TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 1 of 10

REVISION: A Date: 11/7/2024

### **Modbus Configurations**

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

<sup>\*</sup>Parity setting will enable when Stop Bit is set to OFF (Parity).

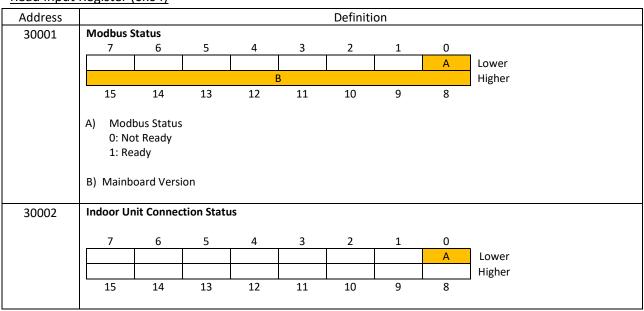
#### **Modbus Communication Protocol**

### **Function Code**

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 Modbus
		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)



TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 2 of 10

	0: Not	Dnit Conr Connected		214143									
	1: Con	nectea											
0003	Model info	rmation 1	*										
1003	7	6	5	4	3	2		1	0				
	(MSB)	В		(LSB)	(MSB)		Α		(LSB)	Lower			
	(MSB)	D		(LSB)	(MSB)		С		(LSB)	Higher			
	15	14	13	12	11	10		9	8	_			
	A) Mode in	itialization	٠ 1										
		: mode (1=		0= Invalid)									
				lid, 0= Invali	id)								
		2: Sense (1= Valid, 0= Invalid)											
	3: ECO+/ECONO (1= Valid, 0= Invalid)												
	D) Error co	da indicati	on										
	B) Error code indication 0x00: Daikin Error code												
		YLT Error c											
	C) Protocol Version												
	D) Product information												
	12: Brand (1= Others, 0= Daikin)												
	13: System (1= Non-Inverter, 0= Inverter)												
	14: Proc	duct (1= Ot											
		rithm (0=[	DAMA,	1= DIL)									
		orithm (0=[	DAMA,	1= DIL)									
<u></u>	15: Algo			1= DIL)									
0004				1= DIL) 4	3	2		1	0				
)004	15: Algo	ormation 2	*		3 (MSB)	2	A	1	O (LSB)	Lower			
)004	Model info 7 (MSB) (MSB)	ormation 2 6 B	* 5	4 (LSB)	(MSB)		A		(LSB)	Lower Higher			
)004	Model info	ormation 2	*	4 (LSB)	(MSB)	2 10	A	1 9	(LSB)				
0004	15: Algo  Model info 7 (MSB) (MSB) 15	ormation 2 6 B	* 5 13	4 (LSB)	(MSB)		Α		(LSB)				
0004	Model info 7 (MSB) (MSB) 15 A) Indoor in	ormation 2 6 B 14	* 5 13	4 (LSB)	(MSB) C 11		Α		(LSB)				
)004	Model info 7 (MSB) (MSB) 15 A) Indoor in	ormation 2 6 B 14	* 5 13	4 (LSB)	(MSB) C 11		Α		(LSB)				
)004	Model info 7 (MSB) (MSB) 15  A) Indoor in *Refer t B) Mode in	ormation 2 6 B 14 Information o external	* 5 13 n NS mo	4 (LSB) (12 del Table lis	(MSB) C 11		A		(LSB)				
)004	Model info 7 (MSB) (MSB) 15 A) Indoor in *Refer t B) Mode in 12: E-lig	ormation 2 6 B 14 Information o external sitialization ht (1= Vali	13 n NS mo	4 (LSB) (12 del Table lis	(MSB) C 11		A		(LSB)				
0004	Model info 7 (MSB) (MSB) 15 A) Indoor in *Refer t B) Mode in 12: E-lig 13: LED	ormation 2 6 B 14 Information o external itialization ht (1= Valioff (1= Valio	* 5 13 n NS mo 1 2 d, 0= In id, 0= I	4 (LSB) (12 del Table lis	(MSB) C 11		Α		(LSB)				
)004	Model info 7 (MSB) (MSB) 15  A) Indoor in *Refer t  B) Mode in 12: E-lig 13: LED 14: Strea	ormation 2 6 B 14 Information o external itialization th (1= Vali off (1= Vali amer (1= Vali off	13 13 NS mo 1 2 d, 0= In id, 0= Ii	4 (LSB) 12 del Table lis nvalid) nvalid) = Invalid)	(MSB) C 11		Α		(LSB)				
0004	Model info 7 (MSB) (MSB) 15  A) Indoor in *Refer t  B) Mode in 12: E-lig 13: LED 14: Strea	ormation 2 6 B 14 Information o external itialization ht (1= Valioff (1= Valio	13 13 NS mo 1 2 d, 0= In id, 0= Ii	4 (LSB) 12 del Table lis nvalid) nvalid) = Invalid)	(MSB) C 11		A		(LSB)				
0004	Model info 7 (MSB) (MSB) 15  A) Indoor in *Refer t  B) Mode in 12: E-lig 13: LED 14: Strea	ormation 2 6 B 14 Information o external itialization th (1= Vali off (1= Vali amer (1= Vali off	13 13 NS mo 1 2 d, 0= In id, 0= Ii	4 (LSB) 12 del Table lis nvalid) nvalid) = Invalid)	(MSB) C 11		A		(LSB)				
0004	Model info 7 (MSB) (MSB) 15  A) Indoor in *Refer t  B) Mode in 12: E-lig 13: LED 14: Strea	ormation 2 6 B 14 Information o external itialization th (1= Vali off (1= Vali amer (1= Vali off	13 13 NS mo 1 2 d, 0= In id, 0= Ii	4 (LSB) 12 del Table lis nvalid) nvalid) = Invalid)	(MSB) C 11		Α		(LSB)				
0004	Model info 7 (MSB) (MSB) 15  A) Indoor in *Refer t  B) Mode in 12: E-lig 13: LED 14: Strea	ormation 2 6 B 14 Information o external itialization th (1= Vali off (1= Vali amer (1= Vali off	13 13 NS mo 1 2 d, 0= In id, 0= Ii	4 (LSB) 12 del Table lis nvalid) nvalid) = Invalid)	(MSB) C 11		Α		(LSB)				

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 3 of 10

REVISION: A Date: 11/7/2024

#### C) Indoor capacity

HP	Capacity, kW	Capacity, kW
	(value in hex/10)	(decimal)
unknown	0x00	0
0.5	0x0F	1.5
0.7	0x14	2.0
0.9/1.0	0x19	2.5
1.5	0x23	3.5
2.0	0x32	5.0
2.5	0x3C	6.0
3.0	0x47	7.1
3.5	0x64	10.0
4.0	0x7D	12.5
5.0	0x8C	14.0
6.0	0xA0	16.0

30005 Model information 3\*

7	6	5	4	3	2	1	0	_
(MSB)		В	(LSB)	(MSB)	А		(LSB)	Lower
			D	(MSB)	С		(LSB)	Higher
15	14	13	12	11	10	9	8	

- A) Mode initialization 3
  - 0: Power LED indication (1= Valid, 0= Invalid)
  - 1: Left-Right Swing (1= Valid, 0= Invalid)
  - 2: Up-Down step (1= Valid, 0= Invalid)
  - 3: Left-Right step (1= Valid, 0= Invalid)
- B) Mode initialization 4
  - 4: Smart Powerful+ (1= Valid, 0= Invalid)
  - 5: Smart Drift (1= Valid, 0= Invalid)
  - 6: Smart Sleep+ (1= Valid, 0= Invalid)
  - 7: Smart Ecomax (1= Valid, 0= Invalid)
- C) Mode initialization 5
  - 8: CK special swing (1= Valid, 0= Invalid)
  - 9: Disable Up-down swing
  - 10: Manual Coil Cleaning (1= Valid, 0= Invalid)
  - 11: Auto Coil Cleaning (1= Valid, 0= Invalid)
- D) Mode initialization 6
  - 12: Percentage Fan Speed Control (1= Valid, 0= Invalid)

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 4 of 10

		it Capabil			_	-	_	_	
	7	6	5	4 E	3 D	2 C	1 B	0 A	Lower
	G		F		D		Б	A	Higher
-	15	14	13	12	11	10	9	8	_ 0 -
۸۱	Bar D	w							
A)	0: No								
	1: Bar								
В)									
	0: No								
C)	1: Bar Bar H								
C)	0: No								
	1: Bar								
D)									
	0: No 1: Bar								
	I. Dai								
E)	Bar Fa	an							
	0: No								
	1: Bar	r							
F)	Fan V	olume Lev	vel Capabi	litv					
'		gle Fan sp		,					
	3: 3 le	evel Fan S	peed						
	5: 5 le	evel Fan Sp	peed						
G)	Fan V	olume Ca	pability						
"		t Exist							
	1: Exi	st							
. N	linimum	and May	imum lim	it of Indo	or Unit Co	oling Set T	[emperati	ure	
.   "									
	7	6	5	4	3	2	1	0	
	(MSB)				<u>А</u> В			(LSB)	Lower Higher
	15	14	13	12	11	10	9	8	

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 5 of 10

	n and Max	imum limi	it of Indoo	r Unit He	ating Set 1	Temperati	ure	
7	6	5	4	3	2	1	0	_
(MSB)			P				(LSB)	Lower
(MSB)	4.4	12	E		10		(LSB)	Higher
15	14	13	12	11	10	9	8	
	or Unit Hea or Unit Hea							
Reserved	I							
On/Off S	tatus, Fan	Direction,	Fan Volu	me				
7	6	5	4	3	2	1	0	
	U	В	7	<u> </u>			A	Lower
		D				С		Higher
15	14	13	12	11	10	9	8	_
Volume Swing s Position Position Position Position Position Swing  C) Up-E	Right Swin, 2 Valido Va	ue grant de la companya de la compan						
Volume		ue						
Swing s								
Position Position								
	12 13							
Position								
Position	n 3 4							

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 6 of 10

	D) Fan Volume								
	Volume	Value							
	Low Medium Low	2							
	Medium	3							
	Medium High	4							
	High	5							
	Auto	7							
32002	Operation Mode	)							
	7 6	5	4	3	2	1	0		
	(MSB)		A	<b>\</b>			(LSB)	Lower	
	15 14	13	12	11	10	9	8	Higher	
	15 14	15	12	11	10	Э	٥		
	A) Operation N						1	T	
	Value	0	1 Heating	2 Capling	3	4	5	6	7
	Mode	Fan	Heating	Cooling	Auto	-	-	-	Dry
32003	Indoor Unit Set	Temperatur	е						
	7 6	5	4	3		2	1	0	
				A				(LSB)	Lower
	Signed bit (MSB)  15 14	13	12	11		10	9	8	Higher
		13	12			10	,	Ü	
	A) Set Temper * Temperature v		mal multi	plies with :	10. Eg: 18°0	C x 10 = 18	30.		
32004	Error Code								
	7 6	5 B	4 (LSB)	(MSB)	2	1	O (LSB)	Lower	
		D	(L3B)	(IVISB)	F		(L3B)		
						С		l Higher	
	15 14	13	12	11	10	<u>С</u> 9	8	Higher	

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 7 of 10

REVISION: A Date: 11/7/2024

**Representation of	f Error Code	<u>:</u> :
---------------------	--------------	------------

Error Code type	B) Error Code higher mapping value (hex)	A) Error Code lower mapping value (hex)	Error Code
OYLT Type	0x00	0x00 - 0x0F	From E01 – E15
	0x01 - 0x0F	0x00 - 0x0F	Invalid
Daikin Type	0x00	0x00 - 0x0F	Invalid
	0x01	0x00 - 0x0F	From A1 - AF
	0x02	0x00 - 0x0F	From C1 - CF
	0x03	0x00 - 0x0F	From E1 - EF
	0x04	0x00 - 0x0F	From H1 - HF
	0x05	0x00 - 0x0F	From F1 - FF
	0x06	0x00 - 0x0F	From J1 - JF
	0x07	0x00 - 0x0F	From L1 - LF
	0x08	0x00 - 0x0F	From P1 - PF
	0x09	0x00 - 0x0F	From U1 - UF
	0x0A - 0x0F	0x00 - 0x0F	Invalid

<sup>\*\*</sup> Please refer to the mainboard manual for the meaning of each error code.

For example:

1. For OYLT Error Code type, If the receiving value of Error Code lower mapping value (A) is 0x00 and Error Code upper mapping value (B) is 0x0B.

Error Code upper mapping value (B) need to convert to decimal and hence *0x0B* in hex is similar to *11* in decimal.

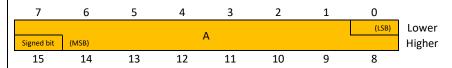
Error Code in OYLT type = A + B = "E" + "11" = **E11** 

2. For Daikin Error Code type, If the receiving value of Error Code lower mapping value (A) is 0x02 and Error Code upper mapping value (B) is 0x03.

Error Code upper mapping value (A) need to refer table above and hence 0x02 is similar to character "C".

Error Code in Daikin type = A + B = "C" + "3" = C3

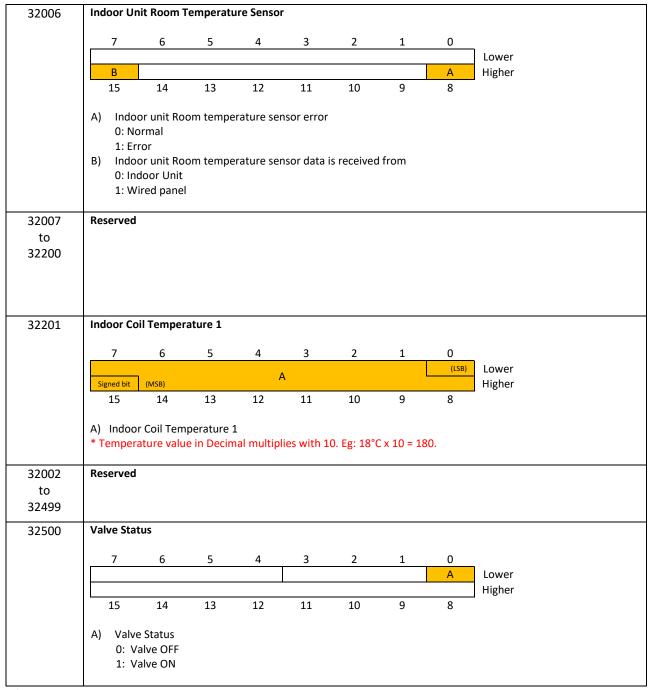
#### 32005 Room Temperature Display



A) Room Temperature

<sup>\*</sup> Temperature value in Decimal multiplies with 10. Eg: 18°C x 10 = 180.

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 8 of 10



<sup>\*</sup>For factory reference only

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 9 of 10

REVISION: A Date: 11/7/2024

# Read Holding Register (0x03)

Preset Single and Multiple Register (0x06 and 0x10)

Address	Definition On/Off Status, Fan Direction, Fan Volume									
42001	On/Off Sta	itus, Fa	n Direction	, Fan Volu						
	7	6	5	4	3	2	1	0	Ì	
			В					Α	Lower	
			D			_	С		Higher	
	15	14	13	12	11	10	9	8		
	A) On/Off	F Ctatuc								
	0: Off									
	1: On									
	1.011									
	B) Left-Ri	ght Swi	ng							
	Volume	V	alue							
	Swing stop Position 0									
	Position									
	Position									
	Position									
	Position -									
	Swing	7								
	C) H= D=		_							
	C) Up-Do	wn Swir	ng							
	Volume	V	alue	1						
	Swing sto									
	Position			1						
	Position									
	Position			1						
	Position			1						
	Position -									
	Swing	7		1						
				-						
	D) Fan Vo	lume								
	Volume		Value							
	Low		1							
	Medium	Low	2							
	Medium		3							
	Medium	High	4							
	High		5 7							
	Auto		/							

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 10 of 10

REVISION: A Date: 11/7/2024

#### Example: If user want to turn ON the unit, set fan direction to 0 and fan volume to 5 (high), then the format of data should transmit as below. Slave ID FC Data Address Value Written checksum (+40001 offset) 01 06 07D0 5001 7487 Transmission of Preset Single Register - 01 06 07 D0 50 01 74 87 42002 **Operation Mode** Lower Higher 15 14 13 Operation Mode Value 1 2 3 4 6 Mode Fan Heating Cooling Auto Example: If user want to set operation mode to COOL mode, then the format of data should transmit as below. Slave ID FC Data Address Value Written checksum (+40001 offset) 01 06 07D1 0002 5946 Transmission of Preset Single Register - 01 06 07 D1 00 02 59 46 42003 **Set Temperature** 0 6 Lower Α Higher Signed bit 15 14 13 12 11 10 9 8 A) Set Temperature \* Temperature value in Decimal multiplies with 10. Eg: 18°C x 10 = 180 If user want to set temperature to 26 °C, then the format of data should transmit as below.

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 11 of 10

REVISION: A Date: 11/7/2024

	Slave ID	FC		Data A (+4000	ddress 1 offset)	Value	Value Written		ksum			
	01	06		07D2		0104		28D4				
	Transmission of Preset Single Register - 01 06 07 D2 01 04 28 D4											
42010	Disable Handset control											
	7	6	5	4	3	2	1	0	1 .			
							В	Α	Lower			
	15	14	13	12	11	10	9	8	Higher			
	A) Disable w 0: OFF 1: ON B) Disable w 0: OFF 1: ON											
42011	Force Valve (	Off										
	7	6	5	4	3	2	1	0	•			
								Α	Lower			
	15	14	13	12	11	10	9	8				
	A) Force Val 0: Normal 1: Force of	Operatio	n									

### \*Preset Multiple Register

If user want to turn ON the unit, set fan direction to 0, fan volume to 5 (high), operation mode to COOL mode and set temperature to 26  $^{\circ}$ C, then the format of data should transmit as below.

Slave ID	FC	Starting Address (+40001 offset)	No. of registers	No. of data	Value to write in	Value to write in	Value to write in	checksum
				bytes	42001	42002	42003	
01	10	07D0	0003	06	5001	0002	0104	685E

Transmission of Preset Multiple Register - 01 10 07 D0 00 03 06 50 01 00 02 01 04 68 5E

TITLE: MODBUS PROTOCOL (FCBAG) PAGE: Page 12 of 10

REVISION: A Date: 11/7/2024

# **Revision History:**

Rev no.	Effective date	Revision description	PIC
Α	11/07/2024	Original Release	ChoyWF