

HP Performance Optimized Datacenter 40c G2 Maintenance and Service Guide

Abstract

This guide provides maintenance and service guidance for the HP Performance Optimized Datacenter 40c (HP POD 40c G2).



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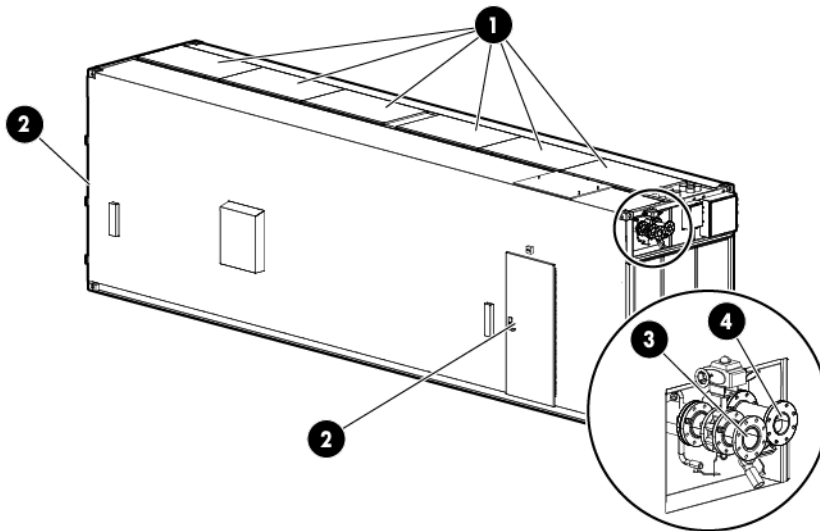
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Illustrated parts catalog

Structural component identification

The HP POD 40c G2 documentation frequently refers to the specific components of the HP POD 40c G2 as shown in the following figure and described in the following table.



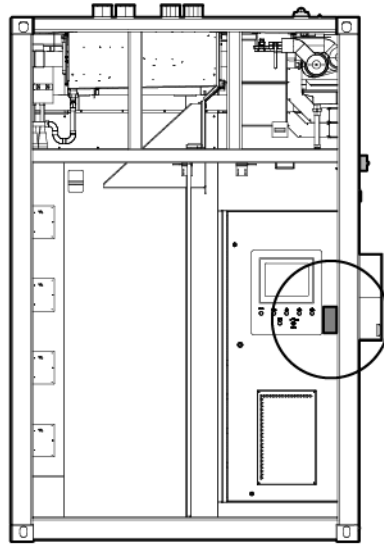
Item	Component	Description
1	Heat exchanger access hatches	Provides access to the overhead heat exchangers
2	Personnel access doors	Provides access to the POD
3	Facility chilled water return	Facilitates the return of chilled water to the POD
4	Facility chilled water supply	Facilitates the supply of chilled water to the POD

Parts and part number identification

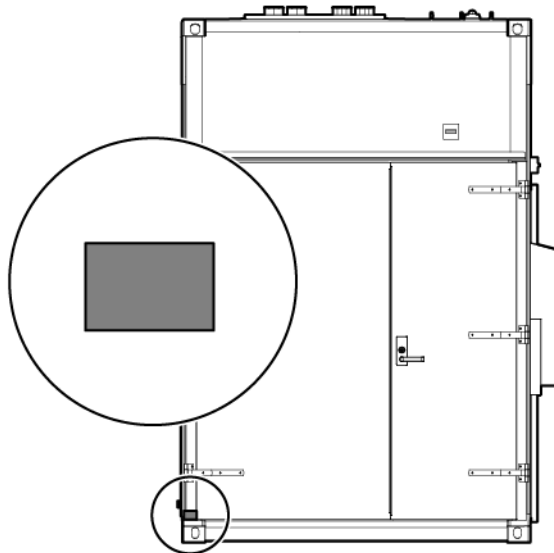
Review the contents of the HP POD 40c G2 to identify the following for each component:

- **Model number**—The model number is located on the door to the control panel inside the cold aisle of the HP POD 40c G2, as shown in the following figure.

- **Regulatory compliance identification number**—This product has been assigned a unique regulatory model number and is located on the door to the control panel inside the cold aisle of the HP POD 40c G2, as shown in the following figure.



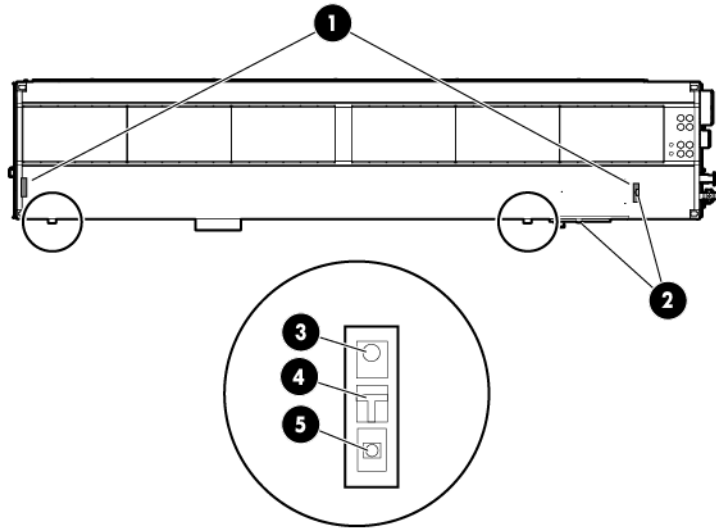
- **CSC Safety Approval placard**—Each HP POD 40c G2 has a CSC Safety Approval placard that includes the model number, serial number, and proof load. The CSC Safety Approval placard is located on the cargo end of the HP POD 40c G2, as shown in the following figure.



Life safety component identification

Internal life safety components

Top view shown



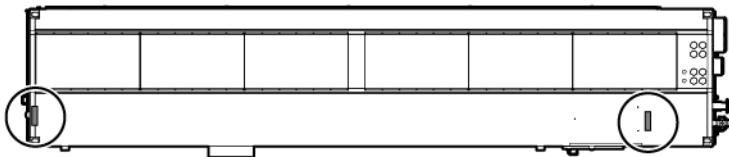
Item	Component	Description
1	Exit sign locations	Indicates the location of an exit
2	Fire strobe light	Indicates a fire alarm condition within the HP POD 40c G2
3	EPO button	Disconnects the HP POD 40c G2 from main power feeds
4	Fire alarm manual pull*	Enables manual initiation of the fire system, which includes activating the interior and exterior fire strobe lights and the optional fire suppression system
5	Fire suppression abort button*	Aborts the fire suppression system. A fire suppression abort button is located next to each personnel door.

*This is an optional component that might not be included.

Exit sign locations

The exit signs within the HP POD 40c G2 contain tritium. For information about the regulatory requirements regarding the handling, transfer, and disposal of the signs, see "Regulatory requirements for EXIT signs (on page 76)."

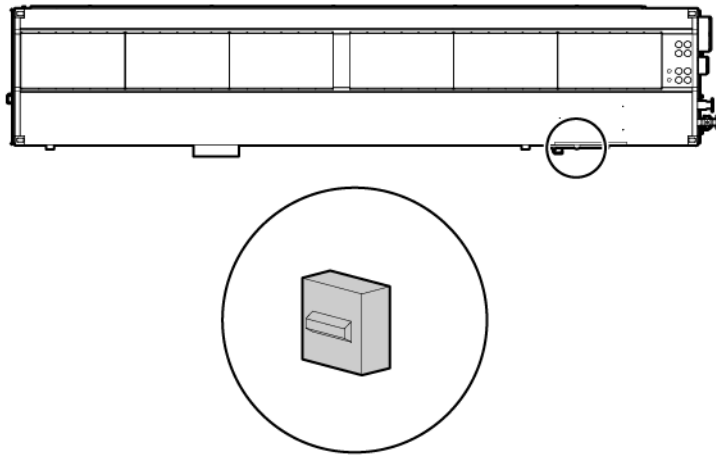
Top view shown



External emergency status indicators

The HP POD 40c G2 has one external fire strobe light that indicates a fire alarm condition.

Top view shown



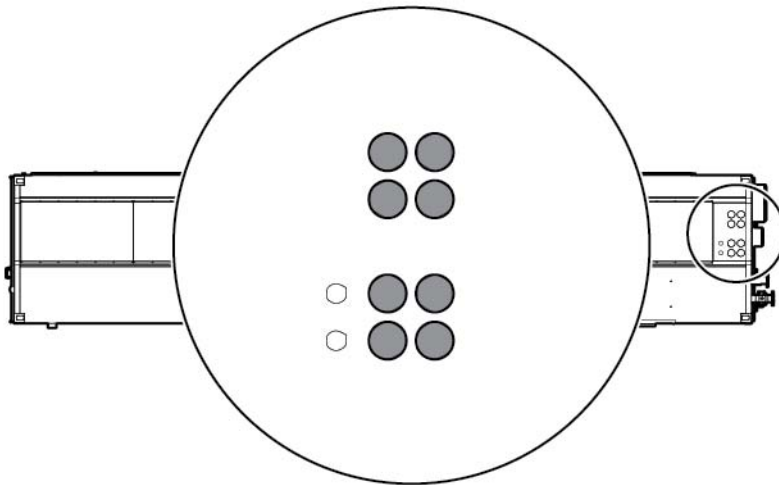
Power feeders



IMPORTANT: A licensed electrician must connect the power according to all local and national electrical codes, and must comply with manufacturer specifications.

The HP POD 40c G2 has eight power feeder couplings that provide the entrance for power to the POD. The power feeders route into the top of each electrical panel on the end of the HP POD 40c G2.

Top view shown



The top of each electrical panel has four 10.16 cm (4 in) welded couplings where the power feeders are connected.

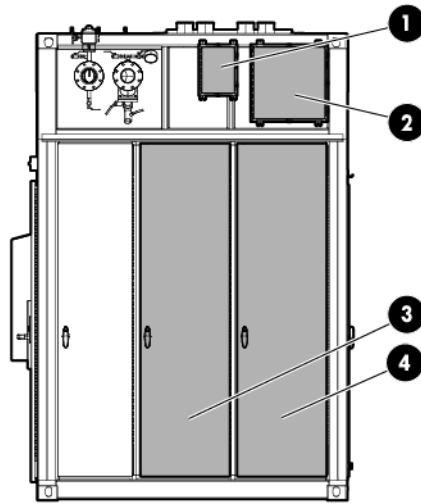
Power feeders are sized in accordance with NEC and IEC regulations.

Electrical panels

⚠ WARNING: To avoid the risk of personal injury or loss of life, all personnel must comply with PPE requirements when opening or working inside areas of the HP POD 40c G2 that are marked as hazardous voltage, per NFPA 70E in accordance with NEC (NA) and IEC (EMEA and APJ).

⚠ WARNING: To avoid the risk of personal injury or loss of life, all personnel must comply with electrical warning labels when operating and maintaining the electrical panels and systems of the HP POD 40c G2.

End view shown

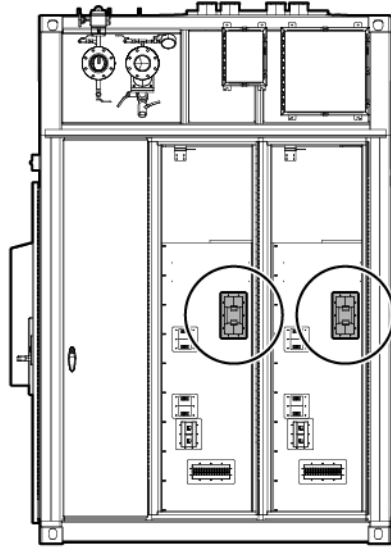


Item	Component	Description
1	Fire box*	Connection location for fire emergency and VESDAnet signals
2	Demarcation box*	Customer communication connection point for the following components: <ul style="list-style-type: none"> • ECS • Security • Phone
3	415 Y/240 V 3-phase, 4-wire, 800 A electrical panel	Feed A power for critical IT loads (electrical busways) and house power
4	415 Y/240 V 3-phase, 4-wire, 800 A electrical panel	Feed B power for critical IT loads (electrical busways) and house power

*The demarcation box and the fire box are communication data points that are provided on the POD by HP. Connecting these data points is the responsibility of the customer, unless an approved Statement of Work is initiated.

Main breaker locations

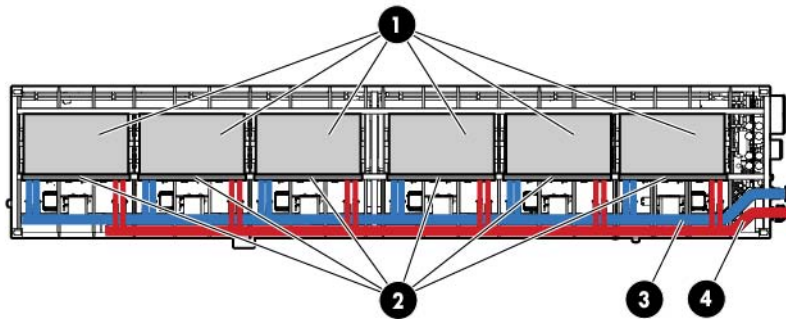
End view shown



Cooling system component identification

The heat exchanger access hatches are located on top of the POD. The hatches are coated with a durable finish to prevent corrosion.

Side view shown



Item	Component	Description
1	Heat exchangers	Use facility chilled water to cool the air in the HP POD 40c G2
2	Heat exchanger fan banks	Operate at variable speeds to maintain the preprogrammed differential pressure setpoint and the hot aisle temperature setpoint
3	Chilled water supply	Supplies facility chilled water to cool the HP POD 40c G2
4	Chilled water return	Returns heated chilled water to the facility

HP POD 40c G2 racks

The HP POD 40c G2 contains a total of 20 IT racks.



CAUTION: If any racks contain empty RU space, use the HP POD 40c G2 filler panels to maintain the efficiency of the HP POD 40c G2 thermal system. Filler panels are available from HP in 10-pack quantities (part number AQ682A) and 100-pack quantities (part number AS993A).

For more information about racks and network cabling, see the *HP Performance Optimized Datacenter Networking Guide*.

Replaceable spare parts

The spare parts in the following table can be replaced by qualified facilities personnel.

Spare part number	Description
660063-001	3-phase, 20A busway drop box; NA POD
660064-001	3-phase, 60A busway drop box; NA POD
637086-001	SPS-FUSE BLOCK 600V 3P
637087-001	SPS-FUSE BLOCK 600V 1P
637088-001	SPS-CPU TOUCH SCREEN
637089-001	8 port ETHERNET SWITCH
637090-001	SPS-TERMINAL DIGITAL OUTPUT 4CH
637091-001	SPS-TERMINAL SER INTFC RS4222 RS485
637092-001	SPS-TERMINAL END BUS EXT
637093-001	SPS-TERMINAL BUS TERM ETHERCAT
637094-001	SPS-TERMINAL COUPLER ETHERCAT
637095-001	SPS-ANALOG INPUT 4 20mA 4CH
637096-001	SPS-TERMINAL ANALOG OUTPUT 0-10V 2CH
637097-001	SPS-TERMINAL BUS END
637098-001	SPS-TERMINAL PRESSURE DIFF 1CH
637099-001	SPS-TERMINAL DIGITAL INPUT 4CH
637100-001	SPS-TERMINAL 100PT INPUT 4CH
637101-001	SPS-SIREN 24V DC
637102-001	White LED light
637103-001	Yellow LED light
637104-001	Red LED light
637118-001	SPS-RELAY 4POLE 2NC 240VAC
637119-001	SPS-SOCKET RELAY LOGIC 4POLE
637120-001	SPS-SENSOR TEMP POD
637121-001	SPS-FUSE ATDR TIME DELAY 600VAC 1A
637122-001	SPS-FUSE ATDR TIME DELAY 600VAC 4A
637123-001	SPS-FUSE ATDR TIME DELAY 600VAC 10A
637124-001	SPS-RELAY 4POLE 24V DC 10A
637129-001	SPS-TSAT 60
637131-001	SPS-MAGNETIC FLOW METER
637134-001	NETWORK INTERFACE CARD
637135-001	SPS-SENSOR TEMP INSERTION
637136-001	SPS-SENSOR PRESSURE ABS 10 BAR
637137-001	SPS-SENSOR TEMP ROOM

Spare part number	Description
637138-001	EPO switch cover w/ horn
637139-001	EPO BUTTON
637140-001	ELECTRIC VALVE ACTUATOR
637141-001	BUTTERFLY VALVE
637371-001	SPS-FAN 235 CFM
637372-001	Temperature sensor duct
637373-001	SPS-SENSOR LEAKAGE
664744-001	SPS-SENSOR TEMP RH NEMA 4 4 20mA OUT
664868-001	SPS-INDICATOR LED 6 24VDC GREEN
671748-001	SPS-SENSOR PRESSURE GAUGE 160 PSI
671749-001	SPS-SENSOR FLOW METER GEMU
671756-001	SPS-HUMIDISTAT GEN M3
VS-005 (Mfg PN)	Filter, replacement, VESDA, Laser Series

The spare parts in the following table are electrical components that must be replaced by a certified electrician.



IMPORTANT: A licensed electrician must connect the power according to all local and national electrical codes, and must comply with manufacturer specifications.

Spare part number	Description
637117-001	SPS-CKT BKR T2 100AF 40AT
637126-001	SPS-CKT BKR T4 200A 600V 3POLE
637128-001	SPS-POWER METER PAC 3200
637130-001	SPS-TRANSFORMER CT PANEL MT
637132-001	SPS-TVSS
637142-001	SPS-SHUNT TRIP 800A CKT BRKR
637143-001	SPS-CKT BREAKER SMD 3P 800A
637144-001	24V UPS power supply
637145-001	SPS-PWR SUPPLY REDUNDANT MOD
637146-001	SPS-PWR SUPPLY 24V 7ah ACCUMULATOR
637496-001	230V power supply
664738-001	SPS-TRANSFORMER 2000VA 240x480 120x240
664748-001	SPS-PWR SPLY SNGL ZONE 220VAC VESDA
671746-001	SPS-TRANSFORMER CT 3 PHASE
671750-001	SPS-HOUSING LED LIGHT FXTR
671751-001	SPS-LED LIGHT FXTR ASSY
671752-001	SPS-FUSE TIME DELAY
671755-001	SPS-CONTACT MAG DOOR
671757-001	SPS-HUMIDIFIER 230VAC
671759-001	SPS-CKT BRKR SNGL POLE 15A
671760-001	SPS-CKT BRKR MINI 5A
671761-001	SPS-CKT BRKR MINI 20A
671762-001	SPS-CKT BRKR BRANCH SNGL POLE 10A
671763-001	SPS-CKT BRKR 3P MAIN LUG 150A

The spare parts in the following table must be replaced by a licensed fire safety contractor.



IMPORTANT: These parts must be replaced by a licensed fire safety contractor according to all local and regional fire codes, and in compliance with manufacturer specifications.

Spare part number	Description
637133-001	Smoke detector

Removal and replacement procedures

Safety considerations

The HP POD 40c G2 is listed to the UL 69050 standard as an Information Technology Product and Classified according to the NEC, NFPA-70, 2008.

The HP POD 40c G2 is not suitable for long term personnel occupancy.

The safety information is specific to the people operating and maintaining the components of the HP POD 40c G2.



IMPORTANT: All plumbing to and from the HP POD 40c G2 must be completed by a licensed plumber.



IMPORTANT: All wiring in and around the HP POD 40c G2 must be completed by a licensed electrician.

Operator safety

The HP POD 40c G2 provides service access areas for periodic maintenance and service and is only to be used by owner-authorized personnel specifically trained in the maintenance and service of the HP POD 40c G2.

The HP POD 40c G2 is not a habitable structure suitable for long term personnel occupancy.



WARNING: To avoid the risk of personal injury or loss of life, all personnel must comply with PPE requirements when opening or working inside areas of the HP POD 40c G2 that are marked as hazardous voltage, per NFPA 70E in accordance with NEC (NA) and IEC (EMEA and APJ).



WARNING: To avoid the risk of personal injury, hearing protection must be worn at all times when working inside the HP POD 40c G2.



WARNING: To avoid the risk of personal injury or damage to the equipment, do not insert anything inside the electrical busways except the approved HP busway drop boxes.

The customer is responsible for completing any Environmental Health and Safety (EHS) evaluation of the HP POD 40c G2 or any attached structural component purchased through HP. The customer must complete an arc flash assessment of the HP POD 40c G2 and the associated electrical supply system for operation, maintenance, and so on.

Fire detection and suppression

The fire suppression system, supplied as an optional component of the HP POD 40c G2, is a "Manufacturer Designed" system specifically for this HP product, in compliance with national standards.

The HP standard suppression system includes a Novec 1230 clean agent system. However, if the customer or local AHJ requires specific modifications or a replacement, HP can assist in these actions at the expense of the customer.

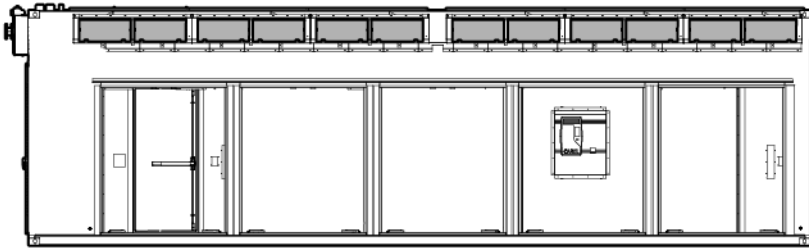
HP does not certify that the fire suppression system installed in the HP POD 40c G2 meets all local and jurisdictional requirements. The customer is responsible for the following actions as related to the fire suppression system:

- Verifying that the POD suppression system meets local codes, including specific local requirements for initial and periodic inspections.
- Arranging for and receiving all required local permits, including initial commissioning as well as standard and repair maintenance.
- Arranging for the connection of the agent tanks, refilling of tanks, and all system testing, including pressure tests. All general maintenance of the suppression system must be completed by an authorized technician.

Additional local requirements are not covered as part of the option price or basic installation and deployment services, unless specifically included in an executed Statement of Work.

Air filter

There are 2 air filters per cooling zone, for a total of 12 filters.

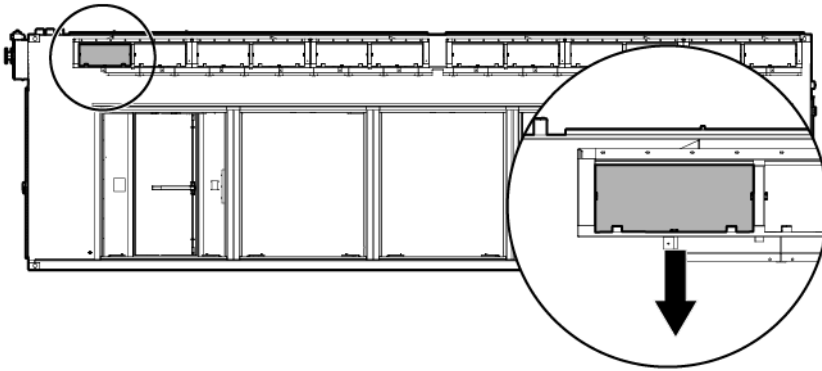


Tools are not required for installation.

Removing the air filter

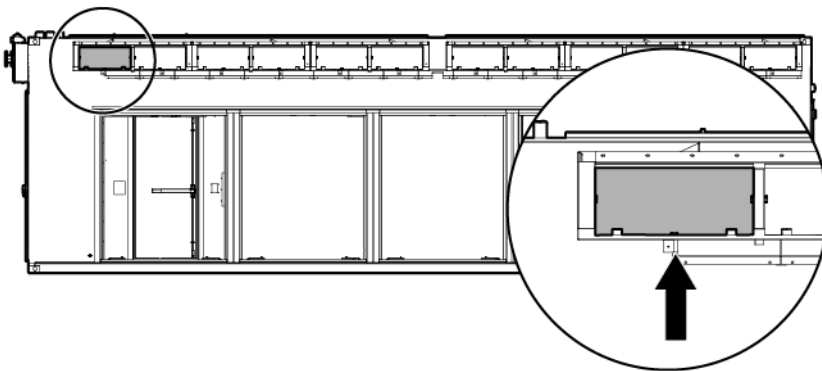
1. Pull the locking tabs away from the air filter to release the filter.

2. Pull the filter down through the frame channels to remove the filter.



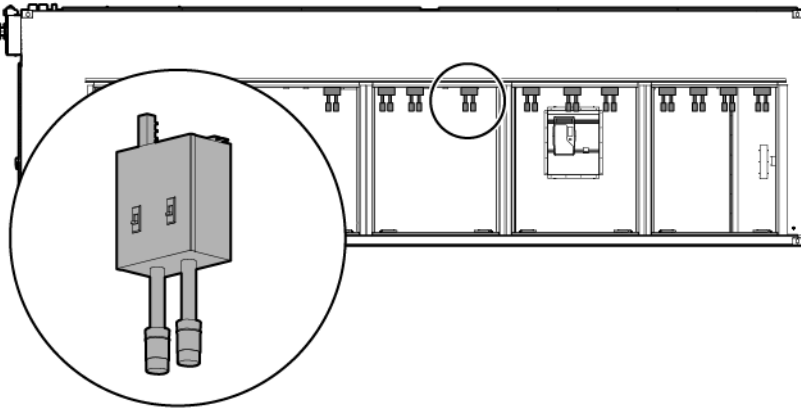
Replacing the air filter

1. Angle the filter to position the top corners in the frame channels, and then push the filter up to the top of the frame.
2. Press in the bottom corners of the filter until the locking tabs engage and the filter clicks into place.



Busway drop box

The internal electrical busways provide a location to connect each of the drop boxes, which then power the PDUs. Stagger the drop boxes on the electrical busways by connecting one drop box to busway #1 and connecting the next drop box to busway #2. A staggered configuration enables load balancing with the rack equipment and is necessary to ensure redundancy.



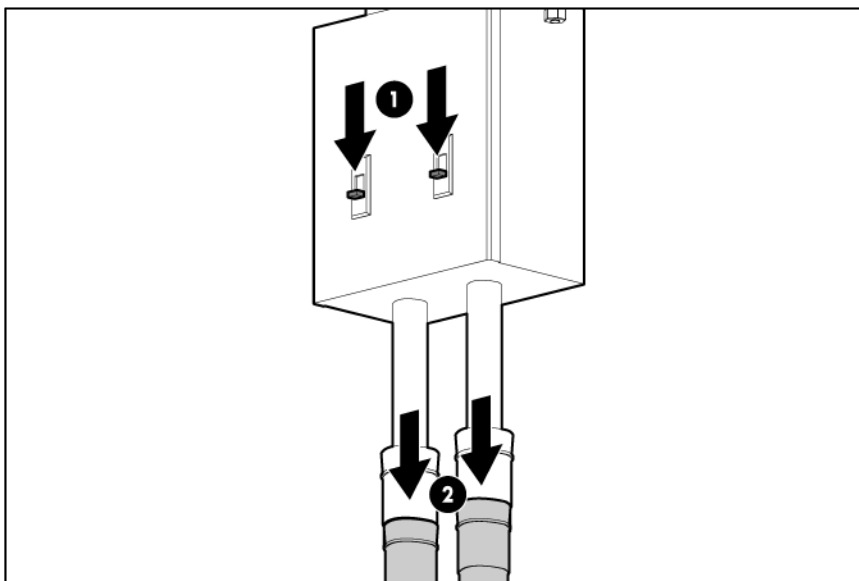
You need a socket wrench for installation.



IMPORTANT: HP recommends that you shut down the associated IT equipment and de-energize the appropriate section of the power busway before attempting to remove or replace a busway drop box. The corresponding branch circuit breaker is labeled on the busway.

Removing the busway drop box

1. Turn the power off by opening both breakers on the busway drop box (1).
2. Disconnect the PDUs that are connected to the busway drop box (2).



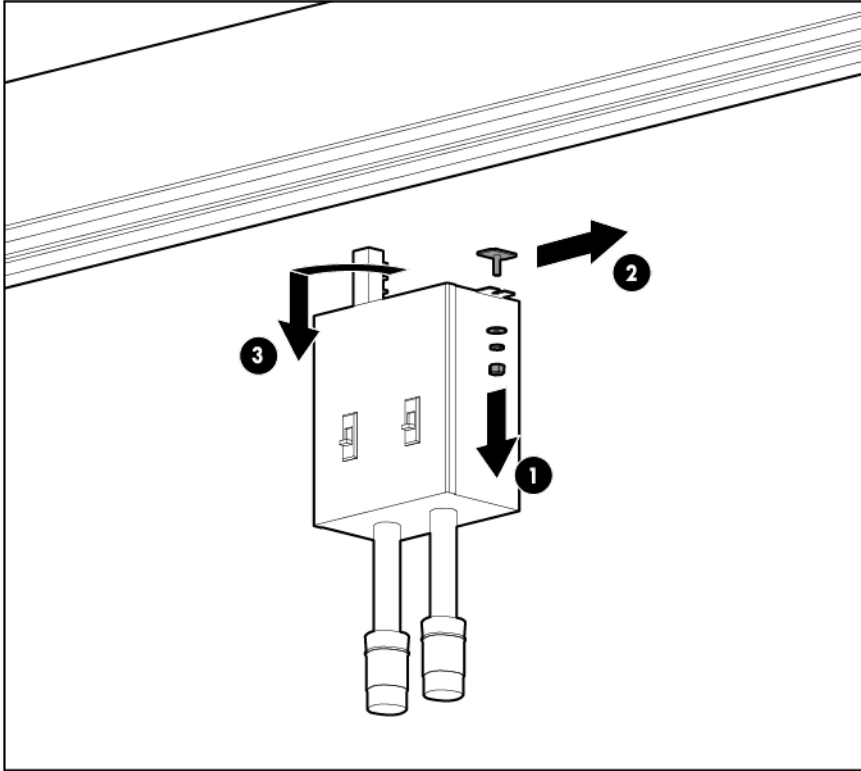
3. Use a socket wrench to loosen and remove the bolt securing the busway drop box to the retaining hardware bracket (1).

- Slide the hardware bracket to the right along the busway, completely disconnecting it from the busway drop box (2).



WARNING: Use caution when removing and replacing the busway drop box. The drop box weighs approximately 9 kg (20 lb).

- Rotate the busway drop box 90° so that it is perpendicular to the electrical busway, and then remove the drop box from the electrical busway (3).



Replacing the busway drop box



WARNING: Use caution when removing and replacing the busway drop box. The drop box weighs approximately 9 kg (20 lb).

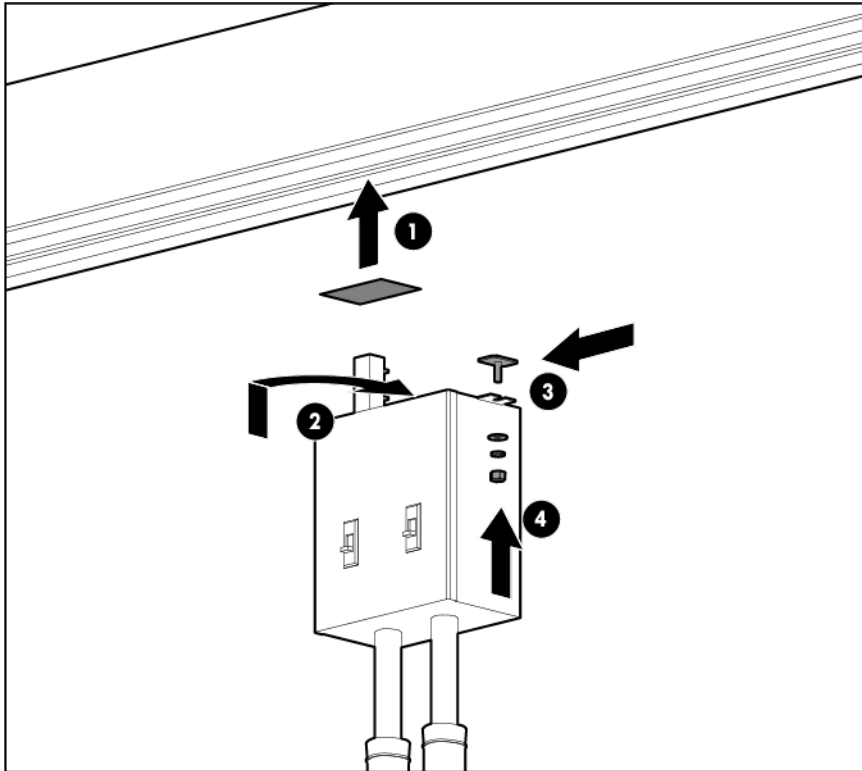
- Place the silver drop box bracket onto the electrical busway where you want to replace the busway drop box (1).
- Note the required rotation indicated on the drop box, insert the drop box into the drop box bracket on the electrical busway, and then rotate the drop box 90° until it locks into place (2).



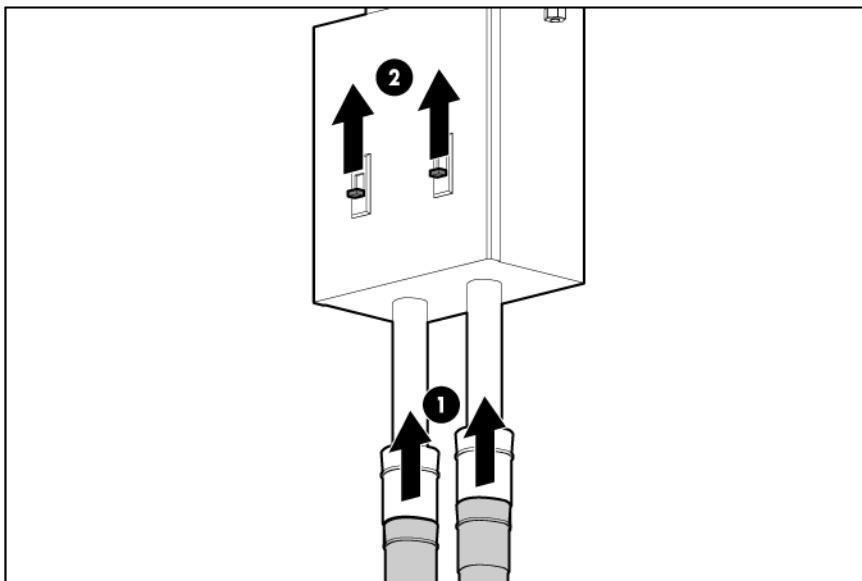
CAUTION: To prevent damage to the drop box and ensure that the drop box engages properly, be sure that the drop box is completely flush to the busway. If a drop box is damaged during installation, do not attempt to re-engage or repair the drop box.

- Slide the hardware bracket to the left along the busway until it connects to the drop box (3).

4. Secure the busway drop box to the retaining hardware bracket by using a socket wrench to insert and tighten a bolt (4).



5. Connect the PDUs to the busway drop box (1).
6. Turn the power on by closing both breakers on the busway drop box (2).



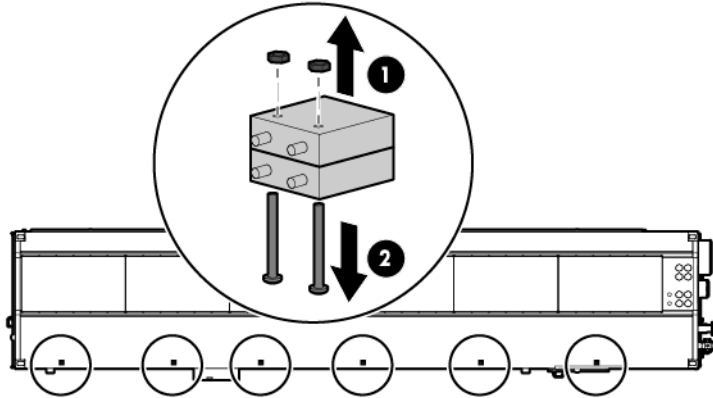
Differential pressure sensor

The differential pressure sensors are located in the cold aisle.

You need a Phillips-head screwdriver for installation.

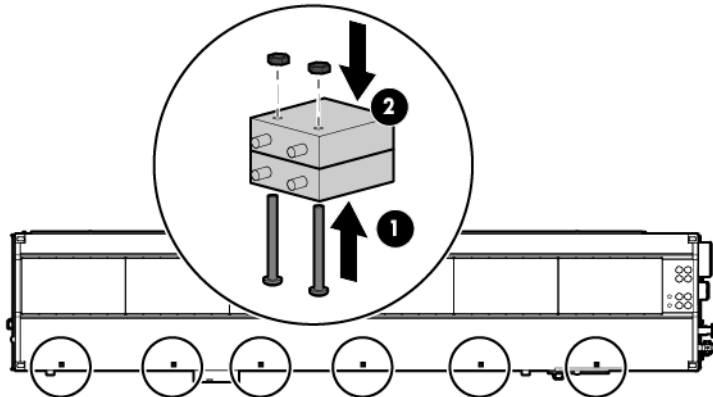
Removing the differential pressure sensor

1. Label the pressure sensor tube connection locations, and then remove the tubes from the differential pressure sensor.
2. Label the sensor wire connection locations, loosen the screws securing the sensor wires, and then remove the sensor wires.
3. Remove the two nuts (1) and two bolts (2) securing the differential pressure sensor, and then remove the differential pressure sensor.



Replacing the differential pressure sensor

1. Replace the differential pressure sensor, and then secure the differential pressure sensor with two bolts (1) and two nuts (2).



2. Insert the pressure sensor tubes into the differential pressure sensor according to the connection locations you labeled during the removal procedure.
3. Replace the sensor wires according to the connection locations you labeled during the removal procedure, and then secure the sensor wires by tightening the screws.

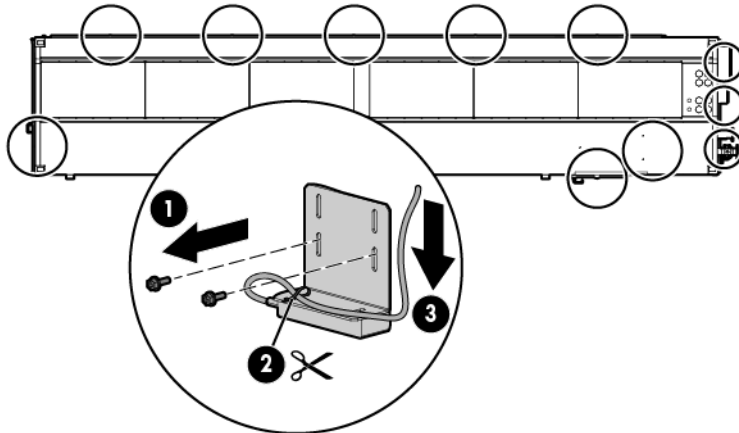
Door position contact

Door position contacts are located on all doors and cabinets.

You need a Phillips-head screwdriver and scissors for installation.

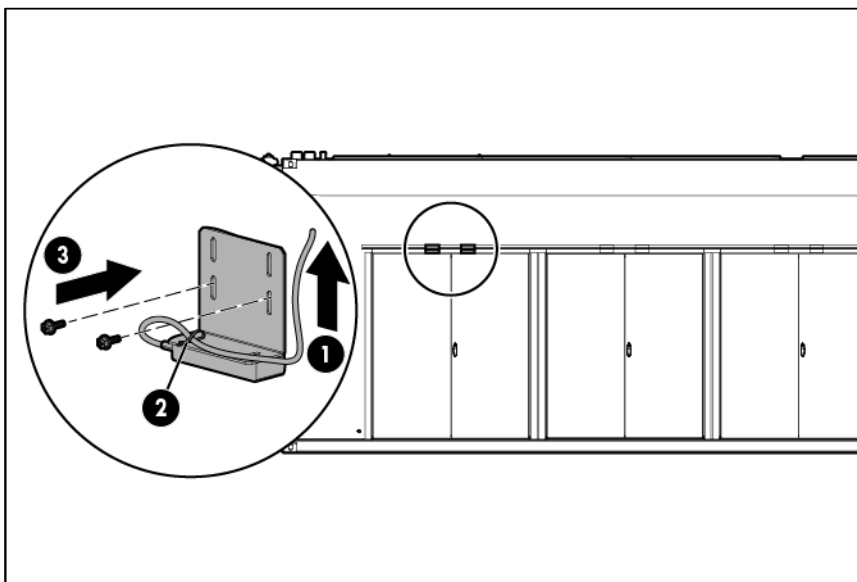
Removing the door position contact

1. Remove the two screws securing the upper magnet (1).
2. Cut the tie wrap (2) and loosen the nut on the HP POD 40c G2 structure that secures the wire.
3. Pull the wire all the way through to the point of entry or ECS panel (3).



Replacing the door position contact

1. Feed the wire all the way through from the point of entry or ECS panel (1).
2. Tighten the nut on the HP POD 40c G2 structure that secures the wire, and then replace the tie wrap (2).
3. Secure the magnet to the bracket using two screws (3).



Drain pan sensor

The HP POD 40c G2 includes six heat exchanger condensate drains. One drain pan sensor is located in the drain tray below each set of heat exchangers.

Two sensors are also located in the header drain pans, one in cooling zone 2 and one in cooling zone 5.

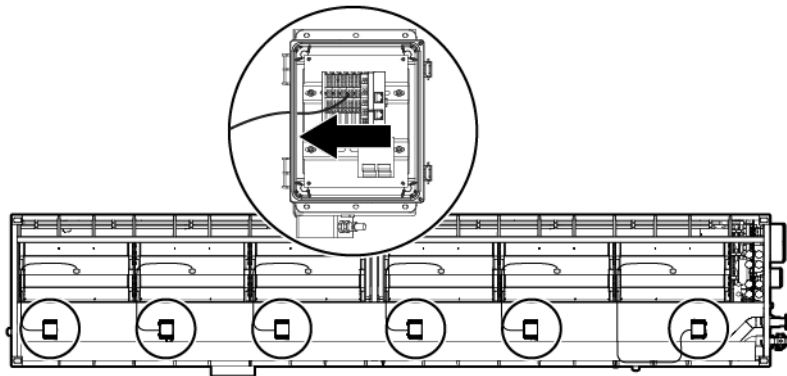
The normally-open circuit is closed when the probes of the drain pan sensor become wet, which allows 24 VDC to travel back to the ECS panel and trigger the alarm.

You need a Phillips-head screwdriver and a small flathead screwdriver for installation.

Removing the drain pan sensor

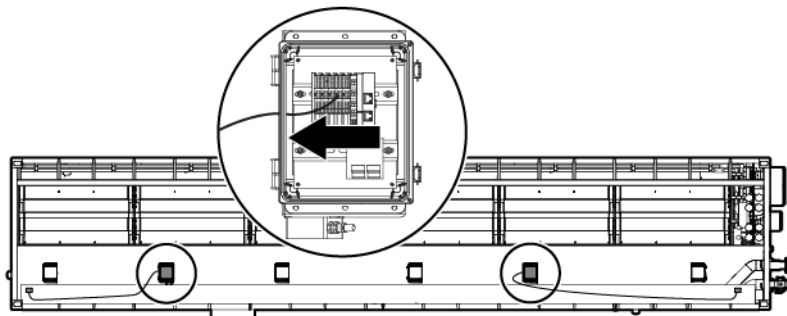
1. If you are removing a heat exchanger drain pan sensor, do the following:
 - a. Inspect the area by removing the center, bottom fan from the center fan bank in the associated zone. For more information, see "Removing the fan (on page 38)."
 - b. To gain additional working space, you might need to remove a fan bank in the associated zone. For more information, see "Removing the fan bank (on page 40)."
2. Follow the sensor wire to the associated satellite box. Disconnect the wire from the satellite box terminal and note the wire location.

Heat exchanger drain pan sensor

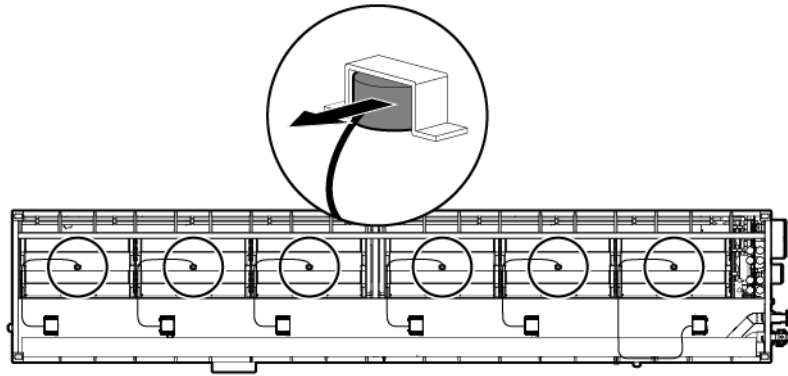


-or-

Header drain pan sensor

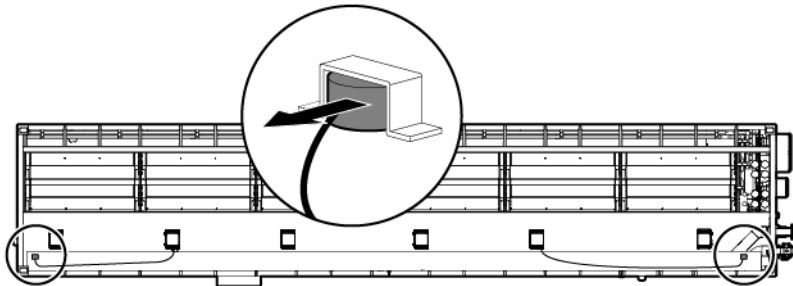


3. Pull the wire through from the satellite box to the sensor location, and then remove the sensor.
Heat exchanger drain pan sensor



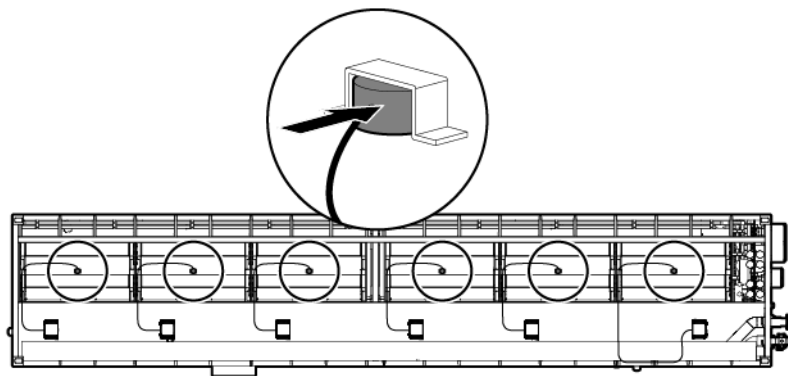
-or-

Header drain pan sensor



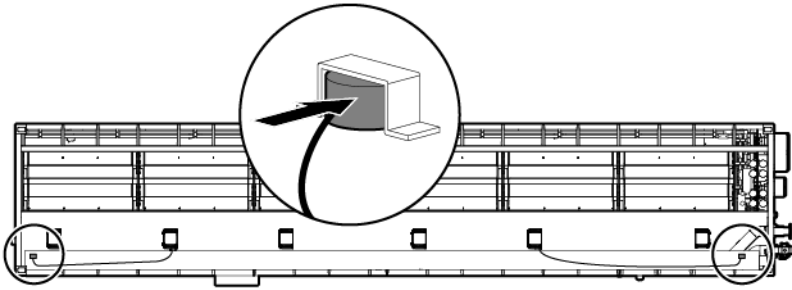
Replacing the drain pan sensor

1. Position the sensor in the drain pan.
Heat exchanger drain pan sensor



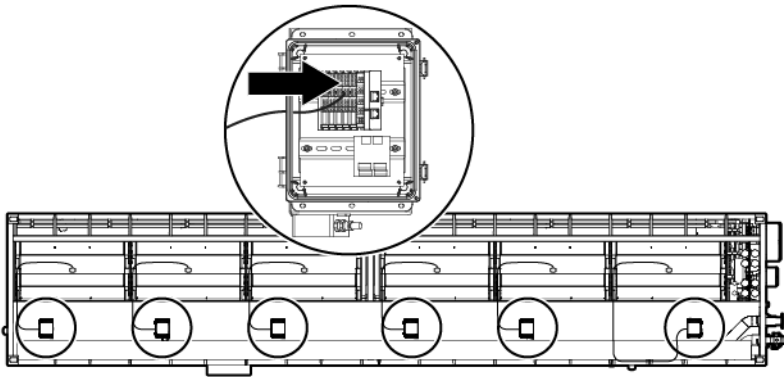
-or-

Header drain pan sensor



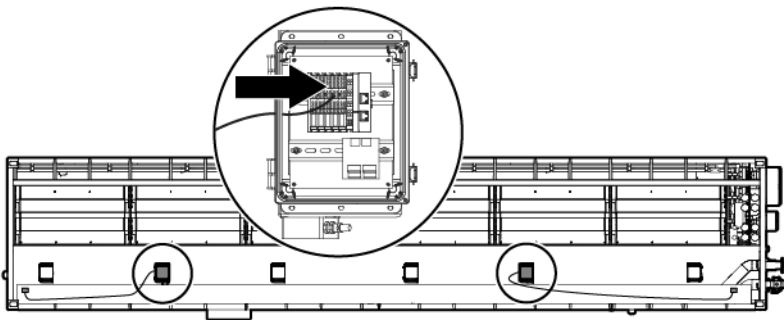
2. Route the wire through the flex tubing to the associated zone satellite box.
3. Connect the sensor wire to the appropriate port on the satellite box terminal.

Heat exchanger drain pan sensor



-or-

Header drain pan sensor



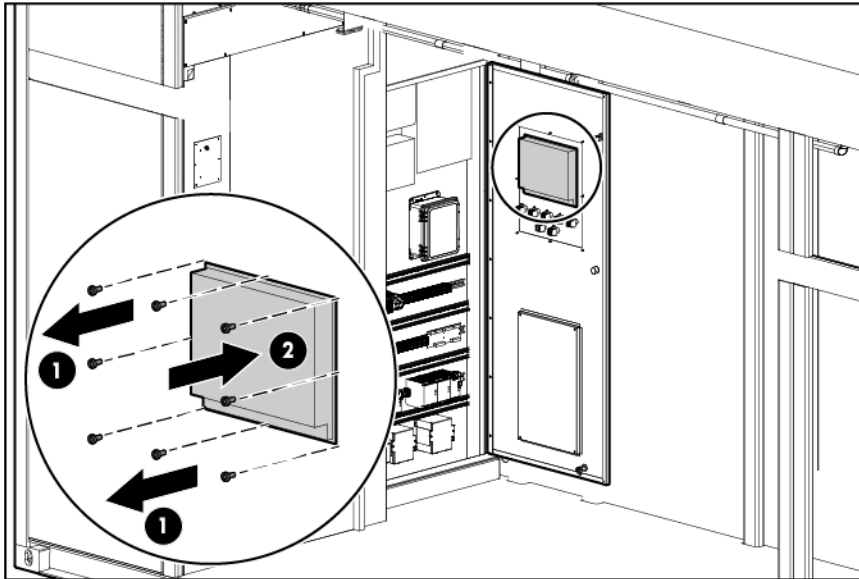
4. If you are replacing a heat exchanger drain pan sensor, do the following:
 - a. Replace the fan bank you removed, if applicable. For more information, see "Replacing the fan bank (on page 41)."
 - b. Replace the fan you removed, if applicable. For more information, see "Replacing the fan (on page 39)."

ECS touchscreen

The ECS touchscreen is located on the door to the control panel inside the cold aisle of the HP POD 40c G2. You need a Phillips-head screwdriver for installation.

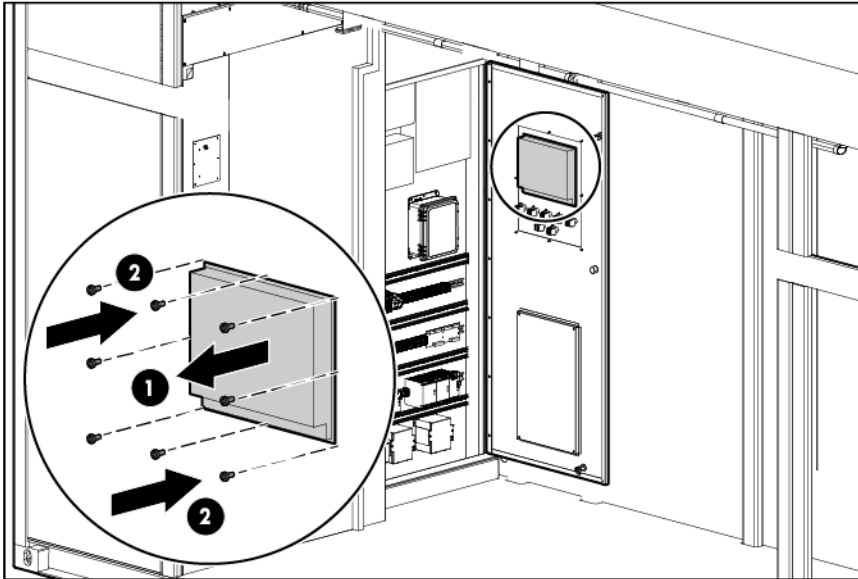
Removing the ECS touchscreen

1. Disconnect the cables attached to the back of the ECS touchscreen.
2. Remove the eight screws on the back of the door that secure the ECS touchscreen (1), and then push the ECS touchscreen through the front of the door to remove the ECS touchscreen (2).



Replacing the ECS touchscreen

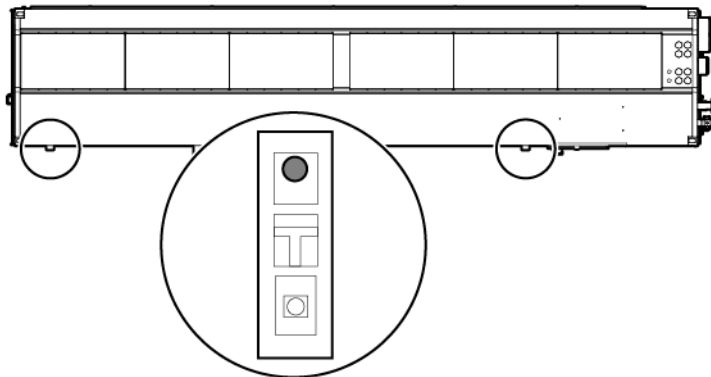
1. Replace the ECS touchscreen through the front of the door (1), and then secure the ECS touchscreen to the back of the door with eight screws (2).



2. Connect the cables to the back of the ECS touchscreen.

EPO button

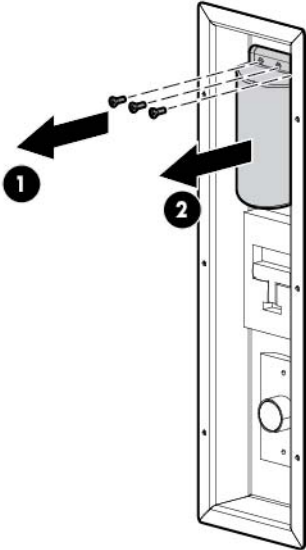
There are two EPO buttons, one by each personnel access door in the HP POD 40c G2.



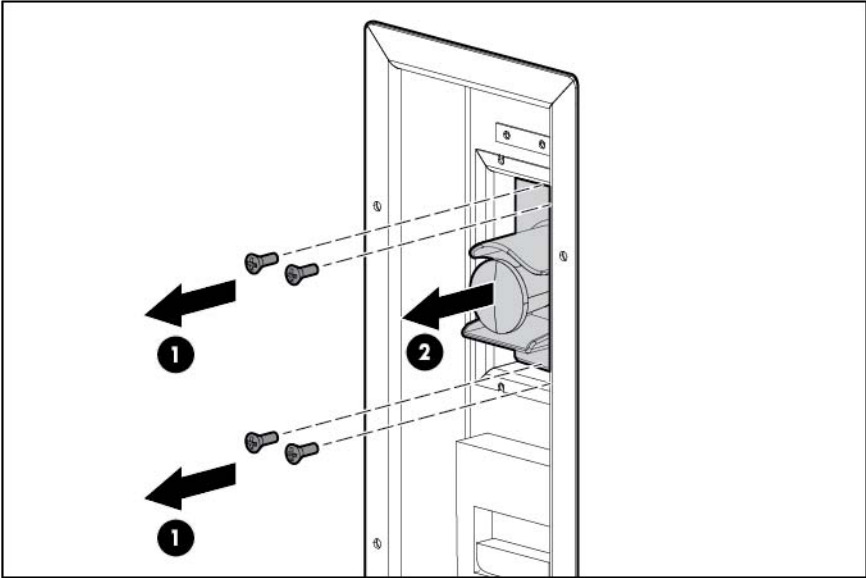
You need a Phillips-head screwdriver for installation.

Removing the EPO button

- 1. Remove the two screws securing the tamper cover (1), and then remove the tamper cover (2).

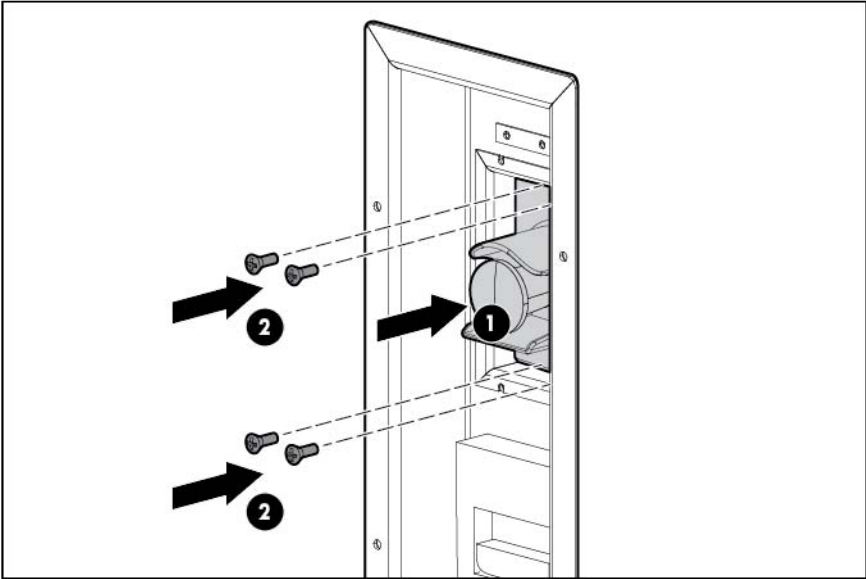


- 2. Remove the four screws securing the EPO button (1), and then remove the EPO button (2).

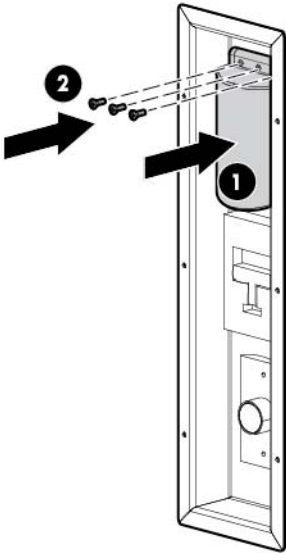


Replacing the EPO button

- 1. Replace the EPO button (1), and then replace the four screws that secure the EPO button (2).

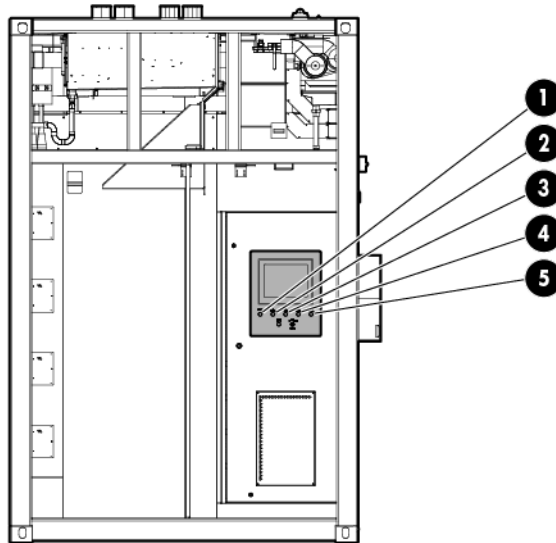


- 2. Replace the tamper cover (1), and then replace the two screws that secure the tamper cover (2).



EPO LED indicators

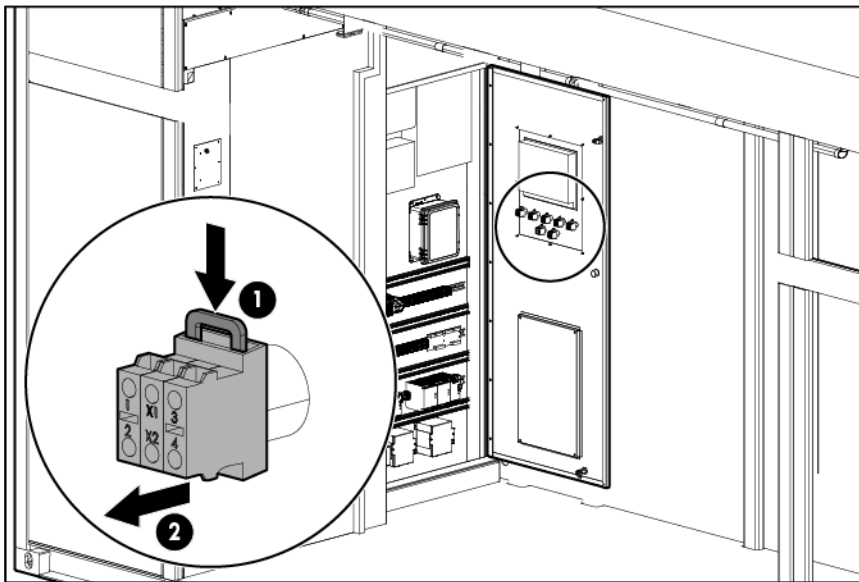
The ECS cabinet contains white (1, 3), red (2), yellow (4), and green (5) EPO LED indicators.



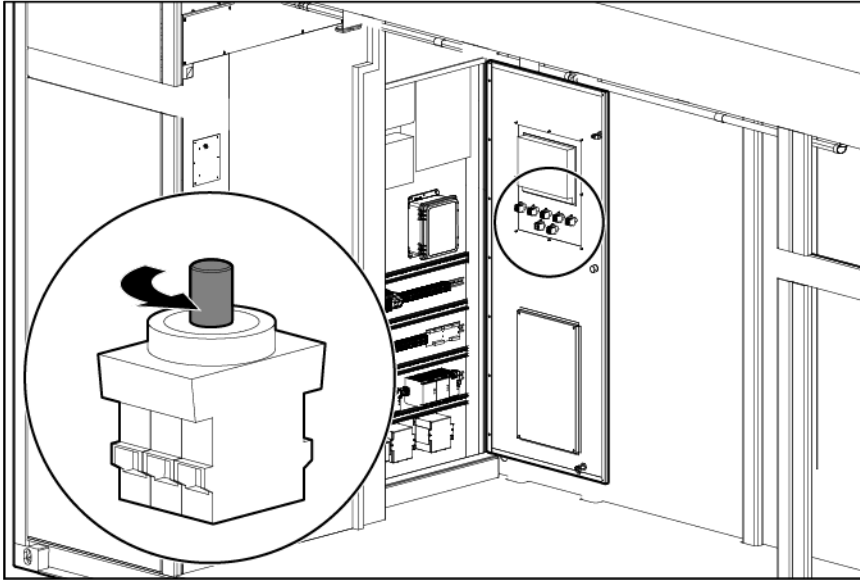
Tools are not required for installation.

Removing the EPO LED indicator

1. On the back of the ECS cabinet door, push the gray tab on the EPO LED indicator module down to release the module (1), and then pull the module out of the door (2).

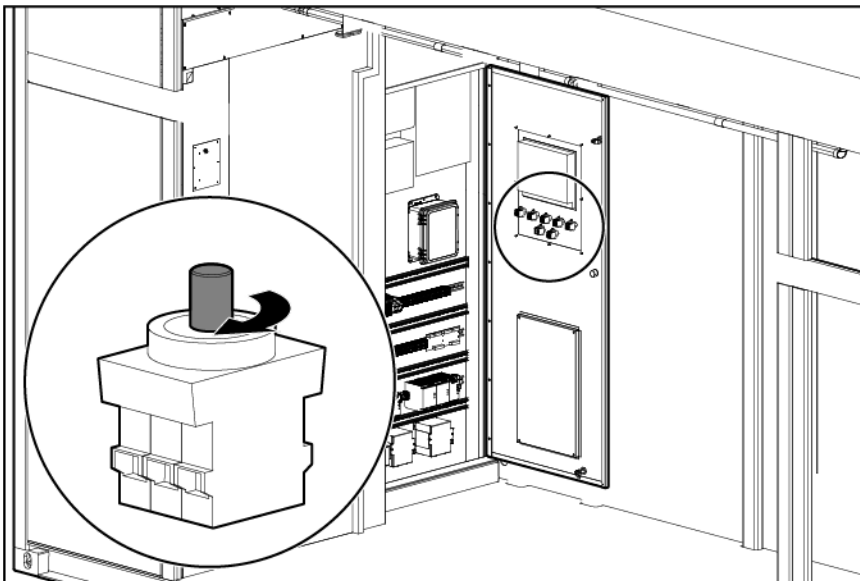


2. Unscrew the EPO LED indicator bulb.

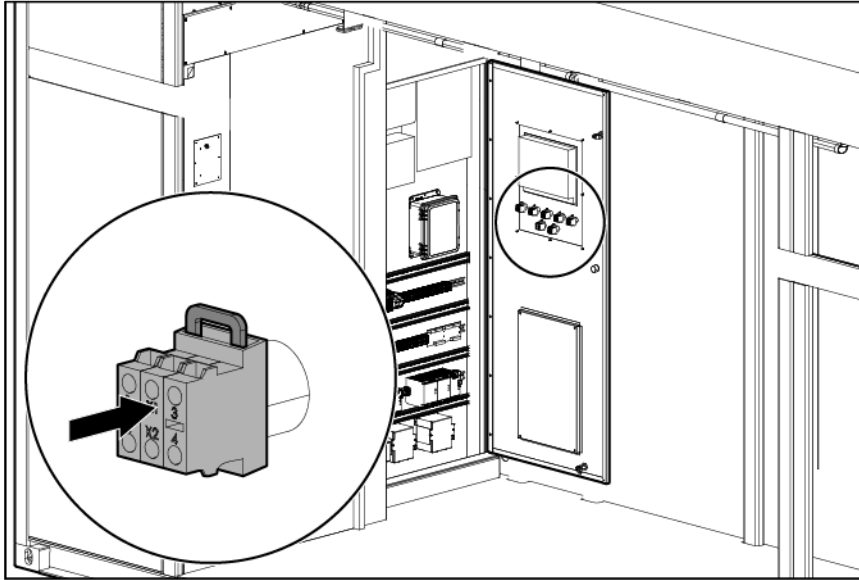


Replacing the EPO LED indicator

1. Screw the new EPO LED indicator bulb into the module.



2. Push the module into the slot on the back of the ECS cabinet door until it clicks into place.



EPO thermister

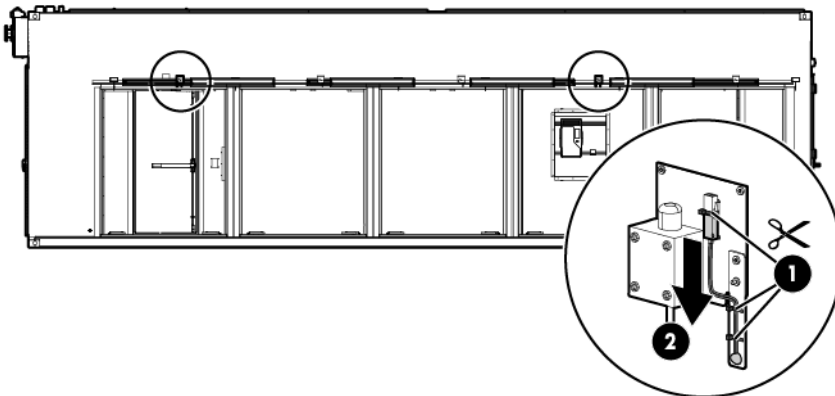
Two EPO thermisters are located in the hot aisle, one in cooling zone 2 and one in cooling zone 5.

While the thermisters are not technically at-temperature monitoring devices, when the hot aisle temperature reaches 60°C (140°F), the thermister switch closes. When both thermister switches are closed, the EPO system initiates an emergency shutdown.

You need scissors for installation.

Removing the EPO thermister

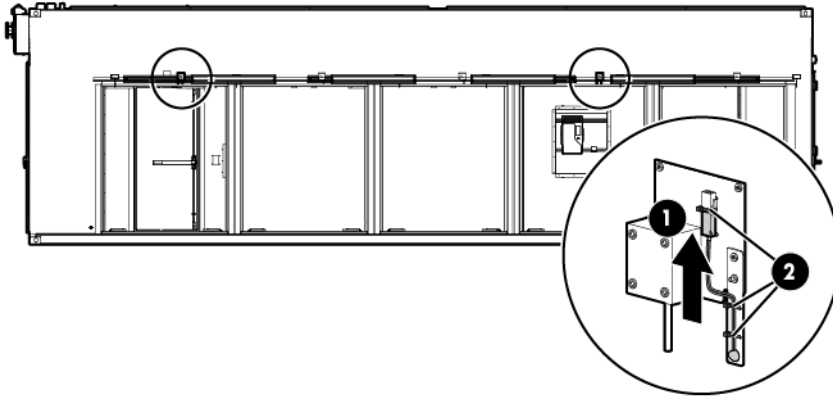
1. Cut the tie wraps securing the thermister (1).
2. Pull the thermister down to remove the thermister (2).



Replacing the EPO thermister

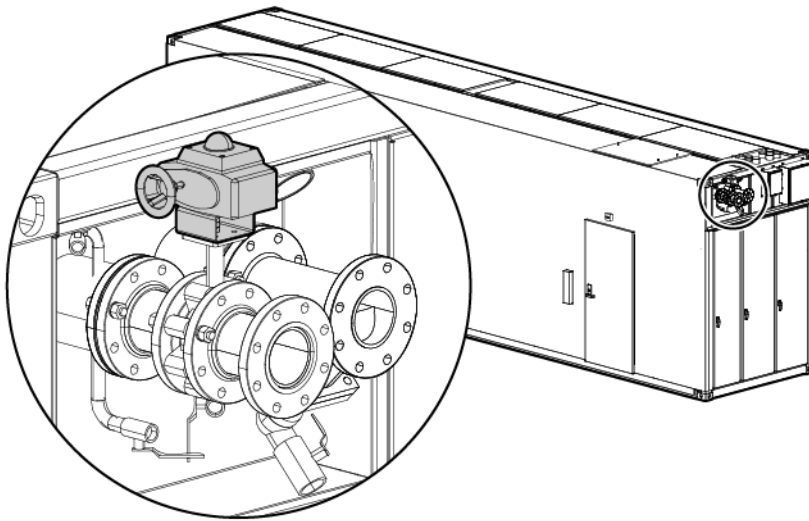
1. Insert the replacement thermister (1).

2. Secure the thermister with tie wraps (2).



External chilled water flow actuator

The external chilled water flow actuator is located on top of the HP POD 40c G2.

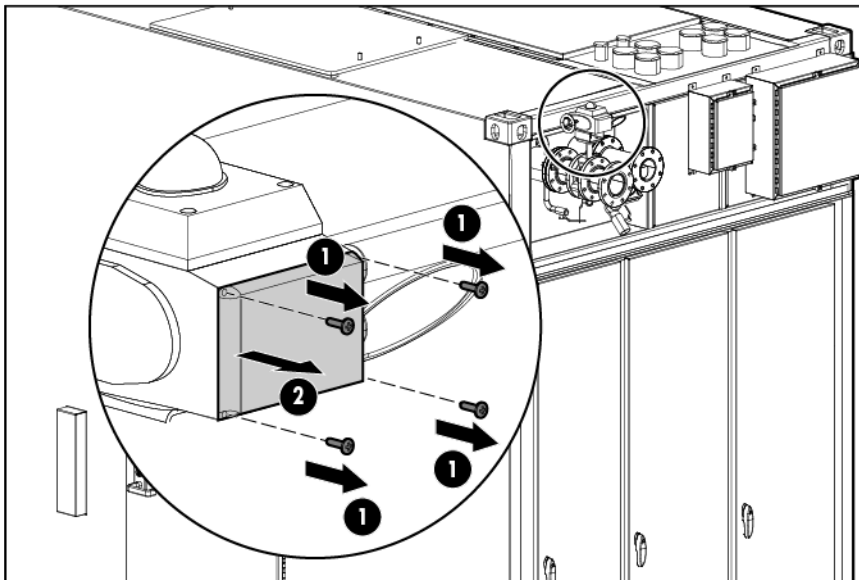


You need a wrench for installation.

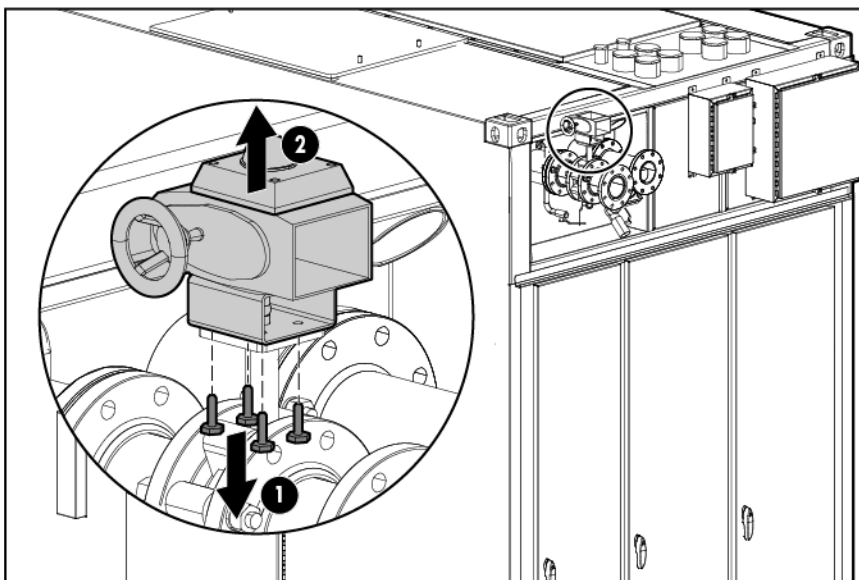
Removing the external chilled water flow actuator

1. Open and danger tag the associated circuit breaker in the ECS cabinet. The circuit breakers are identified on the panel schedule.

2. Remove the four bolts securing the face plate (1), and then remove the face plate (2).

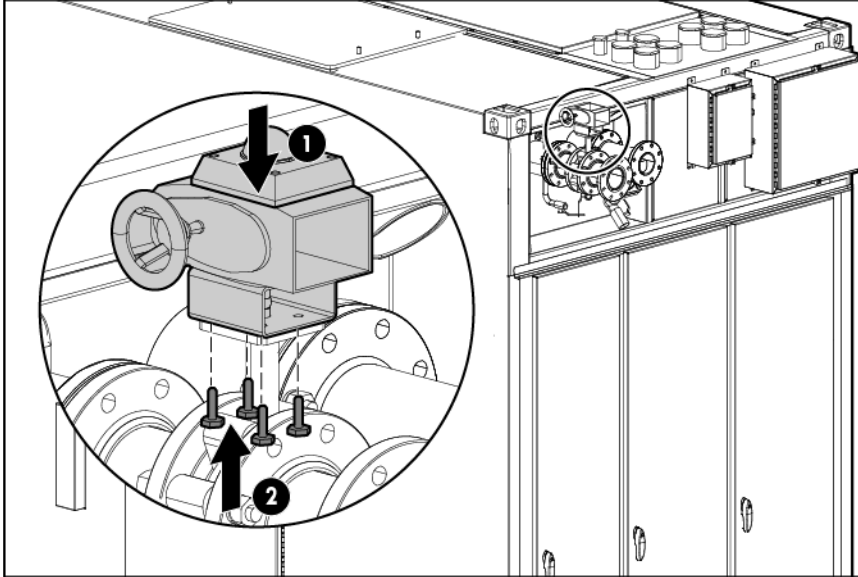


3. Disconnect the power to the actuator.
4. Remove the four bolts securing the actuator (1), and then remove the actuator (2).

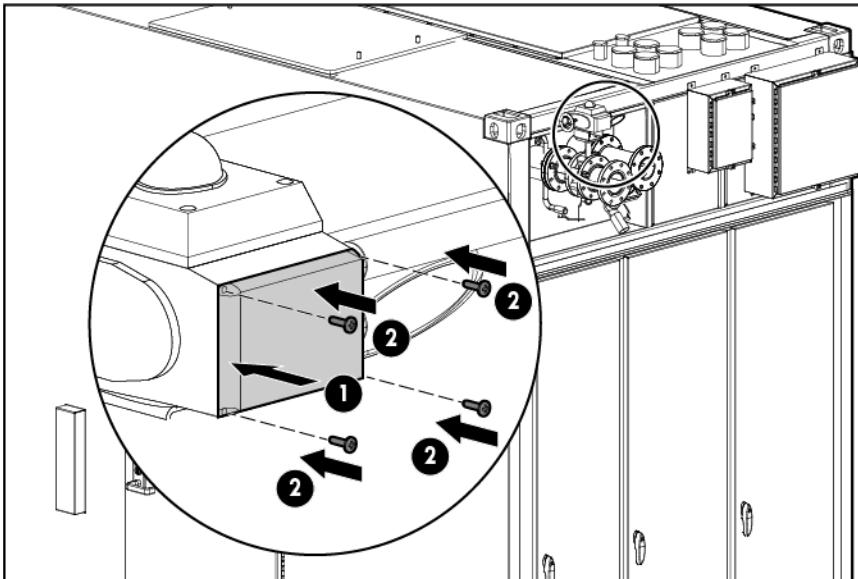


Replacing the external chilled water flow actuator

1. Replace the actuator (1), and then secure the actuator using four bolts (2).



2. Connect the power to the actuator.
3. Replace the actuator face plate (1), and then secure the face plate with four bolts (2).



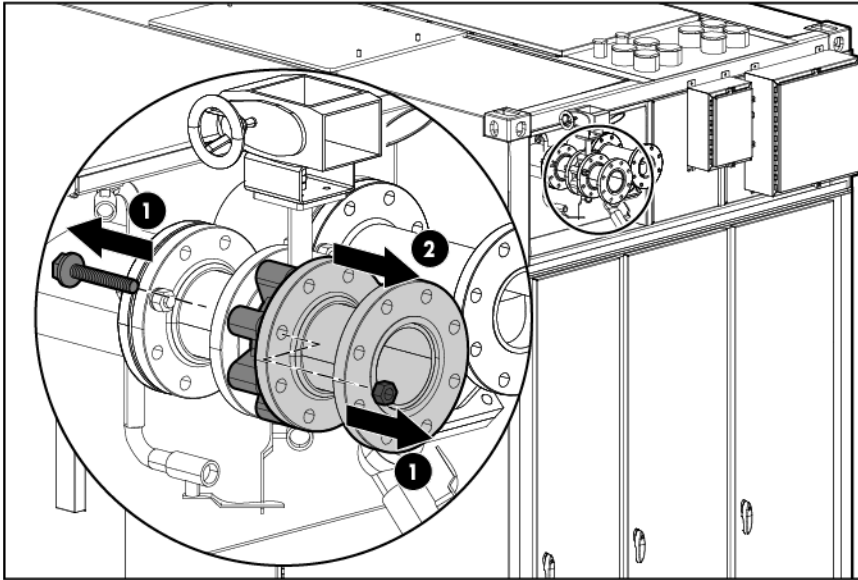
4. Close the associated circuit breaker in the ECS cabinet.

External chilled water flow valve

The external chilled water flow valve is the butterfly valve located on top of the HP POD 40c G2. You need a wrench for installation.

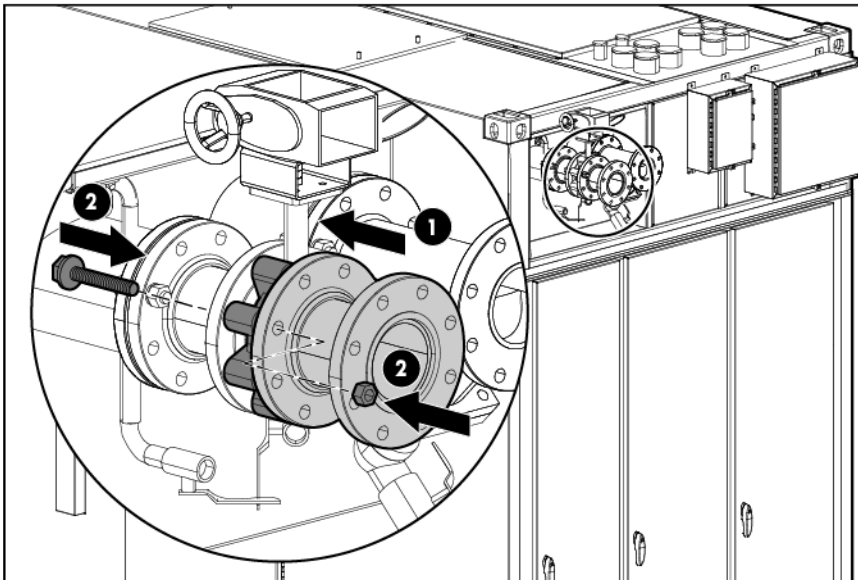
Removing the external chilled water flow valve

1. Remove the external chilled water flow actuator. For detailed instructions, see "Removing the external chilled water flow actuator (on page 33)."
2. Remove the eight bolts surrounding the valve (1), and then remove the valve (2).



Replacing the external chilled water flow valve

1. Replace the valve (1), and then secure the valve with eight bolts (2).



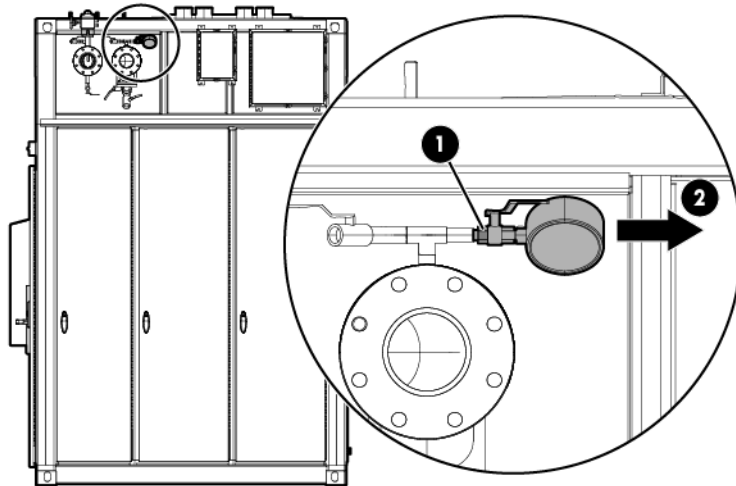
2. Replace the external chilled water flow actuator. For detailed instructions, see "Replacing the external chilled water flow actuator (on page 35)."

External pressure gauge isolation valve

The external pressure gauge isolation valve is located on top of the HP POD 40c G2.
You need an adjustable wrench or an appropriately sized box wrench for installation.

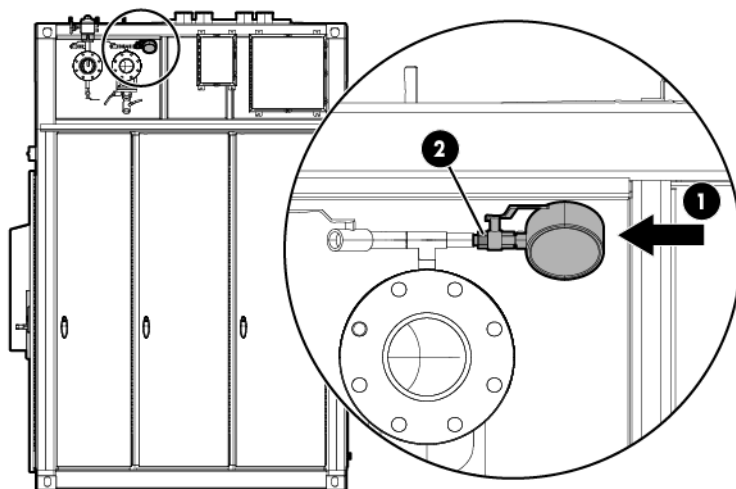
Removing the external pressure gauge isolation valve

Loosen the connection securing the valve (1), and then remove the valve (2).



Replacing the external pressure gauge isolation valve

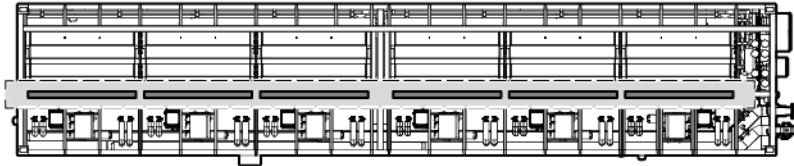
Insert the new valve (1), and then tighten the connection (2).



Fan

There are 18 fans per cooling zone.

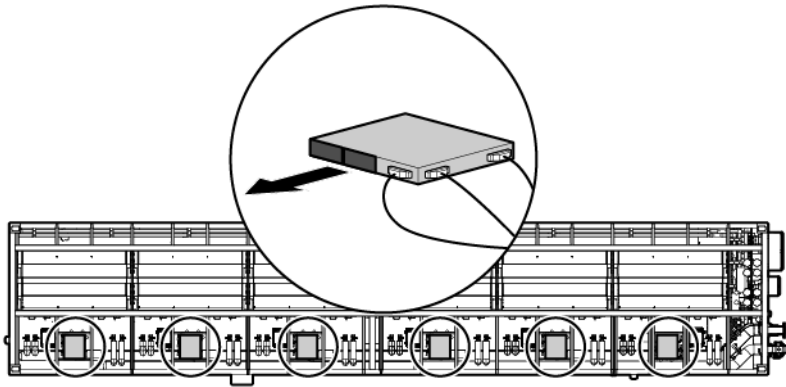
- △ **CAUTION:** Power must be removed from the fan power assembly before removing or replacing a fan or fan bank.



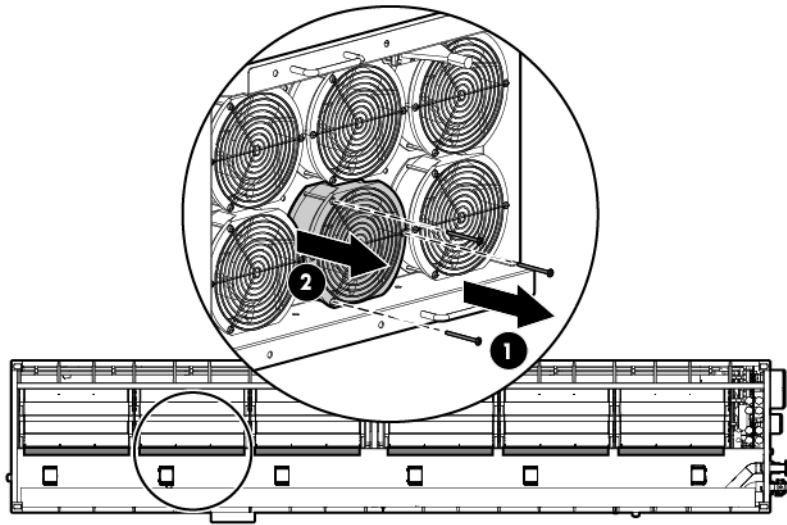
You need a Phillips-head screwdriver for installation.

Removing the fan

1. Disconnect both power supplies from the fan power assembly.



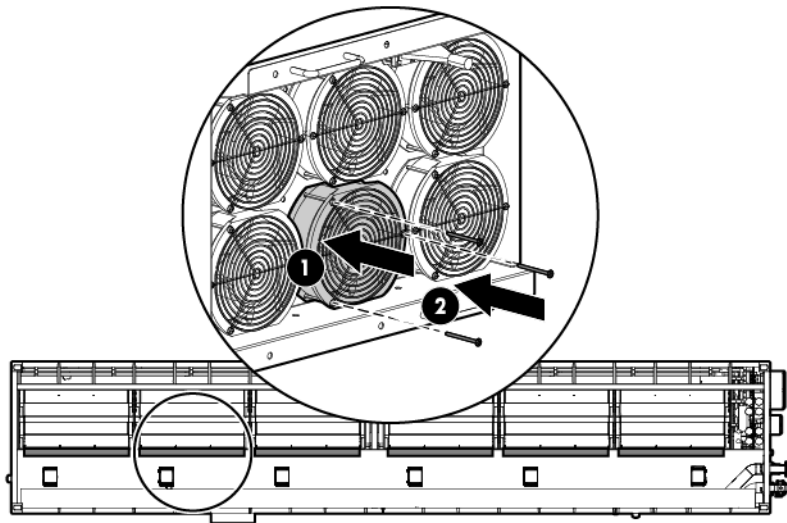
2. Remove the three screws that secure the fan in the assembly (1), and then partially remove the fan by pulling it straight out (2).



3. Disconnect the wire.
4. Remove the fan from the assembly.

Replacing the fan

1. Connect the wire.
2. Insert the fan into the assembly and push until the fan is fully seated (1).
3. Secure the fan with three screws (2).

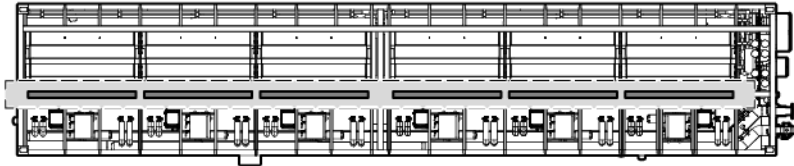


4. Connect the power supplies to the fan power assembly.

Fan bank

There are three fan banks per cooling zone.

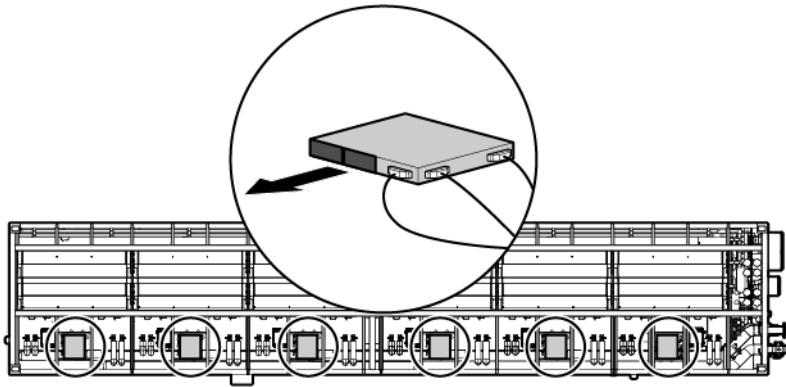
- △ **CAUTION:** Power must be removed from the fan power assembly before removing or replacing a fan or fan bank.



You need a Phillips-head screwdriver for installation.

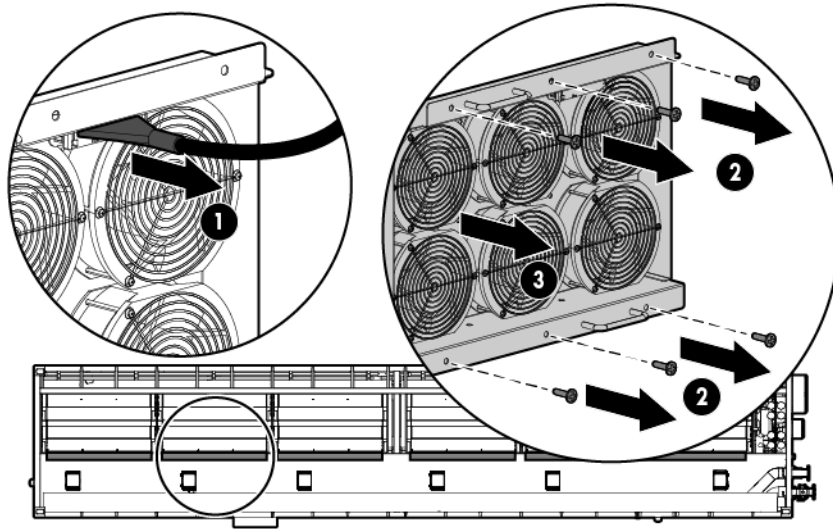
Removing the fan bank

1. Disconnect both power supplies from the fan power assembly.



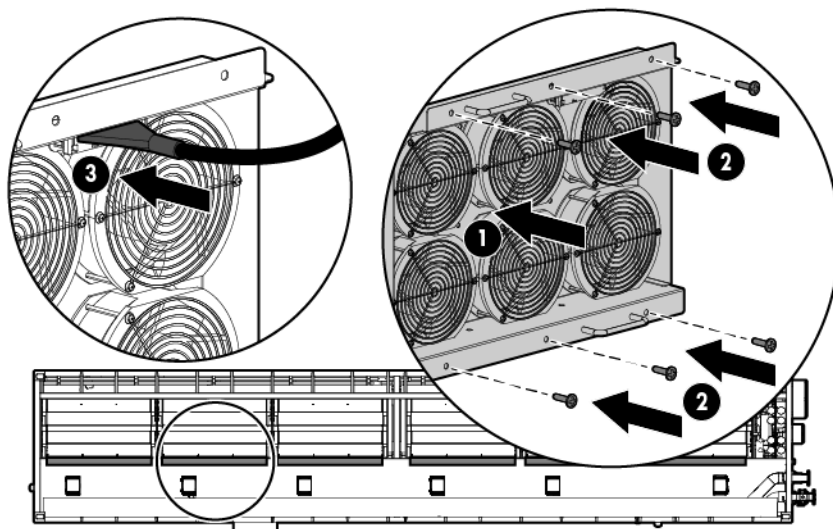
2. Remove the fan bank wire harness (1).
3. Remove the six screws that secure the fan bank (2).

4. Remove the fan bank by pulling it straight out (3).



Replacing the fan bank

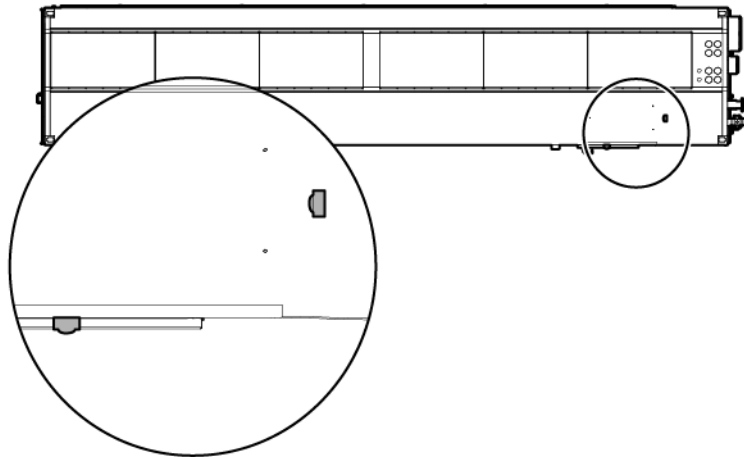
1. Insert the fan bank (1).
2. Secure the fan bank with six screws (2).
3. Replace the fan bank wire harness (3).



4. Connect the power supplies to the fan power assembly.

Fire strobe light

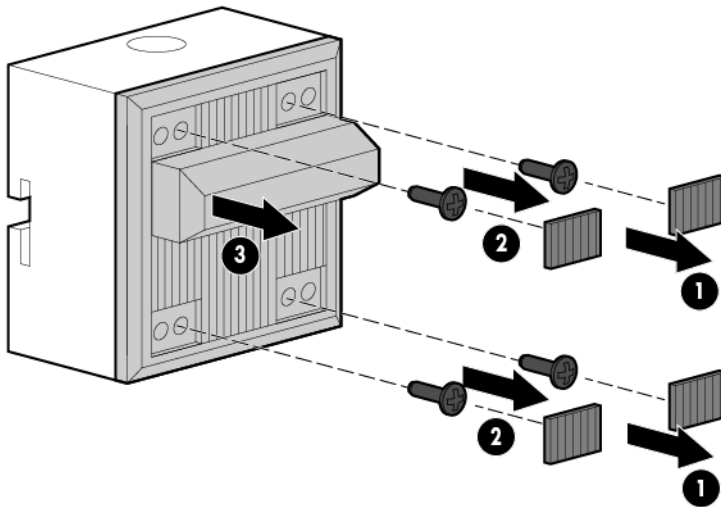
The HP POD 40c G2 contains an internal fire alarm strobe light in the cold aisle and an external fire alarm strobe light at the standard personnel entry door.



You need a Phillips-head screwdriver for installation.

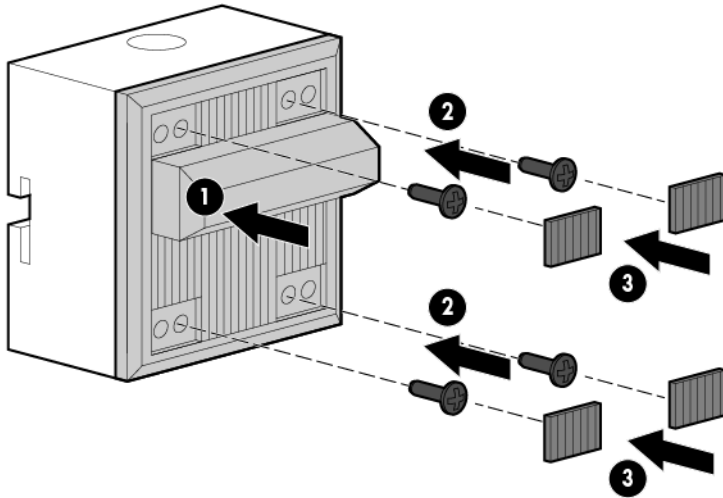
Removing the fire strobe light

1. Remove the four screw cover plates (1).
2. Remove the four screws securing the components (2), and then disconnect the wiring.
3. Remove the electric sounder with strobe, the semi-flush plate, and the standard back box (3).



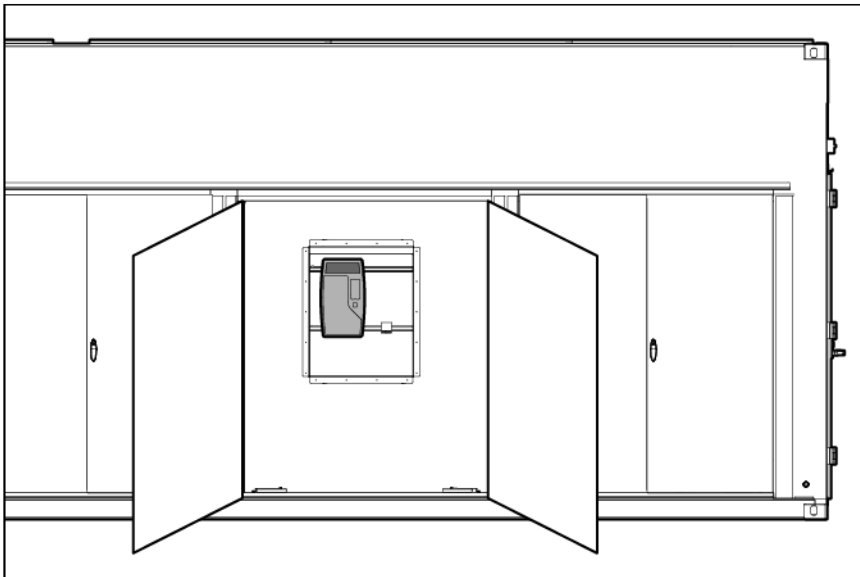
Replacing the fire strobe light

1. Assemble the standard back box, the semi-flush plate, and the electric sounder with strobe (1), and then attach the wiring.
2. Secure the components with four screws (2).
3. Attach the four screw cover plates (3).



Humidifier

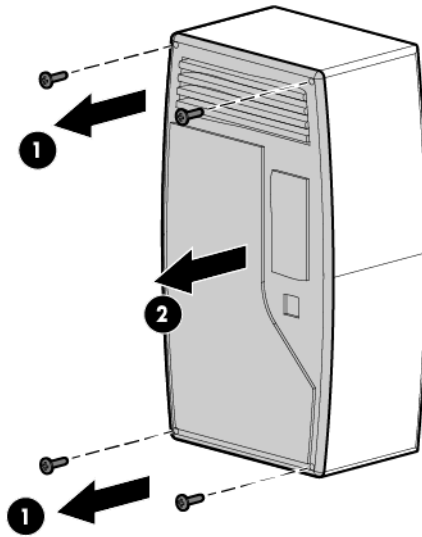
The humidifier is located in the cold aisle humidifier bump out.



You need a Phillips-head screwdriver for installation.

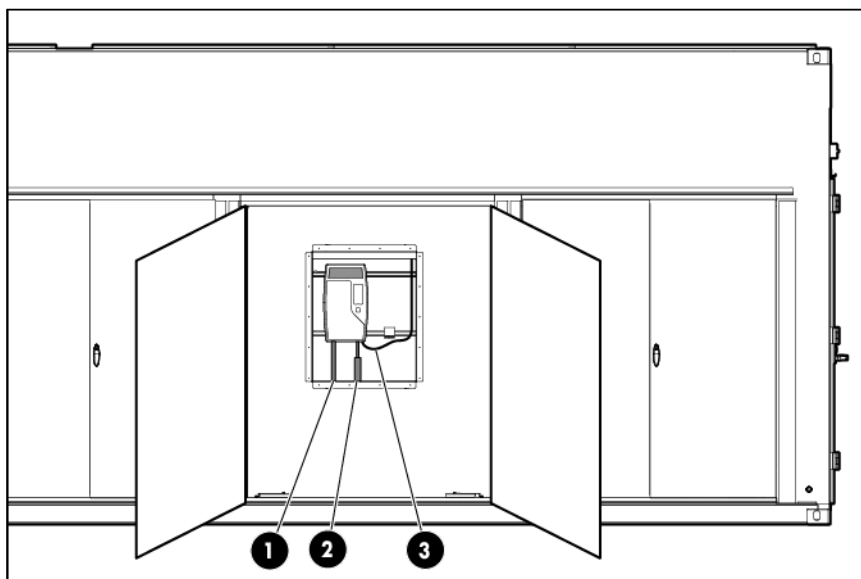
Removing the humidifier

1. Hold the drain button on the humidifier exterior until the humidifier cylinder drains completely.
2. Press the power button on the outside of the humidifier to power down the humidifier.
3. Close the water supply isolation valve on the HP POD 40c G2 exterior.
4. Disconnect the water supply line to the humidifier on the HP POD 40c G2 exterior to relieve the water pressure.
5. Open and danger tag the associated circuit breaker in the ECS cabinet. The circuit breakers are identified on the panel schedule.
6. Remove the four screws on the corners of the humidifier cover (1), and then remove the cover (2).

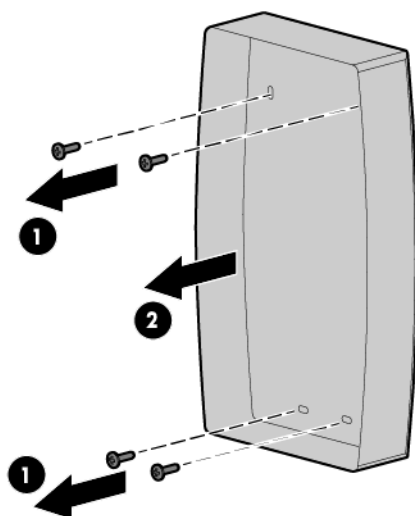


7. Locate the power board and disconnect the two internal electrical wires.
8. Disconnect the drain (1).
9. Disconnect the humidifier from the water supply line (2).

10. Disconnect and remove the external electrical wiring from the housing (3).

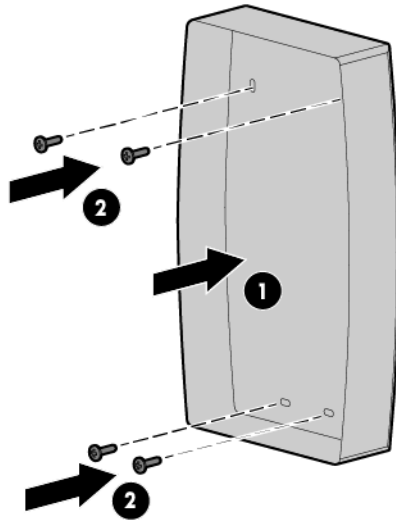


11. Remove the four screws that secure the humidifier body to the wall (1), and then remove the humidifier (2).

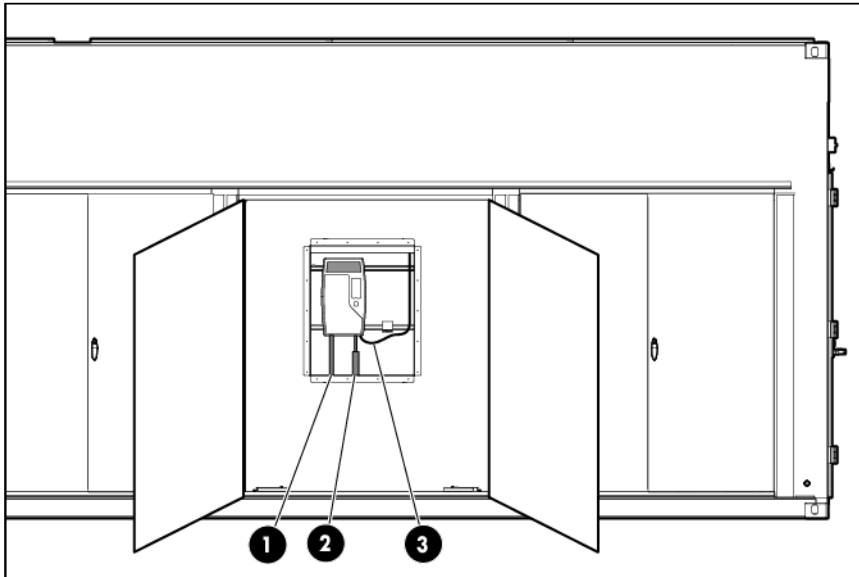


Replacing the humidifier

1. Replace the humidifier (1), and then secure the humidifier to the wall with four screws (2).

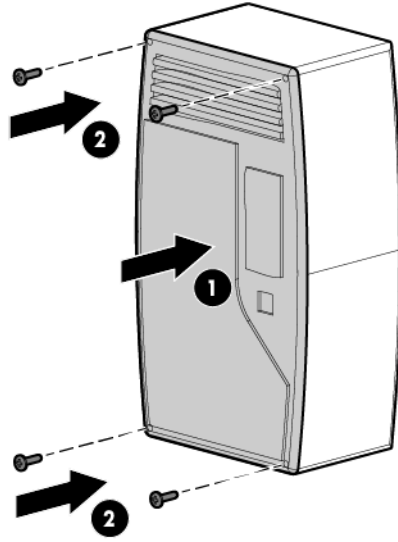


2. Connect the drain (1).
3. Connect the humidifier to the water supply line (2).
4. Route and connect the external electrical wiring to the housing (3).



5. Locate the power board and connect the two internal electrical wires.

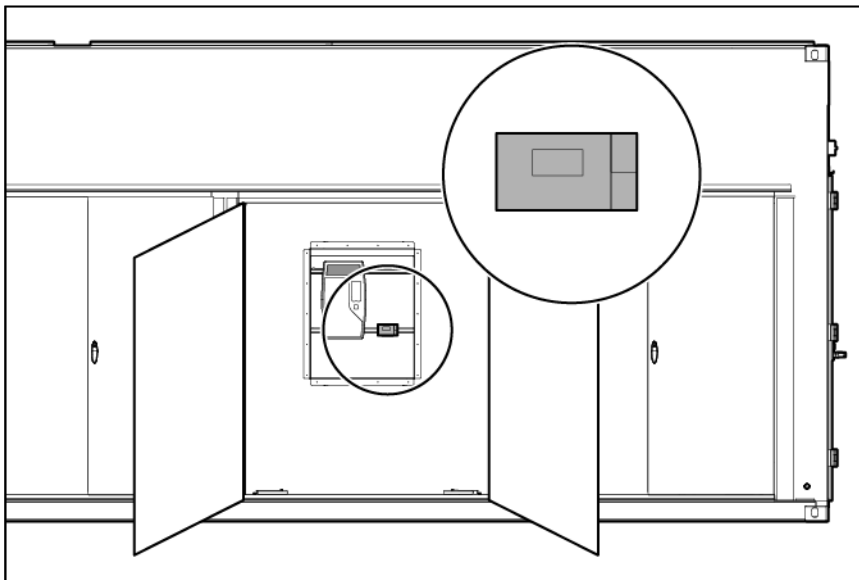
6. Replace the humidifier cover (1), and then secure the cover with four screws (2).



7. Open the water supply isolation valve on the HP POD 40c G2 exterior.
8. Connect the water supply line to the humidifier on the HP POD 40c G2 exterior.
9. Close the associated circuit breaker in the ECS cabinet.
10. Press the power button on the outside of the humidifier to power up the humidifier.

Humidistat

The humidistat is located in the cold aisle humidifier bump out.

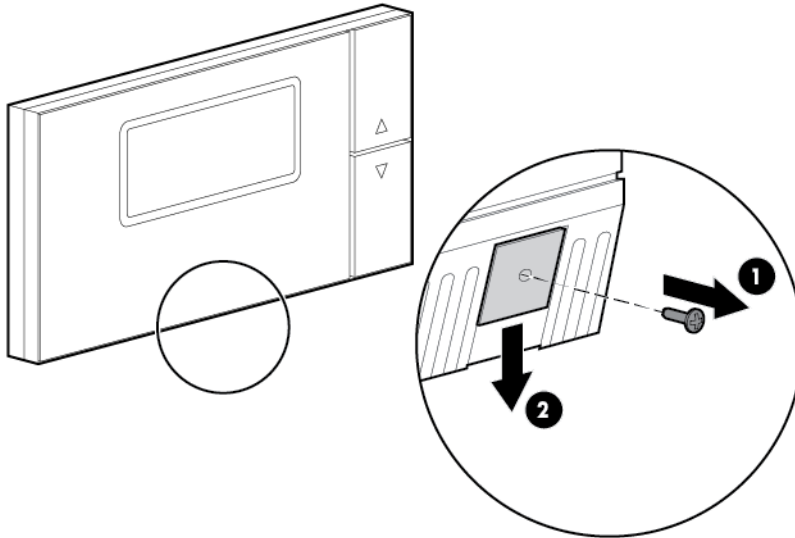


You need a Phillips-head screwdriver and a flathead screwdriver for installation.

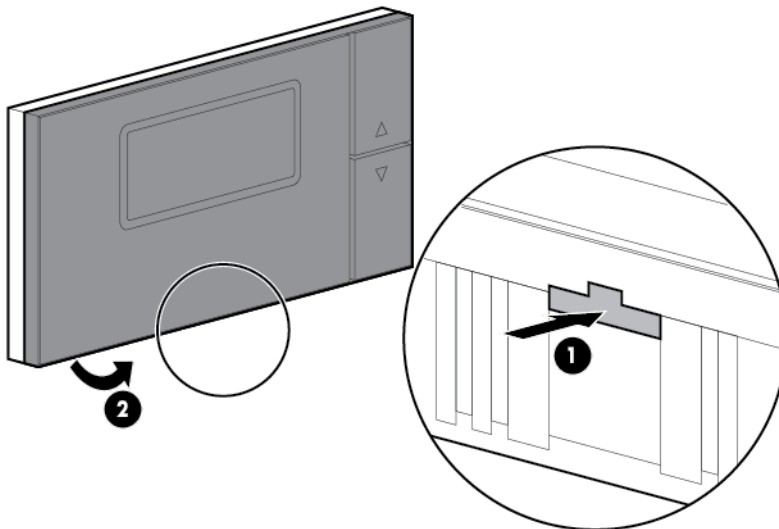
Removing the humidistat

1. Press the power button on the outside of the humidifier to power down the humidifier.

2. Open and danger tag the associated circuit breaker in the ECS cabinet. The circuit breakers are identified on the panel schedule.
3. Detach the front panel of the humidistat from the mounting base:
 - a. Remove the screw securing the tab in the opening (1), and then slide the tab to the open position (2).



- b. Use a flathead screwdriver to the press the release button (1), and then pull the front panel from the bottom to detach the panel (2). The two parts remain connected by a flat cable.

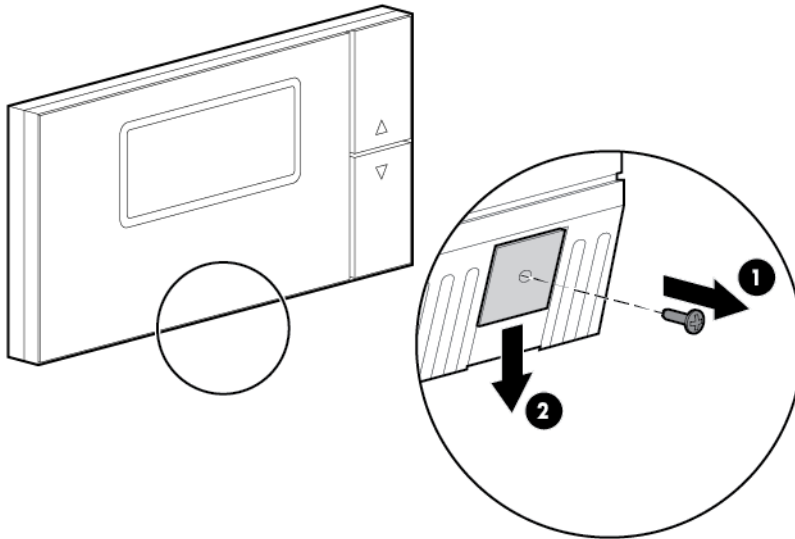


4. Squeeze the two terminal cover fins to remove the cables from the terminal block.
5. Remove the screws securing the mounting base to the wall.

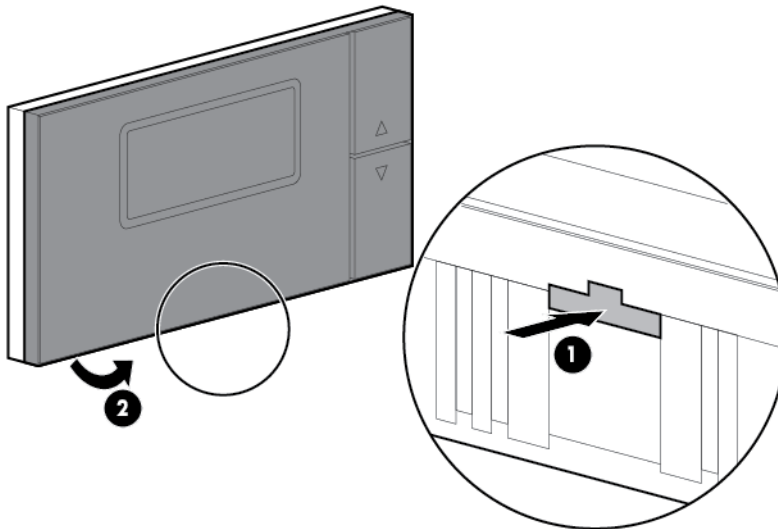
Replacing the humidistat

1. Detach the front panel of the replacement humidistat from the mounting base.

- a. Remove the screw securing the tab in the opening (1), and then slide the tab to the open position (2).



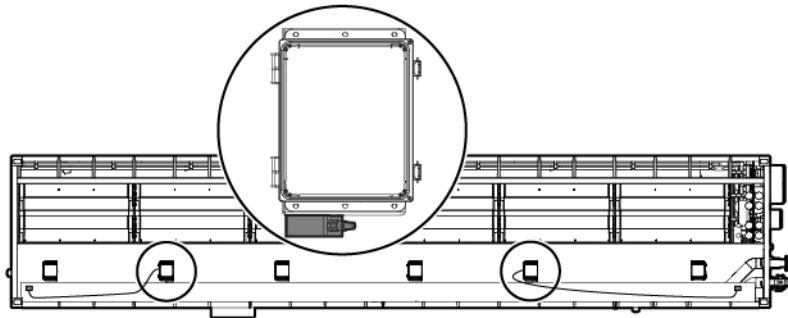
- b. Use a flathead screwdriver to press the release button (1), and then pull the front panel from the bottom to detach the panel (2). The two parts remain connected by a flat cable.



2. Secure the mounting base to the wall using the screws provided.
3. Squeeze the two terminal cover fins to remove the terminal covers.
4. Make the required connections by running the connection cables through the center hole in the bottom of the mounting base and connecting the cables to the terminal block.
5. Separate the connection and control cables from the relay cables.
6. Attach the front panel.
7. Close the associated circuit breaker in the ECS cabinet.
8. Press the power button on the outside of the humidifier to power up the humidifier.

Humidity sensor

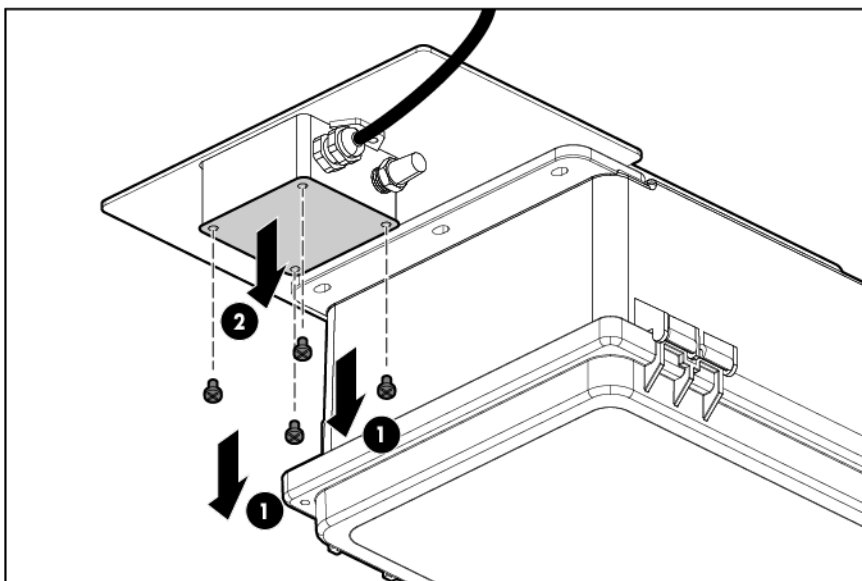
The HP POD 40c G2 contains two humidity sensors, one in cooling zone 2 and one in cooling zone 5.



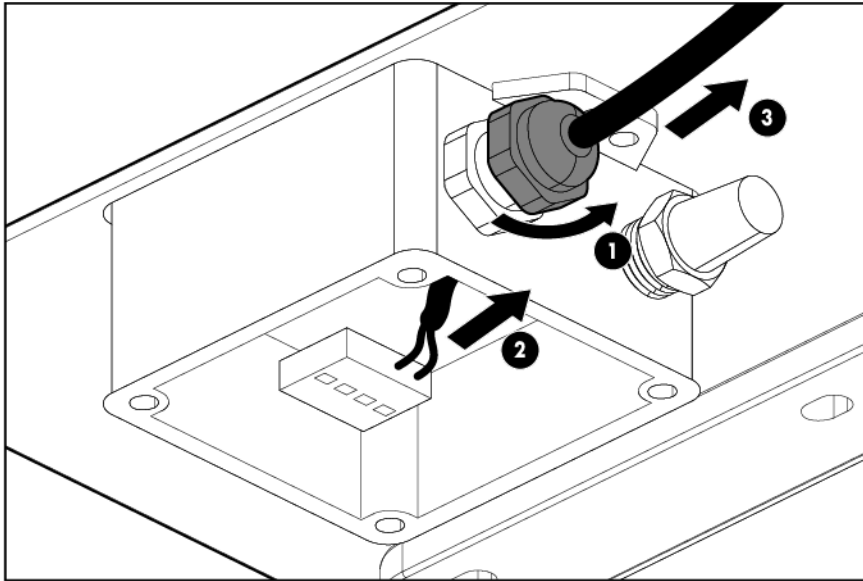
You need a Phillips-head screwdriver for installation.

Removing the humidity sensor

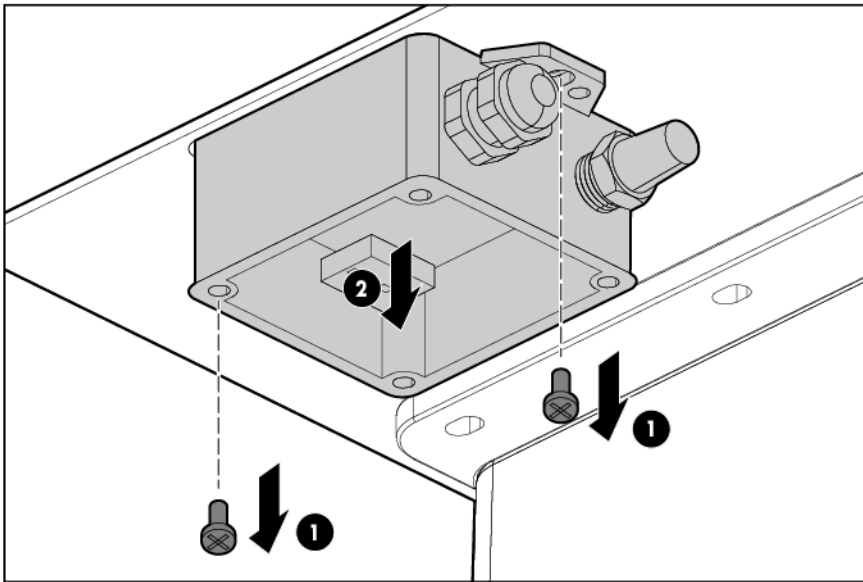
1. Remove the four screws that secure the sensor cover (1), and then remove the cover (2).



2. Loosen the sensor wires by turning the nut counter clockwise (1), remove the sensor wires from the terminal block, and then remove the sensor wires (3).

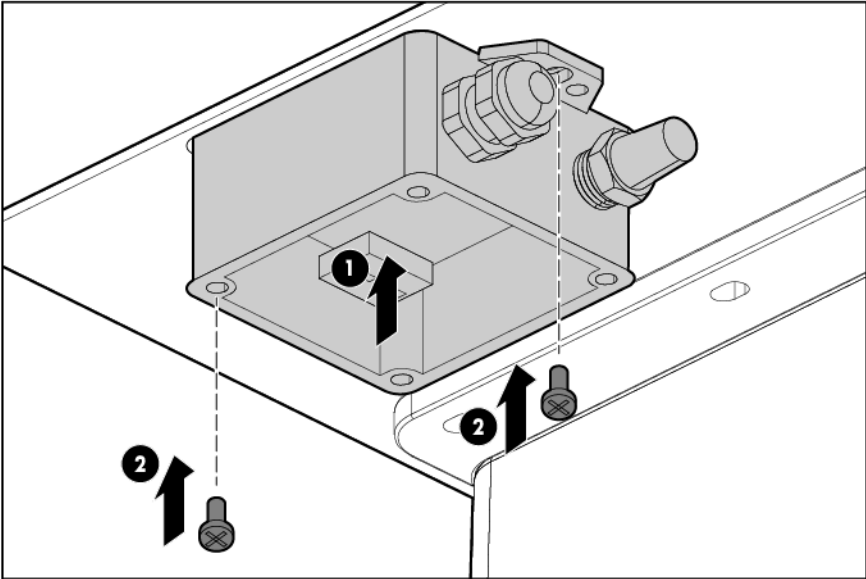


3. Remove the two screws that secure the sensor (1), and then remove the sensor (2).

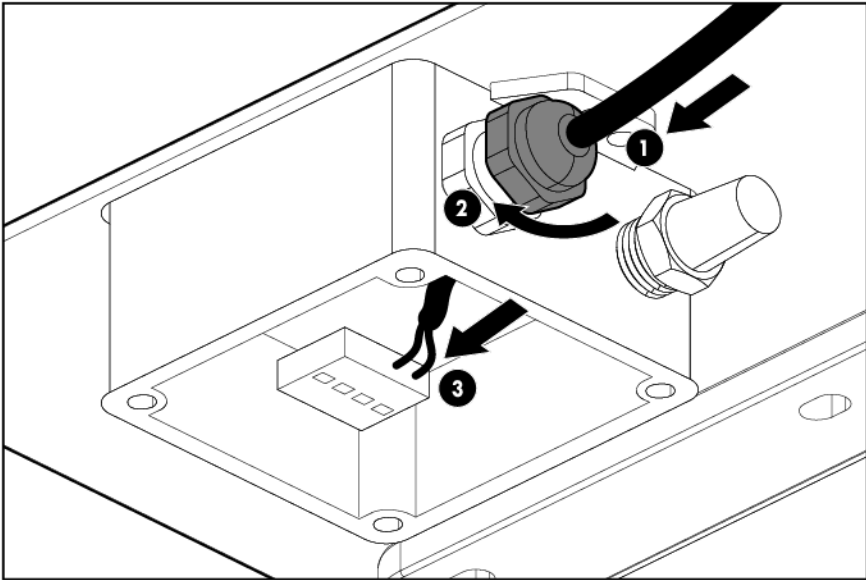


Replacing the humidity sensor

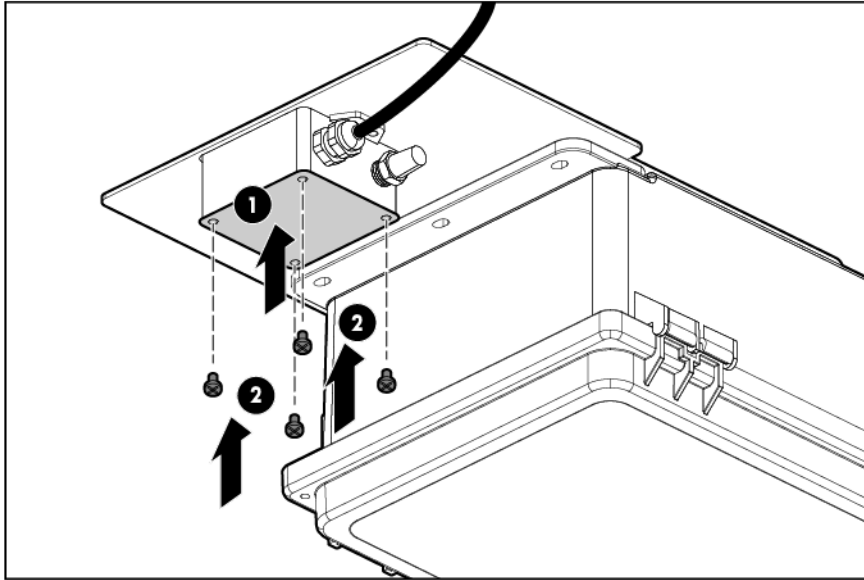
- 1. Replace the sensor (1), and then secure the sensor with two screws (2).



- 2. Insert the sensor wire into the nut (1), secure the wire by turning the nut clockwise (2), and then insert the wire into the terminal block (3).

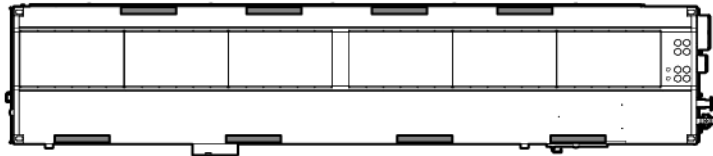


3. Replace the sensor cover (1), and then secure the cover with four screws (2).



LED light

Each POD contains eight LED lights.

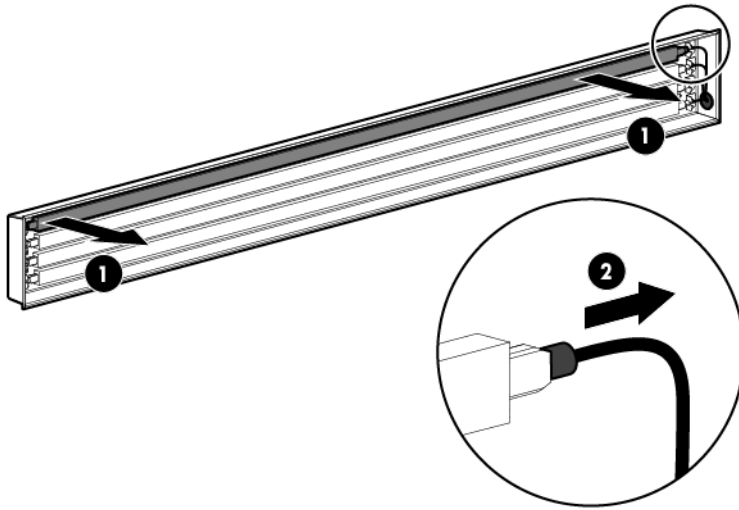


You need adhesive tape for installation.

Removing the LED light

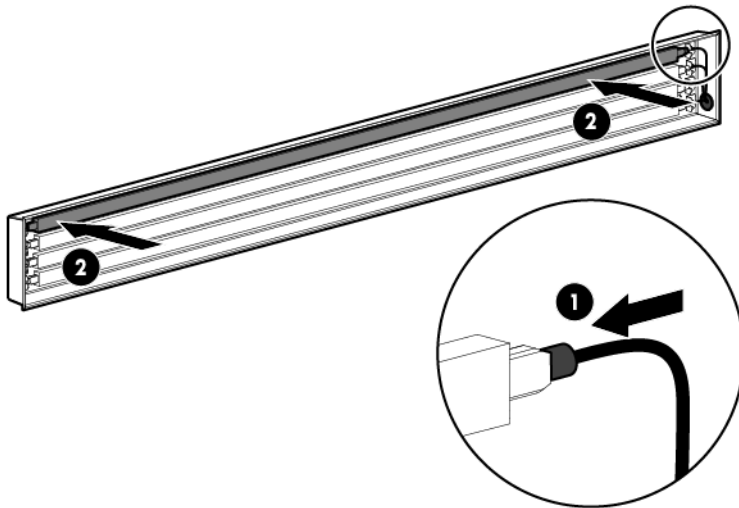
1. Pull the LED light panel out (1).

2. Disconnect the LED light panel (2).



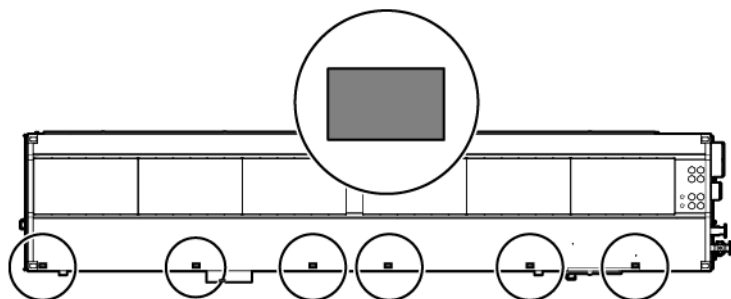
Replacing the LED light

1. Connect the new LED light panel to the LED fixture (1).
2. Replace the LED light panel by pressing it into the LED fixture (2).



Temperature sensor (cold aisle)

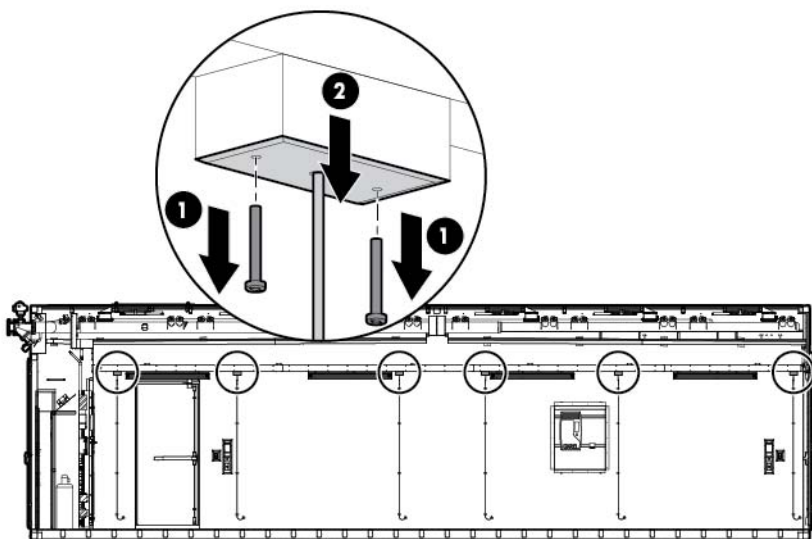
The HP POD 40c G2 contains six temperature sensors in the cold aisle.



You need a Phillips-head screwdriver and scissors for installation.

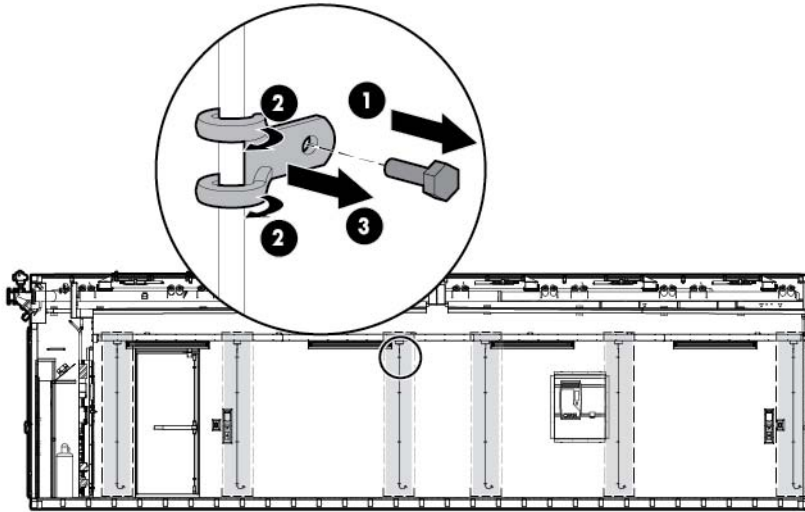
Removing the cold aisle temperature sensor

1. Remove the two screws that secure the sensor cover (1), and then remove the cover (2).



2. Cut the two red wires inside the sensor box.

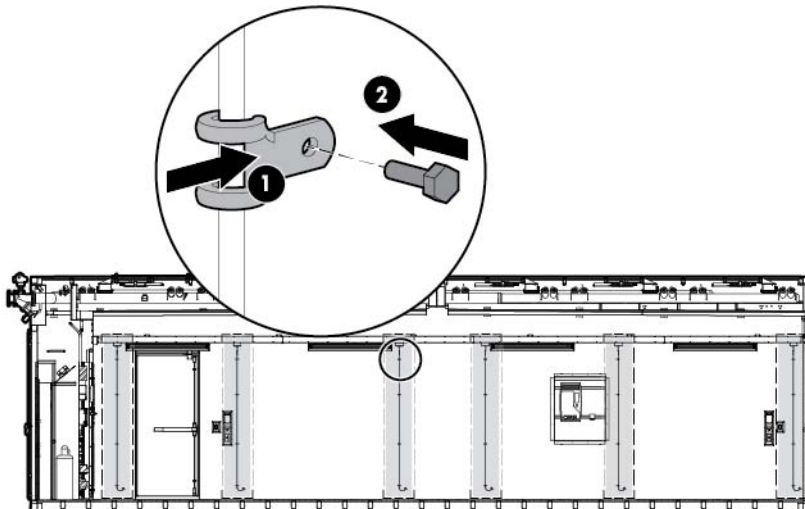
3. For each of the five clamps securing the sensor tube to the HP POD 40c G2 structure, remove the screw that secures the clamp (1), rotate the clamp (2), and then pull the clamp out to remove the clamp (3).



4. Remove the sensor tube.

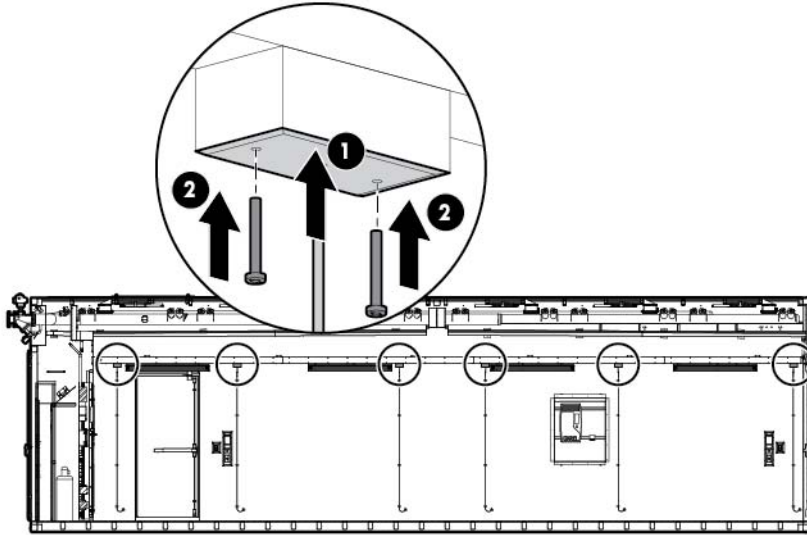
Replacing the cold aisle temperature sensor

1. Replace the sensor tube, and then secure the tube with five clamps. For each clamp, replace the clamp (1), and then secure the clamp with a screw (2).



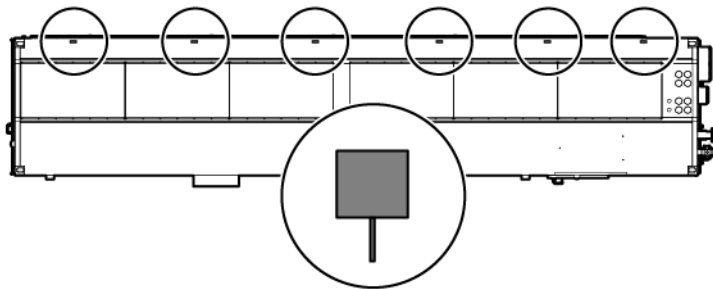
2. Splice the two sensor tube wires with the red wires inside the sensor box.

3. Replace the sensor cover (1), and then secure the cover with two screws (2).



Temperature sensor (hot aisle)

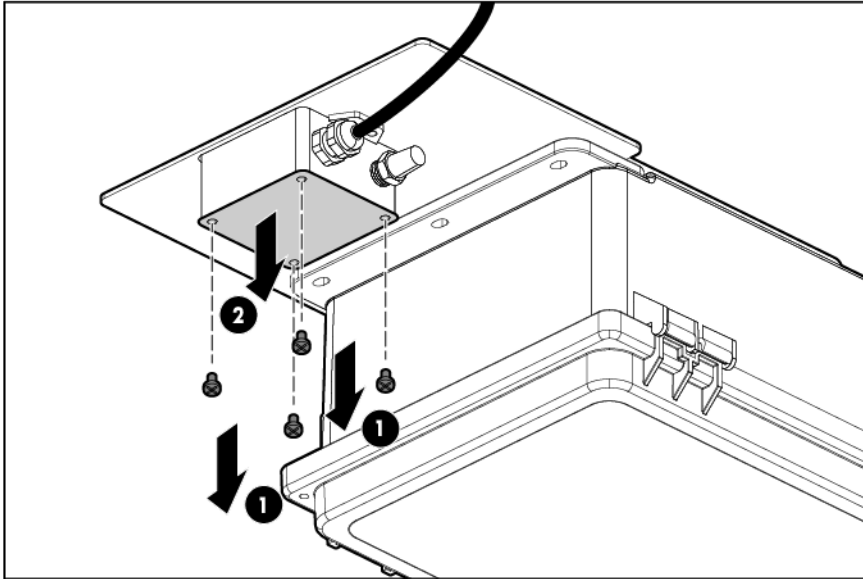
The HP POD 40c G2 contains six temperature sensors in the hot aisle.



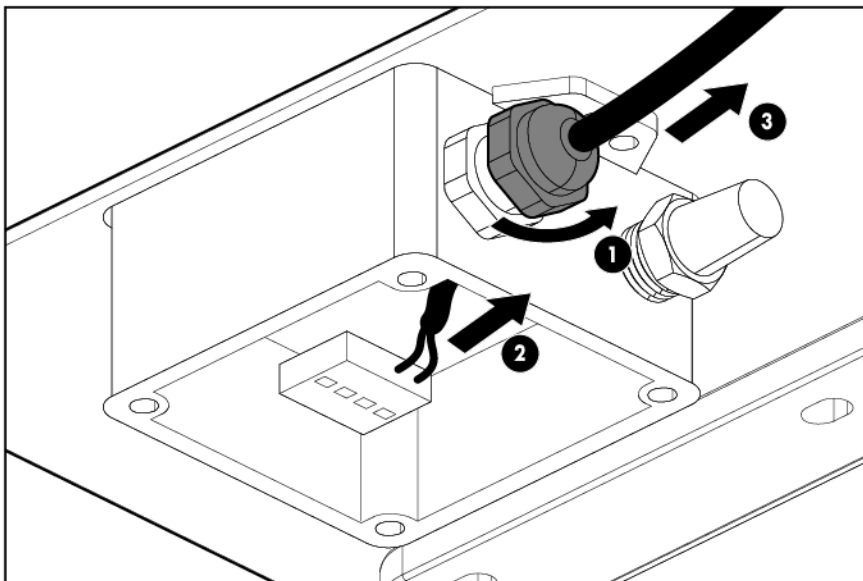
You need a Phillips-head screwdriver for installation.

Removing the hot aisle temperature sensor

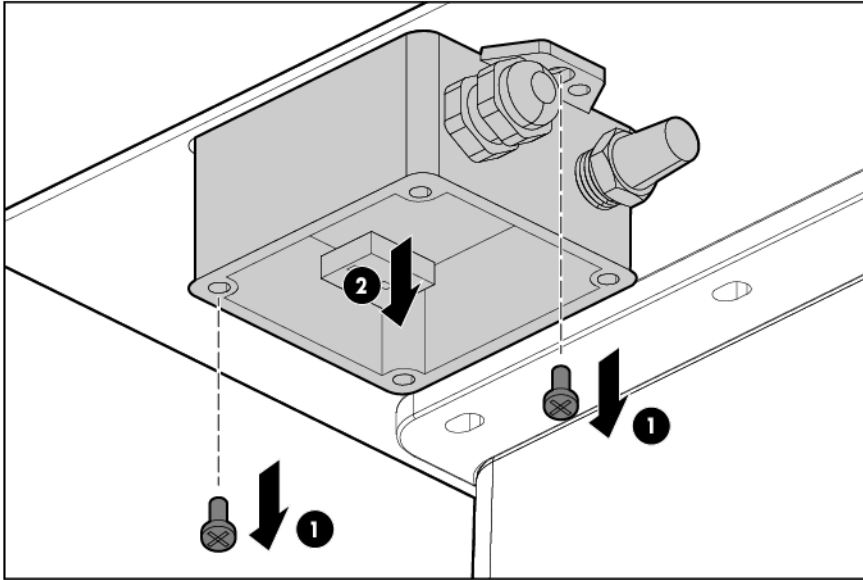
1. Remove the four screws that secure the sensor cover (1), and then remove the cover (2).



2. Loosen the sensor wires by turning the nut counter clockwise (1), remove the sensor wires from the terminal block, and then remove the sensor wires (3).

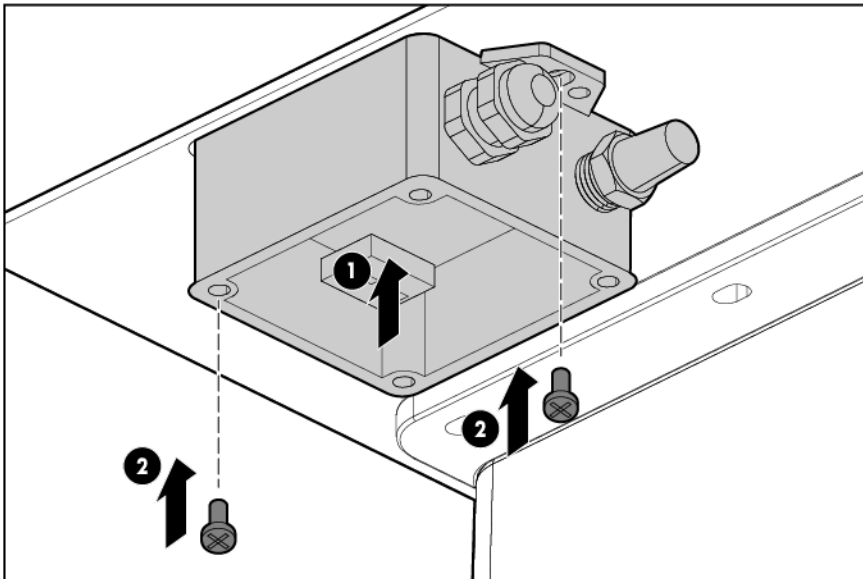


3. Remove the two screws that secure the sensor (1), and then remove the sensor (2).

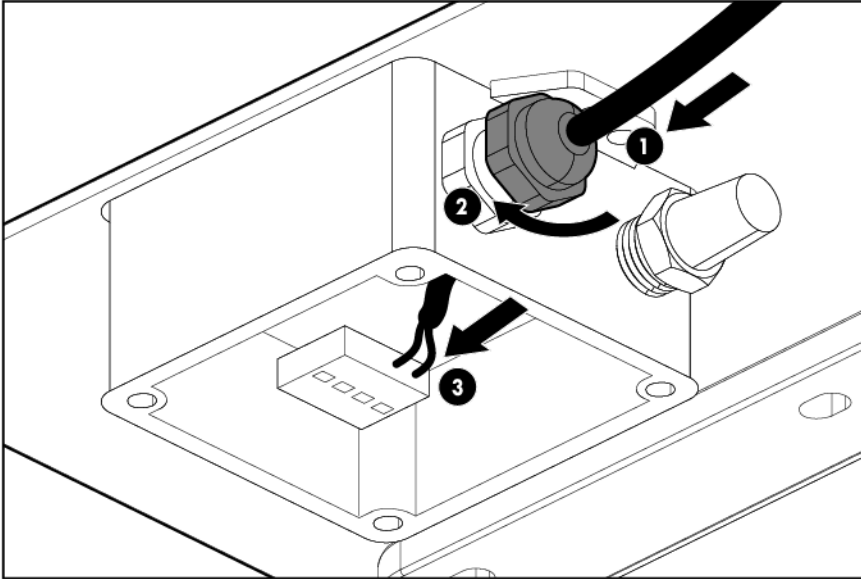


Replacing the hot aisle temperature sensor

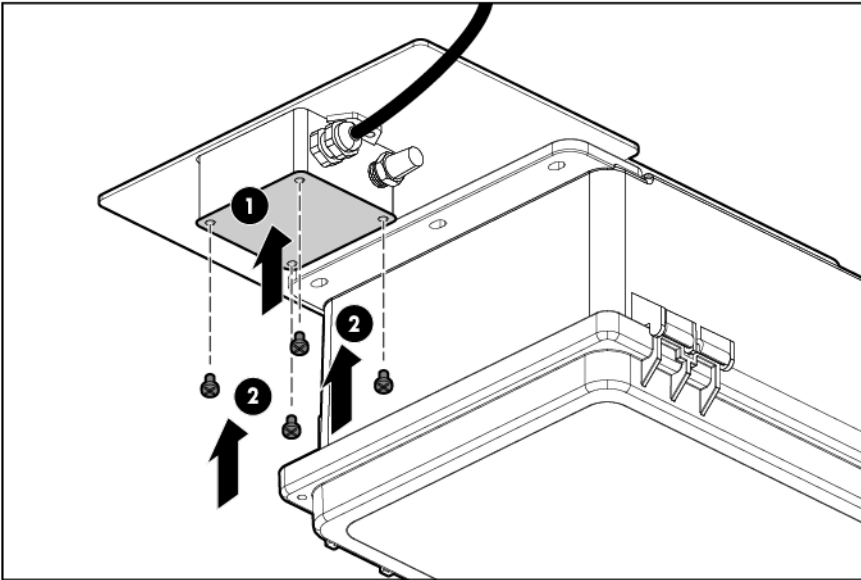
1. Replace the sensor (1), and then secure the sensor with two screws (2).



2. Insert the sensor wire into the nut (1), secure the wire by turning the nut clockwise (2), and then insert the wire into the terminal block (3).



3. Replace the sensor cover (1), and then secure the cover with four screws (2).



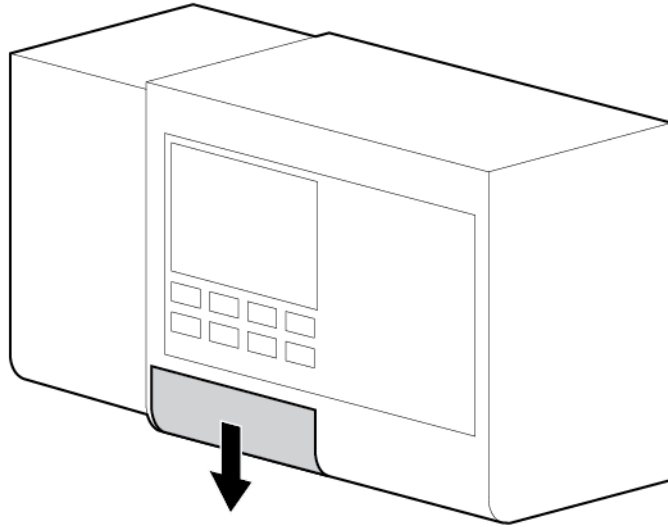
VESDA filter

The VESDA filter sensor notifies you through the ECS when a filter must be changed. HP recommends periodically inspecting and changing each VESDA filter. A VESDA filter can be replaced during normal HP POD 40c G2 operation.

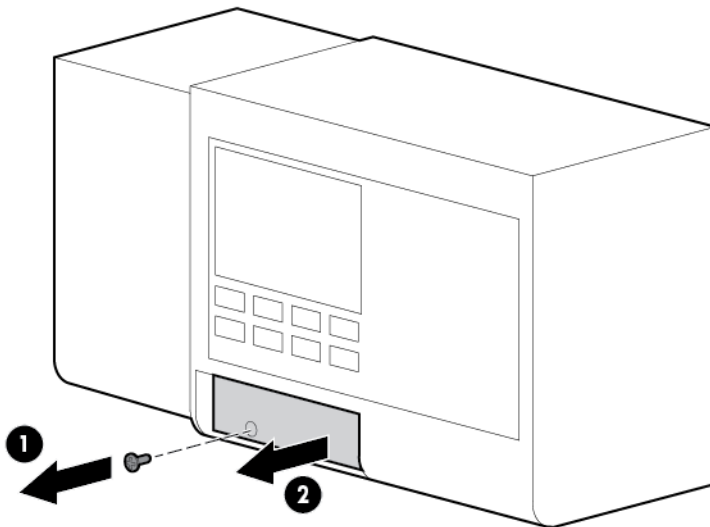
You need a Phillips-head screwdriver for installation.

Removing the VESDA filter

1. Remove the filter cover on the front of the VESDA unit.

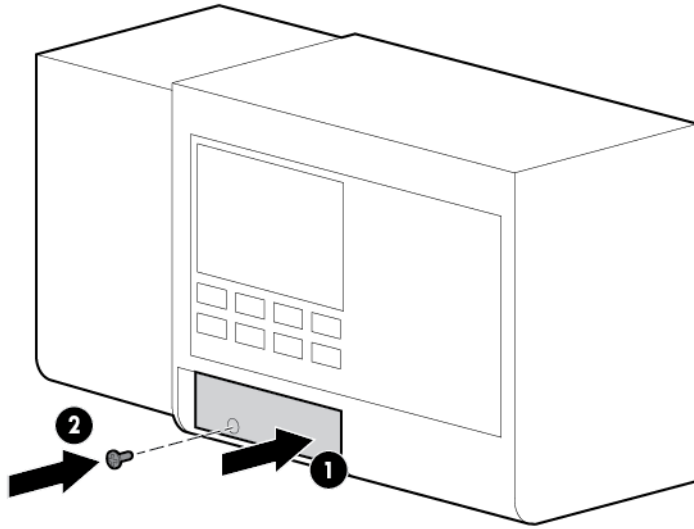


2. Remove the 10mm screw that secures the VESDA filter (1), and then remove the filter (2).



Replacing the VESDA filter

1. Insert the new VESDA filter (1), and then replace the 10mm screw that secures the filter (2).



2. Replace the VESDA filter cover.

Periodic maintenance

Periodic maintenance overview

Perform periodic inspections on the components in this section to ensure that the HP POD 40c G2 continues to perform within the designed parameters.

Cooling system maintenance schedule

Component to be inspected	Task	Frequency	Capable Party
Air filters	Inspect and replace as necessary	As needed	HP and certified facilities personnel
Air filter differential pressure switch	Inspect and test, replace as necessary	Annually	HP and certified facilities personnel
Condensate drain lines and p-trap	Inspect and clean or blowout p-trap and lines as necessary	Quarterly	HP and certified facilities personnel
Condensate drain pans	Inspect pans: <ul style="list-style-type: none"> • Free of debris • No leaks • Leakage detectors are in proper position • Drain line is open • Water can pass through freely • Condensate traps are filled with water Clean pans as necessary	Quarterly	HP and certified facilities personnel
Drain pan sensors	Inspect and test, replace as necessary If a leak is detected, see "Leak detection maintenance (on page 64)."	Quarterly	HP and certified facilities personnel
Conduct visual inspection for leakage during the air filter checks	Inspect and clean as necessary	Quarterly	HP and certified facilities personnel
Heat exchanger fans	Inspect wiring and verify that electrical components are secure and fan power supplies are locked into position	Quarterly	HP and certified facilities personnel
Humidifier (if installed)	Inspect for water leaks, verify that no sparks form between the electrodes during operation, and inspect the general operation of the cylinder.	Bi-weekly	HP and certified facilities personnel
—	Put the humidifier in system flush mode and inspect drain flow and water supply flow. Inspect, clean, and/or replace as necessary.	Quarterly	HP and certified facilities personnel

Component to be inspected	Task	Frequency	Capable Party
—	Inspect for any water leaks and replace the cylinder if necessary. Inspect for blackened areas on the cylinder and, if present, check the condition of the electrodes. If necessary, replace the cylinder.	Quarterly	HP and certified facilities personnel
—	Replace the cylinder.	Annually	HP and certified facilities personnel

Leak detection maintenance



WARNING: To reduce the risk of electric shock or damage to the equipment, use extreme caution when removing and replacing components that involve water around the electrical equipment. There is great risk of electrical shock when water is used near electricity.



CAUTION: If a serious leak develops, shut down the POD immediately and isolate the chilled water cooling system from the site. Contact HP immediately to initiate a field service call. Do not attempt to repair the chilled water cooling system. Attempting to self-repair the chilled water cooling system during the warranty or service contract period shifts all liability to you.



IMPORTANT: HP recommends shutting down the POD after a leak is detected. For more information, see "Power down procedure" in the user guide.

Non-isolable leak detection

A non-isolable leak is a leak from the main supply line or the return header.

To repair a non-isolable leak:

1. Power down all IT equipment.
2. Re-direct the leaking water away from the IT equipment.
3. Repair the leak or contact HP if you are still within your service contract.

Isolable leak detection

An isolable leak is any type of leak that does not occur from the main supply line or the return header.

To repair an isolable leak:

1. Inspect the zone indicated on the ECS Status Overview screen. You might need to inspect each zone condensate drain pan to determine the exact location of the leak.
2. Power down the IT equipment in the zone where the leak is located.
3. Determine the affected heat exchanger.
4. Close and danger tag the supply and return valves to the affected heat exchanger.
If the heat affected exchanger cannot be identified, close all the heat exchanger supply and return valves in the affected zone and open one supply valve at a time to determine the location of the leak.
5. Repair the leak or contact HP if you are still within your service contract.

Drains

Component to be inspected	Task	Frequency	Capable Party
Drains	Visually check drains for blockage	Monthly	Certified facilities personnel
—	Functionally test drains	Quarterly	Certified facilities personnel

ECS

Component to be inspected	Task	Frequency	Capable Party
Full system functional check	Operational check of all system components	Quarterly	Certified facilities personnel
—	Check and clear alarm log	Quarterly	Certified facilities personnel
—	Inspect and test ECS battery backup system	Bi-annually	Certified facilities personnel

Electrical

Component to be inspected	Task	Frequency	Capable Party
Electrical connections (might require a scheduled shutdown)	Infrared inspections of all power connections under normal customer load including transformer, switchboard, and electrical panels (Periodic thermal scans of all electrical connections can reduce issues caused by connections becoming loose due to operational vibrations over time.)	Annually	Licensed electrician
—	Busway drop box visual inspection and torque test of connections. Retighten as necessary and verify adequate distance between connection lugs and drop box grounded steel.	Annually	Licensed electrician
—	Busway visual inspection of busway section and connector interconnects. Retighten as necessary.	Annually	Licensed electrician
—	Busway drop box connections and locking bolt. Visual inspection and torque test of locking bolt. Visually inspect drop box load cable and cord-cap.	Annually	Licensed electrician
—	Visually inspect drop box breaker and torque test breaker lug connections. Mechanically exercise drop box breaker.	Annually	Licensed electrician

Component to be inspected	Task	Frequency	Capable Party
—	Electrical panel, breaker, disconnect, and transformer visual inspection for condensation or other degradation of buses and connections	Annually	Licensed electrician
—	Electrical panel, breaker, disconnect, and transformer bolt torque testing. Retighten as necessary.	Annually	Licensed electrician
—	Grounding system resistance test	Bi-annually	Licensed electrician
—	Ground and grounding connection/lug located internal of each electrical panel torque test. Clean and retighten as necessary.	Bi-annually	Licensed electrician
—	Grounding connection/lug located external on the POD torque test. Clean and retighten as necessary.	Bi-annually	Licensed electrician
—	Service entrance ground connection/lug located at external transformer and switchboard torque test. Clean and retighten as necessary.	Bi-annually	Licensed electrician
—	Service entrance grounding ground-rod/ground well connecting/lug located at locations external to POD torque test. Clean and retighten as necessary.	Bi-annually	Licensed electrician
—	Grounding system bonding jumpers connecting racks to POD structure and rack to rack torque test. Clean and retighten as necessary.	Bi-annually	Licensed electrician
—	Panel breaker operational test (Simulate a breaker response to a load greater than the breaker rating.)	Annually	Licensed electrician
—	Visual inspection of breakers, disconnects, motor starters, and fuse holders	Bi-annually	Licensed electrician/Certified facilities personnel
—	Calibrate all temperature, pressure, and humidity sensors.	Annually	Certified facilities personnel
—	Visual inspection of lighting fixtures and lamps. Measure foot candles and replace as necessary.	Bi-annually	Licensed electrician/Certified facilities personnel

Fire alarm and suppression system

Component to be inspected	Task	Frequency	Capable Party
Full system functional check	Inspect and perform a functional check of the system.	As required by local code	Licensed fire safety contractor
—	Inspect and test fire panel battery backup system.	Bi-annually	Licensed fire safety contractor
—	Inspect and test VESDA power supply.	Quarterly	Licensed fire safety contractor
—	Inspect the VESDA pipe network.	Bi-annually	Licensed fire safety contractor
—	Inspect the VESDA filter.	Annually	Certified facilities personnel
—	Conduct a VESDA pipe integrity smoke test.	Annually	Licensed fire safety contractor
—	Check the VESDA pipe flow.	Annually	Licensed fire safety contractor
—	Clean the VESDA sampling points.	Every 2 years	Licensed fire safety contractor
—	Flush the VESDA pipe network.	Every 2 years	Licensed fire safety contractor
—	VESDA system air sampling/smoke test	As required by local code	Licensed fire safety contractor
—	Suppression system test	As required by local code	Licensed fire safety contractor
—	Fire-pull visual and operational inspection	As required by local code	Licensed fire safety contractor
—	Fire strobe and horn visual and operational inspection	As required by local code	Licensed fire safety contractor

Generator (if applicable)

Component to be inspected	Task	Frequency*	Capable Party
Generator	Visual inspection of the generator	Quarterly	HP and certified facilities personnel
—	Oil change	Annually	HP
—	Oil filter change	Annually	HP
—	Oil analysis	Annually	HP
—	Fuel filter change	Annually	HP
—	Coolant freeze point and inhibition check each time the generator is viewed	—	HP

*These are typical frequencies. See the documentation for the installed component for the recommended schedule.

HP POD 40c G2 structure

Component to be inspected	Task	Frequency	Capable Party
Complete structure	Visually inspect the structural integrity.	Annually	Certified facilities personnel
—	Inspect the door operation and inspect the door gaskets for water and air leaks.	Annually	Certified facilities personnel
—	Visually inspect the paint. Perform prep and touch-up as necessary.	Annually	Certified facilities personnel

Life safety

Component to be inspected	Task	Frequency	Capable Party
EPO system	EPO functional test with manual and automatic shutdown. (Verify all shunt-trips on all panels trip.)	Annually	Licensed EPO safety contractor
—	EPO alarms	Annually	Licensed EPO safety contractor
—	EPO bypass keyed switch (functional test)	Annually	Licensed EPO safety contractor
—	EPO bypass switch located at each personnel door. (Functional test. Verify system time-out reset when switch is activated.)	Annually	Licensed EPO safety contractor
—	EPO status light. (Verify operation in different modes. Replace lamps as necessary.)	Annually	Licensed EPO safety contractor
—	Exit lights. (Verify exit lights are visible when all lighting is off and POD doors are closed.)	Bi-annually	Certified facilities personnel
—	Tritium exit signs (Visual inspection)	Bi-annually	Certified facilities personnel
—	Personnel door emergency egress panic bars. (Visual and operational inspection.)	Bi-annually	Certified facilities personnel

Security

Component to be inspected	Task	Frequency	Capable Party
System functional test	Visual inspection and operational test of door access contact switches	Annually	Certified facilities personnel
—	Visual inspection and operational test of door access card readers, electric strikes, and door release switches at each personnel door and/or in each personnel door panic bar	Annually	Certified facilities personnel

Component to be inspected	Task	Frequency	Capable Party
—	Exterior water proofing check for ingress using water hose	Annually	Certified facilities personnel

Switchgear

Component to be inspected	Task	Frequency	Capable Party
Switchgear	Infrared inspection of all electrical power connections while under normal load	Annually	HP and certified facilities personnel
—	Grounding and electrical systems	Annually	HP and certified facilities personnel
—	Panel operational testing	Annually	HP and certified facilities personnel
—	Breakers/disconnects	Annually	HP and certified facilities personnel

Third-party components

See the *Operations and Maintenance Manual for the HP Performance Optimized Datacenter 40c* for other required maintenance items.

UPS

Component to be inspected	Task	Frequency	Capable Party
UPS	Vacuum Pump oil change	Annually	HP
—	Log file review	Annually	HP
—	Calibration verification	Annually	HP
—	Telemetry review	Annually	HP
—	Replace bearings	Every 2.5 to 3 years	HP

Specifications

General HP POD 40c G2 specifications

Features	Specifications
Overall dimensions	<ul style="list-style-type: none"> • Height—3.66 m (12 ft) • Length—12.19 m (40 ft) • Width—2.43 m (7.97 ft)
Weight ¹	Empty—16,783 kg (37,000 lb) Maximum fully loaded—46,266 kg (102,000 lb)
Maximum power ²	600 kW HP POD 40c G2
Power input voltage	380 VAC to 415 VAC
Power distribution ³	8 x 200 A electrical busways
Maximum rack quantity	20 racks
Rack Units (RU) per rack	50 RU
Rack Units (RU) total	1000 RU
Average capacity per rack (kW)	30 kW
Peak rack capacity	69 kW
Voltage to rack	200 VAC to 240 VAC
Minimum quantity of PDUs per HP POD 40c G2	20 (one per rack)
Maximum quantity of PDUs per HP POD 40c G2	40 (two per rack)
Maximum power per PDU	30A = 17 kW; 60A = 34 kW
Network supported	Bulk cable pass-through-fiber Bulk cable pass-through-copper (Optional) External rated DEMARC box

¹The Empty weight includes the HP POD 40c G2 structure, empty racks, PDUs, and drop boxes. It does not include IT equipment.

²The maximum power depends on the exact installation and power configuration in your POD. The HP POD 40c G2 is electrically limited to 600 kW.

³The HP POD 40c G2 can be configured for redundancy or non-redundancy.

Electrical specifications

Electrical busway system information

Feature	Specification
Number of busways	8
Frequency	60 Hz
Amps (per busway)	200 A
Voltage (per busway)	380 to 415 V
Grounding	Copper
Busway configuration	3-phase + neutral + equipment ground

Fire alarm panel connections

The electrical layout of the fire alarm system is as described in the schematic drawing supplied with the HP POD 40c G2.

Water specifications

The following table describes the chilled water system specifications for the HP POD 40c G2.

Feature	Specification
Facility input temperature to the HP POD 40c G2	12°C to 24°C (55°F to 75°F)
Working pressure	1,034 kPa (150 psi)
HP POD 40c G2 pressure drop	172.4 kPa (25 psi)
HP POD 40c G2 water flow rate	908.5 lpm (240 gpm)
Chilled water supply and return connections	<ul style="list-style-type: none">• North America—Two 10.16 cm (4 in) ASME B16.5 class #150 flanges• International—Two DIN PN16 DN100 flanges

Rack specifications

Standard HP POD 40c G2 racks (AT978A)

Feature	Specification
U height	50U
Width	54.6 cm (21.5 in)
Depth	99 cm (39 in)*
Maximum load weight	1,360.7 kg (3,000 lb)

*This specification indicates the maximum clearance for the cold aisle. Equipment cannot exceed this measurement.

Thermal and air flow performance

Maximum thermal and air flow performance parameters	HP POD 40c G2 specification
Air temperature—Inlet to rack-mounted components)	Dependent on IT configuration and chilled water inlet temperature
Chilled water temperature	12°C to 24°C (55°F to 75°F)
Total rack-mounted component air flow	Variable as required to maintain the hot aisle setpoint temperature and dependent on IT configuration
Heat rejection capacity	600 kW

Environmental specifications

Feature	Specification
Operating temperature	-28°C to 54°C (-18°F to 130°F)

Feature	Specification
Non-operating temperature*	-29°C to 54°C (-20°F to 130°F)
Operating humidity	<ul style="list-style-type: none"> 0% to 100% external 10% to 90% non-condensing internal
Non-operating humidity*	<ul style="list-style-type: none"> 5% to 95% relative non-condensing 39°C (102°F) maximum wet bulb temperature
Operating altitude	-76.2 m to 3,048 m (-250 ft to 10,000 ft)
Non-operating altitude	-76.2 m to 9,144 m (-250 ft to 30,000 ft)

*For non-operating specifications, consider the temperature of computer and IT equipment inside the HP POD 40c G2.

Optional features specifications

Feature	Specification
Fire suppression	3M Novec 1230 fire extinguishing system provided in two canisters (main and reserve)
Card reader	12-key pad with 125 KHz proximity and 13.56 MHz contactless smart card
Humidifier	Provides 2-8 lb/hr of water vapor into cold aisle to maintain POD environment within 20% to 80% relative humidity

Contacting HP

Before you contact HP

Be sure to have the following information available before you call HP:

- Active Health System log
Download and have available an Active Health System log for 3 days before the failure was detected. For more information, see the *HP iLO 4 User Guide* or *HP Intelligent Provisioning User Guide* on the HP website (<http://www.hp.com/go/ilo/docs>).
- Onboard Administrator SHOW ALL report (for HP BladeSystem products only)
For more information on obtaining the Onboard Administrator SHOW ALL report, see the HP website (<http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?lang=en&cc=us&objectID=c02843807>).
- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Product identification number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

HP contact information

For United States and worldwide contact information, see the Contact HP website (<http://www.hp.com/go/assistance>).

In the United States:

- To contact HP by phone, call 1-800-334-5144. For continuous quality improvement, calls may be recorded or monitored.
- If you have purchased a Care Pack (service upgrade), see the Support & Drivers website (<http://www8.hp.com/us/en/support-drivers.html>). If the problem cannot be resolved at the website, call 1-800-633-3600. For more information about Care Packs, see the HP website (<http://pro-aq-sama.houston.hp.com/services/cache/10950-0-0-225-121.html>).

Regulatory compliance notices

HP POD 40c G2 regulatory compliance

The HP POD 40c G2 complies with the following regulatory standards.

Standard	Certification level	Standard title
UL 60950	ETL "Listed"	<ul style="list-style-type: none">UL 60950—<i>Standard for Safety Information Technology Equipment, Part 1: General Requirements</i>, Issue: 2007/03/27, Edition: 2UL 60950—<i>Standard for Safety Information Technology Equipment, Part 22: Equipment to be Installed Outdoors</i>, Issue: 2007/04/23, Edition: 1
NFPA 70	ETL "Classified"	NFPA 70— <i>National Electric Code, 2008 Edition</i> , © 2008 National Fire Protection Association
NFPA 72	Designed to Comply With	<i>National Fire Alarm code, 2007 Edition</i> , © 2006 National Fire Protection Association
NFPA 2001	Designed to Comply With	<i>NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems, 2008 Edition</i> , © 2008 National Fire Protection Association
IBC 2009	Designed to Comply With	<i>2009 International Building Code</i> , © 2010 International Code Council, Inc.

Safety and NEC compliance

The HP POD 40c G2 is certified to UL 69050-1/IEC 60950-22 as a Modular Data Center Information Technology Product and classified according to the National Electric Code NFPA 70 in accordance with NEC (NA) and IEC (EMEA and APJ). Relevant parts of UL1995 are applied to the air handling features of the product. For more information, see "HP POD 40c G2 regulatory compliance (on page 74)."

The HP POD 40c G2 is not suitable for long-term human occupancy. The HP POD 40c G2 has service access areas for periodic maintenance and service. These areas must be used only by owner-authorized personnel who are trained in the maintenance and service of the HP POD 40c G2 components.



IMPORTANT: Before installing the HP POD 40c G2, consult your local AHJ for applicable codes and to review site-specific location guidelines. If needed, obtain any necessary permits.

Additional considerations for safety and NEC compliance are as follows:

- The HP POD 40c G2 is listed as an Information Technology Equipment Product to UL 60950.
- The HP POD 40c G2 is evaluated as a "non-inhabitable product" that provides "service access" areas for customer-authorized, qualified, and trained service personnel.
- The electrical connections of the HP POD 40c G2 are evaluated as feeder connections for connection to an existing facility, and are not suitable as "service entrance" for connection to the utility.
- The HP POD 40c G2 is designed for stationary installation outdoors in a Pollution Degree 3 environment, in restricted access locations, with field wiring terminals provided for permanent supply connections.

- The HP POD 40c G2 meets the following ratings:

Feature	Specification
Category	Rated Overvoltage Category III
Protection	Surge protection device
Class	Class I
Ambient temperature	2°C to 54°C (35.6°F to 129.2°F)
Relative humidity	0% to 100% humidity

- As part of the overall certification, relevant sections of the International Building Code have been applied as part of the design and evaluation. The current design supports wind loads up to 90 mph.

Regulatory compliance identification numbers

For the purpose of regulatory compliance certifications and identification, this product has been assigned a unique regulatory model number. The regulatory model number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to this regulatory model number. The regulatory model number is not the marketing name or model number of the product.

Federal Communications Commission notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Canadian notice (Avis Canadien)

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Regulatory requirements for EXIT signs

Manufacturers of tritium EXIT signs are “specific licensees,” meaning they are licensed by the NRC or an Agreement State. The signs are considered “generally licensed devices,” because they are inherently safe enough to be handled or used by anyone with no radiation training or experience. Although purchasers – known as “general licensees” – do not need authorization from the NRC or a state regulatory agency to possess the signs, they are subject to certain regulatory requirements regarding handling, transfer or disposal of the signs. For more information, see the NRC website (http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-tritium.html#_edn2). They are also subject to NRC or Agreement State inspection and enforcement action (including fines) for violating those requirements. Manufacturers must inform purchasers of the EXIT signs of the regulatory requirements for generally licensed devices. The general licensee is required to designate an individual responsible for complying with the regulatory requirements.

Under NRC regulations, a general licensee using tritium EXIT signs:

- must NOT remove the labeling or radioactive symbol, or abandon a sign;
- must properly dispose of an unused sign (see below);
- must report to the NRC or the appropriate Agreement State any lost, stolen or broken signs;
- must inform the NRC or an Agreement State of a name change, change of address or replacement of a general licensee’s designated representative;
- must NOT give away or sell the sign to another individual, company or institution unless the device is to remain in use at its original intended location; in such a case, the transferor is to notify the recipient of the regulatory requirements and must notify the NRC or Agreement State of the transfer within 30 days.

Tritium EXIT signs must NOT be disposed of as normal trash. To dispose of a sign properly, a general licensee must transfer the sign to a specific licensee. This would typically be a manufacturer, distributor, licensed radioactive waste broker, or a licensed low-level radioactive waste disposal facility. These facilities may charge a fee for this service.

Within 30 days of disposing of a sign, the general licensee is required to file a report to the NRC or Agreement State that includes:

- the device manufacturer’s (or distributor’s) name, model number and serial number;
- the name, address, and license number of the person receiving the device; and
- the date of the transfer.

Reports should be sent to Director, Office of Federal and State Materials and Environmental Management Programs, ATTN: GLTS, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

For more information, see the Fact Sheet on Tritium EXIT Signs on the NRC website (<http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-tritium.html>).

Glossary

branch circuit

The conductors and components following the last overcurrent protective device protecting a load.

control transformer

A transformer whose secondary supplies power to control circuit devices only (excluding loads).

cover

An unhinged portion of an enclosure that covers an opening.

CSC

container safety convention

disconnect switch

A device that disconnects all ungrounded conductors of a circuit from their electrical supply.

door

A hinged portion of an enclosure that covers an opening.

ECS

environmental control system

EPO

emergency power off

equipment

A general term, including fittings, devices, appliances, luminaires, apparatus, machinery, and the like used as a part of, or in connection with, a modular data center. (Source: NEC.)

fuse, branch circuit type

A fuse of Class CC, G, H, J, K, L, R, and T. These fuses are able to provide branch circuit protection.

fuse, supplementary type

Miscellaneous type and miniature type fuses. These fuses are able to provide supplementary protection only.

IEC

International Electrotechnical Commission

PDU

power distribution unit

PLC

programmable logic controller

power circuit

Conductors and components of branch and feeder circuits.

PPE

personal protective equipment

RU

rack units

structure

Enclosure of sufficient size to enable entry of personnel.

supplementary protector

A manually resettable device designed to open the circuit automatically on a predetermined value of time versus current or voltage within an appliance or other electrical equipment. The protector can also be provided manually to open or close the circuit. These devices can provide supplementary protection only.

UL

Underwriters Laboratory

UPS

uninterruptible power system

VESDA

very early smoke detection apparatus

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