INMBSBAC***0000
BACnet to Modbus Slave gateway

Order Codes:
INMBSBAC1000000 (100 points)
INMBSBAC2500000 (250 points)
INMBSBAC6000000 (600 points)
INMBSBAC12000000 (1200 points)
INMBSBAC30000000 (3000 points)

HOW IT WORKS

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

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

Modbus RTU masters are connected to the serial port of the gateway, while Modbus TCP devices are connected to the Ethernet port. On the BACnet side, the gateway simulates a BACnet IP client or BACnet master MSTP device.

Configuration project is done through Intesis MAPS.

FEATURES

- Handles conversion between Modbus (RTU & TCP) and BACnet (IP or MSTP) devices
- Manages Modbus TCP and Modbus RTU simultaneously
- Connects with up to 5 simultaneous Modbus TCP clients
- BACnet BTL certified
- Datalogging through external USB port
- Configuration through IP or USB (Console) 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
- BACnet explorer function (available from Intesis MAPS)

INTEGRATION EXAMPLE
**CONNECTIONS**

- **Power Supply**
- **BACnet MSTP**
- **Modbus TCP**
- **BACnet IP**
- **Ethernet**
- **Console Port**

**PROTOCOLS**

**BACnet**

BACnet is the 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).

BACnet is an American national standard, a European standard, a national standard in more than 30 countries, and an ISO global standard. The protocol is supported and maintained by ASHRAE Standing Standard Project Committee 135.

For further information, please visit [www.bacnet.org](http://www.bacnet.org).

**Modbus Protocol**

Modbus Protocol is a de facto standard, truly open and the most widely used network protocol in the industrial manufacturing environment. Modbus is used in multiple applications to monitor and program devices, to communicate between intelligent devices and sensors and instruments; to monitor field devices using PCs and HMI. But Modbus is not only an industrial protocol. Building, infrastructure, transportation and energy applications also make use of its benefits.

For further information visit [www.modbus.org](http://www.modbus.org).

**COMMUNICATION**

<table>
<thead>
<tr>
<th>Modbus</th>
<th>BACnet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connection</strong></td>
<td><strong>TCP</strong></td>
</tr>
<tr>
<td>EIA485 (3 wire isolated)</td>
<td>EIA485 (3 wire isolated)</td>
</tr>
<tr>
<td>EIA232 (DB9 connector)</td>
<td>10BASE-T</td>
</tr>
<tr>
<td>EIA232 (DB9 connector)</td>
<td>10BASE-T</td>
</tr>
<tr>
<td><strong>Date rate</strong></td>
<td><strong>10 Mbps</strong></td>
</tr>
<tr>
<td>2.4, 4.8, 9.6, 19.2, 38.4, 57.6, 115.2 kbps</td>
<td>9.6, 19.2, 38.4, 57.6, 76.8, 115.2 kbps</td>
</tr>
</tbody>
</table>

**Data Types**

- 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

**POWER**

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

**COMMUNICATION**

**FUNCTIONS SUPPORTED**

<table>
<thead>
<tr>
<th><strong>Data Rate</strong></th>
<th><strong>Connection</strong></th>
<th><strong>Proto</strong></th>
<th><strong>Modbus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4, 4.8, 9.6, 19.2, 38.4, 57.6, 115.2 kbps</td>
<td>EIA485 (3 wire isolated)</td>
<td>10BASE-T</td>
<td>100BASE-TX</td>
</tr>
<tr>
<td>9.6, 19.2, 38.4, 57.6, 76.8, 115.2 kbps</td>
<td>EIA485 (3 wire isolated)</td>
<td>10BASE-T</td>
<td>100BASE-TX</td>
</tr>
</tbody>
</table>

**PROTOCOLS**

**Modbus**

- EIA485 (3 wire isolated) 10BASE-T 100BASE-TX
- EIA232 (DB9 connector) 10BASE-T 100BASE-TX

- **Connection**: EIA485 (3 wire isolated) 10BASE-T 100BASE-TX
- **Date rate**: 2.4, 4.8, 9.6, 19.2, 38.4, 57.6, 115.2 kbps
- **Data Types**: 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

**ELECTRICAL & MECHANICAL FEATURES**

**Enclosure**

- Plastic, type PC (UL 94 V-0)
- Net dimensions (dwxh): 90x85x56 mm
- Recommended space for installation (dwxh): 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 3.06 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 orange 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**

- 1 x DIP-Switch for PORT A configuration:
- Position 1: ON: 120° termination active
- Off: 120° termination inactive (default)
- Position 2-3:
  - ON: Polarization active (default)
  - Off: Polarization inactive

**PORT B**

- 1 x Serial EIA232 (SUB-D9 male connector)
- Pinout from a DTE device
- 1500VDC isolation from other ports
- (except PORT B: EIA485)
- 1 x Serial EIA485 Plug-in screw terminal block (3 poles)
- A, B, SG (Reference ground or shield)
- 1500VDC isolation from other ports
- (except PORT B: EIA232)

**Switch B**

- 1 x DIP-Switch for serial EIA485 configuration:
- Position 1:
  - ON: 120° termination active (default)
  - Off: 120° termination inactive
- Position 2-3:
  - ON: Polarization active
  - Off: Polarization inactive (default)

**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
- (ิด connection not allowed)

**Push Button**

- Button A: Will broadcast 1-AM message in the BACnet network
- Button B: Reserved for future use

**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 Run (Power)/Error
- 2 x Ethernet Link/Speed
- 2 x Port A TX/RX
- 2 x Port B TX/RX
- 1 x Button A indicator
- 1 x Button B indicator

**DIMENSIONS**

- W: 130 mm
- H: 100 mm
- D: 100 mm

© HMS Industrial Networks S.L.U - All rights reserved
This information is subject to change without notice