**INBACMBM***0000**  
Modbus to BACnet Server gateway

**Order Codes:**  
INBACMBM1000000 (100 points)  
INBACMBM2500000 (250 points)  
INBACMBM6000000 (600 points)  
INBACMBM12000000 (1200 points)  
INBACMBM30000000 (3000 points)

**HOW IT WORKS**

The Intesis **INBACMBM***0000 Gateway has been specially designed to work as a translator between Modbus Slave devices and BACnet IP or BACnet MSTP based control and monitoring systems.

Intesis acts as a master in the Modbus side, allowing both BACnet IP and BACnet MSTP client/master devices to read and write on all configured Modbus signals.

BACnet MSTP devices are connected to one of the serial ports of the gateway, while BACnet IP devices are connected to the Ethernet port. On the Modbus side, Modbus TCP devices are connected through the Ethernet port, while Modbus RTU devices can be connected to the serial ports of the gateway.

Configuration project is done through Intesis MAPS.

**FEATURES**

- Manages Modbus TCP and Modbus RTU simultaneously
- Support for BACnet IP or BACnet MSTP, not simultaneously
- Supports up to two independent Modbus RTU channels (2x32 RTU devices per RS485), if BACnet MSTP protocol is not used.
- Modbus device templates available for easier integration
- BACnet advanced features available:
  - Calendars
  - Schedules
  - Trend Logs
- Configuration through IP or USB (Console) port
- Datalogging through external USB port
- Front cover LED indicators to provide easy to check communication status on both the Ethernet and serial ports
- Includes Intesis MAPS with automatic updates for both Intesis MAPS and Gateway's firmware

**INTEGRATION EXAMPLE**
**CONNECTIONS**

- **Power Supply**
- **Modbus RTU EIA485**
- **Ethernet BACNet IP**

**PROTOCOLS**

**Modbus**
- Protocol is a de facts standard, truly open and the most widely used network protocol in the industrial manufacturing environment.

**BACnet**
- BACnet Protocol is a Data Communication Protocol for Building Automation and Control Networks. Developed under the auspices of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

**COMMUNICATION**

**BACnet**
- **Connection**
  - EIA485 (3 wire isolated)
  - 10BASE-T
  - 100BASE-TX

**Modbus**
- **Connection**
  - EIA485 (3 wire isolated)
  - 10BASE-T
  - 100BASE-TX

**Date rate**
- 9.6, 19.2, 38.4, 57.6, 76.8, 115.2kbps
- 10 Mbps
- 100 Mbps

**Data Types**
- 0-AC (Analog Output)
- 1-AI (Analog Input)
- 2-AV (Analog Value)
- 3-BO (Binary Output)
- 4-BI (Binary Input)
- 5-BV (Binary Value)
- 13-MI (Multistate Input)
- 14-MO (Multistate Output)
- 15-MV (Multistate Value)

**Functions supported**
- 1-Read Digital Outputs
- 2-Read Digital Inputs
- 3-Read Holding Registers
- 4-Read Analog Registers
- 5-Write Single Digital Output
- 6-Write Single Analog Register
- 15-Write Multiple Digital Output
- 16-Write Multiple Holding Registers

**COMMUNICATION**

**BACnet**
- **MSTP**
  - IP 10BASE-T
  - 100BASE-TX

**Modbus**
- **IP**
  - 10BASE-T
  - 100BASE-TX

**TCP**
- 10BASE-T
- 100BASE-TX

**COMMUNICATION**

- **Electrical & Mechanical Features**
  - **Enclosure**
    - Plastic, type PC (UL 94 V-0)
    - Net dimensions (dxwxh): 90x88x56 mm
    - Recommended space for installation (dxwxh): 130x100x100mm
    - Color: Light Grey, RAL 7035

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

  - **Terminal Wiring**
    - (for power supply and low-voltage signals)
    - 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
    - If cables are more than 3.05 meters long, Class 2 cable is required.

  - **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

  - **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 other ports

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

  - **PORT B**
    - 1 x Serial EIA232 (SUB-D9 male connector)
    - 1 x Serial EIA485 Plug-in screw terminal block (3 poles)
      - A, B, SGND (Reference ground or shield)
      - 1500VDC isolation from other ports (except PORT B: EIA4232: 240mA
      - Voltage rating: 16VDC

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

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

- **Console Port**
  - Mini Type-B USB 2.0 compliant
  - 1500VDC isolation

- **USB port**
  - Type-A USB 2.0 compliant
  - Only for USB flash storage device (USB pen drive)
  - Power consumption limited to 150mA
  - (HDD 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**
  - 10 x Onboard LED indicators
  - 2 x Port T/A Link/Speed
  - 2 x Port A TX/RX
  - 2 x Port B TX/RX
  - 1 x Button A indicator
  - 1 x Button B indicator

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