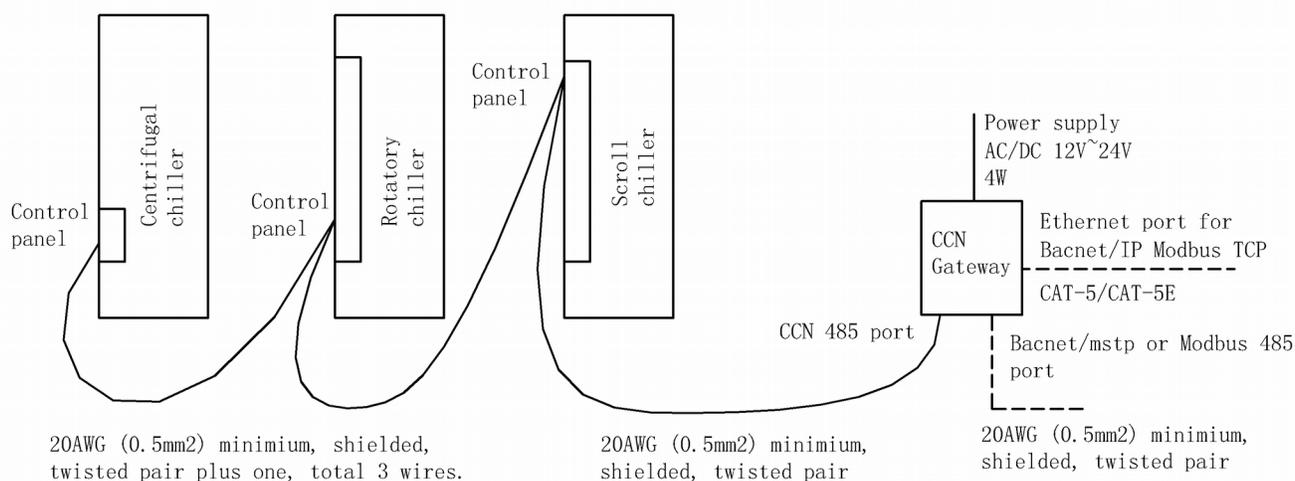# CCN Gateway Installation/Configuration

Installation：

CCN gateway wire schema

1. The power supply shall not be out of rating.

2. If you cann't find where is CCN terminal block on chiller, please give us your chiller's Model, we will try to find out the literature.

3. CCN network is based on EIA-485, so daisy-chained connections shall be used. The branch length should be as short as possible. T connections should be avoided.

4. CCN interface on chiller is not isolated, so please connect all "G" terminal together for more stable communication.

5. RS485 in CCN Gateway is isolated, so there is no "G" terminal, just connect "+", "-" to same terminal on chiller.

6. Each RS485 interface in CCN Gateway has 3 dip switch for pull up/pull down/termination resistor. Normally you could just let it OFF. If you have problem of communication, try to turn them on, but keep in mind, on a RS485 bus, it should only have pull up/pull down on 1 node,

and terminator on each end of line.

Configuration:

1. The commisioning of chillers should be completed before config CCN Gateway.

2. CCN Gateway support 9.6k, 19.2k, 38.4kbps baudrates. The default baudrate is 9.6kbps for CCN network. For better performance, please reduce other communication on CCN bus, For example, close alarm broadcast, disable Master/Slave.

3. CCN Gateway has a fix CCN address of bus 0, element 239. So don't let any chiller conflict with it.

4. LED description:

   When power on, the Power LED(red) keep on. Status LED(blue) turn on when power up. When CCN Gateway complete internal initialization, it turn off. If any CCN device is mapped, Status LED keep flashing for every 2 seconds.

   For each RS485 interface, Send LED flash for sending anything. Receive LED flash only after receiving valid packet. For CCN, valid packet means a valid response from CCN device. For Modbus RTU/ASCII, valid packet means valid request for local or broadcast. For BACnet MSTP, valid packet means a valid Network packet for local or broadcast, so not include token packet.

5. When power on, if there is no CCN device mapped. CCN Gateway will try to initialize and map CCN device on element 1, bus 0, for every 30 seconds.

6. Reset buttion: If you forget IP setting/DHCP/web user/password of CCN Gateway, or you set a wrong IP/MASK, you can not access CCN Gateway Web server. To rescure from that situation, you can press reset button for at least 3 seconds, then CCN gateway will reboot automaticlly, set IP address to 192.168.100.1, turn on DHCP server, set web user to "admin", and password to blank.

7. To access CCN Gateway, just connect to RJ45 on CCN Gateway with ethernet cable. If DHCP is turned on, your PC will be assigned a IP automaticlly. If DHCP is turned off, you have to

manually set your PC's IP to same subnet of CCN Gateway. open web browser, input "http://192.168.100.1" (other if you had changed IP), input user and password when promoted.

8. On general setting page, input element address and bus number of the chiller you want to connect, press "Initialize" button, CCN Gateway will start to pull table information from chiller.

9. If everything is ok, CCN Gateway would report success and suggest to apply configuration template. Press "OK" to try apply template. If something goes wrong, CCN Gateway may report a error code:

   3 = Communication error. Please check CCN Element/Bus confliction

   6 = Data format error. Please run a debug then send debug record to us

   9 = Bus busy. Please check polarity of wires

   10 = No answer. Please check connection of wires, input correct CCN Element/Bus.

10. If the table information of that chiller is not match template, it would report a error, only some or no point is mapped. But you could configure mapping manually later.

11. Then you can initialize other chillers one by one as described above.

12. Click tree menu on the left, you could view every status table inside that chiller, on every status table, you could view every point inside that table, you could select which point to map. Show as below:

Gateway
  30XAXQXW
    GENUNIT
    CIRCA_AN
    CIRCA_D
    CIRCB_AN
    CIRCB_D
    CIRCC_AN
    CIRCC_D
    STATEGEN
    RECLAIM
    MODES
    STRTHOUR
    FANHOURS
    FREECOOL
    QCK_TST1
    QCK_TST2
    SERV_TST
    DCT_DEF

Table: GENUNIT

Refresh   Clear   Submit

Point Name	Description	Present Value	Unit	Writable	Map
Update Interval	Unsigned 0 = no update	10	Second	Writable	☐ Map
Data Age	Unsigned Set as 0 after updating, each second +1	0	Second		☑ Map
OPER_TYP	Operating Type, String	L-off			☐ Map ☐ State Map State Define
ctr_type	Control Type, String	Local			☐ Map ☑ State Map State Define
STATUS	Run Status, String	Off			☐ Map ☑ State Map State Define
CHIL_S_S	CCN Chiller Start/Stop, Boolean 0=false 1=true	Disable	Disable Enable	CCN Writable	☑ Map
CHIL_OCC	Boolean 0=false 1=true	No	No Yes	CCN Writable	☐ Map
min_left	Minutes Left for Start, Signed	1	min		☐ Map ☐ Multiply 10 Map
HEATCOOL	Heat/Cool Status, String	Heat			☐ Map ☐ State Map State Define
HC_SEL	Heat/Cool Select, Unsigned	1		CCN Writable	☑ Map
RECL_SEL	Heat Reclaim Select, Boolean 0=false 1=true	No	No Yes	CCN Writable	☐ Map
FC_DSBLE	Free Cooling Select, Boolean 0=false 1=true	No	No Yes	CCN Writable	☐ Map
ALM	Alarm State, String	Normal			☐ Map ☑ State Map State Define
alarm_1	Current Alarm 1, String				☑ Map ☐ State Map State Define
alarm_2	Current Alarm 2, String				☑ Map ☐ State Map State Define
alarm_3	Current Alarm 3, String				☑ Map ☐ State Map State Define
alarm_4	Current Alarm 4, String				☑ Map ☐ State Map State Define
alarm_5	Current Alarm 5, String				☑ Map ☐ State Map State Define
CAP_T	Percent Total Capacity, Unsigned	0	%		☑ Map

13. Each table has a update interval, if it is set to 0, then CCN Gateway won't try to pull new data from chiller for the table.

14. Remember click "Submit" button when you have done all change on the table. Show as below:

Gateway
  30XAXQXW
    GENUNIT
    CIRCA_AN
    CIRCA_D
    CIRCB_AN
    CIRCB_D
    CIRCC_AN
    CIRCC_D
    STATEGEN
    RECLAIM
    MODES
    STRTHOUR
    FANHOURS
    FREECOOL
    QCK_TST1
    QCK_TST2

Table: GENUNIT

Refresh   Clear   Submit

Point Name	Description	Present Value	Unit	Writable	Map
Update Interval	Unsigned 0 = no update	10	Second	Writable	☐ Map
Data Age	Unsigned Set as 0 after updating, each second	0	Second		☑ Map
OPER_TYP	Operating Type, String	L-off			☐ Map ☐ State Map State Define
ctr_type	Control Type, String	Local			☐ Map ☑ State Map State Define
STATUS	Run Status, String	Off			☐ Map ☑ State Map State Define
CHIL_S_S	CCN Chiller Start/Stop, Boolean 0=false 1=true	Disable	Disable Enable	CCN Writable	☑ Map
CHIL_OCC	Boolean 0=false 1=true	No	No Yes	CCN Writable	☐ Map

15. Each line descript a point, for example as shown below, CHIL_S_S is "CCN Chiller Start/Stop", it's a boolean point, 0=false, 1=true, current value is "Disable", the Unit field for boolean point is state text, for CHIL_S_S is "Disable/Enable" (0=Disable, 1=Enable) , it's writable in CCN mode, click checkbox befor "Map" to toggle the mapping of this point.

16. For numeric point, there may have a "Multiply 10 Map" checkbox, if you select it, there would map a point which value is the real value multiply 10, for example real value 89.5psi would be mapped as 895psi.

17. For String point, for example as shown below, OPER_TYP is a String point, is just check "Map", then it's mapped as a string, not very clear for interpreting. If check "State Map", it's mapped to integer based on the string value. But then you should define state by click "State Define" button.

Then, there would pop up a window as below left, there are some predefined states shown as buttons, you could utility them by click button. But if all of them don't satisfy your use case, as "OPER_TYP" for this example, you should check device's manual to find out that there are 6 states as "L-off/L-on/L-sched/CCN/Remote/Master", input them in text area, each line one state(case insensitive, as below right), the click "Close" to complete.

18. you have done all change, remember click "Save Config" button on "general setting" page, then the configuration would be saved into CCN Gateway's flash storage.

19. Click "Refresh" button on "general setting" page, and click "Report" button, It would output a report describe all mapping information needed by BAS integration.