

IBOX-MBS-BAC

BACnet to Modbus Slave gateway

Order Codes:

IBMSBAC1000000 (100 points)
 IBMSBAC2500000 (250 points)
 IBMSBAC6000000 (600 points)
 IBMSBAC1K20000 (1200 points)
 IBMSBAC3K00000 (3000 points)

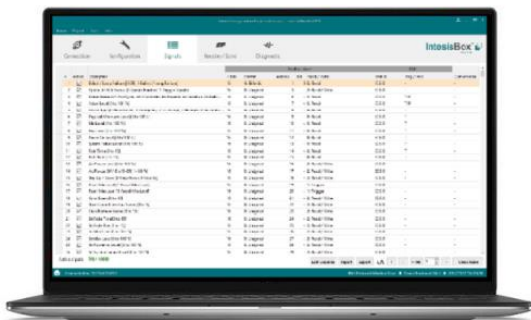
HOW IT WORKS

The IntesisBox **IBOX-MBS-BAC** 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.

IntesisBox 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.

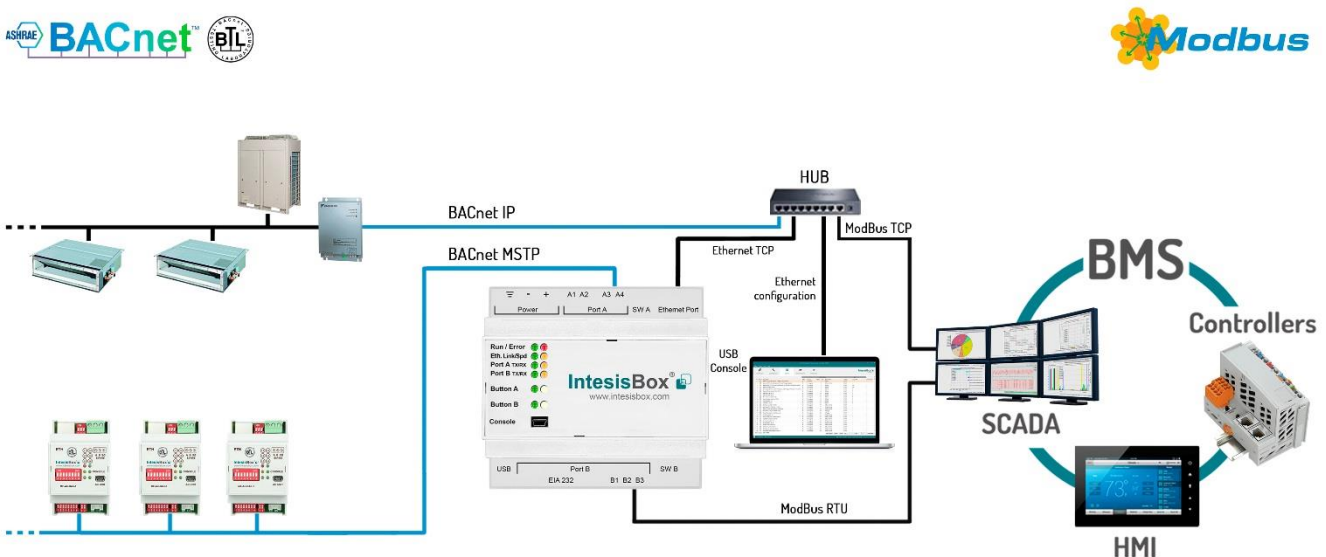
Configuration project is done through IntesisBox MAPS.



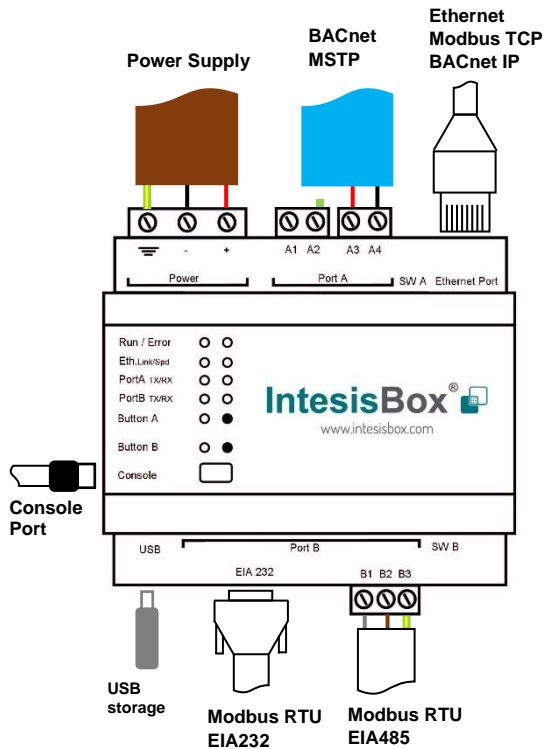
FEATURES

- 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 IntesisBox MAPS with automatic updates for both IntesisBox MAPS and Gateway's firmware
- BACnet explorer function (available from IntesisBox MAPS)

INTEGRATION EXAMPLE



CONNECTIONS



PROTOCOLS



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



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 HMIs.

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

COMMUNICATION

	Modbus		BACnet	
	RTU	TCP	MSTP	IP
Connection	EIA485 (3 wire isolated) EIA232 (DB9 connector)	10BASE-T 100BASE-TX	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	10 Mbps 100 Mbps	9.6, 19.2, 38.4, 57.6, 76.8, 115.2 kbps	10 Mbps 100 Mbps
Data Types & 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		0-AO (Analog Output) 1-AI (Analog Input) 2-AV (Analog Value) 3-BO (Binary Output) 4-BI (Binary Input) 5-BV (Binary Value) 12-LOOP 13-MI (Multistate Input) 14-MO (Multistate Output) 15-MV (Multistate Value) 23-ACUM (Accumulator)	

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	Battery	Size: Coin 20mm x 3.2mm Capacity: 3V / 225mAh Type: Manganese Dioxide Lithium
Mounting	Wall. DIN rail EN60715 TH35.	Console Port	Mini Type-B USB 2.0 compliant 1500VDC isolation
Terminal Wiring (for power supply and low-voltage signals)	Per terminal: solid wires or stranded wires (twisted or with ferrule) 1 core: 0.5mm ² ... 2.5mm ² 2 cores: 0.5mm ² ... 1.5mm ² 3 cores: not permitted If cables are more than 3.05 meters long, Class 2 cable is required.	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)
Power	1 x Plug-in screw terminal block (3 poles) 9 to 36VDC +/-10%, Max.: 140mA. 24VAC +/-10% 50-60Hz, Max.: 127mA Recommended: 24VDC	Push Button	Button A: Will broadcast I-Am message in the BACnet network Button B: Reserved for future use
Ethernet	1 x Ethernet 10/100 Mbps RJ45 2 x Ethernet LED: port link and activity	Operation Temperature	0°C to +60°C
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	Operational Humidity	5 to 95%, no condensation
Switch A (SWA)	1 x DIP-Switch for PORT A configuration: Position 1: ON: 120 Ω termination active Off: 120 Ω termination inactive (default) Position 2-3: ON: Polarization active (default) Off: Polarization inactive	Protection	IP20 (IEC60529)
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)	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
Switch B (SWB)	1 x DIP-Switch for serial EIA485 configuration: Position 1: ON: 120 Ω termination active (default) Off: 120 Ω termination inactive Position 2-3: ON: Polarization active Off: Polarization inactive (default)		