KNX – MITSUBISHI ELECTRIC VRV GATEWAY

USER MANUAL

Document Version: 2.1

Last Revision: 05.05.2022

HW Version: V.1.2

FW Version: V.1.3

Product Code: CR-CG-ME-KNX-01

CONTENTS

1. PRESENTATION

Core KNX-ME Gateway allows to monitor and control of Mitsubishi Electric air conditioners via KNX Systems. Compatible with PAC, RAC, City Multi VRF and Industrial grade models commercialized by Mitsubishi Electric and classified in the compatibility list. HVAC Compatibility List can be downloaded from:

https://core.com.tr/ac-knx-gateways/
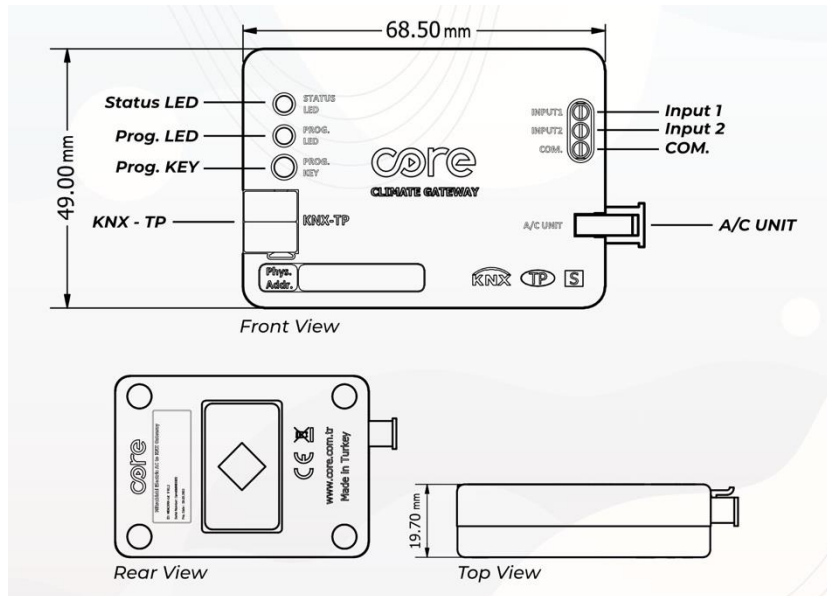
DIMENSIONS

MAIN FEATURES

- Reduced dimensions of 68.5mm x 49mm x 19.7mm, it can easily fits inside the indoor units. With the cable that comes with the device, a quick and faultless installation can be done.
- Can be configured with the standard ETS application.
- With different KNX DPT (Bit, Byte) objects, it can work in harmony with most of the KNX thermostats in the market.
- Indoor unit's setpoint temperature, operation mode, fan speed, vane controls, ... functions can be controlled bidirectionally and their status can be monitored.
- A more efficient air conditioning can be achieved by sending the ambient temperature provided by product groups such as thermostats, switches, etc. containing ambient temperature sensors to the indoor unit.
- Error codes on the indoor unit can be reported.
- With the help of fixing apparatus and internal magnets that come with the device, precise installation can be done.
- To prevent wrong or faulty connections, industrial grade connector type is selected with pin-matching structure.

2. DEVICE CONNECTION AND CONFIGURATION

2.1. CONNECTION

The device comes with a cable for direct connection to the Internal Electronic Board of the Air Conditioner Indoor Unit.

⚠️ The device should not be connected to the air conditioner with any cable rather than the one that comes with it.

CONNECTION TO THE INDOOR UNIT:

- Disconnect the main power from the AC unit.
- Open the front cover of the indoor unit to access the internal controller board.
- Locate the connector marked with the following names on the controller board:
  In Mitsubishi Electric Mr. Slim models; **CN92**
  In rest of Mitsubishi Electric models; **CN105**
- Connect the white connector on the installation cable supplied with the device to the CN105 or CN92 connector on the air conditioner, and the black connector to the A/C Unit connector of the device.

⚠️ Cutting the cable, shortening it or making any other physical modifications may cause the device not to work properly.

CONNECTION TO THE KNX BUS:

- Disconnect power of the KNX bus.
- Connect to the KNX TP-1 (EIB) Bus Line using the device's standard KNX connector (red/black), respect polarity.
- Reconnect power of the KNX bus.

CONNECTION DIAGRAM:

2.2. CONFIGURATION

Core KNX-ME Gateway is a fully compatible KNX device that must be configured and set up using the standard KNX configuration tool ETS. The ETS database for this device can be downloaded from:

https://core.com.tr/ac-knx-gateways/

3. ETS PARAMETERS

3.1. INTRODUCTION

Following group objects are accessible by default when the device project is loaded into the ETS application, or the device is included in an existing project.

```
▲ 🔳 -.-.- Core_MEACInt_V3
    ⬛ 1: Control_On/Off [DPT_1.001 - 1bit] - 0-Off;1-On
    ⬛ 5: Control_Mode [DPT_20.105 -1byte] - 0-Aut;1-Heat;3-Coo;9-Fan;14-Dry
    ⬛ 3: Control_Setpoint_Temperature [DPT_9.001 - 2byte] - (°C)
    ⬛ 7: Control_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte] - Speed Values;1,2,3
    ⬛ 8: Status_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte] - Speed Values;1,2,3
    ⬛ 2: Status_On/Off [DPT_1.001 - 1bit] - 0-Off;1-On
    ⬛ 6: Status_Mode [DPT_20.105 -1byte] - 0-Aut;1-Heat;3-Coo;9-Fan;14-Dry
    ⬛ 4: Status_Setpoint_Temperature [DPT_9.001 - 2byte] - (°C)
    ⬛ 14: Status_AC_Return_Temp [DPT_9.001 - 2byte] - (°C)
```

With the default group objects and specified data types, basic functions such as on/off, control modes, fan speed, target temperature and ambient temperature of the indoor unit can be controlled, and their instantaneous values can be read.

3.2. GENERAL

This tab contains the following parameter settings. ETS product file, installation and user manuals are accessible via the specified web address.

-.-.- Core_MEACInt_V3 > General

General		
Mode Configuration	For more Information, User Manual & Latest Database Entry	www.core.com.tr
Fan Configuration	Enable Object "Error Code [2Byte]"	◯ Yes ⦿ No
Vanes Up-Down Configuration	Alive Beacon	◯ Yes ⦿ No
Vanes Left-Right Configuration	Control from remote control disable	◯ Yes ⦿ No
Temperature Configuration		
Input Configuration		

3.2.1 ENABLE OBJECT "ERROR CODE [2BYTE]"

Error conditions that may occur on the indoor unit can be read through this group object. It is disabled by default. When enabled,

15: Status_Error_Code [2byte] - 0-No Error / Any other see man.

Group object becomes available for use. A value of '0' means that there is no error. Possible error codes are given in Appendix-2.

3.2.2 ALIVE BEACON

Parameter used to observe that the device and the application are running. It is disabled by default. When activated,

Alive Beacon	⦿ Yes ◯ No
Alive Beacon Timer(ms)	3000

Blue segment of the Programming LED will flash with the defined millisecond time interval.

3.2.3 CONTROL FROM REMOTE CONTROL DISABLE

With this parameter, changes from the remote controller can be enabled or disabled. If set to "Yes" all the actions performed through the remote controller will be disabled. If set to "No" the remote controller will work as usually.

3.3. MODE CONFIGURATION

Contains the parameters related to the operating modes of the indoor unit. Default parameter settings are as specified.

With the values written to DPT 20.105 Byte type Control_Mode group object, '0' Auto, '1' Heating, '3' Cooling, '9' Fan and '14' Dry/Dehumidification mode can be activated. When the indoor unit switches to the specified operating mode, feedback will be sent via Status_Mode group object. Operation mode info can also be obtained by reading the same group object.

3.3.1 INDOOR UNIT HAS FAN MODE

If there is no 'FAN' mode among the operation modes of the indoor unit connected to the gateway device, this mode can be disabled with the specified parameter. By default, 'FAN' mode is marked as active.

⚠️ For detailed information about the operating modes of your indoor unit, please review your product manual.

3.3.2 ENABLE MODE COOL/HEAT OBJECTS

With this parameter, group object that allows switching between Heating and Cooling modes can be activated. It is disabled by default. When enabled, following group objects become available.

Cooling mode can be activated with the value '0' written to the 1-Bit Control_Mode group object. When the indoor unit switches to the specified operating mode, a feedback with the value '0' will be sent via the Status_Mode object.

Heating mode can be activated with the '1' value written to the 1-Bit Control_Mode group object. When the indoor unit switches to the specified operating mode, a feedback with the value '1' will be sent via the Status_Mode object.

3.3.3 ENABLE MODE BIT-TYPE OBJECTS

With this parameter, 1-Bit group objects can be activated for each operating mode. It is disabled by default. When enabled, the specified group objects become available.

22: Control_Mode_Auto [DPT_1.002 - 1bit] - 1-Set AUTO mode
24: Control_Mode_Heat [DPT_1.002 - 1bit] - 1-Set HEAT mode
26: Control_Mode_Cool [DPT_1.002 - 1bit] - 1-Set COOL mode
28: Control_Mode_Fan [DPT_1.002 - 1bit] - 1-Set FAN mode
30: Control_Mode_Dry [DPT_1.002 - 1bit] - 1-Set DRY mode
23: Status_Mode_Auto [DPT_1.002 - 1bit] - 1-AUTO mode is active
25: Status_Mode_Heat [DPT_1.002 - 1bit] - 1-HEAT mode is active
27: Status_Mode_Cool [DPT_1.002 - 1bit] - 1-COOL mode is active
29: Status_Mode_Fan [DPT_1.002 - 1bit] - 1-FAN mode is active
31: Status_Mode_Dry [DPT_1.002 - 1bit] - 1-DRY mode is active

The specified operating mode can be activated with the value '1' written to the 1-Bit Control_Mode group object which belongs to the relevant operating mode. When the indoor unit switches to the specified operation mode, a feedback with the value of '1' will be sent via the relevant Status_Mode object.

3.4. FAN CONFIGURATION

This tab contains the parameters related to the Fan Speed controls of the indoor unit. Default parameter settings are as specified.

-.-.- Core_MEACInt_V3 > Fan Configuration

General	Fan is accessible in Indoor unit — ◉ Yes ◯ No
Mode Configuration	Available Fan Speeds in Indoor Unit — 3
Fan Configuration	Fan Speed DPT Object Type — ◉ Enumerated [DPT 5.010] ◯ Scaling [DPT 5.001]
Vanes Up-Down Configuration	Enable use of Bit-type Fan Speed objects (Control&Status) — ◯ Yes ◉ No
Vanes Left-Right Configuration	Indoor Unit has AUTO Fan Speed — ◯ Yes ◉ No
Temperature Configuration	Enable +/- objects for Fan Speed — ◯ Yes ◉ No
Input Configuration	

3.4.1 FAN IS ACCESSIBLE IN INDOOR UNIT

This parameter lets choose if the indoor unit has Fan Speed controls available or not.

When disabled, all parameters and group objects related to Fan Speed controls will also be disabled. It is enabled by default and the specified group objects are available for use.

> 7: Control_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte] - Speed Values;1,2,3
> 8: Status_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte] - Speed Values;1,2,3

3.4.2 AVAILABLE FAN SPEEDS IN INDOOR UNIT

Available Fan Speeds in Indoor Unit   3

Number of different available speed values defined for fan control can be selected via this parameter. The number of related group objects and their settings are updated according to this parameter.

⚠ For detailed information about Fan Speed values supported by your indoor unit, please review your product manual.

3.4.3 FAN SPEED DPT OBJECT TYPE

With this parameter, DPTs of Byte type group objects used in fan speed control can be changed. It is possible to switch between Scaling (DPT_5.001) and Enumerated (DPT_5.010) data types.

Since the Byte type group objects related to Fan Speed are the same, the values they accept will vary according to the selected fan speed steps and DPT. For example, when Fan Speed steps are selected as '3' and data type is selected as Enumerated (DPT_5.010), values '1', '2' or '3' will be accepted as Fan Speed. In the same scenario, when '0' is sent, the minimum Fan speed value will be treated as '1' (If Auto Fan Speed is not selected) and when a value greater than '3' is sent, the maximum Fan speed value will be treated as '3'.

When Scaling (DPT_5.001] is selected as DPT, Byte type Control_Fan_Speed and Status_Fan_Speed objects will appear as specified depending on the selected Fan Speed steps.

> 7: Control_Fan_Speed / 4 Speeds [DPT_5.001 -1byte]_Speed - Threshold:38%,63%,88%
> 8: Status_Fan_Speed / 4 Speeds [DPT_5.001 -1byte] - 25%,50%,75%,100%

Table containing the ranges that can be sent to the Control_Fan_Speed object for each Fan Speed of the Scaling (DPT_5.001) data type and the return values of the Status_Fan_Speed object is given below.

	FAN Speed 1	FAN Speed 2	FAN Speed 3	FAN Speed 4
Control	0-74%	75-100%		
Status	50%	100%		
Control	0-49%	50-82%	83-100%	
Status	33%	67%	100%	
Control	0-37%	38-62%	63-87%	88-100%
Status	25%	50%	75%	100%

3.4.4 ENABLE USE OF BIT-TYPE FAN SPEED OBJECTS

With this parameter, 1-Bit group objects can be activated for each Fan Speed. It is disabled by default. When activated, the specified group objects become available according to the selected fan speed steps.

34: Control_Fan_Speed_1 [DPT_1.002 - 1bit] - 1-Set Fan Speed 1

36: Control_Fan_Speed_2 [DPT_1.002 - 1bit] - 1-Set Fan Speed 2

38: Control_Fan_Speed_3 [DPT_1.002 - 1bit] - 1-Set Fan Speed 3

40: Control_Fan_Speed_4 [DPT_1.002 - 1bit] - 1-Set Fan Speed 4

35: Status_Fan_Speed_1 [DPT_1.002 - 1bit] - 1-Fan Speed 1

37: Status_Fan_Speed_2 [DPT_1.002 - 1bit] - 1-Fan Speed 2

39: Status_Fan_Speed_3 [DPT_1.002 - 1bit] - 1-Fan Speed 3

41: Status_Fan_Speed_4 [DPT_1.002 - 1bit] - 1-Fan Speed 4

Specified Fan Speed can be activated with the value of '1' written to the 1-Bit Control_Fan_Speed group object of the relevant Fan Speed.

When the indoor unit switches to the selected Fan Speed, feedback with the value of '1' will be sent via the related Status_Fan_Speed object.

3.4.5 INDOOR UNIT HAS AUTO FAN SPEED

With this parameter, if there is an Automatic mode for the Fan Speed, it can be activated. It is disabled by default. When enabled, Automatic Fan Speed can be activated with the value '0' written to the 1-Byte Control Fan_Speed group object of the relevant Fan Speed. When the indoor unit switches to Automatic Fan Speed, a feedback with the value '0' will be sent via the related Status_Fan_Speed object.

7: Control_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte] - Speed Values;0,1,2,3

8: Status_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte] - Speed Values;0,1,2,3

Or

7: Control_Fan_Speed / 3 Speeds [DPT_5.001 -1byte] - 0-Auto; Threshold:50%,83%

8: Status_Fan_Speed / 3 Speeds [DPT_5.001 -1byte] - 0-Auto; 33%,67%,100%

3.4.5.1 ENABLE FAN SPEED MANUAL/AUTO OBJECTS

When activated, the specified group objects become available

■⇄ 32: Control_Fan_Speed_Manual/Auto [DPT_1.002 - 1bit] - 0-Manual;1-Auto

■⇄ 33: Status_Fan_Speed_Manual/Auto [DPT_1.002 - 1bit] - 0-Manual;1-Auto

Automatic Fan Speed can be activated with the value '1' written to the 1-Bit Control_Fan_Speed_Manual/Auto group object of the relevant Fan Speed. When the indoor unit switches to Automatic Fan Speed, a feedback with the value '1' will be sent via the related Status_Fan_Speed_Manula/Auto object.

3.4.6 ENABLE +/- OBJECTS FOR FAN SPEED

With this parameter, 1-Bit group object can be activated. It is disabled by default. When activated, the specified group object becomes available.

■⇄ 42: Control_Fan_Speed -/+ [DPT_1.007 - 1bit] - 0-Decrease;1-Increase

Fan speed changes to next level with the value "1" and to previous level with the value "0" written to the 1-Bit Control_Fan_Speed -/+ object. Fan speed level change continues cyclically according to each value written to the object. (For example, if indoor unit has 3 fan speed and auto speed, the changes of fan speed with each value "1" will be as follows: 0>1>2>3>0>1>…)

3.5. VANES UP-DOWN CONFIGURATION

Group objects that control the up and down position of the vanes of the indoor unit can be activated with this parameter. It is disabled by default, when enabled,

■⇄ 9: Control_Vanes Up-Down [DPT_5.010 - 1byte] - 1-Pos1;2-Pos2;3-Pos3;4-Pos4;5-Pos5;6-Swng

■⇄ 10: Status_Vanes Up-Down [DPT_5.010 - 1byte] - 1-Pos1;2-Pos2;3-Pos3;4-Pos4;5-Pos5;6-Swng

Group objects will become available. The '1', '2', '3', '4' and '5' values sent to the Control_ object determine the up-down position of the vanes, while the value '6' will cause these vanes to move periodically.

When the indoor unit switches to the corresponding control value, feedback will be sent via Status_ object.

⚠ Please refer to your product manual for the availability of the up-down vanes in your indoor unit and the number of vane positions it supports.

3.6. VANES LEFT-RIGHT CONFIGURATION

Group objects that control the horizontal position of the vanes of the indoor unit can be activated with this parameter. It is disabled by default, when enabled,

⇄ 11: Control_Vanes Left-Right [DPT_5.010 - 1byte] - 1-<<;2-<;3-||;4->;5->>;6-<>;7-~

⇄ 12: Status_Vanes Left-Right [DPT_5.010 - 1byte] - 1-<<;2-<;3-||;4->;5->>;6-<>;7-~

Group objects will become available. While Full-Left '1', Left '2', Center '3', Right '4', Full-Right '5' and Left-Right '6' values sent to the Control_ object determine the horizontal position of the vanes, the value of '7' will determine these vanes to move periodically.

When the indoor unit switches to the corresponding control value, feedback will be sent via Status_ object.

⚠ Please refer to your product manual for the availability of the left-right vanes in your indoor unit and the number of vane positions it supports.

3.7. TEMPERATURE CONFIGURATION

Contains controls related to Target Temperature and Ambient Temperature. By default, the Parameter tab appears as follows.

-.-.- Core_MEACInt_V3 > Temperature Configuration

General	Enable limits on Setpoint Temp. ◯ Yes ◉ No
Mode Configuration	Ambient temperature is provided from KNX ◯ Yes ◉ No
Fan Configuration	Setpoint Temp. scale ◯ 0.5°C ◉ 1°C
Vanes Up-Down Configuration	
Vanes Left-Right Configuration	
Temperature Configuration	
Input Configuration	

3.7.1 SETPOINT TEMP. SCALE

Steps of the Target Temperature values are determined by this parameter. By default, the increment-decrement step is 1°C. For example, if this parameter is selected as 1°C and the Target Temperature value is sent as '23.5°C', Setpoint Temp. will be '24°C'; If 0.5°C is selected and '23.5°C' is sent, it will be processed as '23.5°C'.

⚠️ Please refer to your product manual for the Target Temperature increment-decrement steps supported by your indoor unit.

3.7.2 ENABLE LIMITS ON SETPOINT TEMP.

The minimum and maximum Target Temperature values can be restricted with this parameter. It is disabled by default. When activated,

| Lower limit(°C) | 16 |
| Upper limit(°C) | 30 |

Minimum and maximum Target Temperature values can be selected. Every value that is below the determined minimum value will be considered as the minimum value and any value that is above the specified maximum value will also be processed as the maximum value.

⚠️ Please refer to your product manual for the minimum and maximum Target Temperature values supported by your indoor unit.

3.7.3 AMBIENT TEMPERATURE IS PROVIDED FROM KNX

It is the parameter that determines the source of the ambient temperature value processed by the indoor unit. It is disabled by default; in this case the indoor unit reads the ambient temperature through its internal sensor. When the parameter is selected as active, the specified group object becomes available,

▪↹ 13: Control_AC_Return_Temp [DPT_9.001 - 2byte] - (°C)

Ambient temperature data to be processed by the indoor unit can be written externally to this group object. **This data must be sent periodically, not exceeding 1 minute intervals.** When the specified time is exceeded, the indoor unit will return to reading the ambient temperature via its internal sensor.

⚠️ Please review your product manual to determine if your indoor unit supports this feature.

3.8. INPUT CONFIGURATION

Tab contains the parameter settings of two dry contact inputs on the device.

By default, these inputs are disabled. When activated, the contact type of each input Normally Open (NO) and Normally Closed (NC) selection parameters are also displayed and the specified group objects become available for use,

Input 1. According to the contact type, when the input is activated, the red segment of the Status LED on the device will become active. Also, '0' or '1' information will be sent over the group object of this input in case of status changes.

Input 2. According to the contact type, when the input is activated, the green segment of the Status LED on the device will become active. Also, '0' or '1' information will be sent over the group object of this input in case of status changes.

4. APPENDIX 1 - COMMUNICATION OBJECTS TABLE

TOPIC	OBJ NO	NAME	LENGTH	DATAPOINT TYPE		FLAGS					FUNCTION
				DPT NAME	DPT ID	C	R	W	T	U	
On/Off	1	Control_On/Off	1 Bit	DPT_Switch	1.001	C	R	W		U	0-Off; 1-On
	2	Status_On/Off	1 Bit	DPT_Switch	1.001	C	R		T		0-Off; 1-On
Setpoint Temp.	3	Control_Setpoint_Temperature	2 Byte	DPT_Value_Temp	9.001	C	R	W		U	(°C)
	4	Status_Setpoint_Temperature	2 Byte	DPT_Value_Temp	9.001	C	R		T		(°C)
Mode	5	Control_Mode	1 Byte	DPT_HVACContrMode	20.105	C	R	W		U	0-Aut;1-Heat;3-Coo;9-Fan;14-Dry
	6	Status_Mode	1 Byte	DPT_HVACContrMode	20.105	C	R		T		0-Aut;1-Heat;3-Coo;9-Fan;14-Dry
	16	Control_Mode_Cool/Heat	1 Bit	DPT_Heat/Cool	1.100	C	R	W		U	0-Cool;1-Heat
	17	Status_Mode_Cool/Heat	1 Bit	DPT_Heat/Cool	1.100	C	R		T		0-Cool;1-Heat
	22	Control_Mode_Auto	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set AUTO mode
	23	Status_Mode_Auto	1 Bit	DPT_Bool	1.002	C	R		T		1-AUTO mode is active
	24	Control_Mode_Heat	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set HEAT mode
	25	Status_Mode_Heat	1 Bit	DPT_Bool	1.002	C	R		T		1-HEAT mode is active
	26	Control_Mode_Cool	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set COOL mode
	27	Status_Mode_Cool	1 Bit	DPT_Bool	1.002	C	R		T		1-COOL mode is active
	28	Control_Mode_Fan	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set FAN mode
	29	Status_Mode_Fan	1 Bit	DPT_Bool	1.002	C	R		T		1-FAN mode is active
	30	Control_Mode_Dry	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set DRY mode
	31	Status_Mode_Dry	1 Bit	DPT_Bool	1.002	C	R		T		1-DRY mode is active

	7	Control_Fan_Speed / 2 Speeds	1 Byte	DPT_Enumerated	5.010	C	R	W		U	Speed Values;1,2
	7	Control_Fan_Speed / 2 Speeds	1 Byte	DPT_Scaling	5.001	C	R	W		U	Threshold:75%
	7	Control_Fan_Speed / 3 Speeds	1 Byte	DPT_Enumerated	5.010	C	R	W		U	Speed Values;1,2,3
	7	Control_Fan_Speed / 3 Speeds	1 Byte	DPT_Scaling	5.001	C	R	W		U	Threshold:50%,83%
	7	Control_Fan_Speed / 4 Speeds	1 Byte	DPT_Enumerated	5.010	C	R	W		U	Speed Values;1,2,3,4
	7	Control_Fan_Speed / 4 Speeds	1 Byte	DPT_Scaling	5.001	C	R	W		U	Threshold:38%,63%,88%
	8	Status_Fan_Speed / 2 Speeds	1 Byte	DPT_Enumerated	5.010	C	R		T		Speed Values;1,2
Fan Speed	8	Status_Fan_Speed / 2 Speeds	1 Byte	DPT_Scaling	5.001	C	R		T		50%,100%
	8	Status_Fan_Speed / 3 Speeds	1 Byte	DPT_Enumerated	5.010	C	R		T		Speed Values;1,2,3
	8	Status_Fan_Speed / 3 Speeds	1 Byte	DPT_Scaling	5.001	C	R		T		33%,67%,100%
	8	Status_Fan_Speed / 4 Speeds	1 Byte	DPT_Enumerated	5.010	C	R		T		Speed Values;1,2,3,4
	8	Status_Fan_Speed / 4 Speeds	1 Byte	DPT_Scaling	5.001	C	R		T		25%,50%,75%,100%
	32	Control_Fan_Speed_Manual/Auto	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Auto
	33	Status_Fan_Speed_Manual/Auto	1 Bit	DPT_Bool	1.002	C	R		T		1-Auto
	34	Control_Fan_Speed_1	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set Fan Speed 1
	35	Status_Fan_Speed_1	1 Bit	DPT_Bool	1.002	C	R		T		1- Fan Speed 1
	36	Control_Fan_Speed_2	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set Fan Speed 2
	37	Status_Fan_Speed_2	1 Bit	DPT_Bool	1.002	C	R		T		1- Fan Speed 2

	38	Control_Fan_Speed_3	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set Fan Speed 3
	39	Status_Fan_Speed_3	1 Bit	DPT_Bool	1.002	C	R		T		1- Fan Speed 3
	40	Control_Fan_Speed_4	1 Bit	DPT_Bool	1.002	C	R	W		U	1-Set Fan Speed 4
	41	Status_Fan_Speed_4	1 Bit	DPT_Bool	1.002	C	R		T		1- Fan Speed 4
	42	Control_Fan_Speed +/-	1 Bit	DPT_Up/Down	1.008	C	R	W		U	0=Up,1=Down
	42	Control_Fan_Speed +/-	1 Bit	DPT_Step	1.007	C	R	W		U	0=Decrease,1=Increase
Vanes Up-Down	9	Control_Vanes Up-Down	1 Byte	DPT_Enumerated	5.010	C	R	W		U	1-Pos1;2-Pos2;3-Pos3;4-Pos4;5-Pos5;6-Swng
	10	Status_Vanes Up-Down	1 Byte	DPT_Enumerated	5.010	C	R		T		1-Pos1;2-Pos2;3-Pos3;4-Pos4;5-Pos5;6-Swng
Vanes Left-Right	11	Control_Vanes Left-Right	1 Byte	DPT_Enumerated	5.010	C	R	W		U	1-<<;2-<;3- | |;4->;5->>;6-<>;7-~
	12	Status_Vanes Left-Right	1 Byte	DPT_Enumerated	5.010	C	R		T		1-<<;2-<;3- | |;4->;5->>;6-<>;7-~
Ambient Temp.	13	Control_AC_Return_Temp	2 Byte	DPT_Value_Temp	9.001	C	R	W		U	(°C)
	14	Status_AC_Return_Temp	2 Byte	DPT_Value_Temp	9.001	C	R		T		(°C)
Error	15	Status_Error_Code	2 Byte	Enumerated		C	R		T		0-No Error / Any other see man.
Inputs	20	Input 1	1 Bit	DPT_Switch	1.001	C	R		T		0-Off;1-On
	21	Input 2	1 Bit	DPT_Switch	1.001	C	R		T		0-Off;1-On

5. APPENDIX 2 - TABLE OF ERROR CODES

CODE	DESCRIPTION
-1	Communication error between the gateway and the AC unit
0	No active error
0001	Communication error with the AC unit
1102	Discharge Temperature high
1108	Internal thermostat detector working (49C)
1110	Outdoor unit fail
1300	Pressure low
1302	Pressure high (High pressure probe working 63H)
1503	Protection against freeze or battery high temperature
1504	Protection against freeze or battery high temperature
1504	Over heating protection
1509	High pressure error (ball valve closed)
1520	Super heating anomaly due to low temp. of discharge. (TH4)
2500	Erroneous operation of drain pump
2502	Erroneous operation of drain pump
2503	Drain sensor anomaly (DS)
4030	Serial transmission error
4100	Compressor pause due to excess of current (initial block)
4101	Compressor pause due to excess of current (overload)
4102	Phase detection opened
4103	Anti-phase detection
4108	Phase opened in phase L2 or connector 51CM opened
4118	Error in the anti-phase detector (electronic board)
4124	Connector 49L opened
4210	Cut due to over-current of compressor
4220	Voltage anomaly

4230	Radiator panel temperature anomaly (TH8)
5101	Ambient temperature probe anomaly (TH1), indoor unit
5102	Liquid probe anomaly (TH2)
5103	Cond/Evap probe anomaly (TH5)
5104	Error detection in discharge temperature
5105	Outdoor probe error TH3
5106	Outdoor probe errorTH7
5107	Outdoor probe errorTH6
5110	Outdoor probe errorTH8
5202	Connector 63L opened
5300	Current probe error
6600	MNET duplicated address definition
6602	MNET Line transmission hardware error
6603	MNET BUS busy
6606	MNET Line transmission error
6607	MNET transmission error
6607	MNET without ack
6608	MNET transmission error
6608	MNET without response
6831	IR remote control transmission error (reception error)
6832	IR remote control transmission error (transmission error)
6840	Transmission error with the indoor/outdoor unit (reception error)
6841	Transmission error with the indoor/outdoor unit (transmission error)
6844	Error in inter-connection cable in the indoor/outdoor unit, IU no. deactivated (5 min or more)
6845	Error in inter-connection cable in the indoor/outdoor unit (cabling error, disconnection)
6846	Initial timer deactivated