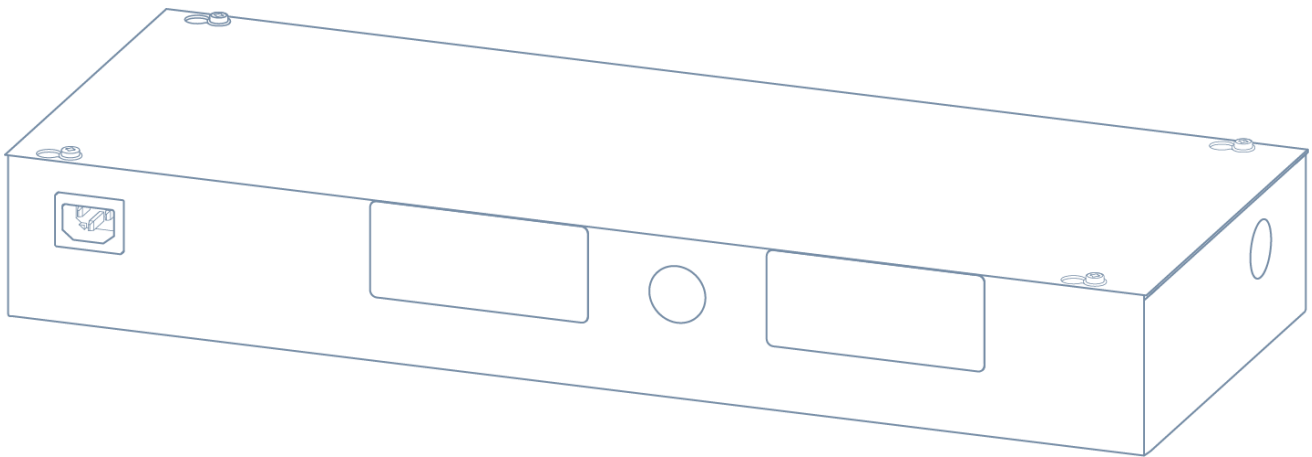


AMS-9080 Controller

Installation Guide



ZE9080



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About this guide

This installation guide explains how to install the AMS-9080 Controller. You must install the AMS-9080 Controller, as outlined in this guide.

Customer requirements dictate the placement of system components. Your Sensormatic representative supplies this information separately.



Regulatory restriction: For indoor use only.

Intended use: Install this device only as described in this guide.

If you install this product 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, you must provide this information to the user.

Technical support

For product bulletins, and the most recent updates to this document, visit <https://sensormaticsecurelogin.com>.

About the product

The AMS-9080 Controller powers and operates the capacitor board, and the antenna coils on a pedestal.

Installation features

The AMS-9080 Controller has the following installation features:

Antenna support

The AMS-9080 Controller supports up to two transceiver exit pedestals, each with two coils, top and bottom. Each coil is a transceiver, which receives and transmits. You can set up the antennas using a laptop computer and the CE ADS4 Platform Configurator. You can set the antenna coils for phase flipping, which is the default operation, aiding, or figure-8 operation.

Note: Phase flipping is unavailable when you use noise cancelling antenna coils.

Alarm support

The AMS-9080 Controller supports the following alarm devices:

- A built-in alarm in the antenna
- Two externally-powered remote alarms, such as an AMS-1060 digital remote alarm
- Up to two relays for devices, such as security cameras
- Externally-powered Sensormatic alarm management or traffic flow devices

Wired synchronization

Use wired synchronization to connect two AMS-9080 Controllers, and to prevent them from interfering with one another. For more information, refer to the *Wired Sync Hookup Installation Guide*, 8200-0537-07. For the location of the wire sync connector P8, see **AMS-9080 Controller board pinouts**.

Manual voltage selection

At installation, you must manually select one of the following controller voltage ranges:

- 100 VAC to 120 VAC
- 220 VAC to 240 VAC



Conduit support

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

Parts

Table 1. Required parts

Kit	Quantity	Product code
AMS-9080 Controller	1	ZE9080
Installation Kit	1	0352-0286-02

Table 2. Installation Kit, 0352-0286-02

Part	Quantity	Product code
Clamp, conduit	10	6010-0107-01

Compatibility

The AMS-9080 Controller is compatible with the following products:

- AMS-1156 Pedestal
- Ranger antennas
- Satellite antennas
- Amorphous core receivers
- Digital Remote Alarm (DRA)
- Ultra-Link
- Local Device Manager (LDM)
- Wireless Device Manager (BIM1000) and the Wireless Device Module (BIX1000)
- Overhead people counters

Safety

Installation requirements



Intended use: Install this device only as described in this guide.

The installer or contractor must adhere to the following criteria:

- Ensure that electrical work complies with the latest national electrical code, national fire code, and all applicable local codes and ordinances. National or local wiring codes or rules can differ between regions. Adherence to these codes supersedes instructions in this document.
- You must coordinate all work with other trades to avoid interference.
- You must verify existing site conditions, and coordinate with the owner's representative and appropriate utilities, as required.
- You must obtain copies of all related plans, specifications, shop drawings, and addenda to schedule and coordinate related work.
- You must thoroughly review the project to ensure that all work meets or exceeds the above requirements. The installer or contractor must bring any alleged discrepancies to the attention of Sensormatic Electronics.



Chemical interaction



WARNING: Do not install this product in hazardous areas where highly combustible or explosive products are stored or used.

Cabling



WARNING: Risk of electric shock.

During installation, if you must leave the antenna, turn off the power or cover high voltage components to prevent unauthorized access to hazardous voltages.



WARNING: Risk of electric shock.

The AC power could be carrying 120 VAC or 240 VAC.



WARNING: Risk of electric shock.

The transmit pedestal contains hazardous voltages. If you must leave the pedestal with its high voltage components exposed, turn off the power or cover these components to avoid unauthorized persons access to hazardous voltages.

WARNING: In accordance with the USA National Electric Code and applicable US local codes, a 15 A or 20 A, two-pole, ganged disconnect device, which also provides short circuit and overload protection and has a minimum 3-millimeter open circuit clearance, must be installed by a licensed electrician at a location readily accessible to the equipment.

For installations in other countries, an electrical outlet, suitable for the voltage and current used in the primary electrical supply input of the equipment, must be already provided or installed by a qualified electrician. The National Electric Codes, regulations, cable, and fusing requirements applicable for the equipment and type of installation must be followed at all times.



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



CAUTION: To meet EMC regulatory compliance, you cannot cut the interconnect transceiver cable when using the AMS-9080 Controller. You can coil any excess cable and secure it with a cable tie.



CAUTION: The AC source must be a two-wire plus ground, 24-hour, unswitched outlet with less than 0.5 VAC between neutral and ground.



CAUTION: Install pluggable equipment in a position where it is near the socket-outlet, and easy to access.



CAUTION: For continued protection against risk of fire, replace the fuse only with the same fuse type and rating.

Important:

- Follow all local, state, and federal electrical and fire codes for cabling into the AMS-9080 Controller.
- Do not share the AC source with neon signs, motors, computers, cash registers, terminals, or data communications equipment.
- Do not use orange-colored outlets which are dedicated for computer equipment.



Mounting



CAUTION: The controller can attach to a wall or ceiling using suitable hardware. The structure and hardware must support 9.56 kilograms or 21.08 pounds, or four times the weight of the controller assembly.

Implanted medical devices

This anti-theft system complies with all applicable safety standards. People with implanted electronic medical devices can ask if the store has an anti-theft system, and its location. You can easily see most anti-theft systems, but some can be concealed. To help individuals with implanted medical devices, consider the following health and safety guidelines:

Health and safety

Place the anti-theft system antennas to ensure that customers behave in the following ways:

- They do not linger near, or lean on anti-theft systems while making their purchase.
- They are near the front of an anti-theft system only while exiting the checkout area.

For exit systems, when placing anti-theft system antennas, adhere to the following guidelines:

- Place the anti-theft system antennas close to exit and entrance doors, encouraging the customer to pass through them. Do not use antennas intended for exits in an aisle configuration.
- Place the anti-theft system antennas away from fixtures, equipment, amusements, and other signage that can attract customers to them.

Apply Anti-theft signage

- Place **Anti-theft** labels 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 1.2 meters or 4 feet above the floor. You can 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 that it has an anti-theft system. You can order awareness materials through your sales representative.



Before you begin

Before you install an AMS-9080 Controller, adhere to the following criteria.

Unpacking and verifying the equipment

When unpacking and verifying the equipment, complete the following checks:

- Verify that you have all the necessary equipment.
- Ensure that the system configuration is the correct one for the site.
- Unpack major components in a space where you are not obstructing, or causing nuisance to customers.
- Do not clutter the aisle or cause a trip hazard.

Tool requirements

You require the following tools:

- A tape measure
- A pencil or a marker
- An electric drill
- A Phillips-head screwdriver or bit
- A hand vacuum or broom

Equipment requirements

You require the following equipment:

- An AMS-9080 Controller, ZE9080
- Pedestal antennas, for example, the AMS-1156 Pedestal
- A hard non-deactivatable AM tag, or AM low energy labels
- Installation kit, 0352-0286-02

Laptop requirements

You require the following items:

- A laptop computer with Windows® 7 operating system and the latest Internet Explorer®, or Mozilla® Firefox® browser installed.
- A USB to RS-232 converter, if required
- An RS-232 Ultra•Max programming cable

Firmware requirements

Table 3. Required firmware

Compatible firmware	Version
CE ADS4 Platform Configurator	9.20, build 26 or higher
AMS-9080 Controller firmware	1.1011 or higher

To support the installation of the AMS-9080 Controller, you must download the latest firmware bundle from <https://sensormaticsecurelogin.com/>.

To download the latest configurator, complete the following steps:

1. Open a web browser, and navigate to <https://sensormaticsecurelogin.com/>.
2. Enter your valid logon details, and click **Login**.
3. From the **Tech Support** menu, click **EAS**.
4. Click **Software Download**.
5. From the **Technology** list, select **Detectors**.
6. Download the latest bundle.



Installation

To install an AMS-9080 Controller, complete the following procedures.

Mounting the controller

You can mount the AMS-9080 Controller to the following locations:

- On a shelf
- On a wall
- To a ceiling

Note: For ceiling mounts, secure plywood with a surface larger than the controller to the ceiling studs that hold the drywall. Attach the controller with suitable hardware for the plywood.

To mount the controller, complete the following steps:

CAUTION: To facilitate the detachment of controller electronics, you must keep 22.9 centimetres or 9 inches of free space to the right of the controller for screwdriver access.

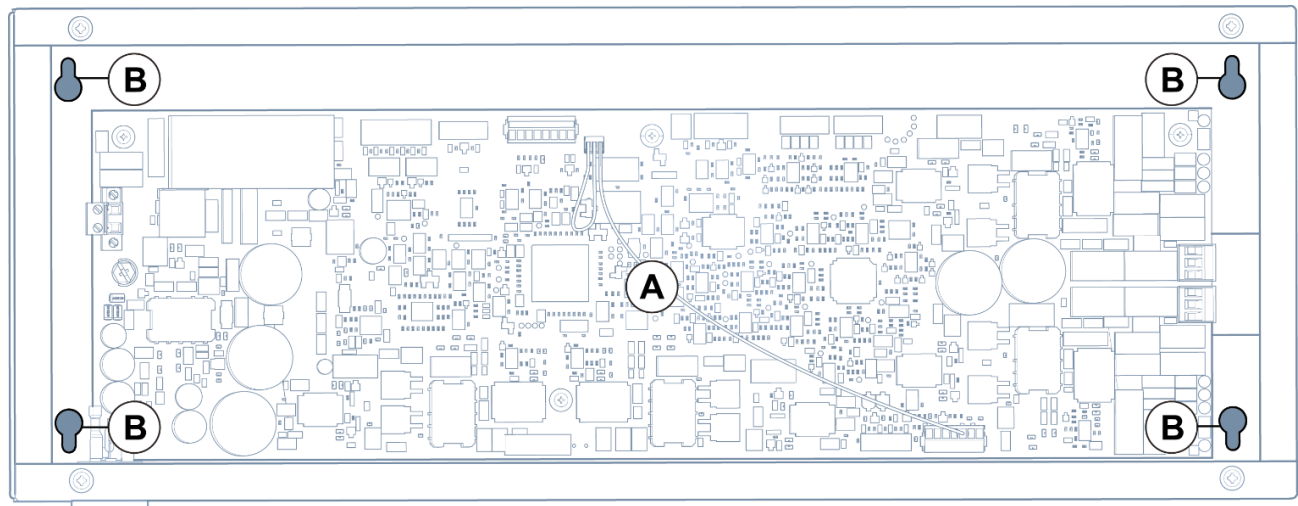
1. Remove the top cover from the controller.
2. Remove the knockouts closest to the connectors that you are going to use.
3. Set the controller on a shelf, or use suitable anchors and hardware to mount it to a wall or ceiling.

Note: If only ceiling studs are located above the ceiling, you must attach plywood to the ceiling. Then attach the controller to the plywood with suitable hardware.

 **WARNING:** Both the anchor system and the wall or ceiling must be able to support 9.56 kilograms or 21.08 pounds, or four times the weight of the controller assembly.

4. Run the cables from the antennas and devices through the appropriate knockouts, and secure them using the cable clamps provided.

Figure 1. Locating the mounting holes



A	AMS-9080 Controller	B	Mounting holes
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Connecting the AC power

To connect the AC power to the AMS-9080 Controller, complete the following steps:



WARNING: In accordance with the USA National Electric Code and applicable US local codes, a 15 A or 20 A, two-pole, ganged disconnect device, which also provides short circuit and overload protection and has a minimum 3-millimeter open circuit clearance, must be installed by a licensed electrician at a location readily accessible to the equipment. If the only line providing power is the primary/L1, you can use a single-pole breaker.

1. Locate the voltage shunt in a bag taped inside the controller.

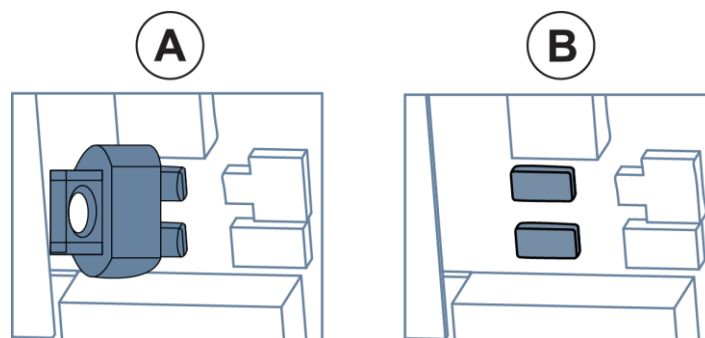


WARNING: Risk of electric shock.

Ensure that you disconnect power from the controller before you move the shunts.

2. Select the proper voltage for the site using the shunt, 2109-0062-01. The default setting is 240 VAC.
3. The AMS-9080 Controller can receive AC power through a power cord, or through a hardwired connection. Complete one of the following procedures:
 - Connecting the power cord
 - Hardwiring the AC connection

Figure 2. Voltage settings and shunts



A	120 VAC, J5 shunt IN
B	240 VAC, J5 shunt OUT

Connecting the power cord

In countries where code allows, you can connect the AC power using a power cord. To connect the AC power using a power cord complete the following steps:

1. From **Table 4**, choose a power cord for the country of use.

Table 4. Power cord part numbers per country

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





WARNING: Risk of electric shock.

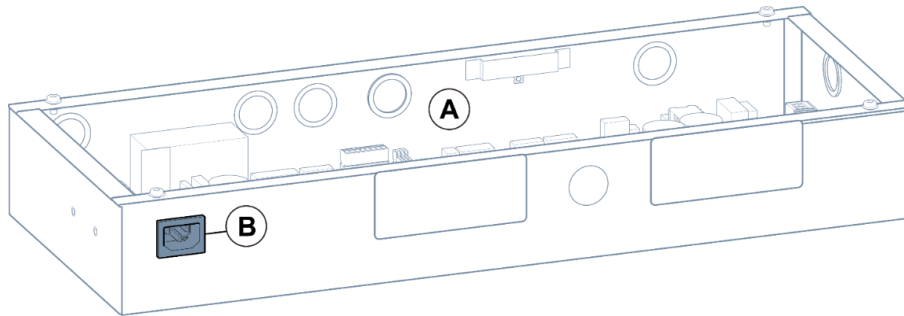
The AC power cord can carry 120 VAC or 240 VAC.



CAUTION: When using a power cord, ensure that you install the controller near a socket-outlet and in a location that is easy to access.

2. Plug the power cord into the IEC320 receptacle on the AMS-9080 Controller, and into the power source.

Figure 3. Locating the power cord connector



A	AMS-9080 Controller	B	AC IN, 120 VAC or 240 VAC
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Hardwiring the AC connection

To hardwire a controller, you must remove the AC wiring and move the ferrite bead to the new cables.

To hardwire the AC connection, complete the following steps:



CAUTION: Use only copper wire.

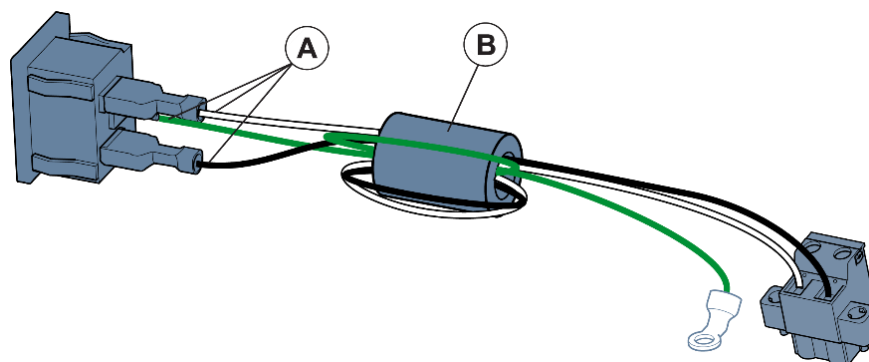


WARNING: Risk of electric shock.

The AC power cord can carry 120 VAC or 240 VAC. Ensure that you turn off the power at the circuit breaker before you proceed.

1. Ensure that you disconnect the power going to the controller and the hard-wire cables.
2. On the main board locate the power connector P2, loosen the screws and remove the two wires. For the location of the power connector P2, see **AMS-9080 Controller board**.
3. Unscrew the ground lug.
4. Cut the three wires that connect the IEC320 connector to the wiring harness with the ferrite bead, and remove the wiring. Cut the wires as close as possible to the quick disconnect plugs, as shown in **Figure 4**.
5. Cut the ferrite bead from the internal wiring harness.

Figure 4. Cutting the wires



A	Location to cut the wires	B	Ferrite bead
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6. Remove one of the knockouts to access the AC connection area. Thread a cable clamp into the hole.
7. Route the AC cable through a cable clamp, leaving about 15.2 centimeters or 6 inches out the other side.
8. Tighten the clamp around the cable.
9. Put the ferrite bead on the Line, Neutral, and Ground wires. Ensure that the wires wrap around and pass through the ferrite bead a second time as it did in the existing wiring harness.
10. Connect the AC power wires to the power connector P2. Connect the Line black wire to **L**, and the Neutral white wire to **N** as shown in **Figure 5**.

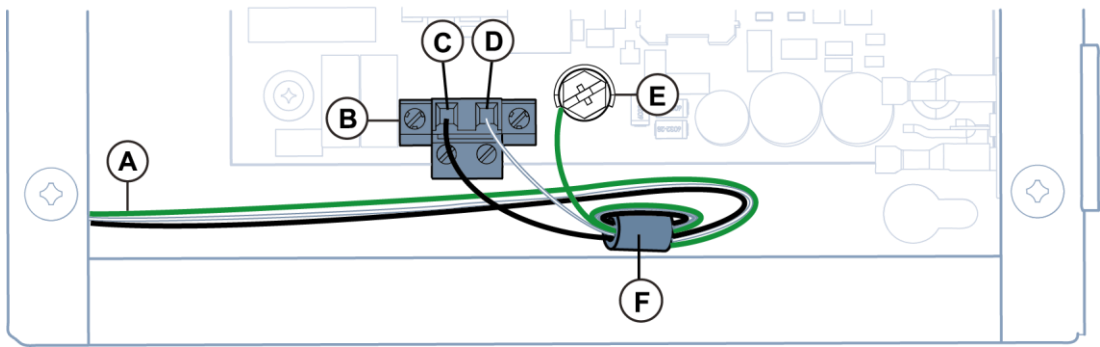
Note: The power connector accepts 0.75 to 2.0 millimeter², or 18 to 14 AWG wire.

Important: If you remove the connector, do not pull it out by the wires; pull on the connector.
11. Connect the Ground green wire to the ground screw on the main board, as shown in **Figure 6**. When you connect the Ground wire, ensure that the slot on the washer is pointing down so that the jacket on the cable can fit behind the washer.



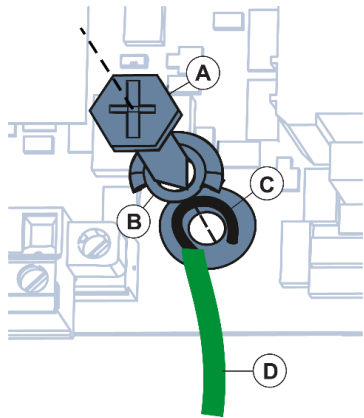
WARNING: After you tighten the ground screw, carefully inspect the Ground wire to ensure that no wire strands are touching any components on the board.

Figure 5. Connecting the wires to the power connector P2



A	AC power cable	B	Power connector P2
C	Line black wire connecting to L	D	Neutral white wire connecting to N
E	Ground green wire connecting to the ground screw	F	Ferrite

Figure 6. Connecting the ground wire



A	Ground screw	B	Washer, slot points down towards wire jacket
C	Ground wire	D	External earth ground cable jacket

Connecting to the pedestals

Transceiver pedestals connect to the AMS-9080 Controller using the following cables:

- A transceiver, Tx/Rx cable
- An alarm/comm cable

Connect the cables to the following connectors:

- **Transceiver connectors P3, P1, and P4:** Connectors P3 and P1 are labelled Pedestal 1. Connector P4 is labelled Pedestal 2. **Table 5** shows the connections for various antenna configurations. If auto configuration is enabled, the system automatically attempts to configure itself based on the number of antennas it detects. Only the most commonly used configurations are auto configured.
- **Alarm and communication connectors TB2 and P10:** Two connectors provide the peripheral RS-485 communication signals to control the audio and visual alarm functions on the pedestals.

To connect pedestals to the controller, complete the following steps:



WARNING: Risk of electric shock.

The AC power cord can carry 120 VAC or 240 VAC. Ensure that you turn off the power at the circuit breaker before you proceed.



CAUTION: To meet EMC regulatory compliance, you cannot cut the interconnect transceiver cable when using the AMS-9080 Controller. You can coil any excess cable and secure it with a cable tie.

1. Ensure that you turn off the power to the controller.
2. Connect the cables to the controller based on the configuration you require. For more information, see **Table 5**.
3. For information about pedestal installations, refer to the installation guide of the antenna that you are installing.

Note: Split and quad configurations are not supported with this controller.

Table 5. Exit systems

Mode	Pedestal 1 connections	Pedestal 2 connections	AUX connections
Single Transceiver	RX A / Alarm A	-	-
1-2 Dual	TX A	TX B	-
1-2 Dual Sim.- Alternating	TX A	TX B	-
1-2 Dual with Ferrites	TX A	TX B	AUX
1-2 Backfield	TX A	TX B	-
1-2 Alternating	TX A	TX B	-



Connecting to auxiliary receiver antennas

Auxiliary receivers are receive-only antennas that extend the detection range of a primary antenna. Connect the auxiliary receivers to one of the following receiver connections:

- Receiver 1, P6
- Receiver 2, P7

To connect an auxiliary receiver to the controller, complete the following steps:



WARNING: Risk of electric shock.

High-voltage AC is present on the capacitor and controller board whenever the controller power is on. Ensure that the system is not powered before you connect the auxiliary receivers.



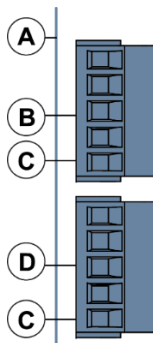
CAUTION: Auxiliary receiver antennas are receive-only. A transmitter current can cause damage to them. Do not connect the auxiliary receivers to receiver port P4 on the AMS-9080 Controller.

1. Disconnect power from the system.
2. Connect the cable from the auxiliary receiver to receiver port P6 or P7 on the AMS-9080 Controller, as shown in **Table 6** and **Figure 7**.
3. Supply power to the system.
4. Test the system with an active EAS tag or label, to verify that the pedestal is operational.

Table 6. Connecting auxiliary receivers

Pin	Color
1	Black
2	Red
3	Green
4	White
5	Shield

Figure 7. Connectors P6 and P7 on the AMS-9080 Controller



A	AMS-980 Controller board	B	P7
C	Pin 1	D	P6

Noise canceling coils

Noise canceling coils, such as a Ranger antenna, cancel the noise that interferes with detector operation. Noise canceling coils connect to Aux rec 1 connector P6, Pin 1 and Pin 2, or Aux rec 2 connector P7, Pin 1 and Pin 2.

To accept a noise canceling coil, on the CE ADS4 Platform Configurator set the auxiliary input to Noise Canceling mode. Save the adjustments to default settings if they will be used on the next power cycle or system reset.

To find where noise cancellation is best, move the noise canceling coil around while monitoring the power levels on a laptop computer. Install the coil where noise cancellation is best. Ensure that the location for the noise canceling coil is practical and yields satisfactory results.

Connecting optional devices

To connect optional devices, use one of the following connectors:

- **Relay connectors, J1:** The controller has two single-pole double-throw (SPDT) relays. Configure each connector using the CE ADS4 Platform Configurator.
 - Each relay triggers devices such as externally powered remote alarms, time-lapse VCRs, and security cameras; one device per detection zone.
 - Each relay accepts three wires and a shield. The cable shields share one pin on the connector.
- **Remote alarm connectors, TB2:** This connector can connect two DRAs, as there are two RS485 ports on the TB2. The first RS485 port is Pin 1, Pin 2, and Pin 3. The second RS485 port is Pin 4, Pin 5, and Pin 6.

Note: If the TB2 connector has alarm/comm cable wires from connected Pedestals, take the existing wires and connect them in parallel with the DRA wires.

Important: The AMS-9080 Controller does not provide power for the digital remote alarms. You need a nearby power outlet to support the required AC adapter.
- **RS-485 network connector, P24:** This connector supports RS-485 communication for remote diagnostics. You also use it as the connector for UltraLink, BIM1000, and BIX1000 devices.
- **Wired Tx sync connector, P8:** Use the wired Tx sync connector to connect an AMS-9080 Controller to an AMS-9080, AMS-9060, AMS-9050, or AMS-9040 Controller, so that they synchronize and avoid cross interference.
- **RS-232 service connection, J2:** The RS-232 connector receives the cable to connect to the local laptop computer that you are using to set up and diagnose the detection system.



Configuring the system

To change the controller's parameters, complete the following steps:

1. On a laptop computer, launch the CE ADS4 Platform Configurator.

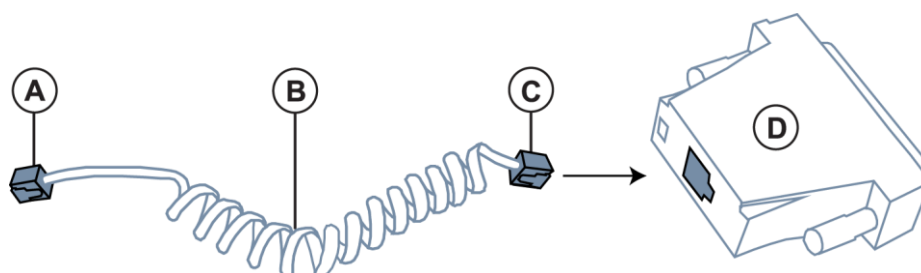
Note: For information on how to use configurator settings, refer to the *CE ADS4 Platform Configurator Help Guide*.



IMPORTANT: Ensure that you turn off the power to the controller. Never restart or boot up a computer that connects to an active controller, as it can disable the mouse function on the computer.

2. Connect the DB-9 to RJ-11/12 connector to the DB-9 serial port on a laptop computer. Use only Pin 2, Pin 3, and Pin 5.
3. Connect the RJ-11/12 connector of the service cable to the DB-9 connector.
4. Connect the RJ-10/22 connector of the service cable to the RS-232 port, J2 on the controller.
5. Supply power to the controller.
6. On the CE ADS4 Platform Configurator's **Setup** page, complete the following steps:
 - a. Ensure that the antenna selections match the antennas that are physically installed. If they do not match, check each antenna's connection to the controller.
 - b. Set up the required parameters for lamps, audio, relays, and remote alarms.
7. On the **Tx Configuration** page, complete the following steps:
 - a. Set the Tx current for each antenna.
 - b. Enable or disable transmitters, if necessary.
8. Verify the antenna performance by passing an active security tag by each antenna.
9. Check that the antenna alarm-lamp lights when you pass a tag or label through the checkout aisle. If the system is covering adjacent aisles, check that the lamp lights only in the aisle that the tag or label passes through.
10. If the pick rate is acceptable, installation is complete.
11. Reattach the top cover to the controller.
12. If you are installing this controller in Japan, ensure that the Japanese regulatory label, 0352-0398-07, is attached to a flat surface on the controller.

Figure 8. Connecting the service cable with a male RJ-10/22 phone connector and a male RJ-11/12 connector to a DB-9 to RJ-11/12 connector



A	RJ-10/22 connector	B	Service cable
C	RJ-11/12 connector	D	DB-9 to RJ-11/12 connector



Troubleshooting

System status alert codes

The system status LED on the controller displays system status alert codes. When an alert code occurs, the color and pattern of the LED changes. A red LED indicates serious alerts, and a yellow LED indicates less serious alerts. Alert codes repeat until the condition resolves or a timer resets the system.

When monitoring system status alerts, take note of the following guidelines:

- The number of red flashes identifies a digit in a two-digit alert code, for example, four flashes indicates the number four.
- A long LED interval indicates the start of an alert code. Then the first digit of a two-digit error code occurs, followed by a short delay, followed by the second digit.
- Most alert codes automatically resolve. For the significance of the alert codes, see **Table 7**.
- You can only access some codes using the service configurator, as they do not display on the system status LED.
- You cannot access alert codes when the controller is reset. Code storage has a time stamp in days, hours, minutes, seconds, milliseconds, or check marks of when the system alert occurs.

Table 7. Alert codes

Alert code	Alert code name	Action
11	Illegal instruction	May need software update
12	Unimplemented interrupt	May need software update
13	NVM write failed	Fatal error; replace the pedestal
14	Invalid device	May need software update
15	Sequence table error	May need software update
16	Out of memory	Replace the pedestal
17	Undecided: No split	Not applicable
18	Watchdog: Task reset	Recoverable. Reset the NVM to its default setting. If the problem persists, reinstall the application software. If the problem still persists, replace the pedestal.
21	Antenna A software current fault	Recoverable
22	Antenna B software current fault	Recoverable
25	Hardware current fault	Recoverable
26	Antenna A current sense fault	Recoverable
27	Antenna B current sense fault	Recoverable
39	Sequence table mismatch	Recoverable
41	Missing zero crossing	Recoverable. Check the AC line quality. If the AC line quality is sufficient, replace the pedestal.
42	Wired Sync: missing signal	Recoverable. This occurs when you select Wired Sync as the Sync source on the configurator but no signal is received. Check the connection on the wired sync connector P8 on the receiver board, and the signal source.
43	Temperature fault	Recoverable
44	Software temperature fault	Recoverable
45	PWM fault	Replace the pedestal
49	Real-time error	Recoverable
51	Auto setup owner timeout	Recoverable
52	Auto setup release without lock	Recoverable
53	Auto setup buffer overrun	Recoverable
54	Auto setup Mailbox Full	Recoverable
56	Notch Select Timeout	Recoverable
57	Window Select Timeout	Recoverable
58	Auto setup illegal owner	Recoverable



Alert code	Alert code name	Action
61	Detector overrun	Recoverable
62	Alarm mailbox full	Recoverable
63	Host communication mailbox full	Recoverable. Reload the application software. If the error does not eliminate, replace the pedestal.
64	Sequencer mailbox full	Recoverable
65	LDM power save active	Not an error. The LDM sent the system into power save mode.
66	LDM power save inactive	Not an error. The LDM sent the system to exit power save mode.

Local diagnostics

Use the CE ADS4 Platform Configurator to troubleshoot and change the AMS-9080 Controller's parameters. You require the following hardware:

- A laptop computer.
- A service cable, with a male RJ-10/22 phone connector on one end and a male RJ-11/12 connector on the other.
- A DB-9 to RJ-11/12 connector.

To connect the cables, complete the following steps:

1. Connect the DB-9 to RJ-11/12 connector to the DB-9 serial port on a laptop computer. Use only Pin 2, Pin 3, and Pin 5.
2. Connect the RJ-11/12 connector on the service cable to the DB-9 connector.
3. Connect the RJ-10/22 connector on the service cable to the RS-232 port, J2 on the controller.

Remote diagnostics

If you install an AMS-9080 Controller and connect it to an Ethernet network, you can configure and service the controller from a remote location.

Servicing the AMS-9080 Controller

Replacing the fuse



WARNING: Risk of electric shock.

Ensure that the unit is powered off completely before checking, touching, or changing a fuse.

The printed circuit board in the controller has two fuses, F1 and F2. If either of the fuses blow, replace them with a 2.5 A, 250 V, 5X20, slow-blow, high-breaking fuse.

Note: The part number for this fuse is 5111-0028-08.

Boot Loader mode

If you are unable to establish communication with the controller board, or if an update of the firmware fails, you can place the board in Boot Loader mode.

Boot Loader mode overrides the normal boot sequence to prevent the controller board from using the application firmware. Instead, the controller board stops during the boot process, and waits for new firmware to download.

Important: Use the boot loader procedure only if you cannot successfully download firmware to the controller board.

To enable Boot Loader mode, complete the following steps:



WARNING: Risk of electric shock.

High-voltage AC is present on the capacitor board whenever the controller is powered on.

Ensure that the controller is powered off before installing the jumper on the capacitor board.

1. Turn off the power to the pedestal.
2. On the controller board, jumper Pin 1 and Pin 2 on the Connector P18. For the location of Connector P18, see **AMS-9080 Controller board**.
3. Connect a laptop to the system and launch the CE ADS4 Platform Configurator.
4. Apply power to the system. The following message appears: Boot utility is running. A Flash Download is needed. Please select a file to download.
5. Click **OK**.
6. On the **Setup** page, click **Flash Download**.
7. Click **Browse...**, and select the flash application firmware version 1.1011 or higher for the controller.



CAUTION: Do not interrupt the flash process.

8. Click the **Start Flash Download** icon.
9. After the download is complete, remove the jumper on the Connector P18, and click the **Reset Pack** icon to reboot the system.



Specifications

Electrical

Power Supply

Primary input.....	100 to 120 VAC or 220 to 240 VAC @ 50 to 60 Hz
Primary power fuse	2.5 A, 250 V, slow-blow, high-breaking
Current draw (120 V).....	<0.9 Arms
Current draw (240 V).....	<0.45 Arms
Input power (120 V).....	<70 W
Input power (240 V).....	<70 W

Transmitter

Operating frequency.....	58 kHz (±200 Hz)
.....	(sync pulse) 56 kHz
Transmit burst duration	1.6 ms
Transmit current maximum (AMS-1156 pedestals)	16 A peak
Burst Repetition Rate:	
Based on 50 Hz ac	75 Hz or 37.5 Hz
Based on 60 Hz ac	90 Hz or 45 Hz

Receiver

Center frequency.....	58 kHz
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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 3000 m or 9800 ft	

Mechanical

Height.....	96.9 mm (3.81 in.)
Width.....	207.0 mm (8.15 in.)
Length	532.5 mm (20.96 in.)
Weight.....	2.39 kg (5.27 lb)



Declarations

Regulatory Model: LFAMS1803

ID list

Product name	Product code	Model
AMS-9080 Controller	ZE9080	AMS-9080
AMS-1156 Pedestal	ZA1156-12M-1 and ZA1156-12M-2	AMS-1156
Digital Remote Alarm	ZP1060-W ZP1060-G	AMC-1060
Ranger Antennas	ZKRANGER-DG and ZKRANGER-3	UM UPFAF
Satellite Antenna	ZKRXMULLMT	UM POST-M
Amorphous Core Antenna	ZSLOOP-AMRX-1	AMS-3004 RK

Regulatory information

FCC ID: BVCAMSUSUPC

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-AMSUSUPC

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.

A separation distance of 2.0cm or more must be maintained between the antenna of this device and persons during device operation.

EMC 47 CFR, Part 15
..... EN 300 330-2
..... EN 301 489-3
..... EN 301 489-1
..... EN 55032
..... EN 55024
..... ICES-003
..... RSS-210

Safety UL/EN 60950-1 (Second edition)
..... EN 62368-1 (Second edition)
..... CSA C22.2.60950-1



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**.



Other declarations

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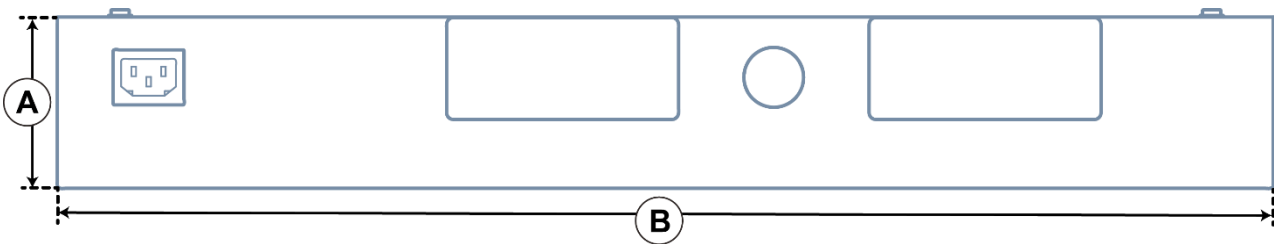
AMS-9080 Controller dimensions

Figure 9. AMS-9080 Controller top view



A	207.0 mm or 8.15 in.
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Figure 10. AMS-9080 Controller side view



A	96.9 mm or 3.81 in.	B	532.5 mm or 20.96 in.
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AMS-9080 Controller board pinouts

Figure 11. AMS-9080 Controller board pinouts

A	Top coil	P3	Pins	Signal	
			1	Bottom coil return	
			2	Shield	
			3	Top coil	
B	Bottom coil	P1	Pins	Signal	
			1	Top coil return	
			2	Shield	
			3	Top coil	
C	IR Input	P10	Pins	Signal	
			1	+12 V	
			2	IR RX1	
			3	IR RX2	
			4	IR RX3	
			5	IR RX4	
			6	Digital ground	
			7	Chassis ground	
D	Alarm board	P5	Pins	Signal	
			1	Power LED-	
			2	Alarm CLK-	
			3	Audio	
			4	+12 V	
			5	+5 V	
			6	Ground	
			7	Tx Inhibit	
			8	Ground	
E	Aux Rec 2	P7	Pins	Signal	
			5	Ground	
			4	Antenna D2 return	
			3	Antenna D2	
			2	Antenna D1 return	
			1	Antenna D1	
F	Aux Rec 1	P6	Pins	Signal	
			5	Ground	
			4	Antenna C2 return	
			3	Antenna C2	
			2	Antenna C1 return	
			1	Antenna C1	
G	Peripheral Network	TB2	Pins	Signal	Color
			1	RS-485 low*	Black
			2	RS-485 high*	Red
			3	Ground	Green/silver
			4	RS-485 low*	Black

			5	RS-485 high*	Red
			6	Ground	Green/silver
H	Service	J2	Pins	Signal	
			1	RS-232 RX	
			2	RS-232 TX	
			3	Ground	
			4	Not used	
I	Tx Inhibit connector**	TB1	Pins	Signal	
			1	Inhibit	
			2	Ground	
J	Flash Override**	P18	Pins	Signal	
			1		
			2		
K	RS-485 Network*	P24	Pins	Signal	
			8	Ground	
			7	Ground	
			6	Sync low (B)	
			5	Not used	
			4	Not used	
			3	Sync high (A)	
			2	RS-485 low*	
			1	RS-485 high*	
L	Secondary	P4	Pins	Signal	Color
			5	Bottom coil return	Black
			4	Bottom coil	Red
			3	Shield	Silver
			2	Top coil return	Green
			1	Top coil	White
M	Wired sync	P8	Pins	Signal	
			5	Ground	
			4	Wired sync arm low	
			3	Wired sync arm high	
			2	Tx Burst Low*	
			1	Tx Burst High*	
N	Relays	J1	Pins	Signal	
			1	Ground	
			2	Not used	
			3	NO 2	
			4	ARM 2 (COM 2)	
			5	NC 2	
			6	NO 1	
			7	ARM 1 (COM 1)	
			8	NC 1	
O	AC	P2	Pin	Signal	
			1	Primary/L1	
			2	Neutral/L2	

* The wire color code for RS-485 LO and HI signals varies from option to option. Connect RS-485 options by connecting the RS 485 LO wire to the RS 485 LO pin and the RS 485 HI wire to the RS 485 HI pin.

** To inhibit the Transmitter, short the two pins of TB1.

