



iCos 4.0

(Intelligent Building Control Software)



The iCos 4.0 software is a Microsoft Windows based, colour graphic user interface. iCos 4.0 software provide powerful features and networking solutions to control and monitor your intelligent building system. Our technology enables you to integrate heading, ventilation, air conditioning, electric power, electric light, security, fire fighting and CCTV. iCos 4.0 also provide the freedom to create new innovative solutions. Because we get B-OWS certification and use standard, non proprietary technology such as TCP/IP, BAC net, and Ethernet, our solutions are compatible with all systems on the market, and can fully integrate on one network. iCos 4.0 allows use of the same hardware and software for small or large systems. Also through interfaces with other manufacturers' systems, iCos 4.0 can talk to the entire building and share information among systems including

Monitoring / Control

iCos 4.0 graphic screen is based objects. iCos 4.0 support unicode and can easily use to control using mouse. This system is available page open, close and switch. Script run when system occur event such as tag change value.

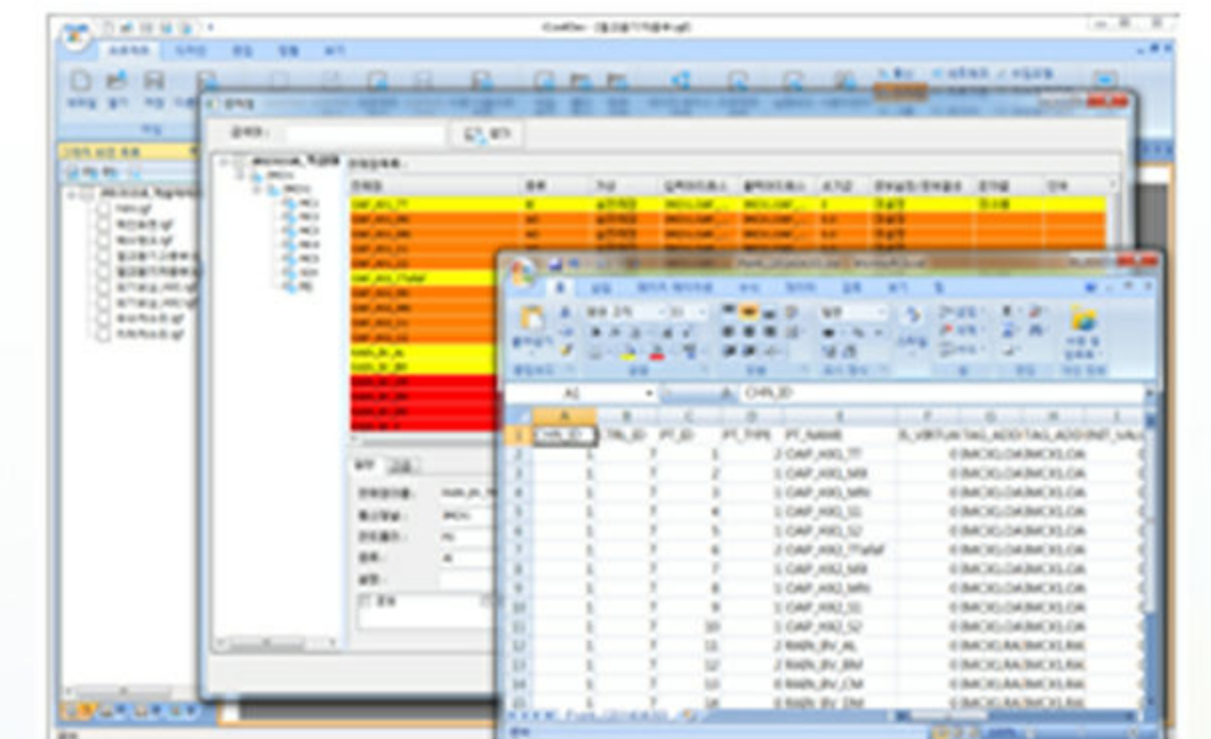
- Convenient menu system and various graphic features.
- Supports configuring point and setting machine using mouse.
- Supports setting scale and offset values.
- Provides the various animation features.
- Supports popup window screen and dual monitor.



Point Management

Operator can easily define real address point and virtual address point. Control points of building connected to system are setting and managing. It consists of tree structure and can easily manage using excel.

- Edit using excel
- Import and export control point



Event Logging

User Event Logging is used to understand an actual site situation more easily by generates a user specific event message. User event message are displayed in user event logging object

Network

It offers the ability to synchronize data by connecting as a client to the server without communicating with the actual device. Also it will support the ability to back up secondary server if the primary server behavior is not possible.

- Support the network configuration of the server/client
- Set the address of the client can connect from iCos 4.0 server
- Support redundancy of server failure by using a server

Security

Security function is used to restrict the operation authorization of each user. The Security level can be assigned from 1 to 10.

Schedule

Schedule function is used for the case that the method to manage acquired data or the one to control a system is different by days such as weekday, holiday and day of the week.



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Data Logging

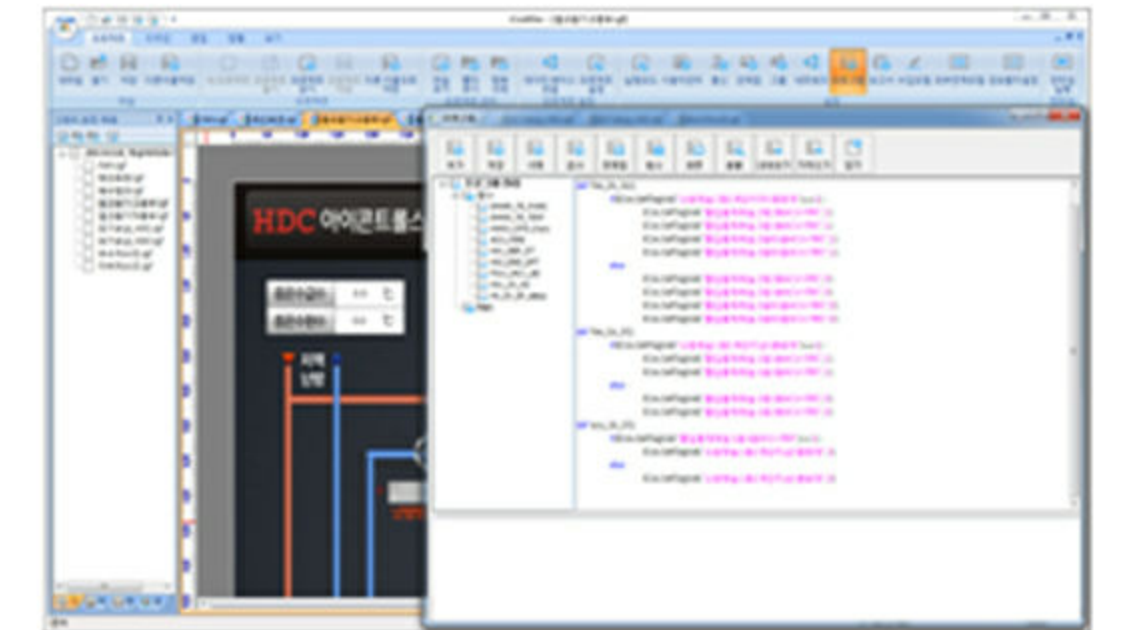
This function is used to save the point value for logging in database. a data are logged according to regular interval or in case that a value is changed. The function to save a logged data in file is provided. Files that are classified according to logging term are saved.

- Logged data can be displayed on a trend window through Trend Function.

Script

The iCos4.0 is supported Python based script language, the user program run inside of the iCos4.0 can be made. it is available to control data or objects in the iCos4.0 and to link with other application programs. It is available to write the script language defining the action to the button or the touch of a monitoring. It is available to write the script language operated when each monitoring widow is opened and closed.

- As the language similar to Python is supported
- Support 20 Functions for iCos4.0



Report

The iCos4.0 makes a report by user made Excel file format. A daily report, weekly report, monthly report and annual report are provided and a report can be outputted by a specific condition or user's command

Alarm

iCos 4.0 can be used to set the conditions for generating the alarm. When an alarm occurs, it will do the notification of the Print, SMS and E-mail. Configure alarm priority and alarm delay Analog tag Alarm : Boundary value, gab value, and rate of change alarm Digital tag Alarm : ON, OFF, ON→OFF, OFF→ON, ON↔OFF Alarm management by region and priority Alarm summary, file, print, sms, e-mail and sound service When alarm occurs, script run.

Trend

The iCos4.0 supports real-time trending and historical trending and archival playback. The real-time trending supports view and analyze archived real-time data. The historical trending supports the storage of trend data for a user set period. The iCos4.0 can be made a graph for analysis of trend data, and saved trend data to Excel file.

- iCos4.0 can make a graph of the trending data it is processed by a daily or a specific period.

Open System

Open system must need for interface building energy management system(BEMS), Facility Management Systems (FMS) and other specific user software.

The iCos4.0 software is supported many functions for connecting to other systems. It supported RDBMS via ODBC and BACnet protocol(standard BAS protocols). The iCos4.0 software get BACnet Operator Workstation Software(B-OWS) certification.

Specifications

System Requirement

OS : Windows XP / Vista / 7 / 8

CPU : Dual core 2GHz or faster / Memory : 3GB or higher

HardDisk : 100GB available on hard disk / Screen Resolution 1024 x 768 pixels or higher

Interface : Keyboard and a Microsoft Mouse or some other compatible pointing device

Printer : Printers supported by Windows / Ethernet : 10Mbps or higher

Serial Port : 1 Serial Port or more(depend on the device)

※ Specifications are subject to change without prior notice for improvement of performance.



iMCX 5.0

(Master Controller)

Master Controller to control the DDC



iMCX5.0 is the Master Controller that provides functions of a powerful programming and effective communication. iMCX5.0, Master Controller, is able to control/surveil on network like LAN. iMCX 5.0 has been implemented with multi -tasking, real-time control system and highly efficient micro computer technology in order to satisfy the needs of recent complex network, control and surveil-lance functions. iMCX5.0 is the base of intelligent building system that has high communication speed and access of multiple operators.

Embedded Program

iMCX5.0 supports IPL(iControls Programming Language) to develop simple/complex control logics. IPL provides multiple arithmetic and trigonometric fuctions and using the functions and commands, operators are able to program control logics such as control in real time, record data, etc.

Communications

iMCX5.0 features the flexibility of network access. iMCX5.0 provides the following functions in network.

- Act as BACnet Gateway supporting BACnet
- Act as host in unit controllers and devices supporting PUP
- Act as control device in the PC host like the iCos

iMCX5.0 can communicate with devices supporting PUP

Ethernet Support

iMCX5.0 supports 10/100Mbps Ethernet(TCP/IP) to communicate with the top system.

- Supports Ethernet(TCP/IP)
- Communicates with the other application programs using OCX like IUIP or IOCP

iMCX5.0 supports IBS control using trend analyses and color graphics of iCos4.0 in multiple iMCXs.



iMCX 5.0

(Master Controller)

Features

- Supporting BACnet Gateway
- Supports Public Unitary Protocol(PUP)
- Supports multiple protocols
- Supports multiple languages
- Type of menu-driven
- Object-oriented database
- Supports multi-tasking
- Unlimited operator
- Supports floating points and runtime control, reports
- Supports Twisted Pair(EIA-485) and Ethernet(TCP/IP)

Hardware

- [ENVIRONMENT]
- 32bit microprocessor
 - 1GB RAM
 - 4GB Internal Memory
- [COMMUNICATION]
- 4 port for EIA-485(change 1 port for RS-422)
 - Operate 32 DDC
 - Network : Multi-drop
 - Ethernet port
 - 10/100Base TCP/IP
 - Communication Speed : 10/100Mbps

SPECIFICATIONS

Power	AC Input voltage range	90 ~ 230VAC, 120 ~ 370VDC
	AC Inrush current	Cold start, 60A at 230VAC
	Overload Protection	105% hiccup mode, auto-recovery
	Over voltage protection	115% ~ 135% rated output voltage
	Over temp. protection	U1, Tj:135°C, power shutdown
	Working temperature	-10 ~ 60°C
	Cooling Method	Natural Air
	Approvals	UL/CUL/TUV/CB/CE
Main Board	Operating Temperature range	0°C ~ 45°C
	Storage Temperature range	-20°C ~ 70°C
	Humidity	20% ~ 90%RH
	Real Time Clock	Battery-Backed Real-Time Clock
	Processor	Cortex-A9 Dual core(1GHz)
	Memory	4GB Internal Memory
	Ports	3xRS-485, 1xRS-485/422, 1xEthernet
Mount	Panel Mount	
Dimension	256(W) X 195(H) X 55(D) (mm)	

※ Specifications are subject to change without prior notice for improvement of performance.



iGTX

The programmable multi-purpose communication device server



iGTX is Incorporate a variety of communication devices to the system for the Fronnix.

Other systems and the Fronnix System using the iGTX can be interfaced.

The MMI Software of the Fronnix System supports approximately 200 types of communication protocols. But, some of the equipments are required to support particular protocols are supported by IGTX. If you are using a iGTX as a terminal server, serial communication devices are also available in a duplex configuration System (iCos3.0 feature). It can build a more stable system.

Features

- High-speed, Stable data processing by Flash Memory
- Transmitting data using a plurality of communication ports
- Multi-threaded operating system
- Using twisted pair and ethernet , Reliable high-speed communication
- Supporting various communication protocols
- Providing Duplex configuration. Electricity power and lighting controller only supports serial communication in ICOS3.5

Hardware

- Characteristics
 - 32-bit Microprocessor
 - 1GB RAM
 - 4GB eMMC Memory
- Communication Port
 - [QUAD EIA-485 Separate Port]
(One can be Available RS-422 conversion)
 - Network : Multi-Drop, Length per one communication trunk is 1,524 Km(5,00ft) two-wire dual trunk
 - [Ethernet Port]
 - 100 Base T
 - Spped : 10/100 Mbps



SPECIFICATIONS

Power	AC Input voltage range AC Inrush current Overload Protection Over voltage protection Over temp. protection Working temperature Cooling Method Approvals	90 ~ 230VAC, 120 ~ 370VDC Cold start, 60A at 230VAC 105% hiccup mode, auto-recovery 115% ~ 135% rated output voltage U1, Tj:135°C, power shutdown -10 ~ 60°C Natural Air UL/CUL/TUV/CB/CE
Main Board	Operating Temperature range Storage Temperature range Humidity Real Time Clock Processor Memory Ports	0°C ~ 45°C -20°C ~ 70°C 20% ~ 90%RH Battery-Backed Real-Time Clock Cortex-A9 Dual core(1GHz) 4GB Internal Memory 3xRS-485, 1xRS-485/422, 1xEthernet
Mount	Panel Mount	
Dimension	256(W) X 195(H) X 55(D) (mm)	

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iDC 511

(Direct Digital Controller)

General-purpose DDC for an extensive application and distributed processing.

The iDC511 controller is a stand-alone microprocessor-based system controller for DDC control.

It is capable of monitoring, controlling and scheduling systems, and consist of the modules.(CPU Module and I/O Module).

The I/O module has Universal Input, Analog Output and Digital Output.(Max use. 4 I/O Modules). The input configuration on the I/O module consists of eight, 12-bit Universal inputs that accept voltage(0 - 10 VDC), digital(Dry Contact), current(0 - 20 mA) or temperature signals. The I/O module contains 8 outputs - four Triac-outputs, each rated for 24VAC and four analog outputs(0 - 10 VDC, 0 ~ 20 mA).

The iDC511 can use HOT Standby CPU Redundancy. It allows a critical application or process to continue operating if a failure occurs in any single component. A Hot Standby system uses two CPU modules.

The memory of the iDC511 can be allocated for any combination of programs using the powerful ICONTROLS Program Language. Programs are then stored and executed by the iDC511 controller.

The iDC511 communicates with the Fronnix iMCX RS-485 field bus.



General functions

- Temperature and Humidity Control
- Accumulating counter signals(Up to 1KHz)
- Check Machine run-time
- Scheduling
- Support embedded control Algorithms

Special feature

- Modular Structure(CPU, I/O)
- Support CPU Redundancy(Hot Standby)
- Support Data Line Redundancy(Hot Standby)
- RS-485 Network
- Data Storage(Flash Memory)
- Capable of Stand-Alone Operating
- Support Extend-PUP(Public Unitary Protocol)
- Programmable(using IPL)



iDC 511

(Direct Digital Controller)

SPECIFICATIONS

Environment	Power	24VAC, 60Hz
	Power Consumption	Min. 1W, Max. 100W
	Real Time Clock	Super capacitor backed real-time clock
	Capacitor Backup	All data stored in flash on power loss
	Operation Environment	0°C ~ 50°C(32°F ~ 120°F) 0 ~ 95% RH(Non Condensing)
	Mounting	Din Rail Mount
Communication	Dimension(1 Module)	Case : 108.1(W) X 147.4(H) X 45.4(D) (mm)
	Media	Twisted Pair Cable
	RS-485 Port	PUP Protocol X 2
	Speed	Programmable(4.8k ~ 115.2kbps)
Pulse Count Inputs	Bus Length	Up to 1,220m(4,000ft)
	Channel	4 Ch(32 bits Accumulate)
Universal Input (UI 8, MAX UI 32)	Channel	8 Ch ~ 32 Ch
	Digital Input	Dry Contact(On/Off) 0 ~ 5 VDC
	Analog Input	Voltage Input 0 ~ 10V, 0 ~ 5V Current Input 4 ~ 20mA, 0 ~ 20 mA Resolution 12 Bit
	Thermistor Input	Precon-Type3 10kΩ(1 kΩ Option) (-30°C ~ 110°C)
	Digital Outputs (DO 4, MAX DO 16)	Channel
Analog Outputs (AO 4, MAX AO 16)	Triac Output	24VAC, 0.25A
	Protection	Metal-Oxide Varistors
	Channel	4 Ch ~ 16 Ch
	Current Output	0 ~ 20mA DC
Algorithms	Voltage Output	0 ~ 10VDC
	Protection	TVS Diodes
	High / Low / Average Calculation	
	PID Control(Loop)	
	Thermostatic Control(Heating and Cooling Operation)	
	Enthalpy Calculation	
	Schedule	
	Fire(or Etc) Alarm Mode	

※ Specifications are subject to change without prior notice for improvement of performance.



iVW 522

(Variable Air Volume Controller)



Stand-alone VAV Controller for PUP

The iVW522 controller is a native VAV box controller that communicate on an RS-485 field bus using the PUP(Public Uintary Protocol). As a native PUP controller, the iVW522 can communicate the other PUP devices on the PUP network.

The iVW522 is a unique VAV box controller to simplify hardware installation and reduce commissioning time.

This stand-alone controller is capable of Air Handling, Zone temperature sensor, Series FAN, Reheat Valve and Reheat Coil control.

The iVW522 provides a built-in connection for Smart Sensor(iSS313). The Smart Sensor provides a LCD display and a 4 touch buttons that enables operation and occupants to change set-point and fan speed.

Features

- Stand-Along control and Remote control with the Fronnix iCos.
- 1 built-in Airflow sensor
- Scheduling
- Provide Smart Sensor Port
- Energy-saving



iW 522

(Variable Air Volume Controller)

SPECIFICATIONS

Environment	Power	24VAC, 60Hz
	Power Consumption	Min. 1W, Max. 25W
	Real Time Clock	Super capacitor backed real-time clock
	Capacitor Backup	All data stored in flash on power loss
	Operation Environment	0°C ~ 50°C(32°F ~ 120°F) 0 ~ 95% RH (Non Condensing)
Communication	Dimension	155.5(W) X 157(H) X 47(T) (mm)
	Channel	2 Ch
	Network 1	PUP Protocol(RS-485) Programmable(4.8k ~ 115.2kbps) Isolated
	Bus Length	Up to 1,220m(4,000ft)
	Network 2	Smart Sensor 38.4kbps Non-isolated
Differential Pressure Sensor	Measurement Range	0 ~ 1 inchH2O
	Pressure Medium	Air
Universal Input	Channel	5 Ch
	Digital Input	Dry Contact(On/Off) 0 ~ 5 VDC
	Analog Input	Voltage Input 0 ~ 10V, 0 ~ 5V Current Input 4 ~ 20mA, 0 ~ 20 mA Resolution 12 Bit
	Thermistor Input	Precon-Type3 10kΩ(1 kΩ Option) (-30°C ~ 110°C)
Digital Outputs	Channel	6 Ch
	Current Output	0 ~ 20mA, DC
	Voltage Output	0 ~ 10VDC
	Protection	TVS Diodes
Algorithms	PID Control	
	P-Control	
	CHM/CMM Calculation	
	Schedule	

※ Specifications are subject to change without prior notice for improvement of performance.



iFC 525

(Fan Coil Unit Controller)



The iFC525 is a easy to build and low cost FCU controller with office, hotel, school or department store stand-alone or remote control.

The iFC525 is increased the comfort to patients, visitors, and employees while reducing energy consumption. Capable of monitoring, controlling and scheduling the iFC525 contains universal input, analog and digital output and an optional Smart Sensor for local control.

The iFC525 provides a built-in connection for Smart Sensor(iSS313). The Smart Sensor provides a LCD display and a 4 touch button that enables operation and occupants to change set-point and fan speed.

Features

- Stand-Along control and Remote control with the Fronnix iCOS.
- Auto control for FCU
- Scheduling
- Provide Smart Sensor Port
- Energy-saving



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iFC 525

(Fan Coil Unit Controller)

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101000110110110111101

SPECIFICATIONS

Environment	Power	24VAC, 60Hz
	Power Consumption	Min. 1W, Max. 25W
	Real Time Clock	Super capacitor backed real-time clock
	Capacitor Backup	All data stored in flash on power loss
	Operation Environment	0°C ~ 50°C(32°F ~ 120°F) 0 ~ 95% RH (Non Condensing)
Communication	Dimension	155.5(W) X 157(H) X 47(T) (mm)
	Channel	2 Ch
	Network 1	PUP Protocol(RS-485) Programmable(4.8k ~ 115.2kbps) Isolated
	Bus Length	Up to 1,220m(4,000ft)
	Network 2	Smart Sensor 38.4kbps Non-isolated
Universal Input	Channel	5 Ch
	Digital Input	Dry Contact(On/Off) 0 ~ 5 VDC
	Analog Input	Voltage Input 0 ~ 10V, 0 ~ 5V Current Input 4 ~ 20mA, 0 ~ 20 mA Resolution 12 Bit
	Thermistor Input	Precon-Type3 10kΩ(1 kΩ Option) (-30°C ~ 110°C)
Digital Outputs	Channel	6 Ch
	Current Output	0 ~ 20mA, DC
	Voltage Output	0 ~ 10VDC
	Protection	TVS Diodes
Algorithms	Auto-FCU Control	
	PID Control(Loop)	
	Schedule	

※ Specifications are subject to change without prior notice for improvement of performance.

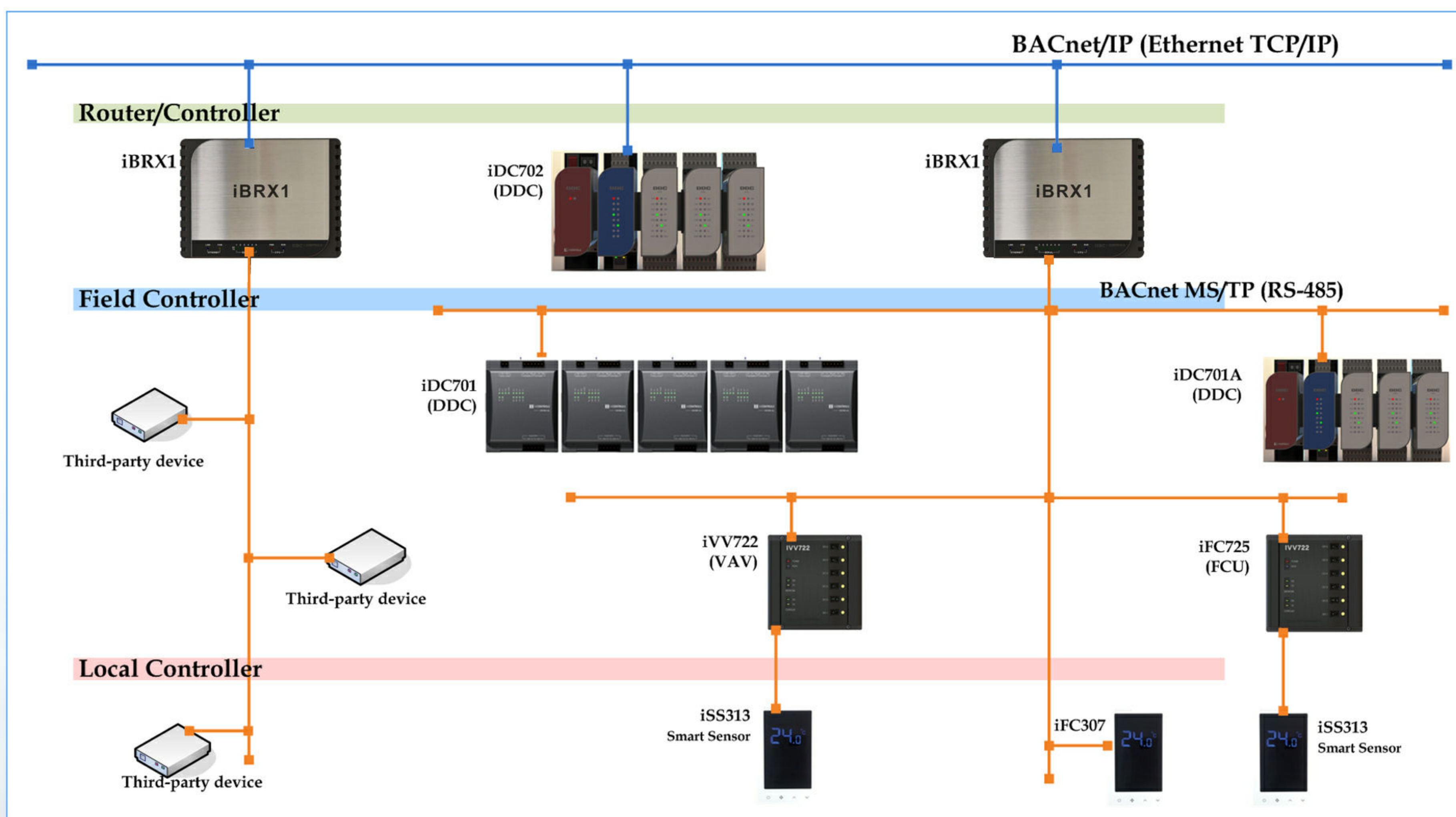


iBRX1

(BACnet Controller / Router)



The iBRX1 is standard BACnet router and controller, which head up the BACnet family of Fronnix controllers. This controller reside at the network level and route BACnet message between BACnet/IP, BACnet over Ethernet, and MS/TP networks. The iBRX1 Controller/Router can communicate directly with third-party devices for a complete, integrated building automation solution.



Features


- B-BC – BACnet Building Controller available in Router and Controller
- BTL Listed
- Supports Trends, Schedules and Calendars
- Support External device schedule
- 10/100 Ethernet port



iBRX1

(BACnet Controller / Router)

SPECIFICATIONS

Environment	Power	90 ~ 230 VAC
	Power Consumption	Min. 1W, Max. 10W
	Operation Environment	0°C ~ 50°C(32°F ~ 122°F) 20 ~ 90% RH(Non Condensing)
Main Board	Processor	TI Sitara Cortex-A8 1GHz
	Memory	512MB DDR3L 800MHz, 4GB eMMC
	Real Time Clock Ports	Embedded Real-Time Clock(Non-Battery) 3xRS-485, 1x Ethernet
Communication	Channel	3 Ch
	Network 1	Ethernet(BACnet/IP) 10/100 BaseT
	Network 2~4	RS-485(BACnet MS/TP) 9.6k ~ 38.4kbps 127 devices max Isolated
	Bus Length	Up to 1,220m(4,000ft)
Algorithms	Embedded Algorithm Internal-Scheduler External Device Scheduler	
Certification	BACnet Device Profile B-BC, BACnet Building Controller, BTL Listed	
Mount	Panel Mount	
Dimension	269.8(W) X 199.8(H) X 52.3(D) (mm)	

※ Specifications are subject to change without prior notice for improvement of performance.



iBGX 5.0

BACnet protocol gateway



The iBGX5.0 allows Modbus devices to communicate on a BACnet network.

The gateway works as a translator between the two networks allowing Modbus RTU(Remote Terminal Unit) devices to show up as individual BACnet-compliant devices on a BACnet/IP network. This enables central control and supervision of Modbus devices in a building.

Modbus RTU networks are connected to the serial port of the gateway, while BACnet/IP networks are connected to the Ethernet port. You will need to create a device profile for each Modbus device and upload this to the gateway.

Features

- Supported Configuration Software.
- Supported Light System(Toshiba, Panasonic).
- Supported BACnet Read Property Multiple Service.
- Supported BACnet COV(Change of Value) Service.
- LED indicators provide communication status on both the Ethernet and serial ports.

Hardware

- Characteristics
 - 32-bit Microprocessor
 - 1GB RAM
 - 4GB eMMC Memory
- Communication Port
 - [QUAD EIA-485 Separate Port]
(One can be Available RS-422 conversion)
 - Network : Multi-Drop, Length per one communication trunk is 1,524 Km(5,00ft)
 - two-wire dual trunk
 - [Ethernet Port]
 - 100 Base T
 - Speed : 10/100 Mbps



iBGX 5.0

SPECIFICATIONS

Power	AC Input voltage range AC Inrush current Overload Protection Over voltage protection Over temp. protection Working temperature Cooling Method Approvals	90 ~ 230VAC, 120 ~ 370VDC Cold start, 60A at 230VAC 105% hiccup mode, auto-recovery 115% ~ 135% rated output voltage U1, Tj:135°C, power shutdown -10 ~ 60°C Natural Air UL/CUL/TUV/CB/CE
Main Board	Operating Temperature range Storage Temperature range Humidity Real Time Clock Processor Memory Ports	0°C ~ 45°C -20°C ~ 70°C 20% ~ 90%RH Battery-Backed Real-Time Clock Cortex-A9 Dual core(1GHz) 4GB Internal Memory 3xRS-485, 1xRS-485/422, 1xEthernet
Mount	Panel Mount	
Dimension	256(W) X 195(H) X 55(D) (mm)	

※ Specifications are subject to change without prior notice for improvement of performance.



iDC 702

(BACnet Direct Digital Controller)

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Can be widely applied

The iDC702 communicates directly to BACnet/IP networks. It is compliant with ASHRAE 135-2004, the iDC702 is BTL-listed as a BACnet Building Controller (B-BC), the most advance BACnet device profile



The iDC702 controller is a stand-alone microprocessor-based system controller for DDC control.

Capable of monitoring, controlling and scheduling systems, the iDC702 consist of the modules.(POWER, CPU and I/O Module).

The I/O module has Universal Input, Analog Output and Digital Output. (Max use. 8 I/O Modules). The input configuration on the I/O module consists of eight, 12-bit Universal inputs that accept voltage (0 - 10 VDC), digital (Dry Contact), current (0 - 20 mA) or temperature signals. The I/O module contains 8 outputs - four Triac-outputs, each rated for 24VAC and four analog outputs (0 - 10 VDC, 0 ~ 20 mA).

The memory of the iDC702 can be allocated for any combination of programs using the powerful BACnet ICONTROLS Program Language. Programs are then stored and executed by the iDC702 controller.

General functions

- Temperature and Humidity Control
- Accumulating counter signals (Up to 100Hz)
- Check Machine run-time
- Supports Schedules and Calendars
- Support embedded control Algorithms
- 10/100 Ethernet port

Special feature

- B-BC – BACnet Building Controller
- BTL Listed
- Modular Structure (POWER, CPU, I/O)
- Max. 8 I/O modules
- Data Storage (Flash Memory)
- Capable of Stand-Alone Operating
- Programmable (using BIPL)



iDC 702

(BACnet Direct Digital Controller)

SPECIFICATIONS

Environment	Power	24VAC, 60Hz
	Power Consumption	Min. 1W, Max. 100W
	Real Time Clock	Super capacitor backed real-time clock
	Capaitor Backup	All data stored in flash on power loss
	Operation Environment	0°C ~ 50°C(32°F ~ 122°F) 20 ~ 90% RH(Non Condensing)
	Mounting	Din Rail Mount
	Dimension(1 Module)	Max. 460(W) X 150(H) X 120(D) (mm)
Communication	Media	Ethernet(BACnet/IP) 10/100 BaseT
Pulse Count Inputs	Channel	8 Ch
Universal Input (UI 8, MAX UI 66)	Channel	8 Ch ~ 64 Ch
	Digital Input	Dry Contact(On/Off) 0 ~ 5 VDC
	Analog Input	Voltage Input 0 ~ 10V, 0 ~ 5V Current Input 4 ~ 20mA, 0 ~ 20 mA Resolution 12 Bit
	Thermistor Input	Precon-Type3 10kΩ(1 kΩ Option) (-30°C ~ 110°C)
Digital Outputs (DO 4, MAX DO 32)	Channel	4 Ch ~ 32 Ch
	Triac Output	24VAC, 0.25A
	Protection	Metal-Oxide Varistors
Analog Outputs (AO4, MAX AO 32)	Channel	4 Ch ~ 32 Ch
	Current Output	0 ~ 20mA DC
	Voltage Output	0 ~ 10VDC
	Protection	TVS Diodes
Algorithms	High / Low / Average Calculation PID Control(Loop), Thermostatic Control(Heating and Cooling Operation) Enthalpy Calculation, Schedule, Alarm Mode	
Certification	BACnet Device Profile B-BC, BACnet Building Controller, BTL Listed	



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iDC 701A

(Direct Digital Controller)

Stand-alone BACnet general-purpose DDC

The iDC701 controller is a native BACnet controller that communicate on an RS-485 field bus using the BACnet MS/TP protocol. As a native BACnet controller, the iDC701 can communicate the other BACnet devices on the MS/TP network and are listed with the BACnet Testing Labs(BTL) as BACnet Application Specific Controller(B-ASC).



The iDC701 can contain Max.4 I/O modules.

The input configuration on the each I/O module consists of 8 full range, 12-bit Universal inputs that accept voltage(0~10VDC), digital(on/off), counter signals(up to 1kHz), temperature signals, or supervised alarm circuits for security applications. The each I/O module of iDC701 contains 8 outputs - 4 triac digital outputs, each rated for 24VAC, 0.25A, and 4 analog outputs(0~10VDC, 0~20mA). So the iDC701 can use the point up to 32UI(Universal Input), 16AO (Analog Output) and 16DO(Digital Output).

The iDC701's non-volatile Flash memory stores your data and BIPL(BACnet Icontrols Program Language), so that in the event of a power loss, your application will be restored when power is returned.

General functions

- The temperature/humidity control by the analog/digital output
- Supports High Speed Pulse Count(up to 1kHz)
- Using Various Sensors by UI ports
- Machine uptime calculation, scheduling, alarming and various algorithm
- Provides built-in functions(Closed-loop control)

Special feature

- BTL Listed B-ASC
- Expandable I/O modules(Max. 4 I/O)
- Non-Volatile Flash Memory Provides Utmost Reliability - Stores Data and BIPL
- RS-485 Twisted pair communication (Baudrate : MAX. 76.8kbps)
- By connecting to iBRX, the iDC701 can control data from the wider MS/TP network
- RS-485 Twisted pair communication (Baudrate : MAX. 76.8kbps)



iDC 701A

(Direct Digital Controller)

SPECIFICATIONS

Environment	Power	24VAC, 60Hz
	Power Consumption	Min. 1W, Max. 100W
	Real Time Clock	Super capacitor backed real-time clock
	Capaitor Backup	All data stored in flash on power loss
	Operation Environment	0°C ~ 50°C(32°F ~ 120°F) 0 ~ 95% RH(Non Condensing)
	Mounting	Din Rail Mount
	Dimension(1 Module)	Case : 108.1(W) X 147.4(H) X 45.4(D) (mm)
Communication	Media	Twisted Pair Cable
	RS-485 Port	BACnet MS/TP
	Speed	Programmable(9.6k ~ 76.8kbps)
	Bus Length	Up to 1,220m(4,000ft)
Pulse Count Inputs	Channel	4 Ch(32 bits Accumulate)
Universal Input (UI 8, MAX UI 32)	Channel	8 Ch ~ 32 Ch
	Digital Input	Dry Contact(On/Off) 0 ~ 5 VDC
	Analog Input	Voltage Input 0 ~ 10V, 0 ~ 5V Current Input 4 ~ 20mA, 0 ~ 20 mA Resolution 12 Bit
	Thermistor Input	Precon-Type3 10kΩ(1 kΩ Option) (-30°C ~ 110°C)
Digital Outputs (DO 4, MAX DO 16)	Channel	4 Ch ~ 16 Ch
	Triac Output	24VAC, 0.25A
	Protection	Metal-Oxide Varistors
Analog Outputs (AO4, MAX AO 16)	Channel	4 Ch ~ 16 Ch
	Current Output	0 ~ 20mA DC
	Voltage Output	0 ~ 10VDC
	Protection	TVS Diodes
Algorithms	High / Low / Average Calculation PID Control(Loop), Thermostatic Control(Heating and Cooling Operation) Enthalpy Calculation, Schedule, Alarm Mode	
Certification	BACnet Device Profile B-BC, BACnet Building Controller, BTL Listed	



※ Specifications are subject to change without prior notice for improvement of performance.



iVW 722

(Variable Air Volume Controller)



Stand-alone BACnet VAV Controller

The iVW722 controller is a native BACnet controller that communicate on an RS-485 field bus using the BACnet MS/TP protocol. As a native BACnet controller, the iVW722 can communicate the other BACnet devices on the MS/TP network.

The iVW722 is a unique VAV box controller to simplify hardware installation and reduce commissioning time.

This stand-alone controller is capable of Air Handling, Zone temperature sensor, Series FAN, Reheat Valve and Reheat Coil control.

The iVW722 provides a built-in connection for Smart Sensor(iSS313). The Smart Sensor provides a LCD display and a 4 touch buttons that enables operation and occupants to change set-point and fan speed.

Features

- Stand-Along control and Remote control with the Fronnix iCos.
- 1 built-in Airflow sensor
- Scheduling
- Programmable (using BIPL)
- Provide Smart Sensor Port
- Energy-saving



iVW 722

(Variable Air Volume Controller)

SPECIFICATIONS

Environment	Power	24VAC, 60Hz
	Power Consumption	Min. 1W, Max. 25W
	Real Time Clock	Super capacitor backed real-time clock
	Capacitor Backup	All data stored in flash on power loss
	Operation Environment	0°C ~ 50°C(32°F ~ 120°F) 0 ~ 95% RH (Non Condensing)
Communication	Dimension	155.5(W) X 157(H) X 47(T) (mm)
	Channel	2 Ch
	Network 1	RS-485(BACnet MS/TP) 9.6k ~ 38.4kbps Isolated
	Bus Length	Up to 1,220m(4,000ft)
	Network 2	Smart Sensor 38.4kbps Non-isolated
Differential Pressure Sensor	Measurement Range	0 ~ 1 inchH ₂ O
	Pressure Medium	Air
Universal Input	Channel	5 Ch
	Digital Input	Dry Contact(On/Off) 0 ~ 5 VDC
	Analog Input	Voltage Input 0 ~ 10V, 0 ~ 5V Current Input 4 ~ 20mA, 0 ~ 20 mA Resolution 12 Bit
	Thermistor Input	Precon-Type3 10kΩ(1 kΩ Option) (-30°C ~ 110°C)
	Digital Outputs	Channel
Current Output		0 ~ 20mA, DC
Voltage Output		0 ~ 10VDC
Protection		TVS Diodes
Algorithms	PID Control	
	P-Control	
	CHM/CMM Calculation	
	Schedule	
	User Programming (BIPL program)	

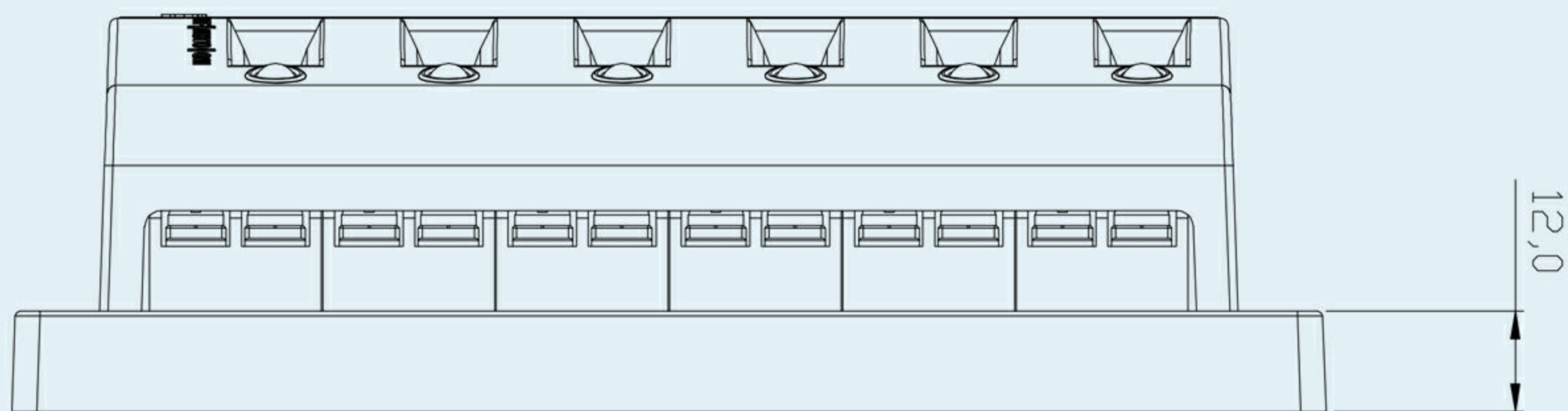
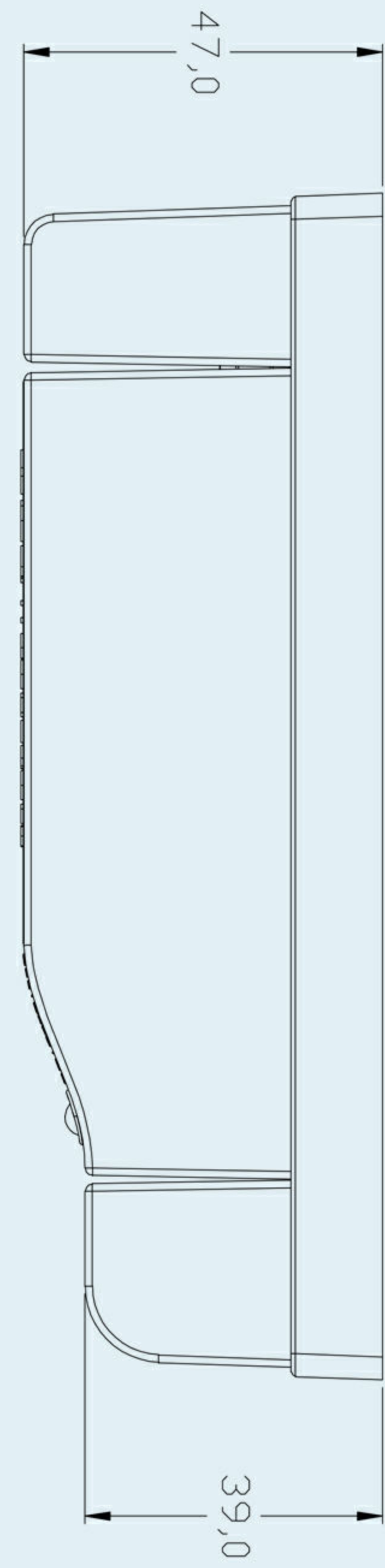
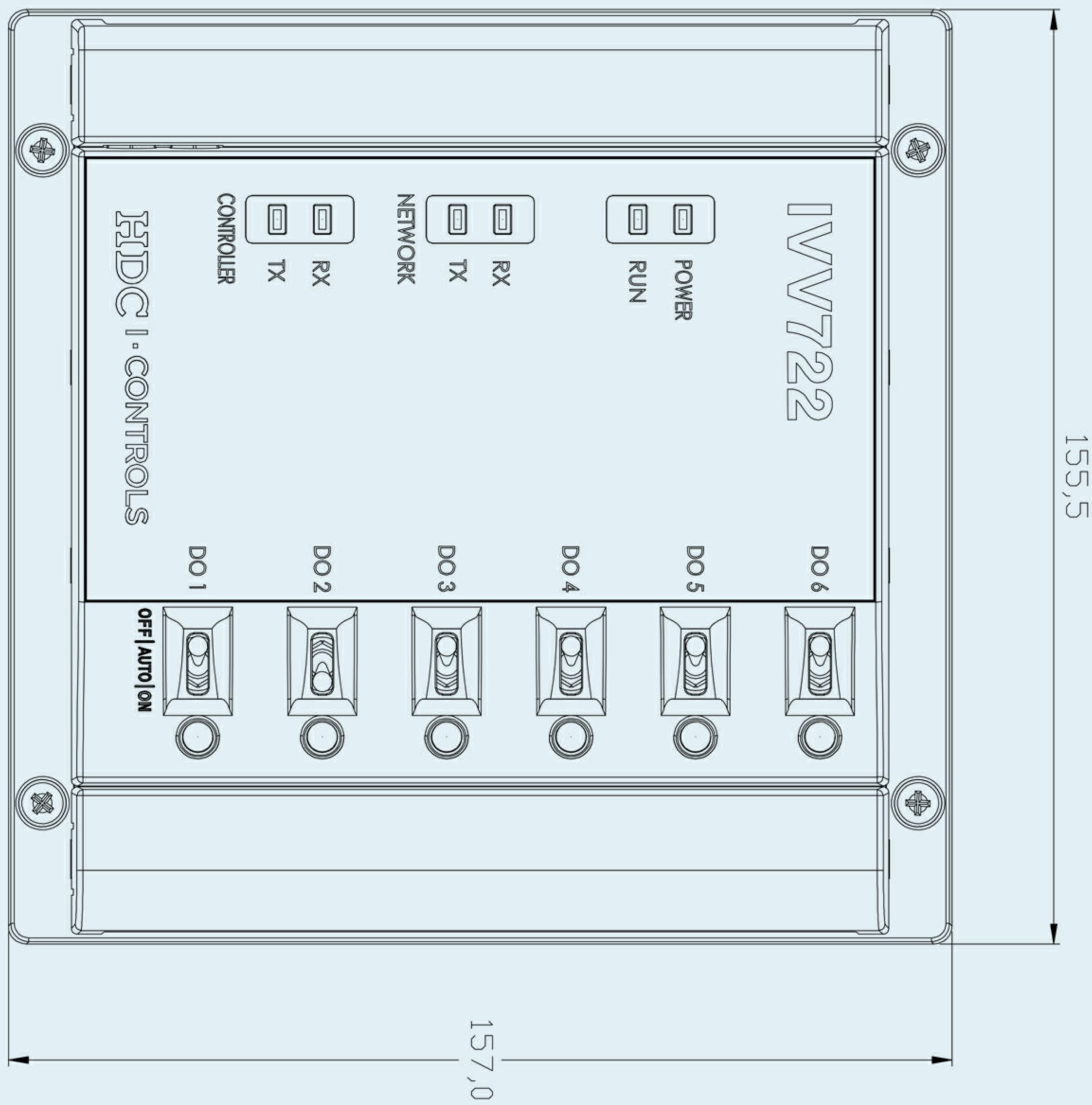
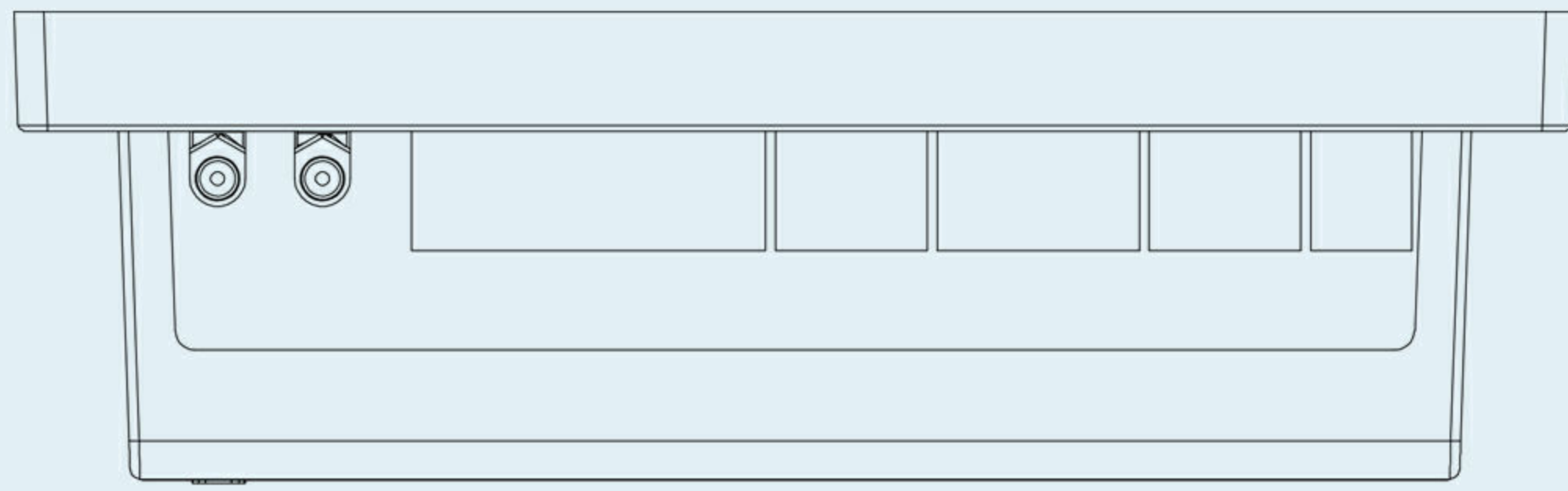
※ Specifications are subject to change without prior notice for improvement of performance.



iVW 722

(Variable Air Volume Controller)

Dimension



* Specifications are subject to change without prior notice for improvement of performance.



iFC 725

(Fan Coil Unit Controller)



The iFC725 is a standard BACnet controller that communicate on an RS-485 field bus as Master devices using the BACnet MS/TP protocol.

The iFC725 is a easy to build and low cost FCU controller with office, hotel, school or department store stand-alone or remote control.

The iFC725 is increased the comfort to patients, visitors, and employees while reducing energy consumption. Capable of monitoring, controlling and scheduling the iFC725 contains universal input, analog and digital output and an optional Smart Sensor for local control.

The iFC725 provides a built-in connection for Smart Sensor(iSS313). The Smart Sensor provides a LCD display and a 4 touch button that enables operation and occupants to change set-point and fan speed.

Features

- Stand-Along control and Remote control with the Fronnix iCOS.
- Auto control for FCU
- Scheduling
- Programmable (using BIPL)
- Provide Smart Sensor Port
- Energy-saving



iFC 725

(Fan Coil Unit Controller)

SPECIFICATIONS

Environment	Power	24VAC, 60Hz
	Power Consumption	Min. 1W, Max. 25W
	Real Time Clock	Super capacitor backed real-time clock
	Capacitor Backup	All data stored in flash on power loss
	Operation Environment	0°C ~ 50°C(32°F ~ 120°F) 0 ~ 95% RH (Non Condensing)
Communication	Dimension	155.5(W) X 157(H) X 47(T) (mm)
	Channel	2 Ch
	Network 1	RS-485(BACnet MS/TP) 9.6k ~ 38.4kbps Isolated
	Bus Length	Up to 1,220m(4,000ft)
	Network 2	Smart Sensor 38.4kbps Non-isolated
Universal Input	Channel	5 Ch
	Digital Input	Dry Contact(On/Off) 0 ~ 5 VDC
	Analog Input	Voltage Input 0 ~ 10V, 0 ~ 5V Current Input 4 ~ 20mA, 0 ~ 20 mA Resolution 12 Bit
	Thermistor Input	Precon-Type3 10kΩ(1 kΩ Option) (-30°C ~ 110°C)
Digital Outputs	Channel	6 Ch
	Current Output	0 ~ 20mA, DC
	Voltage Output	0 ~ 10VDC
	Protection	TVS Diodes
Algorithms	Auto-FCU Control	
	PID Control(Loop)	
	Schedule	
	User Programming (BIPL program)	

※ Specifications are subject to change without prior notice for improvement of performance.



iFC 305 / 307

(Local Fan Coil Unit Controller)



The iFC305/iFC307 are a standalone FCU(Fan Coil Unit) Controller which have a internal thermal sensor and can be applied to office, hospital, hotel, school, department store, etc.

This models can operate automatically and manually. In automatic mode, The iFC305/iFC307 operate to equalize the setting temperature and the room temperature automatically. In manual mode, the fan speed can be controlled manually(Low/Mid/High). A LCD displays the operating information(fan speed/room and set temp/room occupancy/cooling or heating mode).

There are differences in communication protocols that the iFC305 is communicated by PUP and the iFC307 is communicated by BACnet. All these device can be installed to the wall directly or can be assembled to the back box.

	iFC305	iFC307
Temperature adjustment	Automatic & Manual fan control	Automatic & Manual fan control
Buttons	4 (Touch)	4 (Touch)
Button Function	Power, Fan speed, Set temp.	Power, Fan speed, Set temp
LCD Display	Current temp, Set temp, Cooling & Heating Mode, Fan speed, Operating Status	Current temp, Set temp, Cooling & Heating Mode, Fan speed, Operating Status
Network	PUP	BACnet MS / TP

Characteristic

- Automatic & Manual fan speed control.
- Intelligent control depending on room occupancy.
- Easy installation to the wall or back box.
- Well matched design for indoor space.

Technical information

- Power input : 220VAC, 60Hz
- Power consumption : MAX 180W (including sub power consumption)
- Voltage at signal IN/OUT point : NO 5A, NC 2A
- Temperature & Humidity range
 - Shipping & storage : -10 ~ 70 °C, Max 80% RH
 - Operating : 0 ~ 40 °C, 10 ~ 75% RH
- Operation : Automatic & Manual fan speed control (High/Middle/Low)
- Setting temperature range : 5 ~ 35 °C
- Dimensions : 75(W) x 120(H) x 40.7(D) (mm)



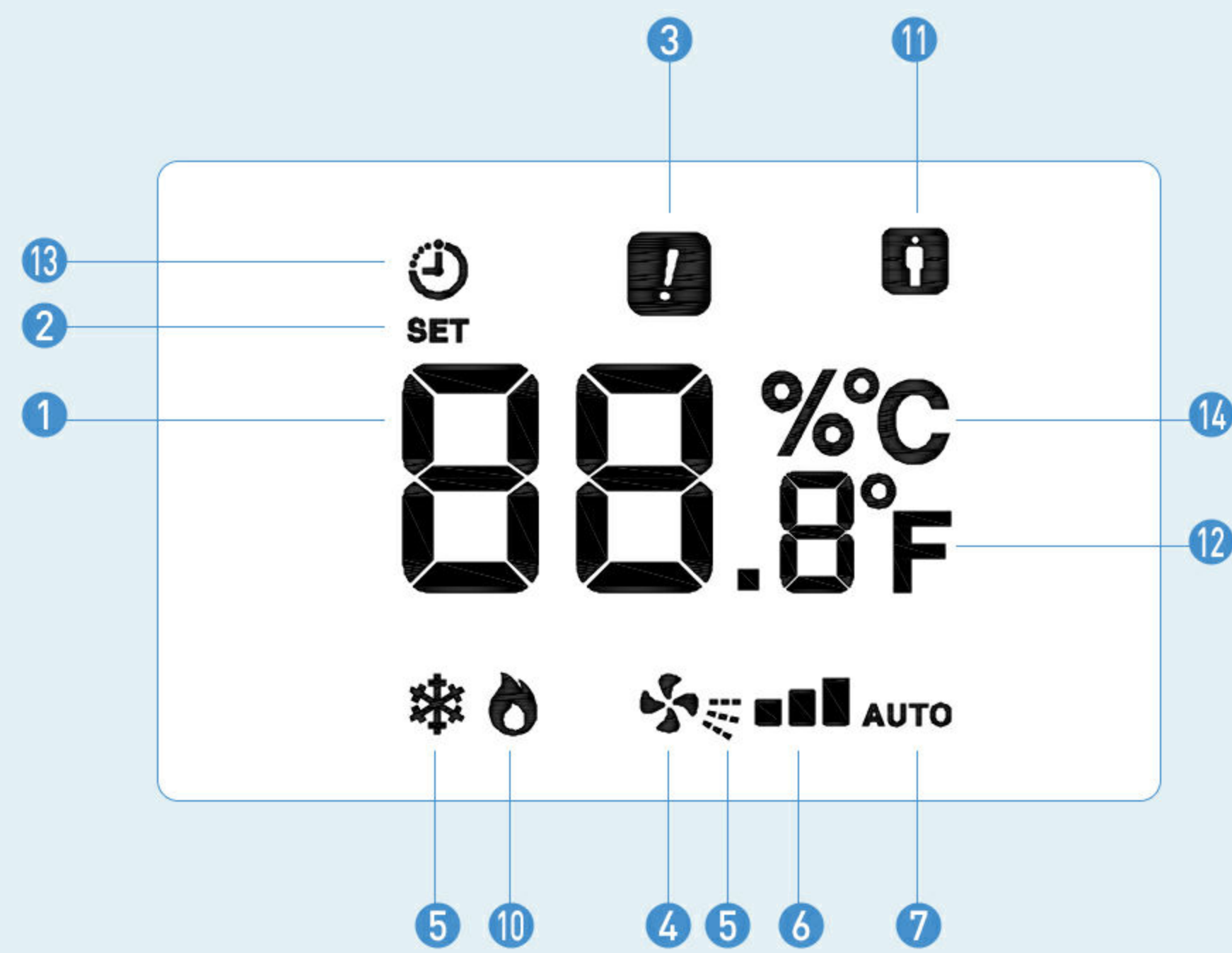
iFC 305 / 307

(Local Fan Coil Unit Controller)

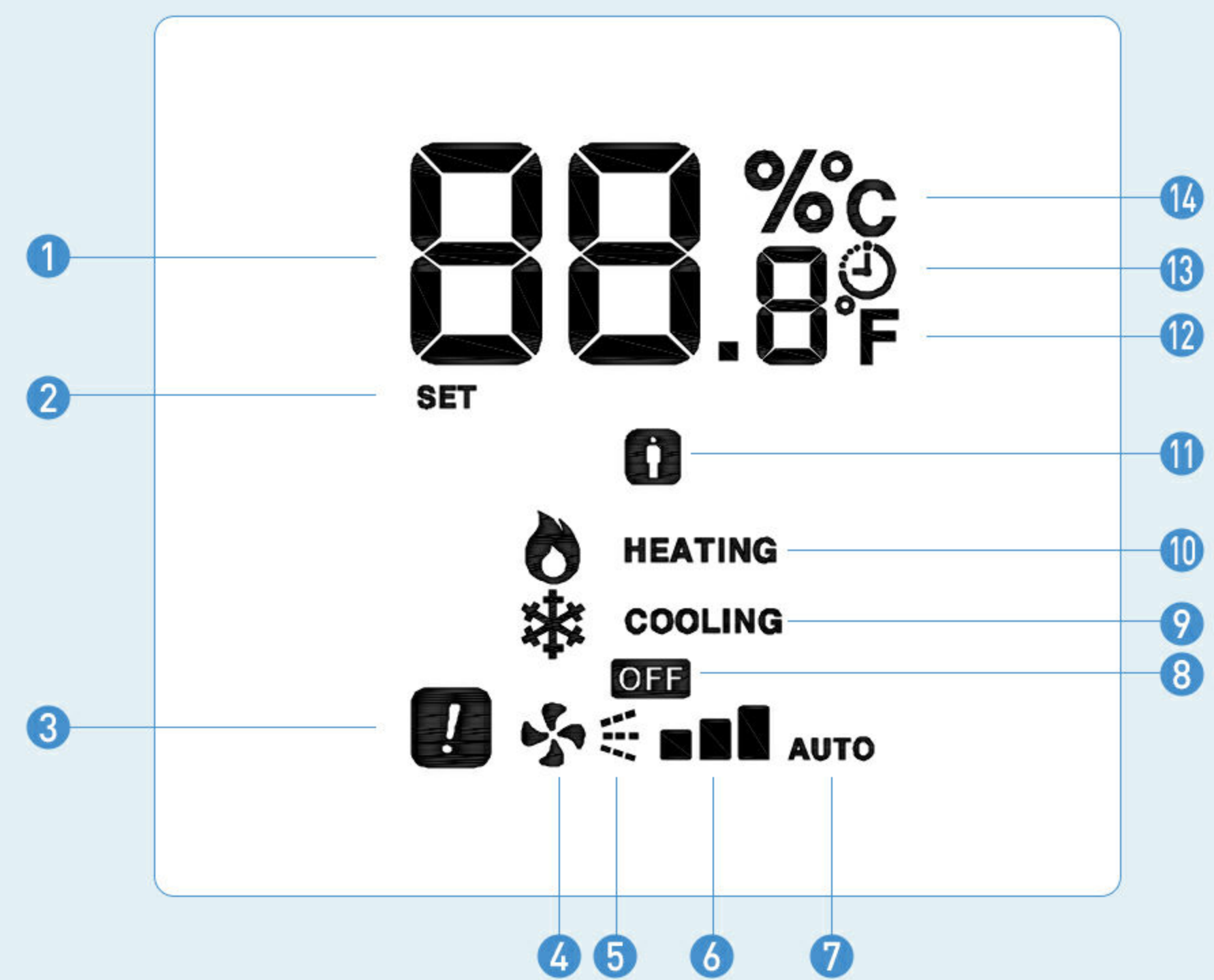
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USER INTERFACE

• A Type LCD(small)







• B Type LCD(big)



• A Type LCD(small) / B Type LCD(big)

- ① Room temperature and Setting temperature
- ② Appear when set temp. and fan speed are changed
- ③ Warning
- ④ Fan operating status
- ⑤ Fan speed
- ⑥ Automatic operation
- ⑦ Power on/off
- ⑧ Cooling
- ⑨ Heating
- ⑩ Operation Status
- ⑪ Fahrenheit temperature
- ⑫ Timer
- ⑬ Humidity(Optional) and Celsius temperature

iFC305 / iFC307

-  Power
-  Fan speed setting
(Auto → Low → Mid → High)
-  Up(temperature setting)
-  Down(temperature setting)

※ Specifications are subject to change without prior notice for improvement of performance.



iSS 313

Smart Sensor

The iSS313 is a Temperature Controller and operates in conjunction with FCU/VAV Controller(The iSS313 do not operate without FCU/VAV controller).

This model can operate automatically and manually. In automatic mode, the iSS313 are operate to equalize the setting temperature and the room temperature automatically. In manual mode, the fan speed can be controlled manually(Low/Mid/High). It can be used effectively in large space (office, hospital, hotel, school, department store, etc) by Group control(1:N) and Multi sensor(N:N). A LCD displays the operating information(fan speed/room and set temp/room occupancy/cooling or heating mode).

All these device can be installed to the wall directly or can be assembled to the back box.



	iSS313
Temperature adjustment	Automatic & Manual fan control
Buttons	4 (Touch)
Button Function	Power, Fan speed, Set temp.
LCD Display	Current temp, Set temp, Cooling & Heating Mode, Fan speed, Operating Status
Network	RS-485

Characteristic

- Automatic & Manual fan speed control.
- Intelligent control depending on room occupancy.
- Easy installation to the wall or back box.
- Well matched design for indoor space.

Technical information

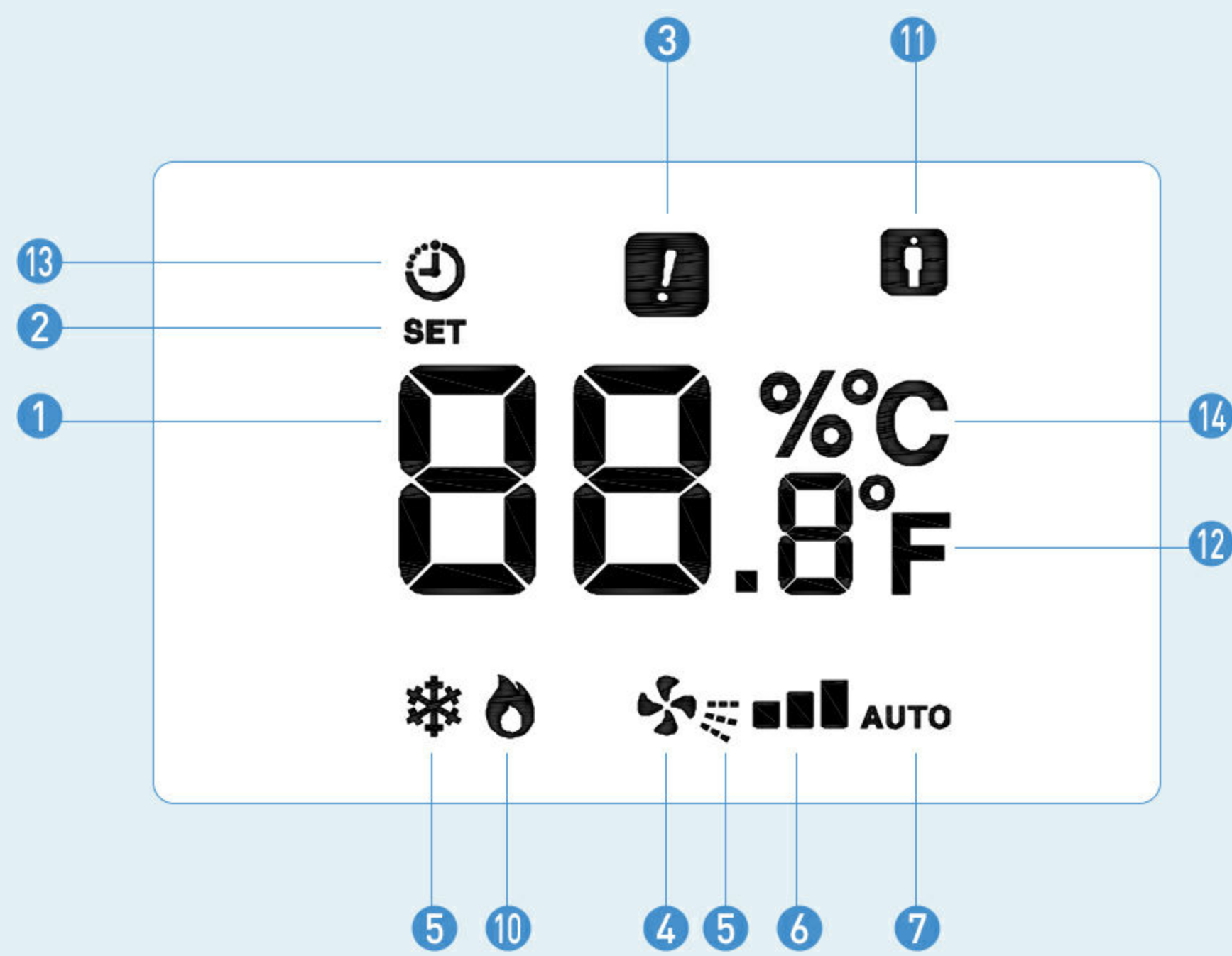
- Power input : 5VDC
- Power consumption : MAX 10W (including sub power consumption)
- Temperature & Humidity range
 - Shipping & storage : -10 ~ 70 °C, Max 80% RH
 - Operating : 0 ~ 40 °C, 10 ~ 75% RH
- Operation : Automatic & Manual fan speed control (High/Middle/Low)
- Setting temperature range : 5 ~ 35 °C
- Dimensions : 75(W) x 120(H) x 40.7(D) (mm)



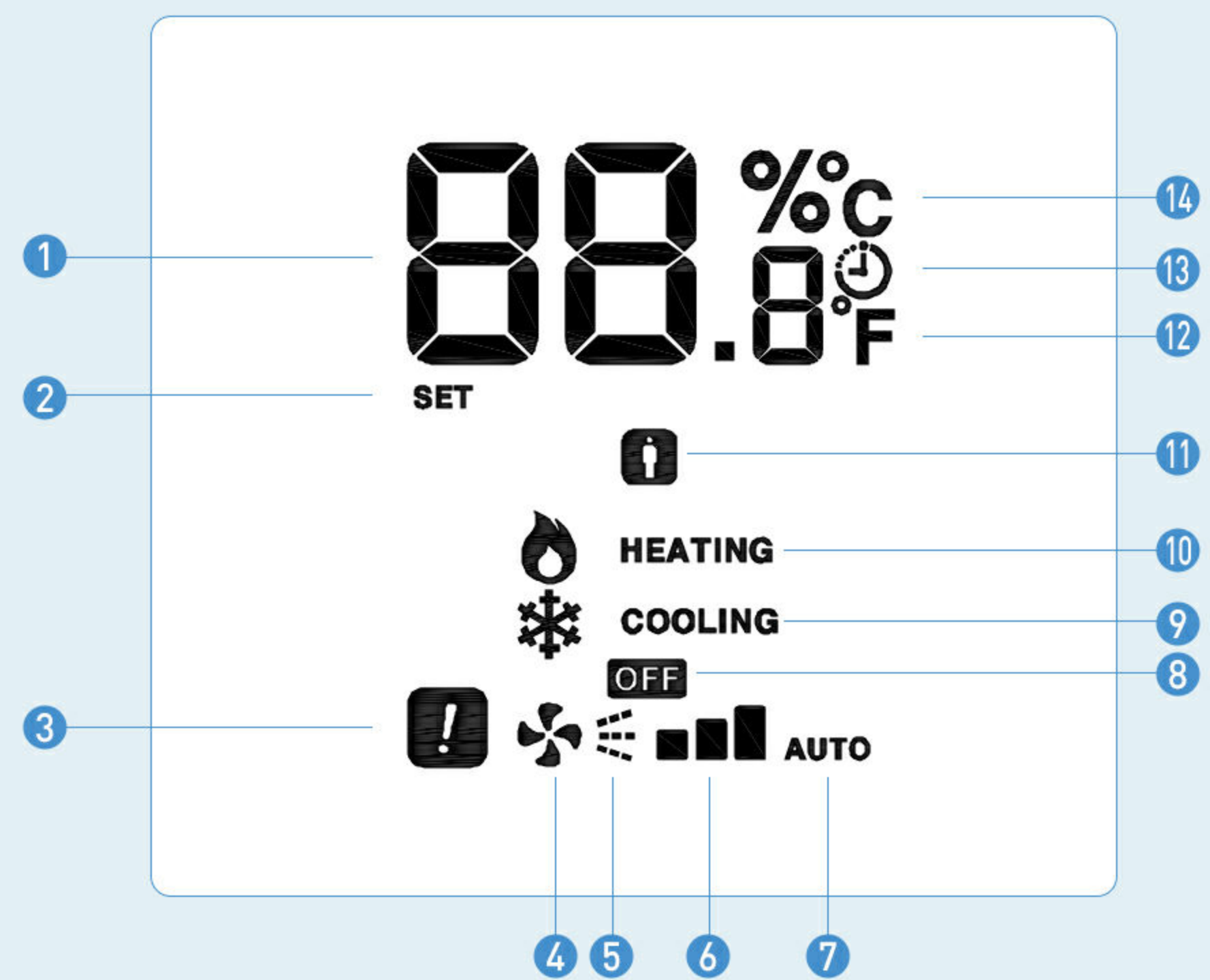
iSS 313

USER INTERFACE

• A Type LCD(small)



• B Type LCD(big)



• A Type LCD(small) / B Type LCD(big)

- ① Room temperature and Setting temperature
- ② Appear when set temp. and fan speed are changed
- ③ Warning
- ④ Fan operating status
- ⑤ Fan operating status
- ⑥ Fan speed
- ⑦ Automatic operation
- ⑧ Power on/off
- ⑨ Cooling
- ⑩ Heating
- ⑪ Operation Status
- ⑫ Fahrenheit temperature
- ⑬ Timer
- ⑭ Humidity(Optional) and Celsius temperature

iSS313

- Power
- Fan speed setting (Auto → Low → Mid → High)
- Up(temperature setting)
- Down(temperature setting)

※ Specifications are subject to change without prior notice for improvement of performance.



iFC 303

Local Fan Coil Unit Controller

The iFC303 is a stand alone FCU(Fan Coil Unit) Controller which can be applied to office, hospital, hotel, school, department store, etc.

The iFC303 has 3 kinds of different models to meet the various needs of customer.

The first model, The iFC303 is a standard model that works both automatically and manually. It automatically controls fan speed using internal thermal sensor to equalize the room temperature to the set temperature. Also the fan speed can be controlled manually. A LCD window shows these kinds of information(fan speed/set temp/room occupancy/cooling or heating mode) and help easy control.



The second one, The iFC303HA has the same function of the iFC303 except manual fan speed controlling function. It provides very easy control with only two function buttons. The last model, iF303HM is a manually operating model that has high/middle/low fan speed buttons. All these the iFC303 Series can be installed to the wall direct

iFC Series	iFC 303	iFC 303HA
Temperature adjustment	Automatic & Manual fan control	Automatic fan control
Buttons	4	2
Button Function	Mode, Fan Speed, Set temp.	Set temp.
LCD Display	Current temp, Setting temp, Cooling & Heating Mode, Fan speed, Operating Status	Current temp, Setting temp, Cooling & Heating Mode, Fan speed, Operating Status

Characteristic

- Automatic fan speed control(iFC303, iFC303HA)
- Manual fan speed control
- Intelligent control depending on room occupancy
- Easy installation to the wall or back box
- Well matched design for indoor space

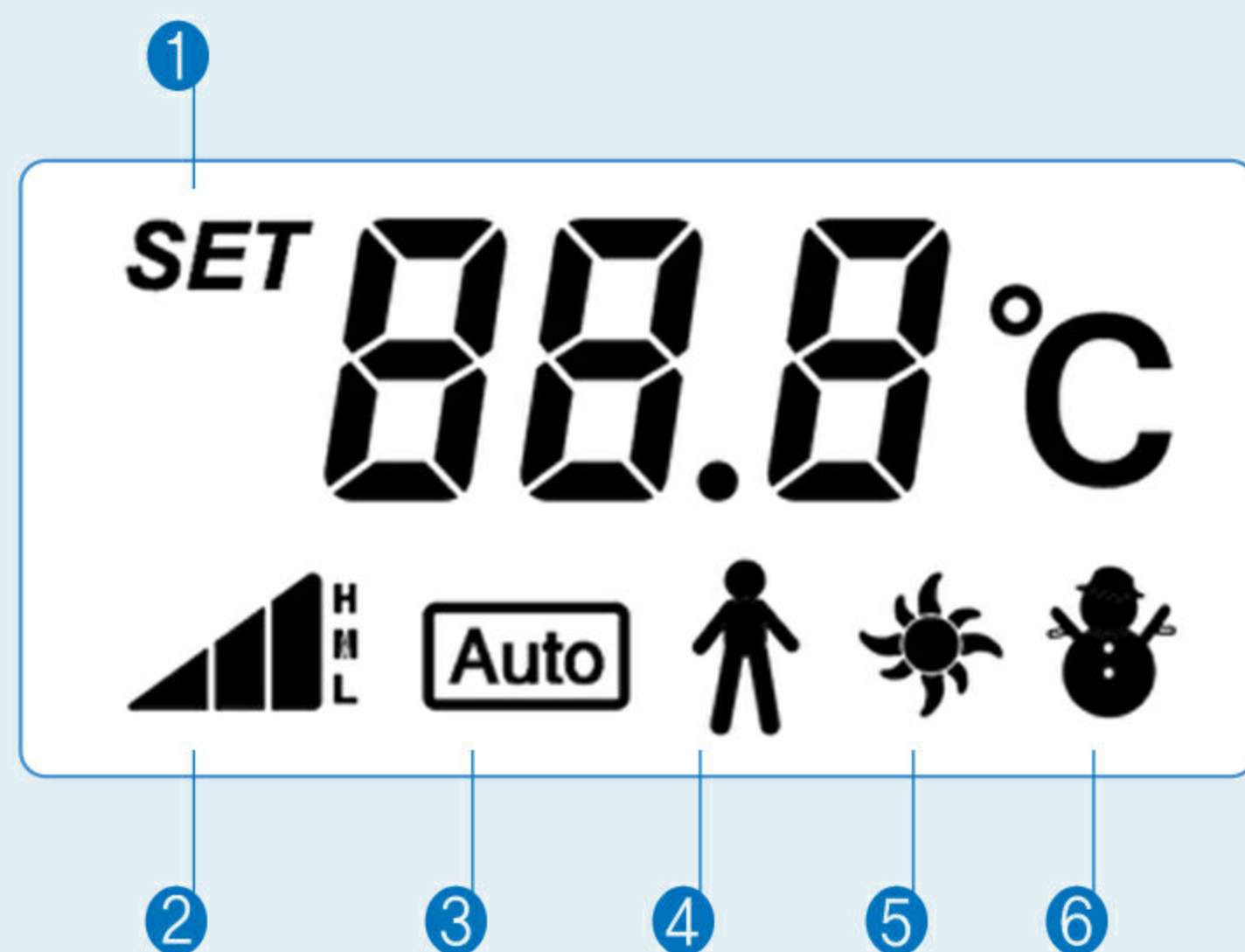
Technical information

- Power input : 220VAC, 60Hz
- Power consumption : MAX 180W (including sub power consumption)
- Voltage at signal IN/OUT point:NO.5A, NC.3A(150W)
- Temperature & Humidity range
 - Shipping & Storage : -10~70°C, Max 90% RH
 - Operating : 0~40°C, 10~75% RH
- Operation : Automatic & Manual fan speed control (High/Middle/Low)
- Setting temperature
 - Setting temperature range : 5~35°C
 - Adjustment unit : 0.5°C
- Dimensions : 80(W) x 120(H) x 30(D) (mm)







iFC 303

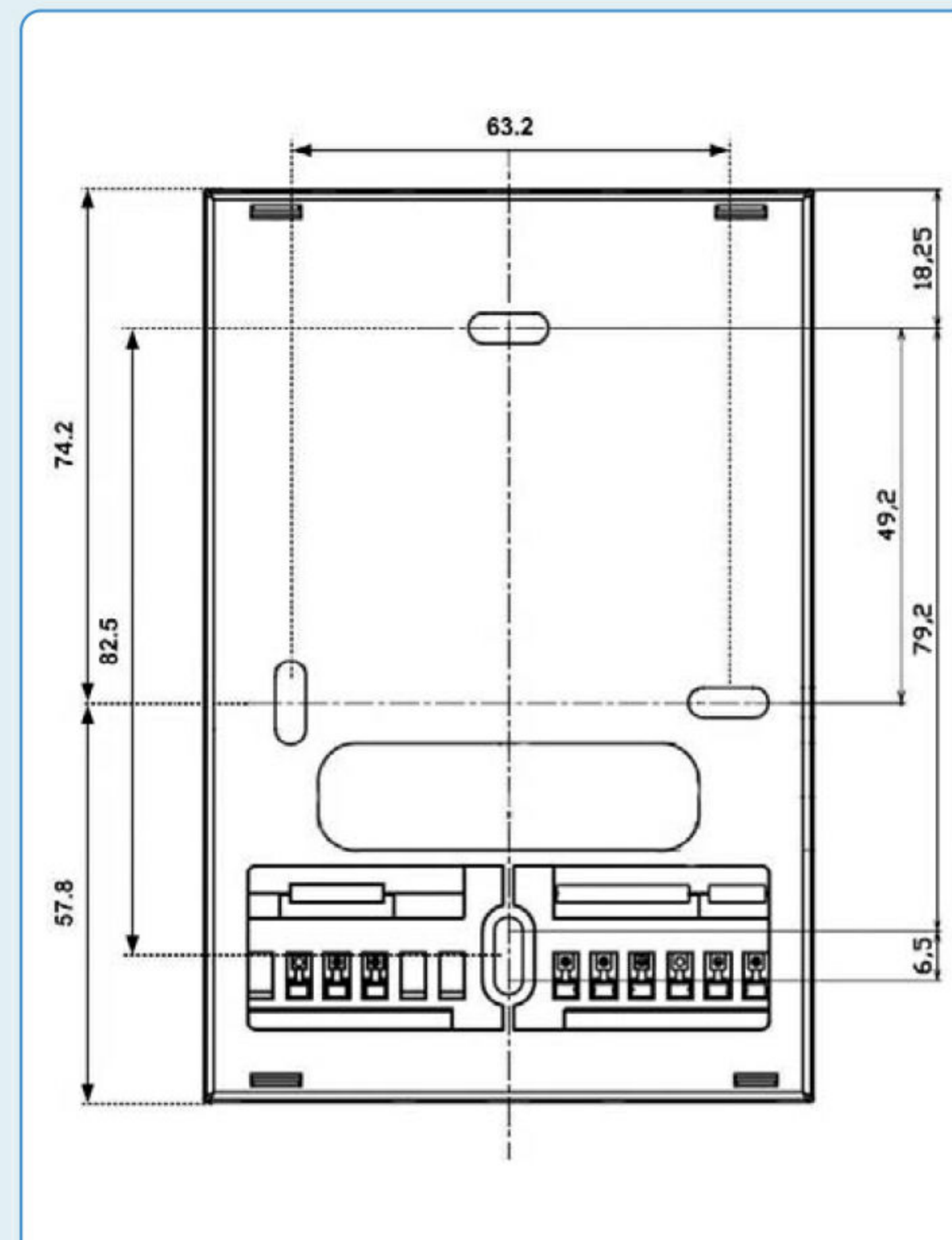
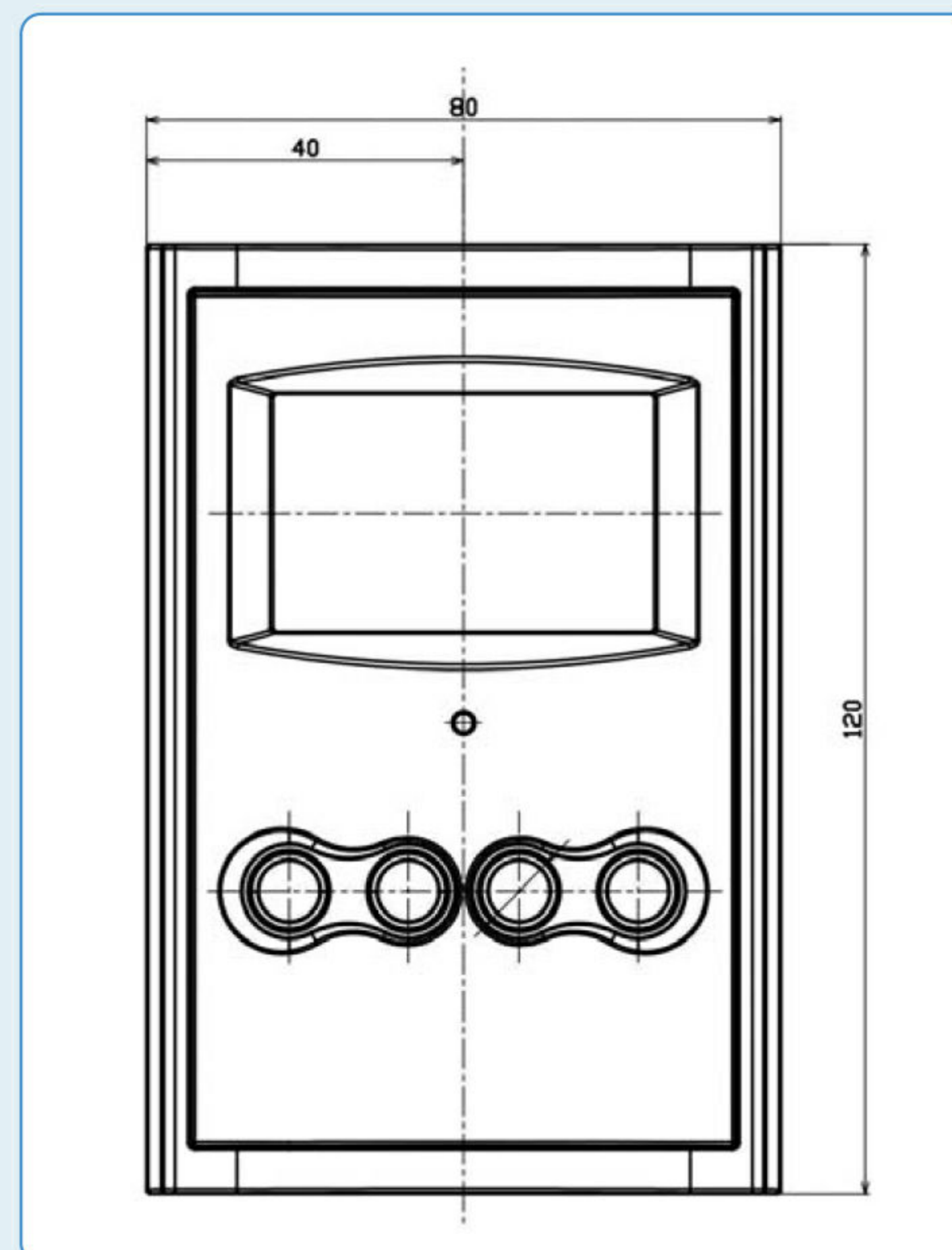
USER INTERFACE



- 1 Appears when there is a set temperature
- 2 Fan Speed
- 3 Automatic operation
- 4 Operation Status
- 5 Cooling mode
- 6 Heating mode

iFC303

-  Room occupancy setting
Winter/Summer mode setting
-  Fan speed setting
-  Up (temperature setting)
Cooling mode select (at mode selection)
-  Down (temperature setting)
Heating mode select (at mode selection)



※ Specifications are subject to change without prior notice for improvement of performance.