IntesisBox®
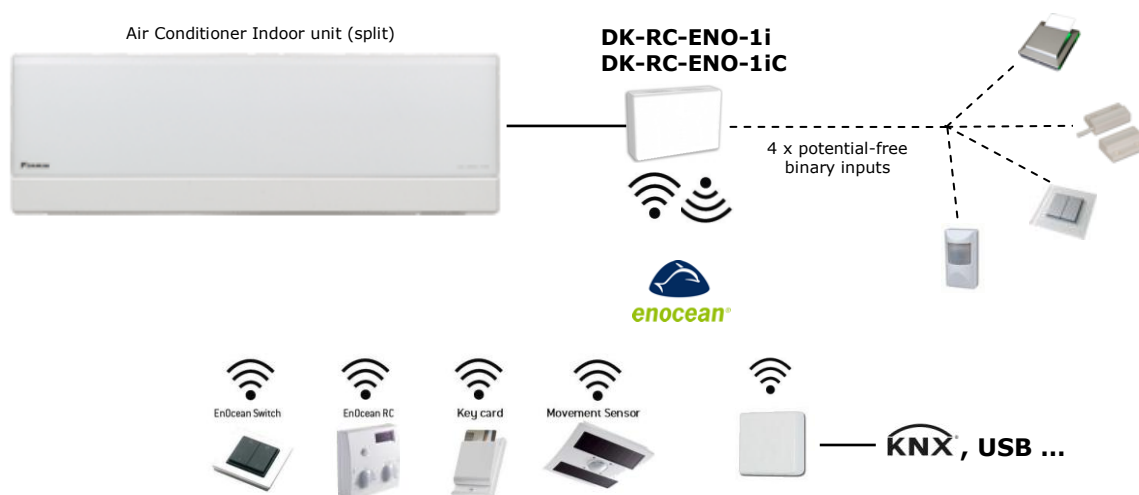## DK-RC-ENO-1i (868 MHz)
DK-RC-ENO-1iC (315 MHz)

Interface EnOcean for DAIKIN Air Conditioners
(SKY & VRV Line)

IntesisBox® DK-RC-ENO-1i allows monitoring and control, fully bi-directionally, all the functioning parameters of DAIKIN Air Conditioners from EnOcean installations.

- Small dimensions.

- Quick installation and possibility of hidden installation.

- External power not required.

- Direct connection to the AC indoor unit (split unit).

- Fully EnOcean interoperable. Control and monitoring, from sensors or gateways, of the internal variables of the indoor unit and error codes and indication.

- Use the air conditioner ambient temperature or the one measured by an EnOcean temperature sensor or Thermostat.

- AC unit can be controlled simultaneously by the remote control of the AC unit and by EnOcean devices.

- Advanced control functions: use it as a room controller.

- 4 binary inputs. They work as standard EnOcean binary inputs as well as being used to control the AC directly.

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1. EnOcean Interface

- DK-RC-ENO-1i: working at 868 MHz (Europe)

- DK-RC-ENO-1iC: Working at 315 MHz (USA and Asia)

Coverage	Conditions
< 300 m	Open areas
< 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 1.1 Device coverage distance

1.1 Reception Channels

Reception channels where up to 5 devices can be linked. The links can be achieved using the manual teach-in learning procedures or using Intesis Configuration Software.

Index	Devices	Signals		
0	Device_8263, Device_EE39, Device_02E2	On/Off	+	-
1	Device_EE39	Mode	+	-
2	Device_1234	Fan Speed	+	-
3		Up/Down Vane position	+	-
4	Device_8263	Setpoint Temp	+	-
5		Ambient Temp	+	-
6	Device_A605	Window Contact	+	-
7		On/Off (KeyCard only)	+	-
8		Occupancy	+	-
9		Up/Down Vane position	+	-
10		Left/Right Vane position	+	-
11		Ambient Temp (Sensing temperature only)	+	-
14		On/Off, Window Contact, Setpoint Temp	+	-
15		On/Off, Window Contact, Setpoint Temp, Ambient Temp	+	-

Tx Table | Rx Table | Configuration | Information

Figure 1.1 Reception channels with their associated signals and devices

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1.2   Transmission Channels

Transmission channels to be used to teach the Air conditioner interface into other devices. As in the reception channels the procedure can be done manually as well as using Intesis Configuration Software.

Index	EEP	Signals	ID	
0	[05 02 01]	On/Off	FF8802E0	Teach
1	[05 02 01]	Alarm State	FF8802E1	Teach
2	[07 02 05]	Setpoint Temp	FF8802E2	Teach
3	[07 02 05]	Ambient Temp	FF8802E3	Teach
4	[07 10 01]	Ambient Temp, Setpoint Temp, Fan Speed, On/Off	FF8802E4	Teach
5	[07 20 10]	Mode, Fan Speed, Up/Down Vane position, On/Off	FF8802E5	Teach
6	[07 10 03]	Setpoint Temp, Ambient Temp	FF8802E6	Teach
7	[07 20 11]	Window Contact, Alarm Code, Disablement, Alarm State	FF8802E7	Teach
8	[05 02 01]	Input 1	FF8802E8	Teach
9	[05 02 01]	Input 2	FF8802E9	Teach
10	[05 02 01]	Input 3	FF8802EA	Teach
11	[05 02 01]	Input 4	FF8802EB	Teach
15	[07 20 10] [07 20 11] [07 10 03]	All	FF8802EF	Teach

⟶ Tx Table   ⟵ Rx Table   ✖ Configuration   ⓘ Information

Figure 1.2 Transmission channels with their EEPs and unique ID's

1.3   Configuration

Configure the behavior of the AC interface, its advanced functionalities as well as the binary inputs using Intesis Configuration Software.

Machine Operation

Index	Name	Units	Value	Description	Allowed range
30	Machine Mode	<enum>	NORMAL	In "LIMITED_SETPOINT", machine setpoint range is adjusted to its current mode. In "AUTOCHANGEOVER", mode is decided automatically using Ambient Temp. Then, setpoint range is adjusted dynamically. In "NORMAL", no action is performed. Setpoint limits are the same to the machine.	
31	Threshold Ambient Temp. Cool	ºC	26	Temperature above which machine is changed to mode Cool, when "AUTOCHANGEOVER" is configured.	Range: 16 .. 30
32	Threshold Ambient Temp. Heat	ºC	21	Temperature under which machine is changed to mode Heat, when "AUTOCHANGEOVER" is configured.	Range: 16 .. 30
33	Min Setpoint Cool	ºC	24	Minimum setpoint allowed when machine is in Cool mode and "LIMITED_SETPOINT" mode is configured.	Range: 16 .. 30
34	Max Setpoint Cool	ºC	28	Maximum setpoint allowed when machine is in Cool mode and "LIMITED_SETPOINT" mode is configured.	Range: 16 .. 30
35	Min Setpoint Heat	ºC	19	Minimum setpoint allowed when machine is in Heat mode and "LIMITED_SETPOINT" mode is configured.	Range: 16 .. 30
36	Max Setpoint Heat	ºC	23	Maximum setpoint allowed when machine is in Heat mode and "LIMITED_SETPOINT" mode is configured.	Range: 16 .. 30
37	Wake Up Time	seconds	120	Time interval to send periodically EnOcean data telegrams. Every Tx profile is updated, at least, at this time interval	Range: 100 .. 510

Window Operation

Index	Name	Units	Value	Description	Allowed range
1	Window reload last value	<bool>	False	If true, previous on/off state is restored when all windows are closed	
2	Window lock when open	<bool>	True	If true, on/off state is forced to 'off' while window contact is opened	
3	Window Timeout	minutes	1	Timeout to turn off the Machine when a window is opened	Range: 0 .. 30

⌄ **Keycard Operation**
⌄ **Occupancy Operation**
⌄ **Input Operation**
⌄ **Radio Operation**

⟶ Tx Table   ⟵ Rx Table   ✖ Configuration   ⓘ Information

Figure 1.3 Device parameter configuration

Intesis software

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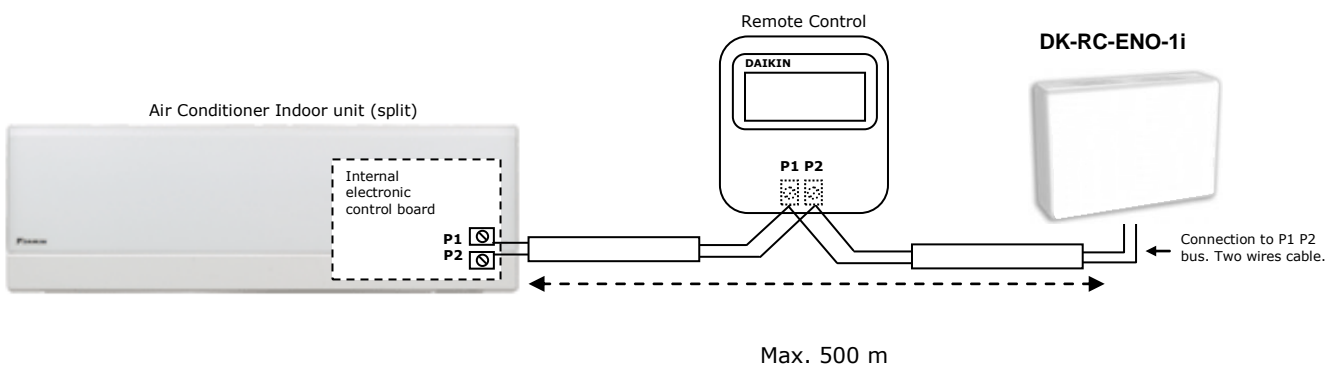tel   +34 938047134

2. Connections

Connection with the Air conditioner indoor unit

DK-RC-KNX-1 can be used with Daikin Remote Controllers or without them.

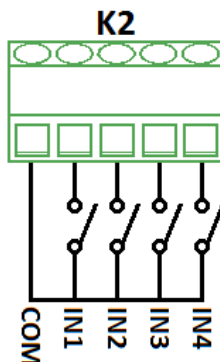- DK-RC-ENO-1i without DAIKIN Remote Controller

Max. 500 m
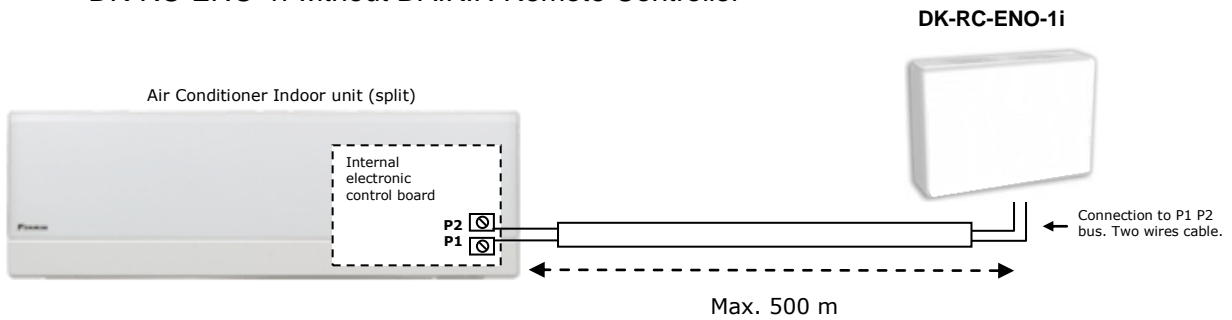
- DK-RC-ENO-1i with DAIKIN Remote Controller

Max. 500 m

Connection to the binary inputs:

The binary inputs are connected to the interface (**K2** connector) and to the contacts on the other side.

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3. Technical Specifications

Envelope	ABS (UL 94 HB). 2,5 mm thickness
Dimensions	70 x 100 x 27 mm
Weight	90g
Color	White
Power supply	12 V, 80mA typical Doesn't require external power supply (supplied by the AC Unit)
Mounting	Wall.
LED indicators (internal)	1 x AC unit state 1 x EnOcean state
Binary inputs	4 x Potential-free binary inputs. Signal cable length: 5m unshielded, may be extended up to 20m with twisted. Compliant with the following standards: IEC61000-4-2 : level 4 - 15kV (air discharge) - 8kV (contact discharge) MIL STD 883E-Method 3015-7 : class3B
Configuration	Manual procedures: Teach-in and Learning Remote wireless Configuration from PC[1]
Operating Temperature	From -25ºC to 85ºC
Operating humidity	<93% HR, no condensation
Stock humidity	<93% HR, no condensation
RoHS conformity	Compliant with RoHS directive (2002/95/CE).

Certifications	DK-RC-ENO-1i:
	
	• CE conformity to EMC directive (2004/108/EC) and Low-voltage directive (2006/95/EC)
	
	   o EN 61000-6-2
	
	   o EN 61000-6-3
	
	   o EN 60950-1
	
	   o EN 50491-3
	
	DK-RC-ENO-1iC:
	
	• FCC (*ID: SZV-STM300C*)
	
	• IC (ID*: 5713A-STM300C)*

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[1] Details can be found in the User Manual

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4. AC Unit Types compatibility.

A list of DAIKIN indoor unit model references compatible with DK-RC-ENO-1i and their available features can be found in:

http://intesis.com/pdf/IntesisBox_DK-RC-xxx-1_AC_Compatibility.pdf

5. Dimensions