

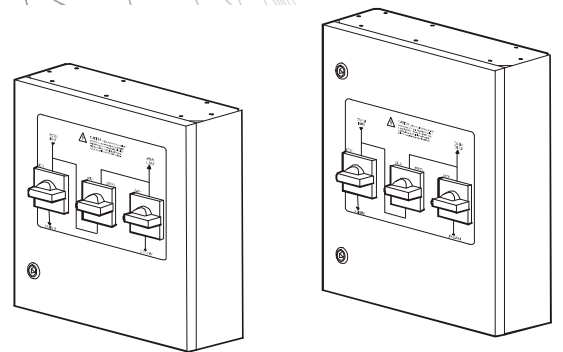
APC[®]

by Schneider Electric

Installation

Smart-UPS[®] VT
MGE[™] Galaxy[™] 3500
Maintenance Bypass Panel

10-40 kVA
400 V





Contents

Safety	1
Save these instructions	1
Safety warnings	1
Maintenance performed while the MBP is receiving input power ..	2
Introduction	3
Receiving the MBP	3
Initial inspection	3
Maintenance Bypass Panel Components	4
Front view (exterior)	4
Front view (interior)	5
Site Planning	6
Environmental considerations	6
Space considerations	6
Installation Procedure	7
Overview	7
Tools required	7
Access the internal components	7
Create knockouts for cable access	7
Mount the MBP to the wall	9
Internal cable connections	9
External cable connections	10
Specifications	13
Maintenance Bypass Panel Schematic	14

Safety

Save these instructions

This manual contains important instructions that must be followed during installation, operation, and maintenance of the wall-mount version of the Smart-UPS VT, MGE Galaxy 3500 Maintenance Bypass Panel (MBP).

Safety warnings



Caution: All wiring must be performed by a certified electrician or an APC-trained individual who is familiar with the construction and operation of this equipment. Installation must comply with local and national codes.



Warning: This product receives power from more than one AC source. Disconnect all AC sources to completely de-energize the unit before servicing.



Warning: This product receives power from more than one AC source. Disconnect all AC sources to completely de-energize the unit before servicing.



Warning: Ensure that the Maintenance Bypass Panel is not connected to electrical power and that all switches are in the OFF position before installing or servicing the unit.



Warning: Follow all wiring instructions exactly. Failure to do so may result in permanent damage to the equipment.



Warning: Avoid contact with previously installed electrical wires and other potential hazards that might be embedded in the wall chosen for installation.

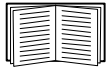
Maintenance performed while the MBP is receiving input power

APC does not recommend performing maintenance on the MBP while it is receiving input power. However, due to the critical nature of data center loads, there may be times when live maintenance must occur. If you must perform maintenance while the MBP is receiving input power, observe the following precautions to reduce the risk of electric shock:

- Never work alone.
- Perform the maintenance only if you are a certified electrician who is trained in the hazards of live electrical installation.
- Know the procedure for disconnecting electricity to the MBP and to the data center in the event of an emergency.
- Wear appropriate protective personal clothing and other body equipment.
- Use double-insulated tools. If double-insulated tools are not available, insulate all tools with electrical tape.
- Always follow local codes and site regulations when working on the MBP.

Introduction

This manual is intended for **certified electricians** or APC-trained personnel installing the wall-mount version of the Smart-UPS® VT, MGE™ Galaxy™ 3500 Maintenance Bypass Panel (MBP). It provides detailed electrical installation instructions and physical specifications.



For additional information regarding the Smart-UPS VT, MGE Galaxy 3500 see the manuals supplied with your UPS. You can find updates to this manual by clicking on the **User Manuals** link on the **Support** page of the APC Web site (www.apc.com/support). In the list of **UPS** manuals, look for the latest letter revision (A, B, etc.) of the part number on the back cover of this manual.

Receiving the MBP

Initial inspection

Follow these steps upon receipt of the Maintenance Bypass Panel:

- ❶ Inspect the box for any obvious signs of rough handling or external damage.
- ❷ Transport the box to the installation site using a dolly or a hand truck.
- ❸ At the installation site, open the box and remove the MBP enclosure.
- ❹ Use the enclosed key to open the front door and inspect the unit for any signs of internal damage.



Note: The key is shipped in a plastic bag inside of the box

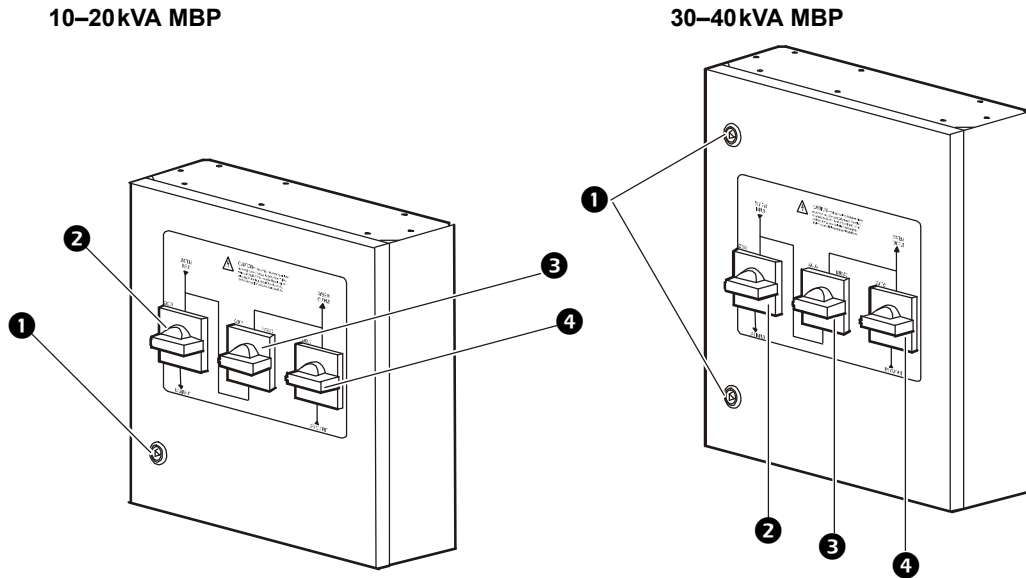
- ❺ Note any damages that you observed during the external or internal inspection and immediately report the damages to the shipping carrier. Allow their personnel to conduct an equipment inspection, if necessary. Make your damage claim as specific as possible. If the carrier conducts an inspection, be sure to obtain a copy of the inspection report for your records.
- ❻ Contact APC using a phone number listed on the back cover of this manual. Inform the representative of the condition of the shipment and of your damage claim with the carrier.



Note: Be sure to contact the shipping carrier before contacting APC.

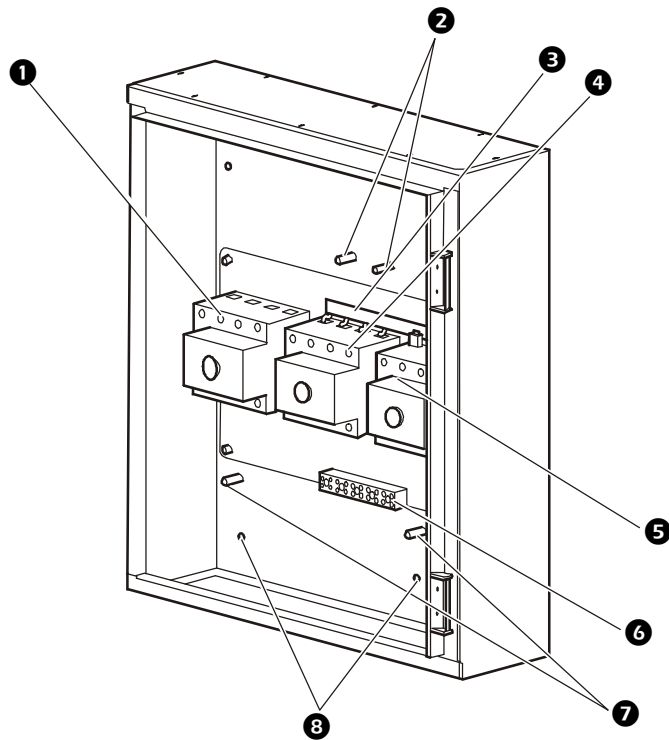
Maintenance Bypass Panel Components

Front view (exterior)



- ❶ Door lock(s)
- ❷ Q1 input switch
- ❸ Q3 bypass switch
- ❹ Q2 output switch

Front view (interior)



- ❶ Q1 input switch
- ❷ PE studs
- ❸ Busbar connections
- ❹ Q3 bypass switch
- ❺ Q2 output switch
- ❻ UPS control terminal block
- ❼ Ground studs
- ❽ MBP mounting holes
(mounting holes are also located at the top of the enclosure)

Site Planning

Environmental considerations

- Ensure that the wall area you selected to install the MBP is structurally sound and able to support the size and weight of the unit.

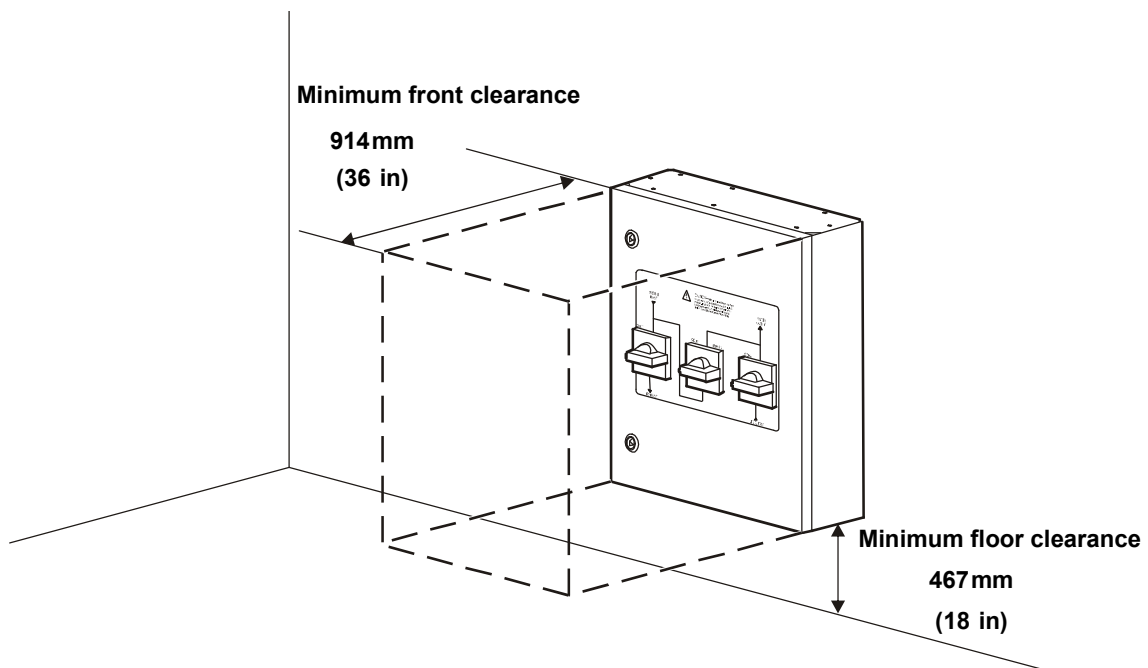


Note: See “Specifications” on page 13 for the size and weight specifications for your particular unit.

- Store or operate the MBP in a climate-controlled environment. Ensure a temperature of 0° to 40°C (32° to 104°F) and a relative humidity of 0 to 95%, non-condensing.
- Protect the MBP at all times from excessive moisture, construction dirt, corrosive elements, or other contaminants.

Space considerations

Refer to the following figure to determine the space requirements for installing the MBP. Consult local codes for any additional requirements. Ideally, install the MBP in a location close to the UPS.



Note: When choosing a location to mount the MBP, consider the need for easy access to all of the switches and internal components.

Installation Procedure

Overview



Warning: Prior to beginning installation of the MBP, read and understand all safety instructions provided in “Safety” on page 1.

- All **internal** cable connections and the Q3 to Q2 **busbar** connections are made at the factory prior to shipment.
- All **external** cable connections with the UPS and mains must be made on-site. External cable is not supplied with the shipment.
- All **control** wire connections between the UPS and the MBP must be made on-site. Control wires are not supplied with the shipment.

Tools required

The installation procedures provided in this manual require the following tools and equipment:

Standard screwdriver	Level
Phillips screwdriver	Tape measure
M8 wrench	Marker
Knockout punch	Four (4) 6-mm hex-head lag bolts
Drill	Four (4) flat washers

Access the internal components

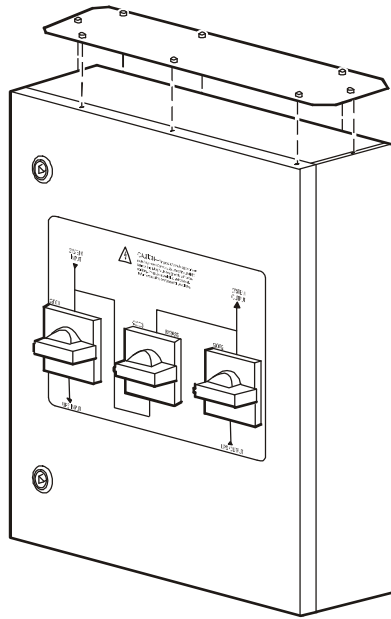
Access the internal components of the MBP by unlocking and opening the front door, using the key provided with the shipment.

Create knockouts for cable access



Note: You can create knockouts for cable access either before or after you have mounted the MBP to the wall. APC recommends creating all necessary knockouts prior to mounting the MBP to the wall.

Using a knockout punch, create appropriate-sized holes for the grommet in either the top or bottom plates of the MBP (depending on your wiring preference). For easier access when creating knockouts, remove either plate by using a Phillips screwdriver to detach the eight screws that secure it to the enclosure. The following illustration shows removal of the top plate.



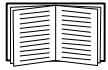
Note: APC recommends running mains utility wires through the top of the enclosure and running UPS input, output, and control wiring through the bottom of the enclosure.

Mount the MBP to the wall



Note: APC strongly recommends mounting the MBP to a minimum 20-mm thick plywood board or similar solid backing that has approximate dimensions of 660 mm (26 in) L × 600 mm (24 in) W.

- 1 Mount the plywood (or other backing) to the wall using appropriate hardware for the type of wall used.



See “Site Planning” on page 6 for guidelines on choosing where to mount the unit.

- 2 Measure and mark the four (4) mounting hole locations on the backing. Refer to the following table for the correct horizontal and vertical spacing between each of the mounting holes.

KVA	Vertical Spacing	Horizontal Spacing
10-20	240 mm (9.45 in) between holes	240 mm (9.45 in) between holes
30-40	380 mm (14.96 in) between holes	330 mm (13.00 in) between holes

- 3 Drill starter holes in each of the four (4) marked locations.
- 4 Lift the MBP and position it against the backing, lining up each of the four (4) mounting holes with each of the four (4) drilled starter holes.

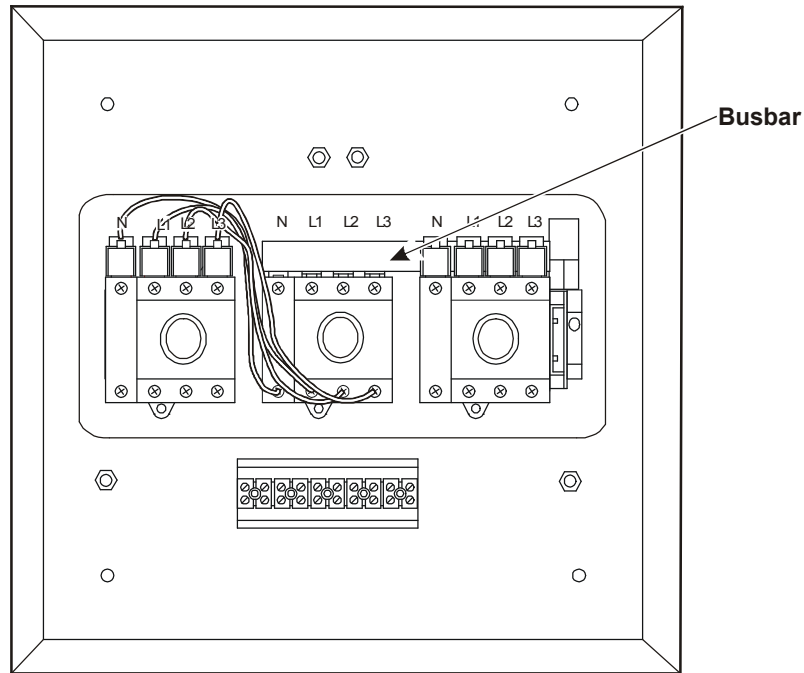


Note: APC recommends that two people mount the MBP to the wall—one person to lift and hold the enclosure, and a second person to secure it to the wall.

- 5 Using a metric wrench, screw four (4) 6-mm hex-head lag bolts (each 25-mm long), along with four flat washers, into the enclosure’s mounting holes. Tighten until rigid.

Internal cable connections

The MBP ships from the factory with the internal wiring between the Q1 input switch and the Q3 bypass switch, as well as the Q3 to Q2 busbar connections, completed. Prior to beginning external wiring, verify these internal connections as shown in the following illustration.



External cable connections

Route the external cables to the MBP through the knockouts that you created in either the top or bottom plate of the unit. If you did not create knockouts prior to mounting the MBP to the wall, do so at this time. See “Create knockouts for cable access” on page 7 for instructions.



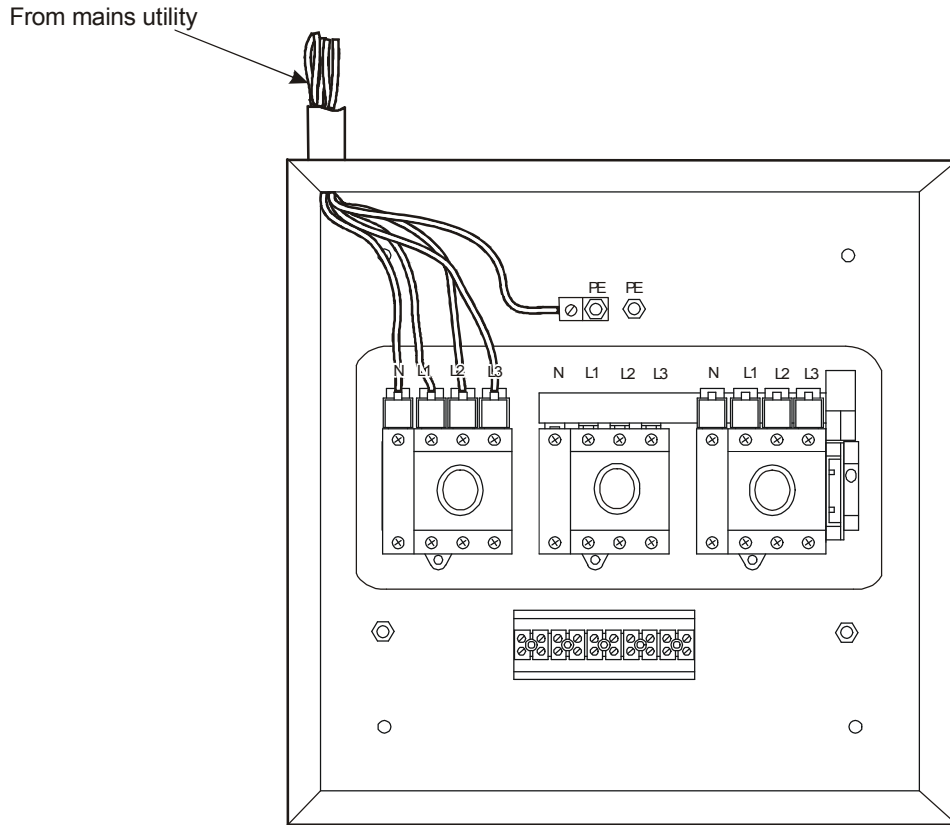
Note: The cables are colored per local code.

Utility connections.

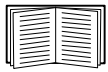


Caution: Connect all cables and wires according to the labels on the switches and studs.

- ❶ Connect the four inputs (**N**, **L1**, **L2**, **L3**) from the mains utility to the terminals on top of the Q1 switch. Use a Phillips screwdriver and torque to 7Nm (60 in-lbs).
- ❷ Connect the one **PE** input from the mains utility to one of the PE studs located above the Q3 switch using an M6 washer, lock washer, and nut. Use an M8 wrench and torque to 27Nm (240 in-lbs).



UPS connections.

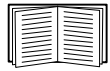
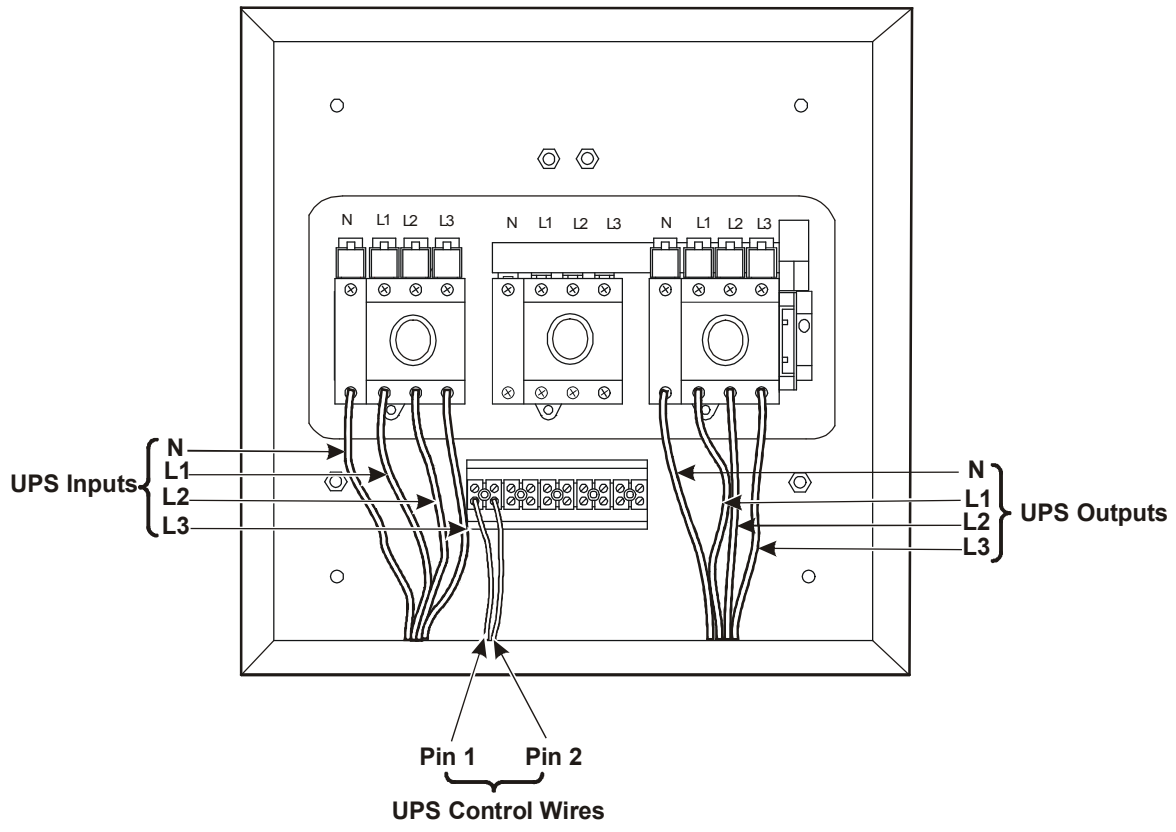


See your Smart-UPS VT, MGE Galaxy 3500 10–40 kVA Installation manual for instructions on how to connect wiring at the UPS.



Caution: Connect all cables and wires according to the labels on the switches or on the terminal block, as required.

- ❶ Connect the four UPS inputs (N, L1, L2, L3) to the Q1 switch in the MBP. Use a Phillips or standard screwdriver, and torque to 7Nm (60 in-lbs).
- ❷ Connect the four UPS outputs (N, L1, L2, L3) to the Q2 switch in the MBP. Use a Phillips or standard screwdriver, and torque to 7Nm (60 in-lbs).
- ❸ Connect the two UPS control wires to **Pins 1** and **2** at the MBP control terminal block. Use a small standard screwdriver, and hand-tighten the screws.



For information on how to use the UPS display interface to change operational modes, see your Smart-UPS VT, MGE Galaxy 3500 10–40 kVA, 400V Operation manual.

Specifications

Electrical	10-20 kVA	30-40 kVA
Input		
Nominal voltage	380/400/415V 4W + GND	380/400/415V 4W + GND
Output		
Nominal voltage	380/400/415V 4W + GND	380/400/415V 4W + GND
Wiring (only use copper conductors suitable for at least 75°C)		
Maximum cable size	16mm ²	35mm ²
System output/ UPS output cable	10mm ²	25mm ²
System input/UPS input cable	10mm ²	25mm ²

Physical

Dimensions (H × W × D)

MBP	315 × 305 × 125mm (12.4 × 12.0 × 4.9in)	460 × 400 × 125mm (18.1 × 15.7 × 4.9in)
Shipping	442 × 305 × 175mm (17.4 × 12.0 × 6.9in)	587 × 400 × 175mm (23.1 × 15.8 × 6.9in)
Weight		
MBP	7.0kg (15.4lb)	11.0kg (24.3lb)
Shipping	7.7kg (17.0lb)	12.3kg (27.0lb)

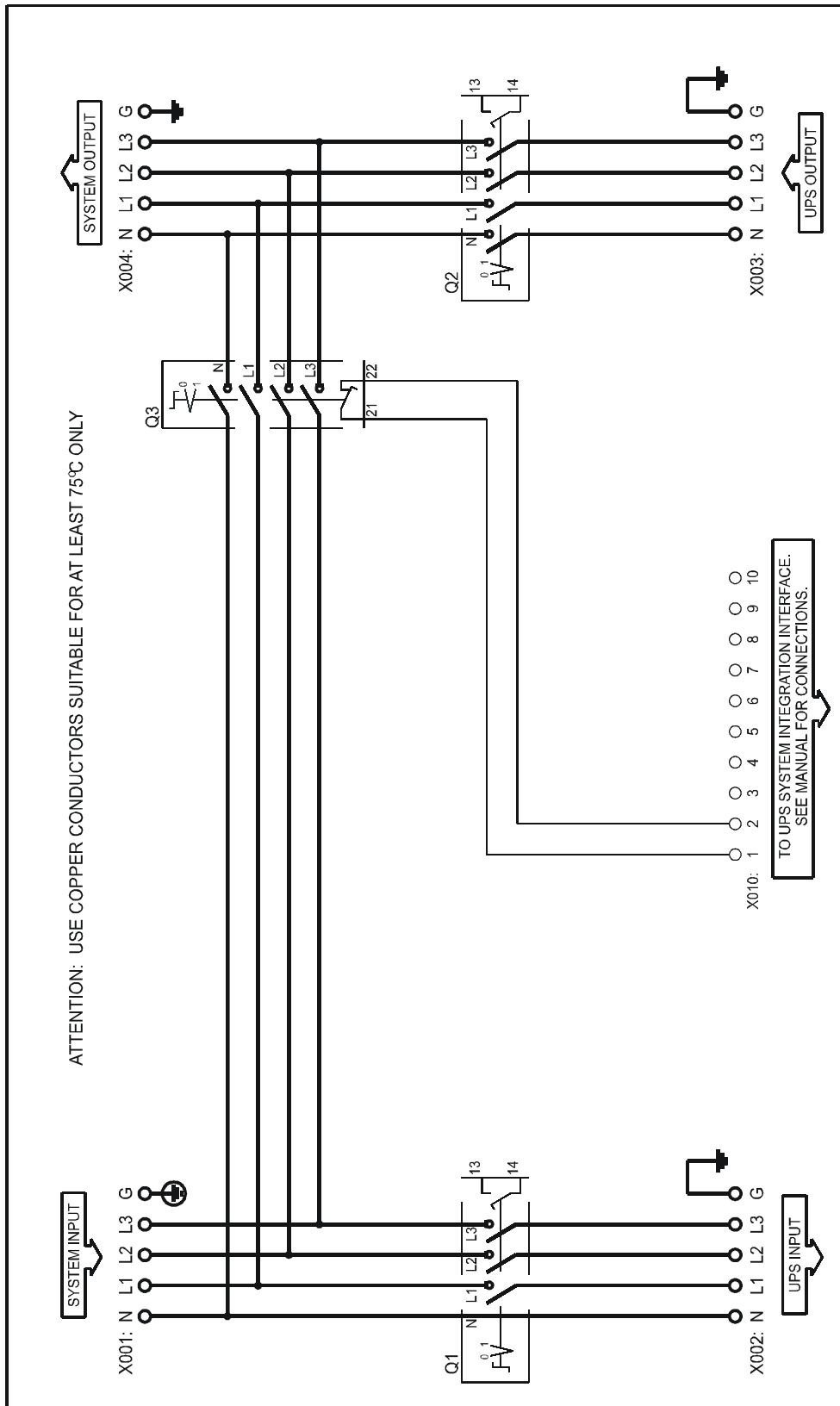
Environmental

Operating environment	Indoor use only, protect from water and conductive contaminants
Temperature (operating and storage)	0° to 40°C (32° to 104°F)
Humidity (operating and storage)	0 to 95%, non-condensing
Pollution degree	2
Protection class	IP 30

Compliance

Approvals	CE
-----------	----

Maintenance Bypass Panel Schematic



APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC Web sites for specific countries, each of which provides customer support information.
 - **www.apc.com/support/**
Global support searching APC Knowledge Base and using e-support.
- Contact the APC Customer Support Center by telephone or e-mail.
 - Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

For information on how to obtain local customer support, contact the APC representative or other distributors from whom you purchased your APC product.

© 2009 APC by Schneider Electric. APC, the APC logo, and TRADEMARK NAMES are owned by Schneider Electric Industries S.A.S., American Power Conversion Corporation, or their affiliated companies. All other trademarks are property of their respective owners.



990-4204D-001



8/2009