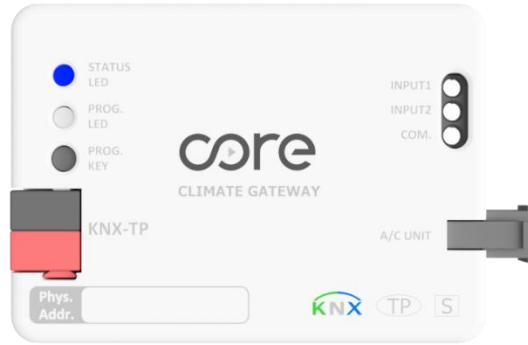


# GREE AC GATEWAY USER MANUAL



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

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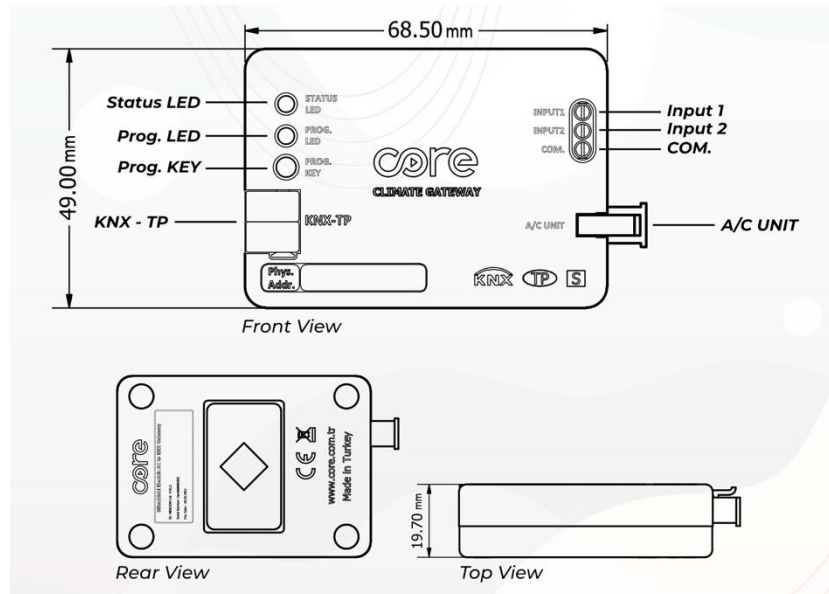
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## 1. PRESENTATION

Core KNX-GREE Gateway allows to monitor and control of Daikin air conditioners via KNX Systems. 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 fit 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:

<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\_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.

--- Core\_GREE\_AC\_INT\_V1 > General

General	
Mode Configuration	Core_GREE_Int is master in H1/H2 bus(If set to "yes", WRC must be SLAVE) <input checked="" type="radio"/> Yes <input type="radio"/> No
Fan Configuration	Enable Object "Error Code [2Byte]" <input type="radio"/> Yes <input checked="" type="radio"/> No
Vanes Up-Down Configuration	Alive Beacon <input type="radio"/> Yes <input checked="" type="radio"/> No
Temperature Configuration	For more Information, User Manual & Latest Database Entry <a href="http://www.core.com.tr">www.core.com.tr</a>
Input Configuration	

### 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 KNX-GREE Gateway parallel with Gree AC wired remote controllers. In this method, Gree AC wired remote controller should be programmed as master, while Core KNX-GREE Gateway programmed as slave.

### 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,

 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.

### 3.2.4 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.

### 3.3. MODE CONFIGURATION

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

--- Core\_GREE\_AC\_INT\_V1 > Mode Configuration

General	Indoor unit has Fan mode	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Mode Configuration</b>	Enable Mode Cool/Heat objects (Control&Status)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Fan Configuration	Enable Mode Bit-type objects (Control&Status)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Vanes Up-Down Configuration		
Temperature Configuration		
Input Configuration		

```

5: Control_Mode [DPT_20.105 -1byte] - 0-Aut;1-Heat;3-Coo;9-Fan;14-Dry
6: Status_Mode [DPT_20.105 -1byte] - 0-Aut;1-Heat;3-Coo;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 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.

- ↕ 16: Control\_Mode\_Cool/Heat [DPT\_1.100 - 1bit] - 0-Cool;1-Heat
- ↕ 17: Status\_Mode\_Cool/Heat [DPT\_1.100 - 1bit] - 0-Cool;1-Heat

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\_GREE\_AC\_INT\_V1 > Fan Configuration

General	Fan is accessible in Indoor unit	<input checked="" type="radio"/> Yes <input type="radio"/> No
Mode Configuration	Available Fan Speeds in Indoor Unit	3
<b>Fan Configuration</b>	Fan Speed DPT Object Type	<input checked="" type="radio"/> Enumerated [DPT 5.010] <input type="radio"/> Scaling [DPT 5.001]
Vanes Up-Down Configuration	Enable use of Bit-type Fan Speed objects (Control&Status)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Temperature Configuration	Indoor Unit has AUTO Fan Speed	<input type="radio"/> Yes <input checked="" type="radio"/> No
Input Configuration	Enable +/- objects for Fan Speed	<input type="radio"/> Yes <input checked="" type="radio"/> No

#### 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

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
Control	0-74%	75-100%	
Status	50%	100%	
Control	0-49%	50-82%	83-100%
Status	33%	67%	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
- ↕ 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

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

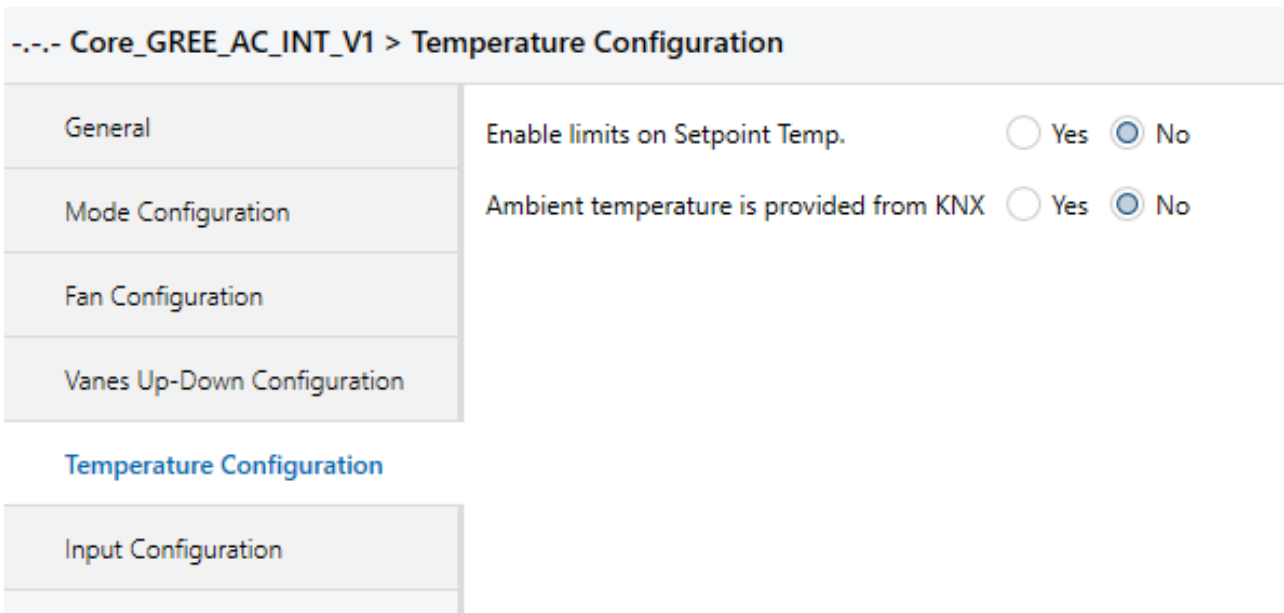
Group objects will become available. The '1', '2', '3', '4' and '5' values sent to the Control\_ object determine the up-down position of the vanes, while the value '6' will cause these vanes to move periodically.

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. TEMPERATURE CONFIGURATION

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




### 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)	<input type="text" value="16"/>
Upper limit(°C)	<input type="text" value="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,

 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.

 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	<input checked="" type="radio"/> Yes <input type="radio"/> No
Mode Configuration	Digital Input 1 Contact Type	<input checked="" type="radio"/> NO <input type="radio"/> NC
Fan Configuration	Enable Use of Digital Input 2	<input checked="" type="radio"/> Yes <input type="radio"/> No
Vanes Up-Down Configuration	Digital Input 2 Contact Type	<input checked="" type="radio"/> NO <input type="radio"/> 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,

■ 20: Input 1 [DPT\_1.001 - 1bit] - 0-Off;1-On

■ 21: 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	-
	19	Control_Mode_Auto [DPT_1.002 - 1bit]	1-Set AUTO mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	20	Status_Mode_Auto [DPT_1.002 - 1bit]	1-AUTO mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	21	Control_Mode_Heat [DPT_1.002 - 1bit]	1-Set HEAT mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	22	Status_Mode_Heat [DPT_1.002 - 1bit]	1-HEAT mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	23	Control_Mode_Cool [DPT_1.002 - 1bit]	1-Set COOL mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	24	Status_Mode_Cool [DPT_1.002 - 1bit]	1-COOL mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	25	Control_Mode_Fan [DPT_1.002 - 1bit]	1-Set FAN mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	26	Status_Mode_Fan [DPT_1.002 - 1bit]	1-FAN mode is active	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	27	Control_Mode_Dry [DPT_1.002 - 1bit]	1-Set DRY mode	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	28	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	-
29	Control_Fan_Speed_Manual/Auto [DPT_1.002 - 1bit]	0-Manual;1-Auto	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
30	Status_Fan_Speed_Manual/Auto [DPT_1.002 - 1bit]	0-Manual;1-Auto	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
31	Control_Fan_Speed_1 [DPT_1.002 - 1bit]	1-Set Fan Speed 1	1 Bit	[1.2] DPT_Bool	R	W	C	-	U



	32	Status_Fan_Speed_1 [DPT_1.002 - 1bit]	1-Fan Speed 1	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	33	Control_Fan_Speed_2 [DPT_1.002 - 1bit]	1-Set Fan Speed 2	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	34	Status_Fan_Speed_2 [DPT_1.002 - 1bit]	1-Fan Speed 2	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	35	Control_Fan_Speed_3 [DPT_1.002 - 1bit]	1-Set Fan Speed 3	1 Bit	[1.2] DPT_Bool	R	W	C	-	U
	36	Status_Fan_Speed_3 [DPT_1.002 - 1bit]	1-Fan Speed 3	1 Bit	[1.2] DPT_Bool	R	-	C	T	-
	37	Control_Fan_Speed +/- [DPT_1.007 - 1bit]	0-Decrease;1-Increase	1 Bit	[1.7] DPT_Step	R	W	C	-	U
	37	Control_Fan_Speed +/- [DPT_1.008 - 1bit]	0-Up;1-Down	1 Bit	[1.8] DPT_UpDown	R	W	C	-	U
Vanes 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	-
Ambient Temp.	11	Control_AC_Return_Temp [DPT_9.001 - 2byte]	°C value in EIS5 format	2 Bytes	[9.1] DPT_Value_Tem p	R	W	C	-	U
	12	Status_AC_Return_Temp [DPT_9.001 - 2byte]	°C value in EIS5 format	2 Bytes	[9.1] DPT_Value_Tem p	R	-	C	T	-
Errors	13	Status_Error_Code [2byte]	0-No Error / Any other see man.	2 Bytes		R	-	C	T	-
	16	Status_Error_Code [1bit]	0-No Error	1 Bit	[1.5] DPT_Alarm	R	-	C	T	-
Inputs	17	Input 1 [DPT_1.001 - 1bit]	0-Off;1-On	1 Bit	[1.1] DPT_Switch	R	-	C	T	-
	18	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**

KNX Error Code	Error in Remote Controller	Error category	Description	
17	A0	Indoor Unit	External protection devices activated	
18	A1		Indoor unit PCB assembly failure	
19	A2		Interlock error for fan	
20	A3		Drain level system error	
21	A4		Temperature of heat exchanger (1) error	
22	A5		Temperature of heat exchanger (2) error	
23	A6		Fan motor locked, overload, over current	
24	A7		Swing flap motor error	
25	A8		Overcurrent of AC input	
26	A9		Electronic expansion valve drive error	
27	AA		Heater overheat	
28	AH		Dust collector error / No-maintenance filter error	
30	AJ		Capacity setting error (indoor)	
31	AE		Shortage of water supply	
32	AF		Malfunions of a humidifier system (water leaking)	
33	C0		Malfunions in a sensor system	
36	C3		Sensor system of drain water error	
37	C4		Heat exchanger (1) (Liquid pipe) thermistor system error	
38	C5		Heat exchanger (1) (Gas pipe) thermistor system error	
39	C6		Sensor system error of fan motor locked, overload	
40	C7		Sensor system of swing flag motor error	
41	C8		Sensor system of over-current of AC input	
42	C9		Suction air thermistor error	
43	CA		Discharge air thermistor system error	
44	CH		Contamination sensor error	
45	CC		Humidity sensor error	
46	CJ		Remote control thermistor error	
47	CE		Radiation sensor error	
48	CF		High pressure switch sensor	
49	E0		Outdoor Unit	Protection devices activated
50	E1			Outdoor unit PCB assembly failure
52	E3	High pressure switch (HPS) activated		
53	E4	Low pressure switch (LPS) activated		
54	E5	Overload of inverter compressor motor		
55	E6	Over current of STD compressor motor		
56	E7	Overload of fan motor / Over current of fan motor		
57	E8	Over current of AC input		
58	E9	Electronic expansion valve drive error		
59	EA	Four-way valve error		
60	EH	Pump motor over current		
61	EC	Water temperature abnormal		

62	EJ	(Site installed) Protection device activated
63	EE	Malfunctions in a drain water
64	EF	Ice thermal storage unit error
65	H0	Malfunctions in a sensor system
66	H1	Air temperature thermistor error
67	H2	Sensor system of power supply error
68	H3	High Pressure switch is faulty
69	H4	Low pressure switch is faulty
70	H5	Compressor motor overload sensor is abnormal
71	H6	Compressor motor over current sensor is abnormal
72	H7	Overload or over current sensor of fan motor is abnormal
73	H8	Sensor system of over-current of AC input
74	H9	Outdoor air thermistor system error
75	HA	Discharge air thermistor system error
76	HH	Pump motor sensor system of over current is abnormal
77	HC	Water temperature sensor system error
79	HE	Sensor system of drain water is abnormal
80	HF	Ice thermal storage unit error (alarm)
81	F0	No.1 and No.2 common protection device operates.
82	F1	No.1 protection device operates.
83	F2	No.2 protection device operates
84	F3	Discharge pipe temperature is abnormal
87	F6	Temperature of heat exchanger (1) abnormal
91	FA	Discharge pressure abnormal
92	FH	Oil temperature is abnormally high
93	FC	Suction pressure abnormal
95	FE	Oil pressure abnormal
96	FF	Oil level abnormal
97	J0	Sensor system error of refrigerant temperature
98	J1	Pressure sensor error
99	J2	Current sensor error
100	J3	Discharge pipe thermistor system error
101	J4	Low pressure equivalent saturated temperature sensor system error
102	J5	Suction pipe thermistor system error
103	J6	Heat exchanger (1) thermistor system error
104	J7	Heat exchanger (2) thermistor system error
105	J8	Oil equalizer pipe or liquid pipe thermistor system error
106	J9	Double tube heat exchanger outlet or gas pipe thermistor system error
107	JA	Discharge pipe pressure sensor error
108	JH	Oil temperature sensor error
109	JC	Suction pipe pressure sensor error
111	JE	Oil pressure sensor error
112	JF	Oil level sensor error
113	L0	Inverter system error
116	L3	Temperature rise in a switch box
117	L4	Radiation fin (power transistor) temperature is too high
118	L5	Compressor motor grounded or short circuit, inverter PCB fault

119	L6		Compressor motor grounded or short circuit, inverter PCB fault
120	L7		Over current of all inputs
121	L8		Compressor over current, compressor motor wire cut
122	L9		Stall prevention error (start-up error) Compressor locked, etc.
123	LA		Power transistor error
125	LC		Communication error between inverter and outdoor control unit
129	P0		Shortage of refrigerant (thermal storage unit)
130	P1		Power voltage imbalance, open phase
132	P3		Sensor error of temperature rise in a switch box
133	P4		Radiation fin temperature sensor error
134	P5		DC current sensor system error
135	P6		AC or DC output current sensor system error
136	P7		Total input current sensor error
142	PJ		Capacity setting error (outdoor)
145	U0	System	Low pressure drop due to insufficient refrigerant or electronic expansion valve error, etc.
146	U1		Reverse phase, Open phase
147	U2		Power voltage failure / Instantaneous power failure
148	U3		Failure to carry out check operation, transmission error
149	U4		Communication error between indoor unit and outdoor unit, communication error between outdoor unit and BS unit
150	U5		Communication error between remote control and indoor unit / Remote control board failure or setting error for remote control
151	U6		Communication error between indoor units
152	U7		Communication error between outdoor units / Communication error between outdoor unit and ice thermal storage unit
153	U8		Communication error between main and sub remote controllers (sub remote control error) / Combination error of other indoor unit / remote control in the same system (model)
154	U9		Communication error between other indoor unit and outdoor unit in the same system / Communication error between other BS unit and indoor/outdoor unit
155	UA		Combination error of indoor/BS/outdoor unit (model, quantity, etc.), setting error of spare parts PCB when replaced
156	UH		Improper connection of transmission wiring between outdoor and outdoor unit outside control adaptor
157	UC		Centralized address duplicated
158	UJ		Attached equipment transmission error
159	UE		Communication error between indoor unit and centralized control device
160	UF		Failure to carry out check operation Indoor-outdoor, outdoor-outdoor communication error, etc.
209	60		Others
210	61	PC board error	
211	62	Ozone density abnormal	
212	63	Contamination sensor error	
213	64	Indoor air thermistor system error	
214	65	Outdoor air thermistor system error	
217	68	HVU error (Ventiair dust-collecting unit)	
219	6A	Dumper system error	
220	6H	Door switch error	
221	6C	Replace the humidity element	
222	6J	Replace the high efficiency filter	
223	6E	Replace the deodorization catalyst	
224	6F	Simplified remote controller error	
226	51	Fan motor of supply air over current or overload	
227	52	Fan motor of return air over current / Fan motor of return air overload	
228	53	Inverter system error (supply air side)	

229	54	Inverter system error (return air side)
241	40	Humidifying valve error
242	41	Chilled water valve error
243	42	Hot water valve error
244	43	Heat exchanger of chilled water error
245	44	Heat exchanger of hot water error
258	31	The humidity sensor of return air sensor
259	32	Outdoor air humidity sensor error
260	33	Supply air temperature sensor error
261	34	Return air temperature sensor error
262	35	Outdoor air temperature sensor error
263	36	Remote controller temperature sensor error
267	3A	Water leakage sensor 1 error
268	3H	Water leakage sensor 2 error
269	3C	Dew condensation error
339	M2	Centralized remote controller PCB error
345	M8	Communication error between centralized remote control devices
347	MA	Centralized remote control devices inappropriate combination
349	MC	Centralized remote controller address setting error