



## BACnet, Modbus Gateway for Functional Devices WiFi RIB

### *Control Solutions' Babel Buster BB2-7010-08*

is an extension of the BB2-7010 family that adds support for Functional Devices WiFi RIB relays/sensors. The BB2-7010-08 queries the RIB via a generic off-the-shelf WiFi access point, parses the data packet, and places the sensor data in one or more BACnet objects. The sensor data objects may be accessed via BACnet IP, Modbus TCP, Modbus RTU, or SNMP using the BB2-7010-08.

The RIB universal inputs support 0-5V, 0-10V, 4-20mA, and thermistor. Additional user configured scaling is provided (optionally) by the gateway. The universal inputs can also be configured as state (on/off) inputs. The universal inputs, in addition to fixed discrete input, can be assigned to any of the gateway's BACnet objects.

The relay in the RIB can be controlled by a BACnet Binary Output object in the gateway. The gateway also provides binding between a discrete input on one RIB to the relay output on a different RIB if configured by the user.

The BB2-7010-08 functions as a BACnet IP client and server, a Modbus RTU master or slave (user selectable) and Modbus TCP client and server. It also includes an SNMP v2 client and server, and with SNMP trap generation based on threshold rules.

The BB2-7010-08 will query WiFi sensor data and command the relay output at whatever poll rate is configured by the user via the web pages available in the BB2-7010-08. The BB2-7010-08 can also be configured to send the sensor data to other Modbus slaves or BACnet IP servers, or retrieve relay output state from another device.

### *Babel Buster BB2-7010-08 Object Summary*

- *Analog Input, Analog Output, Analog Value*
- *Binary Input, Binary Output, Binary Value*
- *Multi-State Input, Output, Value*
- *Pool of 500 objects for BB2-7010-08*
- *Up to 200 WiFi RIB relay/sensors supported*
- *Data accessible via BACnet IP, Modbus, SNMP*
- *Support for both Modbus RTU and Modbus TCP*
- *Sensor changes can be sent via BACnet COV notifications*
- *Threshold limits can be sent via SNMP Trap notifications*
- *Utilizes generic off-the-shelf WiFi access point*
- *Objects from pool can be assigned to any of above types*
- *Maximum of 200 Binary objects, includes state text*
- *Maximum of 64 states for multi-state, includes state text (actual value supported varies by resource usage per object)*

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## Built-In Web Server for Configuration and Diagnostics



### BACnet Protocol Implementation Conformance Statement (Abbreviated)

Date: 30 December 2013

Vendor Name: Control Solutions, Inc.

Product Name: Babel Buster BB2-7010-01/02/06/07/08

Product Model Number: BB2-7010

Applications Software Version: 2.38

Firmware Revision: 2.38

BACnet Protocol Revision: 7

Product Description: Network gateway allowing Modbus RTU and TCP devices, SNMP devices, and WiFi sensors to be accessed via BACnet IP.

### BACnet Standardized Device Profile (Annex L):

- ▶ BACnet Smart Sensor (B-SS)
- ▶ BACnet Smart Actuator (B-SA)

### List all BACnet Interoperability Building Blocks Supported (Annex K):

DS-RP-B, DS-RPM-B, DS-WP-B, DS-COV-B, DS-COVP-B,  
DM-DDB-B, DM-DOB-B, DM-RD-B

Segmentation Capability: Request & response, window size 8

### Standard Object Types Supported:

Object types: AI, AO, AV, BI, BO, BV, MSI, MSO, MSV, DEV (all static)  
See additional documentation for optional & proprietary properties.

### Data Link Layer Options:

- ▶ BACnet IP (Annex J)

### Device Address Binding:

Is static device binding supported? No

Networking Options: BBMD, supports registration by foreign devices

Character Sets Supported: ANSI X3.4

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports:

Modbus RTU and/or Modbus TCP slaves/servers (BACnet slave device functions as Modbus RTU or TCP master), SNMP (-02), WiFi sensor data via UDP (-06) WiFi sensor data via UDP or TCP (-07), WiFi sensor data via HTTP (-08)

## WiFi Sensor Data Available as BACnet Object Properties, Modbus Registers, and SNMP MIB Variables

### FEATURES

- Pool of 500 objects accessible via BACnet, Modbus, SNMP
  - Analog, Binary, Multi-State object types
  - Input, Output, Value objects
- Up to 200 WiFi relays/sensors supported
- Data accessible via BACnet IP, Modbus, SNMP
- Support for both Modbus RTU and Modbus TCP
- Sensor changes can be sent via BACnet COV notifications
- Threshold limits can be sent via SNMP Trap notifications
- Utilizes generic off-the-shelf WiFi access point
- Maximum of 200 Binary objects, includes state text
- Maximum of 64 states for multi-state, includes state text (actual value supported varies by resource usage per object)
- All object mapping configured via web interface
- Commandable BACnet objects implement priority array
- Includes BACnet IP client and server
- Includes Modbus RTU master or slave, user selectable
- Includes Modbus TCP client and server
- Includes SNMP client and server
- Bidirectional communication between protocols
- Hardened EIA-485 transceiver for Modbus RTU
- 10/100BaseT Ethernet for BACnet IP and Modbus TCP
- Powered by 12-24V DC/AC 50/60 Hz
- Power Consumption: 0.1A @ 24VDC
- DIN rail mounting, 100mm H x 70mm W x 60mm D
- Pluggable screw terminal block for power & RTU network
- Operating temperature -40°C to +85°C; Humidity 5% to 90%
- FCC Class A, CE Mark
- Listed to UL 916 and (Canadian) C22.2 No. 205-M1983

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