

Neopanel™

Digital User Terminal for Infilex™ Series Controller

(Thermoplate (Auxiliary part))

General

Model QY7205 Neopanel™ is a digital user terminal for the controllers such as Infilex™ FC (FCU (fan coil unit) controller), Infilex™ VC (VAV (variable air volume) controller), and Infilex™ AC (AHU (air handling unit) controller).

Neopanel has a temperature sensing element built-in and functions as a sensor and a remote controller. In addition to ON/OFF control, temperature setting, and other controls of air conditioning equipment, Neopanel shows the outdoor air temperature and the wet weather indication on its display. Besides, preset time schedule can be changed (extended) through Neopanel so that air conditioning does not stop during your overtime work in the office.

Thin and flat design is adopted for Neopanel™ that requires a little mounting space.

The built-in sensor with optional Thermoplate (Model QY7205Z0000) reduces effects of conditions in which Neopanel measures the temperature.

Features

- ON/OFF control, temperature setting and fan speed control of air conditioning equipment.
- Light-switch-plate shape/design in a selectable color to be matched up with various type of rooms. (For a non-standard color request, Neopanel needs to be custom-ordered.)
- High visibility LCD.
- Operation time extension of air conditioning for overtime working hours.
- Batch operation (single Neopanel operates multiple controllers set as a group).
- Display of the outdoor air temperature and the wet weather indication for Neopanel combined with Infilex ZM.
- Simple wiring with modular connectors for easy installation.
- CE Marking certified product:
Neopanel conforms to all the applicable standards of CE Marking.



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.

WARNING



- Do not disassemble the product. Disassembly may result in electrical shock or equipment damage.

CAUTION



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



- This product must be operated under the operating conditions (power, temperature, humidity, vibration, installation position, atmospheric condition, etc) specified in this manual to prevent equipment damage.



- This product must be operated within its rated operating ranges specified in this manual. Failure to comply will cause equipment damage.



- All wiring must comply with local codes of indoor wiring and electric installation rules.



- If more than the rated power supply voltage is applied, product replacement is required for safety.



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

System Configuration

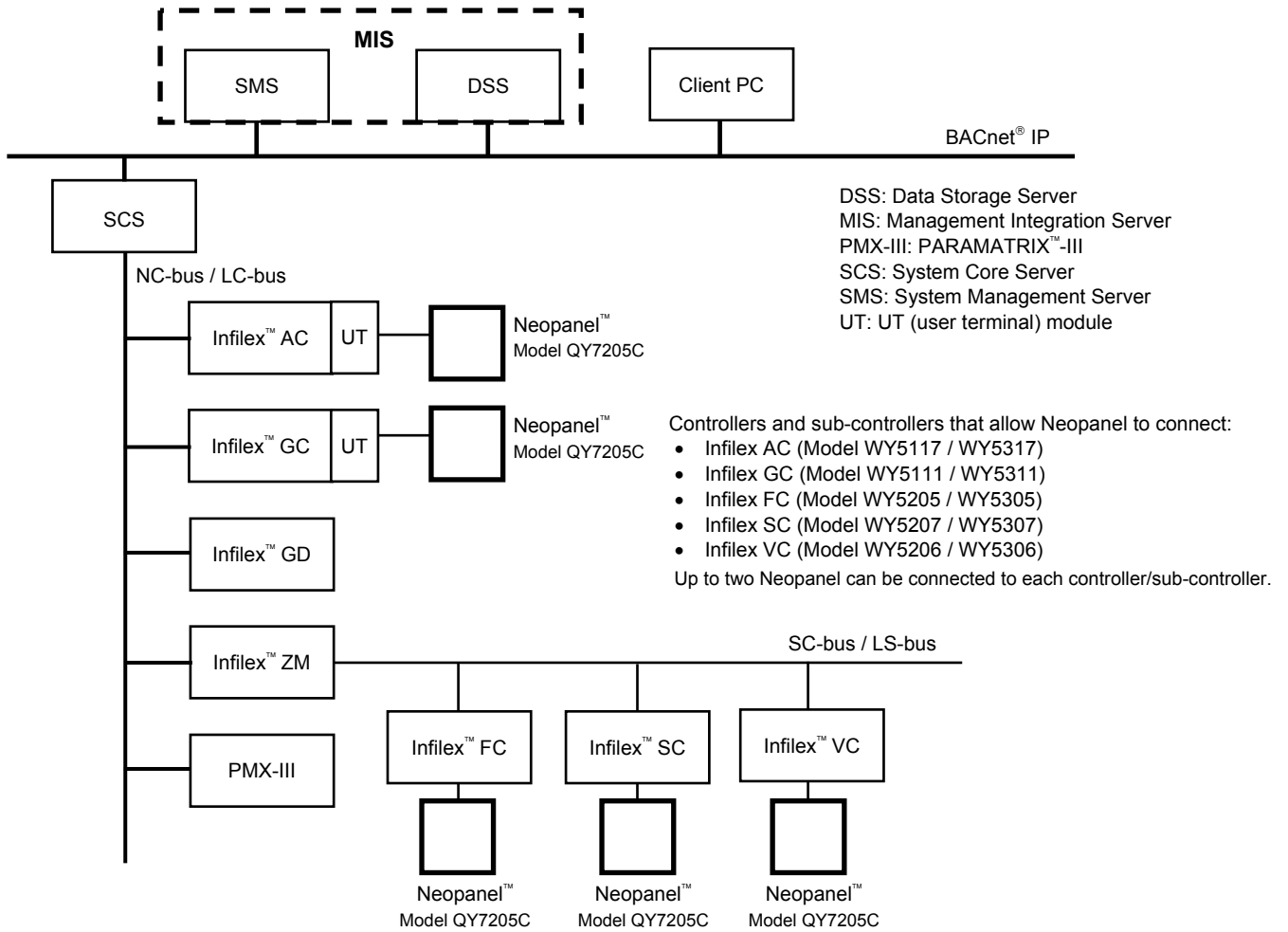


Figure 1. System configuration example: Neopanel™ in savic-net™ FX building management system

Notes:

- * Up to two Neopanel can be connected to one applicable controller/sub-controller.
- * Infilex AC/Infilex GC needs UT module to connect Neopanel.
- * MIS may be used instead of SMS and DSS for your system. Note that MIS cannot be mixed with SMS and DSS in the same system.
- * NC-bus is communication protocol for controllers. LC-bus is LonTalk® protocol for controllers.
 For details of NC-bus or LC-bus, refer to Specifications/Instructions of: Infilex AC, Infilex GC, Infilex GD, Infilex ZM.
- * SC-bus is communication protocol for sub-controllers. LS-bus is LonTalk® protocol for sub-controllers.
 For details of SC-bus or LS-bus, refer to Specifications/Instructions of: Infilex FC, Infilex SC, Infilex VC, Infilex ZM.

Model Numbers

Neopanel

Model number						Description
QY7205						Base model number
	C					English version
		1				Single fan speed
		2				Fan speed control with one key (one key for four levels: auto→low→mid→high)
		3				Fan speed control with four keys (one key for each level: auto, low, mid, high) * Optional functions cannot be added to this model. Only 0 follows for the next digit (QY7205C30)
		0				No optional function
		1				Timer: Extends scheduled time for overtime-work hours. Functions as OFF timer when Neopanel is connected to standalone Inflex FC.
		2				Temperature indication change
		3				Temperature unit change (°C/°F)
		4				Timer + temperature indication change
		5				Timer + temperature unit change (°C/°F)
		6				Temperature indication change + temperature unit change (°C/°F)
		7				Timer + temperature indication change + temperature unit change (°C/°F)
		0				Corporate logo
		1				No corporate logo
			1			Address 1
			2			Address 2
						Off white (for standard model)
					-1	Warm white (for custom-ordered model)
					-2	Pale yellow (for custom-ordered model)
					-3	Pale pink (for custom-ordered model)
					-4	Dark brown (for custom-ordered model)
					-5	Silver (for custom-ordered model)
					-6	Dark gold (for custom-ordered model)
					-7	Dark silver (for custom-ordered model)
					-8	Pearl white (for custom-ordered model)

* Note:
For details of custom-ordered models, ask our sales personnel.

Thermoplate

Model number		Description
QY7205Z0000		Off-white (for standard model)
	-1	Warm white (for custom-ordered model)
	-2	Pale yellow (for custom-ordered model)
	-3	Pale pink (for custom-ordered model)
	-4	Dark brown (for custom-ordered model)
	-5	Silver (for custom-ordered model)
	-6	Dark gold (for custom-ordered model)
	-7	Dark silver (for custom-ordered model)
	-8	Pearl white (for custom-ordered model)

* Note:
For details of custom-ordered models, ask our sales personnel.

Specifications

Item	Specification	
Power supply	8 V DC to 12 V DC (supplied from the controller)	
Power consumption	0.4 W	
Operating environment conditions	Temperature	0 °C to 40 °C
	Humidity	10 %RH to 75 %RH (non-condensing)
	Altitude	2000 m or lower
	Vibration	Max. 3.2 m/s ² (10 Hz to 150 Hz)
Transport/storage conditions	Temperature	-20 °C to 60 °C
	Vibration	5 %RH to 90 %RH (non-condensing)
	Humidity	Max. 3.2 m/s ² (10 Hz to 150 Hz) for storage Max. 9.8 m/s ² (10 Hz to 150 Hz) for transport
Installation	Wall-mount with 1 outlet box	
Insulation resistance	100 MΩ or higher at 500 V DC (between connector and main body)	
Withstand voltage	500 V AC (between connector and main body)	
Materials	Main body, mounting base, and key: ABS resin Sheet: polycarbonate	
Color	For standard model: Off white For custom-ordered model: Warm white (-1), pale yellow (-2), pale pink(-3), dark brown (-4), silver (-5), dark gold (-6), dark silver (-7), pearl white (-8) * '-' with number in () indicates suffix number of each model number.	
Weight	80 g	
Setting resolution	0.5 °C	
Setting range	15 °C to 30 °C (High/low limit setpoint can be set using the controller)	
Temperature sensing element	Thermistor	
Sensing accuracy	± 1.0 °C* ¹ (Zero adjustment can be performed using the controller)	
Operation functions	<ul style="list-style-type: none"> • ON/OFF: Combined with BMS (Building Management System), the latest operation (commanded from Neopanel or BMS center unit) takes priority. ON/OFF operation from Neopanel can be controlled by the BMS center unit. • Temperature setting: Combined with BMS, the latest operation (commanded from Neopanel or BMS center unit) takes priority. High/low limit setpoint can be set. • Fan speed control (L/M/H/AUTO): Available only for Neopanel connected to Inflex FC • Extended operation*²⁺³ Scheduled OFF time can be extended for overtime-work hours. • Display change Temperature indication on the display can be switched between outdoor air temperature and room temperature. • Temperature unit change Temperature unit can be switched between Celsius (°C) and Fahrenheit (°F). 	
Indication functions	<ul style="list-style-type: none"> • Equipment operating status (ON/OFF) • Set temperature • Fan speed (L/M/H/AUTO) *Available only for Neopanel connected to Inflex FC. • Cooling/heating status • Wet weather indication*⁴ <ul style="list-style-type: none"> ○ Outdoor air temperature*⁵ (requires to be custom-ordered.) ○ Room temperature*⁵ (requires to be custom-ordered.) 	
Wiring	EIA-568 compliant (Category 3 or over) φ0.5 × 4 poles for LAN cable	
Wiring length	Max. 50 m long	
Wiring connection	Modular connection Plug: Model 940-SP-3088R (manufactured by Stewart Connector)* ⁶	
Transmission system	Start/stop synchronization	

Notes:

*1 Sensing accuracy is the accuracy of Neopanel itself. Its ambient conditions are not counted.

*2 When Neopanel is connected to Inflex AC / Inflex GC / Inflex GD, extended operation can not be carried out.

*3 Extended operation may not be available depending on a product and/or a system configuration with which Neopanel is combined.

*4 An additional rain sensor is required for the wet weather indication. (A rain sensor cannot be directly connected to Inflex FC or Inflex VC.)

*5 For displaying the full-time indication of either outdoor air temperature or room temperature, Neopanel does not require to be custom-ordered.

*6 This plug is also available at Azbil Corporation. (Part No. DY7207A0100, 100 pieces/set)

Dimensions and Parts Identification

Model QY7205C1001

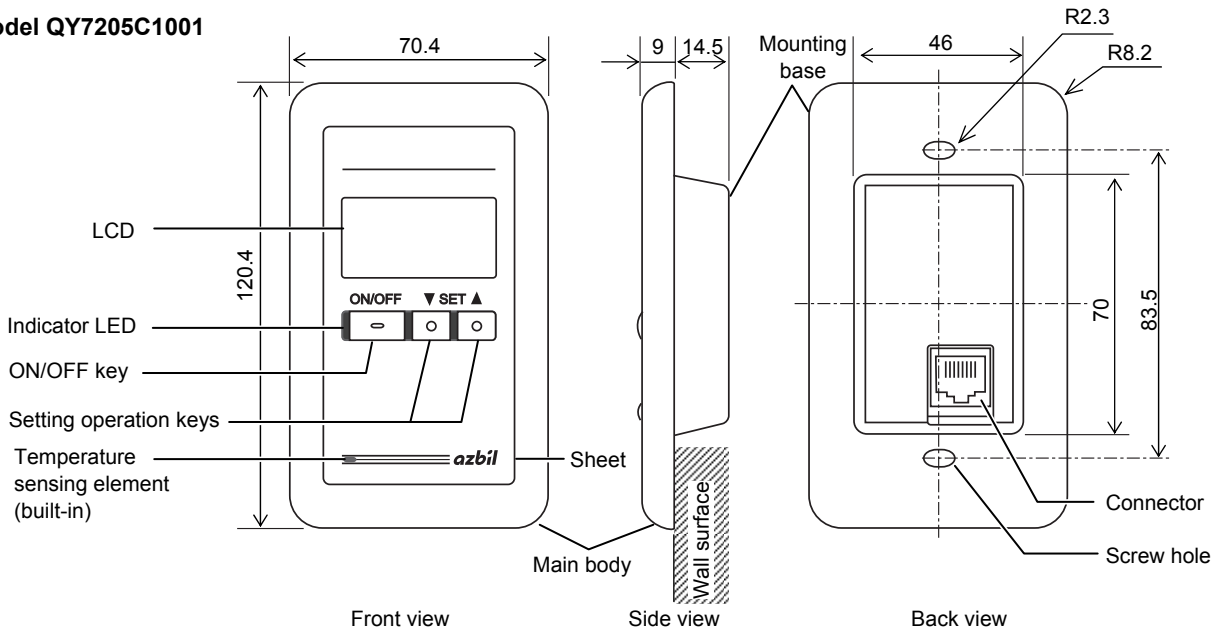


Figure 2. Model QY7205C1001

Model QY7205C2001

Model QY7205C3001

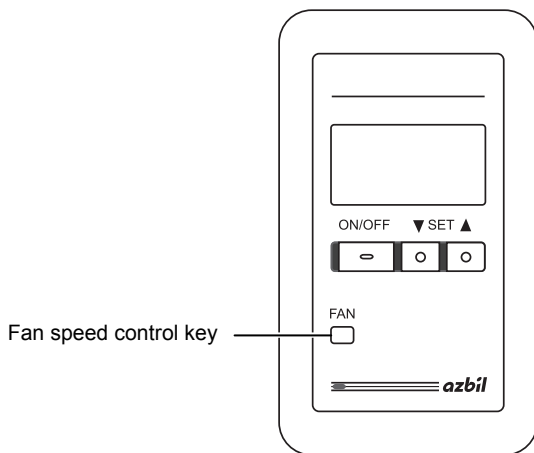


Figure 3. Model QY7205C2001 (front view)

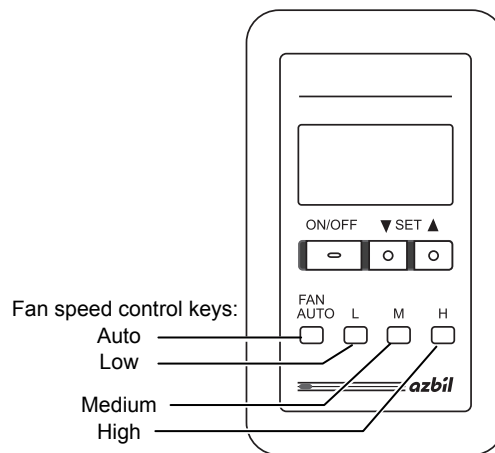


Figure 4. Model QY7205C3001 (front view)

Model QY7205C2701

Thermoplate Model QY7205Z0000 (Optional)

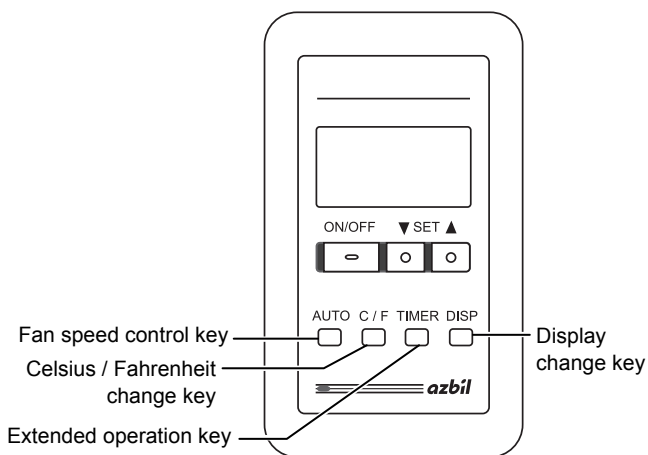


Figure 5. Model QY7205C2701 (front view)

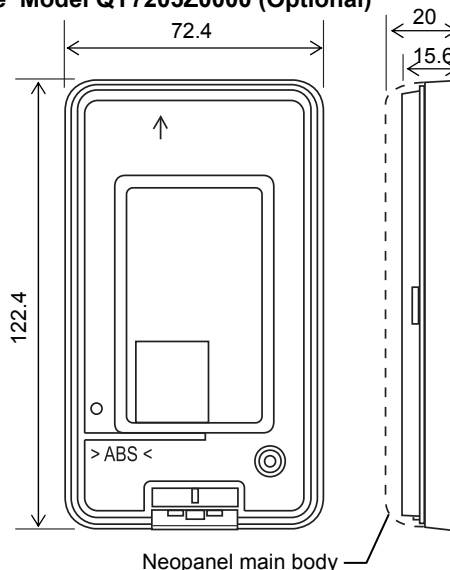


Figure 6. Model QY7205Z0000

Functional Allocation to Each Key

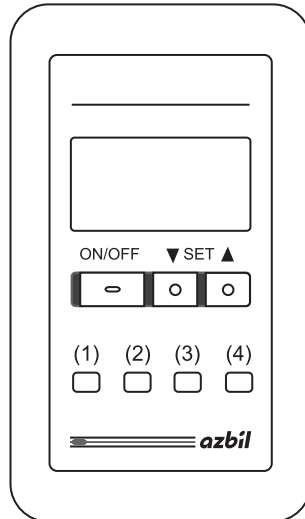


Figure 7. Keys arrangement

(1/2)

Model QY7205					Functions allocated to each key				Corporate logo	Address
					Key (1)	Key (2)	Key (3)	Key (4)		
C	1	0	0	1					With logo	1
	1	1	0	1	Timer					
	1	2	0	1	Display					
	1	3	0	1	°C/°F					
	1	4	0	1	Timer			Display		
	1	5	0	1	°C/°F			Timer		
	1	6	0	1	°C/°F			Display		
	1	7	0	1	°C/°F		Timer	Display		
C	1	0	1	1					Without logo	1
	1	1	1	1	Timer					
	1	2	1	1	Display					
	1	3	1	1	°C/°F					
	1	4	1	1	Timer			Display		
	1	5	1	1	°C/°F			Timer		
	1	6	1	1	°C/°F			Display		
	1	7	1	1	°C/°F		Timer	Display		
C	1	0	0	2					With logo	2
	1	1	0	2	Timer					
	1	2	0	2	Display					
	1	3	0	2	°C/°F					
	1	4	0	2	Timer			Display		
	1	5	0	2	°C/°F			Timer		
	1	6	0	2	°C/°F			Display		
	1	7	0	2	°C/°F		Timer	Display		

Model QY7205					Fan speed/additional function/key arrangement				Corporate logo	Address
					(1)	(2)	(3)	(4)		
C	1	0	1	2					Without logo	2
	1	1	1	2	Timer					
	1	2	1	2	Display					
	1	3	1	2	°C/°F					
	1	4	1	2	Timer			Display		
	1	5	1	2	°C/°F			Timer		
	1	6	1	2	°C/°F			Display		
	1	7	1	2	°C/°F		Timer	Display		
C	2	0	0	1	Fan speed				With logo	1
	2	1	0	1	Fan speed			Timer		
	2	2	0	1	Fan speed			Display		
	2	3	0	1	Fan speed			°C/°F		
	2	4	0	1	Fan speed		Timer	Display		
	2	5	0	1	Fan speed		°C/°F	Timer		
	2	6	0	1	Fan speed		°C/°F	Display		
	2	7	0	1	Fan speed	°C/°F	Timer	Display		
C	2	0	1	1	Fan speed				Without logo	1
	2	1	1	1	Fan speed			Timer		
	2	2	1	1	Fan speed			Display		
	2	3	1	1	Fan speed			°C/°F		
	2	4	1	1	Fan speed		Timer	Display		
	2	5	1	1	Fan speed		°C/°F	Timer		
	2	6	1	1	Fan speed		°C/°F	Display		
	2	7	1	1	Fan speed	°C/°F	Timer	Display		
C	2	0	0	2	Fan speed				With logo	2
	2	1	0	2	Fan speed			Timer		
	2	2	0	2	Fan speed			Display		
	2	3	0	2	Fan speed			°C/°F		
	2	4	0	2	Fan speed		Timer	Display		
	2	5	0	2	Fan speed		°C/°F	Timer		
	2	6	0	2	Fan speed		°C/°F	Display		
	2	7	0	2	Fan speed	°C/°F	Timer	Display		
C	2	0	1	2	Fan speed				Without logo	2
	2	1	1	2	Fan speed			Timer		
	2	2	1	2	Fan speed			Display		
	2	3	1	2	Fan speed			°C/°F		
	2	4	1	2	Fan speed		Timer	Display		
	2	5	1	2	Fan speed		°C/°F	Timer		
	2	6	1	2	Fan speed		°C/°F	Display		
	2	7	1	2	Fan speed	°C/°F	Timer	Display		

Installation

IMPORTANT:

- Installation location of Neopanel largely affects temperature control. Thoroughly select the location.
- When applying Neopanel to a location where sensing accuracy is particularly required, such as follows, do not use internal temperature sensor. Provide an additional temperature sensor and connect it to the controller.
 - Industrial plant, operation room, clean room, animal holding facility, etc.
 - Rooms where follow-up control is required for rapid change of room temperature.

Influence of wall surface temperature

Neopanel is a well-designed, thin and flat digital user terminal. Its built-in sensor does not protrude from the product front surface and is close to the wall where the Neopanel is mounted.

As the sensor built in Neopanel measures air temperature adjacent to the wall, accurate room temperature may not be measured if there is a large difference between the room temperature and the wall surface temperature. In such a case, use Thermoplate (Model QY7205Z0000) to leave a space between the built-in sensor and the wall surface and to diminish the difference between temperature measure by the built-in sensor and room temperature. In the following conditions, an external temperature sensor is recommended instead of the built-in sensor .

- Room air adjacent to the wall does not circulate, and the air distribution is poor.
- Heat capacity of the wall is large due to the thick wall (50 mm or thicker) or its material such as concrete, plaster board, etc.
- Temperature difference between the wall surface on the rear side and the room is large. (e.g. Elevator shaft, corridor, etc. where the air temperature adjacent to the rear side of the wall is as high/low as the outdoor air temperature.)
- Rear side of the wall is open to the outdoor air.
- Air conditioner does not have 24-hour operating system. Temperature significantly drops in winter and rises in summer after its shutdown, and there's a large temperature change at its startup.

For use of the sensor built in Neopanel, ask our sales personnel.

Requirements for installation location

Install Neopanel on an indoor wall where:

- Representative temperature/humidity (of the room/zone to control) can be measured (approx. 1.5 m high above the floor)).
- Ambient wind velocity is 0.1 to 0.15 m/s.
- There is enough maintenance space left in front.

Do not install Neopanel on a wall where:

- Heat (generated by office device or equipment, for example) stays on.
- Air circulation is interfered (by furniture or door, for example).
- Draft, downdraft, and hot/cold air from water pipes/ducts affects.
- Weather conditions (including sunlight and outdoor air) affects.
- There is vibration.
- Dew condensation occurs.
- Water drops on.
- Atmosphere contains corrosive gas, organic solvent, or other chemicals.

Do not install Neopanel outdoors or in a duct.

Do not install Neopanel directly or horizontally on a ceiling.

Precautions for installation

- Provide Thermoplate (Model QY7205Z0000) for installing Neopanel as necessary.
- Do not allow any foreign object get inside Neopanel.
- Do not get cables caught between the mounting surface of Neopanel and the wall.
- Do not damage the element of Neopanel when removing the cover.
- Wind velocity may not be sufficient for horizontally installed Neopanel.
- Protect Neopanel from air infiltrating to the rear side of Neopanel from an outlet box (inside a wall) by sealing the wall.

Notes

- Chemical (organic solvent) atmosphere may shift the output values.
- Corrosive gas, organic solvent, and other chemicals contained in the atmosphere can cause measuring error of Neopanel, shorten the service life of Neopanel, or damage Neopanel.
- Ask our sales personnel for a special application.

Installation procedure: Neopanel with Thermoplate

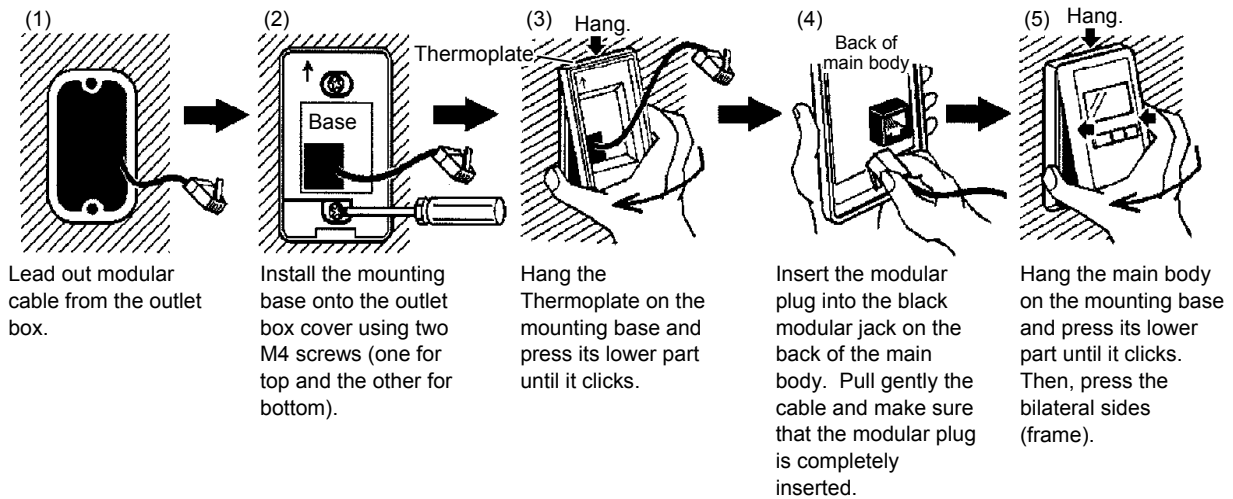


Figure 8. Installation procedure: Neopanel with Thermoplate

Installation procedure: of mounted Neopanel with Thermoplate

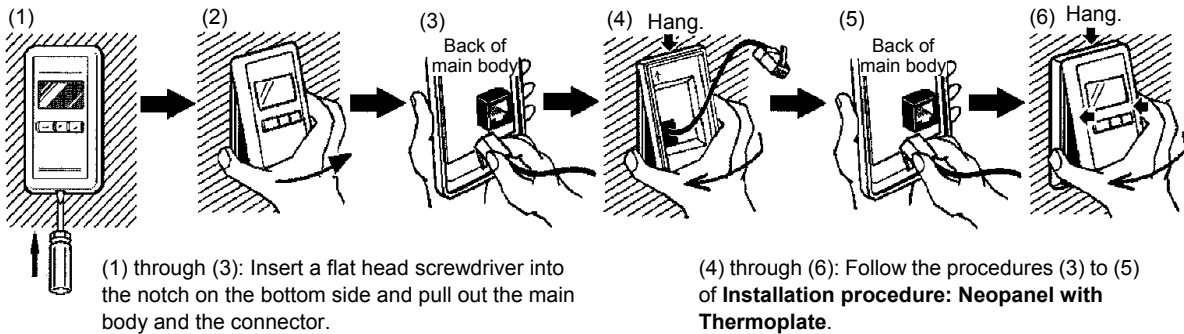


Figure 9. Installation procedure: mounted Neopanel with Thermoplate

Wiring

- 1) Lead out modular cable from the outlet box.
- 2) Install the mounting base onto the outlet box cover (pitch: 83.5mm) using two M4 screws attached to the mounting base (one on the upper and the other on the lower).
- 3) Insert modular plug into the black modular jack on the back of the main body. Pull gently the cable and make sure that the modular plug is completely inserted.
- 4) Hang the main body on the mounting base and press its lower part until it clicks. Then, press the bilateral sides (frame).

For use of the built-in sensor, please contact Azbil Corporation's sales representatives.

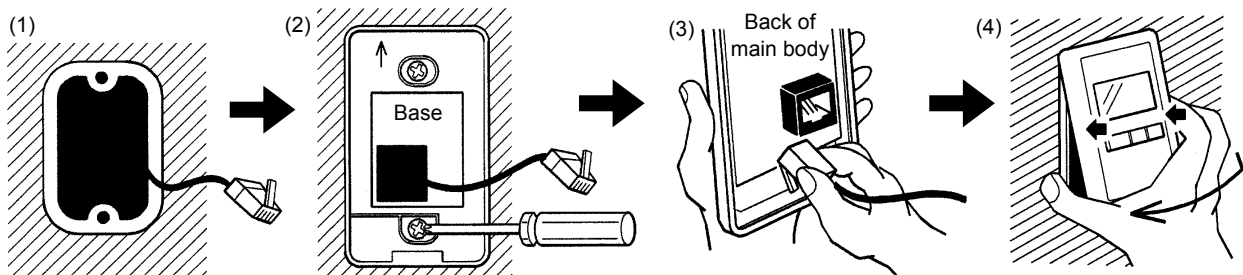


Figure 10. Cable connection to Neopanel

To remove the main body from the mounting base, insert a flat head screwdriver into the notch on the bottom side and pull out the main body.

Precautions for Use

Neopanel is coated with the protective sheet before shipment. Remove sheet before activating Neopanel.

Operations

Operation/control functions may not be applicable depending on a system configuration connected to Neopanel.

Function	Description	Operation/Display	Remark
Start/stop operation	Performs ON/OFF operation of VAV unit or FCU, etc.	Press ON/OFF key. Green indicator LED lights up while Neopanel is ON.	<ul style="list-style-type: none"> Combined with BMS (Building Management System), the latest operation (commanded from Neopanel or BMS center unit) takes priority. ON/OFF operation from Neopanel can be controlled by the BMS center unit. Combined use with setback control is not available.
Set operation	Changes set temperature.	Press set operation key. Set temperature on LCD is changed.	<ul style="list-style-type: none"> Combined with BMS, the latest operation (commanded from Neopanel or BMS center unit) takes priority. High/low limit setpoint can be set with the BMS center unit. Dual setting¹⁾ is available for Inflex FC and Inflex VC.
Setback control	Changes to setback operation ²⁾	Press ON/OFF key. Indicator LED goes off during setback control.	<ul style="list-style-type: none"> Combined with BMS, the latest operation (commanded from Neopanel or BMS center unit) takes priority. Setback control from Neopanel can be controlled by the BMS center unit. Combined use with ON/OFF operation is not available.
Fan speed control	Changes fan speed (L/M/H/AUTO) of FCU	Press fan speed control key. Fan speed indicator icon on the LCD changes .	<ul style="list-style-type: none"> Combined with BMS, the latest operation (commanded from Neopanel or BMS center unit) takes priority.
Display change	Changes LCD indication	Press display change key. LCD indication is changed between room temperature and outdoor air temperature.	
Temperature unit change	Changes temperature unit on LCD	Press unit change key. Temperature unit is changed between °C and °F.	
Extended operation	Extends scheduled OFF time of VAV unit or FCU	Press extended operation key. Scheduled time for air conditioning OFF is displayed on LCD. Press set operation key to reschedule OFF time.	<ul style="list-style-type: none"> Time schedule is set with the BMS center unit.
Batch operation	Operates multiple VAV units or FCUs altogether (e.g. ON/OFF and temperature setting).		<ul style="list-style-type: none"> A group of multiple VAV units/FCUs operated with Neopanel needs to be the same as that operated with the BMS center unit.

Notes:

- 1) Dual setting is the method to have cooling setting and heating setting separately.
- 2) Setback control conserves energy by changing temperature setpoint.

Setting

The following functions of Neopanel can be changed by its controller parameter settings. For the parameter settings, refer to the relevant startup manuals of a controller connected to the Neopanel.

- 1) Full-time indication on display

Full-time indication is composed of large and small display parts. Full-time indication items for each part can be selected from the right:

For large display part	}	+	{	For small display part
<ul style="list-style-type: none"> Room setpoint Room temperature Current time 				<ul style="list-style-type: none"> Outdoor air temperature Room temperature No indication
- 2) Cooling/heating indication

COOL/WARM/VENTILATE status can be displayed or undisplayed.

To Connect Two Neopanel (for Remote Control)

Up to two Neopanel can be connected to a controller.

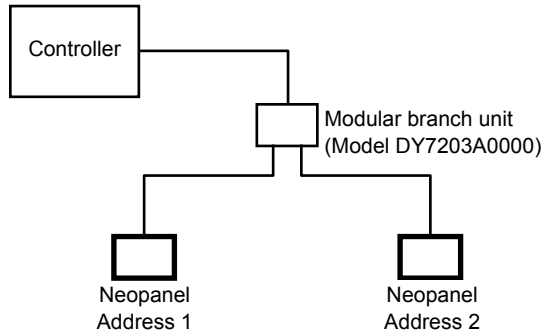
To connect two Neopanel,

- Modular branch unit (Model DY7203A0000)
- Neopanel with address 1 and with address 2.

(Note that two Neopanel with address 1 connected to a controller do not work.)

are required.

Address number is indicated on the shipping carton and on the label attached to the inside surface of the Neopanel main body (with the base cover removed).



Notes:

- * Between Neopanel addresses 1 and 2, the latest command of start/stop operation, temperature setting, and fan speed control takes priority.
- * Neopanel with address 2 does not have a temperature measuring function.

Maintenance

- Maintenance is not required unless necessary.
- A whole product needs to be replaced for any replacement.
- For Neopanel installed in an animal holding facility or in an operation room, attach protective cover to Neopanel before sterilizing the place.
- Wipe display and area of the keys with dried soft cloth. Never use detergent or organic solvent. Otherwise, Neopanel gets damaged, discolored, or deformed.



This product complies with the following harmonised standards of the Electromagnetic Compatibility Directive (EMCD) and the Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment Directive (RoHSD).

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

RoHSD: EN 50581

Trademark information:

- * Inflex, Neopanel, PARAMATRIX and savic-net are trademarks or registered trademarks of Azbil Corporation in Japan or in other countries.
- * BACnet is a registered trademark of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).
- * LonTalk is a trademark of Echelon Corporation registered in the United States and other countries.

Azbil Corporation
Building Systems Company

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Specifications are subject to change without notice.

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