

FM/PAGER SECURITY SYSTEM

INSTALLATION MANUAL

Before Installing:

1. Read the INSTRUCTIONS!
2. USE A DIGITAL OR ANALOG VOLT/OHM METER
3. BEFORE MOUNTING THE PRODUCT CHECK THE POSSIBLE LOCATIONS FOR THE SIREN, LED, AND MODULE BEFORE YOU PERMANENTLY INSTALL THEM.
4. PROTECT THE VEHICLE BY USING FENDER COVERS.
5. ROLL DOWN THE DRIVER WINDOW BEFORE STARTING THE INSTALLATION.
6. ALWAYS LOOK BEFORE DRILLING- MAKE SURE YOU WILL NOT CAUSE DAMAGE TO VEHICLE HOSES, ELECTRICAL LOOMS OR PHYSICAL DAMAGE TO VEHICLE.
7. PROGRAM THE DIP SWITCH ON THE MODULE FIRST, FOR THE FEAT-

TURES THAT YOU PLAN ON USING. (SEE DIP SWITCH INFORMATION.)

8. REMOVE DOME LIGHT FUSE TO PREVENT BATTERY DRAIN.

Timing Information

Automatic reset time: 45 seconds,

Panic output reset time:45 seconds,

Arming time (when all inputs are monitored): 10 seconds-active arm, passive 30 + 10 seconds (40 total).

Door Lock output time:.75 seconds or 3 seconds (programmable via dip switch #1)

2nd Channel output: Pressing button 2 for 3 seconds provides output for as long as button is pressed.

3rd Channel output: Pressing button 3 provides continuous output on 3rd channel as long as botton 3 is pressed.

Armed output: Orange wire will pro-

duce a grounded output when system is armed.

Flashing Parking Light Output:

Armed: 1 second pulsed, *Disarmed:* 2-one second pulses-, then output will Latch on for 30 seconds, or until ignition is turned on, or system rearms. *System triggered:* 1 second pulse on, 1 second off, repeated for 45 seconds.

Dome Light Output: Output is identical to Flashing Parking light Output.

Input Zone Out Feature:

If a door input, shock or sensor input remains on for 4 consecutive cycles (45 seconds) that input will be ignored. If the input returns to a non-triggered state for 30 seconds it will be monitored by the system again.

PROGRAMMING FEATURES

Remote Programmable Features:

Service Mode: This mode will allow customer to shut the system off and allow car to be serviced without giving technician or valet the remote control. LED will go solid when in this mode. To enter this mode:

1. Disarm system,
2. Press button #2 momentarily,
3. Immediately press and hold button #1

until you hear 5 rapid chirps. LED will go on solid and remain in service mode until button #1 (or arming button) is pressed again.

Chirp Delete: If you would like to turn off the arm/disarm chirps:

1. System disarmed,
2. Turn ignition to the on position,
3. Press and hold button #2 until you hear a double chirp. Arm/Disarm chirps will remain turned off until above procedure is repeated. When Arm/Disarm chirps are turned back on you will hear 2 double chirps.

Temporary Remote Trigger Bypass: If you wish to have the system ignore all inputs (door, trunk and shock or auxiliary sensor), but wish to have the starter disable feature to be engaged:

1. Press Button #1, you will hear a normal arming chirp, (as long as arming chirps are on).
2. Within 5 seconds press Button #2, you will hear a second short chirp, confirming that all inputs will not be monitored.

Once you disarm and rearm, the hood and doors will be monitored normally.

Temporary Remote Sensor Bypass: If you wish to have the system ignore the shock and auxiliary sensor inputs (Customer is leaving pet or children in vehicle but wishes to monitor doors and hood or trunk) Press button #1, then

within 5 seconds press button #3. You will hear a normal arming chirp, (as long as arming chirps are on), then right after you press buttons #3 you will hear a second short chirp, confirming that the Shock sensor and auxiliary sensor input will not be monitored. Once you disarm and rearmed, the sensor will normally be monitored.

Using the temporary remote sensor and trigger bypass to diagnose falsing problems will allow you to easily find the defective input. (Have the customer turn

one or the other off, and see if falsing still occurs). *Note:* You may not turn off both sensor or trigger inputs at the same time. **Temporary Chirp Mute:** If you wish to mute arm/disarm chirps: **1.** Press button #2 momentarily, **2.** Next press button #1 to arm or disarm. Chirps can only be heard if standing right next to vehicle. Chirps will be muted for one complete cycle (arm/disarm).

Summary of Inputs and outputs:

Inputs:

- I Sensor port-4 wire (w/warn away)
- Negative door trigger
- I Negative hood/trunk trigger
- I Positive door trigger

Outputs

- Siren output: 3 amp Max - positive
- Flashing lights: relayed - 15 amp Max
- Dome Light: 500 mA
- Door lock/unlock : 500 mA -negative
- 2 nd Channel: 500 ma- negative
- 3rd Channel: 500 ma - negative
- Armed Output: 250 ma - negative

Dip Switch Programmable Features:

- | | | |
|--|-----------------|------------------|
| Switch #1 = Lock/Unlock Pulse Time: | ON: .75 seconds | OFF: 3 seconds |
| Switch #2 = Ignition Triggered Door Locks: | ON: Feature On | OFF: Feature OFF |
| Switch #3 = Passive Door Locks: | ON : Feature On | OFF: Feature OFF |
| Switch #4 = Passive or Active Arming: | ON: Passive Arm | OFF: Active Arm |

Using Valet/Override Switch

Valet Mode: If the system is programmed to passively arm (dip switch #4 On), and you wish to keep system from arming but wish to retain keyless entry features: 1. Disarm the system, 2. Turn ignition to on, 3. Press and hold valet/override switch for approximately 3 seconds, 4. LED will turn on solid.

To exit Valet mode: Repeat procedure, LED will turn off momentarily, siren will chirp twice.

Emergency Override: If you lose your remote or it becomes inoperable, and system is armed: 1. Open door and enter vehicle (Siren will sound, lights will flash). 2. Turn ignition key to on, 3. Press the override switch, 4. System will disarm, and automatically enter Valet mode, regardless of whether system is programmed to passively or actively arm.

Code Learning Mode: If you wish to 'teach' the system different remote controls:

1. Make sure system is disarmed or in valet mode,
2. Turn ignition switch on 3 times within 5 seconds and leave in the on position (ON, OFF, ON , OFF, and ON), you will hear one chirp from the siren, LED will flash one time,
3. Within 5 seconds press and hold

valet/override switch for approximately 5 seconds, you will hear a series of chirps and LED will turn on solid,

4. Release the valet switch, and within 5 seconds you must press all of the arming buttons on all Transmitters that you desire to operate the system. You will hear a chirp after the system has learned each remote control. The system will hold 3 different codes in memory.

NOTE: Once you enter the code learning mode, the system will throw out any previous programmed remotes. If you are programming two remotes with the same code, the system will acknowledge only the first remote. Even though both remotes will operate the system.

Multi Car Operation: If you are using a remote to control two vehicles (the second button to operate the second vehicle) Button #2 will only operate arming and disarming features on the second vehicle only. 2nd and 3rd Auxiliary channels will not function. Since the transmitter is 3 channel, you could operate up to three different vehicles with a single remote. (Buttons 1, 2 and 3)

INSTALLATION INSTRUCTIONS:

1. Mount the module and program dip switch functions:

Look for a suitable mounting location under the dash or inside the vehicle that will be difficult for a potential thief to locate the module, but allow for a convenient installation position.

2. Mount the extended range receiver/pager module:

This module is connected with an 8 foot coaxial to the main module. Carefully route the cable up the driver side pillar post and mount the Receiver/pager module up in the upper left corner of windshield or behind the center rear view mirror. Antenna can be mounted in any direction. Adhere the module to the glass with the supplied 2 sided tape.

3. Mount the Siren:

Locate a suitable place under the hood, away from hot and moving engine parts such as manifolds, turbo chargers, fan belts, etc. Secure siren by screwing bracket to a solid location under the hood. Make sure that there is no outside access to both siren and wire from underneath the vehicle or through the grill. Point the siren down so that water may

not accumulate inside the siren bell.

Ground the black wire of the siren to a solid ground; preferably, use a star washer and ring terminal.

Using either tape or split loom tubing, cover and route the red wire to the firewall and run inside the vehicle to the module location.

Always use either existing grommets or if a new hole is needed to be drilled always protect the wire from chaffing by installing a proper size grommet.

4. Mount the shock sensor:

Mount the dual stage shock sensor using a wire tie to the steering column, or thick wire harness, or even a dash brace under the dash close to the module.

Plug the harness into the shock sensor, then plug the other end into the 4 pin white connector on the module. Make sure that the adjustment screw is accessible for later testing and adjustment. Do Not mount sensor under the hood!

5. Install the Status Indicator (LED):

Locate a suitable place for the status indicator (LED), drill the appropriate size hole (7/16"). Make sure there is enough clearance for the LED to fit all the way in, and can be easily seen from outside the vehicle. Carefully push the connector through the hole and route the wire and

connector to the module and plug into the red two pin connector. Push the LED into the hole, it should fit snugly.

6. Install the Valet/Override Switch:

Mount the valet/override switch in a hidden location, but that can still be found by the customer for programming and emergency override situations.

Run the 2 pin connector and wire harness to the module and plug into the matching blue two pin connector on the module.

7. Connect the Illuminated Entry Output:

Connect the Green/Black wire on the 3 pin accessory output plug to a SPDT relay (See illuminated entry diagram).

Warning: don't connect the green/Black wire directly to a door trigger wire, this output is only designed to be used with an outboard relay.

8. Connect Armed Output: Orange wire on main harness (see diagram)

This wire provides a 250ma output (-) when the system is armed. See diagram. Must use relay when connecting the Orange wire.

9. Connect 2nd channel out-

put: Gray wire on main harness

This output is 500ma, and drives a relay to open the electric trunk or hatch release. (See diagram section).

NOTE: This output will work with the ignition on or off. Press button#2 and hold for 3 seconds. You will receive output on the gray wire as long as you hold button #2.

10. Connect Negative door input: Green wire on main harness

Connect the green wire from the module to the wire that shows ground when all of the doors are opened. Verify with volt/ohm meter. Make sure that all doors when opened separately make the target wire provide a ground output.

11. Connect Hood/ Trunk switch input: Blue wire on main harness

Connect the blue wire to either or both hood and trunk switches. They must provide a ground output when the trunk or hood are opened.

12. Connect Positive door input: Violet wire on main harness

Connect the violet wire from the module to the wire that shows 12v+ when all of

the doors are opened. Verify with volt/ohm meter. Make sure that all doors when opened separately make the target wire provide a 12v+ output.

13. Connect Siren output: Brown wire on main harness

Connect the brown wire on the main harness to the red wire from the siren.

14. Connect the Flashing Parking Light Output: White wire main harness.

Using a volt/ohm meter, locate the wire that shows 12v+ when just the parking lights are switched on (usually on the head light switch). Some European vehicles might require an additional relay as they have separate wires that switch on the left side parking lights and the right side parking lights.

This is a relayed output with a maximum of 15 amps. Do not hook to head lights. (See diagram section).

15. Connect 12v+ Power Input : Red wire on main harness

Connect the red fused wire on the main harness to a constant 12v+ source.

This source wire should be at least 20 amp supply. There usually is a main constant power wire on the ignition switch. Use volt/ohm meter to verify.

16. Connect the 12v+ ignition input: Yellow wire on main harness

Connect the yellow wire on the main harness to a main ignition wire. This can be also found in the main ignition switch wire harness. Your volt/ohm meter will read 12v+ when key is turned on.

Make sure that this ignition wire has 12v+ on even during the starting process of the vehicle. It is important that the voltage does not drop when the car is starting. Some vehicles have ignition wires that remain or slowly drop to 0 volts. Verify that when the ignition is shut off that the voltage drops to 0 Volts immediately. If the yellow wire has voltage on it after the key is turned off, it will keep the alarm from arming via the remote.

17. Connect Ground Input: Black wire on main harness

Locate a good solid chassis ground and connect to the black wire on main harness. Verify the ground with your volt/ohm meter.

18. Connect optional third channel output: Yellow wire on 3 pin accessory harness

Connect the yellow wire on main harness to an optional relay or accessory module

to control via the 3rd channel. Ideal for window roll up or remote start.

To use this feature press both buttons 1&2 on 2 button remote control.

NOTE: This output will work with the ignition on or off. It will provide output on the Yellow wire as long as you hold transmitter button #3.

20. Connect Horn Honk output: Red wire on 3 pin accessory connector

Connect the red wire to a relay that honks the factory car horn. In many vehicles this wire can be found off of the main harness at the steering wheel or ignition harness. Add a SPDT relay if you are connecting directly to the car horn.

21. Connect the door lock wires: Blue and Green on 3 pin harness.

The blue wire provides a 500 ma negative pulsed output for unlock, this output is designed to drive a relay. See diagram section.

The green wire provides a 500 ma negative pulsed output for lock, this output is designed to drive a relay. See diagram section.

The Red wire provides a constant +12V to use for triggering relays, door lock modules, or inverters.

22. Plug in main harness and 3 pin door lock harness and 3 pin accessory connection to module.

23. Test features and function, adjust shock sensor.

Arm and disarm system, check that the siren chirps and parking lights are functioning normally. Make sure that the programmed features (via dip switch) are performing correctly-ignition locks, passive arming, passive locks, etc.

Test the doors and hood or trunk inputs (make sure that you check that all doors trigger the system not just the drivers door), you can do this with the Silent Test Mode.

Adjust the shock sensor (clockwise for more sensitive, counter clockwise for less sensitive) , make sure that it is not too sensitive.

Arm the system and try and start the vehicle, it should not start.

Arm the system and disarm it with the ignition and override switch.

If programmed to passively arm make sure that the system properly arms.

Check for range with the remotes that they arm and disarm all the way around the vehicle- adjust antenna location if necessary.

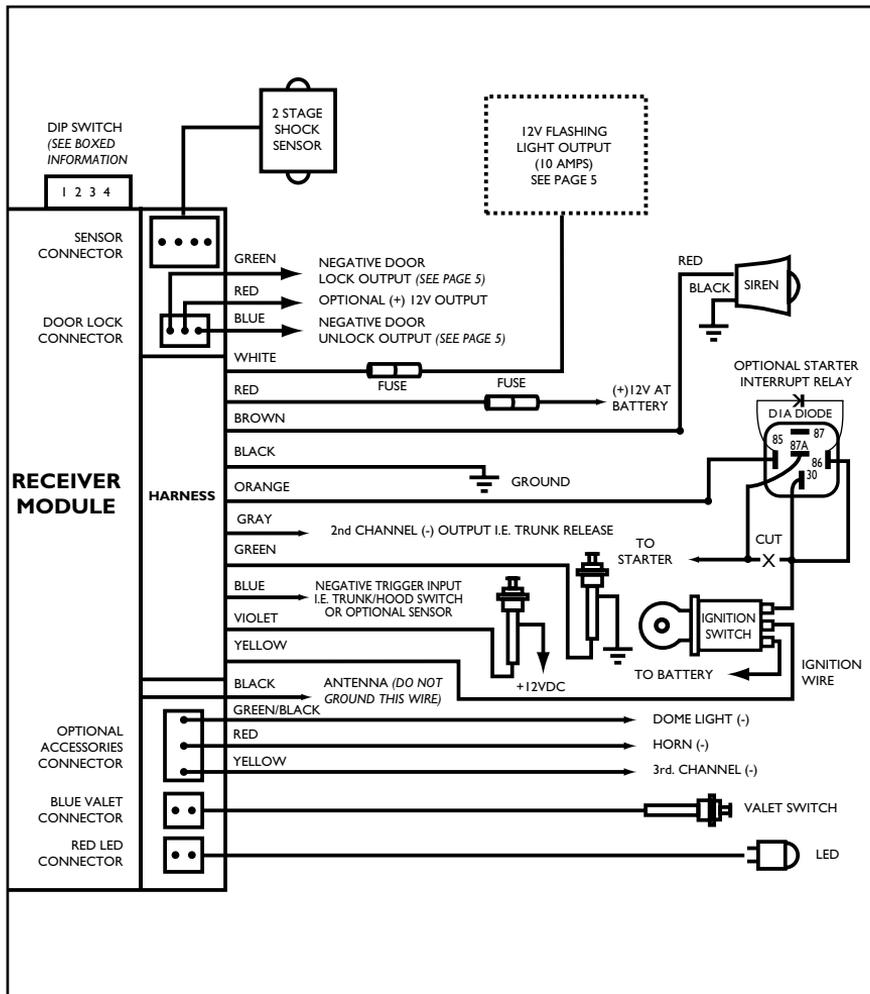
Using the remote and valet switch check for the user features: Chirp mute, Service mode, Valet mode, temporary trigger and sensor bypass, and chirp delete.

Tie up wire harness, and replace any under dash panels

Deliver the vehicle to customer.

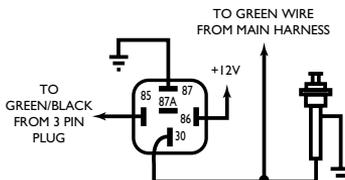
Make sure the customer has physical knowledge of the location of the valet/override switch

BWFM 100 WIRING DIAGRAM



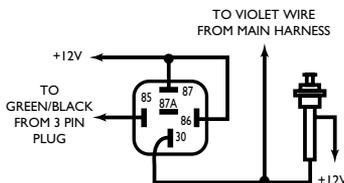
ADDITIONAL DIAGRAMS

**ILLUMINATED
ENTRY DIAGRAM
(Negative Trigger
Doors) See item 7.
on page 6.**

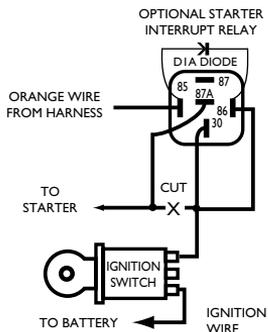


Connect 30 off of relay to Green (-) input wire on main module harness.

**ILLUMINATED
ENTRY DIAGRAM
(Positive Trigger
Doors) See item 7.
on page 6.**



**ARMED OUTPUT
(Starter Disable)
See #8. on page 6.**



SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTION
Alarm doesn't Arm/Disarm	Alarm in Valet Mode, ignition input has voltage on it, make sure the power and ground wires show 12v+	Take alarm out of Valet mode- turn key off - wrong wire connected to yellow wire main harness
Alarm will not Passively Arm	Dip Switch #4 is OFF, wrong polarity door input wire, Yellow ignition input has 12v+ on it.	Correct Dip Switch #4, Correct door switch polarity, change ignition input wire, make sure alarm is not in Valet.
Alarm will not go into Code Learning Mode	Not leaving ignition in the on position after turning it on & off three times. Not turning ignition on/off rapidly enough (5 sec.)	Repeat procedure quicker.
Alarm will not go into Code Learning Mode	Valet/Override Switch is defective or not plugged in.	Replace valet switch or Plug it in again.
Alarm chirps 4 times 30 seconds after system is Armed	Factory Dome light Delay is longer than 30 seconds. Door open or defective pin switch, Shock sensor is defective	If dome light delay is longer than 30 seconds no correction necessary. Replace defective pin switch or shock sensor.
Parking lights do not flash	Wrong wire connected to the White wire, or requires a negative output	Correct the wire connected to the White wire, Using a SPDT relay reverse polarity on white wire (see diagrams)
System Arms and Disarms but doesn't chirp siren	Chirp Delete mode is engaged	Turn ignition on, press and hold button # 2 until you hear 2 double chirps

SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTION
Vehicle starts when armed	Wrong starter wire was cut	Locate proper starter wire and reconnect
Car will not start when system is disarmed	Bad connection from relay to starter wire.	Repair connection at starter wire.
Door locks do not work with remote	Wrong door lock polarity, Wrong lock wires connected	See Door lock Diagram, verify vehicle lock/unlock wires
Ignition triggered door lock feature doesn't operate	Yellow wire still has voltage on it, Door input is showing open door	Connect yellow wire to the proper ignition wire, door input wire is connected to wrong wire or reverse polarity
Car Horn honks when system disarmed and door is opened	Vehicle factory security system needs to be disarmed	Locate disarm wire (drivers kick panel?) use neg. unlock pulse to disarm factory system.
Alarm system intermittently works	Bad power and ground connections	Replace and secure power and ground connections
Car won't start Alarm won't function properly	Vehicle battery dead or drops below 7.5 volts when trying to start the vehicle	Replace battery or charge.

TRANSMITTER/PAGER OPERATIONS

Arming system- Press button number 1
- Button verification will flash, door lock will flash 1 time, Pager will beep 1 time; system is now armed.

Disarming system- Press button #1 again, button verification will flash, door lock will flash 2 times, Pager will beep 2 times; system is now disarmed.

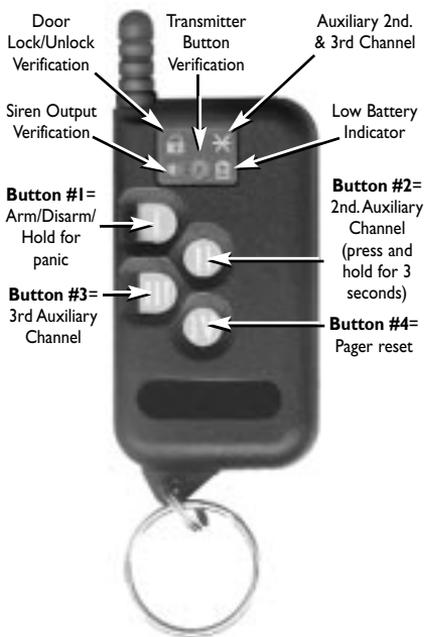
2nd channel- Press button number 2 and hold for 3 seconds -Button verification will flash, auxiliary channel verification flashes 2 times, Pager will beep 2 times; 2nd channel output is now functioning.

3rd channel- Press button number 3- Button verification will flash, aux channel verification flashes 3 times, Pager will beep 3 times; 3rd channel output is now functioning.

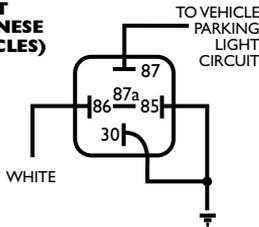
Alarm Triggered- If alarm is triggered, pager will start beeping twice and then rapid series of chirps to confirm that the system was triggered. It will continue until the alarm cycle is completed and the siren stops.

Warn Away- If shock sensor's warn away is triggered the pager will beep 5 times.

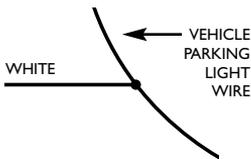
To Reset Pager- Press button #4 and pager will stop. You can now shut off alarm by pressing button#1.



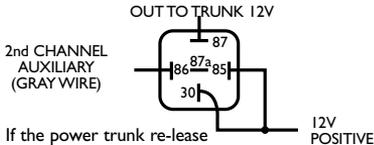
FOR NEGATIVE PARKING LIGHTS (MOST JAPANESE VEHICLES)



FOR POSITIVE PARKING LIGHTS



TRUNK RELEASE CIRCUIT DIAGRAM:



If the power trunk re-lease requires a positive pulse to operate, use this circuit.

STATUS INDICATOR (LED) FUNCTIONS

- Off= System off in Active Mode
- Slow Flash= System Armed
- Rapid Flash= Passive Pre Arm State
- Rapid Flash (after disarm)= System was triggered
- On Solid= In Valet or Service Mode
- On Solid= (After passive prearm or active arm) 10 second final prearm state
- On Solid= (when disarmed, and not in Valet/Service Mode) -Input is open. See Test Mode.

SILENT TEST MODE

When the system is disarmed the LED will go solid every time an input is triggered. You can check the shock sensor, doors, hood, trunk, and the auxiliary sensor input as well.

SIREN CHIRP STATUS

- 1 chirp= system armed
- 2 chirps= system disarmed
- 3 chirps= System disarmed, but alarm was triggered while away.
- 4 chirps= Alarm armed but there is a trigger that remains open. (This occurs 25 seconds after system was armed)
- 5 rapid chirps= Alarm armed, shock sensor warn away output was triggered.

DIP SWITCH PROGRAMMABLE FEATURES

Switch	Description	ON	OFF
#1	Lock/Unlock Pulse Time	.75 seconds	3 seconds
#2	Ignition Triggered Door Locks	Feature On	Feature Off
#3	Passive Door Locks	Feature On	Feature OFF
#4	Passive or Active Arming	Passive Arming,	Active arming

