BAScontrol22C Controller Configuration

Setra CEMS Network Hardware Procedure

Before you get started:

- This is necessary to bring any Analog Devices (LITES, Analog SRHs, etc.) into the local network as well as the larger CEMS network if they are not wired directly into a FLEX or other BACnet device.
- The BAScontrol22C (NET-CTLR-22) has set defaults that may conflict with the rest of the network, especially if there is more than one present.

Initial Connection to the Controller

In order to change any settings within the controller or to set up the controller to handle the analog signals, it must first be connected to.

It is recommended that the following is done **one controller at a time and independent of any other networking devices** (Edge, Router, etc.).

The following equipment is required:

- A computer with an Ethernet port or a USB to Ethernet converter.
- An ethernet cable.
- The controller with power applied.
 - 1. Static your computers IP to be on the same subnet as the controller (NOTE: See the document How to Static an IP Address).

The default network configuration is as follows:

Description	Defaults
IP Address	192.168.92.68
Subnet Mask	255.255.255.0

- 2. Type the IP address of the controller into the URL bar of an internet browser of your choice (Chrome, Firefox, etc.).
- 3. If the computer can see the controller on the network, a login prompt will appear.

⊕ 192.168.92.68		
This site is asking you to sign in.		
Username		
admin		
Password		
•••••		
	Sign in	Cancel

The default login information is as follows:

Description	Defaults
Username	admin
Password	admin

4. After logging in, a screen as follows should come up:

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\leftarrow	\rightarrow	C @		0	8	192.168.92.68	В								9	0% 公		\bigtriangledown	பி	≡
					Univ	versal Input	s		E	Binary Input	s	An	alog Outputs	5	Bi	nary Outpu	ts			
				Universal Input 1			Universal Input	5		Binary Input 1			Analog Output 1			Binary Output	1			
			UI1	4.699		UI5	0.008		BI1	0		AO1	0.000		BO1	0				
				Universal Input 2			Universal Input	6		Binary Input 2			Analog Output 2			Binary Output 2	2			
			UI2	0.007		UI6	0.007		BI2	0		AO2	0.000		BO2	0	0			
				Universal Input 3			Universal Input	7		Binary Input 3			Analog Output 3			Binary Output 3	3			
			013	0.002		UI7	0.005		BI3	0		AO3	0.000		BO3	0				
			ши	Universal Input 4		1118	Universal Input	8	BIA	Binary Input 4		404	Analog Output 4	10	B04	Binary Output 4	4			
			014	0.004		010	0.000		014	U		/104	0.000		504	Binary Output F				
															BO5	0	0			
							_									Binary Output 6	5			
							D/	\ C	200	S nti	ro	19			BO6	0				
							Dr	10		חוו	U		20							
				System Config		System Statu	IS	Set Time	•	Virtual Points		Web Compor	nents B	ACnet Utili	ity	Restart Contro	ller			
										Auto Refresh OFF										
							0	opuriabt 0	017 Contomos	root Control Custo		Il righta ragona	and .							
							0	opynyni 2	Firmware Revis	ion 3.2 : Web Par	nis, inc. A	in fights reserv	eu.							
							NOTE: A	GREEN	abel indicates t	hat the I/O point h	as been p	laced on the v	vire sheet.							

System Config Menu

Once connected it is important to configure the controller itself so that it will be discoverable on the CEMS BACnet network. All the following information should be filled in as to match the planned network in the shared project Excel spreadsheet.

1. Click the System Config menu on the main menu and a pop-up window should open that looks like the following:

📦 System Configuration — Mozilla Firefox				-	đ	\times
🛇 掻 192.168.92.68/sys_cfg.html				90% 🖒	<u>ආ</u>	≡
						^
IP Co	onfiguration	BACnet Devi	ce Configuration			
IP Mode	Static IP 🗸	Device Object Name	BAScontrol System			
IP Address	192.168.92.68	Device Instance	2749			
Netmask	255.255.255.0	UDP Port	47808			
Gateway	192.168.92.1	BBMD IP Address	0.0.0.0			
Primary DNS	8.8.8.8	BBMD Reg Time	100			
Secondary DNS	8.8.4.4	Time Transmissions (Min)	0			
			BIP			
BA	Cnet Client	Enable				
Poll Delay (mS)	1000	BACnet/IP 🗹	BACnet Client 🗹			
Retry Delay (S)	20	Sedona 🗹				
Configu	a BACast Caster	FTP 🗆				
Conigu	Te bachet servers	Authe	entication			
		User Name	admin			
		Password	•••••			
		Close	Submit			
		NOTE: You must click the Submi	it button to store any changes.			
		Changes will not take effect until the You can restart the control	he controller has been restarted. oller from the main page.			~

- 2. Once all the necessary information is filled in as per the information in the shared Excel sheet, press Submit and then Close.
- 3. Though this information has been changed, it has not yet been written to the Controller. In order to write the information to the Controller, the device will need to be power cycled. This can be done by pressing the Restart Controller button in the main menu.
- 4. NOTE: The computer will have to have its IP address changed to match the new IP address subnet of the controller if it was changed. The controller will now need to be connected to through its new IP address.

Setting Up Virtual Points

To set up the controller to convert the raw analog signal it is receiving into a BACnet object that can be read, the Universal Inputs need to be associated with Virtual Points.

To configure the Virtual Points, a specific software called Sedona Application Editor (SAE) will be needed. Please download the BAScontrolToolsetInstaller.

1. Download the software tools provided by Setra and open the SAE application. A window as follows should appear:



2. Press the button at the top left of the screen and a window as follows should appear:

+ Open Sedona		– 🗆 X
Address Protocol: Sox Host: 192.168.92.68 Port: 1876	Credentials Username: ✓ Delete Password:	admin
Data Folder Choose Sedona Folder:	onent_Bundle_BASC_1.1.9\sedo	na v Add Delete OK Cancel

3. The Host: box will be the IP address of the controller and the Credentials will be the username and password used for the controller login. If the login information does not work initially, the default "admin" and "admin" can be used. Everything else should be left at default and then press OK.



4. A window similar to what follows should appear:

- 5. Double click the box that says *sheets* and a new tab will open up.
- 6. On the left side there is a window with drop down menus.
- 7. Drop down the one labeled *CControls_BASC22C_IO* (the top one) and all the input options should appear.



8. Drag and drop the UIs that are being used.

 In this document, our example is setting up LITES and SRHs: The controller is being set up to receive a pressure from a 0-5V LITE and a temperature and humidity from a 0-10V analog SRH, so UI1, UI2, and UI3 will be used. 10. From the same drop-down menu, drag and drop an equivalent amount of VT (virtual) points. These are the virtual BACnet objects the analog inputs will



become.

- 11. Click a VT block so that it is outlined in red.
- 12. On the right side of the window there is a menu with two columns, *Property* and *Value*.
- 13. Change the WireSheet to OutputFrom rather than InputTo.
- 14. Repeat this for each VT block.



15. On the left, drop down the *hvac* menu and drag an equivalent amount of *Reset* blocks in between each pair of UI and VT blocks.

	UI1 CControls_BASC22C_IO::UI1	Reset 🖉	VT01 CControls_BASC22C_IO::VT01
Controls_BASC22C_IO	Initialized true	Out 0.0) Initialized true
CControls_BASC22C_Platform	ChnType Input10V	In 0.0	ChnType FloatOutput
> CCONTROLS_BASC22C_WEB	OutF 2.40	InMin 0.0) Reset false
> CControls_BASCC_IVE IV	OutB false	InMax 4095.0	FloatV 0.0
> CControls_Function	Outl 2	OutMin 0.0) BinaryV false
> basicSchedule	Reset false	OutMax 100.0) WireSheet OutputFrom
> datetimeStd			
> func > hvac	UI2 CControls BASC22C IO::UI2	Reset1	VT02 CControls BASC22C IO::VT02
LSeq [84B]	Initialized true	Out	Initialized true
ReheatSeq [68B]	ChnType Input10V		ChnType EloatOutput
🛃 Reset [64B]	OutE 2.16	InMin 0.1) Pasat falsa
- Tstat [52B]	OutB false	InMax 40951	EloatV 0.0
> logic	Outl 2	OutMin 01	Binan/V false
> math	Reset false	OutMax 100.	WireSheet OutputErom
> pricomp			
> sys			
> timing	CControls BASC22C IO::UI3	keset2 2	CControls BASC22C IO::VT03
> types	Initialized true	Out 01	Initialized true
	ChnType Input10V		ChnType EloatOutput
	OutE 6.36	InMin 01	Reset false
	OutB false	InMax 4095.	EloatV 0.0
	Outl 6	OutMin 01	BinaryV false
	Reset false	OutMax 100	WireSheet OutputErom

16. Highlight a *Reset* block so that it is outlined in red.

Welcome	app(BAScontrol22C)	sheets(BAScon	trol22C) 🛙					Property	Value
							▲	✓ Reset	
								Name	Reset
							11	Meta	268697601
								Out	-0.5
	1114		Deast	10	VT04			In	0.0
	CControls BASC220		hvac::Reset	<u> </u>	CControls BASC	22C IO-VT01		InMin	0.0
	Initialized	true	Out	-0.5	Initialized	true		InMax	5.0
	ChnType	Input10V	In	0.0	ChnType	EloatOutout		OutMin	-0.5
	OutE	2 40	InMin	0.0	Reset	false		OutMax	0.5
	OutB	false	InMax	5.0	FloatV	0.0			_
	Outl	2	OutMin	-0.5	BinaryV	false			
	Reset	false	OutMax	0.5	WireSheet	OutputFrom			
	UI2		Reset1	<u>12</u>	VT02				
	CControls_BASC220	C_IO::UI2	hvac::Reset		CControls_BASC	C22C_IO::VT02			
	Initialized	true	Out	0.0	Initialized	true			
	ChnType	Input10V	In	0.0	ChnType	FloatOutput			
	OutF	2.17	InMin	0.0	Reset	false			
	OutB	false	InMax	10.0	FloatV	0.0			
	Outl	2	OutMin	0.0	BinaryV	false			
	Reset	false	OutMax	100.0	WireSheet	OutputFrom			
	UI3		Reset2	14	VT03				
	CControls BASC220		hvac::Reset	E	CControls BASC	C22C IO::VT03			
	 Initialized	true	Out	-40.0	Initialized	true			
	ChnType	Input10V	In	0.0	ChnType	FloatOutput			
	OutF	6.38	InMin	0.0	Reset	false			
	OutB	false	InMax	10.0	FloatV	0.0	+		
	Outl	6	OutMin	-40.0	BinaryV	false			
	Reset	false	OutMax	140.0	WireSheet	OutputFrom			

- 17. On the right side of the window there is a menu with two columns, *Property* and *Value*.
 - a. Change the *InMin* to be the lower bound of the analog signal (ex. 0V for 0-10V).

- b. Change *InMax* to be the upper bound of the analog signal (ex. 10V for 0-10V).
- c. The *OutMin* and *OutMax* will similarly be changed but for the range of the sensor (ex. -40F and 140F for temp).
- 18. Repeat this for each Reset block.
- 19. Using the mouse drag connections between the blocks as seen in the image below.

Ul1	Reset	4	VT01	
CControls_BASC22C_IO::UI1	hvac::Reset		CControls_BAS	C22C_IO::VT01
Initialized true	Out	-0.01	Initialized	true
ChnType Input10V	In	2.41	ChnType	FloatOutput
OutF 2.41	InMin	0.0	Reset	false
OutB false	InMax	5.0	FloatV	-0.01
Outl 2	OutMin	-0.5	BinaryV	false
Reset false	OutMax	0.5	WireSheet	OutputFrom
UI2	Reset1	14	VT02	
CControls_BASC22C_IO::UI2	hvac::Reset	<u> </u>	CControls_BAS	C22C_IO::VT02
Initialized true	Out	21.81	Initialized	true
ChnType Input10V	In	2.18	ChnType	FloatOutput
OutF 2.18	InMin	0.0	Reset	false
OutB false	InMax	10.0	FloatV	21.81
Outl 2	OutMin	0.0	BinaryV	false
Reset false	OutMax	100.0	WireSheet	OutputFrom
UI3	Reset2	17.	VT03	
CControls BASC22C IO::UI3	hvac::Reset	E	CControls BAS	C22C IO::VT03
Initialized true	Out	75.30	 Initialized	true
ChnType Input10V	In	6.40	ChnType	FloatOutput
OutF 6.40	InMin	0.0	Reset	false
OutB false	InMax	10.0	FloatV	75.30
Outl 6	OutMin	-40.0	BinaryV	false
Reset false	OutMax	140.0	WireSheet	OutputFrom

Notice in the VT blocks, there should now be the present values of the sensors if the units are wired correctly and have been configured correctly as per the steps above.

20. The configuration has been built but not yet written to the device. To write it to the device press the lightning bolt button in the top left of the window. After pressing this button, a window should pop up saying the operation was a success.



21. Go back to the web portal for the controller, there should now be values populated in the Universal Inputs section and the configured UIs should be green.

	Universal Inputs							
	Universal Input 1			Universal Input 5				
UI1	2.409		UI5	0.001				
	Universal Input 2			Universal Input 6				
UI2	2.110		UI6	0.001				
	Universal Input 3			Universal Input 7				
UI3	6.415		UI7	0.004				
	Universal Input 4			Universal Input 8				
UI4	0.009		UI8	0.008				

22. Click on the button that says *Virtual Points* and a new window should open up that displays the converted analog signals. The VTs should similarly be green.

👙 Virtual Points — Mozilla Firefox				-		×
🔿 192.168.92.68/virtual.h	tml			90% 🏠	பி	\equiv
		Virtual Points				
VT01	Virtual Point 1 -0.018	VT09 0.000	Virtual Point 17 VT17 0.000			
VT02	Virtual Point 2 21.792	Virtual Point 10 VT10 0.000	Virtual Point 18 VT18 0.000 0			
VT03	Virtual Point 3 75.284	Virtual Point 11 VT11 0.000	VT19 0.000			
VT04	Virtual Point 4	VT12 0.000 0	Virtual Point 20 VT20 0.000 0			
VT05	Virtual Point 5	VT13 VT13 0.000	Virtual Point 21 VT21 0.000			
VT06	Virtual Point 6	Virtual Point 14 VT14 0.000	Virtual Point 22 VT22 0.000			
VT07	Virtual Point 7 0.000	Virtual Point 15 VT15 0.000	VT23 0.000			
VT08	Virtual Point 8 0.000	Virtual Point 16 VT16 0.000 □	Virtual Point 24 VT24 0.000			
		Auto Refresh OFF				
	NOTES: 1. A GREEN label means that the virth hover text indicates if the point is cont 2. Values for virtual points VT01-VT12 unchanged through resets and powe	ual point has been placed on the wire sheet. Th igured as "Read from Wire Sheet" or "Write to V are kept in persistent memory and will remain r cycles.	e label Close			

23. Click the blue text that says *Virtual Point X* and another window should open up.

24. In this window the BACnet object information can be filled in.

- a. The Object Name and Object Description can be whatever is preferred.
- b. The Object Type must be Analog Value.
- c. The *Units* should match what the range was set to in the previous steps (ex. INCHES_OF_WATER for the pressure).
- d. Click submit, click close, and repeat for each virtual point.

ڬ BACnet	t Object Configuration — Mozilla F	irefox		-		×
08	192.168.92.68/chn_cfg.html			90% 🖒	பி	Ξ
		BAS Channel	Configuration			
	Channel Type	Virtual 🗸		VT01		
	Default Value	0				
		BACnet Object	Configuration			
	Object Instance	201				
	Object Name		Virtual Point 1]	
	Object Type	Analog Value 🗸	 Read from wire si Write to wire she 	heet et		
	Object Description		Pressure]	
	Units	INCHES_OF_WATER V				
	COV Increment	0.001	Close	Submit)	

25. The controller has now been fully configured.

Note: If the Auto Refresh button is set to ON, live data should appear on the screen, otherwise it will stay at the data that was being read at the moment the window opened.