



1st Gen. Controllers VRF Midea

WEEKLY CENTRALIZED CONTROLLER OWNER'S & INSTALLATION MANUAL

CCM08

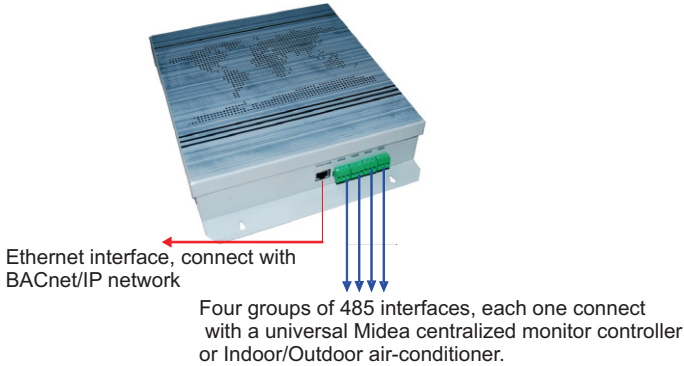
NW-BCN-CM

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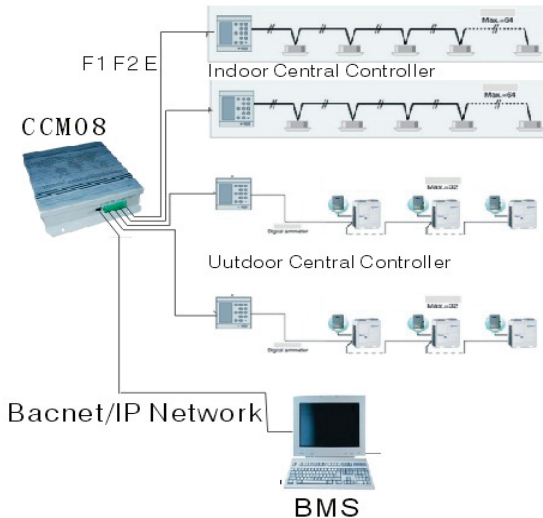
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1. Connecting diagram

1.1. Central Controller O8 interfaces illustration



1.2. System connecting illustration



⚠ CAUTION

Do not operate the air-conditioner frequently, for avoiding the operating status of the air-conditioner system would be different from the expected status. The operation time interval between different objects in the same air-conditioner should be over 10~20 seconds, to keep the promptness and effectiveness of the status changing.

2. Function description

This unit shall be installed between in Building Management System (BMS) and air conditioning, which provide with BACnet interfaces, associating these two systems to realize the systems integration. It also can connect with Midea Multi-connected air-conditioner independently.

BMS is allowed to access any online air conditioning in central air conditioning system for information collection and operation control, after proper installation of central air conditioning and this unit.

2.1. Information collection

This unit is provided a function that collecting information from the central air conditioning by BMS, which operation states; data of indoor units and outdoor units within air conditioning system could be obtained by accessing the specifically BACnet object. Refer to "Object table" for detail object information.

2.2. Operation control

The unit provides BMS control central air conditioning, with seven setting functions to control the indoor units in which of the system. Setting functions included "Operation mode setting", "time-ON setting", "time-OFF setting", "Auxiliary swing function setting" and "electric heater setting". By modify the corresponding BACnet object variables to set the unit's operation status. Refer to "Object table" for detail object information.



CAUTION

Do not operate the air-conditioner frequently, for avoiding the operating status of the air-conditioner system would be different from the expected status. The operation time interval between different objects in the same air-conditioner should be over 10~20 seconds, to keep the promptness and effectiveness of the status changing.

3. Configuration illustration

Setting configuration before using this unit, whether can't provide to preinstall function. User input IP address of this unit into the browser, using WEB access function of this unit set air conditioning.

3.1. Time and date setting

Control provide real-time clock for saving date and time setting, control also provide corresponding set function through network. After setting to control that will be preform at once and the equipment need't restart.

3.2. Safe setting

Controller was reset function through administrators keyword provided by network. After setting will effect at once and need it restart.

The default administrator name is "admin" and the password is "12345".

CAUTION

For the system safety, please change the password in time.

3.3. Network setting

There is an Ethernet interfaces in the controller, it is Eth0. This device adapts Ethernet as the network interface of BACnet/IP.

IP address of ethernet has been set 192.168.1.8 before ex-factory, please modified to appropriate network address. Please contact with network manager to know detailed information.

3.4. BACnet setting

The BACnet network code represents only one of the BACnet Centralized Controller, at the range from 2 to 418. Default value is 19.

The BACnet UDP port setting range from 1 to 65534. Default value is 47808.

Once set up the address, please restart the device to renew the modified settings to become effective.

If the above setting have been changed, the corresponding setting in BMS master system must be setting as the same value.

BACnet network No. is the BACnet network No. that belong to the BACnet device of the MDV series air conditioner which under connect with the BACnet centralized controller. For different centralized controller must be set in different BACnet network NO., which is the unique number in the system could not be used for represent the other device or BACnet centralized controller. The calculation formula of air-conditioner indoor and outdoor unit instance number is as follow:
Device ID=BTXX;.

B is the bus Number 0-3;

T means type 0-indoor unit,1-outdoor unit;

XX is the indoor unit Number 0-63 or outdoor unit 0-31;

3.5. Factory Reset

When the unit is electrified,short connect the terminal 1and 2 of 485.It will return to factory settings when finishing start-up .

The IP address, Login ID/PW, A/C name will be return to factory setting, the other setting will be remain.



4. Object tabel

This device provides with different objects tables for the different types of outdoor units which are in using for the MDV system.

System will automatically identify the in using outdoor unit and generate the BACnet object.

4.1. Indoor objects

This equipment provides with fourteen types of BACnet object, show as the following table, for connecting with indoor unit using in the Building Management System (BMS) or other system which suitable for BACnet Protocol.

Number	Content	Number	Content
1	Preset Temperature	10	Malfunction state
2	Indoor temperature	11	Protection state
3	Set on time	12	Mode query
4	Set off time	13	Speed query
5	Swing function	14	Temp set query
6	Device Information	16	AC_TurnOnOff
7	Operation mode	15	Remote Control lock
8	Fan state	17	ALL_AC_OnOff
9	Electric heater function	-	-

Detailed information of corresponding objects refer to under-table.

1) Device information:

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-iutput 5	R
Object Name	CharacterString	AC_ICom3Current	R
Object Type	BACnetObjectType	Analog-iutput	R
Current value	REAL		R
Discription	CharacterString	Compressor 3 current	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Amperes	R
Minimum	REAL	0	O
Maximum	REAL	200	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Low valve value	REAL	0	O
High valve value	REAL	200	O
Width valve value	REAL	1	O
Enable valve value	BACnetLimitEnable	F T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the COMPRESSOR 1 ELECTRIC CURRENT (it's unsettingtable). The MINIMAL VALUE stands for the minimum electric current, while the MAXMUN VALUE stands for the maximum electric current.		

2) Running mode

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Multistate-output 1	R
Object Name	CharacterString	AC_OModeSetting	R
Object Type	BACnetObjectType	Multistate-output	R
Description	CharacterString	Operation mode setting	O
Current value	Unsigned		W
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
States number	Unsigned	6	R
States text	BACnet ARRAY[N] CharacterString	Auto Cool Heat Dehumidify FanOnly Stop	O
Priority Array	BACnetPriorityArra	NULL	R
Release default	Unsigned	0	R
Time delay	Unsigned	2	O
Publicly type	Unsigned	1701	O
Feedback value	Unsigned	6	
Event enable	BACnetEventTransitionBits	T T T	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current OPERATION MODE (it's writeable and settable). Thereinto, the CURRENT VALUE 1 means HEATING MODE; the CURRENT VALUE 2 means COOLING MODE; the CURRENT VALUE 3 means DEHUMIDIFIED MODE; the CURRENT VALUE 4 means AIR SUPPLY; the CURRENT VALUE 5 means AUTO MODE; the CURRENT VALUE 6 means SHUT OFF.		

3) Fan states

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Multistate-output 2	R
Object Name	CharacterString	AC_OFanSpeed	R
Object Type	BACnetObjectType	Multistate-output	R
Description	CharacterString	Fan Speed Setting	O
Current value	Unsigned	W	
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
States number	Unsigned	5	R
States text	BACnet ARRAY[N] CharacterString	Auto Low Middle High Stop	O
Priority Array	BACnetPriorityArra	NULL	R
Release default	Unsigned	5	R
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Feedback value	Unsigned	5	
Event enable	BACnetEventTransitionBits	T T T	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current FAN SPEED (It's writable and settable). Thereinto, the CURRENT VALUE 1 means HIGH SPEED; the CURRENT VALUE 2 means MEDIUM SPEED; the CURRENT VALUE 3 means LOW SPEED; the CURRENT VALUE 4 means AUTO SPEED; the CURRENT VALUE 5 means FAN STOP. The thing is, during air conditioner operating, the CURRENT VALUE would be set as to 5 (the order of stop the fan) for ensuring the normal operate, however, this default setting would be omitted by the system automatically.		

4) Preset temperature

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-output 1	R
Object Name	CharacterString	AC_OTempSetting	R
Object Type	BACnetObjectType	Analog-output	R
Current value	REAL		W
Description	CharacterString	Temperature Setting	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Degree-Celsius	R
Minimum	REAL	16	O
Maximum	REAL	32	O
Priority array Value	BACnetPriorityArra	NULL	R
Default release	REAL	25	R
Distinguishability	REAL	1	O
COV increment	REAL	1	O
Low valve value	REAL	16	O
High valve value	REAL	32	O
Width valve value	REAL	1	O
Enable valve value	BACnetLimitEnable	T T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Publicly type	Unsigned	1701	O
Time delay	Unsigned	1	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current SETTING TEMPERATURE (it's writable and settable). The MINIMAL VALUE stands for the min. temperature, while the MAXMUN VALUE stands for the max. temperature. The setting temperature could not exceed than the range.		

5) Room temperature

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-iutput 1	R
Object Name	CharacterString	AC_TempIndoor	R
Object Type	BACnetObjectType	Analog-iutput	R
Current value	REAL		R
Description	CharacterString	Indoor temperature	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Reliability	BACnetReliability	NO-FAULT-DETECTED	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Degree-Celsius	R
Minimum	REAL	-20	O
Maximum	REAL	100	O
Distinguishability	REAL	1	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Low valve value	REAL	-20	O
High valve value	REAL	100	O
Width valve value	REAL	1	O
Enable valve value	BACnetLimitEnable	T T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	event	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current ROOM TEMPERATURE (its read only, could not be set). The MINIMAL VALUE stands for the min. temperature, while the MAXMUN VALUE stands for the max. Temperature.		

6) Set on time

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-output 2	R
Object Name	CharacterString	AC _ IOnTime	R
Object Type	BACnetObjectType	Analog-input	R
Current value	REAL		W
Description	CharacterString	On Time Setting	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnetEventStates	Normal	R
Reliability	BACnetReliability	NO-FAULT-DETECTED	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Hours	R
Minimum	REAL	0	O
Maximum	REAL	24	O
Distinguishability	REAL	0.25	O
Priority Array	BACnetPriorityArra	NULL	R
Default release	REAL	0	R
COV INCREMENT	REAL	0.25	O
Low valve value	REAL	0	O
High valve value	REAL	24	O
Width valve value	REAL	0.5	O
Enable valve value	BACnetLimitEnable	T T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Publicity type	Unsigned	1701	O
Time delay	Unsigned	1	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current TIMING ON time (it is read only, could not be set). From 0 to 24 means during the 24 hours without timing has been set.		

7) Set off time

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-output 3	R
Object Name	CharacterString	AC _ OOffTime	R
Object Type	BACnetObjectType	Analog-output	R
Current value	REAL		W
Description	CharacterString	Off Time Setting	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Hours	R
Minimum	REAL	0	O
Maximum	REAL	24	O
Distinguishability	REAL	0.25	O
Reliability	BACnetReliability	NO-FAULT-DETECTED	O
Priority Array	BACnetPriorityArra	NULL	R
Default release	REAL	0	R
COV INCREMENT	REAL	0.25	O
Low valve value	REAL	0	O
High valve value	REAL	24	O
Width valve value	REAL	0.5	O
Enable valve value	BACnetLimitEnable	T T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Publicly type	Unsigned	1701	O
Time delay	Unsigned	1	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current TIMING OFF time (it is read only, could not be set). From 0 to 24 means during the 24 hours without timing has been set.		

8) Swing function

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Binary-output 1	R
Object Name	CharacterString	AC_OSwing	R
Object Type	BACnetObjectType	Binary-output	R
Current value	BACnetBinaryPV	inactive	W
Discription	CharacterString	Swing Setting	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Polarity	BACnetPolarity	Normal	R
Inactive text	CharacterString	Turn off	O
Active text	CharacterString	Turn on	O
Time delay	Unsigned	1	O
States change time	BACnetDateTime		O
States change times	Unsigned		O
Change time to 0	BACnetDateTime		O
Publicly type	Unsigned	1701	O
Feedback value	BACnetBinaryPV	inactive	O
Event enable	BACnetEventTransitionBits	T T T	R
Affirm transform	BACnetEventTransitionBits	T T T	O
Priority Array	BACnetPriorityArra	NULL	R
Default release	BACnetBinaryPV	inactive	R
Notify type	BACnetNotify type	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current SWING STATUS. INACTIVE means SWING OFF, while ACTIVE means SWING ON.		

9) Electric heater function

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Binary-output 2	R
Object Name	CharacterString	AC _OElecHeat	R
Object Type	BACnetObjectType	Binary-output	R
Current value	BACnetBinaryPV	Inactive	W
Discription	CharacterString	Elecheat Setting	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Polarity	BACnetPolarity	Normal	R
Inactive text	CharacterString	Turn off	O
Active text	CharacterString	Turn on	O
Time delay	Unsigned	1	O
States change time	BACnetDateTime	-	O
States change times	Unsigned	-	O
Change time to 0	BACnetDateTime	-	O
Publicly type	Unsigned	1701	O
Feedback value	BACnetBinaryPV	inactive	O
Event enable	BACnetEventTransitionBits	T T T	R
Affirm transform	BACnetEventTransitionBits	T T T	O
Priority Array	BACnetPriorityArra	NULL	R
Default release	BACnetBinaryPV	inactive	R
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	<p>"The CURRENT VALUE attribute of this selected object reflects the current ELECTRIC HEATER working status. INACTIVE means ELECTRIC HEATER OFF, while ACTIVE means ELECTRIC HEATER ON. The thing is, when air conditioner in the COOLING MODE or other mode, the CURRENT VALUE would be set as ELECTRIC HEATER ON for ensuring the normal operate, however, this default setting would be omitted by the system automatically."</p>		

10) AC_Turn On/Off

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Binary-output 3	R
Object Name	CharacterString	AC_TurnOnOFF	R
Object Type	BACnetObjectType	Binary-output	R
Current value	BACnetBinaryPV	inactive	W
Discription	CharacterString	Turn On/Off the AC	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Polarity	BACnetPolarity	Normal	R
Inactive text	CharacterString	Turn off	O
Active text	CharacterString	Turn on	O
Time delay	Unsigned	1	O
States change time	BACnetDateTime		O
States change times	Unsigned		O
Change time to 0	BACnetDateTime		O
Publicly type	Unsigned	1701	O
Feedback value	BACnetBinaryPV	inactive	O
Event enable	BACnetEventTransitionBits	T T T	R
Affirm transform	BACnetEventTransitionBits	T T T	O
Priority Array	BACnetPriorityArra	NULL	R
Default release	BACnetBinaryPV	inactive	R
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	<p>The CURRENT VALUE attribute of the selected object reflects the current AC_TurnOnOff STAUS . INACTIVE means AC Turn OFF , while ACTIVE means AC Turn On .</p> <p>Caution: When CCM08 power on, the A/C's object: Setting mode, setting fan speed, setting temp. must be setting at least one time. So that this object"AC TurnOnOff" will be available.</p>		

11) Remote Control lock

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Binary-output 2	R
Object Name	CharacterString	AC _OElecHeat	R
Object Type	BACnetObjectType	Binary-output	R
Current value	BACnetBinaryPV	Inactive	W
Discription	CharacterString	Elecheat Setting	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Polarity	BACnetPolarity	Normal	R
Inactive text	CharacterString	Turn off	O
Active text	CharacterString	Turn on	O
Time delay	Unsigned	1	O
States change time	BACnetDateTime	-	O
States change times	Unsigned	-	O
Change time to 0	BACnetDateTime	-	O
Publicly type	Unsigned	1701	O
Feedback value	BACnetBinaryPV	inactive	O
Event enable	BACnetEventTransitionBits	T T T	R
Affirm transform	BACnetEventTransitionBits	T T T	O
Priority Array	BACnetPriorityArra	NULL	R
Default release	BACnetBinaryPV	inactive	R
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	<p>"The CURRENT VALUE attribute of this selected object reflects the current ELECTRIC HEATER working status. INACTIVE means ELECTRIC HEATER OFF, while ACTIVE means ELECTRIC HEATER ON. The thing is, when air conditioner in the COOLING MODE or other mode, the CURRENT VALUE would be set as ELECTRIC HEATER ON for ensuring the normal operate, however, this default setting would be omitted by the system automatically."</p>		

12) ALL_AC_OnOff

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnet Object Identifier	Binary-output 5	R
Object Name	Character String	ALL_AC_OnOff	R
Object Type	BACnet Object Type	Binary-output	R
Current value	BACnet Binary PV	inactive	W
Discription	CharacterString	turn on/turn off ac all the bus	O
Status Flags	BACnet Status Flags	F F F F	R
Event states	BACnet Event States	Normal	R
Take off service	BOOLEAN	F	R
Polarity	BACnet Polarity	Normal	R
Inactive text	Character String		O
Active text	Character String	turn off ac all the bus	O
Time delay	Unsigned	1	O
States change time	BACnet Date Time	-	O
States change times	Unsigned	-	O
Change time to 0	BACnet Date Time	-	O
Publicly type	Unsigned	1701	O
Feedback value	BACnet Binary PV	inactive	O
Event enable	BACnetEventTransitionBits	T T T	R
Affirm transform	BACnetEventTransitionBits	T T T	O
Priority Array	BACnetPriorityArra	NULL	R
Default release	BACnetBinaryPV	inactive	R
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current ALL_AC_OnOff STATUS . ACTIVE means Turn off ac on the bus.		

13) Malfunction States

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Multistate-input 1	R
Object Name	CharacterString	AC_IMalfunction	R
Object Type	BACnetObjectType	Multistate-input	R
discription	CharacterString	Malfunction State	O
current value	Unsigned		R
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
States number	Unsigned	17	R
States text	BACnet ARRAY[N] CharacterString	EF EE ED EC EB EA E9 E8 E7 E6 E5 E4 E3 E2 E1 E0 No E	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Event enable	BACnetEventTransitionBits	T T T	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current MALFUNCTION (it's read only). In case of the CURRENT VALUE shows as No E, that means without malfunction, while other information displaying means the relevant malfunction. For detail, please refer to TROUBLESHOOT & MAINTENANCE BROCHURE, or contact with After-sales agent. Provided that more the one malfunction occurs simultaneously, only the minimal No. of the error would be showed.		

14) Protection States

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Multistate-input 2	R
Object Name	CharacterString	AC_IProtect	R
Object Type	ACnetObjectType	Multistate-input	R
Discription	CharacterString	Protect State	O
Current value	Unsigned		R
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
States number	Unsigned	11	R
States text	BACnet ARRAY[N] CharacterString	PF P8 P7 P6 P5 P4 P3 P2 P1 P0 No P	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Event enable	BACnetEventTransitionBits	T T T	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current PROTECTION status (it's read only). In case of the CURRENT VALUE shows as No P, that means the system without protection, while other information displaying means the other relevant protection. For detail, please refer to TROUBLESHOOT & MAINTENANCE BROCHURE, or contact with After-sales agent. Provided that more than one protection occurs simultaneously, only the minimal No. of the protection would be showed. Thereinto, the CURRENT VALUE displays as 1 means P0; the CURRENT VALUE displays as 2 means P1, analogously, the CURRENT VALUE displays as 3 means P2; the CURRENT VALUE displays as 10 means PF; the CURRENT VALUE displays as 11 means No P.		

15) Mode Query

Attribute identifier	Data type	Attribute value	Read/Write
Object identifier	BACnetObjectIdentifier	Multistate-input 3	R
Object name	CharacterString	AC_QueryMode	R
Object type	BACnetObjectType	Multistate-input	R
Description	CharacterString	QueryMode	O
Status text	BACnet ARRAY[N] CharacterString	{"Heat","Cool","Dehumidify", "Fanonly","Auto","Stop"}	O

16) Fan Speed Query

Attribute identifier	Data type	Attribute value	Read/Write
Object identifier	BACnetObjectIdentifier	Multistate-input 4	R
Object name	CharacterString	AC_QueryFanSpeed	R
Object type	BACnetObjectType	Multistate-input	R
Description	CharacterString	QueryFanSpeed	O
Status text	BACnet ARRAY[N] CharacterString	{"High","Middle","Low","Auto", "Stop"}	O

17) Temperature Setting Query

Attribute identifier	Data type	Attribute value	Read/Write
Object identifier	BACnetObjectIdentifier	Analog-input 4	R
Object name	CharacterString	AC_QueryTempSetting	R
Object type	BACnetObjectType	Analog-input	R
Current value	REAL		R
Description	CharacterString	QueryTempSetting	O
Unit	BACnetEngineering Units	Degree-Celsius	R

4.2. Outdoor Air Conditioner Objects

This equipment provides with ten types of BACnet object, show as the following table, for connecting with Inverter AC or Digital AC using in the Building Management System (BMS) or other system which suitable for BACnet Protocol.

Number	Content
1	Device Information
2	Operation mode
3	Fan state
4	Outdoor temperature
5	Indoo unit quantity
6	Compressor 1 electric current
7	Compressor 2 electric current
8	Compressor 3 electric current
9	Malfuction state
10	Protection state

1) Device Information

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnet Object Identifier	Acnumber	R
Object Name	Character String	Outdoor_ *_ *_ *	R
Object Type	BACnet Object Type	Device	R
System Status	BACnet Device Status	Operational	R
Producer Name	Character String	AC Inc	R
Producer Identifier	Unisgned 16	111(Reserve)	R
Model Name	Character String	Frequency Conversion AC or Digital rotation AC	R
Firmware Edition	Character String	1.0	R
Application Software Edition	Character String	1.0	R
Protocol Edition	Unsigned	1	R
Protocol Correspondency Type	Unsigned	3	R
Protocol Service Support	BACnet Service Support	Read Property etc.	R
Protocol Object Types Support	BACnet Object Types Support	Analog Input etc.	R
Object Array	BACnet Array [n]	List all objects	R
Max length of APDU support	Unsigned	1476	R
Segmentation support	BACnet Segmentation	Segmented both(0)	R
Local Time	Time		R/W
Local Date	Date		R/W
Apdu segmentation time over	Unsigned	2000	O
Apdu timeover	Unsigned	3000	R
Apdu resend times	Unsigned	3	R
Device address binding	AddressBinding	ASN.1 ij	R
Operation instruction	The OBJECT NAME attribute of this selected object reflects the MODEL INFORMATION, which is not allowed to set, while the specific MODEL NAME is defined by the relevant protocol.		

2) Running Mode

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Multistate-input 1	R
Object Name	CharacterString	AC_IOperationMode	R
Object Type	BACnetObjectType	Multistate-output	R
Description	CharacterString	Operation mode	O
Current value	Unsigned		W
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
States number	Unsigned	3	R
States text	BACnet ARRAY[N] CharacterString	Cool Heat Stop	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Event enable	BACnetEventTransitionBits	T T T	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current OUTDOOR UNIT OPERATION MODE (it's unsettable). Thereinto, the CURRENT VALUE 1 means HEATING MODE; the CURRENT VALUE 2 means COOLING MODE; the CURRENT VALUE 3 means DEHUMIDIFIED MODE;		

3) Fan States

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Multistate- iutput 2	R
Object Name	CharacterString	AC_IFanSpeed	R
Object Type	BACnetObjectType	Multistate- iutput	R
Current value	Unsigned		R
Description	CharacterString	Fan speed	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet_EventStates	Normal	R
Take off	serviceBOOLEAN	F	R
States number	Unsigned	4	R
States text	BACnet ARRAY[N] CharacterString	Low Middle High Stop	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Event enable	BACnetEventTransitionBits	T T T	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current FAN SPEED (It's read only). Thereinto, the CURRENT VALUE 1 means HIGH SPEED; the CURRENT VALUE 2 means MEDIUM SPEED; the CURRENT VALUE 3 means LOW SPEED; the CURRENT VALUE 4 means FAN STOP.		

4) Outdoor Temperature

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-iutput 1	R
Object Name	CharacterString	AC_ITempOutdoor	R
Object Type	BACnetObjectType	Analog-iutput	R
Current value	REAL		R
Description	CharacterString	Outdoor Temperature	O
Status Flags	BACnetStatusFlags	F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Degree-Celsius	R
Minimum	REAL	-20	O
Maximum	REAL	100	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Low valve value	REAL	-20	O
High valve value	REAL	100	O
Width valve value	REAL	1	O
Enable valve value	BACnetLimitEnable	T T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	event	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current ROOM TEMPERATURE (it could not be set). The MINIMAL VALUE stands for the minimum temperature, while the MAXMUN VALUE stands for the maximum Temperature.		

5) Indoor Quantity

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-iutput 2	R
Object Name	CharacterString	AC_ ITotalACs	R
Object Type	BACnetObjectType	Analog-iutput	R
Current value	REAL		R
Description	CharacterString	Indoor unit qty	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units		R
Minimum	REAL	0	O
Maximum	REAL	250	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Low valve value	REAL	0	O
High valve value	REAL	250	O
Width valve value	REAL	1	O
Enable valve value	BACnetLimitEnable	F T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current INDOOR UNIT QUANTITY (it's read only).		

6) Compressor 1 Current

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-iutput 3	R
Object Name	CharacterString	AC_ ICom1Current	R
Object Type	BACnetObjectType	Analog-iutput	R
Current value	REAL		R
Description	CharacterString	Compressor 1 current	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Amperes	R
Minimum	REAL	0	O
Maximum	REAL	200	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Low valve value	REAL	0	O
High valve value	REAL	200	O
Width valve value	REAL	1	O
Enable valve value	BACnetLimitEnable	T T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the COMPRESSOR 1 ELECTRIC CURRENT (it's unsettingtable). The MINIMAL VALUE stands for the MINIMUM ELECTRIC CURRENT, while the MAXMUN VALUE stands for the MAXIMUM ELECTRIC CURRENT.		

7) Compressor 2 Current

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-iutput 4	R
Object Name	CharacterString	AC_ ICom2Current	R
Object Type	BACnetObjectType	Analog-iutput	R
Current value	REAL		R
Description	CharacterString	Compressor 2 current	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Amperes	R
Minimum	REAL	0	O
Maximum	REAL	200	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Low valve value	REAL	0	O
High valve value	REAL	200	O
Width valve value	REAL	1	O
Enable valve value	BACnetLimitEnable	T T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the COMPRESSOR 2 ELECTRIC CURRENT (it's unsettingtable). The MINIMAL VALUE stands for the minimum electric current, while the MAXMUN VALUE stands for the maximum electric current.		

8) Compressor 3 Current

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Analog-iutput 5	R
Object Name	CharacterString	AC_ICom3Current	R
Object Type	BACnetObjectType	Analog-iutput	R
Current value	REAL		R
Discription	CharacterString	Compressor 3 current	O
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
Unit	BACnetEngineering Units	Amperes	R
Minimum	REAL	0	O
Maximum	REAL	200	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Low valve value	REAL	0	O
High valve value	REAL	200	O
Width valve value	REAL	1	O
Enable valve value	BACnetLimitEnable	F T	O
Event enable	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the COMPRESSOR 1 ELECTRIC CURRENT (it's unsettingtable). The MINIMAL VALUE stands for the minimum electric current, while the MAXMUN VALUE stands for the maximum electric current.		

9) Error States

<i>Attribute Identifier</i>	<i>Data mode</i>	<i>Attribute value</i>	<i>Read/write</i>
States Text	BACnet Object Identifier	Multistate-input 3	R
Object Identifier	Character String	AC_IOut malfunction	R
Object Name	BACnet Object Type	Multistate-input	R
Object Type	Character String	Malfunction State	O
Discription	Unsigned	-	R
Current Value	BACnet Status Flags	F F F F	R
Status Flags	BACnet Event States	Normal	R
Event States	BOOLEAN	F	R
Take Off Service	Unsigned	17	R
States Number	BACnet ARRAY[N] Character String	EF, EE, ED, EC, EB EA, E9, E8, E7, E6, E5, E4, E3, E2, E1, E0, No E	O
Time Delay	Unsigned	1	O
Publicly Type	Unsigned	1701	O
Event Enable	BACnet Event Transition Bits	T T T	O
Affirm Transform	BACnet Event Transition Bits	T T T	O
Notify Type	BACnet Notify Type	alarm	O
Operation Instruction	<p>The CURRENT VALUE attribute of the selected object reflects the current ERROR status (it's read only). In case of the CURRENT VALUE shows as No E, that means the system without protection, while other information displaying means the other relevant protection. For detail, please refer to TROUBLESHOOT & MAINTENANCE BROCHURE, or contact with Aftersales agent. Provided that more the one protection occurs simultaneously, only the minimal No. of the protection would be showed. Thereinto, the CURRENT VALUE displays as 1 means E0; the CURRENT VALUE displays as 2 means E1, analogously, the CURRENT VALUE displays as 3 means E2; the CURRENT VALUE displays as 16 means EF; the CURRENT VALUE displays as 17 means No E.</p>		

10) Protect States

Attribute Identifier	Data mode	Attribute value	Read/write
Object Identifier	BACnetObjectIdentifier	Multistate-input 4	R
Object Name	CharacterString	AC_IOutprotect	R
Object Type	BACnetObjectType	Multistate-input	R
Discription	CharacterString	Protect State	O
Current value	Unsigned		R
Status Flags	BACnetStatusFlags	F F F F	R
Event states	BACnet EventStates	Normal	R
Take off service	BOOLEAN	F	R
States number	Unsigned	17	R
States text	BACnet ARRAY[N] CharacterString	PF PE PD PC PB PA P9 P8 P7 P6 P5 P4 P3 P2 P1 P0 No P	O
Time delay	Unsigned	1	O
Publicly type	Unsigned	1701	O
Event enable	BACnetEventTransitionBits	T T T	O
Affirm transform	BACnetEventTransitionBits	T T T	O
Notify Type	BACnetNotifyType	alarm	O
Operation instruction	The CURRENT VALUE attribute of the selected object reflects the current PROTECTION STATUS (it's read only). In case of the CURRENT VALUE shows as No P, that means the system without protection, while other information displaying means the other relevant protection. For detail, please refer to TROUBLESHOOT & MAINTENANCE BROCHURE, or contact with After-sales agent. Provided that more than one protection occurs simultaneously, only the minimal No. of the protection would be showed. Thereinto, the CURRENT VALUE displays as 1 means P0; the CURRENT VALUE displays as 2 means P1, analogously, the CURRENT VALUE displays as 3 means P2; the CURRENT VALUE displays as 16 means PF; the CURRENT VALUE displays as 17 means No P.		

**CAUTION**

BACnet which are the registered trademarks have been registered by America ASHARE consortium in United State and other countries.

5. Installation

5.1. Purpose

For the connection between Air conditioner system and the Building Management System (BMS) (namely Automated Building System) with BACnet interfaces by realizing the integration of MDV system and Building Management system.

5.2. Features

- Insert Air conditioner system to BACnet;
- Comply with BACnet Standard, base on BACnet technique;
- The core control module of node applies Flash Memory, which application program could be downloaded and upgrade on line.
- Support BACnet/IP Protocol, Ethernet connected way. Support four 485 interfaces, convenient for installation and wiring, each interface which Pluggable Terminal connecting with only one general BACnet of air conditioner.
- Connection BACnet Air Conditioner with AUTO-ID (including BACnet of indoor unit and outdoor unit), connection between Air Conditioner indoor unit and outdoor unit with AUTO-ID.

5.3. Specification

	Function	
1	Processor	TI AM1808
2	Memory	MT47H64M16HR-25EIT:H 128M
3	Saver	SAMSUNG KG08VOD 256M
4	I/O	Interface Road
5	BACnet connection	IP/BACnet
6	Input supply power	100-220VAC
7	Work temperature	Temperature Relative humidity
8	Mass of Function	Manual's Owner
9	Dimension	-

Product Description

For inserting field apparatus system to BACnet building control network which will realizable and possible by the BACnet protocol integration of BACnet. To realize that monitor field apparatus through RS485 interface. To realize that communicate with BMS control system through BACnet/IP interfaces.

Mode of Supportive Bacnet Consistency

<i>Mode1 j</i>	<i>Mode4 j</i>
<i>Mode2 j</i>	<i>Mode5 j</i>
<i>Mode3 j</i>	<i>Mode6 j</i>

Functional Group Of Supportive Bacnet

- Functional group of supportive BACnet operation equipment functional group-Hand
- Personal computer working station functional group
- Event start functional group
- Event response functional group
- COV event start functional group
- COV event response functional group
- File functional group
- Reinitialization functional group
- Virtual operator interface functional group
- Virtual terminal functional group
- Communication equipment functional group
- Time main station functional group

Supportive Object Type

Object Type	supported or not	Dynamic established or not	Dynamic deleted or not	optional support of attribute	Writable attribute
Analog Input Object Type	i	i	i	_____	_____
Analog Output Object Type	i	i	i	_____	_____
Analog Value Object Type	i	i	i	_____	_____
Binary Input Object Type	i	i	i	_____	_____
Binary Output Object Type	i	i	i	_____	_____
Binary Value Object Type	i	i	i	_____	_____
Calendar Object Type	i	i	i	_____	_____
Command Object Type	i	i	i	_____	_____
Device Object Type	i	i	i	_____	_____
Event Enrollment Object Type	i	i	i	_____	_____
File Object Type	i	i	i	_____	_____
Group Object Type	i	i	i	_____	_____
Loop Object Type	i	i	i	_____	_____
Multi-state Input Object Type	i	i	i	_____	_____
Multi-state Output Object Type	i	i	i	_____	_____
Notification Class Object Type	i	i	i	_____	_____
Program Object Type	i	i	i	_____	_____
Schedule Object Type	i	i	i	_____	_____

Option of Data Link Layer

i	ISO 8802-3,10BASE5	i	ARCNET,coax star
i	ISO 8802-3,10BASE2	i	ARCNET,coax bus
i	ISO 8802-3,10BASET	i	ARCNET,twisted pair star
i	ISO 8802-3,Fiber	i	twisted pair star,ARCNET
i	MS/TP master,baudrate(s):_____	i	ARCNET, fiber star R
i	MS/TP slave,baud rate(s):_____	i	LonTalk,medium:_____
i	Point-To-Point,EIA232,baudrate(s):_____	i	other
i	Point-To-Point,modem,baud rate(s):_____	i	

Supportive Character Set

Support multi-character set doesn't mean that it's synchronously supported.		
ANSI X3.4	IBM TM/Microsoft TM ISO	ANSI X3.4-1 ISO C
ISO 10646(ICS-4)	10646(UCS2)	ANSI X3.4-1 ISO

Especial Funtion

Subsection request support	i	e s	i	no	1 4 7 6:window size
Subsection respond support	i	e s	i	no	1 4 7 6:window size

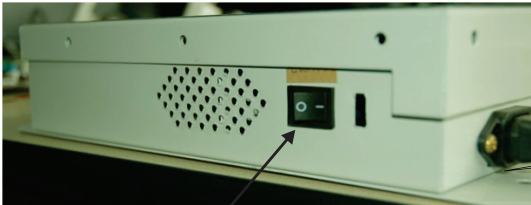
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Interfaces Diagrammatic



(Ethernet B)
Ethernet interface
Connect Bacnet/IP network

(485A 485B 485C 485D)
Four groups 485 interface Each one connects
with an indoor Central controller or a outdoor
Central controller (F1 F2 E).



Power Switch



Power Supply100-220VAC 50/60Hz
Powe line£Prefabrication£

If suspension installed, make sure put the communication termnal at the upper side.



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