

Building Management Integration Card

AP9622

Installation and
Quick Start



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Product Description

Overview

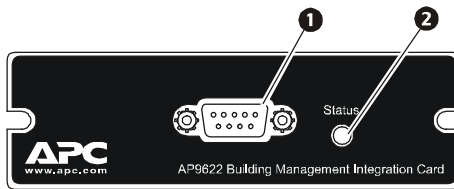
The American Power Conversion® Building Management Integration Card communicates using the Modbus/Jbus protocol. This allows monitoring of your UPS through an existing building management system.

Hardware requirements

The Building Management Integration Card requires the following:

- An APC UPS that has a card slot: Smart-UPS®, Matrix-UPS™, Symmetra®, Silcon™ DP300E Series, Silcon BC Series, or AIS 5000.
- An available card slot, either in the UPS, an APC Expansion Chassis, or an APC Triple Chassis.

Front panel



- ➊ Management port — Use to configure communication parameters and connect to the Modbus/Jbus master.
- ➋ Status LED — When solid green, it indicates that the card is powered and functioning properly.

Handling

The Building Management Card is sensitive to electrostatic discharge. It is shipped in a conductive bag to help dissipate damaging static charges.



Caution

- Leave the card in the bag until you are ready to install.
- Handle the card by the end plate only.
- Do not touch the printed circuit board or other components.

Receiving inspection

Inspect the package and contents for shipping damage, and make sure that all parts were sent. Report any damage immediately to the shipping agent. Report missing contents, damage, or other problems immediately to APC or your APC reseller.

Inventory

- Building Management Integration Card (AP9622)
- Null modem cable (940-0103)
- Installation manual (990-7410B)
- Register Description addendum (990-1223A)
- Installing Multiple Management Cards addendum (990-0231D)
- Warranty card

Please recycle



The shipping materials are recyclable. Please save them for later use, or dispose of them appropriately.

Installation

How to install the card

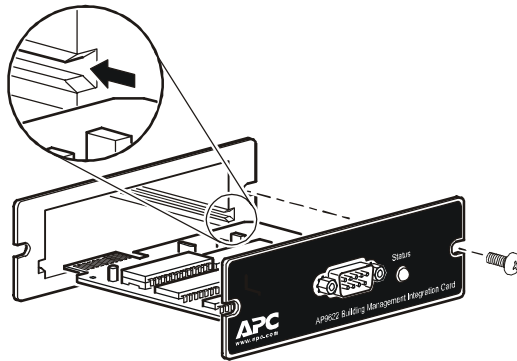
1. Choose a slot for the card in your APC UPS or Expansion Chassis.



Note

If the UPS uses more than one APC management product, see *Installing Multiple Management Cards* (990-0231D), a copy of which came with the Building Management Card. You must install the APC management products in the correct order for them to operate properly.

2. Shut down the protected loads and turn off the UPS.
3. Remove the two screws holding the cover plate over the card slot using a #2 Phillips head screwdriver. Keep the screws for step 5 and keep the cover for future use.
4. Align the sides of the printed circuit board with the guides in the sides of the slot. Slide the card into the slot until the panel of the card is flush with the front face of the slot.



5. Secure the card with the screws removed in step 3.
6. Apply power to the UPS and the protected equipment.
7. Confirm operation of the card: observe the status LED on the card. After a moment, it should be on continuously. If the LED flashes rapidly, the card has failed its power-on self-test and you should contact APC Customer Support at a number listed on the back cover of this manual.

Configuration and Connection

How to configure the communication settings

1. Connect one end of the null modem cable (940-0103) to the card's management port and the other end of the cable to an available serial port on a DTE device.
2. Start a terminal session on the DTE device, and set the communication parameters to match the factory settings on the card:
 - 2400 baud
 - 8 data bits
 - No parity
 - 1 stop bit
 - No flow control
3. Press ENTER two times. A menu similar to the following will appear:

```

AMERICAN POWER CONVERSION
-----
                OPTIONS          SETTING
                -----          -
BAUD RATE :
1. 1200 BPS
2. 2400 BPS          X
3. 4800 BPS
4. 9600 BPS
5. 19200 BPS
PARITY:
6. EVEN
7. ODD
8. NONE              X
9. SLAVE ADDRESS    01H
-----
ESC: EXIT
ENTER: REFRESH

SELECTION>

```

4. Configure the **baud**, **parity**, and **slave address** settings

in the card's menu to comply with the requirements of your building management system.

For example, to change the **Baud Rate** to 9600, press 4. The screen will refresh and an *X* will appear after 9600. There is no need to press ENTER after making a selection.

5. Exit the terminal session.



Note

Changes to the card's communication settings are made when you exit the card's menu. Record your settings below for future configuration:

Baud Rate: _____

Parity: _____

Expansion Address: _____

How to connect to the building management system

Connect the management port to your building management system to begin operation.

If your building management system uses an RS-485 bus to communicate, you will need an adaptor to connect it to your card's management port. A listing of compatible adaptors is available on the APC Web site. Go to www.apc.com and search the Knowledge Base for RS-485.



For direct connection of the card to a building management system's RS-232 master, consult your system's documentation.

BMI card management port pinout

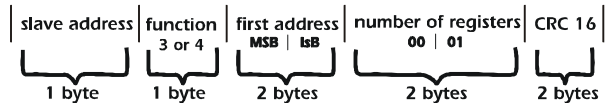
Pin	Function
1	Unused
2	Receive data input
3	Transmit data output
4	RS-232 High
5	Ground
6	Unused
7	Request to send output
8	Clear to send input
9	Unused

Operation

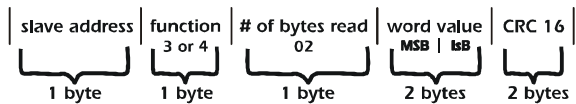
Overview

The Building Management Card supports register reads using functions 3 and 4. The following shows the structure of register read requests and responses for the card:

Request



Response



Example

Request to slave 10 for Phase A line voltage:

0A 04 0019 00 01 E176

Response

0A 04 02 00D0 1D6D



See also

Please refer to the addendum to this manual (990-1223A) for the available register reads for each UPS family.

Specifications

AP9622
specifications

Item	Specification
Electrical	
Operating current draw	5 mA dc (typical)
Physical	
Size (H×W×D)	1.5 × 4.0 × 4.0 in (3.8 × 10.2 × 10.2 cm)
Weight	0.27 lb (0.123 kg)
Shipping weight	0.8 lb (0.363 kg)
Environmental	
Operating elevation	Up to 50,000 ft (15000 m) above MSL
Storage elevation	Up to 10,000 ft (3000 m) above MSL
Operating temperature	+32 to +113° F (0 to +45° C)
Storage temperature	+4 to +122° F (−15 to +70° C)
Operating relative humidity	0 to 95%, non-condensing
Storage relative humidity	0 to 95%, non-condensing
Approvals	
EMC verification	FCC/DOC Class A, EN50022, EN50082-1

Warranty and Service

Limited warranty

APC warrants the Building Management Integration Card to be free from defects in materials and workmanship for a period of two years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser.

Warranty limitations

Except as provided herein, APC makes no warranties, expressed or implied, including warranties of merchantability and fitness for a particular purpose. Some jurisdictions do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

Except as provided above, in no event will APC be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of this product, even if advised of the possibility of such damage.

Specifically, APC is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise. This warranty gives you specific legal rights and you may also have other rights, which vary according to jurisdiction.



Obtaining service

To obtain support for problems with your Building Management Integration Card:

1. Note the serial number and date of purchase. The serial number can be found on a sticker on the bottom of the card or on the outside of the box.
2. Contact Customer Support at a phone number located at the end of this manual. A technician will try to help you solve the problem by phone.
3. If you must return the product, the technician will give you a return material authorization (RMA) number. If the warranty expired, you will be charged for repair or replacement.
4. Pack the unit carefully. The warranty does not cover damage sustained in transit. Enclose a letter with your name, address, RMA number and daytime phone number; a copy of the sales receipt; and a check as payment, if applicable.
5. Mark the RMA number clearly on the outside of the shipping carton.
6. Ship by insured, prepaid carrier to the address provided by the Customer Support technician.

Life-Support Policy

General policy

American Power Conversion (APC) does not recommend the use of any of its products in the following situations:

- In life-support applications where failure or malfunction of the APC product can be reasonably expected to cause failure of the life-support device or to affect significantly its safety or effectiveness.
- In direct patient care.

APC will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to APC that (a) the risks of injury or damage have been minimized, (b) the customer assumes all such risks, and (c) the liability of American Power Conversion is adequately protected under the circumstances.

Examples of life-support devices

The term *life-support device* includes but is not limited to neonatal oxygen analyzers, nerve stimulators (whether used for anesthesia, pain relief, or other purposes), autotransfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators (for adults and infants), anesthesia ventilators, infusion pumps, and any other devices designated as “critical” by the U.S. FDA.

Hospital-grade wiring devices and leakage current protection may be ordered as options on many APC UPS systems. APC does not claim that units with these modifications are certified or listed as hospital-grade by APC or any other organization. Therefore these units do not meet the requirements for use in direct patient care.

Radio Frequency Interference



Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

USA—FCC

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 this user manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. The user will bear sole responsibility for correcting such interference.

Canada—ICES

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Japan—VCCI

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると、電波妨害を引き起こすことがあります。この場合には、使用者が適切な対策を講ずるように要求されることがあります。



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