MBus2BACnet Manual

Version 2.0.0-a

Introduction

MBus2BACnet is an MBus-to-BACnet/IP converter that works on the PiiGAB Pi-900 series M-Bus gateways. The application reads values periodically from the Pi-900S MBusAscii port. The configured read period (UpdateInterval) therefore sets the **maximum age** of a value when it is read by a BACnet client.

Mbus2Bacnet supports **Analog Input (AI)** objects in polling mode. All numerical values can be read via BACnet, but they are presented as 32-bit floating-point values.

Reliability handling

By default, Reliability is **NO_FAULT_DETECTED**. In case of an error, it is set to:

- **CONFIGURATION_ERROR** if the OPC item does not exist in the Pi-900 Masterport configuration.
- **COMMUNICATION_FAILURE** if the meter does not respond after all retries.

Integration with Pi-900 configuration

MBus2BACnet integrates with the native Pi-900 configuration. The conversion configuration can be generated automatically from the M-Bus Masterport configuration file (myconfig.csv). See the Pi-900 documentation for details.

Object names and identifiers are derived from myconfig.csv and cannot be edited in the MBus2BACnet web interface. To change names/descriptions, edit the Pi-900 configuration and regenerate the configuration in Mbus2BACnet. The object names can be generated either from the standard value names or aliases, set in the Pi-900 configuration templates.

BACnet/IP and BBMD

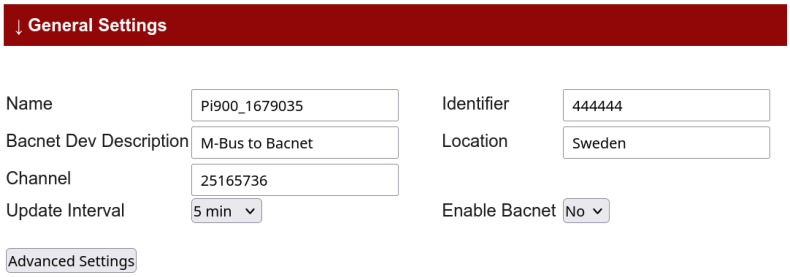
MBus2BACnet does **not** provide a BACnet Broadcast Management Device (BBMD). It can operate as a **Foreign Device (FD)** and register with an external BBMD in two-hop configuration. Single-hop is not supported.

All metadata must be configured via the web configuration interface. No metadata can be modified via BACnet write commands. Objects are created from the configuration file and cannot be created or removed dynamically.

Quick start

1. Ensure the Pi-900 M-Bus configuration (myconfig.csv) is present and correct.
2. Open the MBus2BACnet web interface.
3. Select the correct Channel (must match the channel used in myconfig.csv).
4. Click Create From myconfig to generate the BACnet configuration.
5. Set Enable BACnet to Yes.
6. Verify that values are visible from a BACnet client.

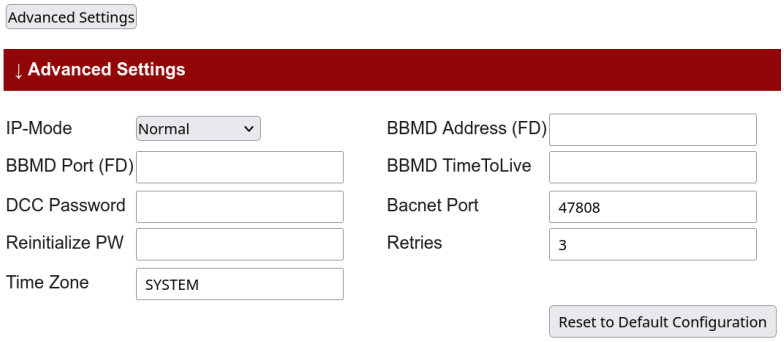
General Settings



Web configuration. General Settings.

Label	Description	Default value
Name	BACnet Device object *Object Name*.	Pi900-<serialno>
Identifier	BACnet Device Instance (max 4194303 / 0x3FFFFF).	250001
BACnet Dev Description	BACnet Device *Description* property.	M-Bus to BACnet
Location	BACnet Device *Location* property.	Sweden
Channel	Channel from M-Bus configuration. Must match the channel used in myconfig.csv.	None
UpdateInterval	MBusAscii readout period	5 min
Enable BACnet	Enables/disables the application. Keep disabled when not in use to avoid unnecessary traffic on the M-Bus loop.	No
Advanced Settings	Press to show advanced settings	

Advanced Setting

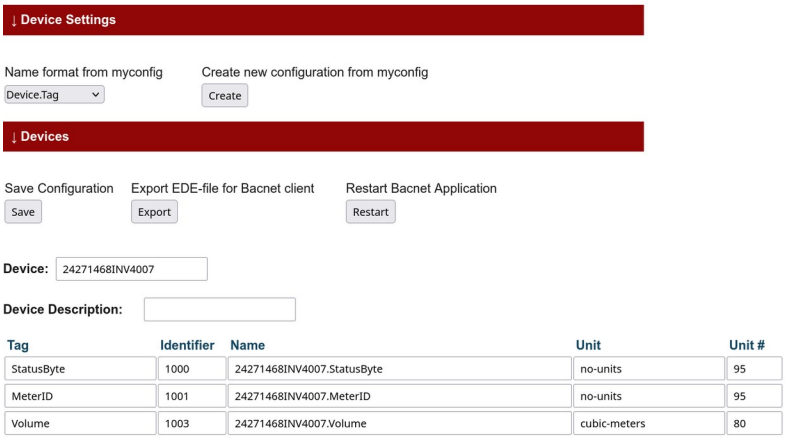


Web configuration. Advanced Settings.

Label	Description	Default
IP-Mode	BACnet/IP mode: Normal or Foreign Device. If set to Foreign Device, the device is not reachable on the local network and will only be available via the BBMD network.	Normal
BBMD Address (FD)	BBMD address used to register as a Foreign Device.	Empty
BBMD Port (FD)	BBMD UDP port.	47808
BBMD TimeToLive	Re-registration period (seconds) for Foreign Device mode (max 65535).	60000
DDC Password	Password for Device Communication Control.	Empty
BACnet Port	Local UDP port for BACnet/IP (BAC0).	47808
Reinitialize PW	**Password required for reinitialization.** Warning Change this from the factory default to prevent unintended or unauthorized configuration changes (including BBMD parameters).	Hekla1234
Retries	Extra requests to the MBusAscii port in case of timeout.	3
Time Zone	UTC offset. Leave empty or write SYSTEM to use the Pi-900 system configuration.	SYSTEM
Reset to Default Configuration	Resets configuration to default values. Do not use unless really needed.	

Timezone Example: UTC-1:25 sets the offset to -85 minutes. Allowed range: -24 to +24 hours. For advanced setups, consult PiiGAB support or documentation for the TZ environment variable.

Device Settings



Web configuration. Device settings.

Label	Description
Device format from myconfig	Choose Object Name generation from myconfig. See further information below.
Create new configuration	Create Bacnet Objects from myconfig.csv
Save	Saves the current configuration
Export EDE-file	Create an EDE file from the configuration and download to PC.
Restart Bacnet	Restarts the Mbus2Bacnet application.

Analog Input parameters

Label	Description
Tag	Tag part of the OPC item (from myconfig.csv).
Identifier	BACnet object identifier for the Analog Input. This number is generated from myconfig.csv by counting meters in steps of 1000 and then data records.

Label	Description
	• StatusByte = 0 • MeterID = 1 • Other data records from the template file = 2, 3, ... Max value: 4194303 / 0x3FFFFF.
Name	BACnet object name (generated from myconfig.csv; see above).
Units	BACnet units (generated from myconfig.csv).
Units #	BACnet unit number (generated from myconfig.csv).

BACnet object name generation

When generating from myconfig.csv, the BACnet object names can be created in three ways:

1. **Device.Tag** The name is <Device>.<Tag>. Example: Device = 12345678PII0102, Tag = StatusByte → 12345678PII0102.StatusByte.
2. **Description.Tag** The name is <Device Description>.<Tag>. The *Device Description* is the same as on the *Meters* overview page.
3. **Description.Description** The name is <Device Description>.<Tag Description>. The *Device Description* is the same as on the *Meters* overview page. The *Tag Description* is found in the *Startup Config* template page and stems from the M-Bus configuration (it is not the BACnet *Description* property).

If **Description** is selected but a description is missing in myconfig.csv, the application falls back to using *Device* and *Tag*.

Program behaviour

Database Revision starts at 0 the first time the program runs and is increased for every change that can affect the BACnet object model or values.

The database revision is increased if any of the following Analog Input parameters change: Device, Tag, Identifier, Name or Units.

The maximum number of analog-input objects is defined by the software license bought with the Pi-900 gateway. The possible numbers of objects is 50, 250, 750, 1500, 3000 or 10000. If the number of points exceeds the license bought, all objects within the license will be available.