DAIKIN

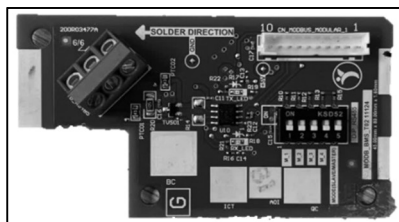# INSTALLATION & OPERATION MANUAL

FCBAG MODULE

English

Deutsch

Français

Nederlands

Español

Italiano

Ελληνικά

Português

Русский

Türkçe

CONTENT

WHAT'S INSIDE BOX

The following parts are contained in the carton box together with this manual.
1. FCBAG Module.
2. Wire Harness with 100MM to/from DAMA mainboard.
3. Installation and Operation Manual.
4. Bubble Bag.

INTRODUCTION

This manual provides the procedures of installation to ensure a safe and good standard of operation for the FCBAG module. Special adjustment may be necessary to suit local requirement. Before using your gateway, please read this instruction manual carefully and keep it for future reference.

This application is intended to be used by expect or trained users in shopping mall, in light industry and office building or for commercial use by lay person.

This appliance is not intended for use by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

SAFETY PRECAUTION

⚠ WARNING

1. Installation and maintenance should be performed by qualified person who are familiar with local code and regulation, and experienced with this type of appliance.
2. Confirm that the unit has been switched OFF before installing or servicing the unit.
3. Risk of electric shock, can cause injury or death. Disconnect all remain electric power supplies before servicing.
4. DO NOT pull out the power cord when the power is ON. This may cause serious electrical shocks which may result in fire hazards.

⚠ CAUTION

Please take note of the following important points when installing.

1. Do not install the unit where leakage of flammable gas.
2. Use only the recommended cables for wiring. The connections must be firm but without tensioning the terminals.
   - ❗ Improper connection or fastening can cause fire or electrical shock.
3. Do not handle with wet hands/ wash the unit with water.
   - ❗ Electrical shock may occur.
4. Do not operate any heating apparatus too close to the gateway or use in room where mineral oil, oil vapor or oil steam exist, this may cause plastic part to melt or deform as a result of excessive heat or chemical reaction.
5. Don't use joined and twisted wires for incoming power supply.
6. The equipment is not intended for use in a potentially explosive atmosphere.

FCBAG MODULE PCB LAYOUT
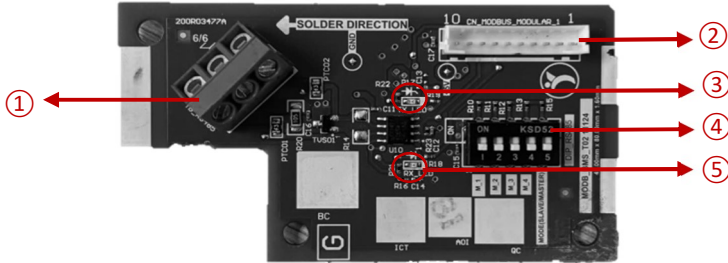
① TB_RS485 : Connector for connection to other Modbus Modules and Modbus Master.
② CN_MODBUS_MODULAR_1 : Connector to CN_MODBUS_MODULAR (BMSW)
③ TX_LED : Indication of data transmission in progress.
④ DIP_RS485 : Unit configuration setting.
⑤ RX_LED : Indication of data receiving in progress.
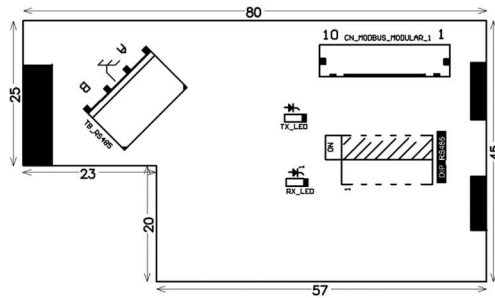
*Dimension in mm

COMPATIBILITY

Mainboard Controller
Can only be used in conjunction with DAIKIN Manufacturing produced FCU type air conditioner units.
Please refer to the FCBAG Protocol documents for the list of capability model.

FCBAG COMMUNICATION PROTOCOL

Scan the QR code below to download the FCBAG Protocol.

Below is the supported function code:

Function Code	Description	Remarks
0x03	Read Holding register	-
0x04	Read Input Register	-
0x06	Preset Single Register	In case PCB does not function correctly, ensure FCBAG software does not force to send command function code 0x10 in replacement of function code 0x06 on protocol setting.
0x10	Preset Multiple Register	Function code 0x10 must control more than 1 address in one single command.

Read Input Register (0x04)

Address	Read/Write (R/W)	Definition
30001	R	FCBAG Status
30002	R	Indoor Unit Connection Status
31002	R	Minimum and Maximum limit of Indoor Unit Cooling Set Temperature
31003	R	Minimum and Maximum limit of Indoor Unit Heating Set Temperature
32001	R	On/Off Status, Fan Direction, Fan Volume
32002	R	Operation Mode
32003	R	Indoor Unit Set Temperature
32004	R	Error Code
32005	R	Room Temperature Display
32006	R	Indoor Unit Room Temperature Sensor
32201	R	Indoor Coil Temperature 1
32500	R	Compressor / Valve Status

Read Holding Register (0x03)
Preset Single and Multiple Register (0x06 and 0x10)

Address	Read/Write (R/W)	Definition
42001	R/W	On/Off Status, Fan Direction, Fan Volume
42002	R/W	Operation Mode
42003	R/W	Set Temperature
42010	R/W	Disable Handset Control
42011	R/W	Force Compressor / Valve Off

Daikin Error Code Indication

Error Code in hex	Error Code	Description
0x11	A1	EEPROM system/ Operation switch error
0x16	A6	Fan Lock Error
0x24	C4	Coil Thermistor Error
0x29	C9	Room Thermistor Error
0x1E	AE	Pipe Water Temperature bad
0x19	A9	Water Valve Error
Others	Invalid	-

FCBAG CONFIGURATION

Adjusting the dip switch to "ON" position enables the function assigned to it. Configure the mainboard setting dip switch (DIP_Config) according to operating option preference and the table below.

Dip Switch on Mainboard (DIP_Config):

DIP Switch	Pin	Function	OFF	ON
DIP_Config	1	Modbus	Disable	Enable
	2	Baud Rate	9600bps	19200bps
	3	Stop Bit	1 (Parity)	2 (non-parity)
	4	Parity*	Even	Odd
	5	Reserved	Disable	Enable

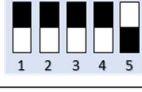*Parity setting will enable when Stop Bit is set to OFF (Parity).
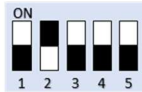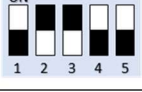
Configure the unit ID by setting dip switch (DIP_RS485) and tally with FCBAG software.

Dip Switch on FCBAG module:

| DIP Switch	Pin	Function	OFF	ON
DIP_RS485	1	Slave Address	0: No Modbus Communication 1-15: Slave Address OFF: 0 ; ON: 1	
	2			
	3			
	4			
	5	Reserved		

UNIT CONFIGURATION

Unit configuration setting for dip switch on FCBAG (DIP_RS485)

| Unit address	DIP configuration	Binary to Decimal (read from right to left)	Unit address	DIP configuration	Binary to Decimal (read from right to left)
1		00001	9		01001
2		00010	10		01010
3		00011	11		01011
4		00100	12		01100
5		00101	13		01101
6		00110	14		01110
7		00111	15		01111
8		01000			

UNIT INSTALLATION

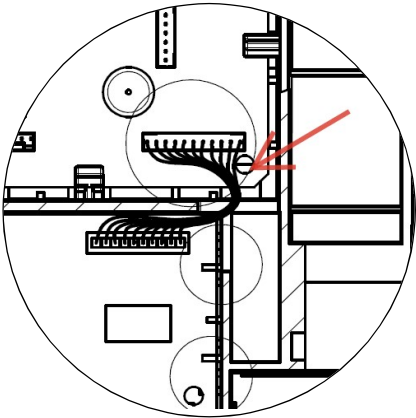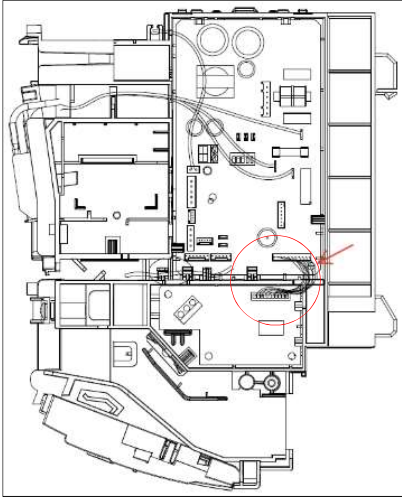**A)   Step to assemble FCBAG into unit.**

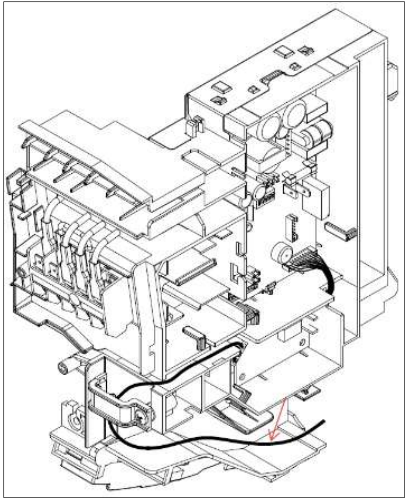1. Remove the control box metal cover as per below.
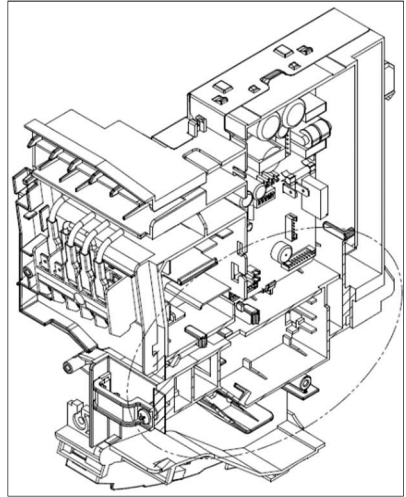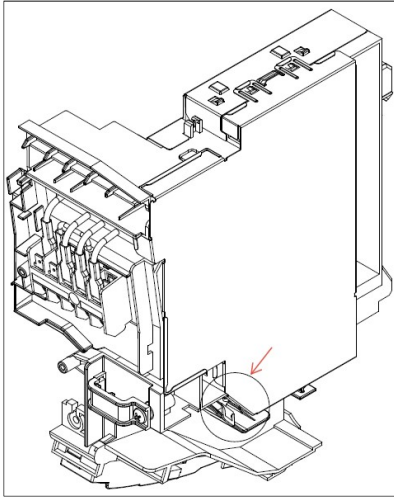
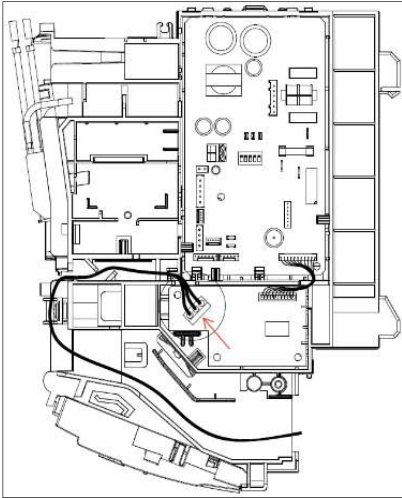2. Insert FCBAG module into the dedicated slot and ensure it is completely insert into the hook.
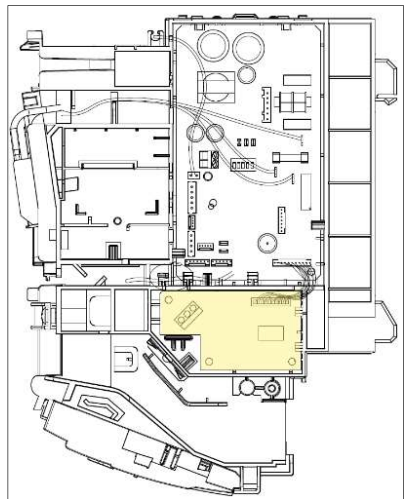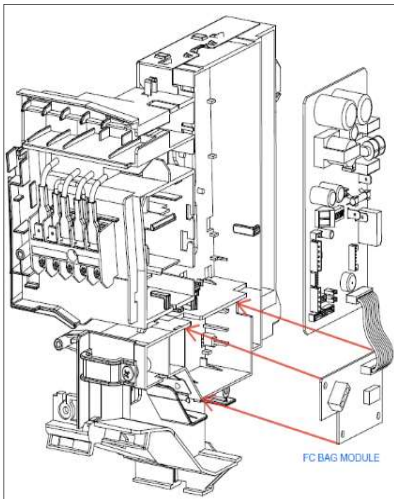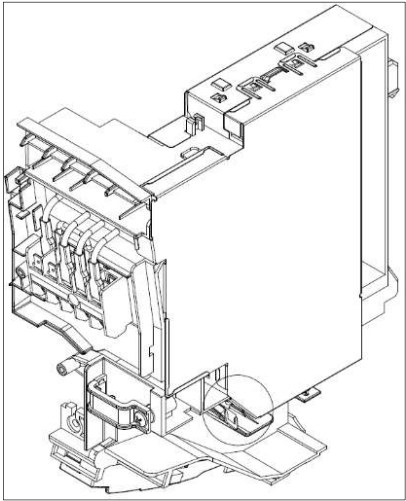
3. Then connect the wire to Mainboard side of CN_MODBUS_MODULAR.
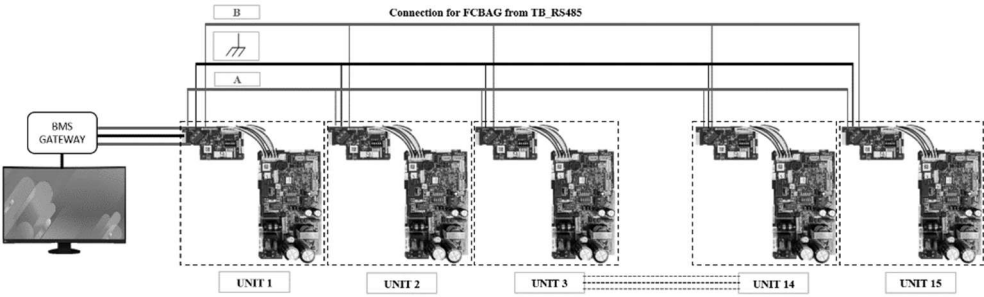

4. Insert RS485 wire as per routing below.

5. Refer to IOM Unit Installation for FCBAG module configuration and enclose the control box with the metal cover as per below.

B) Wiring diagram of connection between FCBAG connector TB_RS485

ELECTRICAL CHARACTERISTIC

Recommended wire specification and maximum wire length.

Connection	Communication Type	Wire Specification	Max Wire Length
FCBAG module to Mainboard	IO	10W wire harness	100mm
FCBAG module to BMS	RS-485	24AWG Shielded twisted pair. Characteristic Impedance: 100 Ohm Shunt Capacitance: 16pF/ft	1000 Meter
FCBAG module to PC*	RS-485	24AWG Shielded twisted pair. Characteristic Impedance: 100 Ohm Shunt Capacitance: 16pF/ft	500 Meter

** An Isolated gateway or converter (RS485 to RS232) are required when connect to PC.

TROUBLESHOOTING GUIDELINE

** Please refer FCBAG layout for LED location.

No	Problem	LED		Solution
		RX_LED (Red)	TX_LED (Yellow)	
1	FC BAG software can read signal from mainboard but cannot control the mainboard.	Blinking	Blinking	Check the mainboard DIP_Config to tally with the Modbus software setting.
2	i) Both A & B in TB_RS485 wire is reverse. ii)A or B in TB_RS485 is opened.	RED LED is turned ON but not blinking	No blinking	Check wire connection at TB_RS485
3	Wrong setting on mainboard DIP_Config	Blinking	No Blinking	Make sure only dip switch no. 'E' is turned ON for MODBUS feature.

- The manufacturer reserves the right to revise any of the specification and design contain herein at any time without prior notification.
- All images are for illustration purposes only.

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