# Installation Sheet for IN485FGL001I0xx

*The order code may vary depending on the product seller and the buyer's location.*

Version: 1.0.3

**Owner's record**

Find the serial number on the silver label on the right side of the gateway. For sales or technical assistance, we recommend writing it in the space below:

**SN:**

## Safety Information

Follow these instructions carefully. Improper work may seriously harm your health and damage the gateway and/or any other equipment connected to it.

Only technical personnel, following these instructions and the country legislation for installing electric equipment, can install and manipulate this gateway.

Install this gateway indoors, in a restricted access location, avoiding exposure to direct solar radiation, water, high relative humidity, or dust.

All wires for communication and power supply (if needed) must only be connected to networks without routing to the outside plant. All communication ports are considered for indoor use and must only be connected to SELV circuits.

Disconnect power wires before manipulating and connecting them to the gateway.

Use SELV-rated NEC class 2 or limited power source (LPS) power supply.

Supply the correct voltage to power the gateway. See the Technical Specifications table at the end of this document.

Respect the expected polarity of power (if needed) and communication cables when connecting them to the gateway.

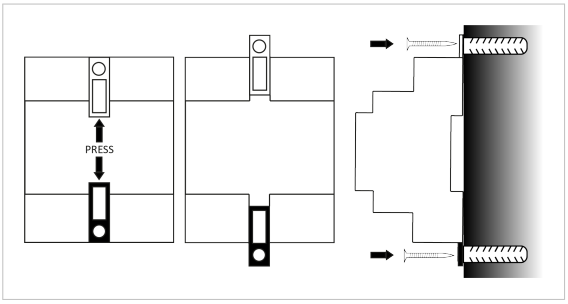
## Mounting

Do not mount the gateway in air-handling units or conducts.

DIN rail mounting inside a grounded metallic cabinet is recommended.

**Wall mounting**

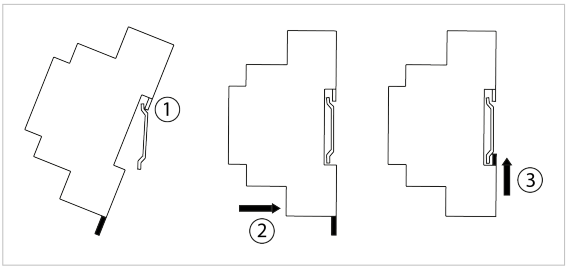
1. Press the rear panel clips until you hear a *click*.
2. Use the clip holes to screw the gateway to the wall.
3. Make sure the gateway is firmly fixed.




**DIN rail mounting**

Keep the top side clip in its original position.

1. Insert the gateway in the upper edge of the DIN rail.
2. Fit the low side of the gateway in the DIN rail.
3. Push the bottom clip back to its original position, locking the gateway to the rail.
4. Make sure the gateway is firmly fixed.




## Wiring

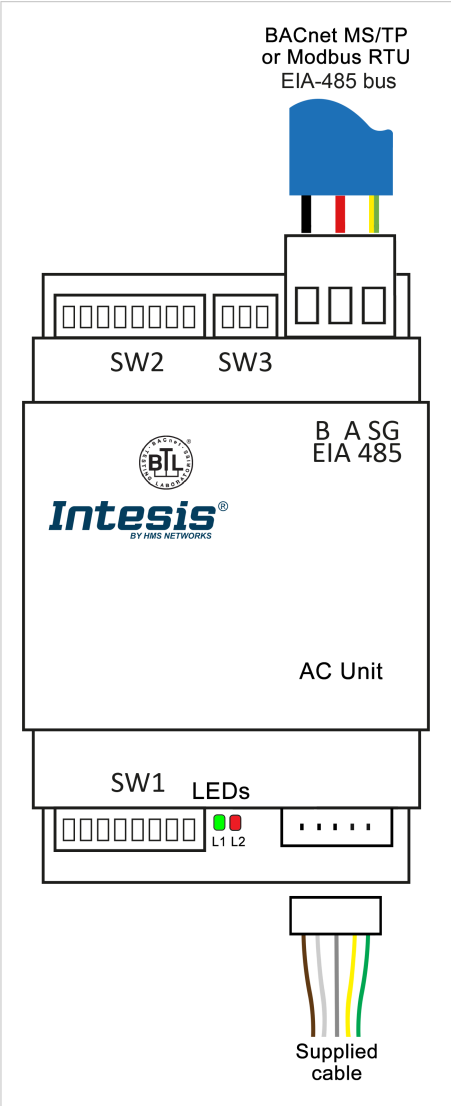



Figure 1. Wiring diagram *(wire colors are indicative only)*

1. Disconnect the AC system from the power.
2. Mount the gateway in the desired place.
3. Use the supplied cable to connect the AC unit and the gateway:

   This cable is 1.50 m (4.9 feet) long. Its modification in length may affect the correct operation of the gateway.

   a. **AC unit connection:** Plug the largest unsheathed cable part connector into the socket CN75, CN65, CN12 or CN6 of the AC unit control board.
   b. **Gateway connection:** Plug the other end connector, the one on the shortest unsheathed part of the cable, into the socket labeled as **AC Unit**.
4. Connect the BACnet MS/TP or Modbus RTU bus to the EIA-485 port of the gateway.

   Observe polarity: B -, A +, and SG for ground connection.

Keep communication cables away from power and ground wires.

## DIP Switches

Table 1. **SW1** (P1, P4): AC unit configuration; (P5): Gateway configuration; (P6 to P8): BACnet MS/TP or Modbus RTU baudrate

| Binary value | Position | | | | | | | | Description | |
|---|---|---|---|---|---|---|---|---|---|---|
| b0 .. b7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | BACnet | Modbus |
| 0 0 X X X X X X | ↓ | ↓ | X | X | X | X | X | X | - | 3 Fan speeds |
| 1 0 X X X X X X | ↑ | ↓ | X | X | X | X | X | X | - | 4 Fan speeds (default) |
| 0 1 X X X X X X | ↓ | ↑ | X | X | X | X | X | X | - | 5 Fan speeds |
| 1 1 X X X X X X | ↑ | ↑ | X | X | X | X | X | X | - | 6 Fan speeds |
| X X X X 0 X X X | X | X | X | X | ↓ | X | X | X | BACnet MS/TP in 485 port enabled (default) | Modbus RTU in 485 port disabled (default) |
| X X X X 1 X X X | X | X | X | X | ↑ | X | X | X | BACnet MS/TP in 485 port disabled | Modbus RTU in 485 port enabled |
| X X X X X 0 0 0 | X | X | X | X | X | ↓ | ↓ | ↓ | Autobaudrate (default) | 2400 bps |
| X X X X X 1 0 0 | X | X | X | X | X | ↑ | ↓ | ↓ | 9600 bps | 4800 bps |
| X X X X X 0 1 0 | X | X | X | X | X | ↓ | ↑ | ↓ | 19200 bps | 9600 bps |
| X X X X X 1 1 0 | X | X | X | X | X | ↑ | ↑ | ↓ | 38400 bps | 19200 bps |
| X X X X X 0 0 1 | X | X | X | X | X | ↓ | ↓ | ↑ | 57600 bps | 38400 bps |
| X X X X X 1 0 1 | X | X | X | X | X | ↑ | ↓ | ↑ | 76800 bps | 57600 bps |
| X X X X X 0 1 1 | X | X | X | X | X | ↓ | ↑ | ↑ | 115200 bps | 76800 bps |
| X X X X X 1 1 1 | X | X | X | X | X | ↑ | ↑ | ↑ | Autobaudrate | 115200 bps |

Table 2. **SW2 (BACnet MS/TP)** (P1 to P7): BACnet MS/TP MAC address; (P8): Temperature unit (°C/°F)

| Binary value | Position | | | | | | | | BACnet address | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| b0 .. b7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| 0000000X | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | X | 0 | - |
| 1000000X | ↑ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | X | 1 | - |
| 0100000X | ↓ | ↑ | ↓ | ↓ | ↓ | ↓ | ↓ | X | 2 | - |
| 1100000X | ↑ | ↑ | ↓ | ↓ | ↓ | ↓ | ↓ | X | 3 | - |
| ... | | | | | | | | | ... | - |
| 1011111X | ↑ | ↓ | ↑ | ↑ | ↑ | ↑ | ↑ | X | 125 | - |
| 0111111X | ↓ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | X | 126 | - |
| 1111111X | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | X | 127 | - |
| XXXXXXX0 | X | X | X | X | X | X | X | ↓ | - | Temperature in Celsius (default) |
| XXXXXXX1 | X | X | X | X | X | X | X | ↑ | - | Temperature in Fahrenheit |

Table 3. **SW2 (Modbus RTU)** (P1 to P6): Modbus server address; (P7): Degree decimals setting (P8): Temperature unit (°C/°F)

| Binary value | Position | | | | | | | | Modbus address | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| b0 .. b7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| 100000XX | ↑ | ↓ | ↓ | ↓ | ↓ | ↓ | X | X | 1 | - |
| 010000XX | ↓ | ↑ | ↓ | ↓ | ↓ | ↓ | X | X | 2 | - |
| 110000XX | ↑ | ↑ | ↓ | ↓ | ↓ | ↓ | X | X | 3 | - |
| ... | | | | | | | | | ... | - |
| 101111XX | ↑ | ↓ | ↑ | ↑ | ↑ | ↑ | X | X | 61 | - |
| 011111XX | ↓ | ↑ | ↑ | ↑ | ↑ | ↑ | X | X | 62 | - |
| 111111XX | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | X | X | 63 | - |
| XXXXXX0X | X | X | X | X | X | X | ↓ | X | - | Temperature in degrees x1 (default) |
| XXXXXX1X | X | X | X | X | X | X | ↑ | X | - | Temperature in degrees x10. Example: 19.2°=192 |
| XXXXXXX0 | X | X | X | X | X | X | X | ↓ | - | Temperature in Celsius (default) |
| XXXXXXX1 | X | X | X | X | X | X | X | ↑ | - | Temperature in Fahrenheit |

Table 4. **SW3** (P1 to P3): BACnet/Modbus polarization and termination resistor

| Binary value | Position | | | Description |
|---|---|---|---|---|
| b0 .. b2 | 1 | 2 | 3 | |
| 0 X X | ↓ | X | X | EIA-485 bus without termination resistor. The gateway is not at one end of the EIA-485 bus (default value) |
| 1 X X | ↑ | X | X | 120 Ω termination resistor active. The gateway is at one end of the EIA-485 bus |
| X 0 0 | X | ↓ | ↓ | No bus polarization (default value) |
| X 1 1 | X | ↑ | ↑ | Bus polarization active |

The DIP switches configuration will only take effect after rebooting the gateway.

## LEDs Information

| LED | Status | Description |
|---|---|---|
| **When the gateway is set for BACnet MS/TP** | | |
| L1 Green | ON | EIA-485 bus link performed |
| | Flickering | Activity on the EIA/485 bus |
| | OFF | EIA-485 bus link not performed |
| L2 Red | ON | AC communication error |
| | Blinking | AC unit error |
| | Flashing | AC communication OK |
| **When the gateway is set for Modbus RTU** | | |
| L1 Green | Blinking | Comunication error<br>Any error in the AC unit |
| | Flashing | Normal operation |
| L1 Green + L2 Red | Pulse | Gateway startup |
| **LED PATTERNS:**<br>**Flickering:** 90 % on / 10 % off<br>**Blinking:** 50 % on / 50 % off<br>**Flashing:** 10 % on / 90 % off<br>**Pulse:** 5 sec on / then off | | |

## Technical Specifications

| | |
|---|---|
| **Housing** | Plastic, type PC (UL 94 V-0)<br>Net dimensions (DxWxH): 93 x 53 x 58 mm / 3.7 x 2.1 x 2.3”<br>Recommended space for installation (DxWxH): 100 x 60 x 70 mm / 4 x 2.4 x 2.8"<br>Color: Light grey. RAL 7035 |
| **Weight** | 85 g (3 oz) |
| **Terminal wiring for low-voltage signals** | Per terminal: solid wires or stranded wires (twisted or with ferrule). Wire cross-section/gauge:<br>One core: 0.2 to 2.5 $mm^2$ (24 to 11 AWG)<br>Two cores: 0.2 to 1.5$mm^2$ (24 to 15 AWG)<br>Three cores: Not permitted |
| **Mounting** | Wall or DIN rail |
| **BACnet MS/TP - Modbus RTU port** | 1 x EIA-485 pluggable terminal block (3 poles: B, A, and SG) with 120 Ω resistor termination and polarisation configurable by DIP switch |
| **AC unit port** | 1 x Specific socket |
| **LED indicators** | 2 x Communication status |
| **DIP switches** | SW1: Gateway, AC unit, and baudrate configuration<br>SW2: BACnet/Modbus address and temperature unit<br>SW3: Bus polarization and termination |
| **Operational and storage temperature** | Celsius: Op: 0 to +70°C; St: -20 to 85°C<br>Fahrenheit: 32 to 158°F; St: -4 to 185°F |
| **Operational and storage humidity** | 5% to 95%, non-condensing |
| **Isolation Voltage** | 1500 VDC |
| **Isolation resistance** | 1000 MΩ |

## Disposal and Recycling

This product contains electronic components and must be properly disposed of according to local laws and regulations. For further information, refer to: https://www.intesis.com/weee-regulation

For further information on the installation, connection, and configuration of this gateway, refer to the User manual.