



# IntesisBox®

## DK-AC-ENO-1 / 1C

v.1.0.9

### EnOcean Interface for Daikin air conditioners (domestic lines).

DK-AC-ENO-1 and DK-AC-ENO-1C devices allow a complete and natural integration of Daikin air conditioners with EnOcean control systems both in their 868 MHz (DK-AC-ENO-1) and 315 MHz (DK-AC-ENO-1C) versions.

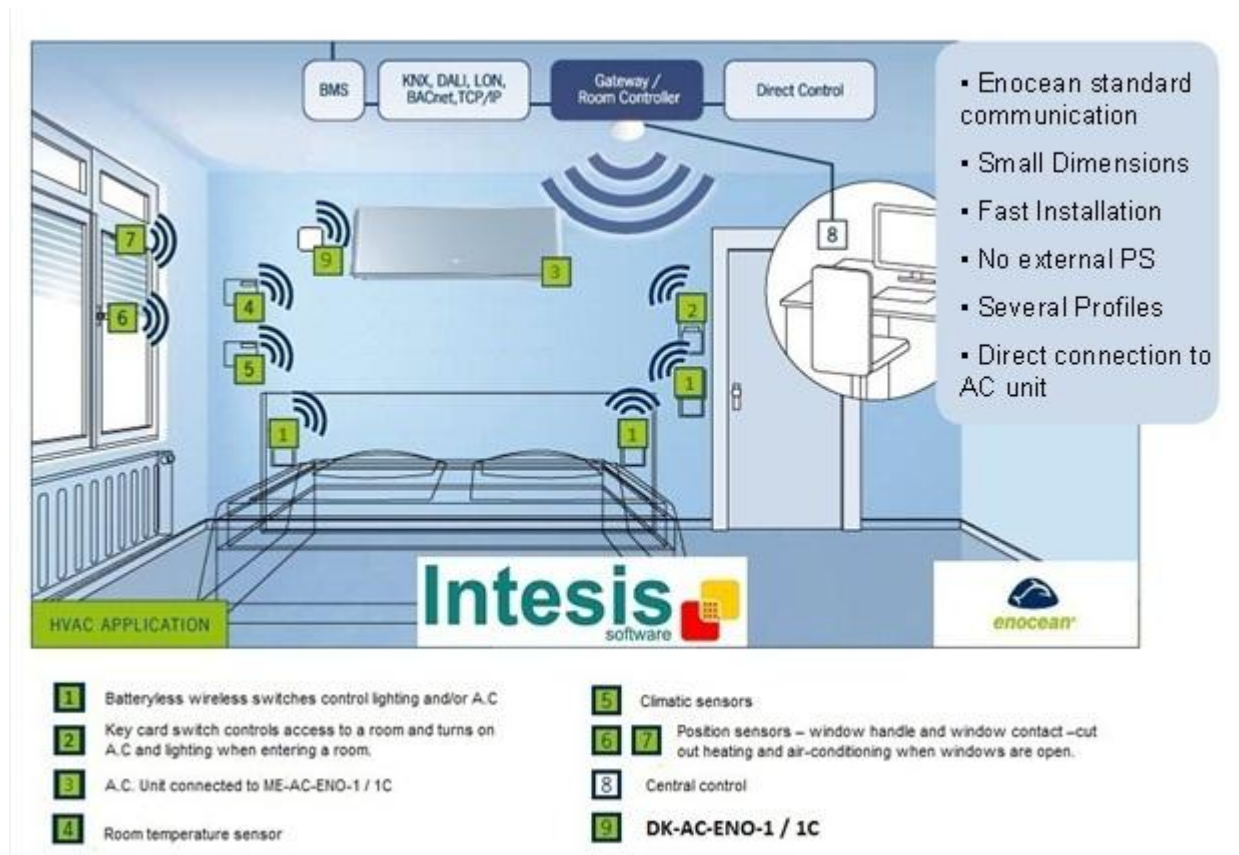
Compatible with all models of Domestic line of Daikin (Check section 4 for details).

## 1. Main Features:

- Reduced dimensions.
- Quick installation.
- External power not required.
- Direct connection to the AC indoor unit.
- Fully EnOcean interoperable.
- Multiple profiles
- Control of the AC unit based in the ambient temperature read by the own AC unit, or in the ambient temperature read by any EnOcean thermostat.
- Total Control and Monitoring of the AC unit from EnOcean, including monitoring of AC unit's state of internal variables, and error indication and error code.
- AC unit can be controlled simultaneously by the IR remote control of the AC unit and by EnOcean devices.
- Implements the newly approved HVAC EEP's
- Advanced room control functionalities.

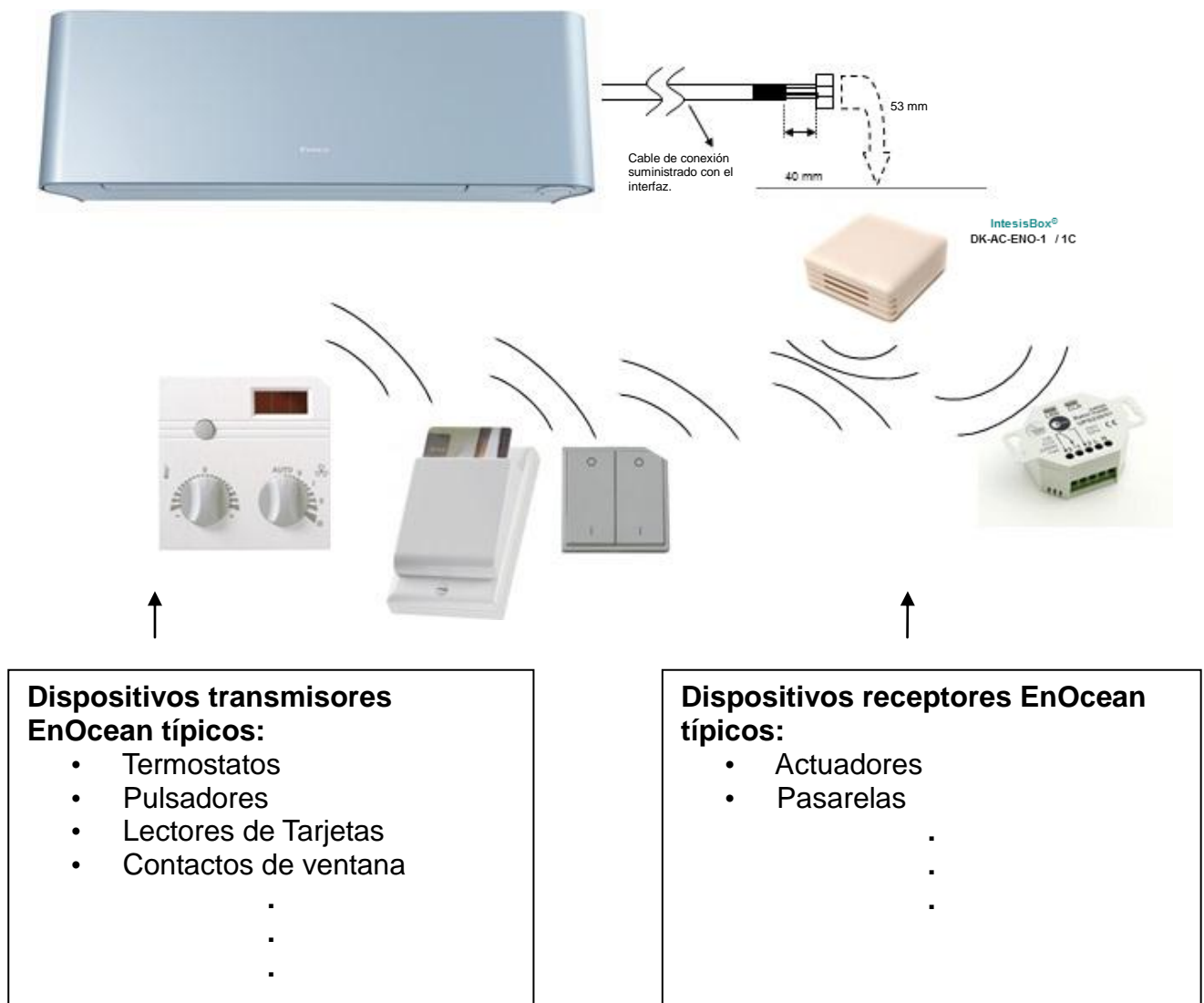
## 2. Typical application

In Figure 2.1 it is shown a typical application of DK-AC-ENO-1 / 1C in a hotel room. The different devices that can control the A.C unit, like switches, Key cards, window contacts, are connected to it through the DK-AC-ENO-1 / 1C.



**Figure 2.1** Typical application of DK-AC-ENO-1 / 1C in a hotel room

A schematic view of what it could be the application shown in Figure 2.1 can be seen in Figure 2.2. The connection diagram of the A.C with the DK-AC-ENO-1 / 1C and some of the supported EnOcean devices are shown



**Figure 2.2** Example of DK-AC-ENO-1 / 1C control or actuation devices

### 3. IntesisBox DK-AC-ENO-1 / 1C EnOcean Interface

EnOcean Interface	
<b>Devices</b>	DK-AC-ENO-1: Transceiver @ 868 MHz DK-AC-ENO-1C: Transceiver @ 315 MHz
<b>Virtual signals</b>	Virtual signals: <ul style="list-style-type: none"> <li>Alarm State (0/1)</li> <li>Window contact (0/1)</li> </ul>
<b>Configurable capabilities</b>	Up to 16 transmission profiles and 16 reception profiles

**Table 3.1** General characteristics

Coverage distance	Conditions
< 30 m	Under ideal conditions: Broad room, no obstacles and good antenna position.
< 20 m	The room is filled with furniture and people And penetration through up to 5 dry walls or up to 2 brick walls or up to 2 aero concrete walls
< 10 m	Identical to the previous case but the receiver is placed to a room corner or range along a narrow floor.
< 1 m	Metal-reinforced ceilings at upright penetration angle (in strong dependence of reinforcement density and antenna positions).

**Table 3.2** Device coverage distance

#### 3.1 Reception

<b>Number of profiles</b>	14
<b>Number of devices in each profile</b>	5 <sup>1</sup> 2
<b>Number of signals in each profile</b>	6

Profile Index Rx	Signal	EEP
0	On/Off	[05-02-xx] [05-03-xx] [06-00-01] [07-10-01] [07-10-02] [07-10-05]
1	Mode	[05-02-xx] [05-03-xx]
2	Fan Speed	[05-02-xx] [05-03-xx] [07-10-01] [07-10-02] [07-10-04] [07-10-07] [07-10-08] [07-10-09]
3	N/A	N/A
4	Set point Temperature	[05-02-xx] [05-03-xx] [07-10-01] [07-10-02] [07-10-03] [07-10-04] [07-10-05] [07-10-06] [07-10-0A] [07-10-10] [07-10-11] [07-10-12]
5	Ambient Temperature	[07-02-05] [07-02-06] [07-10-01] [07-10-02] [07-10-03] [07-10-04] [07-10-05] [07-10-06] [07-10-07] [07-10-08]

<sup>1</sup> Profile index 5 and 7 can handle only one device

<sup>2</sup> Profiles E and F can handle up to 5 devices with normal precedure or 1 if use the Multiteach-in process. More info in the User Manual

	(virtual)	[07-10-09] [07-10-0A] [07-10-0B] [07-10-0C] [07-10-0D] [07-10-10] [07-10-11] [07-10-12] [07-10-13] [07-10-14]
6	Window contact	[05-02-xx] [05-03-xx] [06-00-01] [07-30-02]
7	KEY CARD	[05-04-01]
8	Occupancy sensor	[07-07-01] [07-08-01] [07-08-02]
9	Horizontal Swing	[05-02-xx] [05-03-xx]
A	Vertical Swing	[05-02-xx] [05-03-xx]
B	Ambient temperature (Profiles 5 & F have priority over it).	07-02-05] [07-02-06] [07-10-01] [07-10-02] [07-10-03] [07-10-04] [07-10-05] [07-10-06] [07-10-07] [07-10-08] [07-10-09] [07-10-0A] [07-10-0B] [07-10-0C] [07-10-0D] [07-10-10] [07-10-11] [07-10-12] [07-10-13] [07-10-14]
E	A.C profile <sup>1</sup>	[07-20-10] [07-10-03] [07-20-11]
F	A.C profile <sup>2</sup>	[07-20-10] [07-10-03] [07-20-11]

### 3.2 Transmission

<b>Number of profiles</b>	10
<b>Number of signals in each profile</b>	6

Profile Index Tx	Signals	EEP
0	On/Off	[05-02-01]
1	Alarm State	[05-02-01]
2	Set point Temperature	[07-02-05]
3	Ambient Temperature	[07-02-05]
4	Ambient Temperature, Set point Temperature, Fan Speed, On/Off	[07-10-01]
5	AC interface: Mode, fan speed, vane position, sensors and on/off	[07-20-10]
6	Set point Temperature, Ambient Temperature	[07-10-03]
7	AC interface: AC Error code, Error state and disablements	[07-20-11]
8 to D	N/A	
E	All	[07-20-10] <sup>3</sup> [07-10-03] [07-20-11]
F	All	[07-20-10] <sup>3</sup> [07-10-03] [07-20-11]

<sup>1</sup> It doesn't enable Virtual temperature

<sup>2</sup> It enables Virtual temperature

<sup>3</sup> Multiteach-in process: The three EEP's are sent one after the other pressing the teach-in button only once. More info in the User Manual

## 4. IntesisBox® DK-AC-ENO-1 / 1C Daikin Interface

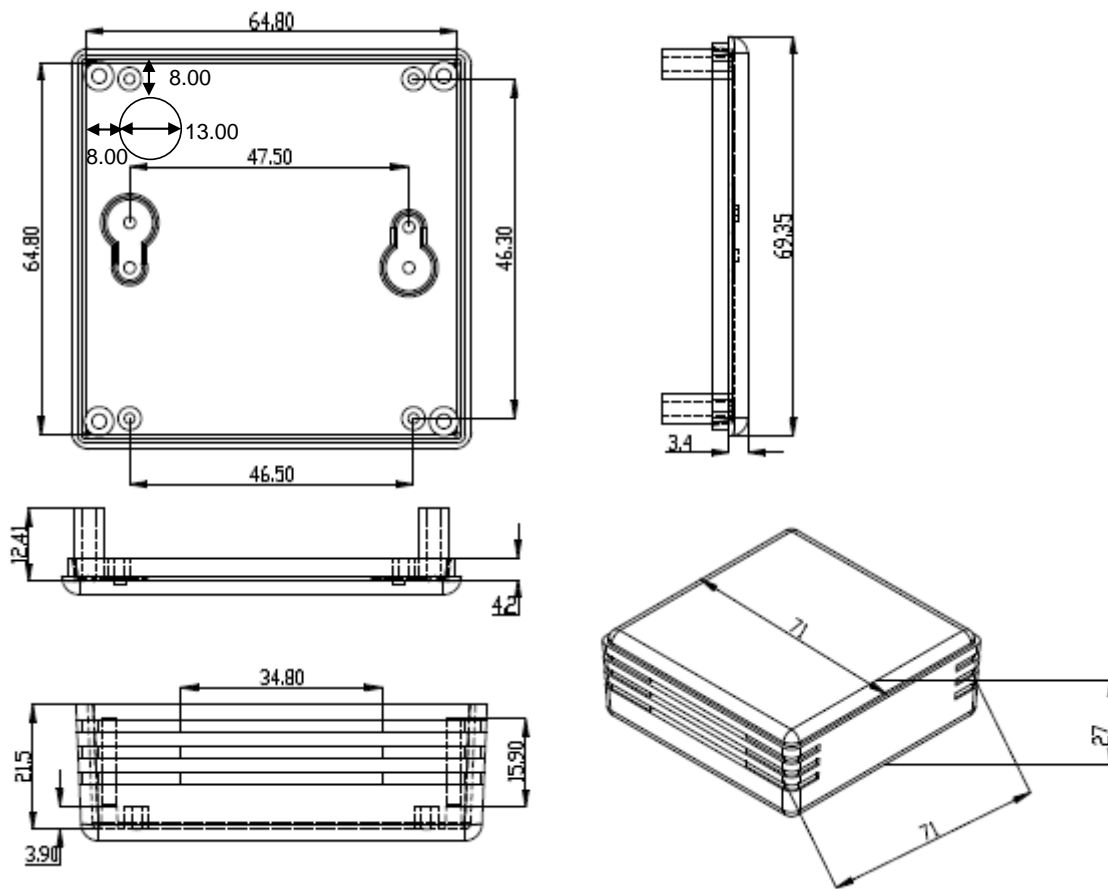
A list of Daikin indoor unit model references compatible with DK-AC-ENO-1 / 1C and their available features can be found in:

[http://www.intesis.com/pdf/IntesisBox\\_DK-AC-xxx-1\\_AC\\_Compatibility.pdf](http://www.intesis.com/pdf/IntesisBox_DK-AC-xxx-1_AC_Compatibility.pdf)

## 5. Technical specifications

<b>Envelope</b>	ABS (UL 94 HB). 2,5 mm thickness
<b>Dimensions</b>	71 x 71 x 27 mm
<b>Weight</b>	60g
<b>Color</b>	White
<b>Power supply</b>	12V, 35mA typical Doesn't require external power supply (supplied by the AC Unit)
<b>Mounting options</b>	Wall
<b>LED indicators (internal)</b>	1 x AC unit state 1 x EnOcean state
<b>Configuration</b>	Teach-in and Learning EnOcean protocol Remote management configuration
<b>Operating Temperature</b>	From -25°C to 85°C
<b>Operating humidity</b>	<93% HR, no condensation
<b>Stock humidity</b>	<93% HR, no condensation
<b>RoHS conformity</b>	Compliant with RoHS directive (2002/95/CE).
<b>Certifications</b>	DK-AC-ENO-1: <ul style="list-style-type: none"> <li>• CE</li> </ul> DK-AC-ENO-1C: <ul style="list-style-type: none"> <li>• FCC (ID: SZV-STM300C)</li> <li>• IC (ID: 5713A-STM300C)</li> </ul>

## 6. Dimensions



**Figure 6.1** Device Dimensions