Complete the following steps to install a Conquest BAC-5900 Series BACnet General Purpose Controller (B-ACC).

Refer to the **Conquest BAC-5900 Series BACnet General Purpose Controller (B-ACC) data sheet** for controller specific information on the web at **kmccontrols.com**.

INSTALL CONTROLLER

NOTE: Complete steps **1–2** to install the controller with **screws**. Or complete steps **3–7** to install the controller on a 35 mm **DIN rail**.

NOTE: Install the controller in a metal enclosure.

1. Position the controller on a flat surface so that the color coded **terminal blocks** **1** are easy to access for wiring.

NOTE: The black terminals are for power. The green terminals are for inputs and outputs. The gray terminals are for communication.

2. Screw a #6 sheet metal screw through each corner of the **controller** **2**.

NOTE: Complete steps 3–7 to install the controller on a 35 mm DIN rail.

3. Position the **DIN rail** **3** so that when the controller is installed the color coded terminal blocks are easy to access for wiring.

4. Pull out the **DIN latch** **4** until it clicks once.

5. Position the controller so that the top **four tabs** **5** of the back channel rest on the DIN rail.
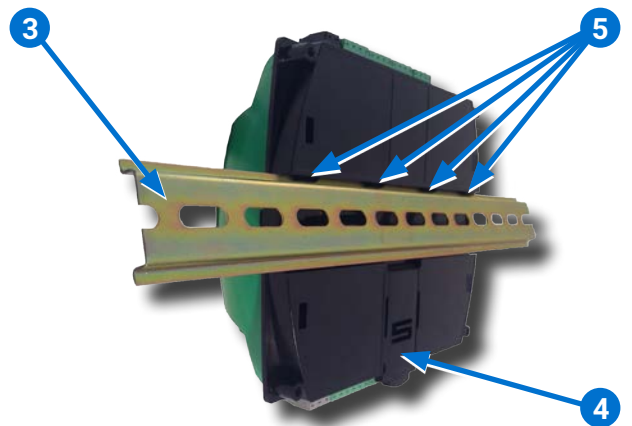
6. Lower the controller against the DIN rail.

7. Push in the **DIN latch** **6** to engage the DIN rail.

NOTE: To remove the controller, pull the DIN latch until it clicks once and lift the controller off the DIN rail.
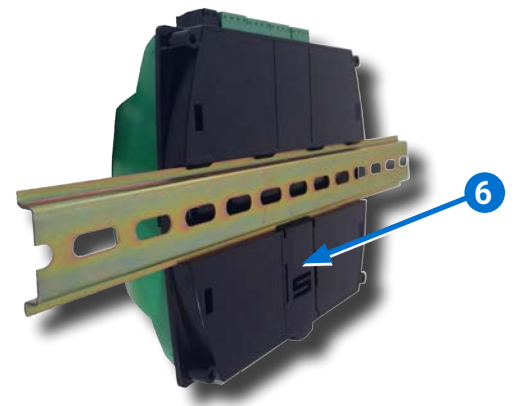
CONNECT STE-9000 SENSOR

NOTE: Refer to the **STE-9000 Series NetSensor Installation Guide** to install a sensor.

8. Plug an **Ethernet patch cable** 7 connected to an STE-9000 Series NetSensor into the **ROOM SENSOR** port 8 of the controller.
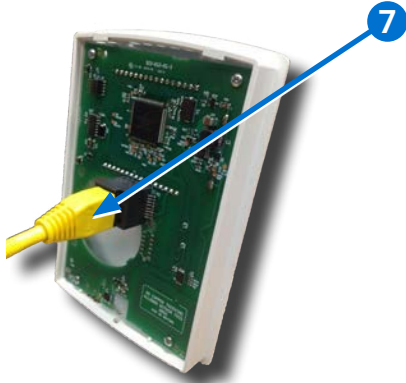
NOTE: The Ethernet patch cable should be a maximum of 150 feet (45 meters).

CONNECT AUXILIARY EQUIPMENT

NOTE: Auxiliary VAV equipment such as fans, heaters, reheat valves, and discharge air temperature sensors can be connected to the controller.

9. Verify the controller is not connected to power.

10. Connect additional sensors to the **green (input) terminal blocks** 9.

NOTE: Wire sizes 12–24 AWG can be clamped together into each terminal.

NOTE: No more than two 16 AWG wires can be joined at a common point.

11. Connect additional equipment to the **green (output) terminals** 10.

INSTALL OVERRIDE BOARD

NOTE: Install output override boards for enhanced output options, such as manual control, using large relays, or for devices that cannot be powered directly from a standard output.
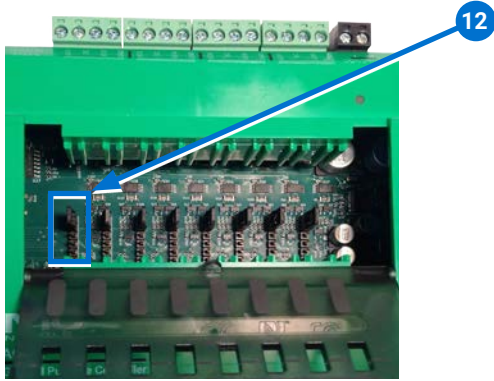
12. Verify the controller is not connected to power.

> **CAUTION:** Connecting 24 VAC or other signals that exceed the operation specifications of the controller before an override board is installed will damage the controller.
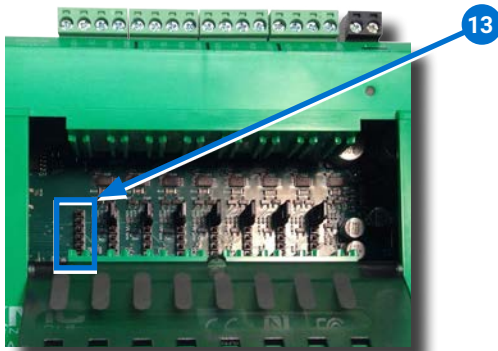
13. Open the **plastic cover** 11.

14. Remove the **jumper** 12 from the slot in which the override board will be installed.
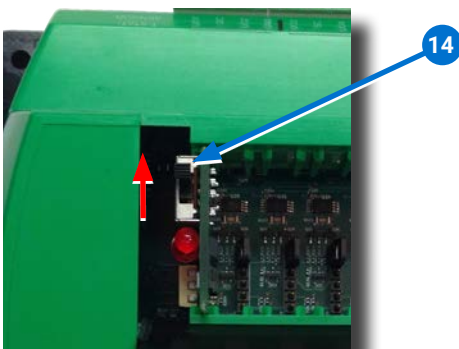

NOTE: Each of the eight override slots ships from KMC with a jumper installed on the two pins closest to the output terminal blocks. Only remove a jumper if an override board will be installed.

15. Install the override board in the slot in which the jumper was removed 13.

NOTE: Position the board with the **selection switch** 14 towards the top of the controller.

16. Close the plastic cover.

17. Move the **A-O-H selection switch** 15 on the override board to the appropriate position.

NOTE: A = Automatic
O = Off
H = Hand

NOTE: For more information about output override boards, see the **Output Override Boards HPO-6700 Series Installation Guide.**

CONNECT OVERRIDE BOARD OUTPUT DEVICE

18. Verify the output device is not connected to power.

19. Wire the output device to the corresponding **green (output) terminal block** 16 of the override board.

NOTE: HPO-6701 triac and HPO-6703/6705 relay board circuits use the Switched Common **SC** terminal—not the Ground Common **GND** terminal.

CONNECT CAN-5901 EXPANSION MODULE

NOTE: Up to four CAN-5901 expansion modules can be connected in series (daisy chain) to a BAC-5900 series controller to add additional inputs and outputs.

20. Wire a CAN-5901 expansion module to the **gray EIO terminal block 17**.

CONNECT ETHERNET NETWORK

21. Connect an **Ethernet patch cable 18** to the **10/100 ETHERNET** port ("E" models only).

NOTE: The Ethernet patch cable should be T568B Category 5 or better and a maximum of 328 feet (100 meters) between devices.

CONNECT MS/TP NETWORK

22. Wire the network to the **gray BACnet MS/TP terminal block 19**.

NOTE: Use 18 gauge AWG shielded twisted pair cable with maximum capacitance of 51 picofarads per foot (0.3 meters) for all network wiring (Belden cable #82760 or equivalent).

23. Connect the −A terminals in parallel with all other −A terminals on the network.

24. Connect the +B terminals in parallel with all other +B terminals on the network.

25. Connect the shields of the cable together at each device using a wire nut or the S terminal on the controllers.

26. Connect the cable shield to a good earth ground at **one end only**.

NOTE: For principles and good practices when connecting an MS/TP network, see **Planning BACnet Networks (Application Note AN0404A)**.

SELECT END OF LINE (EOL)

NOTE: The EOL switch is shipped from KMC in the OFF position.

27. If the controller is at either end of a BACnet MS/TP network, turn that **EOL switch 20** to **ON**.

28. If the controller is at the end of a Controller Area Network (CAN), turn that **EOL switch 21** to **ON**.

CONNECT POWER

NOTE: Follow all local regulations and wiring codes.

NOTE: Use either shielded connecting cables or enclose all cables in conduit to maintain RF emissions specifications.
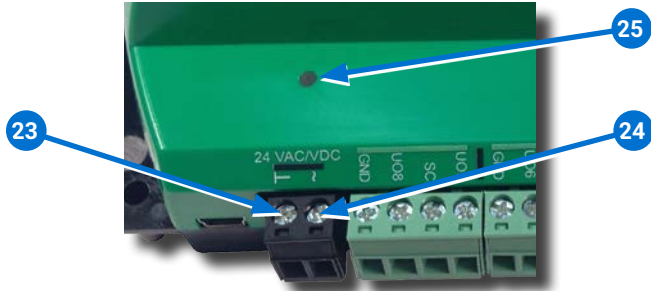
NOTE: Connect a 24 VAC, Class-2 transformer to the **black power terminal block** ㉒ of the controller.

NOTE: Connect only one controller to each 24 VAC, Class-2 transformer with 12–24 AWG copper wire.

29. Connect the neutral side of the transformer to the controllers **common terminal ⊥** ㉓.

30. Connect the AC phase side of the transformer to the controllers **phase terminal ∼** ㉔.

POWER AND COMMUNICATION STATUS

The **status LEDs** indicate power connection and network communication.

NOTE: If neither the green READY LED nor the amber COMM LED is ON, check the transformer fuse, power, and connections to the controller.

GREEN READY LED ㉕

◆ During initialization, the green READY LED is ON for 5 to 20 seconds.

THEN

◆ The green READY LED flashes once per second, indicating power.

AMBER BACnet MS/TP COMM LED ㉖

◆ The amber COMM LED flashes at a one-half-second rate during power-up.

◆ The amber COMM LED flickers as it receives and passes the token over the BACnet MS/TP network.

AMBER CAN COMM LED ㉗

The **Computer Area Network (CAN) status LEDs** indicate network communication.

NOTE: The amber CAN COMM LED is active when a Conquest CAN-5901 Expansion Module is connected to the controller.

◆ The amber CAN COMM LED flashes at a one-half-second rate during power-up.

◆ The amber CAN COMM LED flickers as it receives and passes the token.

NOTE: If the amber CAN COMM LED is OFF, the module is not communicating with the CAN network. Check the power and network EIO connections.

ETHERNET LEDs

The **Ethernet status LEDs** indicate network connection and communication speed.

> **NOTE:** If neither the green Ethernet LED nor the amber Ethernet LED is lit, check the power and network cable connections.
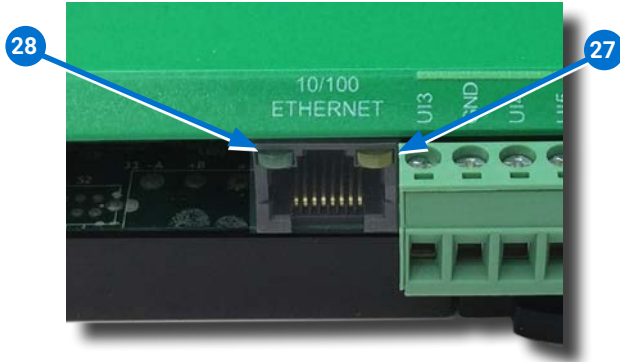
GREEN ETHERNET LED 27

◆ The green Ethernet LED stays lit when the controller is connected to the network.

◆ The green Ethernet LED is OFF when the controller is not powered or not communicating with the network.

AMBER ETHERNET LED 28

◆ The amber Ethernet LED flashes when the controller is communicating with the network.

◆ The amber Ethernet LED is OFF when the controller is communicating with the network at 10 Mbps.

NETWORK ISOLATION BULBS

The two **network isolation bulbs** 29 serve three functions:

1. Removing the bulbs opens the MS/TP circuit and isolates the controller from the network.

2. If one or both bulbs are lit, it indicates the network is improperly phased.

◆ This means the ground potential of the controller is not the same as other controllers on the network.

◆ If this happens, fix the wiring. (See **CONNECT MS/TP NETWORK** on page 4.)

3. If the voltage or current on the network exceeds safe levels, the lamps blow, opening the circuit. If this happens, fix the problem and replace the bulb assembly.

REPLACEMENT PARTS

HPO-0055	Replacement Network Bulb Module for Conquest Controllers, Pack of 5
HPO-9901	Conquest Hardware Replacement Parts Kit

> **NOTE:** HPO-9901 includes the following:

Terminal Blocks	DIN Clips
(1) Black 2 Position	(2) Small
(2) Grey 3 Position	(1) Large
(2) Green 3 Position	
(4) Green 4 Position	
(2) Green 5 Position	
(2) Green 6 Position	

CONTROLLER SETUP

Refer to the table below to set up the controller. See the documents or Help systems for the respective KMC Tool to use.

> **NOTE:** After the controller has been configured, an STE-6010/6014/6017 series analog sensor can be connected to the controller in place of an STE-9000 series digital NetSensor.

SET UP PROCESS			KMC TOOL
Config-uration	Programming (Control Basic)	Web Page Graphics*	
✔			Conquest NetSensor
✔			KMC Connect Lite app or software**
✔	✔		KMC Connect software
		✔	TotalControl software
		✔	KMC Converge module for Niagara^AX WorkBench

*Custom graphical user-interface web pages can be hosted on a remote web server, but not in the controller.

**Requires a Near Field Communication (NFC) enabled Android mobile device or tablet or an Android or Apple mobile device, paired with an NFC-Bluetooth fob, running the KMC Connect Lite app or a PC, paired/connected to an NFC-Bluetooth fob, running the KMC Connect Lite Desktop software.

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TEL: 574.831.5250
FAX: 574.831.5252
EMAIL: **info@kmccontrols.com**