EKWHCTRL0 and EKWCTRL1 - Modbus quick reference

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1 Introduction

This document gives a brief outline of the basic Modbus commands for the following Daikin products.

Internal name	Commercial code(s)	Description	Applicable to
EWKHCTRL0	*tbd*	Fancoil on-board control	Release 3.2 and up
EWKHCTRL1 / EWKHCTRL1A	*tbd*	Fancoil wall control	Release 2.3 and up

2 EKWHCTRL0

2.1 Quick reference

Default configuration

- Serial: 9600-8N1
- Protocol: Modbus RTU (on-board jumper closed at power-on)
- Modbus Address: 1
- Supported Modbus FCs:
    - FC03: Read holding registers (max reg. for single request: 3)
    - FC06: Write single register
- Minimum time between Modbus commands: 150 ms

Reg.#		Name	Description	Unit	R/W	Default value	Min	Max
201		PRG	Program/speed	-	R/W	-	-	-
	.[2-0]	Mode	auto=000 min=001 night=010 max=011	-	R/W	auto	-	-
	.4	Lock	keys_locked=1 keys_unlocked=0	-	R/W	keys_unlocked	-	-
	.7	Stby	standby=1 on=0	-	R/W	on	-	-
231		SP	Temperature set-point	0.1 °C	R/W	200	50	400
233		MAN	Mode selection auto=0 man_heat=3 man_cool=5	-	R/W	auto	-	-
18		T_AIR	Control air temperature	0.1 °C	R	-	-	-

Reg.#		Name	Description	Unit	R/W	Default value	Min	Max
104		Status	Unit status	-	R	-	-	-
	.0		Cooling active	-	R	-	-	-
	.1		Heating active	-	R	-	-	-
	.2		-	-	R	-	-	-
	.3		-	-	R	-	-	-
	.4		Fan stop for inadequate H2 temperature	-	R	-	-	-
	.5		Fan stop for inadequate H4 temperature	-	R	-	-	-
	.6		Stop for inadequate water temperature trend	-	R	-	-	-
	.7		-	-	R	-	-	-
	.8		Antifreeze active	-	R	-	-	-
	.9		Alarm active	-	R	-	-	-
	.10		Reserved	-	R	-	-	-
	.11		Standby active	-	R	-	-	-
	.12		Master comm. timeout (when using *remote mode*)	-	R	-	-	-
	.13		Missing H2 probe (only for selected units)	-	R	-	-	-
	.14		Missing H4 probe (only for selected units)	-	R	-	-	-
	.15		-	-	R	-	-	-

Reg.#		Name	Description	Unit	R/W	Default value	Min	Max
105		Alarms	Unit alarms	-	R	-	-	-
	.0		Comm. error	-	R	-	-	-
	.1		AIR probe fault	-	R	-	-	-
	.2		H4 probe fault	-	R	-	-	-
	.3		Inadequate water temperature	-	R	-	-	-
	.4		H2 probe fault	-	R	-	-	-
	.5		H4 temperature outside limits	-	R	-	-	-
	.6		Heating res. high temperature	-	R	-	-	-
	.7		Fan motor failure	-	R	-	-	-
	.8		GRID switch open	-	R	-	-	-
	.9		H2 temperature outside limits	-	R	-	-	-
	.10		Air filter needs cleaning	-	R	-	-	-
	.11		Lock for inadequate H2 temperature	-	R	-	-	-
	.12		Lock for inadequate H4 temperature	-	R	-	-	-
198		Release	FW release	0.1	R	-	-	-
199		ID	FW identifier	-	R	1085 (B32/B62)	-	-
200		ADR	Modbus address	-	R/W	1	1	255

2.2 Main commands

Action		How-to
100	Turn unit on	Write bit *Stby* ← *on* to *PRG* register
101	Put unit into standby mode	Write bit *Stby* ← *standby* to *PRG* register
102	Select unit fan mode	Write bits *Mode* ← *auto* | *min* | *max* | *night* to *PRG* register
103	Lock / unlock touchpad	Write bit *Lock* ← *keys_locked* | *keys_unlocked* to *PRG* register
104	Choose room temperature set-point	Write temperature value to *SP* register
105	Select season (heating / cooling) or let the unit choose automatically	Write register *MAN* ← *man_heat* | *man_cool* | *auto*
200	Get room air temperature	Read register *T_AIR*
220	Check unit alarms	Read bits from register *Alarms*. If the corresponding bit is 1, the alarm is active.
300	Change Modbus slave address	Write new address to register *ADR*. The change is immediately effective.
310	Check FW version	Read register *Release*
311	Check FW identifier	Read register *ID*

3 EKWHCTRL1 / EKWHCTRL1A

3.1 Quick reference

Default configuration

- Serial: 9600-8N1 (*PC* port)
- Protocol: Modbus RTU
- Modbus Address: 1
- Supported Modbus FCs:
    - FC03: Read holding registers (max reg. for single request: 3)
    - FC06: Write single register
- Minimum time between Modbus commands: 150 ms

Reg.#		Name	Description	Unit	R/W	Default value	Min	Max
201		PRG	Program	-	R/W	-	-	-
	.[2-0]	Mode	auto=000 min=001 night=010 max=011	-	R/W	auto	-	-
	.4	Lock	keys_locked=1 keys_unlocked=0	-	R/W	keys_unlocked	-	-
	.7	Stby	standby=1 on=0	-	R/W	on	-	-
231		SP	Air temperature set-point	0.1 °C	R/W	200	50	400
233		MAN	Mode selection auto=0 man_heat=3 man_cool=5	-	R/W	auto	-	-
18		T_AIR	Control air temperature	0.1 °C	R	-	-	-
20		RH	Relative humidity	%	R	-	-	-

Reg.#		Name	Description	Unit	R/W	Default value	Min	Max
105		Alarms	Unit alarms	-	R	-	-	-
	.0	comm	Comm. error	-	R	-	-	-
	.1	air_fault	AIR probe fault	-	R	-	-	-
	.10	air_clean	Air filter needs cleaning	-	R	-	-	-
	.13	sens_fail	On-board sensor failure	-	R	-	-	-
198		Release	FW release	0.1	R	-	-	-
199		ID	FW identifier	-	R	1141 (M5) 1181 (M6, M6-IAQ)	-	-
200		ADR	Modbus slave address	-	R/W	1	1	255

3.2 Main commands

Action		**How-to**
100	Turn unit on	Write bit *Stby* ← *on* to *PRG* register
101	Put unit into standby mode	Write bit *Stby* ← *standby* to *PRG* register
102	Select unit fan mode	Write bits *Mode* ← *auto* | *min* | *max* | *night* to *PRG* register
103	Lock / unlock touchpad	Write bit *Lock* ← *keys_locked* | *keys_unlocked* to *PRG* register
104	Choose room temperature set-point	Write temperature value to *SP* register
105	Select season (heating / cooling) or let the unit choose automatically	Write register *MAN* ← *man_heat* | *man_cool* | *auto*
200	Get room air temperature	Read register *T_AIR*
201	Get room relative humidity	Read register *RH*
210	Get room air quality index	Read register *IAQ*
211	Get TVOC concentration	Read register *TVOC*
212	Get CO2 concentration	Read register *CO2*
220	Check unit alarms	Read bits *comm* | *air_fault* | *air_clean* | *sens_fail* from register *Alarms*. If the corresponding bit is 1, the alarm is active.
300	Change Modbus slave address	Write new address to register *ADR*. The change is immediately effective.
310	Check FW version	Read register *Release*
311	Check FW identifier	Read register *ID*