

Operation Manual

GW-BAC Operation Manual

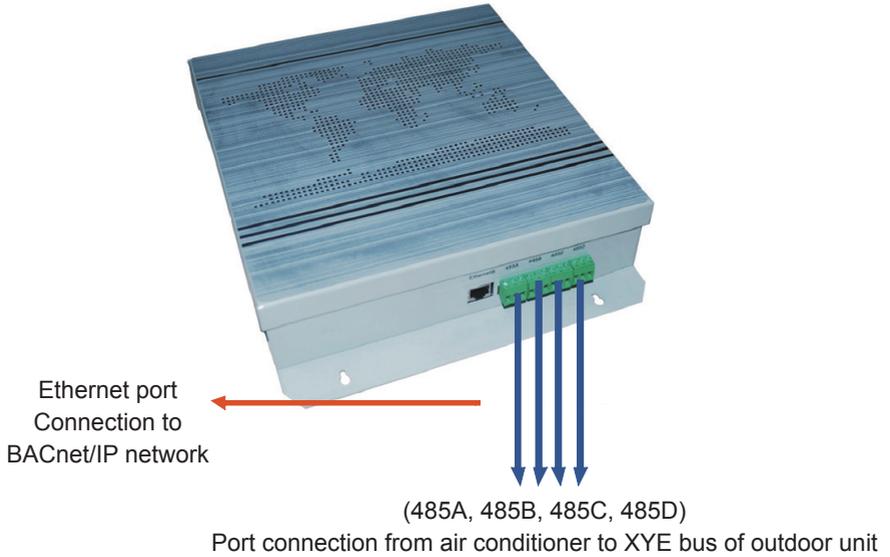
Thank you very much for purchasing our product.
Before using your product, please read this manual carefully and keep it for future reference.

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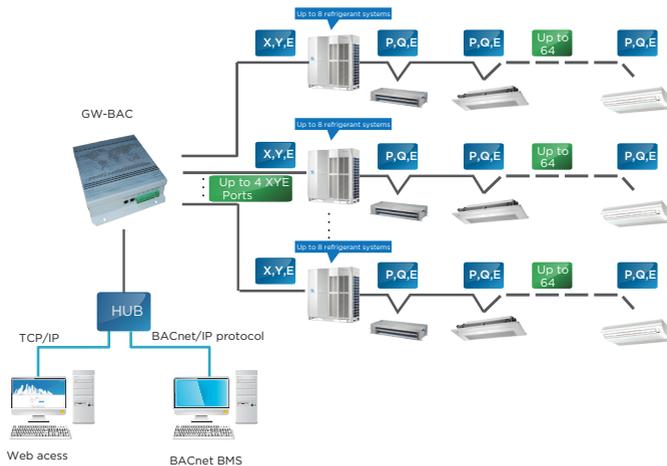
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1. Connection Schematic

1-1 Interfaces



1-2 System Connection Diagram



⚠ Caution

The BACnet gateway must be on the same network segment as the upper computer of the building control system for it to communicate with the upper computer.

2. Functions

Each bus of this device can connect up to 64 indoor units and 32 outdoor units, and 4 buses can connect up to 256 indoor units in total. With the embedded BACnet/IP function module and the Web page debugging function (Chrome browser is recommended), it is used to integrate the VRF system with the building management system.

2-1 Device Monitoring

You can use the building management system to access the specific BACnet objects and obtain information of the indoor and outdoor units. Refer to the corresponding "Object List" for details.

2-2 Operation Controls

You can use the building management system to set the operating status of the indoor unit by changing the corresponding BACnet object. Refer to the corresponding "Object List" for details.

3. Configuration Description

Before use, you need to configure the device. To access the configuration page, start a browser and enter the device IP address.

3-1 Date and Time Settings

You can set the date and time. The settings take effect immediately.

3-2 Security Settings

You can set the admin password. The settings take effect immediately.

The admin account is "admin", and the default password is "123456".

3-3 Network Settings

The default IP address of the Ethernet port is "192.168.1.8". You may ask the network administrator to assign an IP address according to actual circumstances. Then, you can access the configuration page to change the IP address of the gateway.

3-4 BACnet Settings

The BACnet network number is in the range of 2~254. You need to restart the device for the new settings to take effect. Different gateways must have different BACnet network numbers, and the same network number cannot be used for other devices. The rules to generate the BACnet device instance number are as follows:

BACnet device instance number for indoor unit = (BACnet network number * 10000) + (Port number * 1000) + (Indoor unit address);

BACnet device instance number for outdoor unit = (BACnet network number * 10000) + (Port number * 1000) + 100 + (Outdoor unit address)

485 port number: 0~3. For the 485 port near the network port, the number is 0.

Indoor unit address: 0~63; outdoor unit address: 0~31.

3-5 Reset IP Address

Before the device is powered on, connect ports 485A and 485B short. Then, restart the device.

The IP address is reset to 192.168.1.8.



4. Object List

The following describes the abbreviations used for different object types:

Object Type	Abbreviation
Analog Input	AI
Analog Output	AO
Analog Value	AV
Binary Input	BI
Binary Output	BO
Binary Value	BV
Multi-state Input	MI
Multi-state Output	MO
Multi-state Value	MV

4-1 BACnet Objects in Indoor Units

The BACnet device for each indoor unit provides the following objects:

Object ID	Object Name	Current Value Description	R/W
AI 1	Room Temperature	Room temperature (unit: °C)	R
AI 7	Malfunction Code	Error Code (see 4-3)	R
BI 2	Alarm Indication	Indicates the error status of the indoor unit: 0 - No error; 1 - Error	R
BV 1	On/Off Setting	ON/OFF Settings for Indoor Units 0 - OFF; 1 - ON When On is set, the operating mode, fan speed and temperature settings sent to the unit are based on what have been recorded in the last operation of the indoor unit. If the indoor unit is in Off status when the gateway is initialized, the default mode will be cooling with temperature at 24°C and fan speed set to low speed (1).	RW
BV 4	Remote Control Lock Setting	0 - Unlock remote control; 1 - Lock remote control	RW

4. Object List

Object ID	Object Name	Current Value Description	R/W
BV 5	Controller Lock Setting	0 - unlock wired controller, 1 - lock wired controller	RW
MV 1	Mode Setting	Mode setting: 1 - OFF, 2 - Fan, 3 - Cool, 4 - Heat, 5 - AUTO, 6 - Dry.	RW
MV 2	Fan Speed Setting	Fan speed setting: 1~7: 1~7 fan speed; 8 - AUTO; 9 indicates that the fan is off (only used to show the status of the fan, cannot set the fan speed to off). For models with 3 fan speeds: 1, 2 - low fan speed; 3, 4 - mid fan speed; 5, 6, 7 - high fan speed.	RW
MV 3	Mode Limit Setting	The current value, "1", indicates the mode limit is unlocked, "2" indicates the cooling mode is locked, and "3" indicates the heating mode is locked. For indoor units that do not support mode lock, the setting for this variable is not valid.	RW
MV 5	Fan Lock/Unlock Setting	1~7: 1~7 - Lock fan speed; 8 - Unlock. For models with 3 fan speeds: 1, 2 - Lock on low fan speed; 3, 4 - Lock on mid fan speed; 5, 6, 7 - Lock on high fan speed.	RW
AV 1	Temperature Setting	Temperature setting, unit is °C, range is 17-30.	RW
AV 2	Dual Point (Cooling) Setting	Set cooling temperature in AUTO mode. The set cooling temperature for AUTO mode must be greater than or equal to the set heating temperature for AUTO mode. Otherwise, the gateway may automatically change the set heating temperature to make its value the same as the set cooling temperature. Equivalent to AV 1 when it is used not in AUTO mode.	RW
AV 3	Dual Point (Heating) Setting	The set heating temperature for AUTO mode must be less than or equal to the set cooling temperature for AUTO mode. Otherwise, the gateway may automatically change the set heating temperature to make its value the same as the set cooling temperature. This variable is valid only when the indoor unit runs in AUTO mode.	RW
AV 4	Cooling Temperature Limit Setting	The current value, "0", indicates that the lower limit of the cooling temperature is unlocked, while "17~30°C" indicates the lower limit of the cooling temperature. For indoor units that do not support the feature to unlock the lower limit in cooling mode, the setting for this variable is not valid.	RW
AV 5	Heating Temperature Limit Setting	The current value, "0", indicates that the upper limit of the heating temperature is unlocked, while "17~30°C" indicates the upper limit of the heating temperature. For indoor units that do not support the feature to unlock the upper limit in heating mode, the setting for this variable is not valid.	RW

"R" indicates that the current object value is read-only, and "W" indicates that the current object value can be written. "RW" indicates that the current value of the variable corresponds to the current status of the indoor unit, and this value can be written to change the related status of the indoor unit.

4. Object List

4-2 Object List for Outdoor Units

The BACnet device for each outdoor unit provides the following objects:

Object ID	Object Name	Current Value Description/Notes	R/W
MI 1	Mode Status	Operating Mode for Outdoor Unit 1 - Off, 2 - Reserved, 3 - Cool, 4 - Heat, 5- Forced Cool, 6 - Master Cool 7- Master Heat, 8 - Forced Heat	R
BI 1	On/Off Status	0 - OFF; 1 - ON	R
BI 2	Alarm Indication	0 indicates no error; 1 indicates an error	R
AI 1	Ambient Temperature	Ambient temperature (unit: °C)	R
AI 2	Compressor 1 Freq	Compressor 1 frequency (unit: Hz)	R
AI 3	Compressor 2 Freq	Compressor 2 frequency (unit: Hz)	R
AI 4	Compressor 1 Discharge Temp	Compressor 1 discharge temperature (unit: °C)	R
AI 5	Compressor 2 Discharge Temp	Compressor 2 discharge temperature (unit: °C)	R
AI 6	High Pressure	High pressure for compressor (unit: bar)	R
AI 7	Low Pressure	Low pressure for compressor (unit: bar)	R
AI 8	Malfunction Code	Error Code (see 4-3)	R
AI 9	Fan 1 Speed	Fan speed for Fan 1	R
AI 10	Fan 2 Speed	Fan speed for Fan 2	R

"R" indicates that the current object value is read-only.

4. Object List

4-3 Error Codes

Error Code	Content
0	No error
1~20	A0~AF, AH, AL, AP, AU
21~40	b0~bF, bH, bL, bP, bU
41~60	C0~CF, CH, CL, CP, CU
61~80	E0~EF, EH, EL, EP, EU
81~100	F0~FF, FH, FL, FP, FU
101~120	H0~HF, HH, HL, HP, HU
121~140	L0~LF, LH, LL, LP, LU
141~160	J0~JF, JH, JL, JP, JU
161~180	n0~nF, nH, nL, nP, nU
181~200	P0~PF, PH, PL, PP, PU
201~220	r0~rF, rH, rL, rP, rU
221~240	t0~tF, tH, tL, tP, tU
241~260	U0~UF, UH, UL, UP, UU
Reserved	

Notes:

- 1) A0~AF refers to A0, A1, A2, A3, A4, A5, A6, A7, A8, A9, AA, AB, AC, AD, AE, AF, and so on.
- 2) For some models, the errors displayed may not be actual errors. In this case, refer to actual errors of the unit. The specific meaning of the error code is based on the interpretation of the service manual.

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