iCN-633(TH) Operation and User Manual

Parameter Table

1. Parameter Table and Default Values

Basic Function Options				
	Parameter	Code	Factory Setting	Adjustable Range
1	Max. Cooling Temp. Upper Limit	cH	35.0℃	Min. Cooling Temp. Lower Limit ~35.0°C
2	Min. Cooling Temp. Lower Limit	cL	15.0℃	15.0°C ~ Max. Cooling Temp. Upper Limit
3	Max. Heating Temp. Upper Limit	hH	35.0℃	Min. Heating Temp. Lower Limit ~35.0°C
4	Min. Heating Temp. Lower Limit	hL	15.0℃	15.0°C ~ Max. Heating Temp. Upper Limit
5	Valve (3-Way Valve/Compressor) Delay Protection Time	Pd	0 (No Delay)	0(No Delay) 、1(1 min)、2(3 min)
6	Temperature Compensation Setting	tc	0.0℃	-5.0~5.0°C
7	Panel Backlight	bL	30 (30 sec)	30 (30 sec)、 -- (Always On)
8	Panel Key Tone	bu	on (Enabled)	on (Enabled)、oF (Disabled) Note : This function is invalid for iCN-653

Advanced Function Options				
	Parameter	Code	Factory Setting	Adjustable Range
9	Power Recovery Mode	PP	2 (Power Off)	0(Memory Mode)、1(Auto Restart)、2(Remain Off)
10	Coil Configuration	Pi	1 (2-Pipe/DX/Boiler)	0(4-Pipe/Electric Heating)、1(2-Pipe/DX/Boiler)
11	Intermittent Air Supply Function	Pu	0(Intermittent Air Supply - Off)	0(Disable Intermittent Air Supply)、 1(Enable Intermittent Air Supply)
12	Room Card Function	dE	0(Disable Intermittent Air Supply)	oF(Disable Intermittent Air Supply)、 on (Enable Room Card Function)
13	Card Removal Mode	dn	0(Stop AC When Card Removed)	0(Stop AC When Card Removed)、 1(Maintain AC When Card Removed)
14	Room Card Fan Speed	dF	AuTo(Automatic)	AuTo (Auto) (Low) (Medium) (High)
15	Room Card Cooling Set Temperature	dC	27℃	15.0℃~35.0℃ Note : Operation is limited by cooling temperature upper /lower limits.
16	Room Card Heating Set Temperature	dH	23℃	15.0℃~35.0℃ Note : Operation is limited by heating temperature upper/lower limits.

2. Power-on Mode and KEYCARD Operation Relationship (Table 2)

On external call reconnection / Call Mode Setting	Keycard Removed (K.C Line Grounded)	Keycard Inserted (K.C Line Open)
0 (Call Memory)	Execute based on the Keycard Removal Mode : 1. dn=0: Controller OFF 2. dn=1: Continuous AC operation (determined by Cool/Heat/Fan mode, Keycard airflow, Keycard cooling set temp, and Keycard heating set temp)	Controller operates according to the previous state
1 (Call Power-On)	Execute based on the Keycard Removal Mode : 1. dn=0: Controller OFF 2. dn=1: Continuous AC operation (determined by Cool/Heat/Fan mode, Keycard airflow, Keycard cooling set temp, and Keycard heating set temp)	Controller ON
2 (Call Power-Off)	Execute based on the Keycard Removal Mode : 1. dn=0: Controller OFF 2. dn=1: Continuous AC operation (determined by Cool/Heat/Fan mode, Keycard airflow, Keycard cooling set temp, and Keycard heating set temp)	Controller OFF

Note 1 : KEY CARD is an optional feature and is not included in the standard configuration.

Note 2 : To enable the KEY CARD function, set the parameter option (dE) to ON.

Function Description

1 Operation / Keypad Instructions

1.1 Power Button ⏻ : Press once to turn the power ON/OFF。

1.2 Mode Button M :

1.2.1 When the unit is ON, press once to switch operation modes : Cooling, Heating, Fan.

1.2.2 When the unit is OFF, press and hold for 3 seconds to enter basic function settings (refer to Section 2.9).

1.3 Fan Speed Button :

1.3.1 When the unit is ON, press once to select fan speed :
5-speed options: (Auto), Low, Low-Medium, Medium, Medium-High, High.

1.3.2 In Fan mode, Auto fan speed is unavailable.

1.3.3 In Cooling mode (unit ON), press and hold for 5 seconds to enable/disable Sleep Mode.

1.4 Temperature Setting Button (▲/▼) :

1.4.1 When the unit is ON, press once to adjust the set temperature by ±0.5°C. Press and hold to adjust rapidly.

1.4.2 During adjustment, "SET" is displayed to the left of the temperature value.
Cooling Mode : Adjustable between minimum cooling lockout temperature and maximum cooling lockout temperature.
Heating Mode : Adjustable between minimum heating lockout temperature and maximum heating lockout temperature.

1.4.3 The temperature setting will be automatically saved and revert to room temperature display after 5 seconds of inactivity.

1.4.4 Temperature setting is unavailable in Fan mode.

1.4.5 Press both ▲ (Up) and ▼ (Down) temperature keys simultaneously to set 0–24hr scheduled ON/OFF.

1.4.6 In function options, adjust or select settings as needed.

1.4.7 Key Lock (Lock) : Set/Release: Hold both ▲ and ▼ keys for 5 seconds while powered OFF.
Locked State : Only power ON/OFF and 0–24hr scheduling are operable.

1.5 KEYCARD (K.C Line External Control) :

1.5.1 The controller's operation upon power restoration depends on the call mode setting and KEYCARD insertion/removal status, as defined in Table 2.

1.5.2 After power restoration :
Remove KEYCARD : Controller operates per Card Removal Mode.
Insert KEYCARD : Normal operation resumes.

1.5.3 In Cooling mode after power restoration, if KEYCARD is removed :

1.5.3.1 If Card Removal Mode = Stop (dn=0) : Controller forces OFF.

1.5.3.2 If Card Removal Mode = Continue (dn=1) : Operates at KEYCARD-set airflow (dF) and cooling temperature (dC).

1.5.4 Heating Mode Operation (After Power Recovery & KEYCARD Removal) :

1.5.4.1 (dn=0) : System forces OFF when card is removed.

1.5.4.2 (dn=1) : Maintains operation using preset airflow (dF) and heating temp (dH).

1.5.5 Fan Mode Operation (After Power Recovery & KEYCARD Removal) :

1.5.5.1 (dn=0) : System forces OFF when card is removed.

1.5.5.2 (dn=1) : Continues Fan-only operation.

1.5.6 Normal Operation (KEYCARD Inserted) :
Full control resumes in all modes (Cooling/Heating/Fan) after power recovery.

2 Functional Specifications

2.1 Temperature Display
Range : 0.0°C to 50.0°C，Accuracy : ±1°C，Resolution : 0.5°C

2.2 Detection Range : -5.0℃~55.0℃

2.3 Temperature Setting Range :

2.3.1 Cooling Mode : Adjustable between minimum cooling lockout temp and maximum cooling lockout temp.

2.3.2 Heating Mode : Adjustable between minimum heating lockout temp and maximum heating lockout temp.

2.4 Mode : Cooling Fan， Speed : Auto Set ，Temperature : 26°C

2.5 Cooling Mode Operation :

2.5.1 Valve Contact Logic :

2.5.1.1 Opens when room temp ≥ (Set Temp+0.5℃)

2.5.1.2 Closes when room temp ≤ (Set Temp - 0.5℃)

2.5.2 Configurable Fan Speeds: Auto, High, Medium, Low

2.5.2.1 Auto Speed Logic : Three-stage automatic fan speed control in cooling mode

2.5.3 Main Unit Contact ON, Heater Contact OFF

2.5.4 Intermittent Airflow Function Disabled (Pu=0) :
Fan continues running regardless of valve contact status (open/closed).

2.5.5 Intermittent Airflow Function Enabled (Pu=1) :
Fan runs when valve contact is open; stops when valve contact is closed.

Three-Stage Auto Fan Speed Logic in Cooling Mode

△=(Room Temperature –Set Temperature)	Fan Speed
△≧3.0	High
2.5≧△≧2.0	Maintain Current Speed
△=1.5	Medium
1.0≧△≧0.5	Maintain Current Speed
△≦0	Low

2.6 Heating Mode :

2.6.1 Two-Pipe System (Boiler/Direct Expansion) Valve Contact Operation (Coil Setting Pi=1) :

2.6.1.1 Valve contact opens when set temperature ≥ (room temperature + 0.5°C).

2.6.1.2 Valve contact closes when set temperature ≤ (room temperature–0.5°C).

2.6.1.3 Heater contact ON, main unit contact ON.

2.6.2 Four-Pipe System (Electric Heating) Heater Contact Operation (Coil Setting Pi=0) :

2.6.2.1 Heater contact opens when set temperature ≥ (room temperature + 0.5°C).

2.6.2.2 Heater contact closes when set temperature ≤ (room temperature – 0.5°C).

2.6.2.3 Valve contact OFF, main unit contact ON.

2.6.2.4 Heater Fan Shutdown Delay : In electric heating mode, heater contact delays shutdown by 30 seconds after power-off.

2.6.3 Adjustable Fan Speed : Auto, High, Medium, Low

2.6.3.1 Auto Speed :

Three-Stage Auto Fan Speed Logic in Heating Mode

△=(Room Temperature –Set Temperature)	Fan Speed
△≧3.0	High
2.5≧△≧2.0	Maintain Current Speed
△=1.5	Medium
1.0≧△≧0.5	Maintain Current Speed
△≦0	Low

2.6.4 Intermittent Airflow Function Disabled (Pu=0) :
Fan continues running regardless of valve/heater contact status (open/closed).

2.6.5 Intermittent Airflow Function Enabled (Pu=1) :
Fan runs when valve/heater contact is open; stops when valve/heater contact is closed.

2.7 Valve (3-Way Valve/Compressor) Delay Protection Time :

2.7.1 No Delay Protection for Valve Contact (Pd=0).

2.7.2 Valve Contact with 1-Minute Delay Protection (Pd=1).

2.7.3 Valve Contact with 3-Minute Delay Protection (Pd=2).

2.8 Power Recovery Mode Setting :

2.8.1 Power-On Forced Shutdown (PP=2).

2.8.2 Power-On Forced Startup (PP=1) : System turns ON and resumes operation with the previous mode, fan speed, and set temperature.

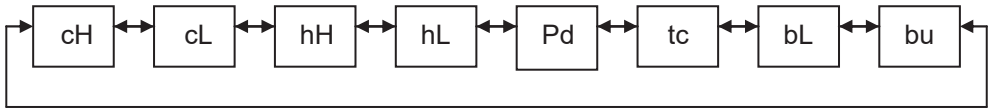
2.8.3 Power-On Memory (PP=0) : System restores the last ON/OFF state along with the previous mode, fan speed, and set temperature.

2.9 Function Options :

2.9.1 Basic Function Option Setting :

(1) Entering Basic Function Mode :
While the controller is in OFF state, press and hold the Mode (M) button for 3 seconds to enter the basic function options.

(2) Navigating Options :
After entering, the LCD displays "cH". Use ▲ or ▼ buttons to cycle through the following main options : cH, cL, hH, hL, Pd, tc, bL, bu.



Basic Function Option Codes

	Main Option	Sub-Option
Max. Cooling Temp. Upper Limit	cH	15.0~35.0℃
Min. Cooling Temp. Lower Limit	cL	15.0~35.0℃
Max. Heating Temp. Upper Limit	hH	15.0~35.0℃
Min. Heating Temp. Lower Limit	hL	15.0~35.0℃
Valve (3-Way/Compressor) Delay Protection Time	Pd	0,1,2
Temperature Compensation Setting	tc	-5.0~5.0℃
Panel Backlight	bL	30, --
Panel Key Tone	bu	on,oF

(3) Sub-Option Access :
When the LCD displays a main option, press the Mode (M) button to enter its sub-option.

(4) Parameter Adjustment :
Upon entering a sub-option, the LCD displays the current parameter value.
Adjust the value using ▲ or ▼, then press Mode (M) to confirm and return to the main options.

(5) Save & Exit :
Auto-Save : If no key is pressed for 20 seconds, or if Mode (M) is held for 3+ seconds, the system :
Saves the new setting to EEPROM (permanent memory).
Exits the adjustment mode.
Displays room temperature on the LCD.

2.9.2 Advanced Function Settings : Contact your dealer for configuration.

3 Troubleshooting

(The controller will automatically shut down when the following faults occur)

3.1 Error Code E2 (Temperature Sensor Malfunction)
Display : "E2" appears on the LCD panel, indicating a temperature sensor abnormality.
Action : The error code remains locked on the display until resolved.
After troubleshooting and repairing the communication wiring, press the Power button ⏻ to reset the system.

4 Important Notices

4.1 Power Safety : Always disconnect power supply before installation to prevent electric shock hazards.

4.2 Wiring Compliance : Strictly follow the wiring diagram during installation to avoid incorrect connections and potential dangers.

4.3 Environmental Conditions : Do not install the controller in humid locations to prevent malfunction.

4.4 Pre-energization Check : Verify all wiring and input power specifications before applying electricity.

4.5 Warranty Exclusion : Damage caused by improper installation is not covered under our product warranty.

4.6 Communication Cable Specifications :
Must use UL2464 compliant cable.
24AWG or 26AWG, 3-core with braided shielding.

5 Specifications

5.1 Dimensions

- 5.1.1 Panel dimensions : 120mm (L) × 70mm (W) × 14mm (H).
- 5.1.2 Drive box dimensions : 127mm (L) × 68mm (W) × 49mm (H).

5.2 Environmental Limits

- 5.2.1 Operating environment : 0°C to 50°C, <90% RH (non-condensing).
- 5.2.2 Storage environment : -10°C to 60°C, <90% RH (non-condensing).

5.3 Input/Output

- 5.3.1 Power input : AC 100V–240V, 50/60Hz (single-phase).
- 5.3.2 Room card input ×1 (optional; not included as standard).
- 5.3.3 Temperature sensor input ×1.
- 5.3.4 Key inputs ×5 (physical buttons for iCN-633; touch keys for iCN-633TH).
- 5.3.5 Output contacts :
  - 5.3.5.1 Valve contact 1A ×1.
  - 5.3.5.2 Blower motor contact 3A ×3.
  - 5.3.5.3 Host interlock contact 1A ×1 (non-energized).
  - 5.3.5.4 Heater contact 1A ×1 (optional; not included as standard).
  - 5.3.5.5 Load fuse : 5A /250VAC.
  - 5.3.5.6 If contact capacity is insufficient, install an additional relay.
- 5.3.6 Display output : LCD with backlight.
- 5.3.7 Communication distance : Max. 100m.

6 Wiring

Refer to the *iCN3-Wire Communication Series Wiring Guide* for detailed instructions.