Rapid news number: RNPI21-073 - Product info - Controls - Sales launch of Modbus adapter EKMBDXB
Date: 31 August 2021
From: EU Strategic Marketing
Pages: 7

1. Background:

- **DIII Net Modbus Interface our integrated control system for connecting between Split, Sky Air, VRV and Small Inverter Chiller has undergone a model change**
- **Product Nr EKMBDXA->EKMBDXB**
- **Earlier an extra centralised controller like ITM or DCS was required to connect Split, QA and HRV units.**

2. What has changed:

- **A power supply has been added to the gateway so there is no additional centralised controller is required.**
- **Logic has been added to avoid conflict for equipment's where F1F2 is already powered by the unit.**
- **Installation Manuals are now available in an additional 6 languages i.e. Croatian, Hungarian, Romanian, Slovenian, Bulgarian and Arabic.**
- **Country compliance has been extended i.e. Bosnia and Herzegovina, Macedonia**

3. Sales availability / Timing:

- **In Market**

Rapid news number: 21-073 Product Info-Controls-Mo Ch In DIII Net Modbus Interface
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Subject: Mo CH in DIII Net Mobus Interface

Dear Colleagues,

Herewith, we would like to announce the Mo CH in DIII Net Modbus Interface i.e. EKMBDXA will be replaced by EKMBDXB.

Product Nr: EKMBDXB7V1

Material Nr: EKMBDXB

Sales Availability: In Market



DIII Net Modbus Interface EKMBDXB

So What's New?

No additional Centralized controller i.e. ITM or DCS is required when connecting Split, QA & HRV products.

Currently EKMBDXA needs to be powered externally. Hence for

Model	Unit	Powered By
EKMBDXA	VRV	DIII net power provided via F1F2
EKMBDXA	RA,SA,HRV	Separate Power Supply Ex: ITM
EKMBDXB	RA, SA, HRV	• **No Separate Power Supply Required. Power Supply added in Gateway.** • **Logic is added to avoid conflict for equipment's where F1F2 is already powered by the unit ex for VRV**

The F1F2 Modbus Interface (EKMBDXA/B) allows the integration of Daikin VRV combination into Building Management Systems (BMS)

1. Features & functions

1.1. System layout

Below a typical example of VRV installation



1.2. Functions

The below functions are offered by the F1F2 Modbus Interface per product type

		Monitor = Read only Monitor & control = Read/write	VRV	Sky-air	HRV	Split	VRV hydrobox LT & HT	Air curtains	ERQ control box	Heating	Applied
On/Off	On/Off status and control of indoor units * For VRV hydrobox LT & HT & Heating: On/off "space cooling/heating" status and control	R/W	O	O	O	O	O*	O	O	O*	O
Error	Error, Alarm & Warning status with code and sub-code code values in ASCII code	RO	O	O	O	O	O	O	O	O	O
Cooling/ Heating Operation mode	Depend on indoor unit capability (fan only/Cool/heat/auto/dry) * for split: no fan only mode * for VRV hydrobox LT&HT & heating & applied: Only Heating&Cooling * for HRV: Only ventilation	R/W	O	O	O*	O*	O*	O	O	O*	O*
Ventilation operation mode	*VAM models: available VKM models: not available	R/W	-	-	O*	-	-	-	-	-	-
Quiet mode (low noise)		R/W	-	-	-	-	O	-	-	O	O
Fan speed (Air flow rate)	LL, L, M, H, HH (depend on indoor unit capability) * Air curtain: CYV models: not available CYQ models: available *HRV (ventilation rate): VAM models: available	R/W	O	O	O*	-	-	O*	-	-	-

	VKM models: not available										
Fan direction	Swing, Flap direction (depend on indoor unit capability)	R/W	O	O	-	-	-	-	-	-	-
Room temperature	Suction temperature of indoor units (or user interface sensor temperature) * Split: KRP928BB2S is required	RO	O	O	-	O*	O		O	O	-
Room temperature setpoint	Setpoint of indoor units	R/W	O	O	-	O	O	O	O	O	-
Room temperature setpoint range	Setpoint of indoor units range *for split: fixed values refer to KRP928BB2S documentation	RO	O	O	-	O*	O	O	O	O	-
Leaving water setpoint	Leaving water setpoint cooling and heating * Applied:"cooling negative leaving water setpoint" feature: depending if function is integrated in unit. (see chapter 7. Overview of compatible Daikin models with DIII connection)	R/W	-	-	-	-	O	-	-	O	O*
Leaving water setpoint range	Leaving water setpoint range cooling and Heating	RO	-	-	-	-	O	-	-	O	O
Filter sign	Filter sign of indoor units & reset filter sign * Aircurtain: CYV models: not available CYQ models: available	R/W	O	O	O	-	-	O*	-	O	-
Domestic hot water	Reheat enable/ disable status and control Storage start status Storage setpoint	R/W R R/W	-	-	-	-	O	-	-	O	-
user interface lock (button)	- On/off lock (no lock, On lock, Off lock) - Operation mode change lock	W	O	O	O	O*	O	O	O	O	O
		Monitor = Read only Monitor & control = Read/write	VRV	Sky-air	HRV	Split	VRV hydrobox LT & HT	Air curtains	ERQ control box	Heating	Applied
Note: **Only available when no other DIII device is detected**	- Up-down temperature lock - Fanspeed lock (if fan present) - Fan direction lock (if fan present) Actual behaviour depending on userinterface. Example: BRC1E52A/B7 & BRC2/3E52C7 Centralized control icon is shown and locked function cannot be done. * Split (with KRP928BB2S) - On/Off lock (no lock, on/off lock) - Operation mode change & setpoint locked together. Function: Locked functions are ignored. * HRV: - On/off lock (no lock, On lock, Off lock)										

Forced off	"Forced off" status of indoor unit (for each unit separate) (by T1-T2 or by central "Forced off" from *Modbus Interface DIII*) (*HRV: no "Forced off" status) Central "Forced off" control for all connected DIII indoors Actual behaviour depending on user interface. Example: BRC1E52A/B7 & BRC2/3E52C7 Centralized control icon is shown and unit is forced off. **Note:** **Central "forced off": Only available when no other DIII device is detected**	R/W	O	O	O*	O	O	O	O	O	O
Indoor status	Operation status (fan only, cooling, heating) Thermostat status Indoor fan status (if present) Heater status (if present) Defrost/hot start status	RO	O	O	-	O	O	O	O	O	O
Indoor unit capability	Fan speed capability(*not split) Fan speed levels capability(*not split) Fan direction capability(*not split) Fan direction levels capability(*not split) Dry mode capability Auto mode capability Heating mode capability Cooling mode capability Fan mode capability (*not split)	RO	O	O	-	O*	O	O	O	O	O
	Leaving water setpoint exist Quiet mode (Low noise) capability Space heating capability Reheat capability	RO	-	-	-	-	O	-	-	O	O
Indoor detail	Cool/heat master	RO	O	O	-	-	O	O	-	-	-
Communication status of units	Communication error of units	RO	O	O	O	O	O	O	O	O	O
Adapter status	Not ready, ready	RO	O	O	O	O	O	O	O	O	O

Note: Some functions are not available when another DIII centralized device is connected (eg. Lock functions, Forced off)

2. Compatibility

For Compatibility with a specific model, please check the manual of the corresponding model.
Updates for the software will be available on the Business portal

Product Overview

- Sky Air
- VRV
- RA(Via KRP928)
- VAM/VKM
- EKVDX
- VRV Hydrobox
- Air Curtains
- ERQ- Control Box (Connection to 3rd party AHU)
- Heating
- Applied

2.2.Centralised control compatibility

		Intelligent Touch Manager	Interface for use in LonWorks®	Interface for use in BACnet®	Intelligent Touch Controller	Intelligent Tablet Controller	Residential central remote controller	Central Remote controller	Unified ON/OFF controller	Schedule timer (*1)
		DCM601A51	DMS504B51	DMS502B51	DCS601C51	DCC601A51	DCS303A51	DCS302CA61	DCS301BA61	DST301BA61
DIII Modbus interface	EKMBDXB7V1	OK	NG	NG	OK	NG	NG	OK	OK	NG

(*1) : The schedule timer should be used in combination with the central remote controller or unified ON/OFF controller

F1F2 Modbus Interface has no priority ranking. Therefore, in case of combination with other D-BACS device, the lock button & force OFF functions will not be available.

- If using in combination with centralized control equipment, the relation between both central remote controller is last command priority.
- If using in combination with centralized control equipment, the remote control mode is decided by the setting of the highest priority item in the priority rank.

3. Specifications 3.1.Modbus specifications

Communication protocol	Modbus RTU
Communication speed	9600 bps Or 19200 bps
Parity / stop bit	Even 1 stop bit Odd 1 stop bit None 2 stop bit None 1 stop bit
One dedicated modbus address setting	1..15
Implemented function codes	0x03Read Holding registers 0x04Read Input Register 0x06Preset Single Register 0x10Preset Multiple Register (remark: Holding registers will not reflect the actual value)
Register addresses	Same address meaning for each applicable model

3.2.General specifications

Daikin equipment connection	DIII net (F1F2) maximum 64 indoor units (groups) and maximum 10 outdoors (addr 1-00 till 4-15)
BMS equipment protocol	Modbus RS485 (2 wire, max 500m)
Installation place	Indoor installation
Operation condition	Temp range 0 till 60°C
Dimensions	379 x 87 x 124 mm
Mass (Weight)	2,1 kg
Power supply	220 – 240 VAC 50 Hz

4. Software

The F1F2 Modbus Interface software can be updated with the Daikin Updater PC software through one of the following PC connectionmethods:

1) With the PC USB cable EKPCCAB3 connected to the X2A of the main board.
2) With a USB/RS485 converter (Daikin spare - part reference 999417P) connected the RS485 Modbus port.

At the sales start, the F1F2 Modbus Interfaces requires a software update during commissioning using Daikin updater PC software v1.4.x or higher (available on extranet)

In case PC usable cable EKPCCAB* is used for the first time on a PC, it is required to install the following USB driver with admin rights.
https://ftdichip.com/drivers/vcp-drivers/

5. Documentation

The following documentationis available for the F1F2 Modbus Interface:

- Installation manual/Installer reference guide: provided with the option
  https://www.daikin.eu/en_us/products/ekmbdxb.html
- Design guide: Available on Daikin Europe website, please find the link below.
  https://bit.ly/37gZCX9

In case you have any questions or remarks, please do not hesitate to contact

Yours sincerely,

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