



A CSW Industrials Company

Model 4000 | Operations and Maintenance Manual

Perimeter Fire Curtain



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1.0 – Introduction

This is the official operation, maintenance and testing manual for the Model 4000 Perimeter Fire Curtain from Smoke Guard, Inc.

The Model 4000 Perimeter Fire Curtain (M4000) is a motorized smoke and fire protection system housed in the ceiling of a building. The Smoke Guard Model 4000 system is a code compliant, 2 hour (120 minute), fire-protective-rated curtain and complies with the UL 10D standard.

The system uses one or more motors to lower a specialized curtain around a strategic location. When not in use the M4000 is retracted into a housing unit which maintains the aesthetic of the facility it is installed in.

The smoke detector or other initiating device is part of the building smoke and fire alarm system and not a component of the Smoke Guard system. However—it is an essential component—vital to the proper operation of the M4000 system and all other connected equipment. The smoke detecting system must therefore be inspected, tested, and properly maintained in accordance with the equipment manufacturer’s guidelines as well as the requirements of the authorities having jurisdiction. Emergency power to the smoke detector should be maintained in accordance with NFPA 80.

The M4000 Features a fire-protective-rated, pleated curtain resting on a tray within a steel housing. Under alarm conditions, flexible metal tape holding the tray in the housing deploys the curtain by lowering the tray to the floor.

The M4000 Main Controller interfaces with a smoke detector or fire alarm circuit already installed in a building to form a fully integrated fire control safety system. The Main Controller also controls the DC motor (or motors) which deploys and retracts the curtain. The Main Controller houses batteries for backup power to ensure the curtain is able to deploy in the event of AC power loss and a fire alarm is active. The batteries are also able to prevent accidental deployments in the event of AC power loss. However, the batteries are for emergencies only.

As with other fire protection systems, periodic inspections and maintenance are required for the M4000 to ensure proper functionality. NFPA 80 requires no less than annual inspection, the manufacturer recommends the building owner inspect and test each M4000 at least once every six months.

Failure to properly test and maintain your M4000 could result in death or serious injury in the event of a fire.

Reference NFPA 80, Standard for Fire Doors and Other Opening Protectives, 2016 Edition, Chapter 21, for operational safety checks.

2.0 – The Responsibilities of the Building Owner

The Smoke Guard Model 4000 Perimeter Fire Curtain is considered “connected equipment” as defined in NFPA 80. As such, the owner or designated representative shall be responsible for inspecting, functional testing, keeping test records and performing system maintenance.

Delegation of responsibility shall be in writing with a copy made available to the authority having jurisdiction under the provisions of the building code and local ordinances.

Record Keeping

A permanent record of all inspections, testing and maintenance should be kept on when tests are conducted, modifications made to the system, the name of the tester and dates. More information on record keeping is available in Section 4.

Why keep records?

According to NFPA 80 (2016 edition), the building owner is responsible for keeping the maintenance and testing record for the life safety devices in their building. Records should be kept available for examination by an authority having jurisdiction upon request.

Testing Frequency

Visual inspection, functional testing and maintenance described in this manual must be performed and recorded at intervals in accordance with NFPA 80. The manufacturer recommends the building owner conduct tests at least every six months. Testing must be performed more frequently where required by the authority having jurisdiction.

Alterations and Additions

Alterations and additions include any changes to the M4000 unit or the surrounding area around the installation.

Visual inspection shall ensure that there are no changes that would affect equipment performance. These changes include but are not limited to:

- Building modifications.
- Occupancy hazards.
- Environmental effects.

Smoke Guard recognized personnel must perform any alterations or additions to your system.

System Acceptance Testing

Acceptance tests shall be performed after system components are added or removed following any modifications, repairs or adjustments to the system hardware or wiring.

3.0 – Full System Overview

The Model 4000 Perimeter Fire Curtain (M4000) is a motorized smoke and fire protection system housed in the ceiling of a building. The system uses one or more motors to lower a specialized curtain around a strategic location. When not in use the M4000 is retracted into a housing unit which maintains the aesthetic of the facility it is installed in.

The smoke detector or other initiating device is part of the building smoke and fire alarm system and not a component of the Smoke Guard system. However—it is an essential component—vital to the proper operation of the M4000 system and all other connected equipment. The smoke detecting system must therefore be inspected, tested, and properly maintained in accordance with the equipment manufacturer’s guidelines as well as the requirements of the authorities having jurisdiction. Emergency power to the smoke detector should be maintained in accordance with NFPA 80.

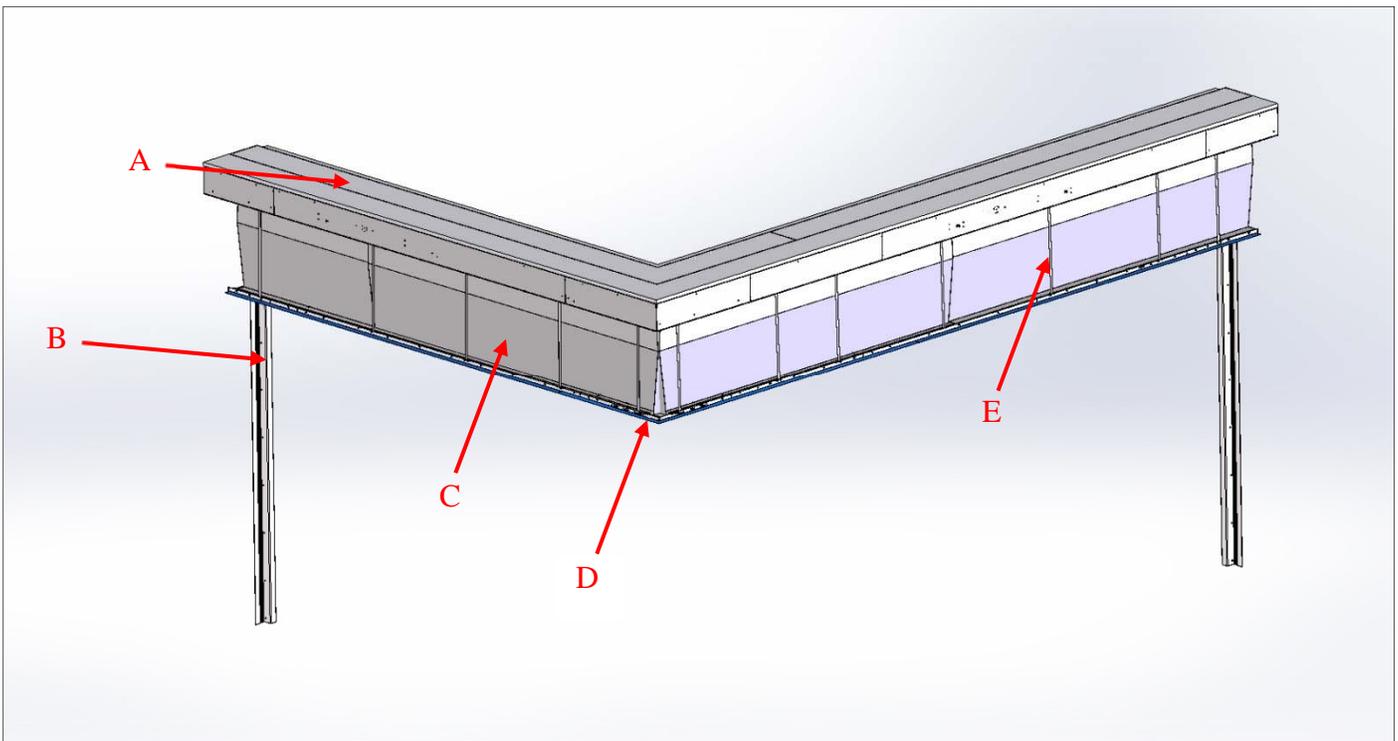


Figure 1 – A complete M4000 system with optional Side Guides.

3.1 – Major Components

A – M4000 Housing: The housing contains all of the hardware for the M4000. The housing contains electrical junction boxes, primary and secondary motors, satellite controllers, drive components (drive shafts and drive chains), electrical sensors and the Curtain Tray which holds the fire-resistance curtain. The Curtain itself is also mounted to the housing.

B – Optional Side Guides: Some units may include the optional Side Guides. The Side Guides help deploy the Curtain by guiding the Curtain down railing. The curtain is connected to the rails by guide pins.

C – Curtain: The curtain is made from specialized fabric and designed to withstand fire and smoke. The curtain is installed to mounts in the housing as well as the Curtain Tray. Optional features include Super Sensors which can detect obstructions below a deploying curtain. The Curtain is sewn together with specialized fire-resistant thread.

D – Curtain Tray: The Curtain Tray lowers to the floor with the Curtain when in use. When not in use the Curtain Tray has aesthetically pleasing exterior paneling.

E – Metal Tape: The Metal Tape is used to lower the Curtain from the Housing. During normal operation, the Metal Tape, along with the curtain and other components are hidden within the M4000's housing.

Single and multi-motor systems

Some M4000 units require only one motor to function. However, the longer the unit, or if the unit bends around a corner, more motors are required. If the M4000 requires additional motors it will also have additional controllers and electrical hardware installed in its housing.

Optional components

Some M4000 units may have optional components in addition to the standard hardware. These optional components include:

- Super sensors.
- Optional keyed test switches.
- Side guides.
- Wall switches.

3.2 – Main Controller

The Main Controller serves as housing for batteries, control switches, status LEDs and system control switches which can be used to put the unit into different operating modes. In the event the unit has additional Satellite Controllers and other hardware, the Main Controller serves as the hub for the entire system.

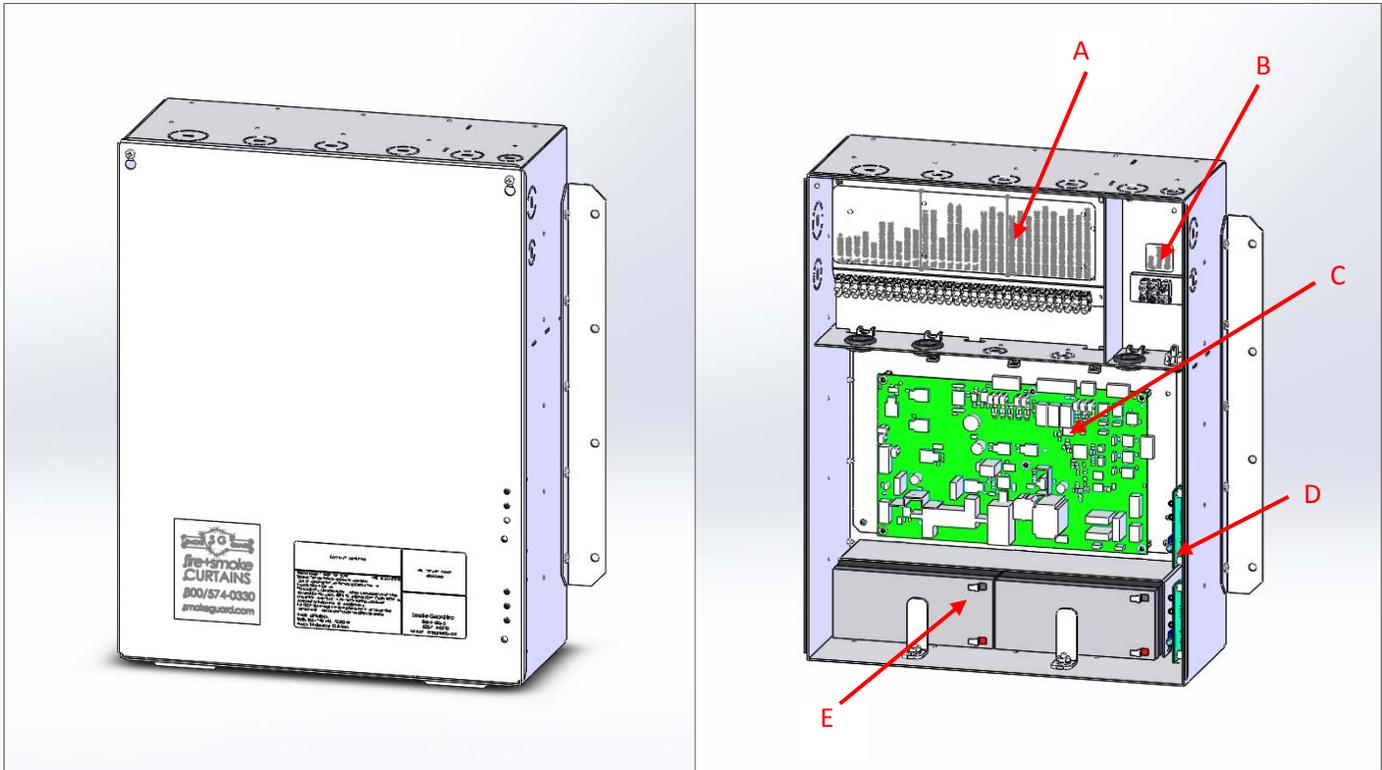


Figure 2 – (Left) The M4000 Main Controller seen with outer cover. (Right) The interior of the Main Controller.

- A – Low Voltage Power Block:** The low voltage power block is the terminal location for most of the systems on the M4000 including optional features.
- B – High Voltage Power Block:** The high voltage power block is the main input point for the M4000 power system.
- C – PCA:** The Printed Circuit Assembly (PCA) controls the normal operation of the M4000. The PCA is also the location of the configuration switches which are used to change the system from Armed to Jog Mode. The control switches used to jog the system are also located by the PCA.
- D – Status LEDs and Test Switch:** The status LEDs indicate normal operation and errors on the M4000. These lights can be used for troubleshooting the system and verifying certain conditions. The system test microswitch is also found on the LED board.
- E – Batteries:** The batteries provide emergency power to the M4000, enabling it to deploy in the event of primary power loss.

3.3 – How the M4000 Works

Armed:

During normal operation the M4000 is retracted and concealed in the ceiling as seen in Figure 3. The unit is connected to an auxiliary relay in the smoke detector located on or near the ceiling of the installation site.

Deployment:

In the event of a smoke alarm, the M4000 deploys. The Curtain is lowered from the ceiling until the Curtain Tray makes contact with the floor as seen in Figure 3.

If the unit is equipped with an optional obstruction detecting Super Sensor, it will detect obstructions during deployment. If the Super Sensor detects an obstruction, it will retract approximately 18 inches momentarily before attempting to re-deploy. The M4000 will attempt deployment 5 times before entering a fault state.

During deployment, the Curtain can be temporarily retracted by pressing an optional door activation switch. When the alarm clears, the door will retract automatically.

If a considerable differential pressure has developed across the curtain, the motor may overcurrent due to the additional load. If this occurs, the Main Controller will pause and attempt to retract 4 times allowing time for the pressure to dissipate.

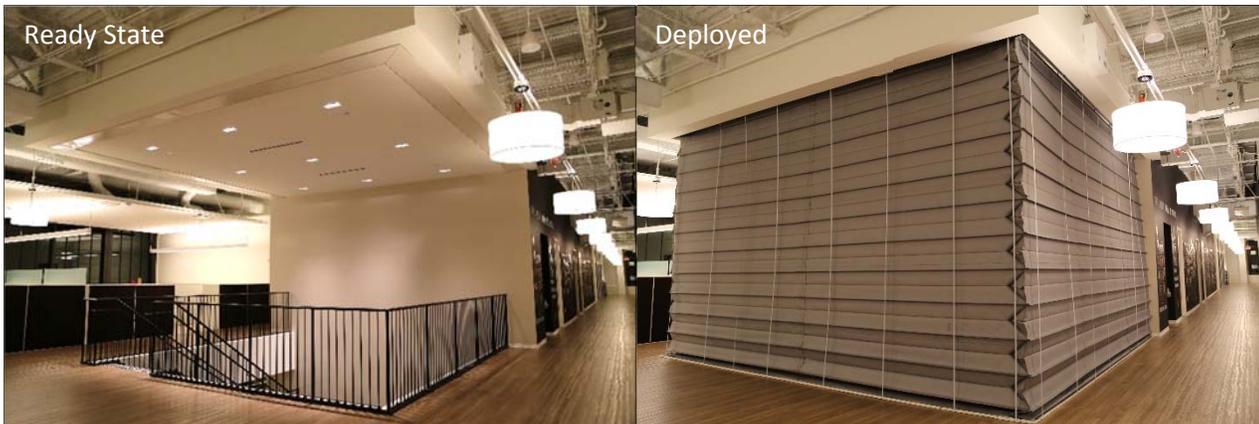


Figure 3 – (Left) A fully retracted curtain recessed in the ceiling. (Right) A fully deployed curtain.

Input / Output Signal Monitoring:

The Main Controller monitors the integrity of the various subsystems. If the Main Controller detects any anomalies during operation, an alarm will sound, and three LEDs on the outside of the Main Controller will display different error codes. The LEDs can indicate a range of problems, as well as normal operating status for the M4000.

The various error codes and possible solutions can be found in the troubleshooting section on page 14.

4.0 – Record Keeping

A permanent record of all inspections, testing and maintenance shall be retained by the building owner, including all the information listed:

- Test date.
- Name of person performing inspection, maintenance and/or tests.
- Functional test of smoke detectors signaling the system per NFPA 80.
- Location of the M4000 unit.
- Any modifications or alterations made to the M4000 unit.
- Name and signature of tester.

Why keep records?

According to NFPA 80 (2016 edition), the building owner is responsible for keeping the maintenance and testing record for the life safety devices in their building. Records should be kept available for examination by an authority having jurisdiction upon request.

Failure to keep records is a violation of NFPA regulations and can result in litigation from the authority having jurisdiction.

Service Record chart

An official record keeping document will aid in staying up-to-date with systems maintenance and tracking Mandatory Semi-annual Cycle Testing. A blank service record is available in the appendix.

The following is an example of a properly completed service record sheet:

Date	Location	Smoke Detector	Curtain	Modifications / Tasks	Inspector's Name	Inspector's Signature
7/11/2016	Main lobby	14	M4000	6-Month Inspection	John Doe	John Doe

5.0 – What to do if the M4000 deploys

Normal Operation / Armed

The M4000 should only deploy if the smoke detector or other initiating device signals an alarm.

If the unit is equipped with optional door activation switches, the curtain can be temporarily retracted to 7 feet.

- If the smoke detector or other initiating device is still signaling an alarm, the curtain will re-deploy automatically.

After the smoke detector or other initiating device clears, the curtain will retract automatically.

- If the unit loses main power, the curtain will remain deployed until power is restored.

NOTE: If the unit is running on backup batteries, the curtain will not retract when a door activation switch is pushed.

If a unit deploys during a fire, notify Smoke Guard at 1-800-574-0330 for a free service visit.

Possible Errors

If the unit fully deploys on its own (fall-by-gravity), this may indicate that the system has completely lost power and the backup batteries have fallen below a critical threshold, or the system has encountered a fault.

See troubleshooting on page 13, for more information on accidental deployments.

6.0 – Testing

Before you test

All testing of the M4000 from this manual assumes installation of the unit is complete and all testing related to installation has been completed.

Before you conduct any testing:

1. Review the information regarding the system included in this manual.
2. Notify anyone who might receive an alarm.
3. Notify building occupants of the test.

6.1– Functional Test & Visual Inspection

A functional test involves triggering the local smoke detector and observing the deployment of the M4000. The inspection involves verifying the proper deployment, retraction and—if necessary—the re-calibration of the M4000.

Locate the service record on page 25 to log the test.

You are responsible for reporting any required adjustments to Smoke Guard or your installing distributor.

Step 1 – Locate the status LEDs on the outside of the Main Controller check for a solid green light.

- A solid green light indicates the system is functioning normally.
- If all lights are flashing in sequence the system is running a normal system check.

Step 2 – Activate the smoke detector or other initiating device connected to the unit.

Step 3 – Observe the Curtain deployment to verify smooth motion.

Step 4 – While deployed, verify a single continuous green LED on the Main Controller to indicate successful deployment.

Step 5 – Inspect the Curtain for damage such as tearing, punctures or unbolted sections of Curtain dangling from the housing.

- If you discover damage, immediately contact Smoke Guard or a local distributor for repair procedures.

If there is an optional door activation switch

Step 6 – Press the door activation switch.

- The Curtain should retract to the egress height of 7 feet and pause momentarily before re-deploying.

Step 7 – Locate the status LEDs on the outside of the Main Controller check for a solid green light.

- A solid green light indicates the system is functioning normally.
- If all lights are flashing in sequence the system is running a normal system check.

Step 8 – Clear the smoke detector or other initiating device. The Curtain should retract automatically.

Step 9 – Observe the Curtain retraction to ensure smooth motion.

Step 10 – Locate the status LEDs on the outside of the Main Controller check for a solid green light.

- A solid green light indicates the system is functioning normally.
- If all lights are flashing in sequence the system is running a normal system check.

7.0 – Troubleshooting

7.1– Spotting an error

If one of the M4000 systems encounters a problem, the system will enter into an Error State which attempts to warn operators of a potential problem.

This may occur if one of the system-monitored input/output signals sends an abnormal signal (such as overcurrent, obstructions or circuit failure).

- When the system enters into an Error State the Main Controller will emit a steady alarm sound. An LED display will flash on the Main Controller. A green, yellow and red LED will flash patterns to indicate different conditions on the M4000.

The table on the following page explains the different indications and the error they correspond to. Once you identify the problem, use the Solutions Guide to troubleshoot the problem.

7.2 – Clearing an error

Silencing the alarm:

Pressing the Test Deploy Switch once will silence the Main Controller alarm and the system will remain in an error state.

To clear a system error first identify the problem using the table on page 14. Once you have identified the problem, you may attempt to fix it using the steps provided in the Solutions Guide.

Clearing the error:

Once you have followed all recommended steps in the Solutions Guide, press the Test Deploy Switch again to attempt to clear the error.

- If you are successful, the error will clear and the system will switch into Ready State.
- If the error persists the Main Controller will continue to indicate an error and the alarm will remain audible.

At this point, you can silence the alarm and continue to troubleshoot the problem. However, if the error remains unresolved, the alarm will sound every 4 hours to remind you that it requires maintenance.

The Solutions Guide has steps to clear the possible errors on the M4000 system as well as ways to get in touch with technical support from Smoke Guard. Although some errors can be resolved by the building owner, some errors may require assistance from a certified technician.

State	Description	Green	Yellow (error code)	Red (Trouble)	Notes
Normal 1	System OK	ON	OFF	OFF	System fully functional.
Normal 2	Power on/Self-test active.	Blinking	Blinking	Blinking	Approximately 12 seconds to complete.
Normal 3	System in calibration.	1-blink every 5s.	1-blink every 5s.	OFF	System in calibration.
Normal 4	LAS active.	ON	1-blink every 5s.	OFF	Normal operation with full deploy
Normal 5	FSCS close or open active.	ON	2-blinks every 5s.	OFF	Normal operation with deploy in accordance with FSCS request.
Normal 6	No AC, battery active.	1-blink every 5s.	OFF	1-blink every 5s.	Low voltage power supply or main power off. Running on battery.
Error 1	Battery health low.	OFF	1-blink every 5s.	ON	Battery or Main Controller problem.
Error 2	Obstruction or out of calibration.	OFF	2-blinks every 5s.	ON	If obstructed, may indicate a fault deployment.
Error 3	LAS open circuit.	OFF	3-blinks every 5s.	ON	No EOL detected.
Error 4	Moving up or down timeout.	OFF	4-blinks every 5s.	ON	Motor, controller, or Up Limit Switch problem.
Error 5	Up Limit Switch Fault.	OFF	5-blinks every 5s.	ON	Up Limit Switch not functioning.
Error 6	Motor overcurrent.	OFF	6-blinks every 5s.	ON	Motor stopped due to overcurrent.
Error 7	Super Sensor Fault.	OFF	7-blinks every 5s.	ON	Super Sensor low battery.
Error 8	Satellite Controller Fault.	OFF	8-blinks every 5s.	ON	Satellite Controller is in fault state.
Error 8A	Satellite Controller overcurrent.	OFF	8-blinks every 5s.	1-blink every 5s.	Satellite Controller(s) stopped due to overcurrent.
Error 8B	Satellite Controller Connection.	OFF	8-blinks every 5s.	2-blinks every 5s.	Main Controller has lost connection to Satellite Controller(s).
Error 8C	Satellite Controller AC off.	OFF	8-blinks every 5s.	3-blinks every 5s.	Satellite Controller(s) have lost AC power and Main Controller has not.
Error 9	Brake Fault.	OFF	9-blinks every 5s.	ON	Brake failure.

Use the Solutions Guide on the following page to try and solve issues with your M4000.

7.3 – Notes on LED indications

Green – The green LED is normally on solid. It changes to blink once every 5 seconds when running off battery power.

Yellow – The yellow LED blinks in error conditions when the red LED is on solid. The yellow LED will blink for .5 seconds and then remain off for a 5 second delay.

Red – The red LED is on solid during error conditions unless the M4000 is equipped with main and satellite controller systems. In the case of Error 8, the red LED will also flash a fault code indicating the satellite controller error.

7.4 – Solutions Guide

Normal 1 – 6: System functioning normally

If the LED lights indicate Normal 1 through Normal 6 then the system is operating normally and is not experiencing an error.

Error 1: Battery health is low

This error indicates that the system's emergency batteries are low.

Step 1 – Verify the batteries (located in the Main Controller) are connected to their terminal points.

Step 2 – Test the batteries voltage. If the combined voltage is less than 24.5 VDC, the battery is faulty. In this case, you must replace the batteries in the Main Controller.

Step 3 – If you continue to experience problems, contact Smoke Guard using the contact information in Section 8.

Error 2: Obstruction or out of calibration

This error will appear during power-up if the system has not been calibrated. It may also indicate an obstruction.

Step 1 – Check the area around the unit for obstacles such as tables, boxes or other objects in the area where the curtain deploys

- If you discover any obstacles, clear them from the area and perform a system test. If this does not clear the error, proceed to the next step.

Step 2 – Using the switch in the upper right corner of the Main Controller, power off the unit and disconnect the batteries. See Figure 5 for switch locations.

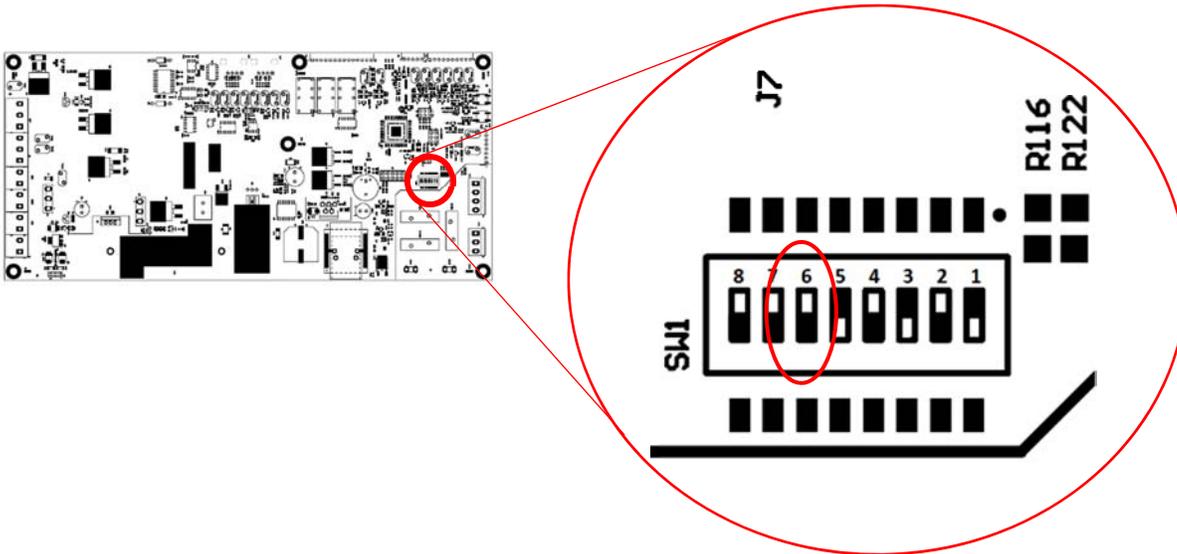


Figure 4 – This illustration highlights the location of the #6 DIP switch used to change system settings.

Step 3 – Locate the circuit board inside the Main Controller. Switch the system into Jog Mode by switching the #6 DIP switch into the DOWN position. See Figure 5 for more switch locations.

Step 4 – Wait 3 seconds before turning the power back on using the switch in the upper right corner of the Main Controller.

NOTE: You do not need to plug in the batteries at this time.

Step 5 – Use the buttons in the bottom right corner of the Main Controller to jog the Curtain Tray to the floor.

WARNING: Do not allow excessive slack on the Metal Tape when the Curtain Tray reaches the floor.

Step 6 – Initiate a calibration by pressing the microswitch on the Main Controller.

- The Curtain should rise slowly and seat in the Housing. A single beep should sound at and a green LED readout should be visible on the Main Controller.

Step 7 – Using the switch in the upper right corner of the Main Controller, power off the unit.

Step 8 – Switch the #6 DIP switch on the circuit board into the UP position to return to Armed Mode.

Step 9 – Turn the power back on. Reconnect the batteries.

Step 10 – Test the system while Armed to ensure proper function.

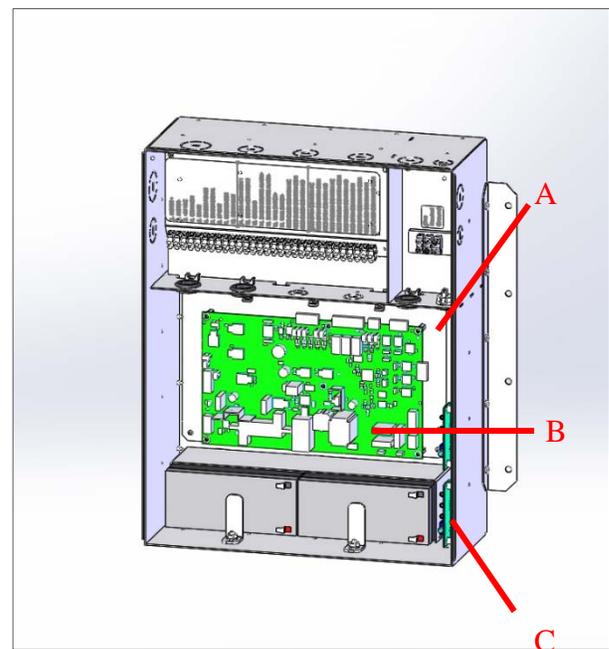


Figure 5 – (A) Power switch location. (B) DIP switch location. (C) Status LED and microswitch location.

Step 11 – If you continue to experience problems, contact Smoke Guard using the contact information in Section 8.

Error 3: Local alarm system open circuit

The local alarm circuit is the circuit that connects the M4000 to the smoke detector or other initiating device. This circuit requires an end-of-line (EOL) diode provided by Smoke Guard to function properly. The EOL diode is installed at the Normally Open contacts of the initiating device. This error indicates a wiring fault in the system. If you experience this error, you may need a Smoke Guard recognized technician to repair it.

Contact Smoke Guard using the contact information in Section 8 to resolve the local alarm system error.

Error 4: Moving up or down timeout

This error indicates that movement was not detected when the M4000 was deploying or retracting.

Step 1 – Ensure the curtain is not blocked or jammed.

- Check for obstacles such as tables, boxes or other objects in the area where the curtain deploys.
- Check for a jam by inspecting the drive system hardware located in the housing.
- Check for snags on the curtain by inspecting the full length of the curtain.
- If your system has optional Side Guides, check the guide pins located at the edges of the curtain to ensure there are no jammed pins.

If you observe the curtain did in fact move but the Main Controller still indicates Error 4, you may have a faulty motor position sensor.

If no movement is observed, a motor or controller may be faulty.

Step 2 – If you have verified that there is no jam or blockage to the system and Error 4 persists, use the information in Section 8 to contact Smoke Guard.

Error 5: Up Limit Switch fault

The Up Limit Switch is a sensor inside the unit housing that enables the M4000 to retract to the correct height. Error 5 indicates the Main Controller is not detecting signals from the Up Limit Switch.

NOTE: This resolution may require two people to perform.

Step 1 – Using the switch in the upper right corner of the Main Controller, power off the unit and disconnect the batteries. See Figure 5 for switch locations.

Step 2 – Locate the circuit board inside the Main Controller. Switch the system into Jog Mode by switching the #6 DIP switch into the DOWN position. See Figure 5 for more switch locations.

Step 3 – Turn the power back on using the switch in the upper right corner of the Main Controller.

NOTE: You do not need to plug in the batteries at this time.

Step 4 – Use the buttons in the bottom right corner of the Main Controller to jog the Curtain Tray to the floor.

WARNING: Do not allow excessive slack on the Metal Tape when the Curtain Tray reaches the floor.

Step 5 – Locate the Up Limit Switch inside the unit housing. The switch will be bolted to a support bracket as seen in Figure 6.

NOTE: During installation, the tang on the Up Limit Switch may have been intentionally bent in order to properly align the system.

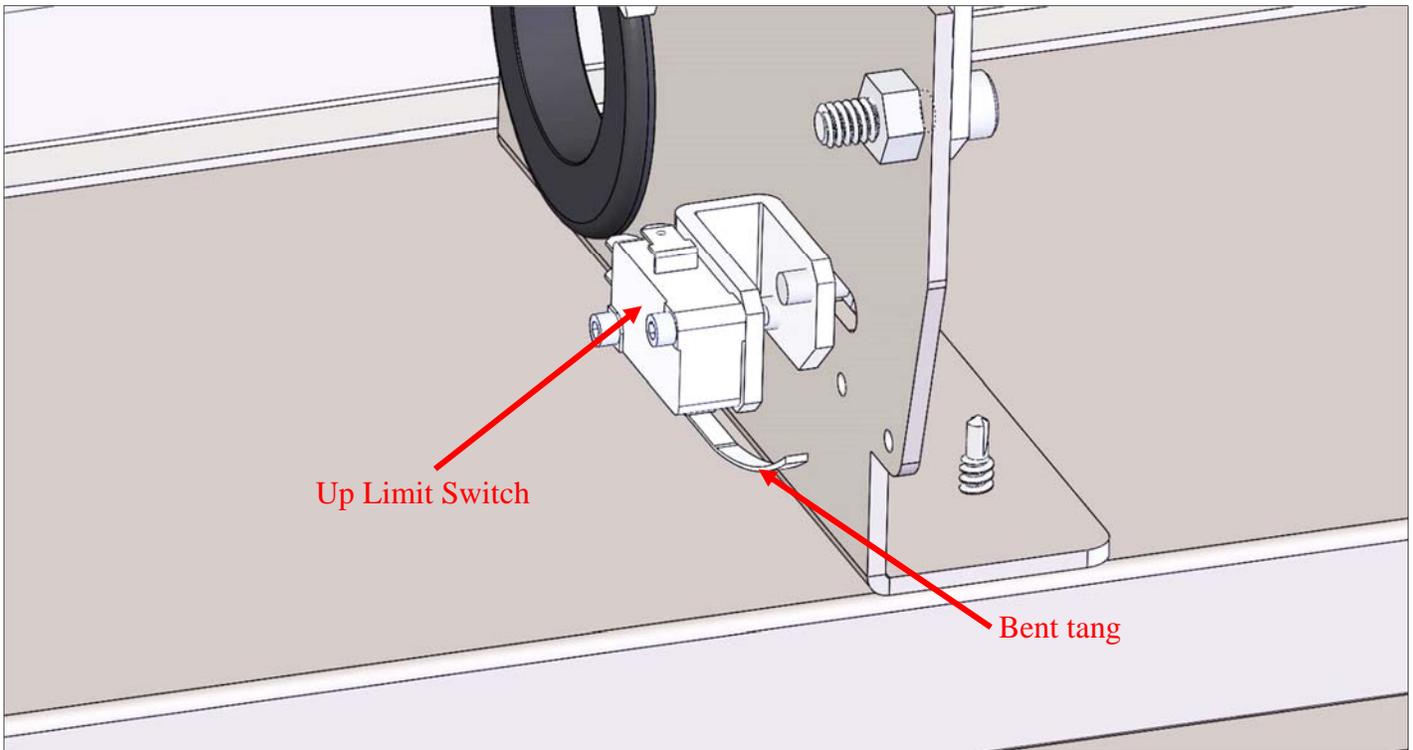


Figure 6 – An illustration of an Up Limit Switch bolted to a support bracket in the housing. Note the tang is bent as you may encounter in your installation.

Step 6 – Press the Up Limit Switch and listen for a click sound at the Main Controller.

- If you hear a click at the Main Controller, proceed to Step 8.
- If no click is heard, you may have a faulty Up Limit Switch and should proceed to Step 9.

Step 7 – If you hear a click but the Up Limit Switch is not being triggered properly by the Curtain, carefully bend the tang of the Up Limit Switch so that it is triggered when the Curtain rises.

Step 8 – Using the switch in the upper right corner of the Main Controller, power off the unit.

Step 9 – Switch the #6 DIP switch on the circuit board into the UP position to return to Armed Mode.

Step 10 – Wait 3 seconds before turning the power back on. Reconnect the batteries.

Step 11 – Test the system while Armed to ensure proper function.

Step 12 – (If unresolved) Use the information in Section 8 to contact Smoke Guard in order to resolve the error.

Error 6: Motor overcurrent

This error indicates a motor has drawn an excessive amount of current. This error may also indicate an obstruction or that the unit has a faulty motor.

Step 1 – Ensure the curtain is not blocked or jammed.

- Check for obstacles such as tables, boxes or other objects in the area where the curtain deploys.
- Check for a jam by inspecting the drive system hardware located in the housing.
- Check for snags on the curtain by inspecting the full length of the curtain.
- If your system has optional Side Guides, check the guide pins located at the edges of the curtain to ensure there are no jammed pins.

Step 2 – If you have verified that there is no jam or blockage to the system and Error 6 persists, use the information in Section 8 to contact Smoke Guard.

Error 7: Super Sensor fault

For Super Sensor Troubleshooting use the information in Section 8 to contact Smoke Guard.

Error 8: Satellite Controller fault

This error indicates a problem with one or more Satellite Controllers. Satellite Controllers are used to provide power to longer systems, or systems that bend around corners and require additional motors. An Error 8 may indicate a number of different problems with the Satellite Controller(s).

Error 8A: Satellite Controller Overcurrent – This error indicates one or more secondary motors has experienced an overcurrent and drawn in too much current. See solution for Error 6 to troubleshoot.

Error 8B: Satellite Controller Connection – This error indicates one or more of the Satellite Controllers has lost connection to the Main Controller.

Step 1 – If this happens, check the wiring from the Main Controller to the Satellite Controllers and other components. Ensure the wiring is secure between the components.

Step 2 – If the wiring is secure but the error persists, use the information in Section 8 to contact Smoke Guard.

Error 8C: Satellite Controller Power – This error indicates one or more Satellite Controllers has lost AC power but the Main Controller has not.

Step 1 – Verify if the Satellite Controller is connected to a different power circuit than the Main Controller. This may resolve the problem.

Step 2 – If the error persists, use the information in Section 8 to contact Smoke Guard.

Error 9: Brake Fault

This error indicates one of the electromechanical brakes used to hold the curtain in place has signaled an error.

If a brake fails, the curtain will fall to the floor. The Main Controller will recognize this and report a fault.

Step 1 – Attempt to clear the fault by pressing the Test Deploy Switch in the Main Controller twice. Once to silence the alarm, and once to retract the curtain.

- If the curtain cannot be retracted or will not remain in place once retracted, use the information in Section 8 to contact Smoke Guard.

8.0 – Contact Smoke Guard

Smoke Guard can be reached for customer service, troubleshooting and general questions on any of your Smoke Guard products by phone, email or standard mail. You can also contact Smoke Guard to learn more about upgrades to your Smoke Guard products as well as additional Smoke Guard products and services.

Physical address:

287 N. Maple Grove
Boise, ID 83704

Business hours are from 7:30am – 5:30pm, Monday – Friday (Mountain Time).

Phone:

Customer service: 1-800-574-0330
Customer service after hours: 1-208-850-1618

Technical support: 1-800-215-6138
Technical support after hours: 1-208-473-0844

Fax:

1-208-639-7851

Email:

info@smokeguard.com

Website:

www.smokeguard.com

Glossary

AC – Alternating Current, this refers to the primary power supply for the M4000.

AHJ – Authority Having Jurisdiction.

Armed – Armed is the operational condition the M4000 is in during normal operation. Armed is indicated on the Main Controller by a green LED.

Batteries – The M4000 has two batteries which provide emergency backup power in the event primary power is lost.

Bevel Gear – A type of gear used to connect Drive Shafts at 90° joints in the M4000.

BOM – Bill of Materials, a detailed list of parts shipped with the unit.

Brake – The M4000 uses electromagnetic brakes in the motors to stop the curtain.

Calibration – The process which captures the total travel distance of the curtain. This value is used by the Main Controller to keep track of the curtain position.

Chain Tensioner – The Drive Chain is held in place by a Chain Tensioner located between the drive shafts and motor.

COM – Common, one of two device settings which can be set on the Main Controller. Also refers to a connection tab on the Up Limit Switch.

Configuration Switches – Refers to control switches located on the PCA in the Main Controller. These are used to put the M4000 into different modes.

Curtain Tray – The Curtain Tray is the part of the M4000 which touches the floor during normal deployment. The Curtain Tray is lowered down by Metal Tape from the Drive Shafts. The Curtain is attached to the Curtain Tray.

Door Activation Switches – An optional feature on the M4000 which allows the Curtain to be temporarily raised to Egress Height after it has been deployed.

Drive Chain – The drive chain allows the motors to turn the drive shafts.

Drive Line – Refers to the drive shafts and motors of the unit working together once assembled.

Drive Shaft – Refers to the one or more shafts used throughout the M4000 to raise and lower the Curtain. Drive shafts are connected to motors located in the unit Housing which provide power to the drive shafts.

Egress Height – The height the M4000 Curtain will rise if a wall switch is activated. Default egress height on an M4000 is 7'.

EOL – End-of-Line diode, a component located at the smoke detector which maintains a circuit between the M4000 and the smoke detector.

FSCS – Firefighters’ Smoke Control Station. Some building facilities incorporate this station as an aid for firefighting. The M4000 has an optional interface for such a station.

Guide Pin – Guide Pins are an optional feature on some M4000 units which allow the Curtain to be guided down a Side Guide system.

Hat Channel – The Hat Channel is the channel located at the top of the housing. This is the location where the Curtain is attached to the Housing.

High Voltage Junction Box – Power routing box used in longer section of M4000. Houses the connections between building power and AC chain cables.

Housing – Refers to the metal components which house the M4000. The housing is typically only seen during installation or deployment of the Curtain. During normal operation the Housing is concealed in the ceiling of the building where it is installed.

Jog Mode – A controller service mode where the Curtain is manually moved up or down. It is used as an installation aid. The green LED will constantly blink in this mode. Additionally, the yellow LED will illuminate up when the Up Limit Switch is engaged.

Keyed Switch – The Keyed Switch is a switch that will cause the M4000 to deploy for testing purposes. The key is given to the building manager following installation of the unit.

LAS – Local Alarm System, refers to the building’s alarm circuit which commands the M4000 to deploy.

Layout Sheet – The Layout Sheets are a series of documents shipped with the M4000 that show how the system is to be organized prior to installation.

LCC – Large Curtain Controller. Generic term for Smoke Guard control systems.

LED – Light Emitting Diode, refers to the lights on the Main Controller which indicate the status and any errors in the unit. For more information on LED status and error codes, see Section 8.

Main Controller – The primary controller for the M4000. The Main Controller houses status LEDs, the ON/OFF switch and backup batteries.

Metal Tape – The Curtain Tray is suspended by Metal Tape.

NO – Normally Open contacts of an electrical switch. Applies to the connection tabs on the Up Limit Switch.

PCA – Printed Circuit Assembly, refers to the circuit board located inside the Main Controller.

Satellite Controller – Secondary controller under the control of the Main Controller. Satellite Controllers are used to control additional motors. The number of Satellite Controllers is dependent on the total length of the M4000.

Side Guide – Side Guides are an optional feature on some M4000 units which allow the Curtain to be guided down via guide pins and railing.

Smoke Guard – Idaho-based company which produces the M4000 and other fire protection systems. Contact information is available in the appendix.

Super Sensor – Super Sensors are an optional feature on some M4000 units which detect obstructions.

TDS – Test Deploy Switch, located on the Main Controller. Used to calibrate the system, deploy the curtain and clear system faults.

Terminate – Point at which a wire begins or ends.

U-Joint – A type of connector used to connect Drive Shafts at angles smaller or larger than 90° in the M4000.

Up Limit Switch – Electrical switch located in the housing that indicates to the Main Controller that the Curtain is fully retracted.

