IntesisBox®
ME-AC-ENO-1 / 1C
v.1.0.9

EnOcean Interface for Mitsubishi Electric air conditioners.

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

Compatible with all models of Domestic and Mr.Slim lines of air conditioners. Other models from different lines are compatible too (check section 4).

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.

URL | http://www.intesis.com
email | info@intesis.com
tel | +34 938047134

2. Typical application

In Figure 2.1 it is shown a typical application of ME-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 ME-AC-ENO-1 / 1C.
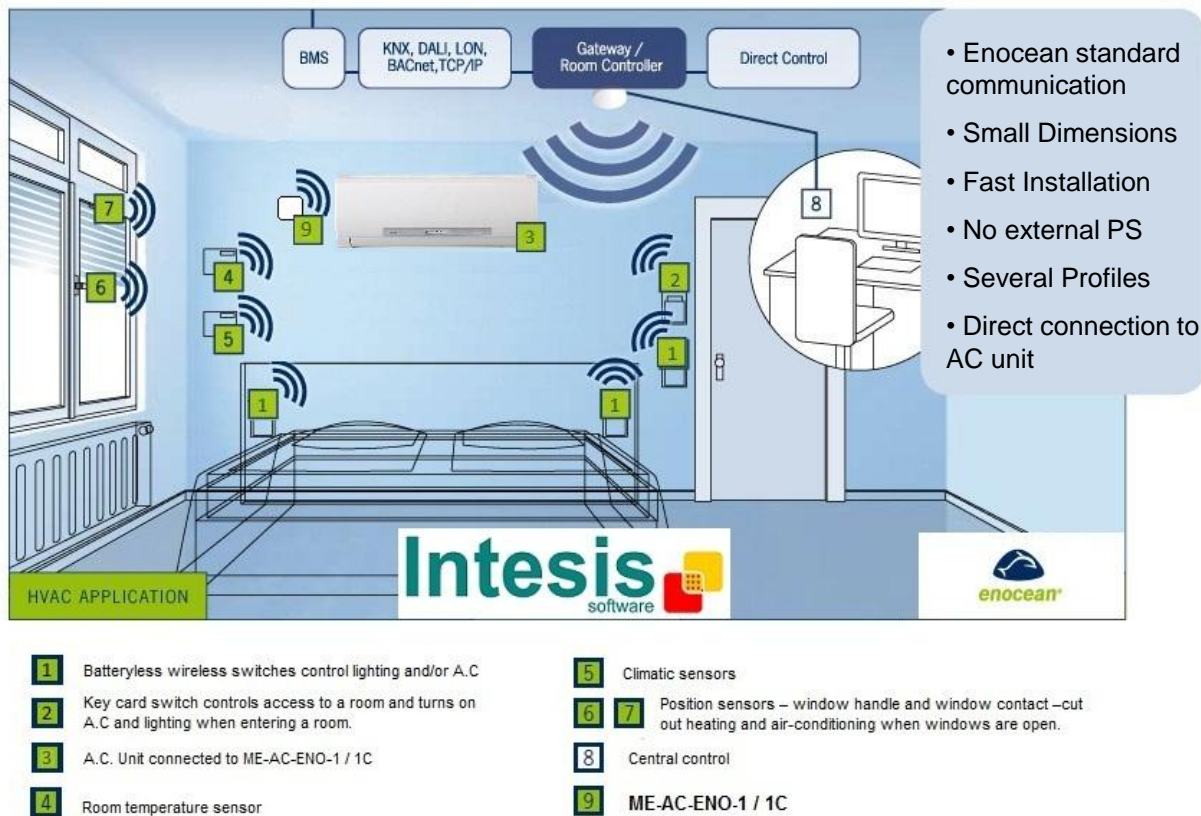

Figure 2.1 Typical application of ME-AC-ENO-1 / 1C in a hotel room

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 ME-AC-ENO-1 / 1C and some of the supported EnOcean devices are shown
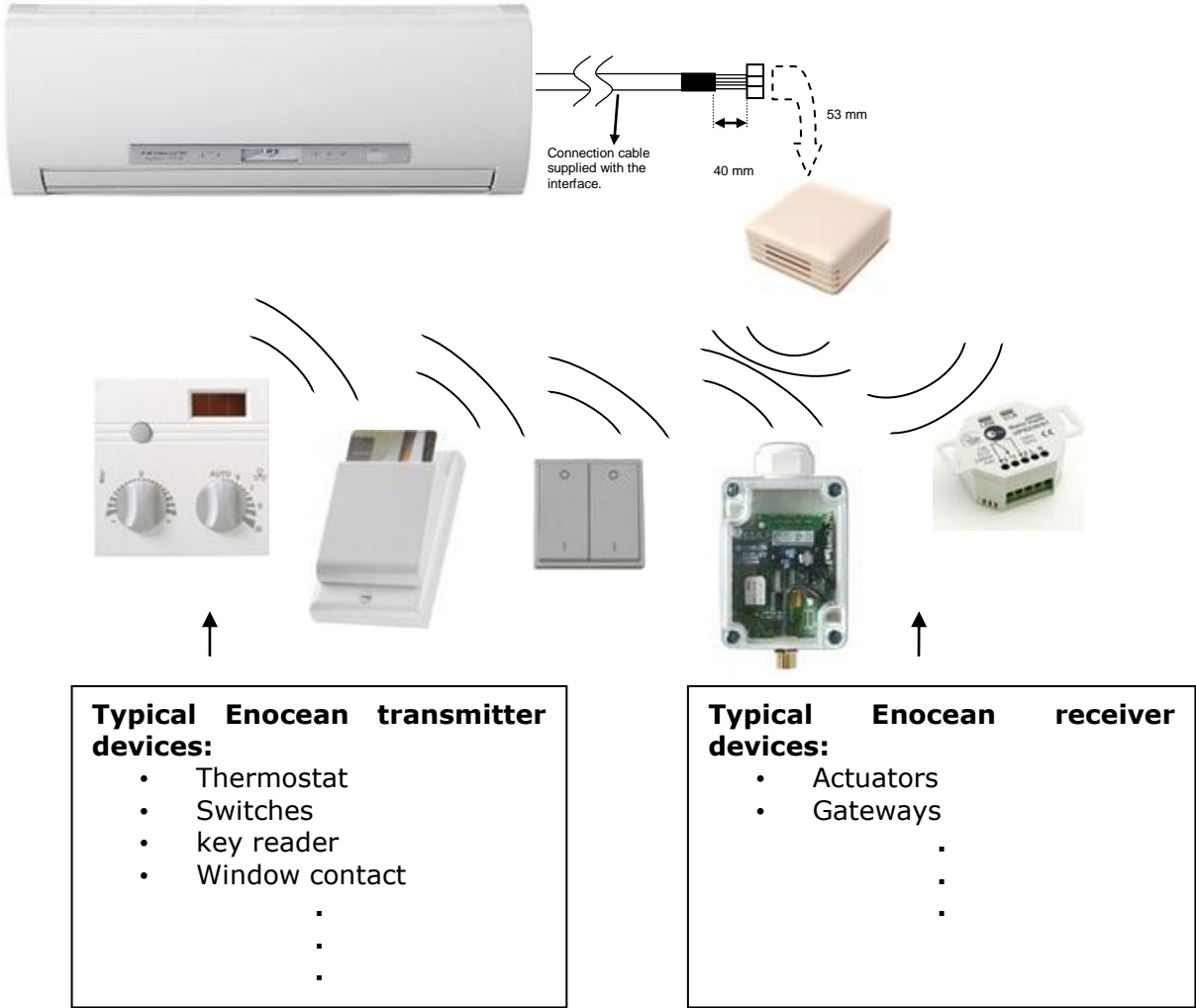

Figure 2.2 Example of ME-AC-ENO-1 / 1C control or actuation devices

URL   http://www.intesis.com
email   info@intesis.com
tel   +34 938047134

3. IntesisBox ME-AC-ENO-1 / 1C EnOcean Interface

EnOcean Interface	
Devices	*ME-AC-ENO-1:* Transceiver @ *868 MHz* *ME-AC-ENO-1C:* Transceiver @ *315 MHz*
Virtual signals	Virtual signals: • Alarm State (0/1) • Window contact (0/1)
Configurable capabilities	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

Number of profiles	10
Number of devices in each profile	5[1] [2]
Number of signals in each profile	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	Vane position	[05-02-xx]
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]

---

[1] Profile index 5 and 7 can handle only one device

[2] Profiles E and F can handle up to 5 devices with normal preceadure or 1 if use the Multiteach-in process. More info in the User Manual

URL	http://www.intesis.com
email	info@intesis.com
tel	+34 938047134

	(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]
E	A.C profile [1]	[07-20-10] [07-10-03] [07-20-11]
F	A.C profile [2]	[07-20-10] [07-10-03] [07-20-11]

3.2 Transmission

Number of profiles	10
Number of signals in each profile	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][3] [07-10-03] [07-20-11]
F	All	[07-20-10][3] [07-10-03] [07-20-11]

---

[1] It doesn't enable Virtual temperature

[2] It enables Virtual temperature

[3] 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 ME-AC-ENO-1 / 1C Mitsubishi Interface

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

http://www.intesis.com/pdf/IntesisBox_ME-AC-xxx-1_AC_Compatibility.pdf

5. Technical specifications

Envelope	ABS (UL 94 HB). 2,5 mm thickness
Dimensions	71 x 71 x 27 mm
Weight	60g
Color	White
Power supply	12V, 35mA typical Doesn't require external power supply (supplied by the AC Unit)
Mounting options	Wall
LED indicators (internal)	1 x AC unit state 1 x EnOcean state
Configuration	Teach-in and Learning EnOcean protocol Remote management configuration
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	ME-AC-ENO-1: • CE ME-AC-ENO-1C: • FCC (*ID: SZV-STM300C*) • IC (ID*: 5713A-STM300C*)

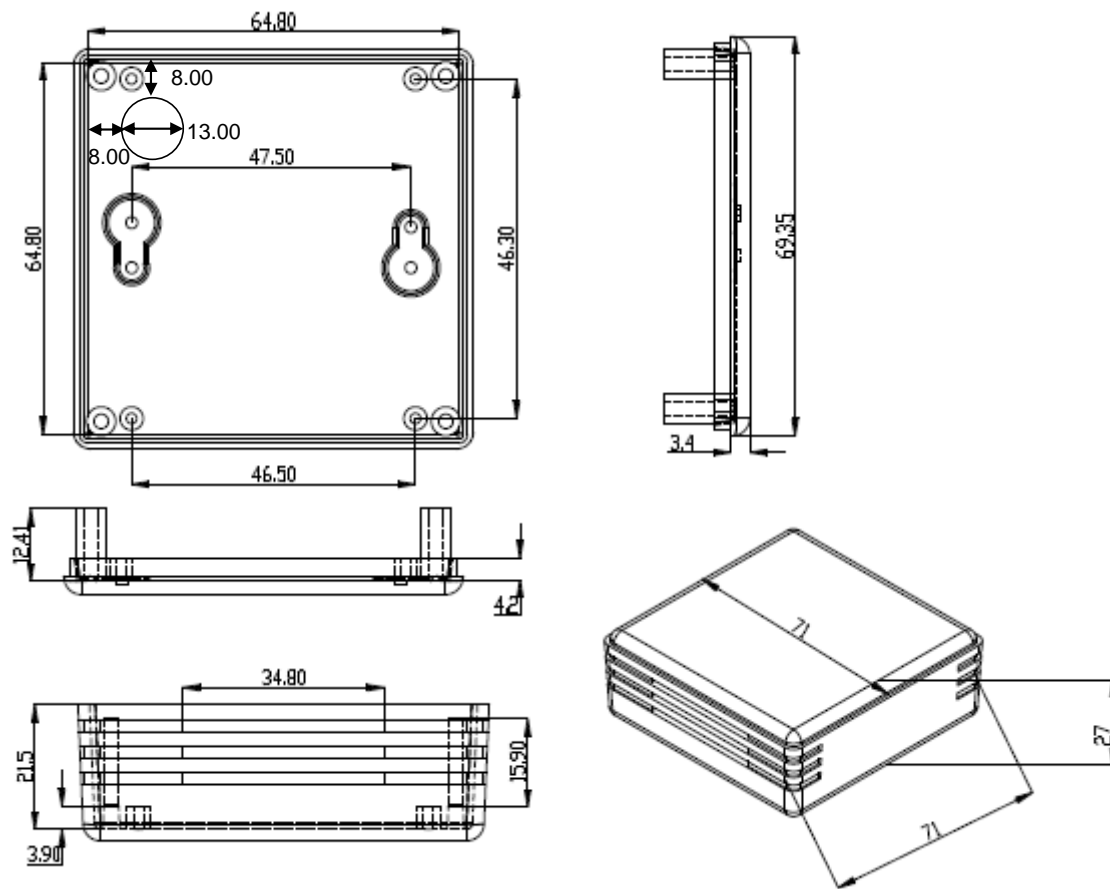|	
URL	http://www.intesis.com
email	info@intesis.com
tel	+34 938047134

6. Dimensions

Figure 6.1 Device dimensions

URL   http://www.intesis.com
email   info@intesis.com
tel   +34 938047134