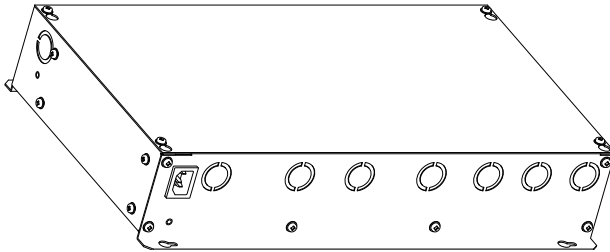


AMS-9060 Controller

Installation Guide



ZE9060
ZE9060-2C
TYPE: AMS-9060

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About this Guide

This installation and setup guide explains how to install the AMS-9060 controller.

At least one but no more than four of the hybrid series-parallel versions of the following antennas can be connected to this controller:

- Ultra•Exit (AMS-1090 Series / AMS-1100 Series)
- Pro-Max 5

Options that connect to this controller are:

- AMS-1060 digital remote alarm
- Passive relays
- Noise canceling antennas
- Wired synchronization
- CBC-4020-216 (UltraLink) or CBC-4055 (LDM II).

Do Not Discard!

This document may be needed by code inspectors. Leave it at the site until the installation is complete and the system has been approved.

Other documents that may be required for installation are:

- AMS-9060 Planning Guide, 8200-1014-02
- Pro-Max 5 Pedestals Installation Guide, 8200-1014-07
- Ultra•Exit Transceiver Antennas Installation Guide (AMS-1090/AMS-1100 Series), 8200-0537-16
- AMS-1060 Digital Remote Alarm Installation Guide, 8200-0505-01
- CBC-4055 Local Device Manager II Installation Guide, 8200-0858-01
- Wired Sync Hookup Installation Guide, 8200-0537-07.

To the Installer



Regulatory Restriction: In certain countries, there may be installation restrictions on the antennas. See antenna installation guides for restrictions, if any.

Regulatory Restriction: Except for power input connector all connections are class 2.

Regulatory Restriction: For indoor use only.

Intended Use: Only install this device as described in this guide.

Declaration of Conformity: If this product was installed in a European Union or European Free Trade Association member state, give the Declaration of Conformity included with this product to the manager or user. By law, this information must be provided to the user.

- Because customer requirements dictate the placement of system components, your Sensormatic representative will supply this information separately.
- Because of the number of antennas and accessories that can connect to this controller, methodically install this system to avoid problems. See “Connecting Pedestals” in this guide for guidance on how to setup antennas.

About the Product

The AMS-9060 controller is part of an EAS system that:

- Includes Ultra•Exit or Pro-Max 5 antennas used to detect tags/labels at exits or in food store checkout aisles.
- Deters theft by activating an alarm when an antenna detects the unique response of an active Ultra•Max® hard plastic tag or disposable label.

The AMS-9060 controller provides the following installation features:

Antenna Support

The AMS-9060 controller supports up to two (ZS9060-2) or four (ZS9060) transceiver exit pedestals, or the same number of aisle pedestals, each with separate transmit and receive coils.

Antennas can be set up as four transceivers, or four transmit/receive pairs, or combinations of both using a laptop computer and ADS 4 service configurator software. Two receivers can be noise canceling antenna coils. Automatic configuration is available for the commonly used system configurations.

Antenna coils can be set for phase flipping (default), aiding, or figure-8 operation.

Note: Phase flipping is unavailable when noise canceling antenna coils are used.

Alarm Support

The controller supports the following alarm devices:

- Built-in alarm in the antenna (if used)
- Two externally-powered remote alarms such as AMS-1060 digital remote alarms
- Up to two relays for devices such as security cameras
- Externally-powered Sensormatic alarm management or traffic flow device.

Auto Synchronization

Auto synchronization occurs during power up or system reset. Auto sync can have different outcomes depending on whether or not nearby EAS transmitters are detected, they are properly aligned to the ac-derived timing of the controller, or too much ambient noise exists.

No transmitters detected. During initialization, the controller determines if EAS transmitters are nearby. If none are found, transmitter delay is set to zero at initial power on, or set to the value stored in the controller if not the initial power on.

Transmitters detected:

- Transmitters detected and aligned. If transmitters are correctly aligned, transmitter delay is calculated and stored in the controller for reference.
- Transmitters detected and not aligned. If transmitters are not aligned, transmitter delay is set to zero at initial power on of the controller, or set according to the value stored the controller if not the initial power on.

Too much ambient noise. During initialization, the controller locates other nearby EAS transmitters.

- If ambient noise prevents the controller from locating nearby EAS controllers and at initial power on of the controller, transmitter delay is set to zero.
- If not initial power on of the controller, the zero crossing delay stored in the controller is used.

Note: The controller stores the zero crossing delay for when the controller could not determine a reliable lock during subsequent power cycles. Instead of using zero for the delay, the controller uses the stored zero crossing delay.

Wired Synchronization

If a wired Tx sync device is connected to the controller, the controller automatically uses its signal as the timing reference instead of the ac line. The service configurator indicates that wired sync is active. See the Wired Sync Hookup Installation Guide for wiring.

Controller Mounting

The controller has a built-in flange used to attach the controller to a wall or ceiling using suitable hardware.

Manual Voltage Selection

The voltage range (100-120 or 220-240 Vac) of the controller must be manually selected at installation.

Conduit Support

Eleven knockouts receive exposed cables or cables in conduit. Knockouts are available for Class 2 wiring from antennas and low voltage devices.

Installation Requirements

Verifying Equipment and Unpacking

- Verify that all equipment has arrived. Ensure the system configuration is correct for the site.
- Unpack major components in a back room. At the install site, lay out parts in the order used. Do not clutter the aisle or cause a trip hazard.

Installer/Contractor

- Have electrical work comply with the latest national electrical code, national fire code, and all applicable local codes and ordinances.
- Coordinate work with other trades to avoid interference.
- Verify existing site conditions and coordinate with the owner's representative and appropriate utilities as required.
- Obtain copies of all related plans, specifications, shop drawings and addenda to schedule and coordinate related work.
- Thoroughly review the project to ensure that all work meets or exceeds the above requirements. Bring alleged discrepancies to the attention of Sensormatic Electronics.

Mounting Requirements

- The controller has a built-in flange used to attach the controller to a wall or ceiling using suitable hardware. Structure and hardware must support 12.08kg (26.06 lbs) or four times the weight of the controller assembly.
- Do not mount controller with its fan facing up.

AC Requirements



WARNING—RISK OF ELECTRIC SHOCK! During installation, if the antenna must be left unattended, turn off power or cover high voltage components to prevent unauthorized access to hazardous voltages.



WARNING—RISK OF ELECTRIC SHOCK! The ac power cord could be carrying 120Vac or 240Vac.



WARNING! Do not install this device where highly combustible or explosive products are stored or used.



WARNING! The ac source must be a 2-wire type with ground. It also must be a 24-hour, unswitched outlet with less than 0.5Vac between neutral and ground.



WARNING! This device is not suitable for an IT power distribution system where impedance exists between neutral and protective earth contacts.



CAUTION: When using a power cord, install a socket-outlet near the controller in an easily accessible location. The appliance coupler or plug on the power supply cord are the specified disconnect devices.

CAUTION: DO NOT share the ac source with neon signs, motors, computers, cash registers, terminals, or data communications equipment.

CAUTION: DO NOT use orange-colored outlets dedicated for computer equipment.

CAUTION: Select the appropriate power cord based on the country of use.

Mounting the Controller

The controller can be mounted as follows:

- On a shelf.
- On a wall.
- To a ceiling. Plywood with a surface larger than the controller is secured to the ceiling studs that hold the drywall. The controller then attaches with suitable hardware to the plywood.

Equipment Required

Basic setup requires the following equipment:

- AMS-9060 controller
- Pedestal antennas
- Hard tag (non-deactivatable Ultra•Max tag)
- Ultra•Max low energy labels.

Advanced setup requires the following additional equipment:

- Laptop with Windows[®] 7, Windows[®] 95, Windows[®] 98, Windows[®] NT, or Windows[®] 2000, operating software
- RS-232 Ultra•Max programming cable
- ADS 4 service configurator software.

Implanted Medical Devices

This anti-theft system complies with all applicable safety standards. However, people with implanted electronic medical devices may ask if the store has an anti-theft system and its location. Although most anti-theft systems are easily seen, some can be concealed. To help these people, do the following:

Consider Health and Safety

Place the anti-theft system antennas so customers:

- do not linger near or lean on them while making their purchase
- are only near the front of them while exiting the checkout area.

For exit systems, place anti-theft system antennas:

- Close to exit/entrance doors, encouraging the customer to pass through them. **DO NOT** use antennas intended for exits in an aisle configuration.
- Away from fixtures, equipment, amusements, and other signage that can attract customers to them.

Apply “Anti-Theft” Signage

- “Anti-Theft” labels are placed on each antenna, including those hidden behind door frames and other structures. **DO NOT** cover these labels with other signage.
- In non-English speaking countries, apply “Anti-Theft” labels in the local language to the antennas. For hidden antennas, apply an “Anti-Theft” label in the local language to each side of the door frame facing the doorway about 1.2m (4ft) above the floor. Order local language labels (2412-0170-XX) from your distribution center.
- To improve customer awareness of the anti-theft system, encourage the store to display signs that state it has an anti-theft system. Order awareness materials through your sales representative.

Controller Installation

Tools required:

- Tape measure
- Pencil or marker
- Electric drill
- Phillips-head screwdriver or bit
- Hand vacuum or broom

Parts required:

Install Kit 0352-0286-02

<u>Part</u>	<u>Qty.</u>	<u>Part number</u>
Clamp, conduit	10	6010-0107-01
Label, Denan		0352-0398-07

Mounting the Controller

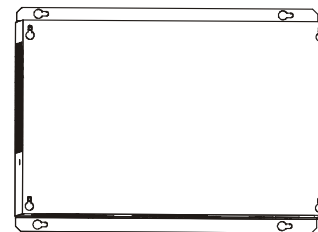


CAUTION: Keep 22.9cm (9in) of free space to the right of the controller for screwdriver access (to facilitate detachment of controller electronics).

1. Detach the top cover from the controller.
2. Remove knockouts closest to the connectors to be used, then reattach the side plate.
3. Set the controller on a shelf, or using suitable anchors and hardware, mount it to a wall or to a ceiling. **Note:** Ceiling attachment requires plywood be first attached to the ceiling and then the controller attached to the plywood.



WARNING! Both the anchor system and the wall or ceiling must be able to support 12.08kg (26.6 lbs) or four times the weight of the controller assembly.



4. Run cables from antennas and devices through the appropriate knockouts and secure them using the cable clamps provided. See **Figure 1** for the locations of the connectors.

Connecting AC Power

The controller can receive AC power either through a power cord or through a hardwired connection.



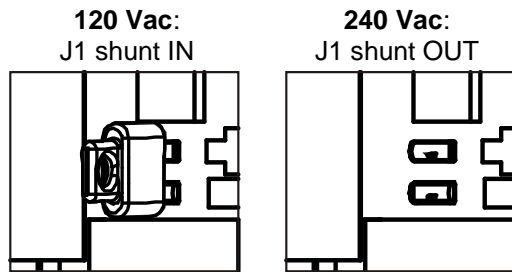
CAUTION: A 10A, 2-pole, ganged disconnect device, which also provides short circuit and overload protection, and has a minimum 3mm open circuit clearance, in accordance with the National Electric Code and applicable local codes must be installed by a licensed electrician at a location readily accessible to the equipment.

1. Locate the voltage shunt, which is in a bag taped inside the enclosure.

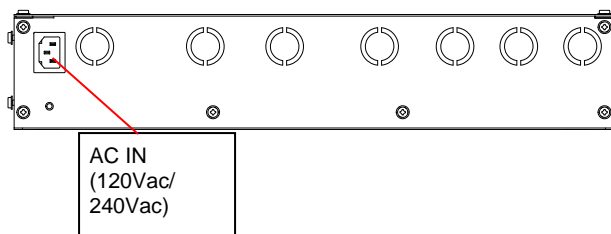


WARNING: RISK OF ELECTRIC SHOCK! Ensure that the system is not powered before moving the shunts.

2. Select the proper voltage for the site using the shunt (2109-0062-01) included with the kit. The default setting is 240Vac.



Power cord connection



1. Choose a power cord for the country of use.

USA-IEC 320, 18/3, 125V, 10A, 7.5ft.	0351-0547-01
Schuko-IEC 320, 1mm sq., 250V, 10A, 2.5m	0351-0547-02
UK-IEC 320, 1mm sq., 250V, 10A, 2.5m	0351-0547-03
Japan-IEC 320, 2mm sq., 250V, 15A, 2.5m	0351-0547-04
US-Filter, Line, 125V, 6A, Plug-in	0351-0547-05
Australia to IEC 320, 2.5m, 250V, 10A	0351-0547-07



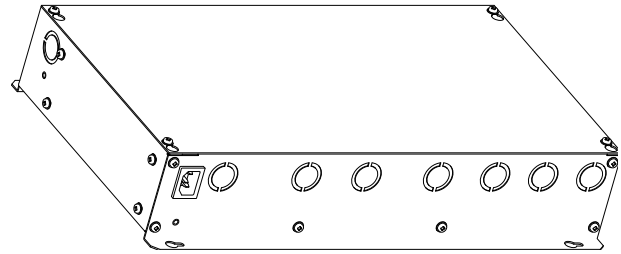
WARNING—RISK OF ELECTRIC SHOCK! The ac power cord may carry 120Vac or 240Vac.



CAUTION: When using a power cord, a socket-outlet must be installed near the controller and in an easily accessible location.

2. Plug the power cord into the IEC320 receptacle and the power source.

Hardwired connection

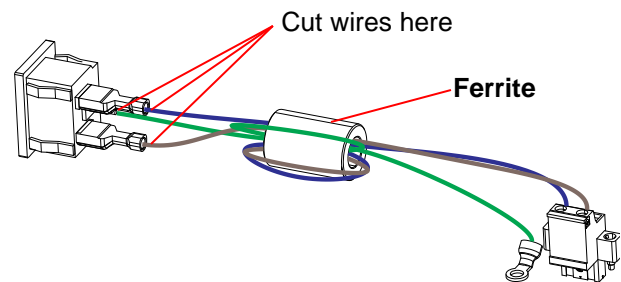


CAUTION: Use only copper wire.



WARNING—RISK OF ELECTRIC SHOCK! The ac power cord may carry 120Vac or 240Vac. Ensure the power is turned off at the circuit breaker before performing the following procedure.

1. Ensure the controller does is not powered and the hard-wire cables are not powered.
2. Unplug the existing power cable connector from the main board, loosen the screws holding the two wires, and pull out the wires.
3. Unscrew the ground lug from the main board. Save the ground screw.
4. Cut the three wires connecting the IEC320 connector to the wiring harness with the ferrite. They should be cut as close as possible to the IEC320 connector.



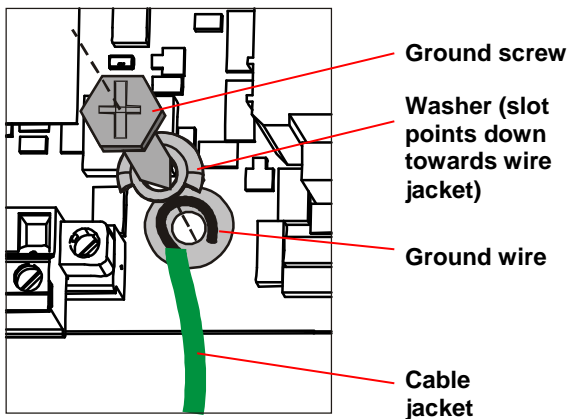
5. Cut the ferrite from the power cord.

6. Remove one of the knockouts accessing the ac connection area. Thread a cable clamp into the hole.
7. Route the ac cable through a cable clamp, leaving about 15.2cm (6in) out the other side. Tighten the clamp around the cable.
8. Put the ferrite on the Line (L1), Neutral (L2) and ground wires. Ensure the wires wrap around the ferrite and pass through again like they did on the existing wiring harness.
9. Expose about 5cm (2in) of insulated wires: Line (L1), Neutral (L2), and ground.
10. Connect the AC power wires to the power connector P1 on the main board in the pedestal.

The power connector accepts 0.75 to 2.0 mm² (18 to 14 AWG) wire. Connect the Line wire (black) to pin 1, the Neutral wire (white) to pin 2, and the ground wire (green) to the screw on the main board, as shown below.

If you remove the connector, do not pull it out by the wires; pull on the connector.

When connecting the ground wire, ensure the slot on the washer is pointing down to allow the jacket on the cable to fit behind the washer.



CAUTION: After you connect the ground wire, ensure all of the strands of the ground wire are beneath the washer. Loose strands can cause a short circuit.

Connecting Pedestals

Transceiver pedestals connect to the AMS-9060 controller with two cables: Transceiver (Tx/RX) cables and Alarm/Communication cables. They connect to the controller at the following connectors:

- **Transceiver connectors (P19, P21, P23, P25).** These four connectors labeled PED A, B, C, and D, support Tx/Rx antennas designated A, B, C, and D. Table 1 shows connections for various antenna configurations. If “auto configuration” is enabled, the system automatically attempts to configure itself based on the number of antennas detected. Only the most commonly used configurations are auto configured.
- **Alarm/Communication connectors (P20, P22, P24, P26):** Four connectors support the antennas audio/visual alarms, transmitter/alarms inhibit function, and peripheral RS-485 network communication. **Note:** Transmitter/Alarms inhibit function and peripheral RS-485 network communications are only available in Ultra•Exit alarm antennas and Pro-Max 5 pedestals.



WARNING—RISK OF ELECTRIC SHOCK! The ac power cord may carry 120Vac or 240Vac.

1. Ensure controller power is off.
2. Connect antenna cables to the controller according to how the antennas are intended to perform. Refer to diagrams and tables on pages 8 and 9 of this guide. See examples of pedestal installations in the antenna installation guide.

Connecting Receivers

Auxiliary receivers connect to the AMS-9060 controller at the following connectors, with top coils connecting to the Coil 1 connections and bottom coils using the Coil 2 connections:

- **Receiver 1 (P3)**
- **Receiver 2 (P4)**
- **Receiver 3 (P5)**
- **Receiver 4 (P17)**

Antennas/coils connected to receiver inputs are designated A, B, C, and D. These connectors default to receive function with no auto detection.

ABOUT NOISE CANCELING COILS:

Noise canceling coils, such as a Ranger antenna or the top coil of a pedestal antenna, are used to cancel noise that interferes with detector operation.

- Noise canceling coils only connect to the top coil (Coil 1) input on connectors P5 and P17.

- To accept a noise canceling coil, the auxiliary input must be in noise canceling mode (set using service configurator software). Save adjustments to default settings if they are to be used on the next power cycle or system reset.
- Move the noise canceling coil around while monitoring power levels on a laptop computer to find where noise cancellation is best. This is where the coil should be installed.
- The location for the noise canceling coil must be practical as well as yield satisfactory results.
- If connecting a noise canceling coil and a receive antenna into the same connector, the top and bottom coils of the receive antenna must share the Coil 2 connection (done in the field by the technician switching the antenna wire connections). Thus phase flipping is unavailable when noise canceling coils are used.

Figure 1. AMS-9060 connectors (with pinouts), jumpers, and switches

<p>P3, P4, P5, P17 (RX1-4) Pin 1 – Black (Antenna [A-D]1) Pin 2 – Red (Antenna [A-D]1 return) Pin 3 – Green (Antenna [A-D]2) Pin 4 – Gray/White (Antenna [A-D]2 return) Pin 5 – Violet / 'X' (Shield) Note: Color may vary depending on device.</p>	<p>J2 (RELAY A-B) Pin 8 – NC 1 Pin 7 – Common 1 Pin 6 – NO 1 Pin 5 – NC 2 Pin 4 – Common 2 Pin 3 – NO 2 Pin 2 – Ground Pin 1 – Ground</p>	<p>P18 (WIRED SYNC) Pin 1 – Black (Tx Burst High) Pin 2 – Red (Tx Burst Low) Pin 3 – Green (Arm High) Pin 4 – White (Arm Low) Pin 5 – (Shield)</p>	<p>J3 (RS232) Pin 1 – (Rx/D) Pin 2 – (Tx/D) Pin 3 – (Ground) Pin 4 – (No Connect)</p>
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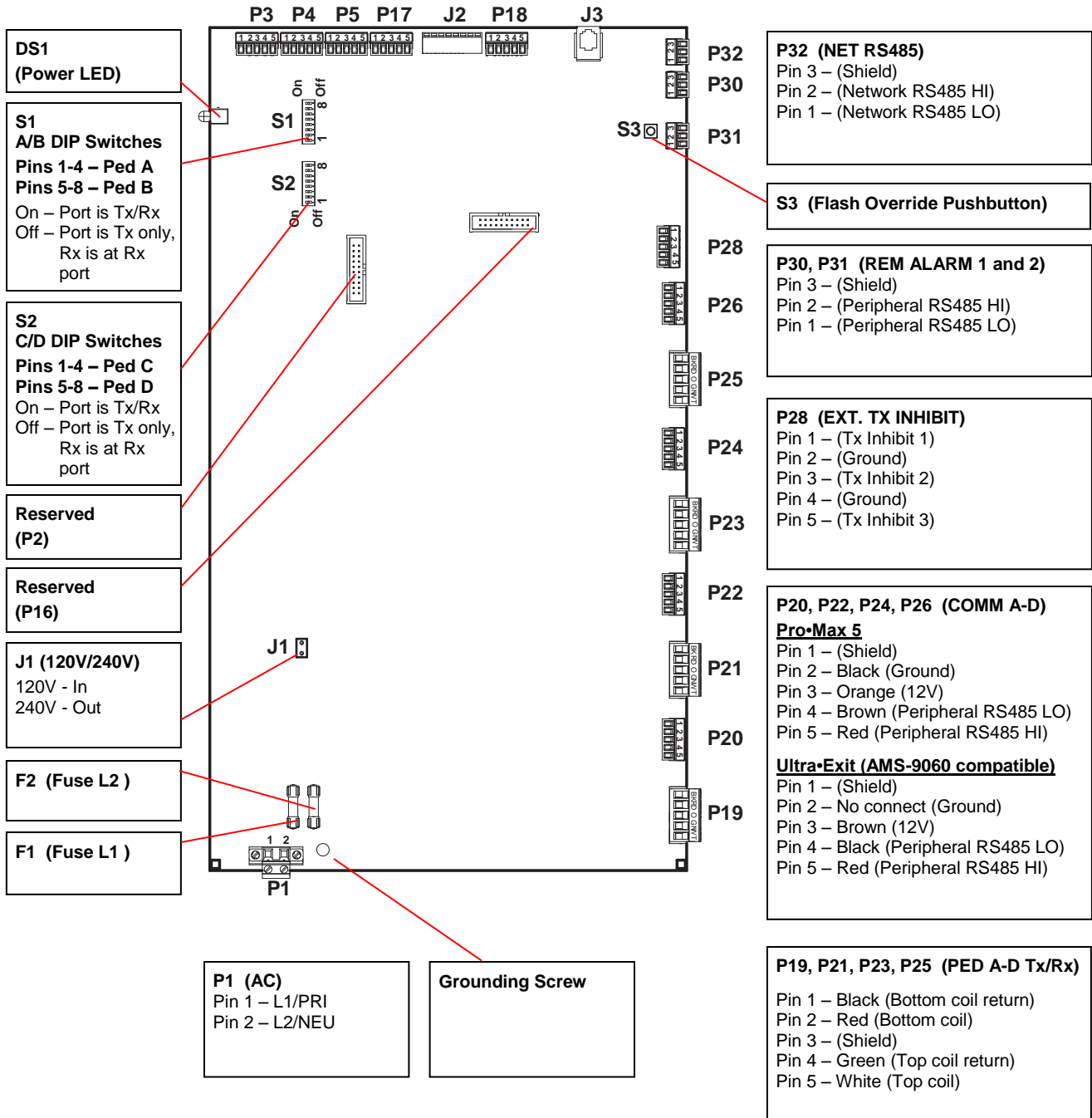


Table 1. Exit System

Note: Numbers 1, 2, 3, and 4 under mode column indicate the pedestals used. 1-2_3-4 indicates that 1 and 2 pedestals are in one exit, and 3 and 4 pedestals are in another. 1-2-3-4 indicates all pedestals are in one exit.

Note: Disregard receiver settings when using antennas as transceivers.

EXIT SYSTEM MODE	Exit 1				Exit 2				Auto Config.*
	PED 1 Connections		PED 2 Connections		PED 3 Connections		PED 4 Connections		
None	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	NO
Single Transceiver	RX A / Alrm A	TX A	NA	NA	NA	NA	NA	NA	YES
1-2 Dual	RX A / Alrm A	TX A	RX C / Alrm C	TX C	NA	NA	NA	NA	YES
1-2 Dual Sim.-Alternating	RX A / Alrm A	TX A	RX C / Alrm C	TX C	NA	NA	NA	NA	NO
1-2-3 Split	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	NA	NA	YES
1-2-3-4 Quad	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	RX D / Alrm D	TX D	YES
1-2 Dual with Ferrites	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B	N/A	RX D	NA	NO
1-2 Transceiver- Ferrite	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B	N/A	RX D	NA	NO
1-2 Backfield	RX A / Alrm A	TX A	RX C / Alrm C	TX C	NA	NA	NA	NA	NO
1-2 Alternating	RX A / Alrm A	TX A	RX C / Alrm C	TX C	NA	NA	NA	NA	NO
1-2-3 Ferrites- Transceiver-Ferrites	RX A	N/A	RX C / Alrm C	TX C	RX B	N/A	NA	NA	NO
1-2 Dual 3 Single	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	NA	NA	NO
1-2 Bfield 3 Single	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	NA	NA	NO
1-2_3-4 Dual	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	RX D / Alrm D	TX D	NO
1-2_3-4 Alternating	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	RX D / Alrm D	TX D	NO
1-2-3-4 Alternating	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	RX D / Alrm D	TX D	NO
1-2-3 Split Alternating	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	NA	NA	NO
1-2_3-4 Backfield	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	RX D / Alrm D	TX D	NO
1_2_3_4 Single Transceiver**	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	RX D / Alrm D	TX D	NO
1-2 Dual 3-4 Bfield	RX A / Alrm A	TX A	RX C / Alrm C	TX C	RX B / Alrm B	TX B	RX D / Alrm D	TX D	NO

* Only applies to Ultra•Exit antennas.

** In 1_2_3_4 Single Transceiver Mode (where each antenna protects an exit), each antenna alarms independently.

Setting Dip Switches

IMPORTANT! DIP S1 and DIP S2 are located on the circuit board of the controller. When connecting antennas, set switches 1–8 of each DIP according to the number and type of antennas used.

Antenna	Controller Input	DIP S1	DIP S2
Ultra•Exit or Pro-Max 5 Transceiver	TXA	1–4 On, rest don't care	Don't Care
	TXB	5–8 On, rest don't care	Don't Care
	TXC	Don't Care	1–4 On, rest don't care
	TXD	Don't Care	5–8 On, rest don't care
Rx Only	RXA	1–4 Off, rest don't care	Don't Care
	RXB	5–8 Off, rest don't care	Don't Care
	RXC	Don't Care	1–4 Off, rest don't care
	RXD	Don't Care	5–8 Off, rest don't care
Noise Coil 1	RXC (top coil)	Don't Care	1–2 Off, rest don't care
Noise Coil 2	RXD (top coil)	Don't Care	5–6 Off, rest don't care

For example, if using a:

- **1-2 dual pedestal exit system using two Ultra•Exit alarm antennas as transceivers:**
 - Set S1 switches 1–4 and S2 switches 1–4 to “on” (switches 5–8 of S1 and S2 can be left either on or off).
 - Also ensure no receive antennas such as noise coils are connected to the controller when using transceivers.
- **1-2_3-4 dual pedestal exit system or 1-2-3-4 quad system using four Ultra•Exit alarm antennas as transceivers:**
 - Set all S1 and S2 switches to “on”.
 - Also ensure no receive antennas such as noise coils are connected to the controller when using transceivers.
- **Noise coils:** If using noise coils, turn off S1 switches 1–2 for RxC and/or S2 switches 5–6 for RxD.

Connecting Optional Devices

Connect any optional devices to their connectors.

Relay connectors (J2): The controller has two double-pole, double-throw (DPDT) relays, each configurable using service configurator software. Each relay:

- Triggers devices such as externally powered remote alarms, time-lapse VCRs, and security cameras; one device per detection zone.
- Accepts three wires and a shield. Cable shields share one pin on the connector.

Remote alarm connector (P30, P31): These connectors can control two externally-powered digital remote alarms, such as an AMC-1060.

RS-485 network connector (P32): This connector supports RS-485 communication for remote diagnostics. It is also the connector for connecting to UltraLink devices.

Wired Tx sync connector (P17): This connector is used to connect an AMS-9060 controller to an AMS-9060, AMS-9050, or AMS-9040 controller to synchronize them to avoid cross interference.

RS-232 service connection (J3): Located on the main board, the RJ-22 connector receives the cable from a laptop computer that is used to locally setup and diagnose the detection system.

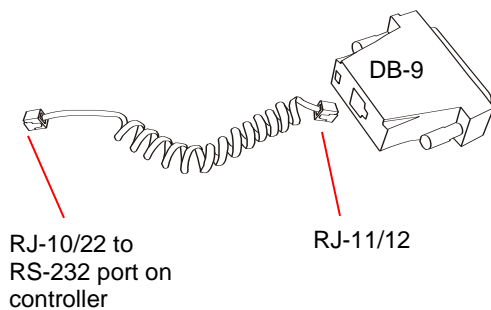
Configuring the System

The AMS-9060 controller enables you to change controller parameters using your laptop computer and the ADS 4 service configurator.

1. Turn on the service laptop and launch the ADS 4 service configurator.

Note: For how to use configurator settings, click *Help* on the configurator.

IMPORTANT! Ensure the controller power is off. Never restart or boot up a computer connected to an active controller. Doing so disables the mouse function on the computer.
2. Connect the DB-9-to-RJ-11/12 connector to the DB-9 serial port on your laptop computer. Only pins 2, 3, and 5 are used.



3. Connect the RJ-11/12 connector of the service cable to the DB-9 connector and the RJ-10/22 connector on its other end to the RS-232 port (J3) on the controller.
4. Turn on the controller.
5. Using the “Setup” page on the configurator:
 - Check that antenna selections match antennas physically installed. If not, check antenna connections to the controller.
 - Setup parameters for lamps, audio, relays, and remote alarms.
6. Using the “Tx Configuration” page, set Tx current for each antenna and enable/disable transmitters, if necessary.

Verifying Operation

1. Pass an active security tag by each antenna to verify antenna performance. Refer to *Help* if monitoring or adjustments are necessary.
2. Check that the antenna alarm lamp lights when a tag/label is passed through the checkout aisle, or if the system is covering adjacent aisles, that the lamp lights only in the aisle the tag/label was in.
3. If the pick rate is acceptable, installation is complete. Reattach the top cover.
4. If you are installing this controller in Japan and the Japanese regulatory label (0352-0398-07) has not been affixed, attach it to a flat surface on the controller.

Specifications

Electrical

Power Supply

Primary input	100-120Vac or 220-240Vac @ 50–60Hz
Primary power fuse.....	3.15A, 250V, slo-blow, hi-breaking
Current draw (120V)	<2.1Arms
Current draw (240V)	<0.9Arms
Input power (120V)	<165W
Input power (240V)	<165W

Transmitter

Operating frequency	58kHz (±200Hz)
..... (sync pulse)	56kHz
Transmit burst duration.....	1.6ms
Transmit current maximum (2.4m pedestals) ...	20A peak
Transmit current maximum (2.0m pedestals) ...	16A peak
Burst Repetition Rate:	
Based on 50Hz ac.....	75Hz or 37.5Hz
Based on 60Hz ac.....	90Hz or 45Hz

Receiver

Center frequency	58kHz
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Environmental

Ambient temperature	0°C to 50°C (32°F to 122°F)
Relative humidity	0 to 90% non-condensing
Enclosure Rating	IPX0
Evaluated for altitudes less than 3000m (9800ft)	

Mechanical

Height	8.87cm (3.5in)
Width	29.82cm (11.74in)
Length.....	46.10cm (18.15in)
Weight	3.02kg (6.65 lbs)

Declarations

TYPE: AMS-9060
 Model: AMS-9060 (4 channel controller)
 Model: AMS-9060-2C (2 channel controller)

Regulatory Compliance

EMC	47 CFR, Part 15 EN 61000-3-2 EN 61000-3-3 EN 300 330-2 EN 301 489-3 EN 301 489-1 EN 55022 EN 55024 ICES-003 RSS-210
Safety (second edition)	UL 60950-1 CSA C22.2.60950-1 EN 60950-1

FCC ID: BVCAMS90604 (4 channel controller)

FCC ID: BVCAMS90602 (2 channel controller)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: 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 instruction manual, 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 his own expense.

IC: 3506A-AMS90604 (4 channel controller)

IC: 3506A-AMS90602 (2 channel controller)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.



EQUIPMENT MODIFICATION CAUTION: Equipment changes or modifications not expressly approved by Sensormatic Electronics, LLC, the party responsible for FCC compliance, could void the user's authority to operate the equipment and could create a hazardous condition.

See "About the Product" on page 2.

Other Declarations

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