SAFETY INSTRUCTIONS

WARNING

Follow carefully these 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 cannot 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 case of wall mount, fix firmly IntesisBox on a not vibrating surface following the instructions next.

In case of DIN rail mount, fix IntesisBox properly to the DIN rail following the instructions below.

 Mounting on DIN rail inside a metallic cabinet properly connected to earth is recommended.

 Disconnect always power of any wires before manipulating and connecting them to IntesisBox.

 A power supply with a NEC Class 2 or Limited Power Source (LPS) and SELV rated is to be used.

 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.

CONFIGURATION

Use the Configuration Tool to configure the gateway.

See instructions to download and install the latest version at: https://intesisbox.com/intesis/software/intesisbox_maps_installer.exe

Use the Ethernet connection or the Console Port (mini USB type B connector included) to get communication between the gateway and the configuration tool.

Follow instructions of the user's manual for more details.

INSTALLATION

Follow instructions next to properly install the gateway.

Disconnect from mains the power supply before connecting it to IntesisBox.

Disconnect power of any bus or communication cable before connecting it to IntesisBox.

Mount IntesisBox on the wall or DIN rail following the instruction given below, respecting the safety instructions given above.

Connect a NEC Class 2 or Limited Power Source (LPS) and SELV rated power supply to IntesisBox, respect the polarity if DC power or Line and Neutral if AC power. Apply always a voltage within the range admitted by IntesisBox and of enough power (see technical characteristics).

Circuit-breaker must be used before the power supply. 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.

Wall Mount

1. Separate the fixing clips in the bottom of the box, pushing them to the outside until hear the "click" which indicates that now the clips are in position for wall mount, see in the figure below.

2. Use the holes of the to fix the box in the wall using screws. Use the template below for the wall wholes.

DIN Rail Mount

With the clips of the box in their original position, insert first the box in the upper edge of the DIN rail and later insert the box in the down part of the rail, using a small screwdriver and following the steps in the figure below.
**CONNECTIONS**

- **Power Supply:** Modbus RTU (EI485) and Modbus TCP BACnet IP
  - **Modbus RTU:** Must use NEC Class 2 or Limited Power Source (LPS) and SELV rated power supply.
  - **Modbus TCP:** Use an outdoor 100Q termination resistor at the end of the bus (check the gateway user manual for more information).

- **Ethernet:** BACnet IP (UDP) / Modbus TCP (TCP) / Console (UDP & TCP)
  - **BACnet IP:** Connect the EIA485 bus to connectors A3 (+) and A4 (-) of the gateway’s PortA. Respect the polarity.
  - **Modbus TCP:** Connect the EIA485 bus to connectors B1 (+), B2 (-) and B3 (SGND) of the gateway’s PortB. Respect the polarity.

- **Port A / Modbus RTU:** Connect the EIA485 bus to connectors A3 (+), A4 (-) and A1 or A2 (SGND) of the gateway’s PortA. Respect the polarity.
- **Port B / BACnet MSTP:** Connect the EIA485 bus to connectors B1 (+), B2 (-) and B3 (SGND) of the gateway’s PortB. Respect the polarity.

- **Note for PortA and PortB:** Remember the characteristics of the standard EIA485 bus: maximum distance of 1200 meters, maximum 32 devices connected to the bus, and in each end of the bus it must be a termination resistor of 120Ω. The gateway has an internal bus biasing circuit that incorporates the termination resistor. If you install the gateway at one of the ends of the bus, then do not install an additional termination resistor in that end.

- **Console Port:** A USB 2.0 compliant 1000VDC isolation
- **USB port:** Type-A USB 2.0 compliant
  - **Only for USB flash storage device (USB pen drive):** Power consumption limited to 150mA
  - **(NDD connection not allowed):**

- **Push Button:** Button A: Check the user manual
  - **Button B: Check the user manual:**

- **Operation Temperature:** 0°C to +60°C
- **Operational Humidity:** 5 to 95%, no condensation

- **Protection:** IP20 (IEC60529)

- **LED Indicators:**
  - **Onboard LED indicators:**
    - 1 x Button A indicator
    - 1 x Button B indicator

- **Battery:** Size: Coin 20mm x 3.2mm
  - **Capacity:** 3V / 225mAh
  - **Type:** Manganese Dioxide Lithium

- **Enclosure:** Plastic, type PC (UL 94 V-0)
  - **Net dimensions:** (dwxh): 90x88x56 mm
  - **Recommended space for installation:** (dwxh): 130x100x100mm
  - **Color:** Colour Grey. RAL 7035

- **Mounting:** Wall, DIN rail EN60715 TH35.

- **Terminal Wiring:** Per terminal: solid wires or stranded wires (twisted or with ferrule)
  - **1 core:** 0.5mm² ... 2.5mm²
  - **2 cores:** 0.5mm² ... 1.5mm²
  - **3 cores:** not permitted

- **Power:**
  - **1 x Plug-in screw terminal block (3 poles):**
    - 9 to 36VDC +/-10%, Max.: 140mA.
    - 24VAC +/-10%, 50-60Hz, Max.: 127mA
    - Recommended: 24VDC

- **Ethernet:**
  - **1 x Ethernet 10/100 Mbps RJ45**
  - **2 x Ethernet LED:** port link and activity
  - **2 x Port A TX/RX**
  - **2 x Port B TX/RX**

- **Port A:**
  - **1 x Serial EIA485 Plug-in screw terminal block (2 poles):**
    - A
    - B
  - **1 x Plug-in screw terminal block green (2 poles):**
    - SGND (Reference ground or shield)
    - 1500VDC isolation from others ports

- **Switch A (SWA):**
  - **1 x DIP-Switch for serial EIA485 configuration:**
    - Position 1:
      - 0: 120Ω termination active
      - 1: Polarization inactive
    - Position 2-3:
      - 0: 120Ω termination active
      - 1: Polarization inactive

- **PORT B (SWB):**
  - **1 x Serial EIA232 (SUB-D9 male connector):**
    - Reserved for future use
  - **1 x Serial EIA485 Plug-in screw terminal block (3 poles):**
    - A, B, SGND (Reference ground or shield)
    - 1500VDC isolation from others ports
    - (except PORT B: EIA232)

- **Battery:**
  - **Size:** Coin 20mm x 3.2mm
  - **Capacity:** 3V / 225mAh
  - **Type:** Manganese Dioxide Lithium

- **USB port:**
  - **Type-A USB 2.0 compliant**
  - **Only for USB flash storage device (USB pen drive):**
    - **Power consumption limited to 150mA**
      - **(NDD connection not allowed):**

- **Push Button:**
  - **Button A:** Check the user manual
  - **Button B:** Check the user manual

- **Operation Temperature:**
  - **0°C to +60°C**

- **Operational Humidity:**
  - **5 to 95%, no condensation**

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  - **2 x Ethernet LED:** port link and activity
  - **2 x Port A TX/RX**
  - **2 x Port B TX/RX**

- **Port A:**
  - **1 x Serial EIA485 Plug-in screw terminal block (2 poles):**
    - A
    - B
  - **1 x Plug-in screw terminal block green (2 poles):**
    - SGND (Reference ground or shield)
    - 1500VDC isolation from others ports

- **Switch A (SWA):**
  - **1 x DIP-Switch for serial EIA485 configuration:**
    - Position 1:
      - 0: 120Ω termination active
      - 1: Polarization inactive
    - Position 2-3:
      - 0: 120Ω termination active
      - 1: Polarization inactive

- **PORT B (SWB):**
  - **1 x Serial EIA232 (SUB-D9 male connector):**
    - Reserved for future use
  - **1 x Serial EIA485 Plug-in screw terminal block (3 poles):**
    - A, B, SGND (Reference ground or shield)
    - 1500VDC isolation from others ports
    - (except PORT B: EIA232)

- **Switch B (SWB):**
  - **1 x DIP-Switch for serial EIA485 configuration:**
    - Position 1:
      - 0: 120Ω termination active
      - 1: Polarization inactive
    - Position 2-3:
      - 0: 120Ω termination active
      - 1: Polarization inactive

- **Battery:**
  - **Size:** Coin 20mm x 3.2mm
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  - **IP20 (IEC60529):**

- **LED Indicators:**
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    - 1 x Button A indicator
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