

## Safety Instructions

### **WARNING**

Follow carefully this safety and installation instructions. Improper work may lead to serious harmful for your health and also may damage seriously the IntesisBox and/or any other equipment connected to it.

- IntesisBox must be installed by accredited electrician or similar technical personnel, following all the safety instructions given here, and in accordance always with the country legislation for installation of electric equipment.
- IntesisBox can not be installed outdoors or exposed to direct solar radiation, water, high relative humidity or dust.
- IntesisBox must only be installed in a restricted access location
- In wall mount, fix firmly IntesisBox on a not vibrating surface following the instructions below.
- Mounting inside a metallic cabinet properly connected to earth is recommended.
- Disconnect always power of any wires before manipulating and connecting them to IntesisBox.
- Respect always the expected polarity of power and communication cables when connecting them to IntesisBox.
- Supply always a correct voltage to power IntesisBox, see details of voltage range admitted by the device in the technical characteristics below.
- This device was designed for installation in an enclosure. To avoid electrostatic discharge to the unit in environments with static levels above 4 kV precautions should be taken when the device is mounted outside an enclosure. When working in an enclosure (ex. making adjustments, setting switches, etc.) typical anti-static precautions should be observed before touching the unit.

## Installation instructions

- Disconnect the mains power and power of any bus or communication cable before connecting it to IntesisBox.
- Mount IntesisBox following the instructions given below, respecting the safety instructions given above.
- Connect the mains power cable to the supply voltage terminal block of IntesisBox.
- Circuit-breaker must be used before the mains power cable. Rating 250V-6A
- Connect the communication cables to IntesisBox, see details on the user's manual.
- Power IntesisBox and the rest of devices connected to it.

## Configuration and setup

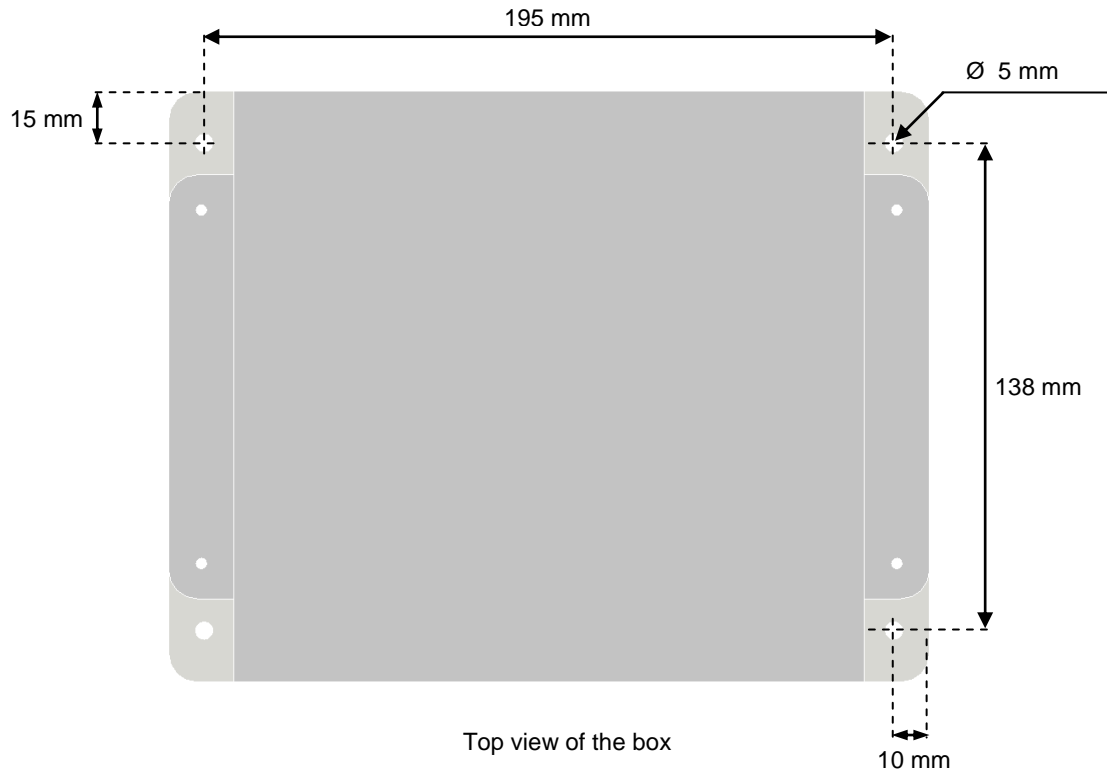
Use the software LinkBoxMB to configure IntesisBox, follow the instructions of the user's manual for more details.

**See instructions to download and install the latest version of LinkBoxMB and the user's manual at**

<http://www.intesis.com/down/mb/linkboxmb.html>

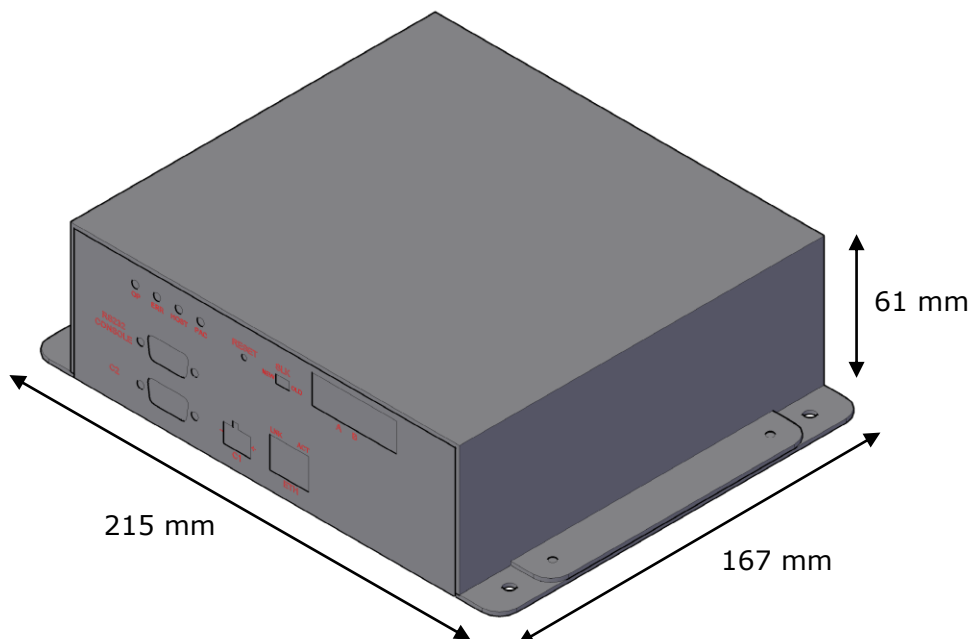
## Wall mount

Use the holes to fix the box in the wall using screws. Use the template below for the wall holes:



## Dimensions

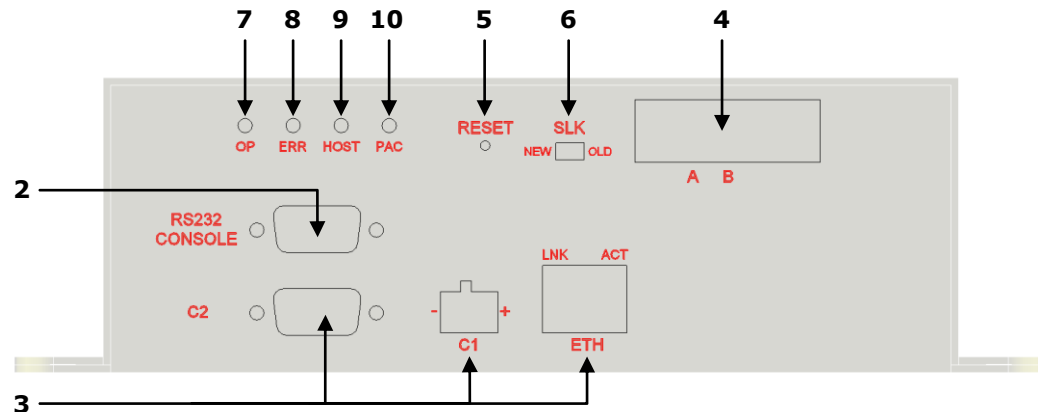
External dimensions.



Connections and indications



Device back view



Device front view

Notes:

1. Mains power connection: 230VAC (see section Technical Characteristics). The device provides switch and a protection fuse. Use the supplied cable with IntesisBox (1,6m).
2. Console connection: Connect the supplied console cable with IntesisBox (1.8 meters long, standard DB9 male-DB9 female) between your PC and the console port of the device. Use the software LinkBoxMB to configure IntesisBox. See the user's manual for details.
3. Modbus connection: IntesisBox allows different connection types: Modbus TCP (ETH port), Modbus RTU EIA485 (C1 port), or Modbus RTU EIA232 (C2 port), this must be configured within LinkBoxMB software.
  - Modbus TCP: Connect the cable coming from the Modbus TCP master device to the connector ETH of IntesisBox, use a crossover ethernet CAT5 cable if connecting directly to the Modbus TCP master device, or a straight ethernet CAT5 cable if connecting to a switch or hub of the LAN of the building. If connecting using the LAN of the building contact the network administrator and make sure that TCP/IP traffic and the TCP port used (502 by default) are allowed through all the LAN path.
  - Modbus RTU EIA485: Connect the EIA485 bus to the connector Modbus RTU EIA485 of IntesisBox (C1). Respect the polarity. Remember the characteristics of the standard EIA485 bus: maximum distance of 1200 meters, maximum 32 device connected, and a 120 ohms terminator resistor in each end of the bus. IntesisBox comes with an internal bus biasing circuit which incorporates internal bus terminator resistor, and thus if you connect IntesisBox in one end of the bus then it is not necessary to install additional 120 ohms resistor in that end.
  - Modbus RTU EIA232: Connect the serial EIA232 cable coming from the Modbus RTU master device to the Modbus RTU EIA232 connector of IntesisBox (C2), this is a male DB9 connector (DTE) in which only lines TX, RX and GND are used, see pinout details in the user's manual. Respect the maximum distance of 15 meters for this EIA232 line.
4. A-B connection: Connect the SuperLink® bus coming from the Mitsubishi Heavy Industries AC to the connector A-B of IntesisBox. Respect the polarity, and consult your distributor for more details.
5. The device provides a "RESET" button.
6. The device provides a selector to choose the SuperLink® bus type. If it belong to the OLD version (SuperLink® 1), or to the NEW version (SuperLink® 2).
7. OP led: indication that the device is operative.
8. ERROR led: the led is ON when there is a communication error.
9. HOST led: the led is blinking when there is connectivity between the two circuits that compose IntesisBox.
10. PAC led: the led is blinking when there is activity in the SuperLink® bus, ie when there is communication between IntesisBox and AC system.

## Technical characteristics

Enclosure	Industrial sheet metal. Size: 215mm x 167mm x 61mm. Weight: 2.025 Kg
Color	Gray metalized.
Power	100 to 240VAC~ 50 to 60Hz 5W max. Power connector: C14 (male) <sup>1</sup>
Fuse	250V 1.5A Dimensions: 20x5mm
Terminal wiring (for low-voltage signals)	Per terminal: solid wires or stranded wires (twisted or with ferrule) 1 core: 0.75 ... 1.25mm <sup>2</sup> 2 cores: 0.75 ... 1.25mm <sup>2</sup> 3 cores: not permitted
Mounting	Wall
Modbus TCP port	1 x Ethernet 10Base-T (RJ45).
Modbus RTU ports	1 x Serial EIA232 (DB9 male DTE). SELV 1 x Serial EIA485 (Plug-in screw terminal block 2 poles). SELV
A-B port	1 x Superlink® terminals (Plug-in screw terminal block 2 poles "A" "B"). SELV
LED indicators	2 x Ethernet port link and activity (LNK, ACT). 4 x MHI Interface (OP, ERR, HOST, PAC)
Push buttons	1 x Reset Device
Selectors	1 x SLK selector
Console port	EIA232. (DB9 female DCE). SELV
Configuration	Via console port. <sup>2</sup>
Firmware	Allows upgrades via console port.
Operational temperature range	0°C to +40°C
Operational humidity range	5% to 95%, non condensing
Protection	IP20 (IEC60529).
RoHS conformity	Compliant with RoHS directive (2002/95/CE).
Norms and standards	CE conformity to EMC directive (2004/108/EC) and Low-voltage directive (2006/95/EC) EN 61000-6-2 EN 61000-6-3 EN 60950-1 EN 50491-3

<sup>1</sup> A power cable with connector C14 male 1.6 meters long is supplied with the device.

<sup>2</sup> Standard cable DB9male-DB9female 1.8 meters long is supplied with the device for connection to a PC COM port for configuring and monitoring the device. The configuration software, compatible with Windows® operating systems, is also supplied.