



IntesisBox[®]

KNX – LG Air Conditioning

Gateway for integration of LG Air Conditioners with KNX control systems.

1. Main Features

- Direct connection to KNX TP-1 (EIB) bus.
- Direct connection to LG outdoor unit's EIA485 bus.
- Simple configuration using the software LinkBoxEIB supplied with the purchase of IntesisBox with no additional cost.
- Integrates¹ LG Air Conditioners in your KNX projects.
- Four models available:
 - Ref. LG-AC-KNX-4, with capacity of up to 4 indoor units.
 - Ref. LG-AC-KNX-8, with capacity of up to 8 indoor units.
 - Ref. LG-AC-KNX-16, with capacity of up to 16 indoor units.
 - Ref. LG-AC-KNX-64, with capacity of up to 64 indoor units.

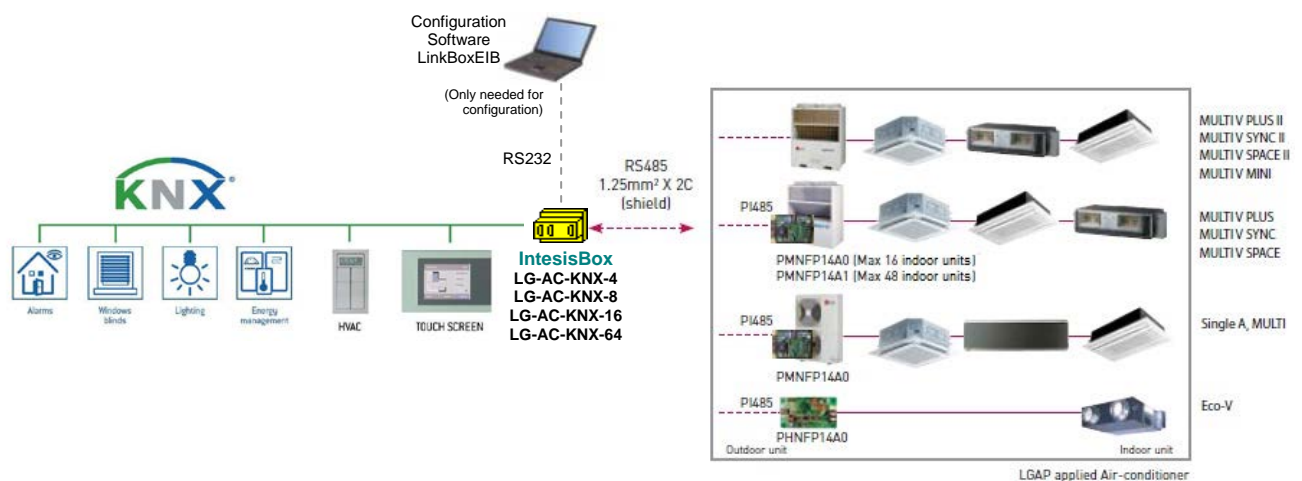


Figure 1.1 Typical System integration using the *IntesisBox[®]* KNX – LG AC

¹ This integration requires in some cases additional cards installed in the outdoor units of the LG AC system, the model of additional card will depend in each case of the line of indoor units used (see details in the figure above).

2. Configuration Software: LinkBoxEIB

LinkBoxEIB	<ul style="list-style-type: none"> Visual engineering tool, easy of use, for IntesisBox’s configuration and monitoring compatible with Microsoft Windows operating systems, supplied with the purchase of IntesisBox. Multi-window tool allowing to monitor simultaneously the communication activity with both protocols (systems), real time values for all the points allowing to modify any value (very useful for test purposes), console window showing debug and operation status messages, and configuration windows to configure all IntesisBox’s parameters and points. Point's configuration in plain text files (tab separated) for easy and quick configuration using Microsoft Excel (very useful in projects with a lot of points). Allows configuring the IntesisBox’s parameters and points while in off-line (not connected to the IntesisBox). Connection to the IntesisBox for download the configuration and monitoring by using serial COM port of the PC (serial cable also supplied). Allows configuring all the external protocols available for IntesisBox® KNX series. Upgrades for this software tool available free of charge whenever a new version or feature is available. Multi-project tool allowing having in the engineer’s PC the configuration for all the sites with different IntesisBox® KNX series gateways. Multi-language tool, all the language-dependent strings are in a plain text file (tab separated) for easy modification or addition of new languages.
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IU	Cod	Signal	EIS	Group	Listening addresses	R	W	T	U	Active
1	0	00-Communication Errc	Communication AC Error: 0-Ok, 1-Error (R)	01 - Switching (1 bit)		R		T		0-No
2	0	01 - OnOff	On/Off: 0-Off, 1-On (R/W)	01 - Switching (1 bit)		R	W	T		0-No
3	0	02 - Mode	Mode: 0-Cool, 1-Heat, 2-Dry, 3-Fan, 4-Auto <<Only AC>> 0-Normal, 1-Heat_Ecl	14 - Counter (8 bit)		R	W	T		0-No
4	0	03 - Cool	Mode: 1- Cool (R/W)	01 - Switching (1 bit)		R	W	T		0-No
5	0	04 - Heat	Mode: 1- Heat (R/W)	01 - Switching (1 bit)		R	W	T		0-No
6	0	05 - Dry	Mode: 1- Dry (R/W)	01 - Switching (1 bit)		R	W	T		0-No
7	0	06 - Fan	Mode: 1- Fan (R/W)	01 - Switching (1 bit)		R	W	T		0-No
8	0	07 - Auto	Mode: 1- Auto (R/W)	01 - Switching (1 bit)		R	W	T		0-No
9	0	15 - SetRoomTemp	Setpoint temperature: Celsius value, 16 to 30 <<Only AC>> (R/W)	05 - Float (16 bit)		R	W	T		0-No
10	0	16 - RoomTemp	Ambient temperature: Celsius value 10 to 40 <<Only AC>> (R)	05 - Float (16 bit)		R		T		0-No
11	0	14 - Swing	Air direction: 0-Stop, 1-Start <<Only AC>> (R/W)	14 - Counter (8 bit)		R	W	T		0-No
12	0	08 - FanSpeed	Fan speed: 0-Auto, 1-Low, 2-Middle, 3-High (R/W)	14 - Counter (8 bit)		R	W	T		0-No
13	0	9 - Auto	Fan speed: 1-Auto (R/W)	01 - Switching (1 bit)		R	W	T		0-No
14	0	10 - Low	Fan speed: 1- Low (R/W)	01 - Switching (1 bit)		R	W	T		0-No
15	0	11 - Middle	Fan speed: 1- Middle (R/W)	01 - Switching (1 bit)		R	W	T		0-No
16	0	12 - High	Fan speed: 1- High (R/W)	01 - Switching (1 bit)		R	W	T		0-No
17	0	13 - Lock	Remote Control: 0-Enabled, 1-Disabled (R/W)	01 - Switching (1 bit)		R	W	T		0-No
18	0	17 - ErrorCode	Error code: 0-No error, X-Error (1 to 255) (R)	10 - Counter (16 bit)		R		T		0-No
19	0	18 - ErrorSign	Error sign: 0-Normal, 1-Error (R)	01 - Switching (1 bit)		R		T		0-No
20	0	19 - FilterSign	Filter alarm: 0-Normal, 1-Sign <<Only VENT>> (R)	01 - Switching (1 bit)		R		T		0-No
21	0	20 - FilterSignReset	Filter reset: 1-Filter reset <<Only VENT>> [w]	01 - Switching (1 bit)			W			0-No
22	1	00-Communication Errc	Communication AC Error: 0-Ok, 1-Error (R)	01 - Switching (1 bit)	9/1/0	R		T		1-Yes
23	1	01 - OnOff	On/Off: 0-Off, 1-On (R/W)	01 - Switching (1 bit)	9/1/1	R	W	T		1-Yes
24	1	02 - Mode	Mode: 0-Cool, 1-Heat, 2-Dry, 3-Fan, 4-Auto <<Only AC>> 0-Normal, 1-Heat_Ecl	14 - Counter (8 bit)	9/1/2	R	W	T		1-Yes
25	1	03 - Cool	Mode: 1- Cool (R/W)	01 - Switching (1 bit)	9/1/3	R	W	T		1-Yes
26	1	04 - Heat	Mode: 1- Heat (R/W)	01 - Switching (1 bit)	9/1/4	R	W	T		1-Yes
27	1	05 - Dry	Mode: 1- Dry (R/W)	01 - Switching (1 bit)	9/1/5	R	W	T		1-Yes

3. LG to KNX integration

Property	EIS type	Signal type (R/W)	Description / Status
On / Off	1 – Switching (1bit)	R/W	Start/Stop AC/VENT Unit 0 – OFF, 1 – ON
Mode	14 – Counter (8bit)	R/W	AC Mode 0 – COOL, 1 – HEAT, 2 – DRY, 3 – FAN, 4 – AUTO Mode (VENT unit) 0 – NORMAL, 1 – HEAT EXCHANGE, 2 – AUTO
Mode::Cool	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
Mode::Heat	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
Mode::Dry	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
Mode::Fan	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
Mode::Auto	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
Setpoint Temperature	EIS 5 – Float (2byte)	R/W	Temperature Set Point (only integer numbers allowed) 16..30 °C (This parameter is not applicable for VENT units)
Ambient Temperature	EIS 5 – Float (2byte)	R	Ambient Temperature (only integer numbers) Read: 10°C to 40°C (This parameter is not applicable for VENT units)
Swing	14 – Counter (8bit)	R/W	AC Swing 0 – Stop, 1 – Start (This parameter is not applicable for VENT units)
Fan Speed	14 – Counter (8bit)	R/W	AC Fan Speed 0 – AUTO, 1 – LOW, 2 – MID, 3 – HIGH
FanSpeed::Auto	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
FanSpeed::Low	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
FanSpeed::Mid	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
FanSpeed::High	1 – Switching (1bit)	R/W	0 – Inactive, 1 – Active
Remote Restriction	1 – Switching (1bit)	R/W	Remote Control Enablement / Disablement 0 – Remote control enabled, 1 – Remote control disabled
Error Sign	1 – Switching (1bit)	R/W	Error Code / Communication error with the Indoor Unit 0 – No error present, 1 – Error code present, or communication error with the indoor unit
Error Code	10 – Counter (16bit)	R/W	Error Code More info in User Manual
Filter Alarm	1 – Switching (1bit)	R/W	Filter Alarm Status 0 – No alarm, 1 – Filter alarm present (This parameter is not applicable for AC units)
Filter Alarm Reset	1 – Switching (1bit)	W	Filter Alarm Reset Write: 1 – Filter alarm reset (This parameter is not applicable for AC units)

4. Technical characteristics

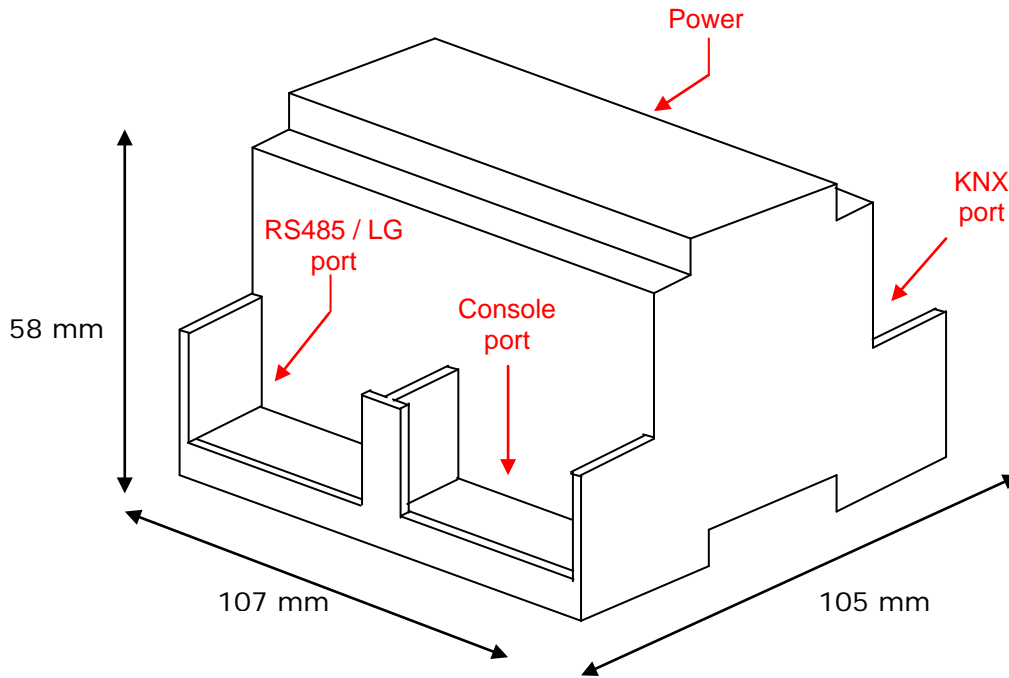


Envelope	Plastic type PC (UL 94 V-0). Size: 107mm x 105mm x 58mm.
Color	Grey. RAL 7035.
Power	9 to 30VDC +/-10% 1.4W. 24VAC +/-10% 1.4VA. Power connector is a 2 pole plug-in screw terminal block.
Mounting options	Wall DIN rail EN60715 TH35.
KNX (EIB) port	1 x KNX TP1 (EIB) opto-isolated (Plug-in screw terminal block 2 poles)
RS485 (LG) port	1 x RS485 connector (Plug-in screw terminal block 2 poles)
LED indicators	1 x Power. 2 x KNX port activity (Tx, Rx). 2 x RS485 port (Tx, Rx). 1 x KNX programming/bus. ¹
Push buttons	1 x KNX programming.
Console port	RS232. DB9 female connector (DCE).
Configuration	Via console port. ²
Firmware	Allows upgrades via console port.
Operational temperature range	-40°C to +70°C
Operational humidity range	5% to 95%, non condensing
Protection	IP20 (IEC60529).
RoHS conformity	Compliant with RoHS directive (2002/95/CE).
Certifications	CE

¹ Not operational for the moment. Reserved for future use.

² Along with the device it is also supplied a standard DB9 male - DB9 female 1.8 m. cable for configuring and monitoring the device using a PC via serial COM port. The configuration software, compatible with MS Windows® operating systems, is also supplied.

5. Dimensions



Recommended available space for its installation into a cabinet (wall or DIN rail mounting), with space enough for external connections:

