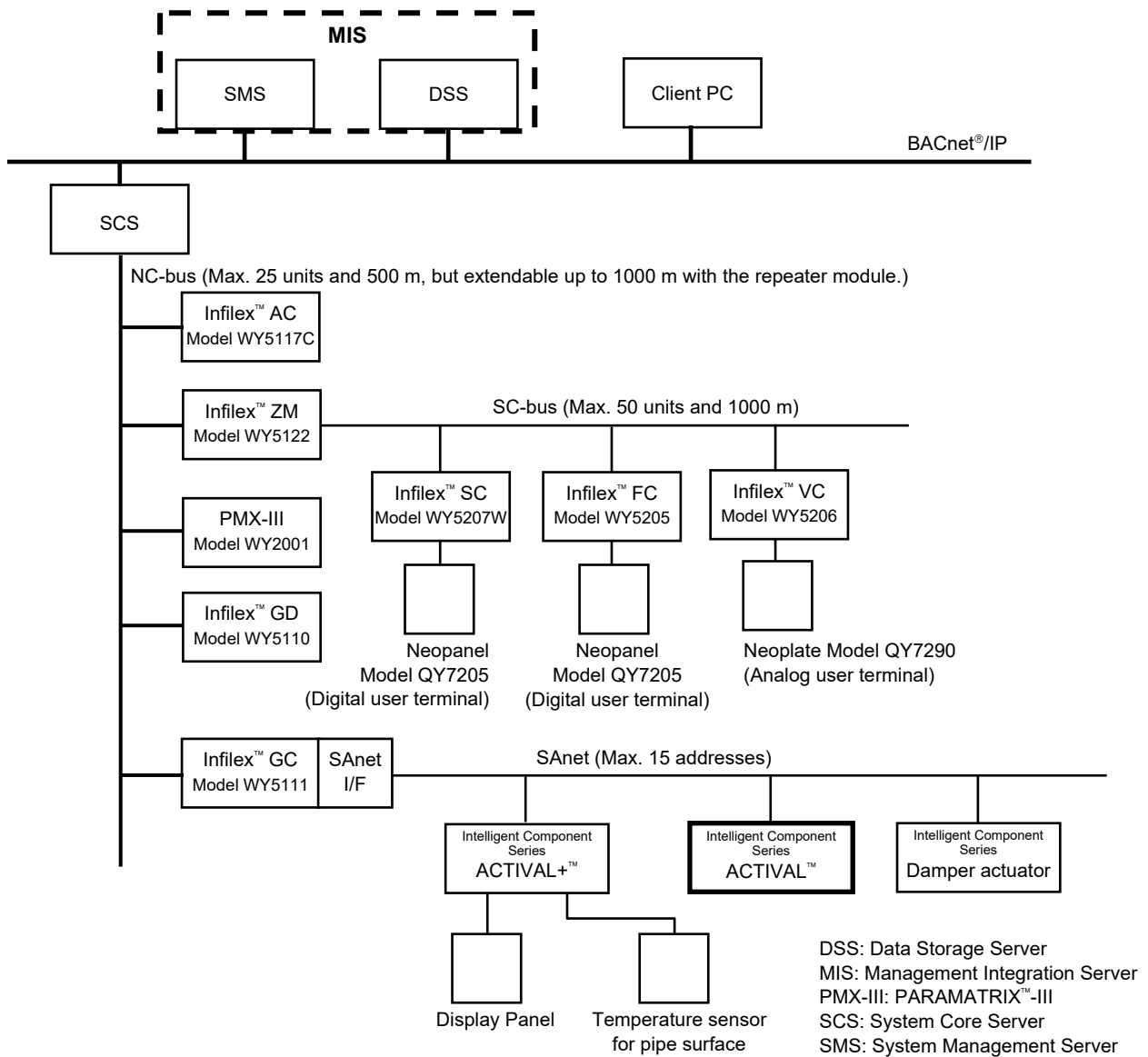


Figure 2. System configuration example: SAnet connection in savic-net™ FX system

Notes:

- \* For detailed specifications of Ethernet, refer to Specifications of General Controller (Model WJ-1111W0000).
- \* MIS may be used instead of SMS and DSS for your system. Note that MIS cannot be mixed with SMS or DSS in the same system.
- \* Up to two SAnet I/F (interface) module can be connected to one Infilex GC/Infilex GD.
- \* For detailed specifications of SAnet, refer to Installation Manual of Intelligent Component Series for SAnet Communication (AB-6713).
- \* 1 ACTIVAL or 1 damper actuator requires 1 SAnet address. 1 ACTIVAL + requires 2 SAnet addresses.

■ Model Numbers

Base model number	Control signal	—	Type	Optional feature	Cable length	—	Description
MY53	9	0	A	0	000	000	Low torque actuator
							SAnet
	0	A	0	000	001	002	Fixed.
							IEC IP54 protected (dust-proof and splash-proof) Non-spring return type actuator
	0	A	0	000	001	002	Sub-DI 1 pt and sub-DO 1 pt
							No cable attached
	0	A	0	000	001	002	0.6 m cable attached
							3 m cable attached
0	A	0	000	001	002	-B	
						Fixed.	

■ Specifications

(1/2)

Item	Specification			
Power supply	24 V AC ± 15 %, 50 Hz/60 Hz			
Applicable valves	Two-way control ball valve : Model VY5302 Three-way control ball valve : Model VY5303			
Power consumption	Max. 7 VA (in operation)			
Timing	60 ± 6 sec. (50 Hz) / 50 ± 6 sec. (60 Hz)			
Control signal	SAnet			
Sub-DI (contact input)	Input type	Potential free (dry) contact input		
	Voltage, current	20 V DC, 5 mA		
Sub-DO (contact output)	Output type	Potential free (dry) contact output		
	Contact rating	30 V AC/30 V DC, Max. 0.5 A (2 A at startup)		
	Min. applicable load	24 V DC, 5 mA		
Factory preset position	Fully open			
Operating conditions	Rated operating conditions	Limit operating conditions	Transport/storage conditions (packaged*2)	
	Ambient temperature*1	-20 °C to 50 °C (Fluid temperature: 0 °C to 100 °C)	-20 °C to 60 °C	-20 °C to 70 °C
	Ambient humidity	5 %RH to 95 %RH		
	Vibration	4.9 m/s <sup>2</sup> (10 Hz to 150 Hz)	9.8 m/s <sup>2</sup> (10 Hz to 150 Hz)	19.6 m/s <sup>2</sup> (10 Hz to 150 Hz)
	*1 Do not allow the fluid to freeze. *2 Actuator shall be packed during transport and storage.			
LED indication	Description			
	Initializing	Continuous ON → LED indication corresponding to the operating status (after initializing is complete.)		
	Normal	Repetition of 1-second ON → 1-second OFF.		
	Major alarm	Continuous ON.		
	Minor alarm	Repetition of 1-second ON → 0.25-second OFF → 0.25-second ON → 0.25-second OFF.		
	Communication error (and minor alarm)	Repetition of 0.25-second ON → 0.25-second OFF		
	Manual operation	Repetition of 0.25-second ON → 0.25-second OFF → 0.25-second ON → 1.25-second OFF.		
	Error during manual operation	Repetition of 0.25-second ON → 0.25-second OFF → 0.25-second ON → 0.25-second OFF → 0.25-second ON → 0.75-second OFF.		
Communication (via SAnet)	Transmission system	Voltage transmission (SAnet)		
	Transmission speed	1200 bps		
	Transmission distance	Transmission distance varies depending on the number of devices and the type of devices to be connected to. For details on the transmission distance, refer to Installation Manual of Intelligent Component Series for SAnet Communication (AB-6713).		

Item	Specification	
Materials	Case	Polycarbonate resin, gray
	Cover	Polycarbonate resin, gray
	Yoke	Polyphenylene sulfide resin, black
Installation location	Indoor / outdoor (Avoid using in acid fumes, corrosive gas and organic solvent atmosphere)	
Mounting position	Refer to ■ "Installation," ● "Mounting position."	
Position indication	Indicator/manual lever shows the valve position by pointing at the value of the scale on the actuator bilateral sides. 0 (%): fully closed for Model VY5302 / Port B (B-AB) fully open for Model VY5303 100 (%): fully open for Model VY5302 / Port A (A-AB) fully open for Model VY5303	
Manual override	Disconnect from the power supply. Turn the indicator/manual lever while pressing the lever release button.	
Accessory cable (only for Model MY5390A0001/MY5390A0002)	JIS* cabtyre cables (VCTF with 0.75 mm <sup>2</sup> cross section) connected. Cable length: 0.6 m or 3 m (depending on the model number)	
Enclosure rating	Equivalent to IEC IP54: Dust-proof and splash-proof * Refer to the section <b>To keep IP54 protection (dust-proof and splash-proof)</b> .	
Insulation	Between terminal and case : 5 MΩ or higher at 500 V DC	
Dielectric strength	Between terminal and case: 500 V/min with 1 mA or less leakage current	
Position for shipment	100 % (fully open)	
Weight	0.5 kg	

\* JIS: Japanese Industrial Standards

### ● Function

Function	Specification
Data monitoring	Following items can be monitored/operated from the host system (savic-net FX) General Controller (model WJ-1111), and Inflex GC/ Inflex GD. Valve position setting, valve position measuring, sub-DO output, sub-DI monitoring

\* Note:

Above function is available in combination with General Controller (model WJ-1111), Inflex GC/Inflex GD and savic-net FX.

### ● Wire specifications

For details regarding specifications of SAnet communication line (24 V (~), GND (⊥), SAnet), refer to the Installation Manual of Intelligent Component Series for SAnet Communication (AB-6713).

Item	Specification	Length
Contact input (sub-DI)	JIS CVV, JIS VCT, JIS IV, KPEV for low power 0.75 mm <sup>2</sup> , 0.9 mm <sup>2</sup> , 1.25 mm <sup>2</sup> , 2.0 mm <sup>2</sup>	30 m
Contact output (sub-DO)	JIS CVV, JIS VCT, JIS IV, KPEV for low power 0.75 mm <sup>2</sup> , 0.9 mm <sup>2</sup> , 1.25 mm <sup>2</sup> , 2.0 mm <sup>2</sup>	30 m

Note

\* KPEV: Wire standard provided by Furukawa Electric Co., Ltd.

### ● Options

For options, separate order is required.

Item	Specification	Note
Seal connector	Part No. 83104346-003	Seal connector is necessary for IEC IP54 protection.
	Part No. 83104346-004	
	Part No. 83104346-005	
Seal connector for SAnet cable gland*	Part No. 83104346-012	Seal connector for SAnet cable gland with three ports is necessary for IEC IP54 protection.
	Part No. 83104346-013	
	Part No. 83104346-014	
SAnet cable gland with three ports Part No. DY7000A1000*	For the specifications of SAnet cable gland with three ports, refer to the Specifications (AS-923E). For the installation of SAnet cable gland with three ports, refer to the Installation Manual of Intelligent Component Series for SAnet Communication (AB-6713).	

Note:

\* SAnet cable gland with three ports are necessary to daisy-chain Model MY5390A0000 (without cable). Note that daisy-chain connection is not applicable to Model MY5390A0001/MY5390A0002 (with cable).

■ Dimensions

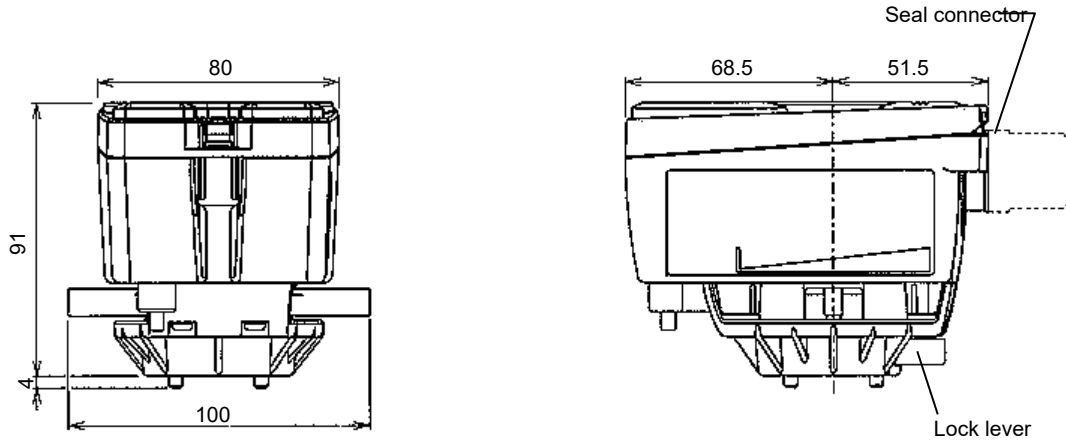


Figure 3. Dimensions (mm) and parts identification

■ Maintenance Space and Parts Indication

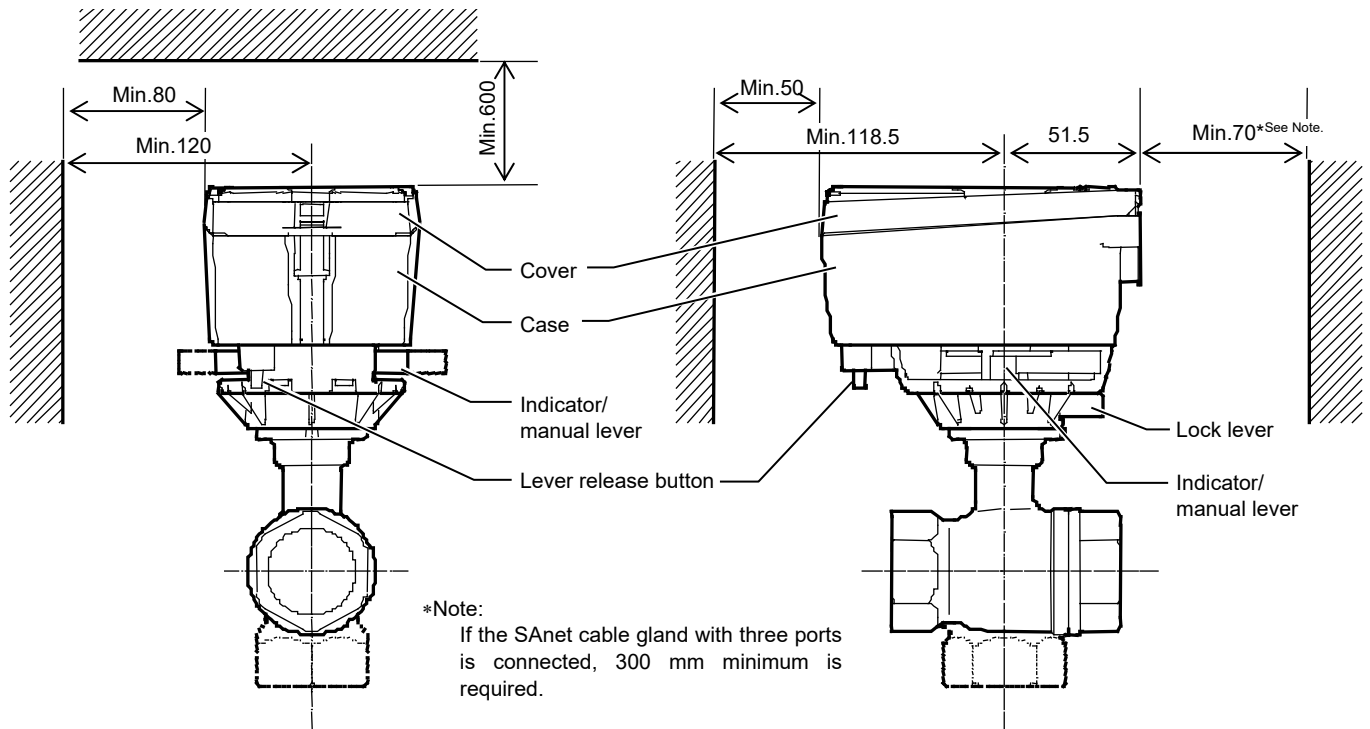


Figure 4. Mounting dimensions with clearance (mm)

■ Installation

<b>⚠ CAUTION</b>	
<b>!</b>	Install, wire, and use this product under the conditions specified by this manual. Failure to do so may cause fire or device failure.
<b>⊘</b>	Do not put a load or weight on this product. Doing so may damage the product.

<b>IMPORTANT:</b>	
•	The cover and the case might be corroded by chemicals and organic solvent or their vapor. Do not expose the ACTIVAL to such substances /vapor.
•	Although Model MY5390A actuator can be used in a high humidity environment (max. 95 %RH), do not immerse it in water.

● **Mounting position**

Install the product so that fluid flows in the direction pointed by the arrow on the body. It can be mounted in any position ranging from upright to sideways (90° tilted).

Note: If the product is installed outdoors, place it in upright position.

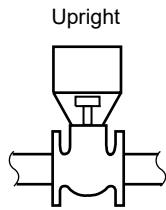
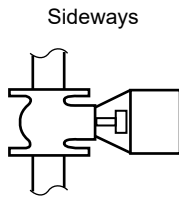


Figure 5. Correct mounting



Actuator is below the valve.

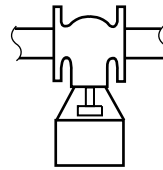


Figure 6. Incorrect mounting

● **Factory preset position**

Actuator shaft: fully open

Indicator/manual lever: completely turned clockwise

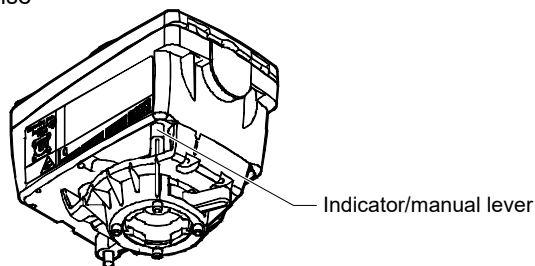


Figure 7. Indicator/manual lever position for shipment

■ **Manual Override**

**IMPORTANT:**

- Before manually opening or closing the ACTIVAL, be sure to disconnect it from the power supply (24 V AC). If being manually opened or closed with the power applied, the ACTIVAL may be damaged.
- Do not manually open or close the valve beyond the fully open or fully closed scale.

- 1) Disconnect the power before manual operation.
- 2) As shown in Fig. 8, turn the indicator/manual lever while pressing the lever release button.

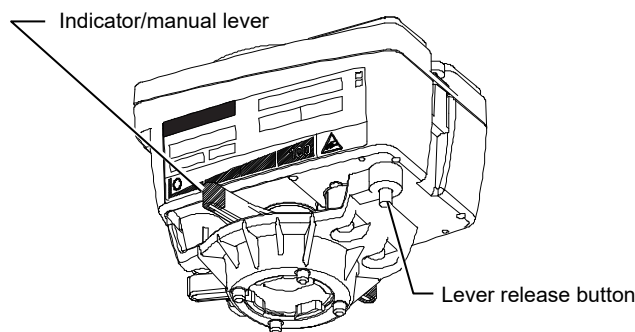


Figure 8. Manual override



■ **Mounting on the valve (Model VY5302/VY5303)**

**⚠ CAUTION**

- !** Installation and wiring of the actuator must be performed by personnel qualified to do instrumentation and electrical work.  
Mistakes in installation or wiring may cause fire or electric shock.
- !** After the actuator is installed, make sure that the lock lever is closed (locked).  
If the lever is not locked, the actuator may fall out, resulting in injury.

**IMPORTANT:**

- The actuator can be horizontally rotated every 90 degrees to fit into the valve mounting position (4 mounting positions). Make sure the positions of the actuator and the valve. (see Fig. 9.)
- Set the actuator and the valve in 100 % position when changing the mounting position. If the valve in 0 % position is assembled with the actuator in 100 % position, the actuator puts torque on the closed valve, and the gear of the actuator gets damaged.

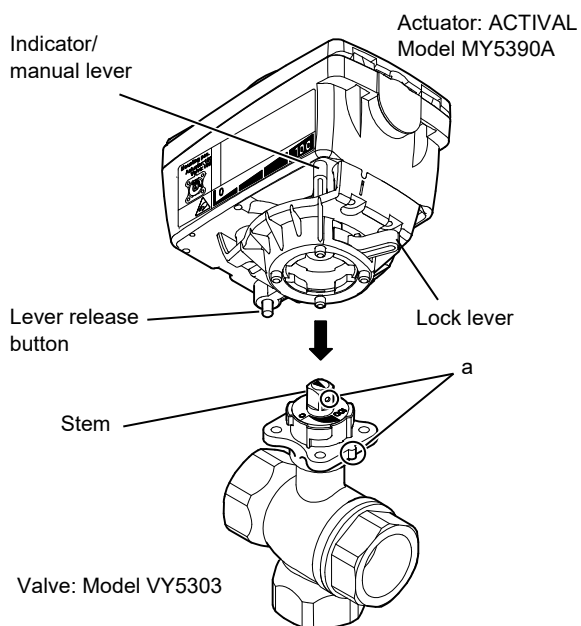


Figure 9. Mounting Model MY5390A actuator on Model VY5303 valve

- 1) Adjust the indicator/manual lever to '100' with the lever release button pressed.

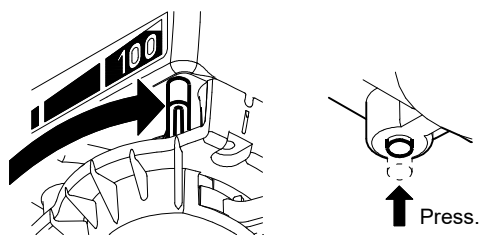


Figure 10. Actuator in 100 % (fully open) position

- 2) Move the lock lever to right-end to unlock.

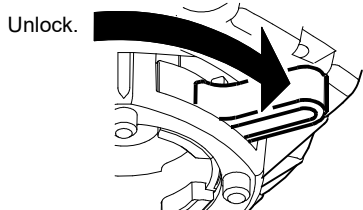


Figure 11. Unlocking the lock lever

- 3) Adjust the stem to '100'. (See Fig. 12.)  
When valve is in 100 % position, the hole on the side surface of the valve stem faces in the same direction as the raised part of the valve joint surface points, as shown in 'a' in Fig. 9.

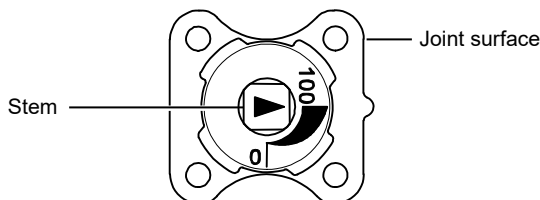


Figure 12. Valve stem pointing at 100 % (fully open ) position

- 4) Mount Model MY5390A onto the joint surface of the valve (Model VY5302/VY5303). Insert the four pins into the four holes on the valve joint surface.
- 5) Move the lock lever to left-end to lock (indicated with the groove as shown in the figure below).

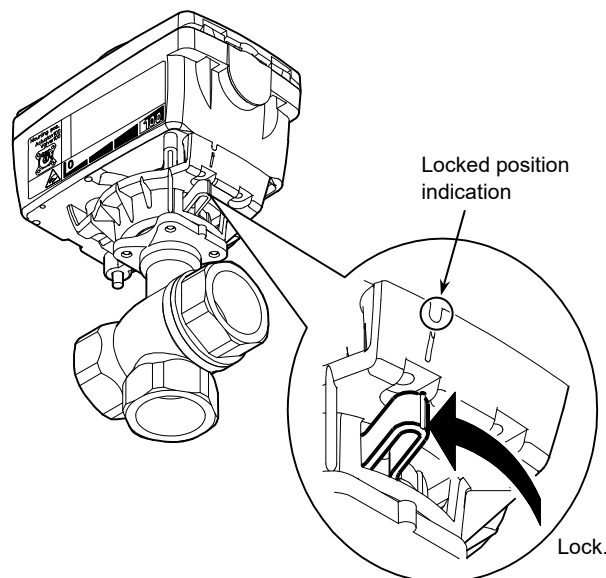


Figure 13. Locking the lock lever

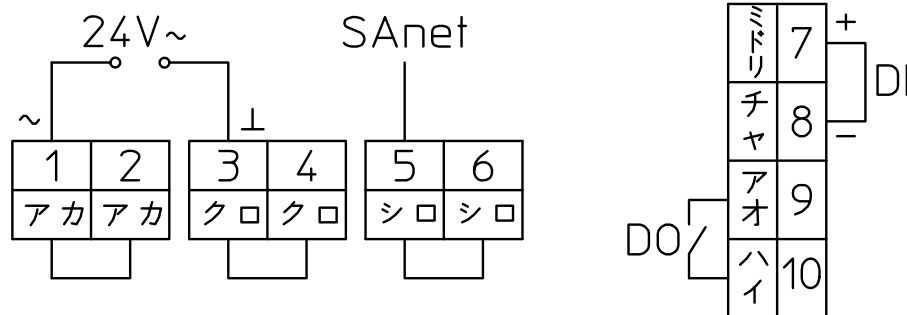
■ Wiring

⚠ CAUTION	
❗	Provide a circuit protector (e.g., a fuse or circuit breaker) for the power source. Failure to do so may cause a short circuit leading to fire or device failure.
❗	Install, wire, and use this product under the conditions specified by this manual. Failure to do so may cause fire or device failure.
❗	Installation and wiring of the actuator must be performed by personnel qualified to do instrumentation and electrical work. Mistakes in installation or wiring may cause fire or electric shock.
❗	Before wiring, be sure to turn off the power to this product. Failure to do so may result in electric shock or device failure.
❗	All wiring must comply with applicable codes and ordinances. Otherwise there is a danger of fire.
❗	For wiring, strip the insulation from cables as specified in this manual. If the length of exposed wire is longer than specified, it may cause electric shock or short circuit between adjacent terminals. If it is too short, it may not make proper contact.
❗	After wiring, be sure to reattach the cover. Failure to do so may result in electric shock.

● Wiring precautions

For wiring, refer to the Installation Manual of Intelligent Component Series for SAnet Communication (AB-6713).

- See Fig. 14 and correctly connect the wires.
- Separate the sub-DO line from the other lines since it may generate noise.



\*Note

Keep the same wire color for each line. On the wiring label attached to the actuator, the wire colors are indicated in Japanese below or next to the terminal numbers and are an example of the cable recommended by Azbil Corporation.

Figure 14. Terminals diagram (on the wiring label)

● To keep IP54 protection (dust-proof and splash-proof),

Use a water-proof connector for the ACTIVAL in a high-humidity environment or outdoor location. Through wiring port with the seal connector (Part No. 8310434600X) attached to, 1 cable can be lead in. Through wiring port with the SAnet cable gland (with three ports) and the seal connectors attached to, 3 cables can be lead in.

- Be sure to completely close the cover.
- Waterproof the wiring port.

In one or both of the following cases, use water-proof connector applicable to your cable size.

- Other cables instead of the cables pre-attached to the product will be used. (for Model MY5390A0001 /MY5390A0002) (Seal connector Part Nos. 83104346-003, 83104346-004, and 83104346-005 are recommended.)
- SAnet cable gland with three ports (Part No. DY7000A1000, optional) will be used. (Seal connector Part Nos. 83104346-012, 83104346-013, and 83104346-014 are recommended.)

For conduit connection, use a water-proof plica tube or the like.

● **Items to be prepared for wiring**

- Slotted screwdriver: 3.5 mm wide, 0.5 mm thick, straight
- Wrench 22 mm to 24 mm.

● **Wires connection**

- 1) Press and hold the latch (snap-fit design) to lift the top cover. Disassemble the hinge (on the other side of the actuator) to remove the cover. Refer to the below figure.

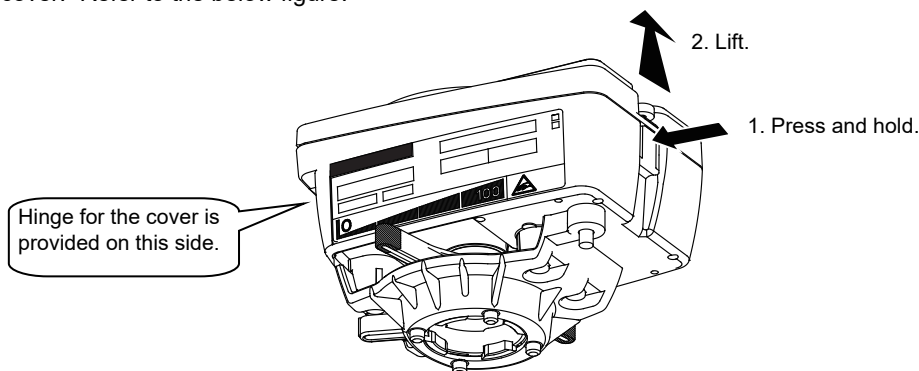


Figure 15. Cover removal

- 2) Attach the nipple to the wiring port of the product. Attach the cap first and then rubber bush to the cable, and pass the cable through the wiring port, as shown in the below figure. Nipple, cap, and rubber bush are the components of the seal connector.

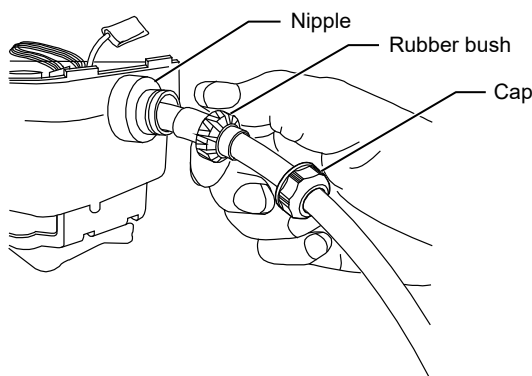
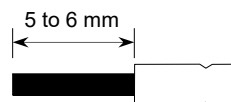
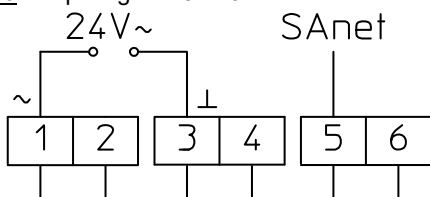


Figure 16. Wiring through the port

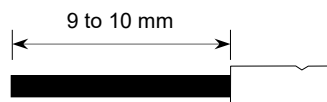
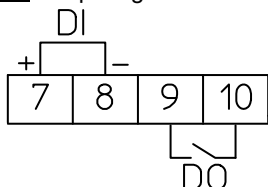
- 3) Strip the insulation of each wire as required, and connect the wires to each terminal. Strip length differs depending on the terminals where wires are connected to, as shown below.

Terminals 1 to 6: Strip length is 5 to 6 mm.



Strip the insulation 5 to 6 mm.

Terminals 7 to 10: Strip length is 9 to 10 mm.



Strip the insulation 9 to 10 mm.

Figure 17. Strip length of lead wires

Terminals 1 to 6

1. Insert a slotted screwdriver into a smaller square hole (for clamp release) of the terminal.
2. Tilt the screwdriver while pushing it into the hole. See the figure below for the direction to tilt.
3. Insert stripped wire into a larger square hole.
4. Pull out the screwdriver with the stripped wire inserted.

Terminals 7 to 10

1. Press and hold the clamp release button.
2. Insert stripped wire into the terminal while pressing the clamp release button.
3. Release the clamp release button with the stripped wire inserted.

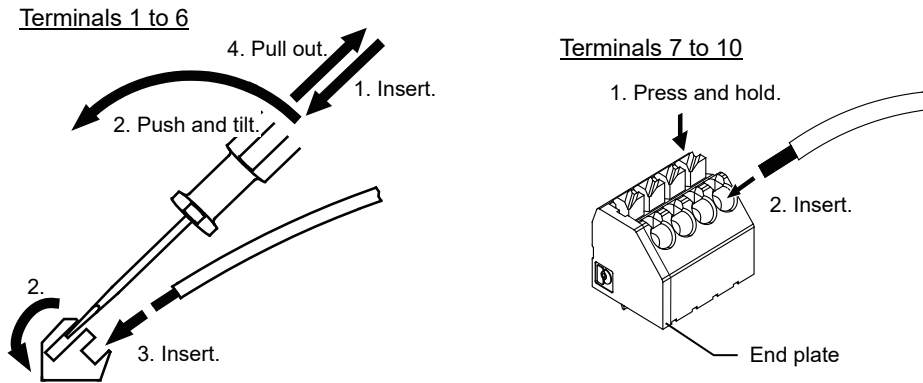


Figure 18. Wires connection to the terminals

Notes:

- \* Be sure not to touch any other components when connecting wires.
- \* End plate next to the terminal 7 may be disassembled if being strongly pressed. When you use a screwdriver or other tools to connect wires, carefully connect the wire to the terminal 7 so as not to disassemble the endplate.

- 4) Lightly pull the wires and make sure that they are completely connected to the terminals. Tighten the cap on the wiring port, using a tool such as a wrench.

Note:

- \* Check that no wire fiber is protruded from the wire. Wire fiber may cause short-circuit between adjacent terminals.

- 5) Arrange the connected wires inside the actuator to close the top cover. Assemble the hinge and close the top cover.

Note:

- \* Neatly arrange the wires inside the actuator so that the cables inside the actuator do not press anything. If the board is pressed, the actuator may get damaged.

● **Wires disconnection**

- 1) Press and hold the latch (snap-fit design) and lift the top cover. Disassemble the hinge (on the other side of the actuator) to remove the cover.
- 2) Loosen the cap and remove it from the wiring port.
- 3) Loosen the rubber bush and remove it from the wiring port.
- 4) Disconnect the wires from each terminal.

Terminals 1 to 6

1. Insert a slotted screwdriver into a smaller square hole (for clamp release) of the terminal.
2. Tilt the screwdriver while pushing it into the hole.
3. Pull the wire to disconnect.
4. Pull out the screwdriver.

Terminals 7 to 10

1. Press and hold the clamp release button.
2. Pull the wire while pressing the clamp release button to disconnect.
3. Release the clamp release button.

- 5) Pull the cable out of the wiring port.
- 6) Assemble the hinge and close the cover.
- 7) Remove the nipple from the wiring port.

Note:

- \* Keep the seal connector (nipple, rubber bush, cap) since it is necessary for re-connecting the cable.

● **Connection example**

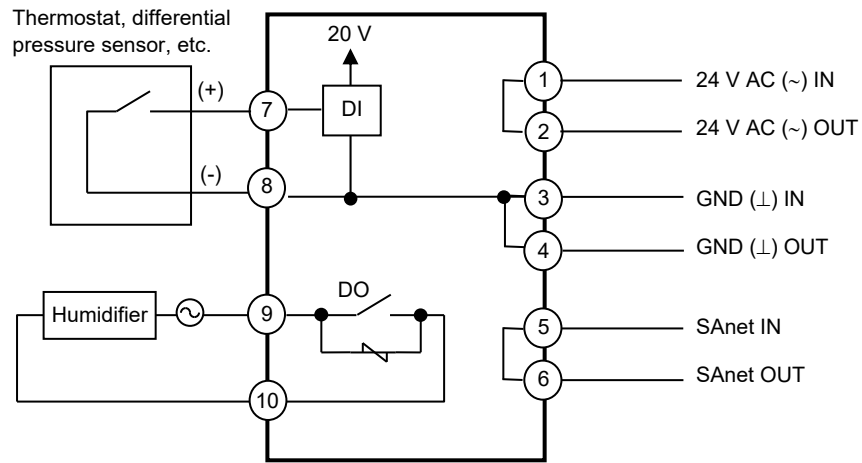


Figure 19. Connection example

**■ Address Setting (Addressing)**

⚠ CAUTION	
⊘	Do not put a load or weight on this product. Doing so may damage the product.
⚠	Before setup or engineering work, be sure to turn off power that is supplied from external devices to the output terminals. Failure to do so may cause electric shock..
⊘	Do not touch the moving parts of this product. Doing so may result in injury.

To SAnet interface module, ACTIVAL Model MY5390A and other Intelligent Component Series devices including ACTIVAL + and damper actuators are connected via SAnet. Set address for the terminal devices (Intelligent Component Series devices) so that the SAnet interface module can recognize all the terminal devices connected. Follow the procedure below to set the address. For details regarding address setting (addressing), ask our sales/service personnel.

- 1) Press and hold the latch (snap-fit design) to lift the top cover. Disassemble the hinge (on the other side of the actuator) to remove the cover. See Fig. 15 for removing the top cover.
- 2) Set address. (See Table 1.) Address can be set with rotary switch, with service pin switch, or based on SAnet ID. Rotary switch and service pin switch are provided on this product. To set the address with service pin switch or based on SAnet ID, Data Setter or PC-MMI is required. Set the address in either way according to your availability. Note that addressing with the service pin switch or based on the SAnet ID is operable only when the rotary switch is set at '0'.

Setting with rotary switch:

Turn the rotary switch using a precision slotted screwdriver and set.

Setting with service pin switch:

1. Set the rotary switch to '0'.
2. Start addressing operation\* of Data Setter or PC-MMI. (for Data Setter/PC-MMI)  
Then, press the service pin switch. Do not keep the switch pressed for longer than 5 seconds.
3. Address is set within 5 seconds after pressing the service pin switch.

\* For the addressing operation of Data Setter or PC-MMI, ask our sales/service personnel.

Setting based on SAnet ID:

1. Set the rotary switch to '0'.
2. With Data Setter or PC-MMI, enter the SAnet ID (on the product code label) and address number to set. The product code label is attached on the side surface of the actuator, as shown in Fig. 21.

\* For the addressing operation of Data Setter or PC-MMI, ask our sales/service personnel.

- 3) Attach the top cover after setting the address.

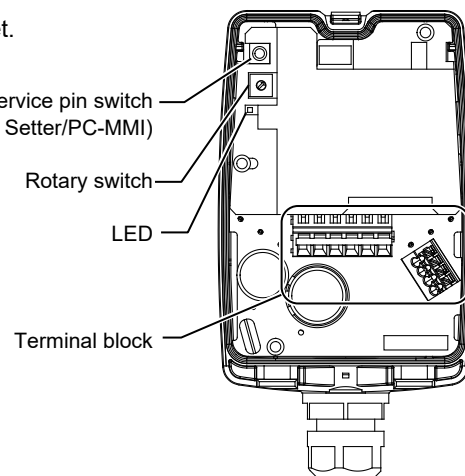


Figure 20. Terminal block, LED, setting switches (without terminal cover)

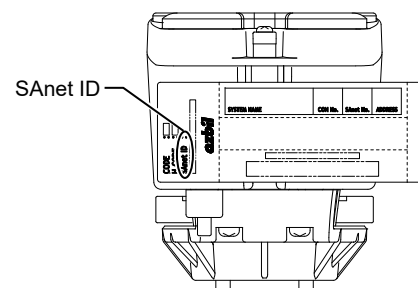


Figure 21. SAnet ID on the product code label

<p><b>IMPORTANT:</b></p> <ul style="list-style-type: none"> <li>• While the top cover is removed, do not touch the terminal block or allow anything to touch the terminal block.</li> <li>• If the service pin switch is kept pressed for longer than 5 seconds, the mode will be switched and operation error (data point trouble) will be occurred. In such a case, press the service pin switch again and keep it pressed for longer than 10 seconds to go back to the normal mode.</li> </ul>
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Table 1. Basic address setting of this product and other Intelligent Component Series devices

Add.	Device	Sub-DO/AI	Sub-DI
1	Outdoor air damper		
2	Exhaust air damper		
3	Return air damper		
4	Switch damper of total heat exchanger for outdoor air		
5	Switch damper of total heat exchanger for exhaust air		
<b>6</b>	<b>Chilled/hot water valve / Chilled water valve</b>		<b>Filter alarm</b>
<b>7</b>	<b>Hot water valve (Chilled water valve*)</b>	<b>Humidifying ON/OFF</b>	
8	Humidifying valve		
D (13)	Reserved		
E (14)	Reserved		
F (15)	Reserved		

Notes:

- \* For 'chilled/hot water valve + chilled water valve' application, set address 6 for chilled/hot water valve and 8 for chilled water valve.
- \* Items in bold characters are the basic address to set for this product.
- \* The above list is a basic setting example. Set address and use sub-I/O in response to system configuration, installation location, and wiring best suitable for your application.

### ■ System Indication Label

A part of the product code label can be a system indication label. Clip the part, and write down the name of the system, host controller number of the system, SAnet line number, and address. Then attach the part, as the system indication label, to a location where you can easily check.

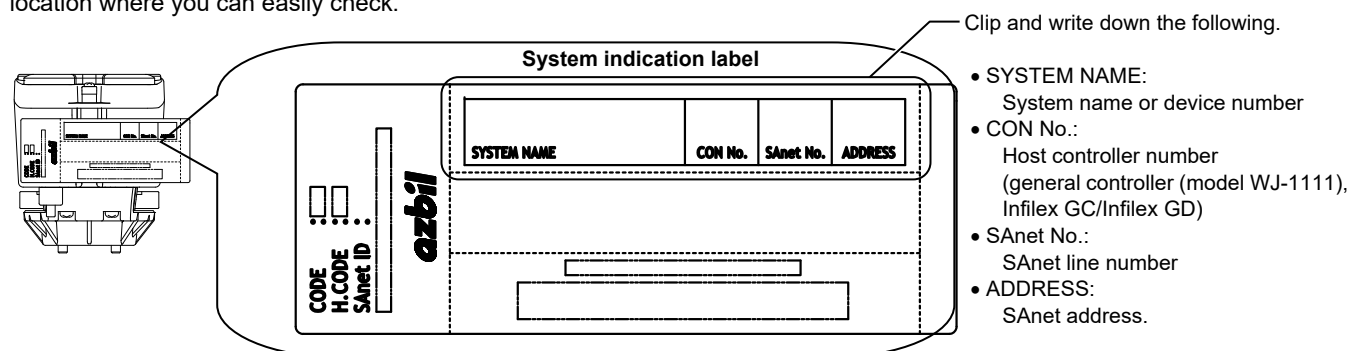


Figure 22. System indication label

**IMPORTANT:**

- Attach the system indication label to a clean location with no dust, oil, or moisture.
- Attach the system indication label by pressing the whole surface of the label to stick on the product surface.

**⚠ CAUTION**

**!** After setup work, be sure to reattach the cover. Failure to do so may result in electric shock.

### ■ Manual Operation Mode

In the manual operation mode, even when this product has not been connected via SAnet yet, the operations shown in Table 2 can be performed and checked. Follow the procedure below for the operation check. For the locations of the service pin switch and the rotary switch, see Fig. 20.

- 1) Keep the service pin switch pressed for 10 seconds to enter the manual mode.
- 2) Turn the rotary switch to the desired position (See Table 2.), using a precision slotted screwdriver.

Table 2. Operations in the manual operation mode

Rotary switch scale	Operation
0	Restart (to go back to the normal operation mode).
2	Fully close (in 0 % position).
4	Open in 50 % position.
6	Fully open (in 100 % position).
E	Automatic adjustment of the potentiometer.

Notes:

- \* Rotary switch scales 1, 3, 5, 7, 8, 9, A to D and F are not available in the manual operation mode.
- \* Do not set the rotary switch to 'E'. (Operation of the rotary switch 'E' is required only when potentiometer itself is replaced.)






Operation will start in 3 seconds after setting the rotary switch.

- 3) After the operation, keep the service pin switch pressed for 10 seconds to go back to the normal operation mode.

- 4) If the address is set with the rotary switch, be sure to reset the rotary switch at the address after entering the normal operation mode.

 CAUTION
 After engineering work, be sure to reattach the cover. Failure to do so may result in electric shock.

**■ Maintenance**

 CAUTION
 Do not put a load or weight on this product. Doing so may damage the product.
 Before doing maintenance, be sure to turn off the power to this product. Failure to do so may result in electric shock or device failure.
 After maintenance, be sure to reattach the cover. Failure to do so may result in electric shock.
 Do not touch the moving parts of this product. Doing so may result in injury.

- Inspect the ACTIVAL according to Table 3.
- Manually open/close the ACTIVAL at least once a month if it is left in inactive state for a long period.
- Visually inspect the fluid leakage of the valve and the actuator operations every six months. If any of the problems described in Table 4 are found, take corresponding actions shown in the table.  
 If your problem is not solved by the corresponding action, please contact Azbil Corporation near you.

Table 3. Inspection items and details

Inspection item	Inspection interval	Inspection detail
Visual inspection	Semiannual	<ul style="list-style-type: none"> <li>• Fluid leakage from the gland and the pipe connecting part</li> <li>• Loosened lock lever</li> <li>• Actuator damages</li> </ul>
Operating status	Semiannual	<ul style="list-style-type: none"> <li>• Unstable open/close operation</li> <li>• Abnormal noise and vibration</li> </ul>
Routine inspection	Any time	<ul style="list-style-type: none"> <li>• Abnormal noise and vibration</li> <li>• Unstable open/close operation</li> <li>• Valve hunting</li> </ul>

Table 4. Troubleshooting

(If your problem is not solved by the corresponding action, please contact Azbil Corporation near you.)

Problem	Part to check	Action
<ul style="list-style-type: none"> <li>• Valve does not operate smoothly / valve stops halfway / valve does not operate at all.</li> </ul>	Conditions of the power applied and of the input signal applied. Wiring condition / disconnected wires. Jammed foreign substance	Check the power supply and the controller connected to the valve. Check the wiring. Remove the jammed foreign substances by manual operation.
<ul style="list-style-type: none"> <li>• Fluid leaks the fully closed valve.</li> </ul>	Position indicator not pointing to fully closed position Incorrect mounting onto the valve.	Fully close the actuator (in 0 % position). Re-mount the actuator onto the valve referring to Installation Manual of Intelligent Component Series for SAnet Communication (AB-6713).
<ul style="list-style-type: none"> <li>• Valve hunting occurs.</li> </ul>	Secondary pressure condition and differential pressure condition. Unstable control.	Adjust the inlet and outlet pressure. Correct the control parameter setting and PI of controller.
<ul style="list-style-type: none"> <li>• The actuator does not fully close the valve.</li> </ul>	—	Consult with Azbil Corporation's sales/service personnel.
<ul style="list-style-type: none"> <li>• Water flow generates large noise.</li> </ul>	—	Consult with Azbil Corporation's sales/service personnel.
<ul style="list-style-type: none"> <li>• Actuator produces abnormal noise when being in operation.</li> </ul>	—	Consult with Azbil Corporation's sales/service personnel.
<ul style="list-style-type: none"> <li>• SAnet communication error occurs.</li> </ul>	—	Consult with Azbil Corporation's sales/service personnel.

**■ Disposal**

Dispose of this product as industrial waste in accordance with your local regulations.  
 Do not reuse all or any part of the product.











This product complies with the following Electromagnetic Compatibility (EMC).  
EMC: EN61000-6-2, EN55011 Class A

**azbil**

*Specifications are subject to change without notice.*

Azbil Corporation

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