

KLIC-DD v3

KNX - Daikin Gateway for Domestic Range Daikin A/C Units

ZCLDDV3

Application program version: [1.5]
User manual edition: [1.5]_a

www.zennio.com

USER MANUAL

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DOCUMENT UPDATES

Version	Changes	Page(s)
[1.5]_a	**Changes in the application program:** • Change in "**Scenes after Download**" default value to "*Configured by Parameters*" • Improve error	
[1.4]_b	Minor document corrections	-
[1.4]_a	**Scenes after Download functionality**	-
[1.3]_a	**Compatibility with new Daikin A/C unit models**	-
[1.2]_a	**Changes in the application program:** • New fan mode: *quiet mode.*	-
[1.1]_a	**Changes in the application program:** • AC unit operation time counter. • Temperature measured by the A/C Unit. • Advanced climate control through external reference temperature. • LED notification of internal errors. • Optimisation of the Heartbeat, binary inputs, temperature probe and motion detector module.	-

1 INTRODUCTION

1.1 KLIC-DD V3

KLIC-DD v3 from Zennio is a gateway that provides **full-duplex** communication between the KNX home automation system and **domestic range Daikin air-conditioning systems** through the S21 port of interior units. KLIC-DD v3 adds component improvements and electrical safety over the previous KLIC-DD3.

Because of this **bidirectional** communication, the air conditioning system can be controlled from the home automation system in the same manner as it is through its own controls. Moreover, the actual status of the unit can be monitored and periodically sent to the KNX bus to inform other devices.

The most outstanding features of KLIC-DD v3 are:

- Bidirectional control of domestic range Daikin A/C units through the **S21 port** of interior units.
- Control of the **main functions** of the domestic range Daikin A/C unit: On/Off, temperature, mode of operation, fan speed, swing of the flaps, etc**.**
- **Error management** to handle specific error codes from the A/C unit itself as well as any communication issues that may arise.
- Up to **five scenes**.
- **Two analogue-digital inputs**, for the connection of temperature probes, motion detectors or binary pushbuttons or switches.
- 10 customisable, multi-operation **logic functions**.
- **Heartbeat** or periodic “still-alive” notification.

1.2 START-UP AND POWER LOSS

Depending on the configuration, some specific actions will be performed during the device start-up. The integrator may set up an initial status to be sent to the A/C unit after

the bus power recovery, and whether certain objects should be sent to the bus after the power recovery, as described in later sections.

On the other hand, when a bus power failure takes place, the device will interrupt any pending actions and will save its state so it can be recovered once the power supply is restored.

2 CONFIGURATION

2.1 GENERAL

After importing the corresponding database in ETS and adding the device into the topology of the desired project, the configuration process begins by entering the Parameters tab of the device.

ETS PARAMETERISATION

The "General" screen is shown in the first place, containing the following parameters:

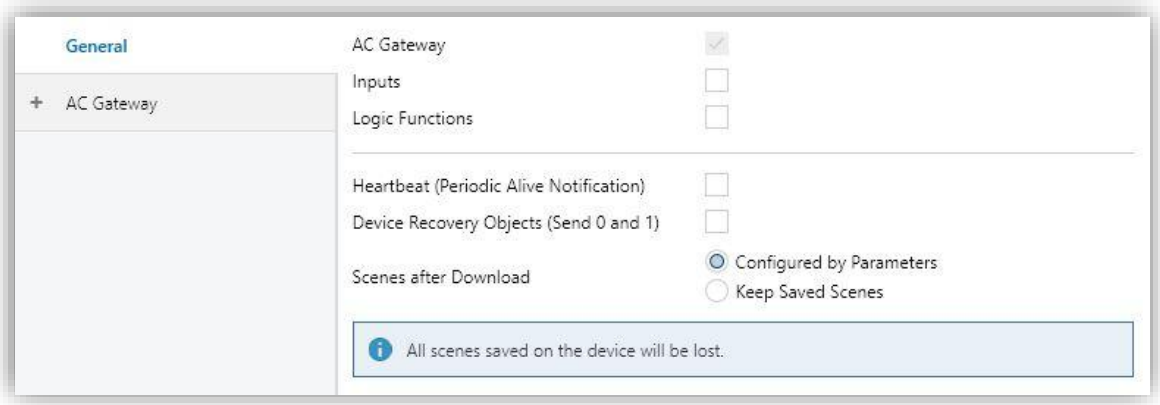


Figure 1. General.

- **AC Gateway** [*enabled*][1]: entails all functions specific to KLIC-DD v3, relating to communication with the A/C unit and management of the climate control system. For more information, see section 2.2.

- **Inputs** [*disabled / enabled*]: enables or disables the "Inputs" tab in the tree on the left. For more information, see section 2.3.

- **Logic Functions** [*disabled / enabled*]: enables or disables the "Logic Function" tab in the tree on the left. For more information, see section 2.4.

- **Heartbeat (Periodic Alive Notification)** [*disabled / enabled*]: this parameter lets the integrator incorporate a one-bit object to the project ("**[Heartbeat] Object to Send '1'**") that will be sent periodically with value "1" to notify that the device is still working (*still alive*).

[1] The default values of each parameter will be highlighted in blue in this document, as follows: [*default / rest of options*].

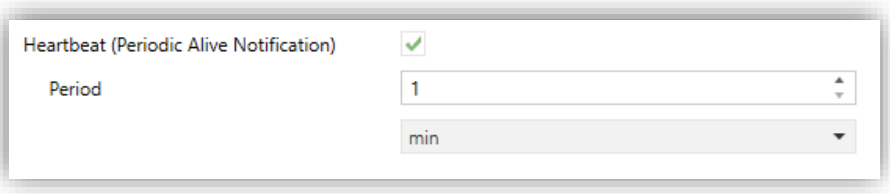


Figure 2. Heartbeat.

Note: *the first sending after download or bus failure takes place with a delay of up to 255 seconds, to prevent bus overload. The following orders will match the period set.*

- **Device recovery objects (Send 0 and 1)** [*disabled / enabled*]: allows the integrator to add two 1-bit objects to send a 1 and a 0 when the device recovers from a reset, bus failure or at the end of programming.

  - **Delay** [*0…255*] [*s*]: allows you to select the delay time for sending device recovery objects in seconds.

- **Scenes after Download** [*Configured by Parameters / Keep Saved Scenes*]: allows defining whether the value of the scenes is configured by parameter or whether the previously saved value is kept after download.

  Note: *if "Keep Saved Scenes" option has been configured, but it is the first download of the device or a different version from the current one, the values configured by parameter will be adopted. If new scenes are added in successive downloads, it will be necessary to perform a download by checking the option "Configured by Parameters" to ensure the correct operation of these scenes.*

Regardless of the above parameters, the following objects are available by default:

- "**[AC] On/Off**" and "**[AC] On/Off (Status)**": allow switching on (value "1") and off (value "0") the A/C unit or reading the current status, respectively.

- "**[AC] Temperature Setpoint**" and "**[AC] Temperature Setpoint (Status)**": allow setting the desired temperature setpoint or reading the current value, respectively. See section 2.2.1 for further information.

- "**[AC] Mode**" and "**[AC] Mode (Status)**": allow setting the desired operation mode (either Automatic, Heating, Cooling, Fan or Dry) or reading the current mode, respectively. See section 2.2.1 for further information.

- "**[AC] Fan: Percentage Control**" and "**[AC] Fan: Percentage Control (Status)**": set the fan level according to the parameter setting (automatic/quiet, fan 1, fan 2, fan3, fan 4 or fan 5) or knowing the current status. See section 2.2.1.

- Several **error objects**. See section 2.2.4.

2.2 AC GATEWAY

2.2.1 CONFIGURATION

KLIC-DD v3 allows controlling and monitoring an air-conditioning unit in the same way it would be through the wired remote control it is provided with.

Through the KNX bus, KLIC-DD v3 can be sent orders to control the following basic functions of the air conditioning unit:

- **On/Off** switch of the air-conditioning unit.

- **Operation mode**: automatic, heating, cooling, fan and dry.

- **Temperature setpoint**, which can be modified within a specific range of values, depending on the capabilities of the specific A/C unit being controlled.

- **Fan speed**: 5 levels, automatic mode and quiet mode.

  Note: *Some air conditioning systems have a quiet operation mode for both indoor and outdoor unit. The quiet mode included in the KLIC-DD v3 speed control refers to the indoor unit*.

- **Flaps swing**: vertical flaps, horizontal flaps or both types depending on A/C unit.

Moreover, KLIC-DD v3 allows configuring several advanced functions:

- **Temperature measured by the AC unit:** allows enabling an object which provides the value of the internal temperature probe. The automatic sending can be configured based on: a period of time, a change in value or a combination of both.

- **Setpoint limits**, to restrict the range for the temperature setpoint.

- **External reference temperature**: which allows enabling an object to use an external reference temperature, provided by a temperature probe.

- **Humidity**: allows enabling six objects for the humidity control function. The availability of humidity control depends on A/C unit model.

- **Automatic off**, which allows an automatic and temporary switch-off of the unit (after a pre-established delay, if desired) when the communication object associated to this function is triggered due to a certain event.

- **Initial configuration**, which allows establishing the desired initial parameters for the state of the A/C unit after programming or restarting the device.

- **Scenes**, which allows defining specific climate control presets, to be sent to the machine on the reception of scene orders from the KNX bus.

- **Operating time**: provides the A/C unit operating time in hours and/or seconds.

These functionalities imply changes in the state of the A/C unit, which therefore notifies KLIC-DD v3 periodically about the current state. When KLIC-DD v3 is notified about a change, it updates the **status objects** and sends them to the KNX bus. In addition, KLIC-DD v3 provides an **error management** function (see section 2.2.4), which allows sending messages to the KNX bus in case the A/Cunit reports any errors.

ETS PARAMETRIZATION

The “Configuration” tab under AC Gateway provides the following parameters:

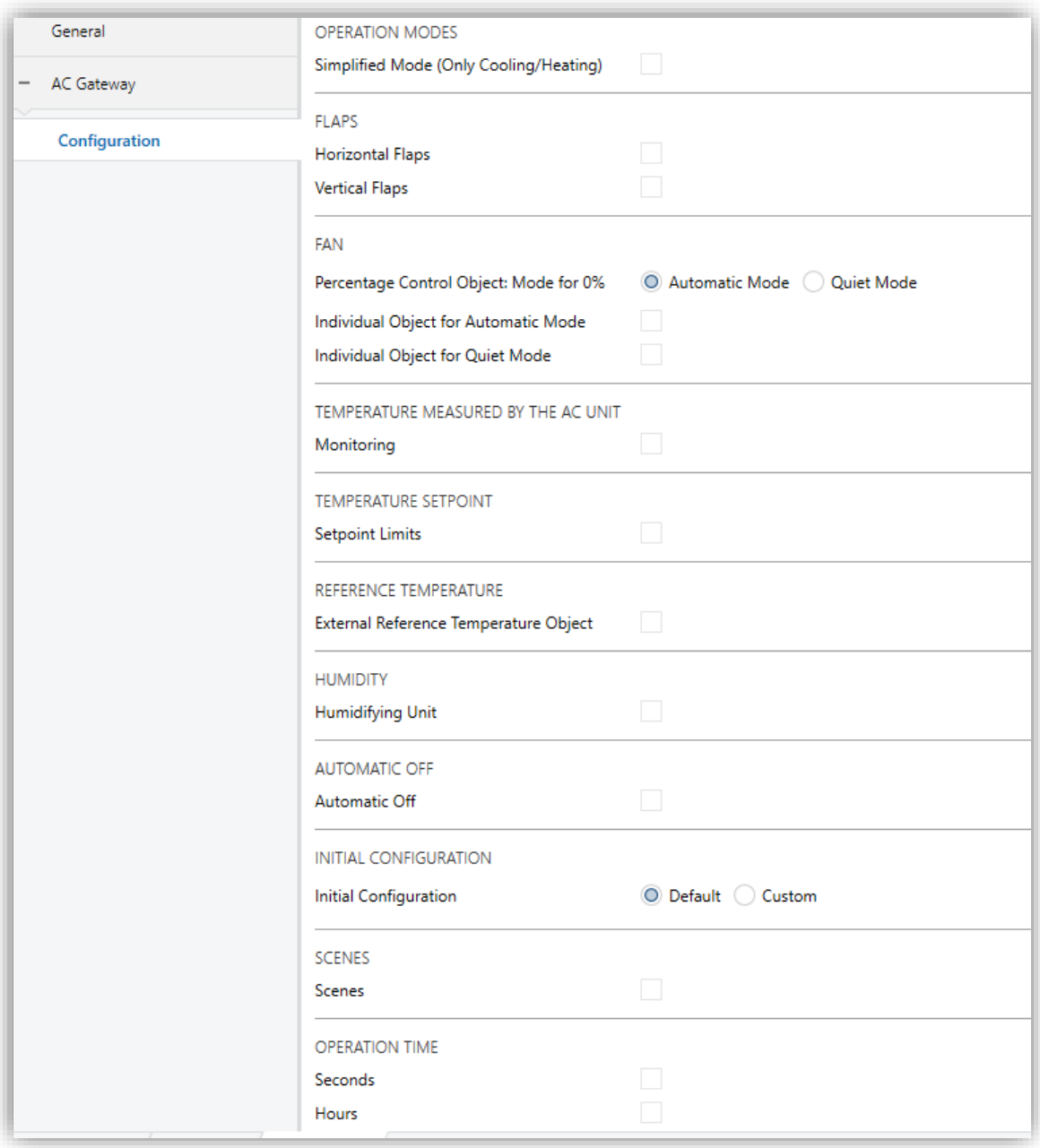


Figure 3. AC Gateway. Configuration.

OPERATION MODES

KLIC-DD v3 allows controlling the A/C unit operating mode through the following objects, available by default:

- **“[AC] Mode”**: 1-Byte object which allows selecting the A/C unit operation mode. There will be only taken in account values that are appropriated with some of available modes in Daikin units, which are represented in Table 1.

- **"[AC] Mode (Status)"**: 1-Byte object which allows knowing the A/C unit operating mode status.

Object Value	A/C unit mode
0	Auto
1	Heating
3	Cooling
9	Fan only
14	Dry

Table 1. A/C unit operating modes.

Note: *In case of having selected humidifying unit, other additional modes will be available. See paragraph Humidity in this section.*

Additionally, a simplified mode can be configured to select Cooling and Heating mode.

- **Simplified Mode** [*disabled / enabled*]: in addition to the "**[AC] Mode**" and "**[AC] Mode (Status)**" one-byte objects, available by default, it is possible to commute and to verify the current operation mode through the following one-bit objects, which get enabled after activating this parameter:

  - "**[AC] Simplified Mode**", which allows switching to the Cooling mode by sending it a "0" and to the Heating mode by sending it a "1".

  - "**[AC] Simplified Mode (Status)**", which will send a value of "0" when the mode switches to Cooling or to Dry, or a value of "1" when it switches to Heating. The Fan mode is not reflected in the value of this object. In Auto mode the value will be actualized depending of the current mode operating: Auto-Cooling ("0") or Auto-Heating ("1").

FLAPS

- **Horizontal Flaps** [*disabled / enabled*]: when enabled, **"[AC] Horizontal Flaps: Swing**" and **"[AC] Horizontal Flaps: Swing (Status)"** 1-bit objects will be available in order to commute or consult the operating state.

- **Vertical Flaps** [*disabled / enabled*]: when enabled, **"[AC] Vertical Flaps: Swing**" and **"[AC] Vertical Flaps: Swing (Status)"** 1-bit objects will be available for commuting or consulting the operating state.

In both cases the following parameter:

- **Swing Object Polarity** [*0 = Swing On; 1 = Swing Off / 0 = Swing Off; 1 = Swing On*]: defines which value activates each swing.

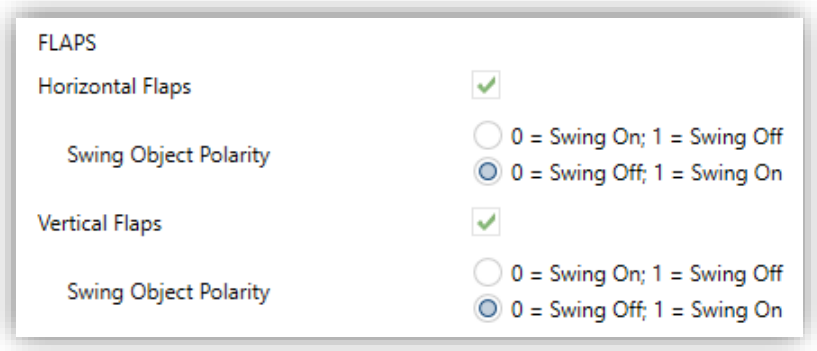


Figure 4. AC Gateway. Configuration. Flaps.

FAN

The Fan function allows sending the A/C unit orders to switch the ventilation speed along the available levels (5 levels, automatic mode and quiet mode – of the indoor unit -). To that end, KLIC-DD v3 provides a **percentage** control through the objects "**[AC] Fan: percentage control**" y "**[AC] Fan: percentage control (Status)**", available by default.

Table 2 reflects the percentage values that refer to several ventilation levels:

Control Value	Status Value	Sent level to the A/C unit
0%	0%	Automatic mode/ Quiet mode
1-20%	20%	1 (minimum)
21-40%	40%	2
41-60%	60%	3
61-80%	80%	4
81-100%	100%	5 (maximum)

Table 2: Fan Speed.

- **Percentage Control Object: Mode for 0%** [*Automatic Mode / Quiet Mode*]: enables to select the mode that will be activated when receiving 0% by the control object.

In addition, individual objects can be enabled by parameter to control the automatic and quiet modes:

- **Individual Object for Automatic Mode** [*disabled / enabled*]**:** enables the "**[AC] Fan: Automatic**" and "**[AC] Fan: Automatic (Status)**" one-bit objects,

which will let activating/deactivating the automatic mode or reading the current status, respectively**.** Moreover, the polarity can be configured by parameter:

- **Automatic Mode Object Polarity** [*0 = Automatic On; 1 = Automatic Off / 0 = Automatic Off; 1 = Automatic On*].

- **Individual Object for Quiet Mode** [*disabled/enabled*]**:** enables the "**[AC] Fan: Quiet**" and "**[AC] Fan: Quiet (Status)**" one-bit objects, which will let activating/deactivating the automatic mode or reading the current status, respectively**.** Moreover, the polarity can be configured by parameter:

  - **Quiet Mode Object Polarity** [*0 = Quiet On; 1 = Quiet Off / 0 = Quiet Off; 1 = Quiet On*].

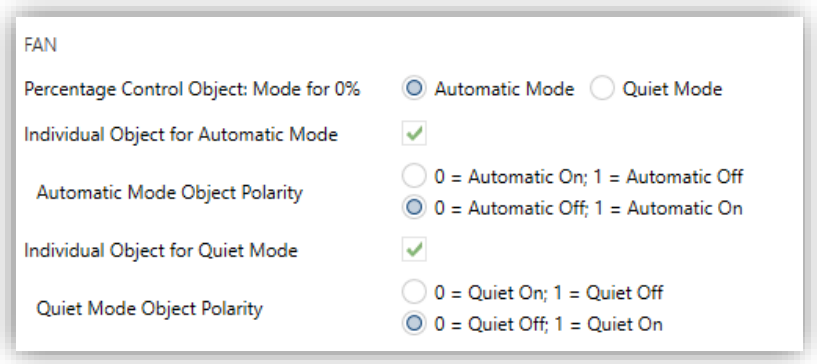


Figure 5. AC Gateway. Configuration. Fan.

Note: *Quiet mode may not be available, depending on the characteristics of the unit.*

Notes:

- *If the mode corresponding to the 0% value is parameterized to be the automatic mode, the effective fan speed cannot be known. In the case of having that mode activated, the ventilation status will remain at 0%. Similarly, the same will happen if quiet mode is selected to correspond the value 0%.*
- *When deactivating quiet or automatic mode, fan level 1 is set.*
- *In dry mode, A/C unit sets fan speed in automatic mode. Due to this fact the fan speed control orders will be ignored during this mode.*
- *Automatic mode and quiet mode cannot be activated at the same time. The activation of one of them will imply the deactivation of the other.*

- *On some A/C unit, if the silent/auto mode is set from the IR control, the KLIC may not be able to distinguish between these two states.*

TEMPERATURE MEASURED BY THE A/C UNIT

- **Monitoring** [*disabled / enabled*]: enables the "**[AC] AC Unit Measured Temperature**" two-byte object, which provides the value of its internal temperature sensor, which is used by the AC machine to execute the control loop. Once enabled, a secondary parameter will show:
  - **Sending Type** [*Variation / Periodic / Periodic + Variation*]: sets whether the above object should be sent only in case of a change in the value, periodically or both, respectively. The latter two options bring entail one more parameter:
    - **Period** [*1…3600*][*s*] [*1…15…1440*][*min*] [*1…24*][*h*]: sets the cycle time for the periodic sending.

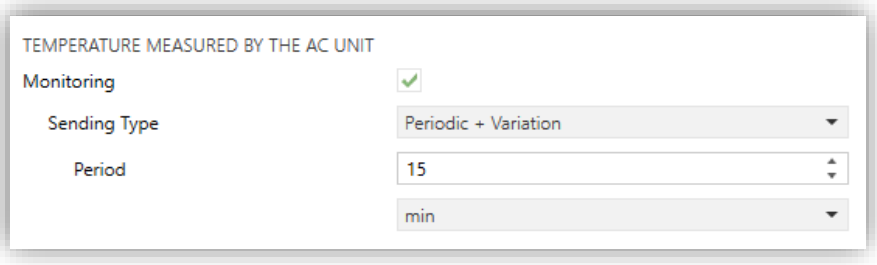


Figure 6. AC Gateway. Configuration. Temperature measured by the AC unit.

TEMPERATURE SETPOINT

The following objects to control and supervise setpoint temperature will be available by default:

- **"[AC] Temperature Setpoint":** 2-Byte object that allow selecting decimal temperature values that belong to the range [10º-32º].
- **"[AC] Temperature Setpoint (Status)"**: 2-Byte object that provides the Temperature setpoint status.

Note: *A X.Y value will be rounded to X.0 if [Y < 5] or to X.5 if [Y ≥ 5].*

Status object will be updated to the last setpoint temperature value received by the A/C unit after a complete communication cycle and will be sent to KNX bus every time that its value changes.

Setpoint limits can be configured by parameter:

- **Setpoint Limits** [*disabled / enabled*]: allows restricting the range of the temperature setpoint (from below in the Cooling, Dry and Auto modes and from above in the Heating and Auto modes), provided that the limits are still within the predefined limits of the A/C unit. When KLIC-DD v3 receives an order to send the A/C unit a setpoint which is greater (or lower) than the configured limits, it will actually send the limit value.
  - **Minimum (Cooling / Auto / Dry Mode)** [*18…32*][*ºC*]: sets the upper limit.
  - **Maximum (Heating / Auto Mode)** [*10…30*][*ºC*]: sets the lower limit.

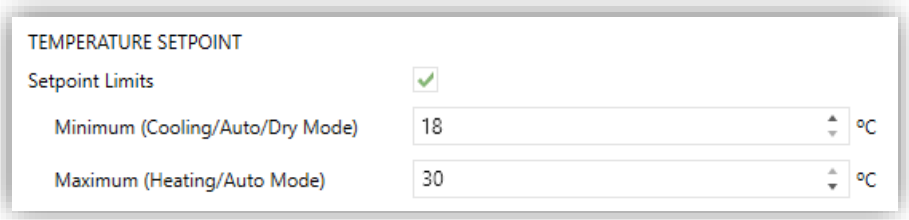


Figure 7. AC Gateway. Configuration. Temperature setpoint.

Once these limits are enabled, several objects to modify them at run time will be available. The values of these objects will be restricted to an interval which is defined by the absolute limits established by the A/C unit (10ºC to 32ºC).

- **"[AC] Temperature Setpoint: Lower Limit"**: 2-Byte object that allows changing the lower limit at run time.
- **"[AC] Temperature Setpoint: Lower Limit (Status)"**: 2-Byte object with the lower limit current value.
- **"[AC] Temperature Setpoint: Upper Limit"**: 2-Byte object that allows changing the upper limit at run time.
- **"[AC] Temperature Setpoint: Upper Limit (Status)"**: 2-Byte object with the upper limit current value.

Notes:

- *If [Minimum] ≥ [Maximum], limits will not be taken in account in Auto mode due to the incongruity. In this case, default values will be used.*

- *These parameters only can be set as integer values in ETS. However, at run time the associated objects allow decimal values.*

- *The A/C unit set a fixed temperature setpoint in Fan and Dry mode, this is the reason why KLIC-DD v3 will not send the setpoint value to A/C unit, however the value will be saved to send when leaving these modes.*

- *The setpoint limits set by the A/C unit on each operating mode are indicated in Table 3:*

Mode	Temperature Setpoint
Auto	[18º-30º]
Cooling	[18º-32º]
Heating	[10º-30º]
Fan	Not available
Dry	Not available

Table 3: Interior setpoint limits of A/C unit

REFERENCE TEMPERATURE

To control the temperature setpoint, the following objects are enabled by default:

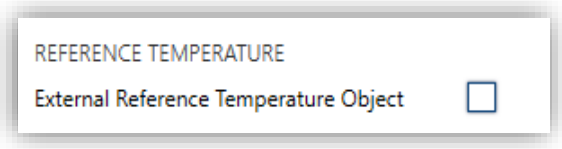


Figure 8. AC Gateway. Configuration. Reference temperature.

- **External Reference Temperature Object** [*disabled / enabled*]: enables the 2-byte object "**[AC] External Reference Temperature**", which provides the value of an external temperature sensor, which is used by the AC machine as the reference to execute the control loop.
  If no temperature values are received after 3 minutes, values of the internal probe will be recuperated again to execute temperature control, in the same way as it will be controlled if KLIC-DD v3 was configured disabling this option. If a new external temperature value is received, the control will be again executed by using this external value. The allowed value range is [0-70] ºC (if different values are received, they will be ignored).

Actually, the machine will continue to executing its control loop with the same reference temperature, but the KLIC will send an adjusted temperature setpoint following the formula:

Adjusted setpoint temperature = Setpoint temp. + [AC measured temp. – External reference temp.]

Important: *If the external reference temperature is enabled, it is recommended not to use the wired remote control or, failing that, not to change the setpoint from it.*

HUMIDITY

The availability of humidity control depends on A/C unit model and can be activated by the parameter:

- **Humidifying Unit** [*disabled / enabled*]: enables humidity control function.

Once the humidifying unit is enabled in AC Gateway Configuration section, the following objects are available:

- **"[AC] Humidity Adjust: Operation Point (%)"**: 1-Byte object to select the desired humidity operation point. Table 4 represents the percentage values that refer to each of the 5 humidity operation points.
- **"[AC] Humidity Adjust: Operation Point (%) (Status)"**: 1-Byte object that provides the humidity operation point.

Note: *A humidity operation point can only be established when the current operating mode allows humidity control (Cooling, Heating and Dry mode). In Automatic or Fan mode the humidity cannot be controlled. So, if a humidity operation point is sent during these modes, it will be ignored.*

Control Value	Status Value	Level Sent to A/C unit	Level Description
0%	0%	Off	Control Humidity Off
1-25%	25%	Low	Humidification/dehumidification with low energy
26-50%	50%	Standard	Humidification/dehumidification with moderate energy
51-75%	75%	High	Humidification/dehumidification with high energy
76-100%	100%	Continuous	Continuous humidification/dehumidification

Table 4. Humidity operation levels.

Domestic range Daikin A/C units with humidity control, allow other operation modes apart from traditional modes (Auto, Fan, Cooling, Heating and Dry):

- **Ururu humidification operation**: this operation permits to raise the humidity. This mode can only be activated while A/C unit is off (if an order of Ururu activation is received while the unit is on, it will be ignored). To activate the Ururu humidification operation or to supervise its status, the following objects are available:

  - **"[AC] Ururu"**: 1-bit object to activate or deactivate Ururu humidification.
  - **"[AC] Ururu (Status)"**: 1-bit object that provides Ururu humidification status.

  Once Ururu humidification is activated, A/C unit turns on, activates Heating mode and the humidify process starts. Fan speed level will remain and temperature setpoint will not be accessible (in case of modifying temperature setpoint while this mode is running, Ururu humidification mode will be deactivated, and Humid heating operation, that will be explain later, will be activated).

  When deactivating Ururu humidification mode (by sending "0" through its object) or when sending "0%" humidity adjust, the A/C unit will operate in Heating mode.

  Note: *After bus failure and/or after a programming, Ururu humidification mode, in case of being configured, will be deactivated.*

- **Humid heating operation:** this operation permits to raise the temperature and humidity. The ways to active this operation are:

  - While in Heating mode, modifying the humidity adjust.
  - While in Ururu humidification mode, modifying the temperature setpoint.

  Once Humid heating is operating, heating mode and a low humidity operation point will be activated. Fan speed level is not modified, keeping its previous value.

- **Sarara Drying Operation:** this operation permits to lower humidity (actually, is the same functionality than Dry mode).

  To activate Sarara Drying operation, there are available the next objects:

  - "**[AC] Sarara:** 1-Bit object to activate or deactivate Sarara Drying operation.

- "**[AC] Sarara (Status)**": 1-Bit object that provides Sarara Drying operation status.

Once Sarara drying operation is activated, Dry mode and a low humidity operation point will be established. Fan speed level will be set to Automatic and temperature setpoint will not be accessible (in case of modifying temperature setpoint while this mode is running, Sarara drying mode will be deactivated, and Dry cooling mode, that will be explain after, will be activated).

Note: *Activating Sarara drying operation involves activating Dry mode and vice versa.*

When deactivating Sarara drying operation (by sending "0" through its object) or when sending "0%" humidity adjustment, the A/C unit will operate in Cooling mode.

- **Dry cooling operation:** this operation permits to lower temperature and humidity. The ways to active this operation are:

  - While in Cooling mode, modifying humidity adjust.

  - While in Sarara Drying operation, modifying temperature setpoint.

  Once Dry cooling operation is activated, Cooling mode and a low humidity operation point will be established. Fan speed level will be set to Automatic.

AUTOMATIC OFF

- **Automatic Off** [*disabled / enabled*]: enables the "**[AC] Automatic Off**" binary object, which lets performing a temporary switch-off of the A/C unit by sending it a value of "1" and a later switch-on by sending it a value of "0". This object will be typically linked to a window sensor or a similar event trigger. Automatic off will be also active if the unit is previously in off state, so, the unit will not be able of being on until this situation finishes.

  During the temporary switch-off state, KLIC-DD v3 will still monitor any control orders being received (setpoint, fan speed, etc.), so they can be applied once it leaves such state.

  - **Automatic Off Object Polarity** [*0 = Activate; 1 = Deactivate / 0 = Deactivate; 1 = Activate*]: sets the polarity of the above object.

- **Automatic Off Delay** [*1…60…3600*][*s*]: sets the time, in seconds, KLIC-DD v3 waits before switching the A/C machine off. Any switch-off order received during the delay will abort the time count.

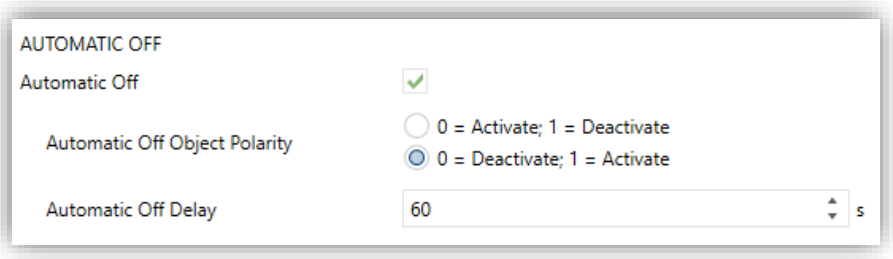


Figure 9. AC Gateway. Configuration. Automatic Off.

Note: *switch-on orders sent to the A/C unit from a wireless control have a higher priority than the Auto Off mode.*

INITIAL CONFIGURATION

- **Initial Configuration**: allows setting the desired initial state that KLIC-DD v3 will send the A/C unit after programming or restarting the device:
  - *Default*: the initial state will be the last one KLIC-DD v3 is aware of.
  - *Custom*: see section 2.2.2.

SCENES

- **Scenes** [*disabled / enabled*]: allows setting up different scenes (up to 5), consisting each of them in a set of orders to be sent to the A/C unit upon the reception of scene trigger values through the KNX bus. See section 2.2.3.

OPERATING TIME

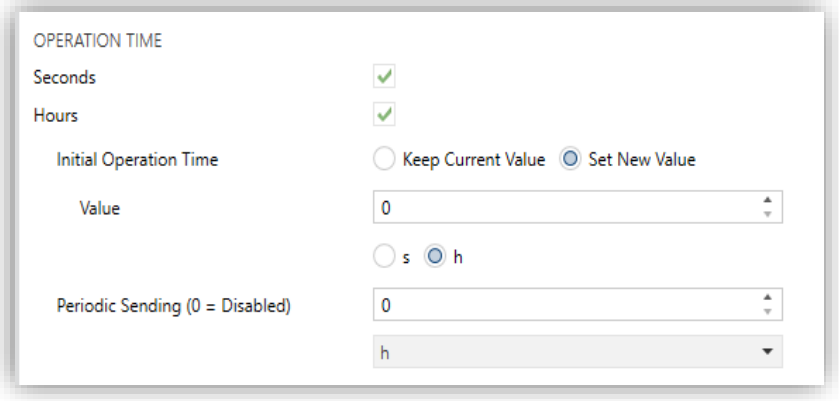


Figure 10. AC Gateway. Configuration. Operating time.

The time that A/C unit has been operating in hours and/or seconds can be known.

The available parameters in ETS are:

- **Seconds** [*disabled / enabled*]: enables the 2-byte object **"[AC] Operating time (s)"**. This object can be read and overwritten during executing time.
- **Hours** [*disabled / enabled*]**:** enables the 4-byte object **"[AC] Operating time (h)"**. This object can be read and overwritten during executing time.
- **Initial Operation Time**:
  - *Keep Current Value*: option enabled by default, which keep the previous value.
  - *Set New Value*: allows establishing an initial operating time value.
- **Periodic Sending** [*0…65535*][*s / min / h*]: resending period of operating time If set to 0 the periodic send is disabled.

When operating time object reaches its maximum value, it will be sent through KNX bus (although the periodical sending has not been configured) and it will keep this value until the user reset it.

2.2.2 INITIAL CONFIGURATION

The custom initial configuration allows setting the desired status that KLIC-DD v3 will send the A/C unit after downloading or restarting the device. This status is defined in terms of on/off, mode, fan speed, flaps position and temperature setpoint.

In addition, it is possible to activate an initial sending of this status to the KNX bus.

ETS PARAMETRISATION

After selecting "Custom" for the **Initial Configuration** option under the "Configuration" tab (see section 2.2.1), a new tab named **Initial Configuration** is displayed with the following parameters:

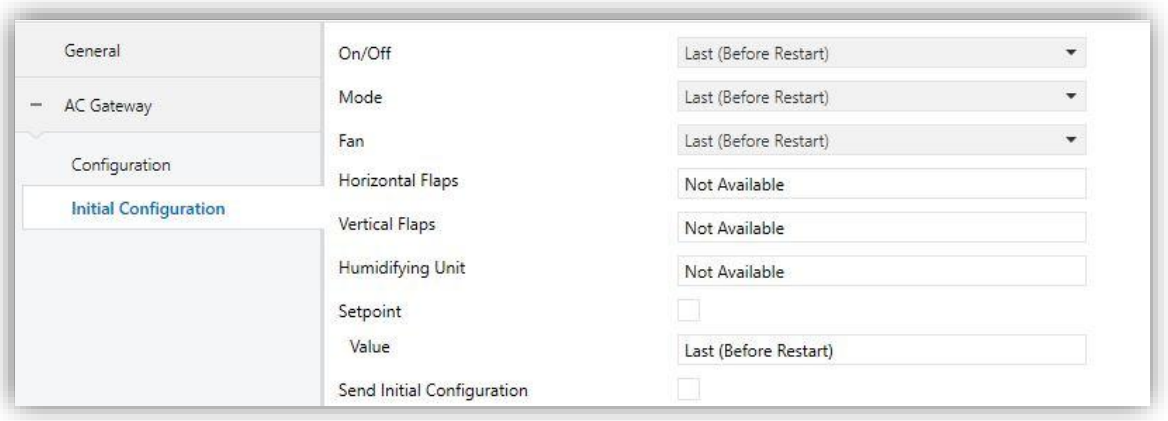


Figure 11. Initial configuration.

- **On/Off** [*Last (Before Restart) / On / Off*].
- **Mode** [*Last (Before Restart) / Automatic / Heating / Cooling / Fan / Dry*].
- **Fan** [*Last (Before Restart) / Automatic / Quiet / 1 / 2 / 3 / 4 / 5*].
- **Horizontal Flaps** [*Last (Before Restart) / Swing Off / Swing On*]. This option only will be visible in case of having enabled this kind of flaps; on the contrary this section will appear as "Not Available"
- **Vertical Flaps** [*Last (Before Restart) / Swing Off / Swing On*]. This option only will be visible in case of having enabled this kind of flaps; on the contrary this section will appear as "Not Available".
- **Humidifying Unit** [*Last (Before Restart) / Off / Low / Standard / High / Continuous*]: permits selecting a humidity operation point from the values.

  Notes:

  - *This parameter is only available if the humidifying unit is enabled in the A/C gateway configuration (see section 2.2.1) and a Mode allowing humidity control has been selected in the parameter above (Heating, Cooling or Dry mode). Otherwise this parameter will be disabled indicating "Not Available" or "Not Available (mode)", respectively.*
  - *If Dry mode is established in the initial configuration, "Last (Before Restart)" and "Off" options will not be available. This fact is due to Dry mode involves a humidity control, so it is not possible to establish off humidity control.*

- **Setpoint** [*disabled / enabled*]:

- **Value:**
  - *Last (Before Restart)*: the setpoint temperature value will kept. Only available if **Setpoint** parameter remains disabled.
  - *10…25…32 ºC*: concrete value of the set temperature.

- **Send Initial Configuration** [*disabled / enabled*]: If enabled, the status objects will be sent to the KNX bus after applying the initial settings.

  Note: *even if this option is not enabled, the status objects may be sent to the KNX bus if the initial configuration differs from the current status of the A/C machine*.

2.2.3 SCENES

The Scenes function allows defining a set of statuses (in terms of On/Off, mode, fan speed, etc.) that KLIC-DD v3 will send to the A/C unit whenever it receives the corresponding scene values from the KNX bus.

ETS PARAMETRISATION

After enabling this function (see section 2.2.1), a new tab named Scenes will be incorporated to the tab tree. It allows setting up different scenes (up to 5), consisting each of them in a set of orders to be sent to the A/C unit upon the reception, through the KNX bus and by means of the "**[AC] Scenes**" object, a value for scene activation [*1…64*]. If, on the other hand, a value is received to store a scene [*128…191*], the current values will be saved. The storing does not apply to the parameters with values *No change* or *Not available*.

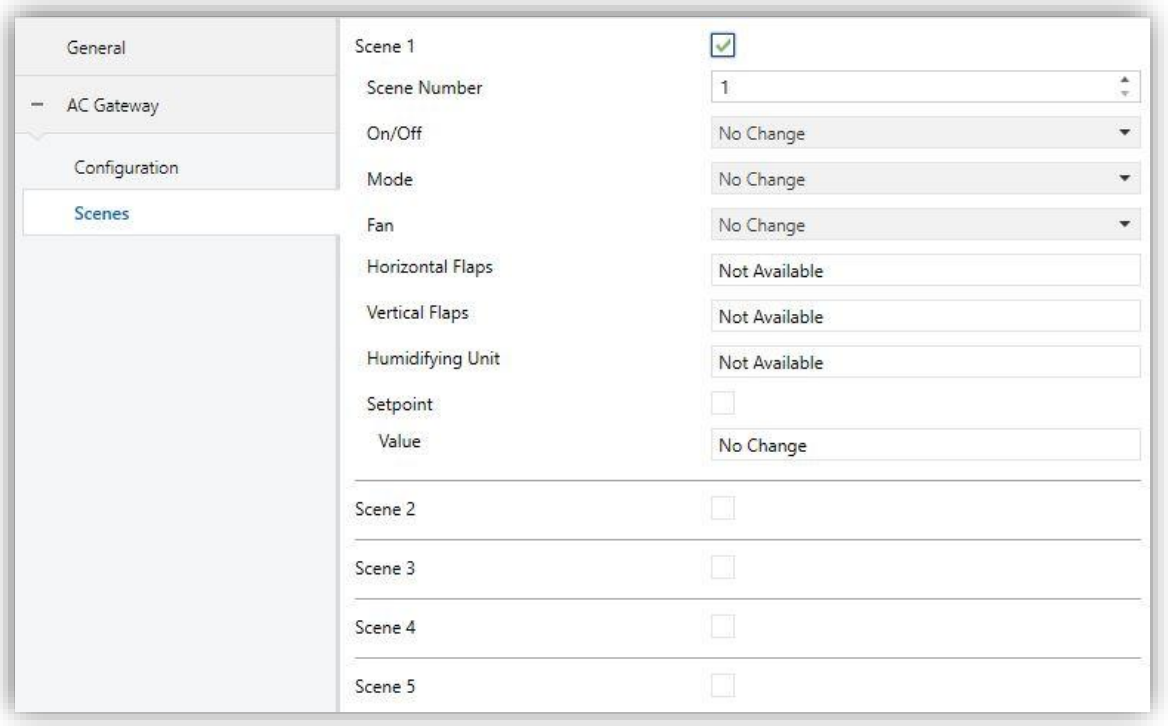


Figure 12. Scenes.

For every enabled scene, the particular parameters that should be configured are:

- **Scene number** [*1…64*]: sets the scene number that, upon reception through the "**[AC] Scenes**" object, will trigger the corresponding orders, as defined next:

  - **On/Off** [*No Change / Off / On*], if "No Change" is selected, the machine will keep the last state it was in before the scene reception.

  - **Mode** [*No Change / Automatic / Heating / Cooling / Fan / Dry*].

  - **Fan** [*No Change / Automatic / Quiet / 1 / 2 / 3 / 4 / 5*].

  - **Horizontal Flaps** [*No Change / Swing Off / Swing On*] (if this kind of flaps is available, on the contrary this section will appear as "Not Available").

  - **Vertical Flaps** [*No Change / Swing Off / Swing On*] (if this kind of flaps is available, on the contrary this section will appear as "Not Available").

  - **Humidifying Unit** [*No Change / Off / Low / Standard / High / Continuous*]**:** allows selecting an operating point to adjust the humidity.

Notes:

- *This parameter is only available if the humidifying unit is enabled in the A/C gateway configuration (see section 2.2.1) and a Mode allowing humidity control has been selected in the parameter above (Heating, Cooling or Dry mode). Otherwise this parameter will be disabled indicating "Not Available" or "Not Available (mode)", respectively.*

- *If Dry mode is established in the scene configuration, "Last (Before Restart)" and "Off" options will not be available. This fact is due to Dry mode involves a humidity control, so it is not possible to establish off humidity control.*

➢ **Setpoint** [*disabled / enabled*]:

- **Value:**

  - *No Change*: the last setpoint temperature value will kept. Only available if **Setpoint** parameter remains disabled.

  - *16…25…31 ºC*: concrete value of the set temperature.

2.2.4 ERROR HANDLING

KLIC-DD v3 is capable of managing two error types that do not entail any previous parameter configuration:

- **Communication or internal errors**: errors in the communication process between KLIC-DD v3 and the A/C unit. These types of errors are notified by the green LED as indicated below:

  ➢ **Communication error**: KLIC-DD v3 is not able to establish communication with the A/C machine. The green LED remains on.

  ➢ **Wrong acknowledgement**: KLIC-DD v3 received an unexpected response after sending a request to the A/C unit. The green LED blinks 3 times and stays off during 3 seconds.

  In case any of the above errors is detected, the corresponding object will be sent (with value "1") to the KNX bus. Once the error is over, the object will be sent with value "0". The object associated with each error will be, respectively:

- "**[AC] Internal Error: Communication**" (1-Bit).
- "**[AC] Internal Error: Wrong Acknowledgement**" (1-Bit).

In case of being in an internal error situation, control orders will be ignored by KLIC DD v3 and the status will be the previous to the error activation.

- **Errors in the A/C unit**: errors reported by the A/C unit itself. KLIC-DD v3 can notify the KNX bus about the reported error code, although referring to the specific documentation of the A/C machine is advisable in order to obtain further information.

  In case the A/C unit reports an error, the binary object "**[AC] AC Unit Error: Active Error**" will be sent with value of "1", while the 14-bytes object "**[AC] AC Unit Error: Error Code**" will report the corresponding error code. Once the error is over, both binary and 14-byte objects will send a value of "0". Please, refer to the user manual of the A/C unit for details about the error codes.

2.3 INPUTS

KLIC-DD3 incorporates **two analogue/digital inputs**, each configurable as a:

- **Binary Input**, for the connection of a pushbutton or a switch/sensor.
- **Temperature Probe**, for the connection of a temperature sensor from Zennio.
- **Motion Detector**, for the connection of a motion detector from Zennio.

2.3.1 BINARY INPUT

Please refer to the "**Binary Inputs**" user manual, available in the KLIC-DD v3 product section, at the Zennio website (www.zennio.com).

2.3.2 TEMPERATURE PROBE

Please refer to the "**Temperature Probe**" user manual, available in the KLIC-DD v3 product section, at the Zennio website (www.zennio.com).

2.3.3 MOTION DETECTOR

It is possible to connect motion detectors from Zennio to the input ports of KLIC-DD v3.

Please refer to the "**Motion Detector**" user manual, available in the KLIC-DD v3 product section, at the Zennio website (www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.4 LOGIC FUNCTIONS

This module makes it possible to perform numeric and binary operations with incoming values received from the KNX bus, and to send the results through other communication objects specifically enabled for this purpose.

KLIC-DD v3 can implement **up to 10 different and independent functions**, each of them entirely customisable and consisting in **up to 4 consecutive operations each**.

The execution of each function can depend on a configurable **condition**, which will be evaluated every time the function is **triggered** through specific, parameterisable communication objects. The result after executing the operations of the function can also be evaluated according to certain **conditions** and afterwards sent (or not) to the KNX bus, which can be done every time the function is executed, periodically or only when the result differs from the last one.

Please refer to the "**Logic Functions**" user manual (available in the KLIC-DD v3 product section at the Zennio homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

ANNEX I. COMMUNICATION OBJECTS

- **"Functional range"** shows the values that, with independence of any other values permitted by the bus according to the object size, may be of any use or have a particular meaning because of the specifications or restrictions from both the KNX standard or the application program itself.

Number	Size	I/O	Flags	Data type (DPT)	Functional Range	Name	Function
1	1 Byte	I/O	C R W T U	DPT_SceneControl	0-63; 128-191	[AC] Scene	0 - 63 (Execute 1 - 64); 128 - 129 (Save 1 - 64)
2	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] On/Off	0 = Off; 1 = On
3	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] On/Off (Status)	0 = Off; 1 = On
4	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[AC] Temperature Setpoint	[10 ... 32] ºC
5	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[AC] Temperature Setpoint (Status)	[10 ... 32] ºC
6	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[AC] Temperature Setpoint: Lower Limit	[18 ... 32] ºC
7	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[AC] Temperature Setpoint: Lower Limit (Status)	[18 ... 32] ºC
8	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[AC] Temperature Setpoint: Upper Limit	[10 ... 30] ºC
9	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[AC] Temperature Setpoint: Upper Limit (Status)	[10 ... 30] ºC
10	1 Byte	I	C - W - -	DPT_HVACContrMode	0=Auto 1=Heat 3=Cool 9=Fan 14=Dry	[AC] Mode	0 = Automatic; 1 = Heating; 3 = Cooling; 9 = Fan; 14 = Dry
11	1 Byte	O	C R - T -	DPT_HVACContrMode	0=Auto 1=Heat 3=Cool 9=Fan 14=Dry	[AC] Mode (Status)	0 = Automatic; 1 = Heating; 3 = Cooling; 9 = Fan; 14 = Dry
12	1 Bit	I	C - W - -	DPT_Heat_Cool	0/1	[AC] Simplified Mode	0 = Cooling; 1 = Heating
13	1 Bit	O	C R - T -	DPT_Heat_Cool	0/1	[AC] Simplified Mode (Status)	0 = Cooling; 1 = Heating
14	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Ururu	0 = Ururu Off; 1 = Ururu On
15	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Ururu (Status)	0 = Ururu Off; 1 = Ururu On
16	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Sarara	0 = Sarara Off; 1 = Sarara On
17	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Sarara (Status)	0 = Sarara Off; 1 = Sarara On
18	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[AC] Humidity Adjust: Operation Point (%)	[0]% = Off; [0.4 ... 25.1]% = Low; [25.5 ... 50.2]% = Standard; [50.6 ... 75.3]% = High; [75.5 ... 100]% = Continuous

19	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[AC] Humidity Adjust: Operation Point (%) (Status)	Off = 0%; Low = 25.1%; Standard = 50.2%; High = 75.3%; Continuous = 100%
20	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[AC] Fan: Percentage Control	[0]% = Automatic; [0.4 ... 20]% = S1; [20.4 ... 40]% = S2; [40.4 ... 60]% = S3; [60.4 ... 80]% = S4; [80.4 ... 100]% = S5
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[AC] Fan: Percentage Control	[0]% = Quiet; [0.4 ... 20]% = S1; [20.4 ... 40]% = S2; [40.4 ... 60]% = S3; [60.4 ... 80]% = S4; [80.4 ... 100]% = S5
21	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[AC] Fan: Percentage Control (Status)	Automatic/Quiet = 0%; S1 = 20%; S2 = 40%; S3 = 60%; S4 = 80%; S5 = 100%
22	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Fan: Automatic	0 = Automatic Off (Speed 1); 1 = Automatic On
	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Fan: Automatic	0 = Automatic On; 1 = Automatic Off (Speed 1)
23	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Fan: Automatic (Status)	0 = Automatic Off; 1 = Automatic On
	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Fan: Automatic (Status)	0 = Automatic On; 1 = Automatic Off
24	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Fan: Quiet	0 = Quiet Off (Speed 1); 1 = Quiet On
	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Fan: Quiet	0 = Quiet On; 1 = Quiet Off (Speed 1)
25	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Fan: Quiet (Status)	0 = Quiet Off; 1 = Quiet On
	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Fan: Quiet (Status)	0 = Quiet On; 1 = Quiet Off
26	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Horizontal Flaps: Swing	0 = Swing Off; 1 = Swing On
	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Horizontal Flaps: Swing	0 = Swing On; 1 = Swing Off
27	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Horizontal Flaps: Swing (Status)	0 = Swing Off; 1 = Swing On
	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Horizontal Flaps: Swing (Status)	0 = Swing On; 1 = Swing Off
28	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Vertical Flaps: Swing	0 = Swing Off; 1 = Swing On
	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Vertical Flaps: Swing	0 = Swing On; 1 = Swing Off
29	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Vertical Flaps: Swing (Status)	0 = Swing Off; 1 = Swing On
	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Vertical Flaps: Swing (Status)	0 = Swing On; 1 = Swing Off
30	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[AC] AC Unit Measured Temperature	Temperature from the internal sensor (ºC)
31	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[AC] External Reference Temperature	[0 ... 70] ºC
32	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Automatic Off	0 = Deactivate; 1 = Activate
	1 Bit	I	C - W - -	DPT_Switch	0/1	[AC] Automatic Off	0 = Activate; 1 = Deactivate
33	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Automatic Off (Status)	0 = Deactivated; 1 = Activated
	1 Bit	O	C R - T -	DPT_Switch	0/1	[AC] Automatic Off (Status)	0 = Active, 1 = Inactive
34	2 Bytes	I	C - W - -	DPT_TimePeriodSec	0 - 65535	[AC] Automatic Off Delay	[0...3600] s (0 = Disabled)
	2 Bytes	I	C - W - -	DPT_TimePeriodMin	0 - 65535	[AC] Automatic Off Delay	[0...1440] min (0 = Disabled)
	2 Bytes	I	C - W - -	DPT_TimePeriodHrs	0 - 65535	[AC] Automatic Off Delay	[0...24] h (0 = Disabled)
35	4 Bytes	I/O	C R W T -	DPT_LongDeltaTimeSec	0 - 2147483647	[AC] Operating Time (s)	Operation time in seconds
36	2 Bytes	I/O	C R W T -	DPT_TimePeriodHrs	0 - 65535	[AC] Operating Time (h)	Operation time in hours
37	1 Bit	O	C R - T -	DPT_Alarm	0/1	[AC] Internal Error: Communication	Unable to Set AC Communication
38	1 Bit	O	C R - T -	DPT_Alarm	0/1	[AC] Internal Error: Wrong Acknowledgement	Acknowledgement Received with Errors

39	1 Bit	O	C R - T -	DPT_Alarm	0/1	[AC] AC Unit Error: Active Error	AC Unit Error
40	14 Bytes	O	C R - T -	DPT_String_ASCII		[AC] AC Unit Error: Error Code	See AC Unit Manual
41, 45	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Ix] Current Temperature	Temperature Sensor Value
42, 46	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Overcooling	0 = No Alarm; 1 = Alarm
43, 47	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Overheating	0 = No Alarm; 1 = Alarm
44, 48	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Probe Error	0 = No Alarm; 1 = Alarm
49, 55	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] Input Lock	0 = Unlock; 1 = Lock
50, 56	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Short Press] 0	Sending of 0
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Short Press] 1	Sending of 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Short Press] 0/1 Switching	Switching 0/1
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Short Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Short Press] Brighter	Increase Brightness
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Short Press] Darker	Decrease Brightness
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Short Press] Brighter/Darker	Switch Bright/Dark
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Short Press] Light On	Sending of 1 (On)
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Short Press] Light Off	Sending of 0 (Off)
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Short Press] Light On/Off	Switching 0/1

	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Short Press] Run Scene	Sending of 0 - 63
	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Short Press] Save Scene	Sending of 128 - 191
	1 Bit	I/O	C R W T -	DPT_Switch	0/1	[Ix] [Switch/Sensor] Edge	Sending of 0 or 1
	1 Byte		C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Short Press] Constant Value (Integer)	0 - 255
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Constant Value (Percentage)	0% - 100%
	2 Bytes		C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Short Press] Constant Value (Integer)	0 - 65535
	2 Bytes		C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Short Press] Constant Value (Float)	Float Value
51, 57	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Short Press] Dimming Status (Input)	0% - 100%
52, 58	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Long Press] 0	Sending of 0
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Long Press] 1	Sending of 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Long Press] 0/1 Switching	Switching 0/1
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit		C - - T -	DPT_UpDown	0/1	[Ix] [Long Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit		C - - T -	DPT_Step	0/1	[Ix] [Long Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Long Press] Brighter	Long Pr. -> Brighter; Release -> Stop
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Long Press] Darker	Long Pr. -> Darker; Release -> Stop
	4 Bit		C - - T -	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) ... 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) ... 0xF (Inc. by 1%)	[Ix] [Long Press] Brighter/Darker	Long Pr. -> Brighter/Darker; Release -> Stop

	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Long Press] Light On	Sending of 1 (On)
	1 Bit		C - - T -	DPT_Switch	0/1	[Ix] [Long Press] Light Off	Sending of 0 (Off)
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Ix] [Long Press] Light On/Off	Switching 0/1
	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Long Press] Run Scene	Sending of 0 - 63
	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Ix] [Long Press] Save Scene	Sending of 128 - 191
	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] [Switch/Sensor] Alarm: Breakdown or Sabotage	1 = Alarm; 0 = No Alarm
	2 Bytes		C - - T -	9.xxx	-671088.64 - 670433.28	[Ix] [Long Press] Constant Value (Float)	Float Value
	2 Bytes		C - - T -	DPT_Value_2_Ucount	0 - 65535	[Ix] [Long Press] Constant Value (Integer)	0 - 65535
	1 Byte		C - - T -	DPT_Scaling	0% - 100%	[Ix] [Long Press] Constant Value (Percentage)	0% - 100%
	1 Byte		C - - T -	DPT_Value_1_Ucount	0 - 255	[Ix] [Long Press] Constant Value (Integer)	0 - 255
53, 59	1 Bit		C - - T -	DPT_Trigger	0/1	[Ix] [Long Press/Release] Stop Shutter	Release -> Stop Shutter
54, 60	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Long Press] Dimming Status (Input)	0% - 100%
	1 Byte	I	C - W - -	DPT_Scaling	0% - 100%	[Ix] [Long Press] Shutter Status (Input)	0% = Top; 100% = Bottom
61	1 Byte	I	C - W - -	DPT_SceneNumber	0 - 63	[Motion Detector] Scene Input	Scene Value
62	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[Motion Detector] Scene Output	Scene Value
63, 92	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix] Luminosity	0-100%
64, 93	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Open Circuit Error	0 = No Error; 1 = Open Circuit Error
65, 94	1 Bit	O	C R - T -	DPT_Alarm	0/1	[Ix] Short Circuit Error	0 = No Error; 1 = Short Circuit Error
66, 95	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix] Presence State (Scaling)	0-100%
67, 96	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Ix] Presence State (HVAC)	Auto, Comfort, Standby, Economy, Building Protection
68, 97	1 Bit	O	C R - T -	DPT_Switch	0/1	[Ix] Presence State (Binary)	Binary Value
	1 Bit	O	C R - T -	DPT_Start	0/1	[Ix] Presence: Slave Output	1 = Motion Detected
69, 98	1 Bit	I	C - W - -	DPT_Window_Door	0/1	[Ix] Presence Trigger	Binary Value to Trigger the Presence Detection
70, 99	1 Bit	I	C - W - -	DPT_Start	0/1	[Ix] Presence: Slave Input	0 = Nothing; 1 = Detection from slave device
71, 100	2 Bytes	I	C - W - -	DPT_TimePeriodSec	0 - 65535	[Ix] Presence: Waiting Time	0-65535 s.
72, 101	2 Bytes	I	C - W - -	DPT_TimePeriodSec	0 - 65535	[Ix] Presence: Listening Time	1-65535 s.
73, 102	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] Presence: Enable	According to parameters
74, 103	1 Bit	I	C - W - -	DPT_DayNight	0/1	[Ix] Presence: Day/Night	According to parameters
75, 104	1 Bit	O	C R - T -	DPT_Occupancy	0/1	[Ix] Presence: Occupancy State	0 = Not Occupied; 1 = Occupied
76, 105	1 Bit	I	C - W - -	DPT_Start	0/1	[Ix] External Motion Detection	0 = Nothing; 1 = Motion detected by an external sensor
77, 82, 87, 106, 111, 116	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Ix] [Cx] Detection State (Scaling)	0-100%

78, 83, 88, 107, 112, 117	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Ix] [Cx] Detection State (HVAC)	Auto, Comfort, Standby, Economy, Building Protection
79, 84, 89, 108, 113, 118	1 Bit	O	C R - T -	DPT_Switch	0/1	[Ix] [Cx] Detection State (Binary)	Binary Value
80, 85, 90, 109, 114, 119	1 Bit	I	C - W - -	DPT_Enable	0/1	[Ix] [Cx] Enable Channel	According to parameters
81, 86, 91, 110, 115, 120	1 Bit	I	C - W - -	DPT_Switch	0/1	[Ix] [Cx] Force State	0 = No Detection; 1 = Detection
121 - 152	1 Bit	I	C - W - -	DPT_Bool	0/1	[LF] (1-Bit) Data Entry x	Binary Data Entry (0/1)
153 - 168	1 Byte	I	C - W - -	DPT_Value_1_Ucount	0 - 255	[LF] (1-Byte) Data Entry x	1-Byte Data Entry (0-255)
169 - 184	2 Bytes	I	C - W - -	DPT_Value_2_Ucount	0 - 65535	[LF] (2-Byte) Data Entry x	2-Byte Data Entry
				DPT_Value_2_Count	-32768 -32767		
				DPT_Value_Tempo	-273.00 – 670433.28		
185 - 192	4 Bytes	I	C - W - -	DPT_Value_4_Count	-2147483648 - 2147483647	[LF] (4-Byte) Data Entry x	4-Byte Data Entry
193 - 202	1 Bit	O	C R - T -	DPT_Bool	0/1	[LF] Function x - Result	(1-Bit) Boolean
	1 Byte	O	C R - T -	DPT_Value_1_Ucount	0 - 255	[LF] Function x - Result	(1-Byte) Unsigned
	2 Bytes	O	C R - T -	DPT_Value_2_Ucount	0 - 65535	[LF] Function x - Result	(2-Byte) Unsigned
	4 Bytes	O	C R - T -	DPT_Value_4_Count	-2147483648 - 2147483647	[LF] Function x - Result	(4-Byte) Signed
	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[LF] Function x - Result	(1-Byte) Percentage
	2 Bytes	O	C R - T -	DPT_Value_2_Count	-32768 - 32767	[LF] Function x - Result	(2-Byte) Signed
	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[LF] Function x - Result	(2-Byte) Float
203	1 Bit		C - - T -	DPT_Trigger	0/1	[Heartbeat] Object to Send '1'	Sending of '1' Periodically

Join and send us your inquiries about Zennio devices:

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