

AHWG TSB#10 – SAGE™ BS BAS Bacnet Setup

Product: SAGE™ BS

Technical Assessment Reference: N/A

Topic/Problem Replacement & Resolution: Configuring SAGE™ BS for specific BAS Bacnet Settings

The following will explain the procedure to configure a SAGE™ BS for specific Building Automation System (i.e. BAS) protocol settings for the Bacnet MSTP or Bacnet Metasys N2 protocols.

In order to successfully connect to and utilize the Bacnet protocol via the SAGE™ BS system there needs to be a Bacnet specific ProtoCessor module plugged into the SAGE™ BS board (**see Figure 1**). This would have either been specified at time of order and subsequently shipped already installed OR would have been requested after the order and thus shipped out and installed onsite.

Tools Required:

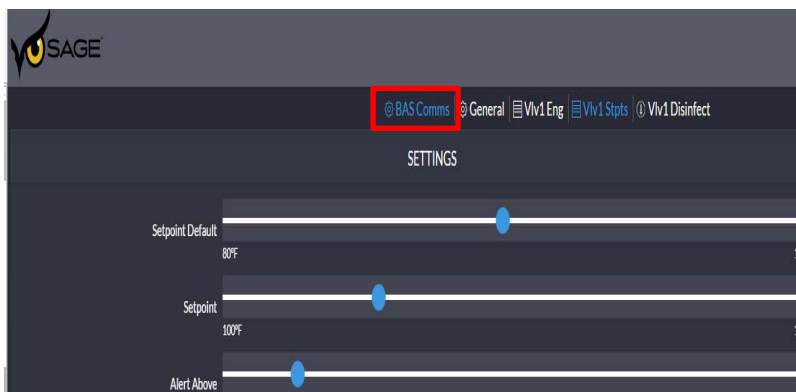
- Ethernet Cable
- Computer with Admin access (Windows 7 Operating System)



Figure 1: ProtoCessor Module

Replacement Process/Steps:

1. Before proceeding, follow all steps included in [TSB#5–SAGE BS Ethernet Access](#); this will allow you to connect to the SAGE™ BS web browser and continue with the steps below
2. Once connected to the SAGE™ BS web browser and the initial system graphic page is up click on the icon labeled **‘BAS Comms’** OR **‘Admin Configuration’** depending on SW vintage (**see Figure 2**)



OR



***Old Version Sold Prior To Jan., 2017**

Figure 2: Initial System Graphic Page

IF SOLD AFTER JAN., 2017 AS SAGE™ BS:

3. Ensure the **'ProtoCessor Port'** is **ON** & the **ProtoCessor Port Baud Rate set to 38400** (see **Figure 3**)
4. If **Bacnet MSTP** is the desired protocol change the following to the specific settings
 - **'Type' = BACnet/Modbus**
 - **ProtoCessor Port MAC Address = 1-127**
 - **ProtoCessor Port Node ID = 1-60000**
 - **Aka 'Instance'**
 - ProtoCessor Port Modbus TCP/IP Address = Leave as is
5. If **Bacnet Metasys N2** is the desired protocol change the following to the specific settings
 - **'Type' = Metasys N2**
 - ProtoCessor Port MAC Address = Leave as is
 - **ProtoCessor Port Node ID = 1-127**
 - **Aka 'Instance'**
 - ProtoCessor Port Modbus TCP/IP Address = Leave as is

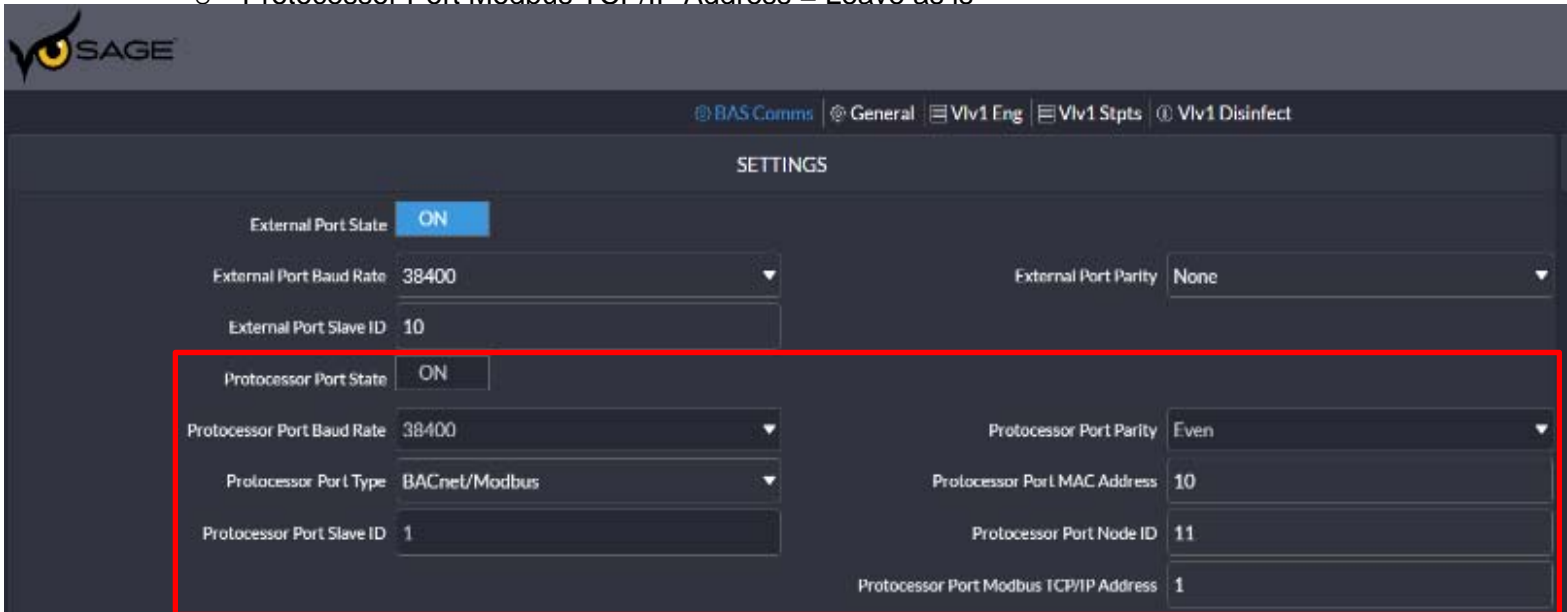


Figure 3: BAS Comms Page

6. Go to ProtoCessor Module & set 'B' bank of dip switches per the required baud rate (see **Figure 4**)

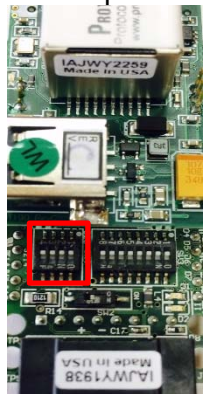


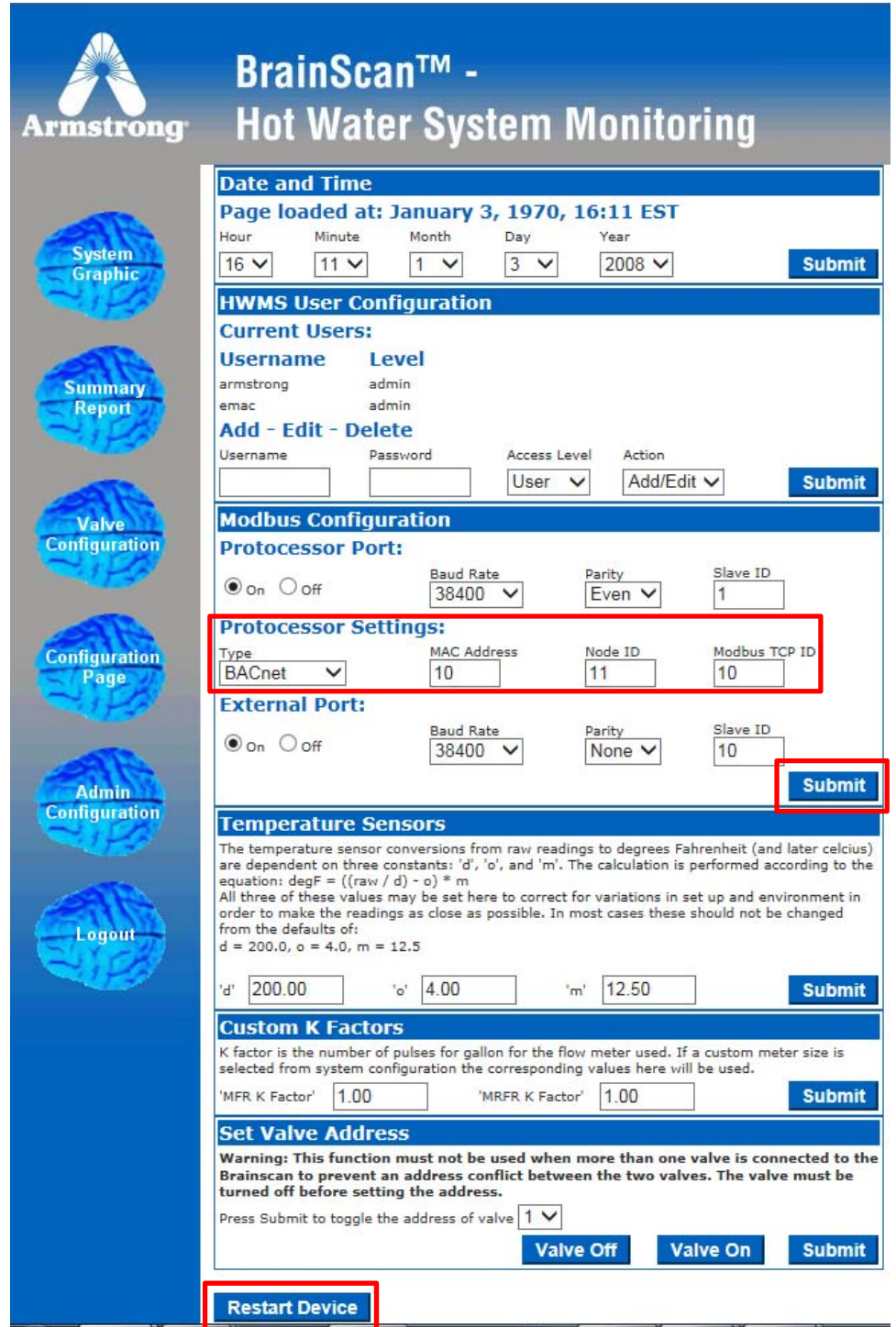
Figure 4: ProtoCessor Dip Switch's

IF SOLD PRIOR TO JAN., 2017 AS BRAINSCAN:

3. Go to the section titled **'Modbus Configuration'** and ensure the settings for **'Processor Port'** and **'External Port'** match those shown below (see Figure 5); do not change these
4. The section titled **'Processor Settings'** is what will be changed per specific BAS protocol setting desires
5. If **Bacnet MSTP** is the desired protocol change the following to the specific settings
 - a. **'Type'** = **BACnet**
 - b. **MAC Address** = **1-127**
 - c. **Node ID** = **1-60000**
 - i. Aka **'Instance'**
 - d. **Modbus TCP ID** = Leave as is
6. If **Bacnet Metasys N2** is the desired protocol change the following to the specific settings
 - a. **'Type'** = **Metasys N2**
 - b. **MAC Address** = Leave as is
 - c. **Node ID** = **1-127**
 - i. Aka **'Instance'**
 - d. **Modbus TCP ID** = Leave as is
7. Go to ProtoCessor Module & set 'B' bank of dip switches per the required baud rate (see Figure 6)



Figure 6: ProtoCessor Dip Switch's



BrainScan™ - Hot Water System Monitoring

Date and Time
 Page loaded at: January 3, 1970, 16:11 EST
 Hour: 16, Minute: 11, Month: 1, Day: 3, Year: 2008 [Submit]

HWMS User Configuration
Current Users:
 Username | Level
 armstrong | admin
 emac | admin
Add - Edit - Delete
 Username | Password | Access Level | Action
 [] | [] | User | Add/Edit [Submit]

Modbus Configuration
Processor Port:
 On Off Baud Rate: 38400 Parity: Even Slave ID: 1
Processor Settings:
 Type: BACnet MAC Address: 10 Node ID: 11 Modbus TCP ID: 10
External Port:
 On Off Baud Rate: 38400 Parity: None Slave ID: 10 [Submit]

Temperature Sensors
 The temperature sensor conversions from raw readings to degrees Fahrenheit (and later celcius) are dependent on three constants: 'd', 'o', and 'm'. The calculation is performed according to the equation: degF = ((raw / d) - o) * m
 All three of these values may be set here to correct for variations in set up and environment in order to make the readings as close as possible. In most cases these should not be changed from the defaults of:
 d = 200.0, o = 4.0, m = 12.5
 'd': 200.00 'o': 4.00 'm': 12.50 [Submit]

Custom K Factors
 K factor is the number of pulses for gallon for the flow meter used. If a custom meter size is selected from system configuration the corresponding values here will be used.
 'MFR K Factor': 1.00 'MRFR K Factor': 1.00 [Submit]

Set Valve Address
Warning: This function must not be used when more than one valve is connected to the Brainscan to prevent an address conflict between the two valves. The valve must be turned off before setting the address.
 Press Submit to toggle the address of valve: 1
 [Valve Off] [Valve On] [Submit]

[Restart Device]

Figure 5: Admin Configuration Page



ProtoCessor Dip Switch Settings:

1. Only required for Metasys N2 Protocol; MSTP may auto find; if not, then set per below
2. The following are the dip switch baud rate settings ('On' is denoted on dip switch bank):

B1	B2	B3	B4	Baud
Off	Off	Off	Off	Auto
On	On	On	Off	9600
Off	Off	Off	On	19200
On	On	Off	On	38400
On	Off	On	On	76800
Off	On	On	On	115200

- Click '**Submit**'
- After clicking '**Submit**'; click '**Restart Device**'; you will be logged out and brought back to main log in screen
- You are now done & should be able to bring the register map points in to the BAS protocol system