# Control Systems

## Individual control

### **Remote Control line up**

	indoor unit	remote control	
	wired all models	RC-EX3A	
wired		RC-E5	
		RCH-E3	

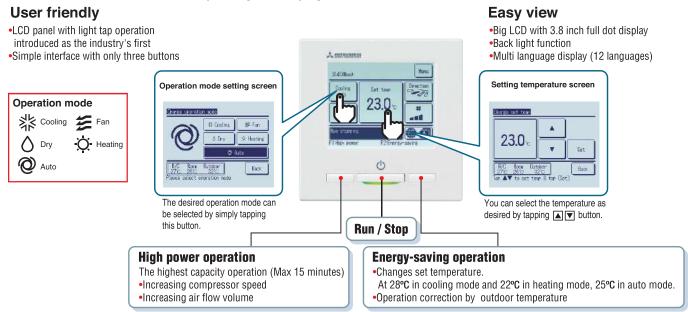
	indoor unit	remote control	indoor unit	remote control	indoor unit	remote control
wireless	FDT	RCN-T-5BW(-5BB)-E2	FDTS	RCN-TS-E2	FDE	RCN-E-E3
	FDTC	RCN-TC-5AW-E3	FDK22~56	RCN-K-E2	FDFW	RCN-FW-E2
	FDTW	RCN-TW-E2	FDK71	RCN-K71-E2	others*	RCN-KIT4-E2

\*FDTQ, FDU, FDUM, FDUT, FDUH, FDU-F

### Wired remote control (option)

### RC-EX3A

Intuitive touch controller with Liquid Crystal Display



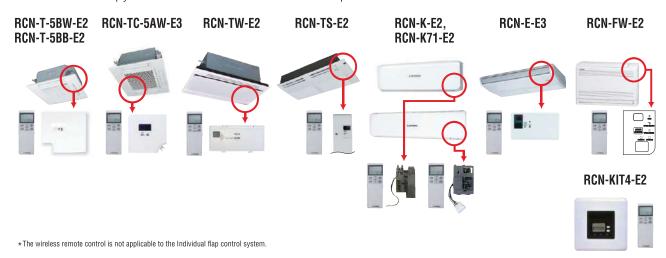
### Main functions

	Function name	Description
Economy & Timer	Energy-saving operation	Since the capacity is controlled automatically based on the outdoor temperature, energy can be saved without losing comfort.
	Sleep timer	Set the time period from start to stop of operation. The selectable range of setting time is from 30 to 240 minutes (at 10-minuteintervals).
	Set temperature auto return	The temperature automatically returns to the previously set temperature.
	Set ON timer by hour	When the set time elapses, the air conditioner starts.
	Set OFF timer by hour	When the set time elapses, the air conditioner stops.
	Set ON timer by clock	The air conditioner starts at the set time.
	Set OFF timer by clock	The air conditioner stops at the set time.
	Weekly timer	On or Off timer can be set on a weekly basis.
	Peak-cut timer	Capacity control can be set by using peak cut function on RC-EX3A for better energy saving. Five-step capacity control is available.
	Home leave operation	When the unit is not used for a long period of time, the room temperature is maintained at a moderate level, avoiding extremely hot or cool temperatures.
	Big LCD & Touch screen panel	Large 3.8 inch screen has resulted in improved visibility and operability.
	Easy modification of Individual flap control	User can visually confirm and set the direction of flaps using the visual display on the remote controller.
Comfort	Automatic fan speed *1	The micro-computer automatically adjusts the airflow effectively to follow the changes of return air temperature.
	Temp increment setting	Temperature increment for the change of the set temp can be changed.
	Silent mode	Set the period of time to operate the Outdoor unit with prioritizing the quietness.
	Function switch	The function switch allows user to select and set two functions among available functions.
	Favorite setting	Operation mode, set temperature, fan speed and air flow direction automatically adjust to the programmed favorite setting.
	Adjusting Brightness of the background light	The brightness of the background light can be adjusted by 10 stages.
	LCD contrast setting	This function allows user to adjust LCD display contrast.
Convenience	High power operation	High Power Mode increases the unit operating ability for 15 minutes to quickly adjust the room temperature to a comfortable level.
Convenience	Back light setting	This convenient function allows user to see controls under low light conditions.
	Administrator settings	This function only allows specific individuals to operate the unit.
	Setting temp range	Limited range of setting temperature in the heating or the cooling operation can be selected.
	External Input/Output Function	The external input/output of indoor unit by remote controller can set input/output based on user needs.
	Select the language	Set the language to be displayed on the remote control.
Service	USB connection (mini-B)	This function allows batch input of schedule timer settings and other settings involving a large amount of data.
	Error code display	This function allows user to check information displayed when abnormal function of the unit occurs.
	Operation data display	Displays various types of air conditioner operation data in real time.
	Contact company display	Address of the service contact is displayed.
	Filter sign	Announces the due time for cleaning of the air filter.
	Static pressure adjustment	Allows user to adjust duct static pressure using the remote control.
	Backup Control	Allows for rotation control, fault backup control, and capacity backup control.

<sup>\*1</sup> Cannot be used when a centralized control remote is connected.

### **Wireless remote control (option)**

For wireless control simply insert the infra-red receiver kit on a corner of the panel



### Wired remote control (option)

### RC-E5

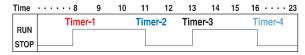


The RC-E5 controller enables extensive access to service and maintenance technical data combined with easy to use functions and a clear LCD display.

### Weekly timer function as standard

RC-E5 provides (as a standard feature) a weekly timer, which allows one-week operation schedules to be registered. A user can specify up to four times a day to start/stop the air conditioner. (Temperature setting is also possible with the timer).

### **Timer operation**



### Run hour meters to facilitate maintenance checking

RC-E5 stores operation data when an anomaly occurs and indicates the error on the LCD. It also displays cumulative operation hours of the air conditioner and compressor since commissioning.

### Room temperature controlled by the remote control sensor

The temperature sensor is housed in the top section of the remote control unit. This arrangement has improved the sensitivity of the remote control unit's sensor, which permits more finely controlled air conditioning.



### Changeable set temperature ranges

RC-E5 allows the upper and lower limits of a set temperature range to be specified separately.

By adjusting a set temperature range, you can ensure energy saving air conditioning by avoiding excessive cooling or heating.

Changeable range		
Upper limit	20~30°C(effective for heating operation)	
Lower limit	18~26°C(effective for non-heating operation)	

### Simple remote control (option)

### RCH-E3 (wired)



Designed specially for hotel rooms, the controller's buttons are limited only to the minimum required functions such as ON/OFF, mode, temperature setting and fan speed. It is really simple and easy to use.

### Up to 16 units

#### It can control up to 16 indoor units, by pressing the AIR CON No. button.

### **AUTO** restart

This function allows starting the air conditioner automatically when power supply is restored after power failure or by turning on the power switch.

- ${\tt *RCH-E3} is not applicable to the Individual flap control system. \\ {\tt *When RCH-E3} is used, the fan speed setting can only be set to 3 speed settings (Hi-Me-Lo). \\$

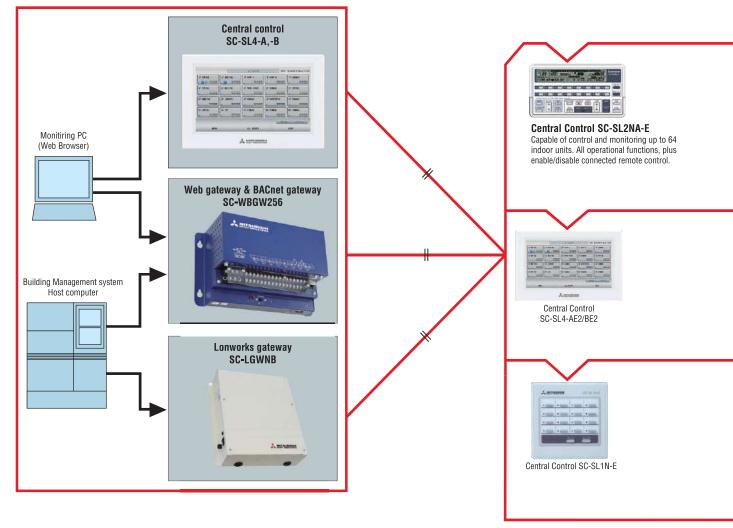
### Thermistor (option)

### SC-THB-E3

In case the sensor integrated in the indoor unit or in the remote controller is unable to sense the room temperature correctly, or an individual controller in each room is not required but a temperature sensor is (as when a central control system is in place), install SC-THB-E3 in an adequate location 8m in the room.

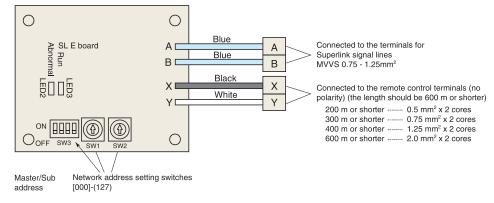
## SUPERLINK®- II Control System

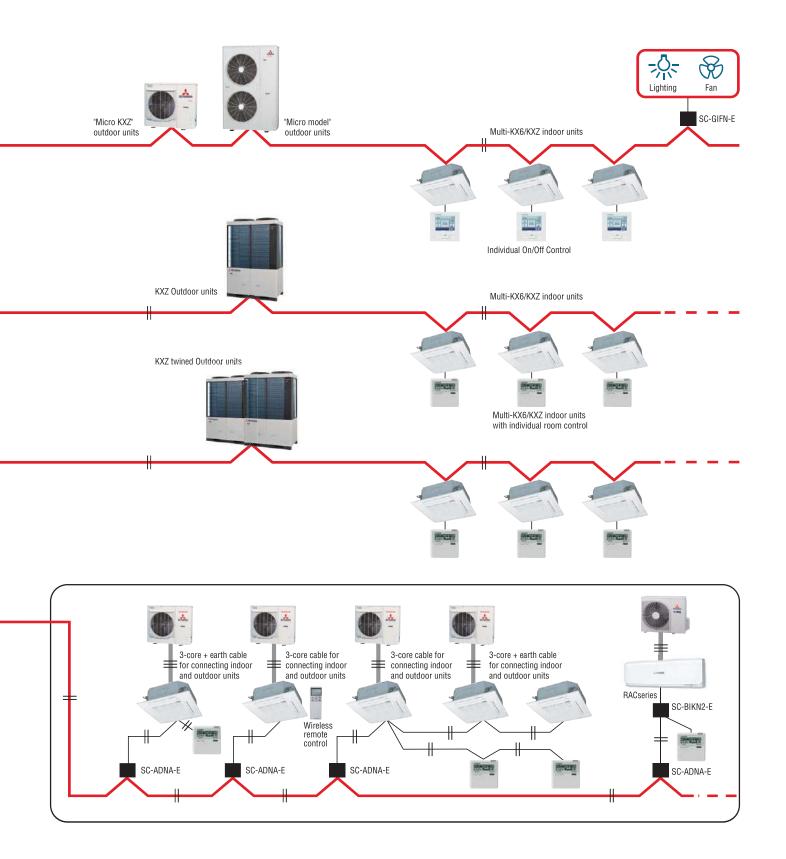
Mitsubishi Heavy Industries Thermal Systems has now combined simplicity of installation with our highly sophisticated SUPERLINK - II control system, to offer building owners and occupiers a comprehensive control and management system, while providing complete commissioning and service maintenance assistance for installers and service engineers. SUPERLINK - II network utilises two wire, non-polar cable - for further details of wiring. SUPERLINK - II is an advanced high speed data transmission system that can connect up to 128 indoor units and 32 outdoor units as a network. Mitsubishi Heavy Industries Thermal Systems offers a wide range of control options for the SUPERLINK - II network to suit any application large or small, as well as connection to new or existing building management systems. Individual Mitsubishi Heavy Industries Thermal Systems split systems can also be integrated on to the SUPERLINK - II network using SC-ADNA-E.



### SUPERLINK E BOARD(SC-ADNA-E)

This board is used when conducting control of the single package (wired remote control unit) 1-type series using a network option.





## Central Control SC-SL4-AE2/BE2 Added new function

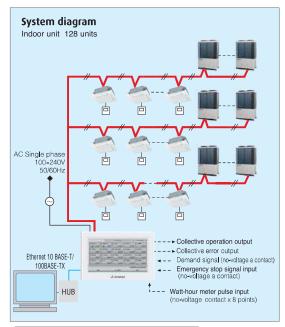
Mitsubishi Heavy Industries Thermal Systems introduces the full colour touch screen central control SC-SL4-AE2/BE2, with 9 inch interactive LCD display. Offers control, monitoring, scheduling and service/maintenance functions for up to 128 indoor units.

Control with PC is available by use of Microsoft Edge/Google chrome.

Indoor units can be controlled, scheduled, monitored and either individually, as groups or as blocks of groups with the following functions:



Monitoring	Scheduling	Administration/Service
Operating state	Yearly schedule	Block definition, Floor layout
Mode	Today's schedule	Group definition
Set temperature	Detailed daily schedule	Unit definition
Room temperature	Season setting	Time and date setting
Operation permitted/ prohibited		Alarm history
Fan speed		Energy consumption calculation period
Air direction		Energy consumption, cumulative operation time
Filter sign		Flap control setting
Maintenance (1, 2 or back-up) Outdoor air		Operation data monitoring  Data logging (Run / Stop set temperature , room temperature , outdoor air temperature )
	Operating state Mode Set temperature Room temperature Operation permitted/ prohibited Fan speed Air direction Filter sign Maintenance (1, 2 or back-up)	Operating state Yearly schedule  Mode Today's schedule  Set temperature Detailed daily schedule  Room temperature Season setting  Operation permitted/ prohibited  Fan speed  Air direction  Filter sign  Maintenance (1, 2 or back-up) Outdoor air



PC requirements: Windows 10 Monitor resolution 1280 x 1024 or more Web browser requirements: Microsoft Edge , Google Chrome

### Schedule setting

### For each group

Schedule settings for each group are possible. The RUN/STOP/HOME LEAVE time, operation mode, remote control Lock/Unlock setting, temperature setting, energy setting, and silent mode can be set up to 16 times per day.



### **Yearly Schedule**

Schedule settings for a year are also possible. The weekday, holiday, special day 1 or special day 2 can be selected and set.

Able to automatically update the yearly schedule.



### **Operation time history**

Possible to check operation time history for cooling and heating separately.



### **Alarm history**

A maximum of 300 records is displayed for the history of error occurrence and restoration in the unit of air conditioner.

It is possible to output the history data to a CSV data file.

### Maintenance code NEW



Able to show the maintenance code

### High visibility

Increase in size from 7 to 9 inches



Contrast between five colours for icon display and black light base screen has achieved high visibility.

### Models that can be connected has increased

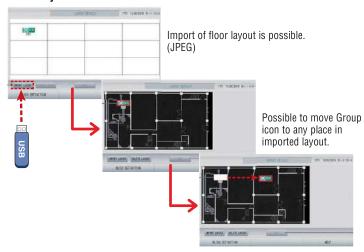


Can now connect to Q-ton/ HMU. Can have easy centralized control over various modes



\*When connecting to Q-ton, an interface(RCI-MDQE2) is necessary.

### **Block layout function**



### Web function

You can monitor and control up to 128 indoor units (Max.128 groups) from a PC or tablet PC.



<Example>

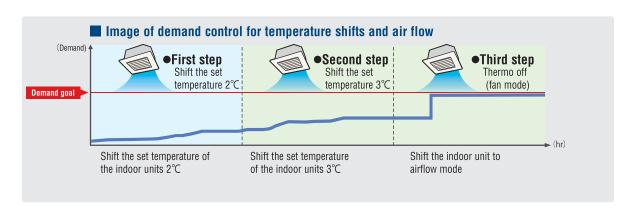
Monitoring and operating air conditioners in a lecture room of a university



### New demand control function



With the new demand control, temperature shifts between 1~9°C(Cooling or Drying;1~9°C, Heating: -1~-9°C), fan mode can be selected.



### **Electric power calculation function:**

(for SC-SL4-BE2 only)

SC-SL4-BE2 gives electric power consumption data (kWh) for each indoor unit , each group, each SUPERLINK-II system, and each watt-hour meter input.



	SC-SL4-BE2
Export data by	USB / LAN
Calculation software	Included
Watt-hour meter pulse input (Maximum)	8
Max connectable indoor units	128

Item Model		SC-SL4-AE2/SC-SL4-BE2		
Aml	pient temperature during use	0 ~ 40°C		
Power supply		1 Phase 100-240V 50/60Hz		
Pov	ver consumption	9W		
External dimensions (Height x Width x Depth)		172mm x 250mm x 23 (+70) mm		
Net	weight	2.0kg		
Number of connectable units (indoor units)		up to 128 units		
LCD touch panel		Colour LCD, 9 inches wide		
	SL (Superlink) signal inputs	1 system (Super link-∏)		
S	Watt-hour meter pulse input*	8-point, pulse width 80ms or more		
Inputs	Emergency stop signal input*	1 point, non-voltage a contact input continuous input (closed, forced stop)		
	Demand signal input*	2 point, non-voltage a contact input continuous input (closed, demand control)		
Outputs	Operation output	1 point, maximum rated current 40mA, DC24 V All units stop; Open, any unit operating;Close		
	Error output	1 point maximum rated current 40mA, DC24 V Normal; closed. If even one unit is abnormal; Open (Open/closed can be changed)		

\* The receiving side power supply is DC 12V (10mA).
The air conditioning charges calculations of this unit are not based on OIML, the international standard.

### SC-SL1N-E

Start/stop control of up to 16 indoor units either individually or collectively.

Simple centralised control.

- 1. The SC-SL1N-E is connected to the Superlink- network via 2-core, non-polar wires ('AB' connection).
- 2. It will monitor and control the start/stop function of up to 16 units, with the sixteen operation button.
- 3. The unit or group numbers in operation or in need of service are displayed with an LED.
- 4. Collective start/stop is also available through the simultaneous on/off button.
- 5. Up to 12 SC-SL1N-E units can be connected to a Superlink-∏ network (consisting of up to 128 indoor
- 6. If a power failure occurs, the SC-SL1N-E will resume the operation of the system according to a stored operation condition, once power is restored.

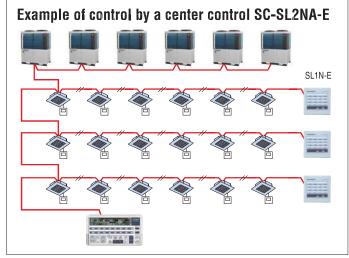


### SC-SL2NA-E

Central control of up to 64 indoor units including weekly timer function as standard.

- 1. The SC-SL2NA-E is connected to the Superlink-∏ network via 2-core, non-polar wires ('AB' connection)
- 2. It will monitor and control the start/stop function of up to 16 units, or 16 groups of units, with the sixteen operation buttons.
- 3. It also monitors and controls the following functions for individual units, groups of units or the complete network: operation mode, set point temperature, return air temperature, louvre position, error code. Air flow and center lock function.
- 4. The unit or group numbers in operation or in need of service are displayed with an LCD.
- 5. Collective start/stop is also available through the simultaneous on/off button.
- 6. If a power failure occurs, the SC-SL2NA-E will resume the operation of the system according to a stored operation condition, once power is restored.
- 7. The SC-SL2NA-E can be connected to an external timer to facilitate timed on/off cycles.





An SC-SL2NA-E performs the start/stop control, monitoring and mode setting of up to 64 units. It is a high quality air conditioner control system that allows up to 64 indoor units to be freely grouped into 1 to 16 groups.

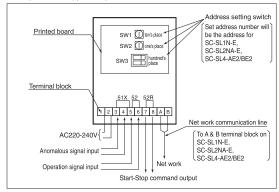
It allows not only the start/stop control but also the monitoring, display of operation statuses such as in operation or in need of service and mode setting such as switching of operation modes of connected units collectively, by group or individually

• Outer dimensions: H120 x W215 x D25+35\*mm.

 $35^{\star}$  is the measurement including the part contained in a recess.

### SC-GIFN-E Interface kit

- Applicable products
   Ventilation fan, Air purifier
   By using SC-GIFN-E together with central control such as SC-SL1N-E, SC-SL2NA-E and SC-SL4-AE2/BE2, you can start-stop, operate & monitor the presenting of equipment experience. the operation of applicable products



Note:Please consult dealer for combination of center controls and Building Management Systems interface units.

## Building Management Systems SC-WBGW256 (Web gateway+BACnet gateway)

Production by order

SC-WBGW256 controls and monitors of up to 256 cells (some cells can have two or more indoor units and total number of indoor units can be up to 256 units) centralised to a network PC using the Superlink-II web gateway. Simple installation is assured with no special software requirements, operation is via Internet Explorer. A low power embedded CPU and compact flash ROM ensure a large storage capacity with high reliability (no moving parts such as a PC fan, etc). An IP address filter function combined with three-level user authentication check also ensures security.

Also, SC-WBGW256 can be used as interface devices that convert Mitsubishi Heavy Industries Superlink-II communication data to BACnet code and are controlled centrally from a building management system.



### [ In case of web gateway ]

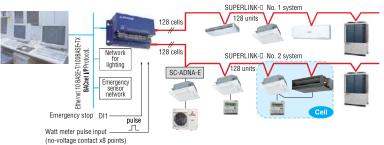


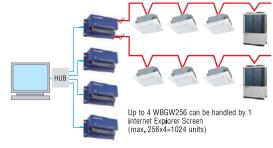


PC requirements: Windows 7 or Windows 8.1.

### Users can manage up to 1024 units by connecting the four devices!!



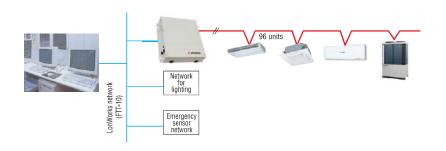




# SC-LGWNB (LonWorks gateway)

Production by order

SC-LGWNB is an interface device that converts Mitsubishi Heavy Industries Superlink-II communication data to LonWorks code. Control and monitoring functions of the a/c system for up to 96 indoor units can be integrated to a central control point via the building management system network.





Additional engineering service cost etc. is required. Please consult your dealer when using this gateway.