

MODEL MSB50 VEHICLE SECURITY SYSTEM INSTALLATION MANUAL

Table of Contents

1.	Before You BeginPage 1
2.	Installation TipsPage 2
3.	Mounting Components
	Main Unit
4.	- Wiring Diagram
5.	Wiring Description
6.	Jumper Settings Parking Light PolarityPage 8 Siren / Horn Honk OutputPage 8 Door Lock Pulse LengthPage 8
7.	Remote Transmitters
	Using the Remote TransmittersPage 10
	Tranmitter Operating ModesPage 10
	Ungo Standard ModePage 10
	Driver Door Priority ModePage 11
	Two Car Operation
	Adding a New TransmitterPage 14
	Deleting TransmittersPage 14
8.	Programming
	System Initialization and Default ResetPage 15
	Arming Mode Selection (Active or Passive Arming)
	Programmable System Parameters
	Ignition Controlled Door Locking
9.	Shock Sensor
	Sensor Test ModePage 18
10.	Dome Light Control Relay DiagramsPage 19
11.	Door Lock DiagramsPage 20
12.	Driver Door Priority Wiring DiagramsPage 21
13.	Reference Chart Page 22
14.	wiring DiagramBack Page

Before You Begin

- 1. Be sure to read the manual thoroughly before beginning the installation to ensure a proper understanding of the MS850 and its functions.
- 2. Verify system contents:
 - Main Unit
 - □ Two 2-Button Remote Transmitters
 - Siren
 - Electonic Shock Sensor
 - Harnesses
 - 14-Pin main harness
 - 2-Pin Status LED harness
 - 2-Pin Override Switch harness
 - 3-Pin Door Lock harness
 - 4-Pin Shock Sensor harness
 - · Pre-wired starter kill relay socket with relay
- 3. Discuss the location of the status LED and the Emergency Override Switch with the vehicle's owner.
- 4. Discuss the optional features of the MS850 and the features that must be programmed during installation, with the vehicle's owner.
- 5. Check all of the vehicle's operating systems before and after the installation.

Installation Tips

- 1. Use a Volt / Ohm meter to test all wires. Do not use a test light.
- 2. Good power and ground connections are essential for proper operation. Ground the alarm as close to the alarm main unit as possible.
- 3. Route all wires from the engine compartment to the interior of the vehicle through a grommet and use electrical tape and split loom tubing for protection.
- 4. When adding optional accessories such as door locks, window modules, etc., be sure to fuse each additional accessory power lead separately from the main power source. This will insure that the security system power is retained in the event that an accessory malfunctions.
- 5. Avoid extending the system's wires, the supplied wiring harnesses provide sufficient length to connect to the required vehicle circuits. If a wire must be extended, be sure to use the appropriate gauge wire in order to avoid a drop in current. Always use wire that is at least the same gauge as the wire you are extending.
- 6. **Never** bypass the fuses included in the MS850 wiring harness. They are necessary safety items designed to protect both the system and the vehicle.
- Be sure to perform a full function test of all of the systems components to verify proper operation. Also, be sure to check all of the vehicle's operating systems before and after the installation.
- 8. For maximum security, disguise all system wires with black electrical tape and split loom tubing to prevent a thief from being able to identify the system wiring.

Mounting Components

Main Unit

The main unit should be mounted in the interior of the vehicle. *Do not* mount the main unit in the engine compartment. For maximum security, avoid mounting the main unit where it will be easily accessible to a thief.

If you are mounting the unit under the dash board, be sure to mount the unit as high as possible and in a location where it will not interfere with the operation of the pedals.

Be sure to extend the antenna as high as possible so that optimum range can be achieved.

Before securing the unit, be sure that you have made all of the necessary switch and jumper selections and perform a thorough function test of the system.

The case of the MS850 is designed to be mounted using screws, or secured using wire ties through the wire tie mounting tabs located on the unit.

Siren

Mount the siren facing downward and away from sources of heat and face the opening downward to prevent water from collecting inside the housing. Be sure that the wires are not easily accessible from underneath the vehicle.

For maximum security, it is best to disguise all under hood system wires with factory style split loom tubing so that they cannot be easily identified by a thief.

Run all wires from the engine compartment into the interior of the vehicle through a grommet.

Shock Sensor

The dual stage, electronic shock sensor, included with the system, is designed to be mounted in the interior of the vehicle using a tie wrap or double sided tape. Be sure to avoid mounting the sensor to sources of strong electrical interference such as cellular phone transceivers or the vehicle's engine computer.

Suggested mounting locations are an air conditioning duct, or a dashboard or center console support brace.

Override Switch

Mount the Override Switch in a location near the driver where it is easily accessible but not plainly visible. Plug the blue override switch connector into the blue 2-pin socket on the main unit.

Be sure that the switch cannot accidentally be pressed or damaged by movement of passengers or contents within the vehicle.

LED Status Indicator

Mount the status LED so that it is visible from both sides of the vehicle. Plug the white LED connector into white 2-pin socket on the Main Unit.

Wiring Diagram



14-Pin Main Harness

Pin 1 - BLACK: Ground.

Connect to a solid chassis ground. Be sure to use a ring connector of proper size. Scrape away the paint at the grounding point.

Pin 2 - RED: Main Power (+12v) input [10A fuse]

Connect to constant +12v. A clean source of power is essential. This connection can be made at either the battery or at the constant power supply wire to the ignition switch.

If this wire does need to be lengthened, use the appropriate wire gauge to avoid a drop in current and be sure to install a fuse near the connection. **Do not** remove or bypass the fuse holder included on the wire harness.

Pin 3 - VIOLET: Ignition input (+12v) input.

Connect to a source that maintains +12v when the ignition key is in both the "on" and "start" positions.

Pin 4 - WHITE: Door Trigger (-) input

Connect to negative door switch circuit. This circuit will show ground (-) when the door is open.

Pin 5 - YELLOW: Door Trigger (+12v) input

Connect to positive door switch circuit. This circuit, commonly found in Ford vehicles, will show +12v when the door is open.

Pin 6 - WHITE/brown: Hood/Trunk Trigger (-) input.

Connect to a negative output from the hood and trunk pin switches.

Pin 7 - **not used**

Pin 8 - ORANGE: Siren (+12v) output / Horn Honk (-) output

Provides +12v to drive the siren or a negative output to honk the vehicle horn.

Siren. Connect to the Red siren wire. Connect the Black siren wire to chassis ground. Set the Siren/Horn Jumper for *Siren.**

Horn. Connect to a relay that will honk the vehicle horn. Set the Siren/Horn Jumper for *Horn.**

*The default setting of the Jumper is *Siren*, for horn operation, be sure to change the position of the Jumper to *Horn*. See *Jumper Settings*.

Pin 9 - **not used**

Pin 10 - **not used**

Pin 11 - BLUE: Starter Defeat Normally Closed (-) output

Provides a negative output while the alarm is Armed and during alarming to disable the vehicle's starter circuits. Connect to the provided Starter Kill Relay socket as shown.



In this configuration, the vehicle's starter will be disabled while the system is armed and alarming.

Pin 12 - **not used**

Pin 13 - RED/yellow: Parking Light (+/-) output [on-board relay, 7.5A Fuse]

Provides +12v or ground (-) to flash the parking lights. See *Jumper Settings* to select polarity.

Do not connect this wire to parking light circuits that exceed 10 amps. For vehicles that have independent left and right parking light circuits, the parking light wires must be connected using diodes to keep the circuits separate.

Pin 14 - YELLOW/white: Auxiliary Function or Dome Light Control* (-) output.

This wire can be used to control either an auxiliary function (such as an electric trunk relase), the drivers side door lock acutator (for Driver Door Priority mode), *or* a dome light control relay.

Aux. Function. Provides negative (-) output. Output will stay on for as long as the transmitter Button is pressed.

Dirver Door Priority. Operates a relay that unlocks only the driver door actuator when the remote tranmitters are configured for Drivers Door Priority mode. See *Driver Door Priority Wiring Diagrams*.

Dome Light Control. Provides a negative (-) output to activate an optional dome light relay. Do *not* connect this wire directly to the vehicle's dome light.

*See Programming.

3-Pin Door Lock Harness

- Pin 1 WHITE/green: Door Lock (-) / Door Unlock (+)
- Pin 2 **not used**

Pin 3 - WHITE/blue: Door Unlock (-) / Door Lock (+)

These wires can be directly connected to negative and positive triggered door lock systems. For Voltage Reversal systems and After-market actuators, add relays. For further information, see **Door Lock Diagrams**. For selection of Double Pulse output, Comfort Closure, and 4-second pulse, see **Programming** and **Jumper and Switch Settings**.

4-Pin Sensor Harness

- Pin 1 RED: Sensor Power +12v.
- **Pin 2 BLACK: Sensor Ground.** This wire provides ground to turn on the sensor only during Sensor Test Mode and when the alarm is Armed.
- Pin 3 WHITE/violet: Trigger (-) input.
- Pin 4 VIOLET/yellow: Warn Away (-) input.

Other Harnesses

For details on the Status LED and Override Switch, see *Mounting Components*.

Extra LEDs

Up to 3 extra LEDs can be added. Cut the Red LED wire and connect in series as shown.



Programming Jumpers

Parking Light Polarity. Selects the polarity (+/-) for the output of the on-board Parking Light relay.

Pin 1 + Pin 2 = negative Pin 2 + Pin 3 = positive (default)

Siren / Horn Honk Output. Selects the polarity (+/-) and function for the output of the Orange wire.

Pin 1 + Pin 2 = Siren (+) output (default)

Pin 2 + Pin 3 = Horn (-) output

Siren - When the system is triggered, the output will be contant.

Horn - When the system is triggered, the output will be pulsing.

Door Lock Pulse Length. Selects between a 1-second and a 4-second output for door locking and unlocking. Set to *4 seconds* when interfacing into vehicles equipped with vacuum door locking systems.

On = 4 seconds Off = 1 second (default)

Accessing the Jumpers

Carefully press in on the access panel and slide it forward toward the end of the case.

Once you have made your selections, close the case by sliding the panel back into place.



Setting the Jumpers

Access Panel

Remote Transmitters

Remote Transmitter Layout



Each system comes with 2 Remote Transmitters, pre-programmed to operate in the **Ungo Standard Mode** and will Arm and Disarm the system *with* chirp confirmation using Button 1.

Transmitter Operating Modes

The MS850 can be configured to work with the remote transmitters in one of three ways, Ungo Standard Mode (default), Convenience Mode, or Driver Door Priority Mode. To select or change the transmitter operating mode, see *Programming*.

Ungo Standard Mode

Button 1 Arms and Disarms the system. This button will also lock and unlock the doors when the system is in Valet mode.

Button 2 controls the system's Auxiliary Function.



When Buttons 1 and 2 are pressed *together*, the systems Chirp confirmation setting will be reversed.

If the system was programmed to arm the system *with* chirp, Pressing Buttons 1 and 2 together will arm the system *without* chirp.

If the system was programmed to arm the system *without* chirp, pressing Buttons 1 and 2 together will arm the system *with* chirp.

Convenience Mode

This mode will configure the system to Arm and Disarm on separate buttons for convenience and ease of use.



Button 1 Arms the system. This Button also locks the doors when the system is in Valet Mode.

Button 2 Disarms the system *and* controls the system's Auxiliary Function. This button also unlocks the doors when the system is in Valet Mode.

If the system is Armed, pressing Button 2 Disarms the system. If the system is Disarmed, pressing Button 2 activates the Auxiliary Function.

When Buttons 1 and 2 are pressed *together*, the systems Chirp confirmation setting will be reversed.

If the system was programmed to arm the system *with* chirp, Pressing Buttons 1 and 2 together will arm the system *without* chirp.

If the system was programmed to arm the system *without* chirp, pressing Buttons 1 and 2 together will arm the system *with* chirp.

Driver Door Priority Mode

This mode operates in a similar manner as the *Convenience Mode*, with the added safety of unlocking just the driver's door when the system is disarmed. Pressing Button 2 again will unlock the remaining doors.

To properly utilize the Driver Door Priority Mode, the alarm <u>must</u> be wired so that the Auxiliary Function output is wired to a relay that controls the drivers door lock actuator. See *Driver Door Priority Wiring Diagrams.*



*Disarming the system will unlock only the Driver's Door

Button 1 Arms the system. This Button also locks the doors whne the system is in Valet Mode.

Button 2 Disarms the system *and* controls the system's Auxiliary Function. This button also unlocks the doors when the system is in Valet Mode.

If the system is Armed, pressing Button 2 Disarms the system. If the system is Disarmed, pressing Button 2 unlocks the passenger doors.

When Buttons 1 and 2 are pressed *together*, the systems Chirp confirmation setting will be reversed.

If the system was programmed to arm the system *with* chirp, Pressing Buttons 1 and 2 together will arm the system *without* chirp.

If the system was programmed to arm the system *without* chirp, pressing Buttons 1 and 2 together will arm the system *with* chirp.

Two Car Operation

For added convenience, the remote transmitters included with the MS850 can be used to operate a second Ungo system. Be sure that both systems are set to operate in **Ungo Standard** mode

If the Auxiliary Function is not being used, Button 2 may be programmed to operate the second system as follows:



To use a single transmitter to operate multiple vehicles, the Transmitter can be set to arm Car #1 with Button 1 and arm Car #2 with the first available Button not being used by Car #1, which will be Mode, Mode, 1 if Car #1 is using Auxiliary functions 1 through 3.

The Auxiliary functions for Car #2 will follow the arm/disarm button in sequential order.

As stated, the Programming and set-up functions of Car #2's system *will not* be affected by this Transmitter configuration and will operate exactly as described described in this manual.

The Button Assignment of Arming and Disarming will not affect the operation of the Remote during Programming, Sensor Test Mode, or any other system set-up function.

The Buttons used to control those features will remain as they are described in this manual, regardless of how the Transmitter is set up to arm and disarm the system.

Adding a New Transmitter into the System

- 1. Turn on the ignition.
- 2. Press and hold the Override switch.
 - The status LED will turn on red.
- 3. Within 5 seconds:

Continue holding the Override switch and Press Transmitter Button 1* For remote arming **with** chirp confirmation.

--- or ---

Release the Override switch and Press Transmitter Button 1* For remote arming **without** chirp confirmation.

- The status LED will flash once quickly to confirm that the new Remote Transmitter has been added.
- 4. Turn off the ignition.

Deleting Transmitters (Adding a Remote Transmitter and Erasing All Other Remote Transmitters From the System)

- 1. Turn on the ignition.
- 2. Press and hold the Override switch.
 - The status LED will turn on red.

Continue to hold the override switch.

- After 5 seconds, the status LED will flash 4 times, then turn on red again.
- 3. Within 5 seconds:

Continue holding the Override switch and Press Transmitter Button 1* For remote arming **with** chirp confirmation.

--- or ---

Release the Override switch and Press Transmitter Button 1* For remote arming *without* chirp confirmation.

- The status LED will flash once quickly to confirm that the new Remote Transmitter has been added.
- 4. Turn off the ignition.
- * The Button that is pressed will be the Arm/Disarm Button on that Remote Transmitter. You may program *any* of the Transmitter's buttons to arm and disarm the system at this point.

Programming

System Initialization and Default Reset

Following this procedure will set all System Programming Parameters to factory default settings.

- 1. Turn on ignition.
- 2. After 4 seconds, press and hold Buttons 1 and 2 together for 5 seconds.

The siren will emit one long chirp, indicating that the reset signal was received.

- 3. Turn ignition off.
 - All System Programming parameters are now set to factory default settings.
 - The Arming Mode is set to Remote Arming only.
 - The Valet Mode is off.

Arming Mode Selection (Passive or Active Arming)

Using the Remote Transmitter, you may select Passive Arming with chirp confirmation, Passive Arming without chirp confirmation, or Active Arming (Remote only).

To set the Arming Mode:

- 1. Turn the ignition on.
- 2. Within 4 seconds, press Transmitter Buttons 1 and 2 together.
 - First push: one chirp = Passive Arming with chirp Second push: two chirps = Active Arming Third push: three chirps = Passive without chirp
- 3. Turn off the ignition key to save your selection.

Entering System Programming

- 1. Turn the ignition on.
- 2. Within 4 seconds, press Transmintter Button 2.
 - The siren will emit one short chirp, indicating that you have entered Programming Step 1.
 - The Status LED will show the current setting of Step 1 (soild of flashing).
- 3. You can now make changes to the Programmable System Parameters.

Press Button 1 to change the setting. Press Button 2 to move to the next step.

4. When you are finished, turn the ignition off to save your changes. You can turn the ignition off at any time during Programming. When the ignition is turned off, the changes that you have made will be saved.

Programmable System Parameters

				Status LED		
			Button 1			
Button 2	Step	Function	solid*	flashing (quickly)	flashing (slowly)	
	1	Ignition Controlled Door Locking	ON	OFF		
	2	Ignition Controlled Door Unlocking	ON	OFF		
	3	Ignore Dome Light Delay	OFF	ON		
	4	Audible Tamper Alert Report	ON	OFF		
	5	Door Unlock Pulse	single	double		
	6	Automatic Rearming	OFF	ON		
	7	Entry Delay for Passive Arming	OFF	15 sec		
	8	Yellow/white Wire Operation	Aux.	Aux. w/ Trunk	Dome Light	
				Bypass	Control	
	9	Passive Door Locking	OFF	ON		
,	10	Transmitter Operating Mode	Standard	Convenience	Driver Door Priority	
* default setting						

 Ignition Controlled Door Locking. Selects whether or not the system automatically locks the doors when the ignition is turned on. When selected, the Ignition Controlled Door Locking feature will automatically lock the doors 10 seconds after the ignition key is turned on.

To prevent the keys from being locked inside the vehicle when Ignition Controlled Door Locking is on:

- The system will not lock the doors if any door is open when the ignition is turned on.
- The system will not lock the doors if any door is opened during the 10 second countdown.
- Ignition Controlled Door Unlocking. Selects whether or not the system automatically unlocks the doors when the ignition is turned off. When selected, the Ignition Controlled Door Unlocking feature will automatically unlock the doors when the ignition key is turned off.
- Ignore Dome Light Delay. For use with vehicles equipped with a timed dome light circuit that stays on after the door has been closed. When programmed ON, the dome light will be ignored during arming to prevent the system from responding with an open zone indication.
- 4. **Audible Tamper Alert Report.** When Audible Tamper Alert is selected, the siren will chirp to indicate which zone had triggered the system, upon disarming.

If the system was triggered, the siren will emit one long chirp, followed by a series of short chirps indicating the violated zone.

no chirps = ignition 1 chirp = door 2 chirps = shock sensor 3 chirps = trunk

When Audible Tamper Alert report is turned off, the siren will emit a long chirp on disarming to indicate the system was triggered, but the zone indication will be from the status LED only.

5. **Door Unlock Pulse - Single/Double.** Selects between a *single* pulse or a *double* pulse door unlock output.

On many late model Nissan vehicles, as well as some European makes, the factory door locking system requires two pulses on the proper wire to unlock the vehicle's doors.

Programming the system for Double Pulse Door Unlocking allow these systems to be interfaced directly *without* the use of relays or any additional circuitry.

6. Auto Rearm. When selected, the system will automatically rearm if no other activity is detected within one minute of Remote Disarming.

One minute after Remote Disarming, the system will alert you with a 10 second series of chirps, then arm. (If the Passive Door Locking feature is selected during the installation, the system will also relock the doors.)

Any of the following will cancel Automatic System Rearming:

- Turn on the ignition. Activate Auxiliary Function.
- Open the Trunk or Hood.

Automatic System Rearming is independent of Passive Arming and only takes place if the system was Armed (actively or passively) for at least 15 seconds and then Disarmed by the Remote Transmitter.

- 7. **Door Entry Delay with Passive Arming.** When selected, the door input trigger will be delayed for 15 seconds, allowing access to the emergency override switch. Only delays when the system is arm passively.
- 8. White/yellow Wire Operation. Selects between operation of an auxilary remote function and Dome Light operation for this output.

Aux. - Yellow/white wire will provide a negative output each time the Auxiliary Function Button is pressed. The output will stay active for as long as the button is held.

Aux. w/ Trunk Bypass - When the Aux. function is used to activate a power trunk release, the system will temporarily ignore the trunk trigger input and the sensor inputs when the trunk is opened by the remote while the system is armed.

Dome Light Control - the system will turn on the vehicle's dome light for 15 seconds each time the system is disarmed and after the ignition key is turned off.

- 9. **Passive Door Locking.** Sets the system to automatically lock the doors during *Passive Arming* and *Auto Rearming*.
- 10. **Transmitter Operation.** Configures the system's Remote Tranmitters to work in one of three operating modes: Standard Mode, Convenience Mode, and Driver Door Priority Mode. *See Remote Transmitters Transmitter Operating Modes.*

Shock Sensor



Sensor Test Mode

This mode will allow you to actively test the shock sensor and make adjustments without the alarm being armed. Be sure that the sensor is securely mounted to the vehicle before entering the Sensor Test mode.

To enter Sensor Test mode:

- 1. Turn the ignition on.
- 2. Within 4 seconds, press Button 1.
 - The siren will chirp 4 times, indicating that the sensor is ready to be tested.
- 3. Test the sensitivity. The siren will respond with a short chirp each time an impact is detected.
 - The green led on the sensor will turn on when a light (warn away) impact is detected.
 - The red led on the sensor will turn on when a heavy (trigger) impact is detected.
- 4. To make adjustments:
 - Turn the adjustment screw on the sensor clockwise to increase the sensitivity.
 - Turn the adjustment screw on the sensor counter clockwise to decrease the sensitivty.
- 5. When you are satisfied with the sensitivity, turn off the ignition.

Dome Light Control Relay Diagrams

As an option, the Yellow/white wire can be used with and optional relay to control the vehicle's domelight instead of an auxiliary function. When using this feature, be sure to program the output of the Yellow/white wire output for Dome Light Control. See *Programming*.



Negative Polarity Dome Light

Positive Polarity Dome Light





Driver Door Priority Wiring Diagrams

For a description of Driver Door Priority Mode, see *Remote Transmitters*-*Transmitter Operating Modes*.



Positive Trigger System







Reference Chart

You can use this chart to quickly identify and interpret the system's chirp indications and LED flashes.

Output	When	Status
1 chirp	arming	normal arming
1 + 4 chirps	arming	door, hood, or trunk is open
2 quick chirps	arming	Valet Mode is on
LED double flashes	Valet Mode	Starter Defeat Activated
2 shires	discurring	normal discussion
2 chinps	uisarining	normal disarming
1 long + 1 short chirp	disarming	Tamper Alert - system was triggered
no chirps	after Tamper Alert	ignition
1 chirp	after Tamper Alert	door
2 chirps	after Tamper Alert	shock sensor
3 chirps	after Tamper Alert	hood or trunk
no LED flashes	after Tamper Alert	Ignition
1 LED flash	after Tamper Alert	door
2 LED flashes	after Tamper Alert	snock sensor
3 LED flashes	after Tamper Alert	nood or trunk
1 chirp	while Armed	Warn Away
Double chirps	while Armed	System Triggered
		(Passive Arming Entry Delay Warning)
4 shime	with impition how on	Sanaar Taat mada an
4 chirps	in Sensor Test mode	Sensor lest mode on
1 chirp	In Sensor Test mode	Impact detected
Double chirps	1 minute after disarming	Automatic Rearming
(for 10 seconds)		
(
LED flashing quickly	ignition key off	Passive Arming sequence started
	1	
Two chirps	ignition key off	Full Time System Diagnostics
1 LED flash	after Full Time Sys. Diag.	door
2 LED flashes	after Full Time Sys. Diag.	shock sensor
3 LED flashes	after Full Time Sys. Diag.	hood or trunk



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