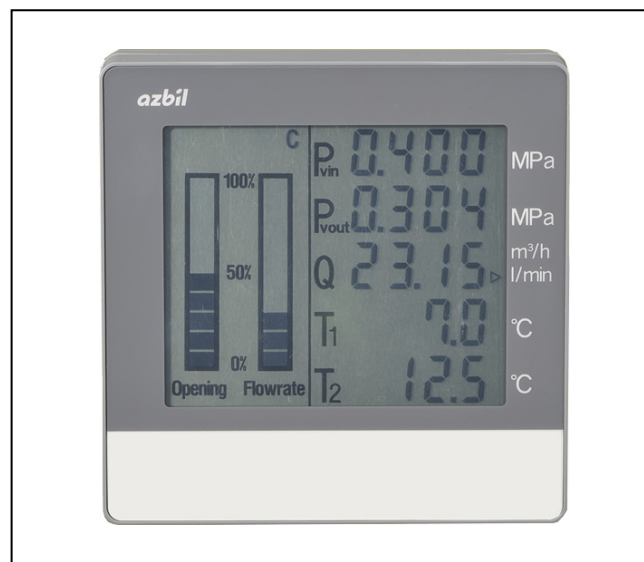


Intelligent Component Series Display Panel for **ACTIVAL+**TM SAnet Communication Model

General

Display Panel Model QY5000S1000 is the data indicator for ACTIVAL +TM Model FVY516 series. Display Panel displays data measured by Model FVY516 series (flow pressure, flow temperature, flow rate) and valve position.



Features

- **Multiple data in a single display:**
You can check flow temperature of AHU inlet/outlet, flow pressure of valve inlet/outlet, and flow rate measured by Model FVY516 series and the valve position at one time.
- **Installable 50 m away from Model FVY516_J:**
Display panel is connected to Model FVY516 series with JIS VCTF cable (0.3 mm² x 4 cores), and max. cable length is 50 m.
- * JIS: Japanese Industrial Standards
- **Continuous display:**
Display Panel displays data all the time. You can thus check flow conditions and valve position at any time.
- **Compact and lightweight:**
Small and light body facilitates installation on an AHU panel or inside a control panel cabinet.
- **Easy wiring:**
Since Display Panel main unit is connected to the base plate with the connector inside, wiring to Display Panel is complete only by connecting the wires to the base plate.

Safety Precautions

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

Restrictions on Use

This product was developed, designed, and manufactured for general air conditioning use.

Do not use the product in a situation where human life may be at risk or for nuclear applications in radiation controlled areas. If you wish to use the product in a radiation controlled area, please contact Azbil Corporation.



Particularly when the product is used in the following applications where safety is required, implementation of fail-safe design, redundant design, regular maintenance, etc., should be considered in order to use the product safely and reliably.

- Safety devices for protecting the human body
- Start/stop control devices for transportation machines
- Aeronautical/aerospace machines




For system design, application design, instructions for use, or product applications, please contact Azbil Corporation.


Azbil Corporation bears no responsibility for any result, or lack of result, deriving from the customer's use of the product.


Warnings and Cautions


	WARNING	Alerts users that improper handling may cause death or serious injury.
	CAUTION	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 \odot 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.)


 **WARNING**


 Before wiring or maintenance, be sure to turn off the power to the product.
Failure to do so might cause electric shock or device failure.


 **CAUTION**


 Install and use the product under the operating conditions requirement (temperature, humidity, power, vibration, shock, mounting direction, atmospheric condition, etc.) as listed in the specifications.
Failure to do so might cause fire or device failure.


 Installation and wiring must be performed by qualified personnel in accordance with all applicable safety standards.

 All wiring must comply with applicable codes and ordinances.

 Take anti-lightening measures based on regional and building characteristics.
Lightening might cause fire or critical damage to the products without the anti-lightening measures.

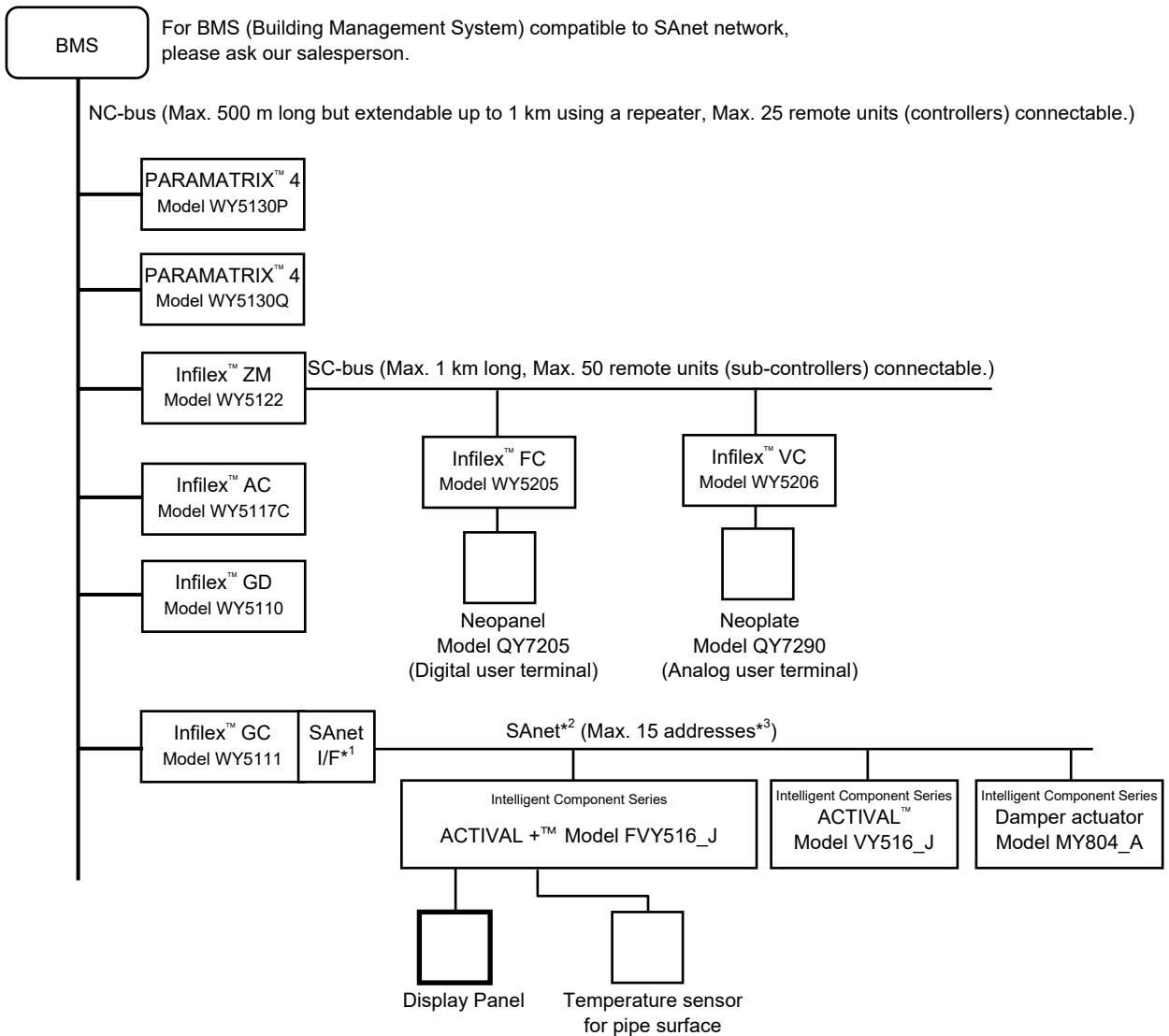
 If more than the rated power voltage is applied to the product, replace the product with new one for your safety.
Failure to do so might cause device failure or overheating.

 Do not disassemble the product.
Doing so might cause device failure.

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

System Configurations

One Display Panel is connectable to single Model FVY516_J.



Notes:

- *1 Up to two SAnet I/F (interface) module can be connected to one Infilex GC/Infilex GD.
- *2 For detailed specifications of SAnet, refer to **Installation Manual of Intelligent Component Series for SAnet Communication (AB-6713)**.
- *3 Single Model FVY516_J requires two SAnet addresses. Single Model FVY516_J or single Model MY804_A actuator requires one SAnet address.

Figure 1. System configuration example: SAnet connection in our BMS

Model Number

Model number	Description
QY5000	Base model number of Display Panel for Model FVY516 series
S1000	Power supplied from Model FVY516 series

Specifications

Item		Specification	
Power supply		12 V DC \pm 1 V (supplied from Model FVY516 series)	
Power consumption		Max. 0.1 VA	
Environmental conditions	Rated operating conditions* ¹	Ambient temperature	0 °C to 50 °C
		Ambient humidity	10 %RH to 85 %RH (non-condensing)
		Vibration	5.9 m/s ² (10 Hz to 150 Hz)
	Transport/storage conditions	Ambient temperature	-20 °C to 70 °C
		Ambient humidity	10 %RH to 85 %RH (non-condensing)
		Vibration (storage)	5.9 m/s ² (10 Hz to 150 Hz)
Enclosure rating		IEC IP40 (dustproof)	
Display* ²	Device	Liquid Crystal Display (LCD)	
	Items to display	PVin	Valve inlet pressure (MPa)
		PVout	Valve outlet pressure (MPa)
		Q	Actual flow rate (m ³ /h or l/min)
		T1	Coil inlet temperature (°C)
		T2	Coil outlet temperature (°C)
		HC	Heat/Cool
		E	Error
		Opening	Actual valve position (% in bar graph)
		Flowrate	Actual flow rate (% in bar graph)
Communication		Transmission system	AP-bus (RS-485 communication)
	Transmission speed	4800 bps	
	Transmission distance	Max. 50 m	
	Number of Display Panel connectable	One per single Model FVY516_J	
Materials	Case	Modified polyphenylene ether (PPE)	
	Base plate	Modified polyphenylene ether (PPE)	
	Face plate	Polyester (PET)	
Accessory	Two tapping screws (M4) for mounting		
Weight	150 g		

Notes:

*1 LCD service life may shorten if Display Panel is used in an environment with high temperature and humidity.

*2 For display accuracy, refer to the specification data of Model FVY516 series.

Recommended Wire Specifications

Cable type	Wiring length
JIS VCTF (0.3 mm ² x 4) (Cable is not supplied with Display Panel.)	50 m

Option

Item	Note
Waterproof box	Part No. 83170324-001 Required when Display Panel is installed outdoors.

Dimensions

Outside dimensions

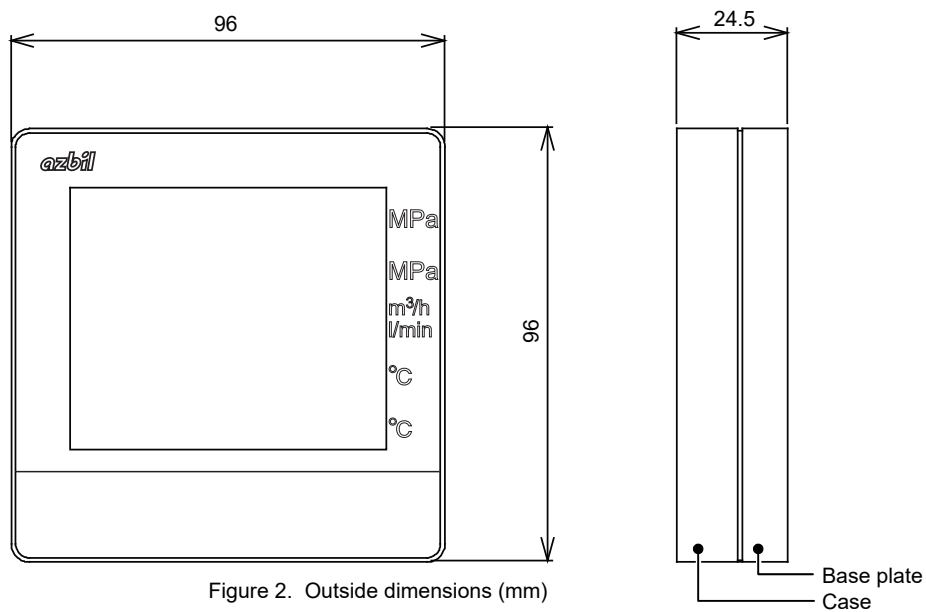


Figure 2. Outside dimensions (mm)

Mounting dimensions of the base plate

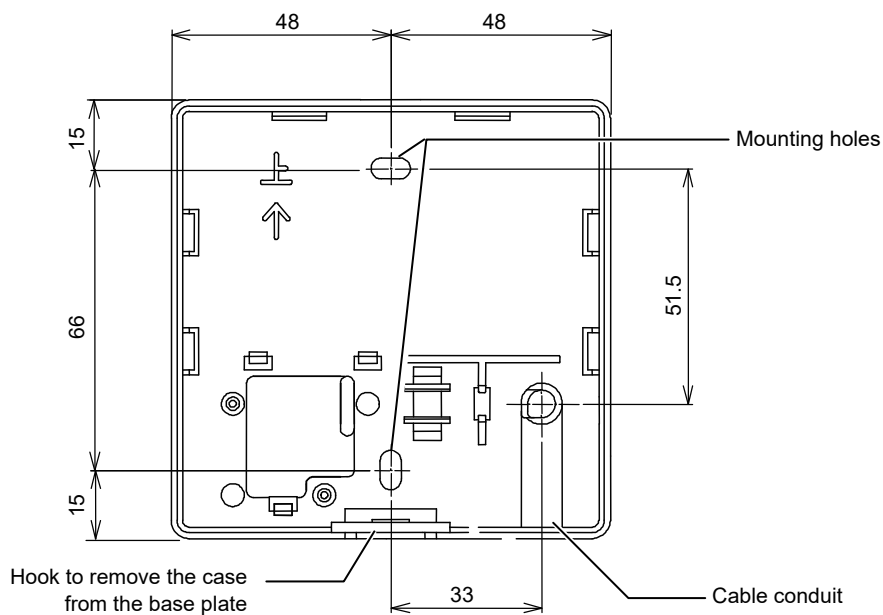


Figure 3. Mounting dimensions of the base plate (mm)

Parts Identification

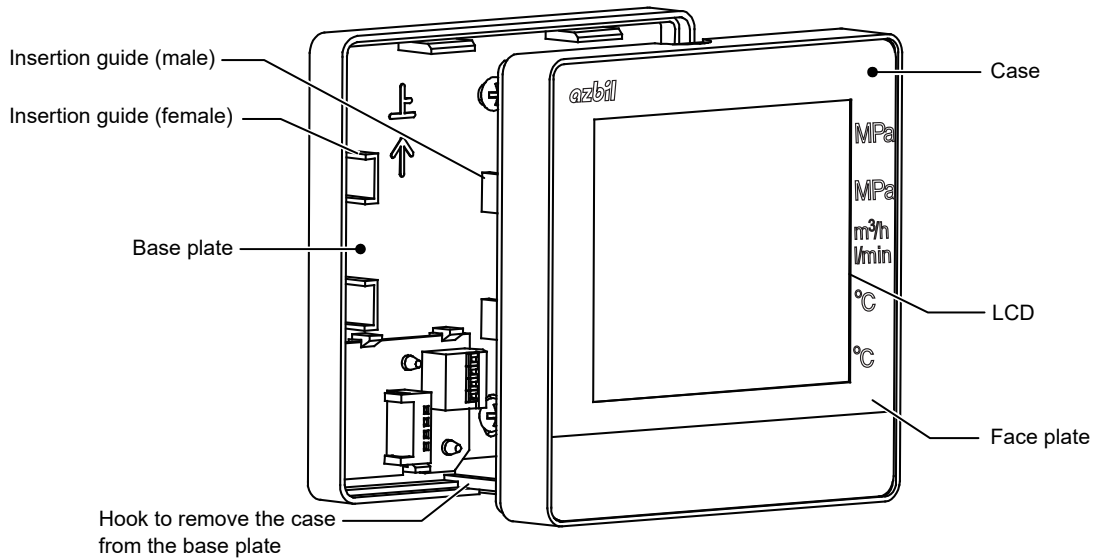


Figure 4. Parts identification

Items to be Displayed on LCD

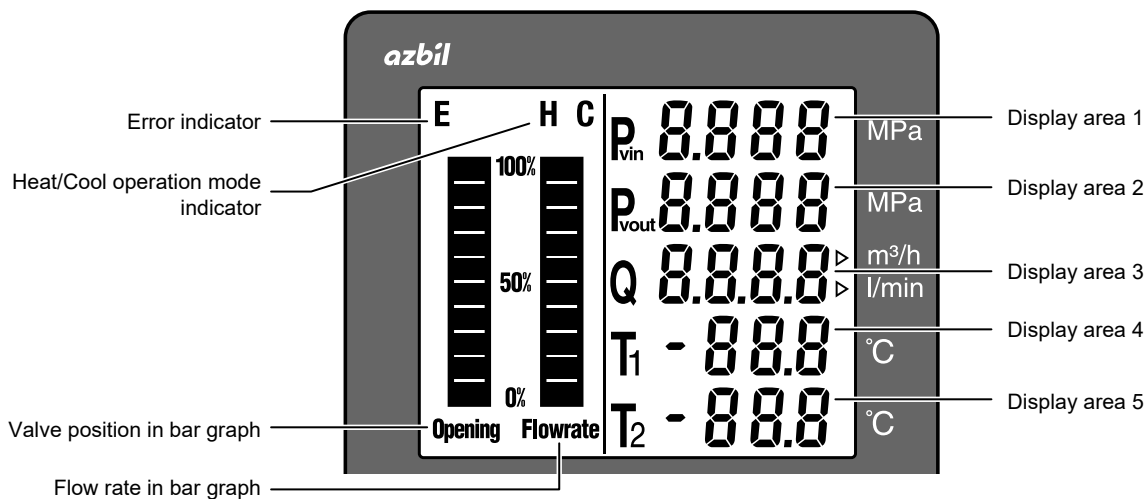


Figure 5. Details of the items displayed on LCD

Display area	Item	Description	Display range		Unit
			Display Panel connected to:	Range	
1	Pvin	Valve inlet pressure	Model FVY5160	0.000 to 1.100	MPa
			Model FVY516E	0.000 to 2.200	
2	Pvout	Valve outlet pressure	Model FVY5160	0.000 to 1.100	MPa
			Model FVY516E	0.000 to 2.200	
3	Q	Actual flow		0 to 9999	m ³ /h or l/min *
4	T ₁	Coil inlet temperature		-10.0 to 99.9	°C
5	T ₂	Coil outlet temperature		-10.0 to 99.9	°C
	Opening	Valve position indicated in a bar graph		0 to 100 (with every 10 % increments)	%
	Flowrate	Flow indicated in a bar graph		0 to 100 (with every 10 % increments)	%
	E	Error occurred ([E] flashes.)		—	—
	H C	AHU operation mode ([H]: Heat / [C]: Cool)		—	—

Note:

* The unit of the actual flow is selectable between 'm³/h' and 'l/min' using the engineering tool (Data Setter or PC-MMI). End users cannot set the unit. The selected unit is indicated with [▷] mark on the display.

Wiring and Installation

⚠ WARNING



Before wiring or maintenance, be sure to turn off the power to the product.
Failure to do so might cause electric shock or device failure.

Wiring

- 1) Press the hook on the bottom of the base plate and detach the case.
- 2) Use $\Phi 5.5$ to $\Phi 6.0$ mm cable (JIS VCTF (0.3 mm² x 4 cores) cable recommended) for connection. Strip 5 to 6 mm sheath of each lead wire. (See Fig. 6.)
- 3) Refer to the wiring label (attached to the base plate) and insert stripped lead wires to each terminal.

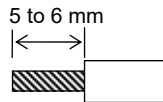


Figure 6. Sheath strip length

Terminals arrangement

Terminal number	Type	Lead wire color
1	12 V DC (+)	Red (RED)
2	0 V	Black (BLK)
3	AP-bus (+)	White (WHT)
4	AP-bus (-)	Green (GRN)

Note:

* Lead wire color shown in the above table is the wire colors of the recommended cable.

- 4) Lock each lead wire with lever lock provided on each terminal. Use a tool such as slotted screwdriver to slide the lever lock.

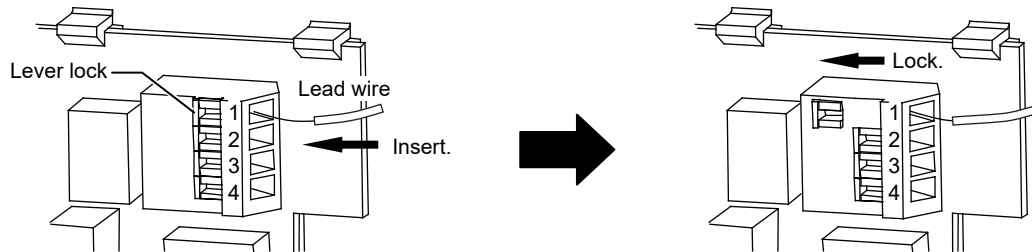


Figure 7. Lead wire connection

- 5) Insert the cable into the slit and fix the cable on the base plate with a cable tie.

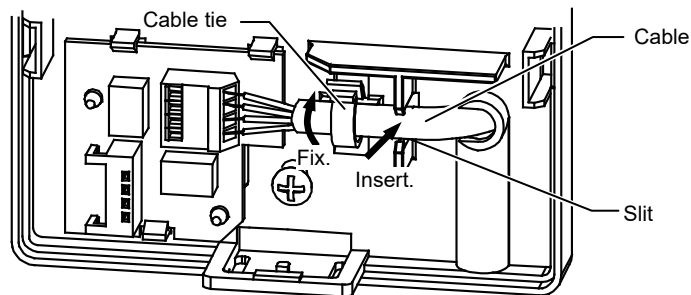


Figure 8. Cable fixed on the base plate

Installation

IMPORTANT:

- Do not install this product in an atmosphere containing corrosive gas or explosive gas.
- Do not install this product in a location exposed to direct sunlight. Direct sunlight accelerates LCD degradation.
- Waterproof box (optional) is required for the product to be installed outdoors. Ask our sales personnel for the waterproof box.

- 1) Make two holes for two M4 tapping screws (one for upper and the other for lower sides) on a mounting location, such as an AHU side plate or a panel cabinet. Distance between the centers of upper and lower M4 screws is 66 ± 2 mm.
- 2) Lead the cable (connected to the base plate terminals) out of the base plate through the base plate conduit (on the bottom right), and mount the base plate on the mounting location with the two M4 tapping screws (accessory of Display Panel).

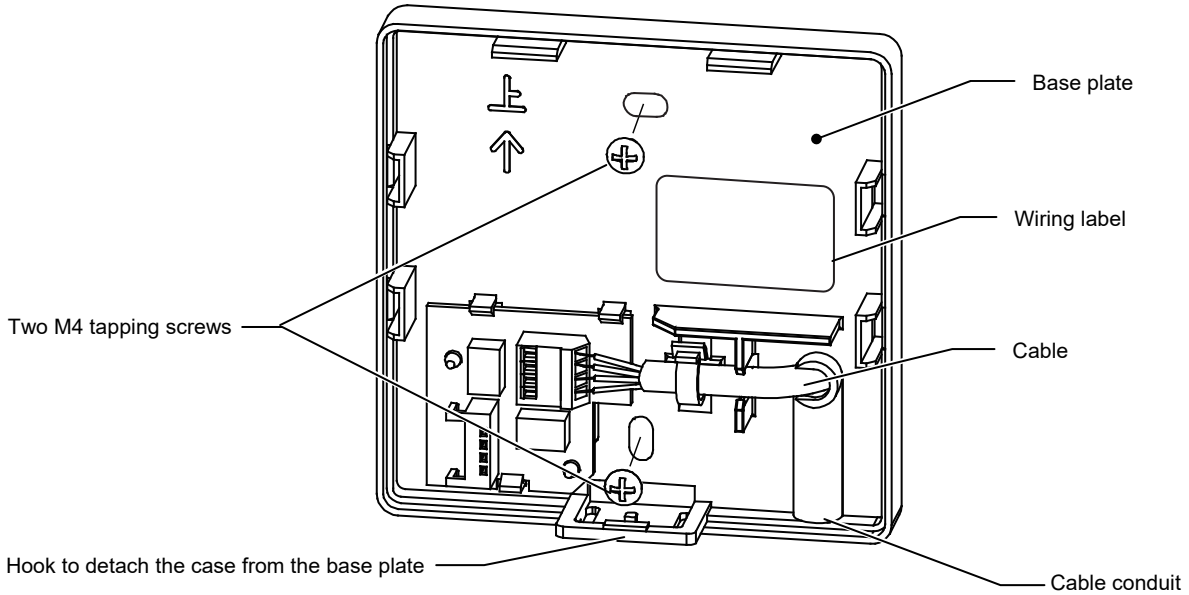


Figure 9. Mounting of the base plate with two M4 tapping screws

- 3) Assemble the case with the base plate by inserting the male insertion guide of the case into the female insertion guide of the base plate. Four insertion guides are provided on the right and left sides. (Two on each side.) Press the case well so that the case is completely assembled with the base plate. The case is connected to the base plate with the internal connector.

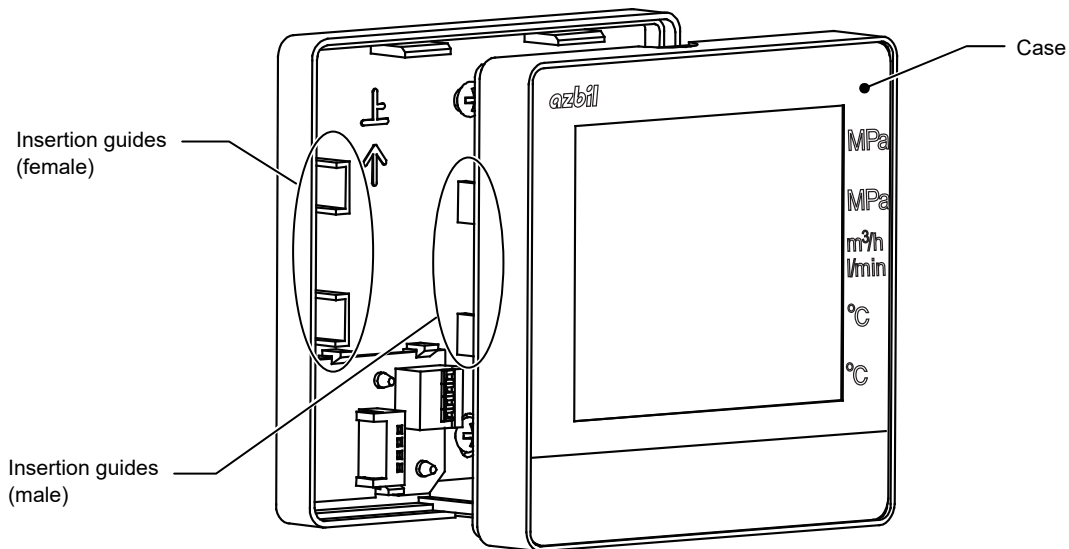


Figure 10. Case assembly with the base plate

4) Arrange the cable connected to the Display Panel.

Cautions for arranging the cable:

- Do not pull the cable.
- To prevent water from flowing down to Display Panel through the cable, let the cable sag, as Fig. 11 shows.
- When installing Display Panel on an AHU side plate, seal the wiring hole on the AHU side plate, as Fig. 11 shows. Damp or dew condensation may damage the Display Panel, otherwise.

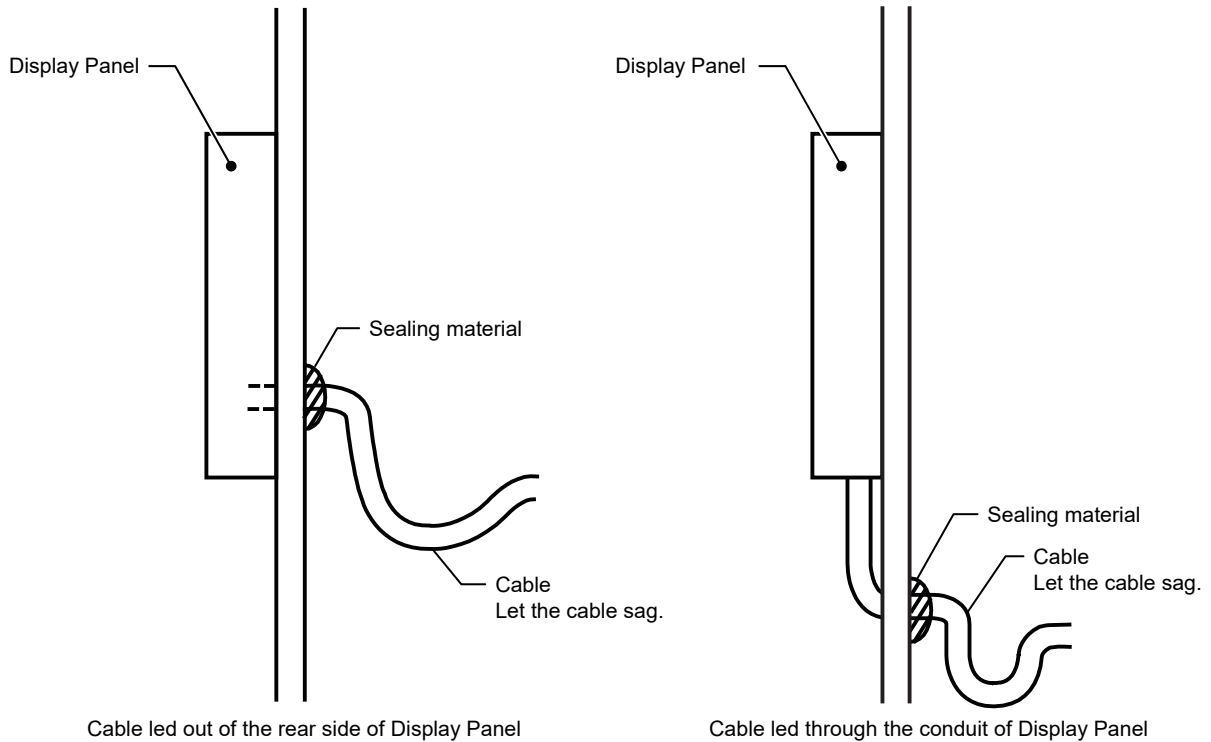


Figure 11. Cable arrangement

5) Film is attached to the front surface (face plate) of Display Panel for protection before shipment. Remove the film before activating Display Panel.

Wiring to Model FVY516 series

IMPORTANT:
Do not pull the cable connected from the terminals of Display Panel to the terminals of Model FVY516_J.

Display Panel is used in combination with Model FVY516 series. To connect the cable to Model FVY516 series, refer to Specification/Installation of Model FVY516 series as well as the following wiring procedure.

- **AB-6880: Intelligent Component Series ACTIVAL +™ Model FVY5160J (JIS 10K/FC200)**
- **AB-7130: Intelligent Component Series ACTIVAL +™ Model FVY516EJ (JIS 20K/SCPH2)**

- 1) Unscrew the three setscrews (M4 × 10) of Model FVY516 series terminal cover and remove it.

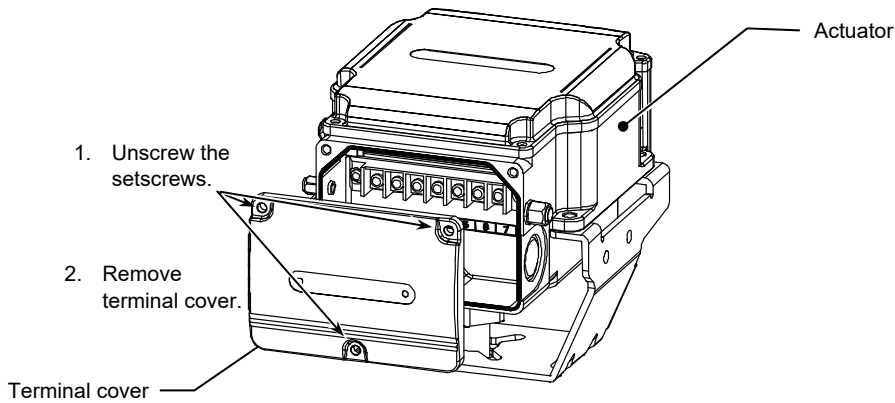
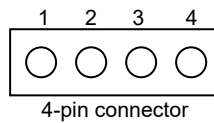


Figure 12. Terminal cover removal

- 2) Lead the cable connected from Display Panel through the port (for the Display Panel cable) of the actuator. Refer to Fig. 13 for the port location.

- 3) Unplug the 4-pin connector pre-plugged in the actuator, as shown in Fig. 12, and connect the cable (4 cores) to the 4-pin connector.

* The lead wire colors described are for the recommended cable (JIS VCTF). If you use a different cable, be sure to match the terminal numbers between the 4-pin connector and the Display Panel.



Pin number	Lead wire color*
1	Red
2	Black
3	White
4	Green

- 4) Plug the 4-pin connector into the connector for Display Panel provided on the actuator.
- 5) Fasten the seal connector. Screw the connector nut well, so that clearance becomes 1 mm or narrower. Cable may be twisted as the connector nut is screwed. In such a case, loosen the connector nut and untwist the cable, then re-screw the connector nut.
- 6) Attach the terminal cover to the actuator, then organize the cable. To prevent water from flowing down to actuator through the cable, let the cable sag.

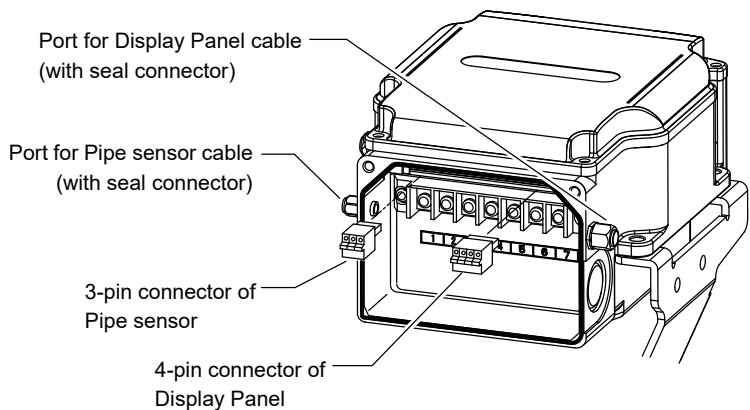


Figure 13. 4-pin connector and 3-pin connector

Maintenance

For replacement of Display Panel, whole unit must be replaced. Display Panel cannot be partially replaced.

Care for the face plate

Clean the face plate with dry soft cloth. Do not use detergent or organic solvent to clean the face plate. Otherwise, the face plate will become scratched, discolored, or deformed.



This product complies with the following harmonised standards of the Electromagnetic Compatibility Directive (EMCD) and the Restriction of Hazardous Substances Directive (RoHSD).

EMCD: EN 61326-1 Class A, Table 2 (for use in an industrial electromagnetic environment)

RoHSD: EN 50581

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