

GREE AC GATEWAY

USER MANUAL



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

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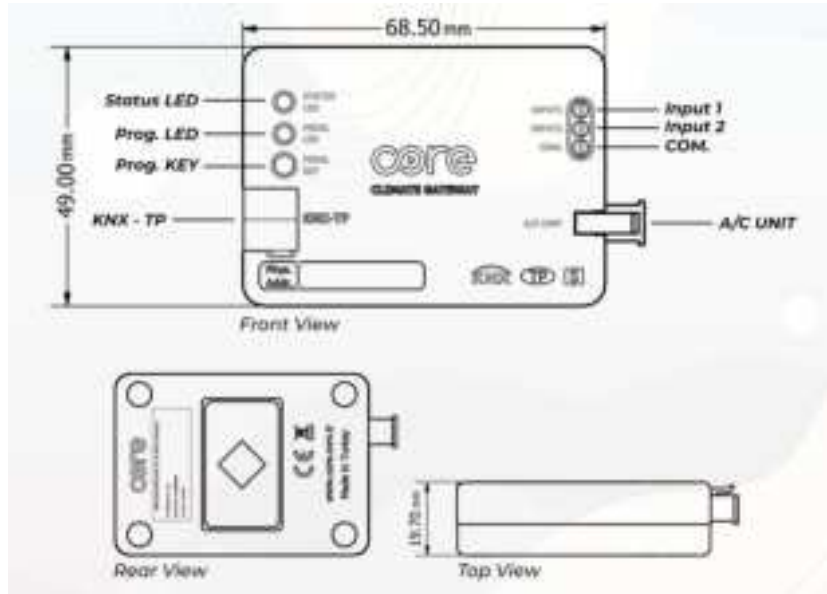
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1. PRESENTATION

Core KNX-GREE Gateway allows to monitor and control of Gree air conditioners via KNX Systems. HVAC Compatibility List can be downloaded from:

https://core.com.tr/wp-content/uploads/2024/09/Core_KNX_Gree_Compatibility_List_v3.0.pdf

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 related terminals 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 internal controller board.
- Find the **H1-H2** terminals
- Connect **Yellow and Green** cables on the installation cable supplied with the device to H1 and H2 terminals on the air conditioner (cables can be connected in any direction due to no polarity), 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-GREE 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 ETS online catalog.

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_GREE_AC_INT_V1	
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]	16°C to 32°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]	16°C to 32°C
14: Status_AC_Return_Temp [DPT_9.001 - 2byte]	°C value in EIS5 format

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.

CR-CG-GREE-KNX-01 > General

General

Mode Configuration

Fan Configuration

Up/Down Vanes Configuration

Temperature Configuration

Input Configuration

Core_GREE_Int is master on H1/H2 bus (If set to "Yes": WRC must be SLAVE)

☒ Yes
☐ No

Enable Object "Error Code [2Byte]"

☒ Yes
☐ No

Enable Object "Error Code [1bit]"

☒ Yes
☐ No

Alive Beacon

☐ Yes
☒ No

Enable Turbo Function

☒ Yes
☐ No

Enable Sleep Function

☒ Yes
☐ No

Enable Ionizer Function

☒ Yes
☐ No

Enable Indication Lights Control

☒ Yes
☐ No

3.2.1 MASTER/SLAVE

With this parameter, it is selected whether Core KNX-GREE gateway or wired remote controller of air conditioner (if used) will be the master. If Core KNX-GREE gateway is selected as master, wired remote controller must be in slave mode. If wired remote controller will not be used, Core KNX-GREE gateway must be selected as master. By default, Core KNX-GREE gateway is selected as master.

INSTALLATION WITH GREE WIRED REMOTE CONTROLLERS

Connect Core AC Gateway parallel with Gree AC wired remote controllers or directly to the H1,H2 connectors of the Gree AC indoor unit. In this method, only one controller can be master. Core AC Gateway should be programmed as master, while Gree AC wired remote controller programmed as slave or Core AC Gateway should be programmed as slave, while Gree AC wired remote controller programmed as master.

INSTALLATION WITHOUT GREE WIRED REMOTE CONTROLLERS

Connect Core KNX-GREE Gateway directly to the H1,H2 connectors of the Gree AC indoor unit. In this scenario, Core KNX-GREE Gateway must be programmed as Master.

3.2.2 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,



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

3.2.3 ENABLE OBJECT "ERROR CODE [1 BIT]"

This group object indicates whether there is an error or no error on the indoor unit. It is disabled by default. When enabled,



Group object becomes available for use. A value of '0' means that there is no error. A value of "1" means there is error.

3.2.4 ALIVE BEACON

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



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

3.2.5 ENABLE TURBO FUNCTION

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

54	Control_Turbo_Function [DPT_1.002 - 1bit]	0-Turbo Off; 1-Turbo On
55	Status_Turbo_Function [DPT_1.002 - 1bit]	0-Turbo Off; 1-Turbo On

Turbo Function can be activated with the value '1' written to the 1-Bit Control Turbo Function group object. When the indoor unit activates turbo function, a feedback with the value '1' will be sent via the related Status Turbo Function object.



For detailed information about turbo function, please review your product manual.

3.2.6 ENABLE SLEEP FUNCTION

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

56	Control_Sleep_Function [DPT_1.002 - 1bit]	0-Sleep Off; 1-Sleep On
57	Status_Sleep_Function [DPT_1.002 - 1bit]	0-Sleep Off; 1-Sleep On

Sleep Function can be activated with the value '1' written to the 1-Bit Control Sleep Function group object. When the indoor unit activates sleep function, a feedback with the value '1' will be sent via the related Status Sleep Function object.



For detailed information about sleep function, please review your product manual.

3.2.7 ENABLE IONIZER FUNCTION

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

60	Control_Ionizer_Function [DPT_1.002 - 1bit]	0-Ionizer Off; 1-Ionizer On
61	Status_Ionizer_Function [DPT_1.002 - 1bit]	0-Ionizer Off; 1-Ionizer On

Ionizer Function can be activated with the value '1' written to the 1-Bit Control Ionizer Function group object. When the indoor unit activates ionizer function, a feedback with the value '1' will be sent via the related Status Ionizer Function object.



For detailed information about ionizer function, please review your product manual.

3.2.8 ENABLE INDICATION LIGHTS CONTROL

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

58	Control_Indication_Lights [DPT_1.002 - 1bit]	0-Indication Lights Off; 1-Indication Lights On
59	Status_Indication_Lights [DPT_1.002 - 1bit]	0-Indication Lights Off; 1-Indication Lights On

Indication lights on indoor unit can be activated with the value '1' or turned off with the value '0' written to the 1-Bit Control Indication Lights group object. When the indoor unit activates indication lights on itself, a feedback with the value '1' or When the indoor unit turns off indication lights on itself, a feedback with the value '0' will be sent via the related Status Indication Lights object.



For detailed information about indication lights on AC unit, please review your product manual.

3.3. MODE CONFIGURATION

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

CR-CG-GREE-KNX-01 > Mode Configuration

General

Mode Configuration

Fan Configuration

Up/Down Vanes Configuration

Temperature Configuration

Input Configuration

Enable Mode Cool/Heat Objects

☐ Yes
☒ No

Enable Mode Bit-Type Objects

☐ Yes
☒ No

5	Control_Mode [DPT_20.105 - 1Byte]	0-Auto;1-Heat;3-Cool;9-Fan;14-Dry
6	Status_Mode [DPT_20.105 - 1Byte]	0-Auto;1-Heat;3-Cool;9-Fan;14-Dry

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 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.

14	Control_Mode_Cool/Heat [DPT_1.100 - 1bit]	0-Cooling;1-Heating
15	Status_Mode_Cool/Heat [DPT_1.100 - 1bit]	0-Cooling;1-Heating

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.

3.3.2 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.

18	Control_Mode_Auto [DPT_1.002 - 1bit]	1-Set AUTO mode
19	Status_Mode_Auto [DPT_1.002 - 1bit]	1-AUTO mode is active
20	Control_Mode_Heat [DPT_1.002 - 1bit]	1-Set HEAT mode
21	Status_Mode_Heat [DPT_1.002 - 1bit]	1-HEAT mode is active
22	Control_Mode_Cool [DPT_1.002 - 1bit]	1-Set COOL mode
23	Status_Mode_Cool [DPT_1.002 - 1bit]	1-COOL mode is active
24	Control_Mode_Fan [DPT_1.002 - 1bit]	1-Set FAN mode
25	Status_Mode_Fan [DPT_1.002 - 1bit]	1-FAN mode is active
26	Control_Mode_Dry [DPT_1.002 - 1bit]	1-Set DRY mode
27	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.

--- CR-CG-GREE-KNX-01 > Fan Configuration

General	Enable Fan Speed Control	☒ Yes ☐ No
Mode Configuration	Available Fan Speeds in Indoor Unit	5
Fan Configuration	Fan Speed DPT Object	☒ Enumerated [DPT 5.100] ☐ Scaling [DPT 5.001]
Up/Down Vanes Configuration	Access Control for Auto Fan Speed	☒ Yes ☐ No
Temperature Configuration	Enable Fan Speed Auto/Manual Objects	☐ Yes ☒ No
Input Configuration	Enable Fan Speed Step Control	☐ Yes ☒ No
	Enable Fan Speed Bit-Type Objects	☐ Yes ☒ No

3.4.1 ENABLE FAN SPEED CONTROL

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

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 / 3 Speeds [DPT_5.001 -1byte] - Threshold:50%,83%
- 8: Status_Fan_Speed / 3 Speeds [DPT_5.001 -1byte] - 33%,67%,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	FAN Speed 5
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%	
Control	0-29%	30-49%	50-69%	70-89%	90-100%
Status	20%	40%	60%	80%	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.

	30	Control_Fan_Speed_1 [DPT_1.002 - 1bit]	1-Set Fan Speed 1
	31	Status_Fan_Speed_1 [DPT_1.002 - 1bit]	1-Fan Speed 1
	32	Control_Fan_Speed_2 [DPT_1.002 - 1bit]	1-Set Fan Speed 2
	33	Status_Fan_Speed_2 [DPT_1.002 - 1bit]	1-Fan Speed 2
	34	Control_Fan_Speed_3 [DPT_1.002 - 1bit]	1-Set Fan Speed 3
	35	Status_Fan_Speed_3 [DPT_1.002 - 1bit]	1-Fan Speed 3
	36	Control_Fan_Speed_4 [DPT_1.002 - 1bit]	1-Set Fan Speed 4
	37	Status_Fan_Speed_4 [DPT_1.002 - 1bit]	1-Fan Speed 4
	38	Control_Fan_Speed_5 [DPT_1.002 - 1bit]	1-Set Fan Speed 5
	39	Status_Fan_Speed_5 [DPT_1.002 - 1bit]	1-Fan Speed 5

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 ACCESS CONTROL FOR 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

	28	Control_Fan_Speed_Manual/Auto [DPT_1.002 - 1bit]	0-Manual;1-Auto
	29	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 FAN SPEED STEP CONTROL

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

 40 Control_Fan_Speed +/- [DPT_1.008 - 1bit] 0-Up;1-Down

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.

It is possible to enable 1 bit objects for each positions. When enabled,

	42	Control_Up/Down_Vane_Pos_1 [DPT 1.002 - 1bit]	1-Set Up/Down Vane Pos 1
	43	Status_Up/Down_Vane_Pos_1 [DPT 1.002 - 1bit]	1-Up/Down Vane Pos 1
	44	Control_Up/Down_Vane_Pos_2 [DPT 1.002 - 1bit]	1-Set Up/Down Vane Pos 2
	45	Status_Up/Down_Vane_Pos_2 [DPT 1.002 - 1bit]	1-Up/Down Vane Pos 2
	46	Control_Up/Down_Vane_Pos_3 [DPT 1.002 - 1bit]	1-Set Up/Down Vane Pos 3
	47	Status_Up/Down_Vane_Pos_3 [DPT 1.002 - 1bit]	1-Up/Down Vane Pos 3
	48	Control_Up/Down_Vane_Pos_4 [DPT 1.002 - 1bit]	1-Set Up/Down Vane Pos 4
	49	Status_Up/Down_Vane_Pos_4 [DPT 1.002 - 1bit]	1-Up/Down Vane Pos 4
	50	Control_Up/Down_Vane_Pos_5 [DPT 1.002 - 1bit]	1-Set Up/Down Vane Pos 5
	51	Status_Up/Down_Vane_Pos_5 [DPT 1.002 - 1bit]	1-Up/Down Vane Pos 5
	52	Control_Up/Down_Vane_Swing [DPT 1.002 - 1bit]	1-Set Up/Down Vane Swing
	53	Status_Up/Down_Vane_Swing [DPT 1.002 - 1bit]	1-Up/Down Vane Swing

Specified vane position can be activated with the value of '1' written to the 1-Bit Control_Up/Down_Vane group object of the relevant vane position.

When the indoor unit switches to the selected vane position, feedback with the value of '1' will be sent via the related Status_Up/Down_Vane 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. TEMPERATURE CONFIGURATION

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

--- Core_GREE_AC_INT_V1 > Temperature Configuration

General	Enable limits on Setpoint Temp. ☐ Yes ☒ No
Mode Configuration	Ambient temperature is provided from KNX ☐ Yes ☒ No
Fan Configuration	
Vanes Up-Down Configuration	
Temperature Configuration	
Input Configuration	

3.6.1 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)	32

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.

3.6.2 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,



Ambient temperature data to be processed by the indoor unit can be written externally to this group object.



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

3.7. INPUT CONFIGURATION

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

--- Core_GREE_AC_INT_V1 > Input Configuration

General	Enable Use of Digital Input 1	☒ Yes ☐ No
Mode Configuration	Digital Input 1 Contact Type	☒ NO ☐ NC
Fan Configuration	Enable Use of Digital Input 2	☒ Yes ☐ No
Vanes Up-Down Configuration	Digital Input 2 Contact Type	☒ NO ☐ NC
Temperature Configuration		

Input Configuration

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,

16	Status Digital Input 1 [DPT_1.001 - 1bit]	0-Off;1-On
17	Status Digital Input 2 [DPT_1.001 - 1bit]	0-Off;1-On

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	Function	Length	Data Type	Flags				
On/Off	1	Control_On/Off [DPT_1.001 - 1bit]	0-Off;1-On	1 Bit	[1.1] DPT_Switch	R	W	C	-	U
	2	Status_On/Off [DPT_1.001 - 1bit]	0-Off;1-On	1 Bit	[1.1] DPT_Switch	R	-	C	T	-
Setpoint Temp.	3	Control_Setpoint_Temperature [DPT_9.001 - 2byte]	16°C to 32°C	2 Bytes	[9.1] DPT_Value_Temp	R	W	C	-	U
	4	Status_Setpoint_Temperature [DPT_9.001 - 2byte]	16°C to 32°C	2 Bytes	[9.1] DPT_Value_Temp	R	-	C	T	-
Mode	5	Control_Mode [DPT_20.105 - 1byte]	0-Auto;1-Heat;3-Cool;9-Fan;14-Dry	1 Byte	[20.105] DPT_HVACContr Mode	R	W	C	-	U
	6	Status_Mode [DPT_20.105 - 1byte]	0-Auto;1-Heat;3-Cool;9-Fan;14-Dry	1 Byte	[20.105] DPT_HVACContr Mode	R	-	C	T	-
	14	Control_Mode_Cool/Heat [DPT_1.100 - 1bit]	0-Cool;1-Heat	1 Bit	[1.100] DPT_Heat_Cool	R	W	C	-	U
	15	Status_Mode_Cool/Heat [DPT_1.100 - 1bit]	0-Cool;1-Heat	1 Bit	[1.100] DPT_Heat_Cool	R	-	C	T	-
	18	Control_Mode_Auto [DPT_1.002 - 1bit]	1-Set AUTO mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	19	Status_Mode_Auto [DPT_1.002 - 1bit]	1-AUTO mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	20	Control_Mode_Heat [DPT_1.002 - 1bit]	1-Set HEAT mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	21	Status_Mode_Heat [DPT_1.002 - 1bit]	1-HEAT mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	22	Control_Mode_Cool [DPT_1.002 - 1bit]	1-Set COOL mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	23	Status_Mode_Cool [DPT_1.002 - 1bit]	1-COOL mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	24	Control_Mode_Fan [DPT_1.002 - 1bit]	1-Set FAN mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	25	Status_Mode_Fan [DPT_1.002 - 1bit]	1-FAN mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	26	Control_Mode_Dry [DPT_1.002 - 1bit]	1-Set DRY mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	27	Status_Mode_Dry [DPT_1.002 - 1bit]	1-DRY mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
Fan Speed	7	Control_Fan_Speed / 2 Speeds [DPT_5.001 -1byte]	0-Auto; Threshold:75%	1 Byte	[5.1] DPT_Scaling	R	W	C	-	U

7	Control_Fan_Speed / 3 Speeds [DPT_5.001 -1byte]	0-Auto; Threshold:50%,83%	1 Byte	[5.1] DPT_Scaling	R	W	C	-	U
7	Control_Fan_Speed / 2 Speeds [DPT_5.001 -1byte]	Threshold:75%	1 Byte	[5.1] DPT_Scaling	R	W	C	-	U
7	Control_Fan_Speed / 3 Speeds [DPT_5.001 -1byte]	Threshold:50%,83%	1 Byte	[5.1] DPT_Scaling	R	W	C	-	U
7	Control_Fan_Speed / 2 Speeds [DPT_5.010 - 1byte]	Speed Values;1,2	1 Byte	[5.100] DPT_FanStage	R	W	C	-	U
7	Control_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte]	Speed Values;1,2,3	1 Byte	[5.100] DPT_FanStage	R	W	C	-	U
7	Control_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte]	Speed Values;0,1,2,3	1 Byte	[5.100] DPT_FanStage	R	W	C	-	U
7	Control_Fan_Speed / 2 Speeds [DPT_5.010 - 1byte]	Speed Values;0,1,2	1 Byte	[5.100] DPT_FanStage	R	W	C	-	U
8	Status_Fan_Speed / 3 Speeds [DPT_5.001 -1byte]	0-Auto; 33%,67%,100%	1 Byte	[5.1] DPT_Scaling	R	-	C	T	-
8	Status_Fan_Speed / 2 Speeds [DPT_5.001 -1byte]	0-Auto; 50%,100%	1 Byte	[5.1] DPT_Scaling	R	-	C	T	-
8	Status_Fan_Speed / 3 Speeds [DPT_5.001 -1byte]	33%,67%,100%	1 Byte	[5.1] DPT_Scaling	R	-	C	T	-
8	Status_Fan_Speed / 2 Speeds [DPT_5.001 -1byte]	50%,100%	1 Byte	[5.1] DPT_Scaling	R	-	C	T	-
8	Status_Fan_Speed / 2 Speeds [DPT_5.010 - 1byte]	Speed Values;1,2	1 Byte	[5.100] DPT_FanStage	R	-	C	T	-
8	Status_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte]	Speed Values;1,2,3	1 Byte	[5.100] DPT_FanStage	R	-	C	T	-
8	Status_Fan_Speed / 2 Speeds [DPT_5.010 - 1byte]	Speed Values;0,1,2	1 Byte	[5.100] DPT_FanStage	R	-	C	T	-
8	Status_Fan_Speed / 3 Speeds [DPT_5.010 - 1byte]	Speed Values;0,1,2,3	1 Byte	[5.100] DPT_FanStage	R	-	C	T	-
28	Control_Fan_Speed_Manual/ Auto [DPT_1.002 - 1bit]	0-Manual;1-Auto	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
29	Status_Fan_Speed_Manual/ Auto [DPT_1.002 - 1bit]	0-Manual;1-Auto	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
30	Control_Fan_Speed_1 [DPT_1.002 - 1bit]	1-Set Fan Speed 1	1 Bit	[1.2] DPT_Bool	R	W	C	-	U

	31	Status_Fan_Speed_1 [DPT_1.002 - 1bit]	1-Fan Speed 1	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	32	Control_Fan_Speed_2 [DPT_1.002 - 1bit]	1-Set Fan Speed 2	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	33	Status_Fan_Speed_2 [DPT_1.002 - 1bit]	1-Fan Speed 2	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	34	Control_Fan_Speed_3 [DPT_1.002 - 1bit]	1-Set Fan Speed 3	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	35	Status_Fan_Speed_3 [DPT_1.002 - 1bit]	1-Fan Speed 3	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	36	Control_Fan_Speed_4 [DPT_1.002 - 1bit]	1-Set Fan Speed 2	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	37	Status_Fan_Speed_4 [DPT_1.002 - 1bit]	1-Fan Speed 2	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	38	Control_Fan_Speed_5 [DPT_1.002 - 1bit]	1-Set Fan Speed 2	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	39	Status_Fan_Speed_5 [DPT_1.002 - 1bit]	1-Fan Speed 2	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	40	Control_Fan_Speed +/- [DPT_1.007 - 1bit]	0-Decrease;1-Increase	1 Bit	[1.7] DPT_Step	R	W	C	-	U
	40	Control_Fan_Speed +/- [DPT_1.008 - 1bit]	0-Up;1-Down	1 Bit	[1.8] DPT_UpDown	R	W	C	-	U
Vane s Up- Down	9	Control_Vanes Up-Down [DPT_5.010 - 1byte]	1-Pos1;2-Pos2;3-Pos3;4- Pos4;5-Pos5;6-Swng	1 Byte	[5.10] DPT_Value_1_Uc ount	R	W	C	-	U
	10	Status_Vanes Up-Down [DPT_5.010 - 1byte]	1-Pos1;2-Pos2;3-Pos3;4- Pos4;5-Pos5;6-Swng	1 Byte	[5.10] DPT_Value_1_Uc ount	R	-	C	T	-
	42	Control_Up-Down_Vane_Pos 1 [DPT_1.002 - 1bit]	1-Up/Down Vane Pos 1	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	43	Status_Up-Down_Vane_Pos 1 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 1	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	44	Control_Vanes Up- Down_Pos 2 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 2	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	45	Status_Up-Down_Vane_Pos 2 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 2	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	46	Control_Vanes Up- Down_Pos 3 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 3	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	47	Status_Up-Down_Vane_Pos 3 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 3	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	48	Control_Vanes Up- Down_Pos 4 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 4	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	49	Status_Up-Down_Vane_Pos 4 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 4	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	50	Control_Vanes Up- Down_Pos 5 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 5	1 Bit	[1.2] DPT_Bool	R	W	C	-	U

	51	Status_Up-Down_Vane_Pos 5 [DPT_1.002 - 1bit]	1-Set Up/Down Vane Pos 5	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	52	Control_Vanes Up-Down_Swing [DPT_1.002 - 1bit]	1-Set Up/Down Vane Swing	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	53	Status_Up-Down_Vane_Swing [DPT_1.002 - 1bit]	1-Set Up/Down Vane Swing	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
Ambient Temp.	11	Control_AC_Return_Temp [DPT_9.001 - 2byte]	°C value in EIS5 format	2 Bytes	[9.1] DPT_Value_Temp	R	W	C	-	U
	12	Status_AC_Return_Temp [DPT_9.001 - 2byte]	°C value in EIS5 format	2 Bytes	[9.1] DPT_Value_Temp	R	-	C	T	-
Errors	13	Status_Error_Code [2byte]	0-No Error / Any other see man.	2 Bytes		R	-	C	T	-
	41	Status_Error_Code [1bit]	0-No Error	1 Bit	[1.5] DPT_Alarm	R	-	C	T	-
Functions	54	Control_Turbo_Function [DPT_1.002 - 1bit]	0-Turbo Off; 1-Turbo On	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	55	Status_Turbo_Function [DPT_1.002 - 1bit]	0-Turbo Off; 1-Turbo On	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	56	Control_Sleep_Function [DPT_1.002 - 1bit]	0-Sleep Off; 1-Sleep On	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	57	Status_Sleep_Function [DPT_1.002 - 1bit]	0-Sleep Off; 1-Sleep On	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	58	Control_Indication_Lights [DPT_1.002 - 1bit]	0-Indication Lights Off; 1-Indication Lights On	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	59	Status_Indication_Lights [DPT_1.002 - 1bit]	0-Indication Lights Off; 1-Indication Lights On	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	60	Control_Ionizer_Function [DPT_1.002 - 1bit]	0-Ionizer Off; 1-Ionizer On	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	61	Status_Ionizer_Function [DPT_1.002 - 1bit]	0-Ionizer Off; 1-Ionizer On	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
Inputs	16	Input 1 [DPT_1.001 - 1bit]	0-Off;1-On	1 Bit	[1.1] DPT_Switch	R	-	C	T	-
	17	Input 2 [DPT_1.001 - 1bit]	0-Off;1-On	1 Bit	[1.1] DPT_Switch	R	-	C	T	-

5. APPENDIX 2 - TABLE OF ERROR CODES

Error Code on KNX (Hex)	Error Code on KNX (Dec)	Error in Remote Controller	Error category	Description
4C30	19504	L0	Indoor Unit	Malfunction of IDU
4C31	19505	L1		Protection of indoor fan
4C32	19506	L2		Auxiliary heating protection
4C33	19507	L3		Water-full protection
4C34	19508	L4		Abnormal power supply for wired controller
4C35	19509	L5		Freeze prevention protection
4C36	19510	L6		Mode conflict
4C37	19511	L7		No main IDU
4C38	19512	L8		Power supply is insufficient
4C39	19513	L9		For single control over multiple units, number of IDU is inconsistent
4C41	19521	LA		For single control over multiple units, IDU series is inconsistent
4C48	19528	LH		Alarm due to bad air quality
4C43	19523	LC		IDU is not matching with outdoor unit
4C4C	19532	LL		Malfunction of water flow switch
4C45	19525	LE		Rotation speed of EC DC water pump is abnormal
4C46	19526	LF		Malfunction of shunt valve setting
4C4A	19530	LJ		Setting of functional DIP switch code is wrong
4C50	19536	LP		Zero-crossing malfunction of PG motor
4C55	19541	LU		for one-to-more unit of heat recovery system
4C62	19554	Lb		For single control over multiple units, IDU is inconsistent
6431	25649	d1		Indoor PCB is poor
6432	25650	d2		Malfunction of lower water temperature sensor of water tank
6433	25651	d3		Malfunction of ambient temperature sensor
6434	25652	d4		Malfunction of entry-tube temperature sensor
6435	25653	d5		Malfunction of mid-tube temperature sensor
6436	25654	d6		Malfunction of exit-tube temperature sensor
6437	25655	d7		Malfunction of humidity sensor
6438	25656	d8		Malfunction of water temperature sensor
6439	25657	d9		Malfunction of jumper cap
6441	25665	dA		Web address of IDU is abnormal
6448	25672	dH		PCB of wired controller is abnormal
6443	25667	dC		Setting capacity of DIP switch code is abnormal
644C	25676	dL		Malfunction of air outlet temperature sensor
6445	25669	dE		Malfunction of indoor CO2 sensor
6446	25670	dF		Malfunction of upper water temperature sensor of water tank
644A	25674	dJ		Malfunction of backwater temperature sensor
6450	25680	dP		Malfunction of inlet tube temperature sensor of generator
6455	25685	dU		Malfunction of drainage pipe temperature sensor of generator
6462	25698	db		Debugging status
6464	25700	dd		Malfunction of solar power temperature sensor
646E	25710	dn		Malfunction of swing parts

6479	25721	dy	Indoor Unit	Malfunction of water temperature sensor
7931	31025	y1		Malfunction of entry-tube temperature sensor 2
7932	31026	y2		Malfunction of exit-tube temperature sensor 2
7937	31031	y7		Malfunction of fresh air inlet temperature sensor
7938	31032	y8		Malfunction of IDU's air box sensor
7941	31041	yA		Malfunction of IFD
6F31	28465	o1		Low bus bar voltage of IDU
6F32	28466	o2		High bus bar voltage of IDU
6F33	28467	o3		IPM module protection of IDU
6F34	28468	o4		Failure startup of IDU
6F35	28469	o5		Over-current protection of IDU
6F36	28470	o6		Current detection circuit malfunction of IDU
6F37	28471	o7		Desynchronizing protection of IDU
6F38	28472	o8		Communication malfunction of IDU's drive
6F39	28473	o9		Communication malfunction of main mater of IDU
6F41	28481	oA		High temperature of IDU's module
6F62	28514	ob		Malfunction of temperature sensor of IDU's module
6F43	28483	oC		Charging circuit malfunction of IDU
6F4F	28495	o0		Other drive malfunction
4530	17712	E0	Outdoor	Malfunction of ODU
4531	17713	E1		High-pressure protection
4532	17714	E2		Discharge low-temperature protection
4533	17715	E3		Low-pressure protection
4534	17716	E4		High discharge temperature protection of compressor
4564	17764	Ed		Drive IPM low temperature protection
4630	17968	F0		Main board of ODU is poor
4631	17969	F1		Malfunction of high-pressure sensor
4633	17971	F3		Malfunction of low-pressure sensor
4635	17973	F5		Malfunction of discharge temperature sensor of compressor 1
4636	17974	F6		Malfunction of discharge temperature sensor of compressor 2
4637	17975	F7		Malfunction of discharge temperature sensor of compressor 3
4638	17976	F8		Malfunction of discharge temperature sensor of compressor 4
4639	17977	F9		Malfunction of discharge temperature sensor of compressor 5
4641	17985	FA		Malfunction of discharge temperature sensor of compressor 6
4648	17992	FH		Current sensor of compressor 1 is abnormal
464C	17996	FL		Current sensor of compressor 3 is abnormal
4645	17989	FE		Current sensor of compressor 4 is abnormal
4646	17990	FF		Current sensor of compressor 5 is abnormal
464A	17994	FJ		Current sensor of compressor 6 is abnormal
4650	18000	FP		Malfunction of DC motor
4655	18005	FU		Malfunction of casing top temperature sensor of compressor 1
4662	18018	Fb		Malfunction of casing top temperature sensor of compressor 2
4664	18020	Fd		Malfunction of exit tube temperature sensor of mode exchanger
466E	18030	Fn		Malfunction of inlet tube temperature sensor of mode exchanger
4A30	18992	J0		Protection for other modules
4A31	18993	J1		Over-current protection of compressor 1

4A32	18994	J2	Outdoor	Over-current protection of compressor 2
4A33	18995	J3		Over-current protection of compressor 3
4A34	18996	J4		Over-current protection of compressor 4
4A35	18997	J5		Over-current protection of compressor 5
4A36	18998	J6		Over-current protection of compressor 6
4A37	18999	J7		Gas-mixing protection of 4-way valve
4A38	19000	J8		High pressure ratio protection of system
4A39	19001	J9		Low pressure ratio protection of system
4A41	19009	JA		Protection because of abnormal pressure
4A43	19011	JC		Water flow switch protection
4A4C	19020	JL		Protection because high pressure is too low
4A45	19013	JE		Oil-return pipe is blocked
4A46	19014	JF		Oil-return pipe is leaking
6231	25137	b1		Malfunction of outdoor ambient temperature sensor
6232	25138	b2		Malfunction of defrosting temperature sensor 1
6233	25139	b3		Malfunction of defrosting temperature sensor 2
6234	25140	b4		Malfunction of liquid temperature sensor of sub-cooler
6235	25141	b5		Malfunction of gas temperature sensor of sub-cooler
6236	25142	b6		Malfunction of inlet tube temperature sensor of vapor liquid separator
6237	25143	b7		Malfunction of exit tube temperature sensor of vapor liquid separator
6238	25144	b8		Malfunction of outdoor humidity sensor
6239	25145	b9		Malfunction of gas temperature sensor of heat exchanger
6241	25153	bA		Malfunction of oil-return temperature sensor 1
6248	25160	bH		Clock of system is abnormal
6245	25157	bE		Malfunction of inlet tube temperature sensor of condenser
6246	25158	bF		Malfunction of outlet tube temperature sensor of condenser
624A	25162	bJ		High-pressure sensor and low-pressure sensor are connected reversely
6250	25168	bP		Malfunction of temperature sensor of oil-return 2
6255	25173	bU		Malfunction of temperature sensor of oil return 3
6262	25186	bb		Malfunction of temperature sensor of oil return 4
6264	25188	bd		Malfunction of gas inlet temperature sensor of sub-cooler
626E	25198	bn		Malfunction of liquid inlet temperature sensor of sub-cooler
5030	20528	P0		malfunction of driving board of compressor
5031	20529	P1		Driving board of compressor operates abnormally
5032	20530	P2		Voltage protection of driving board power of compressor
5033	20531	P3		Reset protection of driving module of compressor
5034	20532	P4		Drive PFC protection of compressor
5035	20533	P5		Over-current protection of inverter compressor
5036	20534	P6		Drive IPM module protection of compressor
5037	20535	P7		Malfunction of drive temperature sensor of compressor
5038	20536	P8		Drive IPM high temperature protection of compressor
5039	20537	P9		Desynchronizing protection of inverter compressor
5041	20545	PA		Malfunction of drive storage chip of compressor
5048	20552	PH		High-volta drive DC bus bar
5043	20547	PC		Malfunction of current detection circuit drive of compressor

504C	20556	PL	Outdoor	Low voltage protection for DC bus bar of drive of compressor
5045	20549	PE		Phase-lacking of inverter compressor
5046	20550	PF		Malfunction of charging loop of driven of compressor
504A	20554	PJ		Failure startup of inverter compressor
5050	20560	PP		AC current protection of inverter compressor
5055	20565	PU		AC input voltage of drive of inverter compressor
4830	18480	H0		Malfunction of driving board of fan
4831	18481	H1		Driving board of fan operates abnormally
4832	18482	H2		Voltage protection of driving board power of fan
4833	18483	H3		Reset protection of driving module of fan
4834	18484	H4		Drive PFC protection of fan
4835	18485	H5		Over-current protection of inverter fan
4836	18486	H6		Drive IPM module protection of fan
4837	18487	H7		Malfunction of drive temperature sensor of fan
4838	18488	H8		Drive IPM high temperature protection of fan
4839	18489	H9		Desynchronizing protection of inverter fan
4841	18497	HA		Malfunction of drive storage chip of inverter outdoor fan
4848	18504	HH		High-voltage protection of fan's drive DC bus bar
4843	18499	HC		Malfunction of current detection circuit of fan drive
484C	18508	HL		Low voltage protection of bus bar of fan drive
4845	18501	HE		Phase-lacking of inverter fan
4846	18502	HF		Malfunction of charging loop of fan drive
484A	18506	HJ		Failure startup of inverter fan
4850	18512	HP		AC current protection of inverter fan
4855	18517	HU		AC input voltage of drive of inverter fan
4730	18224	G0		PV reversed connection protection
4731	18225	G1		PV anti-islanding protection
4732	18226	G2		PV DC overcurrent protection
4733	18227	G3		PV power generation overload
4734	18228	G4		PV leakage current protection
4735	18229	G5		Phase-lacking protection at power grid side
4736	18230	G6		PV LVRT
4737	18231	G7		Grid over/under frequency protection
4738	18232	G8		Overcurrent protection at power grid side
4739	18233	G9		Drive IPM module protection at power grid side
4741	18241	GA		Low/high input voltage protection at power grid side
4748	18248	GH		Photovoltaic DC/DC protection
4743	18243	GC		Photovoltaic DC hardware overcurrent protection
474C	18252	GL		Grid side hardware overcurrent protection
4745	18245	GE		High or low photovoltaic voltage protection
4746	18246	GF		DC bus neutral-point potential unbalance protection
474A	18250	GJ		Grid side module high-temperature protection
4750	18256	GP		Grid side temperature sensor protection
4755	18261	GU		Charging circuit protection
4762	18274	Gb		Grid side relay protection
4764	18276	Gd		Grid side current side protection
476E	18286	Gn		Insulation resistance protection

4779	18297	Gy	Debugging	Power protection (PV)
5530	21808	U0		Preheat time of compressor is insufficient
5532	21810	U2		Wrong setting of ODU's capacity code/jumper cap
5533	21811	U3		Power supply phase sequence protection
5534	21812	U4		Refrigerant-lacking protection
5535	21813	U5		Wrong address for driving board of compressor
5536	21814	U6		Alarm because valve is abnormal
5538	21816	U8		Malfunction of pipeline for IDU
5539	21817	U9		Malfunction of pipeline for ODU
5543	21827	UC		Setting of main IDU is succeeded
554C	21836	UL		Emergency operation DIP switch code of compressor is wrong
5545	21829	UE		Charging of refrigerant is invalid
5546	21830	UF		Identification malfunction of IDU of mode exchanger
5564	21860	Ud		Drive board of grid-connection is abnormal
556E	21870	Un		Communication malfunction between the drive board of grid-connection and the main board
4330	17200	C0		Communication malfunction between IDU, ODU and IDU's wired controller
4331	17201	C1		Communication malfunction between main control and DC-DC controller
4332	17202	C2		Communication malfunction between main control and inverter compressor driver
4333	17203	C3		Communication malfunction between main control and inverter fan driver
4334	17204	C4		Malfunction of lack of IDU
4335	17205	C5		Alarm because project code of IDU is inconsistent
4336	17206	C6		Alarm because ODU quantity is inconsistent
4337	17207	C7		Abnormal communication of converter
4338	17208	C8		Emergency status of compressor
4339	17209	C9		Emergency status of fan
4341	17217	CA		Emergency status of module
4348	17224	CH		Rated capacity is too high
4343	17219	CC		No main unit
434C	17228	CL		The matching ratio of rated capacity for IDU and ODU is too low
4345	17221	CE		Communication malfunction between mode exchanger and IDU
4346	17222	CF		Malfunction of multiple main control units
434A	17226	CJ		Address DIP switch code of system is shocking
4350	17232	CP		Malfunction of multiple wired controller
4355	17237	CU		Communication malfunction between IDU and the receiving lamp
4362	17250	Cb		Overflow distribution of IP address
4364	17252	Cd		Communication malfunction between mode exchanger and ODU
436E	17262	Cn		Malfunction of network for IDU and ODU of mode exchanger
4379	17273	Cy		Communication malfunction of mode exchanger
4130	16688	A0	Status	Unit waiting for debugging
4132	16690	A2		Refrigerant recovery operation of after-sales
4133	16691	A3		Defrosting
4134	16692	A4		Oil-return
4136	16694	A6		Heat pump function setting

4137	16695	A7	Status	Quiet mode setting
4138	16696	A8		Vacuum pump mode
4148	16712	AH		Heating
4143	16707	AC		Cooling
414C	16716	AL		Charge refrigerant automatically
4145	16709	AE		Charge refrigerant manually
4146	16710	AF		Fan
414A	16714	AJ		Cleaning reminding of filter
4150	16720	AP		Debugging confirmation when starting up the unit
4155	16725	AU		Long-distance emergency stop
4162	16738	Ab		Emergency stop of operation
4164	16740	Ad		Limit operation
416E	16750	An		Child lock status
4179	16761	Ay		Shielding status
6E30	28208	n0		SE operation setting of system
6E33	28211	n3		Compulsory defrosting
6E34	28212	n4		Limit setting for max. capacity/output capacity
6E35	28213	n5		Compulsory excursion of engineering code of IDU
6E36	28214	n6		Inquiry of malfunction
6E37	28215	n7		Inquiry of parameters
6E38	28216	n8		Inquiry of project code of IDU
6E39	28217	n9		Check quantity of IDU on line
6E41	28225	nA		Heat pump unit
6E48	28232	nH		Heating only unit
6E43	28227	nC		Cooling only unit
6E45	28229	nE		Negative code
6E46	28230	nF		Fan model
6E4A	28234	nJ		High temperature prevention when heating
6E55	28245	nU		Eliminate the long-distance shielding command of IDU
6E62	28258	nb		Bar code inquiry
6E6E	28270	nn		Length modification of connection pipe of ODU