A-PIM701 (Police Interface Module)

2015-2017 Dodge Charger Pursuit

Introduction

The Police Interface Module is intended to provide Dodge Chargers with multiple desired functions within a single module. The PIM base features include Secure Park Outputs, Auxiliary Switch control and Chime Mute. Optional features include Trunk Release Kit, Display Panel, Blackout Mode and Surveillance mode.

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T	Trunk Release Option	7-10
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Installation Instructions

Disconnect vehicle battery before proceeding with the installation.

WARNING
Disconnect the battery to prevent setting a check engine light.

It is the installer's responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers.
It is important to avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Also avoid radio frequency energy from antenna's or inverters next to the module. Finally, avoid high voltage spikes in vehicle wiring by always using diode clamped relays when installing upfitter circuits.

PIM Module

Remove the left side cover of the instrument panel (accessible with the door open) and find a suitable location to mount the PIM module. Locate the module in an area away from any external heat sources (engine heat, heater ducts, etc.). Do not mount the module until all post installation testing is complete and wire harnesses are routed and secure.

Data Link Harness (6-pin connector)

1. Locate the vehicle OBDII Data Link Connector. It is white and points at the floor of the vehicle in the area above the drivers left foot.
2. Use a flat screwdriver to remove the OEM OBDII connector. There are tabs on the sides of the connector that allow it to snap into place. Press the tabs and push the connector up and out of its bracket. The PIM kit includes a Data Link harness (see picture). Plug the red connector from the PIM Data Link Harness into the vehicle's OBDII connector. Ensure the connection is fully seated and secured with the supplied wire tie.
3. Mount the white connector from the PIM Data Link Harness in the former location of the vehicle's OBDII connector, by snapping it into place.

PIM Data Link harness "T's" into OBDII connector.

LED Display Panel—Optional –W

1. If purchased and included in the PIM kit, it indicates the status of the steering wheel switches, and Chime Mute.
2. Locate a suitable position on the dashboard or center console within view of the driver for mounting the LED Display Panel. The length of the display harness is 40". This is the maximum distance the display can be mounted from the PIM module. Drill a 5/8" hole in the panel where the center of the display will be located, being careful not to damage anything behind the panel.
3. Run the LED display harness through the hole, and to the PIM modules 4-Pin black connector. Observe the polarity tab on the PIM harness connector, matching it with the PIM module connector.
4. Ensure panel is level, and secure using the supplied screws.

Optional LED panel indicates switch status & Chime Mute active

Secure Park Output

Dodge Charger Pursuit vehicles are all equipped with the Secure Park feature, which locks the column shifter in Park and allows the officer to remove the key fob with the engine running. The PIM provides outputs to also disable the gun rack, trunk release, or other equipment when the vehicle is in Secure Park. The PIM has an onboard relay which can be used to interrupt the gun rack release wire. The PIM will keep the rack enabled for 10 seconds (configurable) after Secure Park is entered.

The trunk disable requires an external relay (not provided) and connects to a second output of the PIM. The trunk release will also stay enabled for 10 seconds after entering Secure Park.

Gun Rack Disable Relay Connections

The PIM has an onboard Normally Closed pass-through relay that will open 10 seconds after entering Secure Park. The usual connection is to route the gun rack release wire through the PIM's relay.

4-Pin White Connector

- Pin #2 Gun Rack In, Purple wire on 4 pin PIM connector
- Pin #4 Gun Rack Out, Blue wire on 4 pin PIM connector

Trunk Release Disable Output

A discrete 12 volt output rated at 1/2A is intended to drive relay coils or other low current loads. This can be used to open a relay that interrupts the trunk release wire. Thus the trunk can not be opened when in Secure Park mode.

12-Pin White Connector

- Pin #2 Secure Park Output, Pink wire on 12 pin PIM connector. 12V when Secure Park active.

Secure Park Output Installation Test

Perform the following tests before actually mounting the PIM. This will allow easy viewing of the diagnostic LED's on the PIM, if needed. For PIM LED descriptions, see Diagnostic section later in these instructions.

With vehicle in Park, Park Brake applied, and Engine Running:

1. Activate Secure Park by pressing the center button on the backside of the steering wheel (9 o'clock or 3 o'clock positions). The Instrument Cluster will indicate Secure Park is active. Remove the key fob from the vehicle and the engine will stay running and the shifter will be locked in Park.
2. By default the PIMs Secure Park output delay timer is set to 10 seconds. If already wired into the gun rack release wire, verify that the gun lock release button does not work after 10 seconds (PIMs purple and blue wires do **not** have continuity).
3. Verify the pink wire is active (+12 Volts), or if wired, that the trunk release is disabled after 10 seconds.
4. Disable Secure Park by returning the key fob and pressing the Secure Park button on the steering wheel. Verify the gun rack and trunk can now be released.

Steering Wheel AUX Switches

The InterMotive PIM module allows much more flexibility in the use of the three AUX switches on the steering wheel. Each button can be configured in any of the following ways:

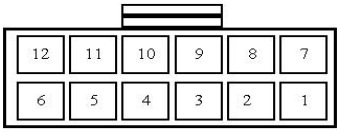
- Momentary
- Timed (1 - 1,800 seconds)
- Radio Button (only one Radio Button active at a time)
- Latching (toggle on—toggle off. This is how the switches work from the factory)

The PIM provides 3 outputs that represent the state of the 3 buttons, and will operate in one of the above modes, depending on how they are configured. **Contact Intermotive regarding configuring these outputs.**

Example: All 3 buttons are configured as "Radio Buttons". Their outputs from the PIM are wired to appropriate lights/sirens, etc. Pushing any one of the AUX steering wheel buttons activates the desired Code and shuts the others off such that only one is active at a time. Each output provides 12 volts rated at 1/2A and is intended to drive relay coils or other low current loads.
Note: when driving relays, a diode-protected type relay must be used. InterMotive recommends DigiKey #PB682-ND Relay. Also note that the OEM switch outputs under the center console will still be active, but will only support the OEM mode of latching. Generally these are no longer used when the PIM is installed.

The 3 switch outputs are defined as follows:

- Switch Output 1: Pin #9 (Light Green/Brown wire) Configurable output
- Switch Output 2: Pin #3 (Light Green/Violet) Configurable output
- Switch Output 3: Pin #1 (Light Green/ Dark Blue) Configurable output



Back of PIM Connector

Display Panel (W)

The Charger gives no indication when an AUX button output is active. The PIM Display Panel will indicate when an AUX output is active.

AUX 1 = LED 1

AUX 2 = LED 2

AUX 3 = LED 3

Chime Mute = LED 4

Charger AUX Switches (cont.)

Post Installation Test

Perform the following tests before mounting the module, to allow viewing of the diagnostic LED's, if needed.

- Push AUX 1, verify output one (Light Green/Brown wire) is ACTIVE (+12v).
- Push AUX 2, verify output two (Light Green/Violet) is ACTIVE (+12v).
- Push AUX 3, verify output three is (Light Green/ Dark Blue) is ACTIVE (+12v).

Note the output behavior will depend on how the switches have been configured: momentary, latching, radio, or timed. Contact Intermotive regarding changing switch configurations.

Diagnostics

The PIM has a Diagnostic mode which is entered by shorting the two "Test" pads together. The amber status LED flashes to indicate Diagnostic Mode has been entered, and the other LEDs will now represent the status of the various outputs listed below.

To exit Diagnostic Mode and disable the LEDs, simply cycle the ignition switch.

LED #	Diagnostic Mode LED Descriptions
1	Output 1 active
2	Output 2 active
3	Output 3 active
4	Secure Park Active
5	Cluster Level Off
6	Chime Mute Input Active
7	Trunk Release Input

Short pads together to enter Diag Mode

Chime Mute

This option will silence the following chimes from the interior of the vehicle:

- Lights-on reminder.
- Ignition or accessory on chime.

Chime Mute can be activated by either grounding the Green/White wire (PIN5 on 12 pin PIM connector) with a discrete switch (not provided in kit) or by simply turning off the cluster backlighting.

How to turn OFF Cluster Backlighting

Rotate the left dimmer control to the extreme bottom OFF position. The interior lights will remain off when the doors are open, and the PIM will mute the driver door related chimes.

Chimes Post Installation Test

Perform the following tests before mounting the module, to allow viewing of the diagnostic LED's, if needed.

With vehicle in Park, Park Brake applied, and Key fob in ACC:

1. Open Door and verify the audible Chime sounds.
2. Ground the Green/White (PIN 5) and verify the chime has stopped, or
3. Rotate the dimmer control to the OFF position, verify the chime has stopped.

Trunk Release Kit Option (T)

The trunk release on the Dodge Charger Pursuit works only when the Key is in Run and does not lock down the button when the vehicle is in Secure Park. The PIM701 offers three different options to install the trunk release, Hot in Run except in Secure Park (page 7) Hot at all times (page 8) and Hot at all times except Secure Park (page 9). The Trunk Release option also provides a secondary Trunk Release switch (page 10). **Note:** The Trunk Release Kit includes a Relay and Secondary trunk release switch.

Hot in Run except in Secure Park

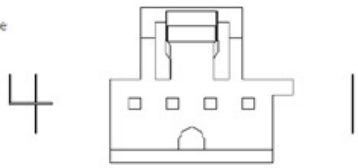
This option only allows the Trunk Release to be operational with the key in the Run position.
The button will be disabled when the vehicle is in Secure Park.

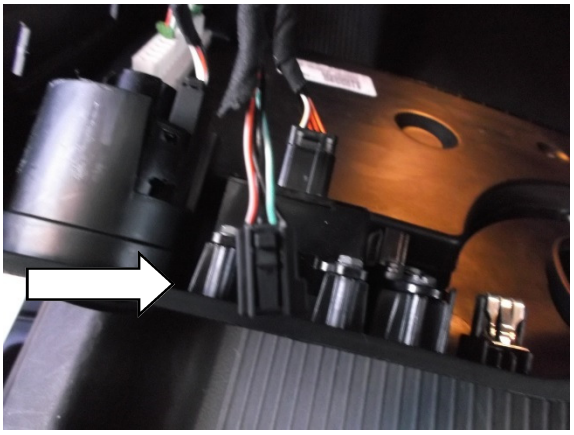
Installation Instructions

1. Remove the driver side panel to get to the trunk release switch.
2. Locate the trunk release connector (D2216A) and remove from the switch.
3. Cut the Green/White wire (Pin 2 of D2216A) of the connector and attach the BCM side of the wire to the White wire of the relay.
4. Attach the Switch side of the Green/White wire (Pin 2 of D2216A) to the Tan wire of the relay.
5. On the PIM module, locate the Brown wire (Pin 2 of 12 pin connector) and attach to the Orange/Black wire of the relay.
6. Attach the Black wire of the relay to chassis ground.
7. The Light Green wire of the relay is not used in this configuration

SWITCH-DECKLID RELEASE

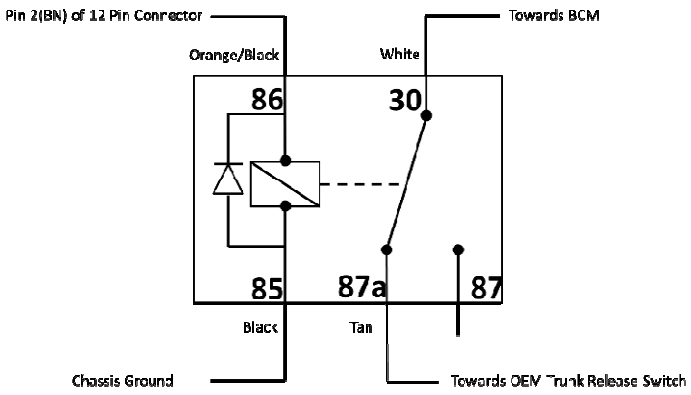
Harness Family: IP
Cavities: 4
Color: BLACK
Gender: FEMALE
Part Description: 1-929170-1
Engineering Name: Sw_Decklid_Release
Connector No: D2216A
Option: Standard
Available Views: Location View





Pin	Circuit	Wire Color	Gauge/Size	Function	Option
1	Z910	BK	0.35	GROUND	
2	P223	LG/WT	0.35	DECKLID/LIFTGATE RELEASE SWITCH SENSE	
3	Z910	BK	0.35	GROUND	
4	E12	OR/GY	0.35	PANEL LAMPS DRIVER	

Hot in RUN, Except in Secure Park



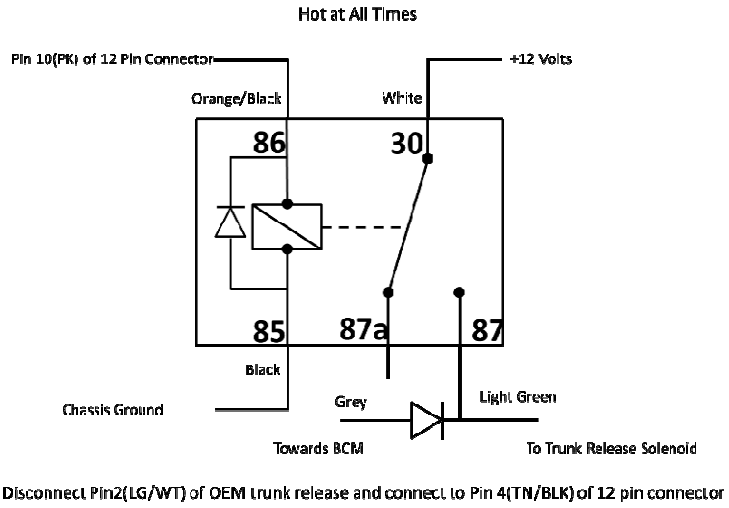
Hot at All Times

This option allows the Trunk Release to be operational with the key in the OFF, ACC or Run position.
The button will NOT be disabled when the vehicle is in Secure Park.

Installation Instructions

Trunk Release Solenoid

1. Remove the passenger floor railing to get to the bundle of BCM wires.
2. Locate the Tan/Yellow wire used for the trunk release solenoid.
3. Confirm signal pulses +12 volts when the trunk release button is pressed.
4. Cut this wire and attach the BCM side to the Grey wire of the relay.
5. Attach the solenoid side of the Tan/Yellow wire to the Light Green wire of the relay.
6. On the PIM module, locate the Pink wire (Pin 10 of 12 pin connector) and attach to the Orange/Black wire of the relay.
7. Attach +12volts to the White wire of the relay.
8. Attach the Black wire of the relay to chassis ground.



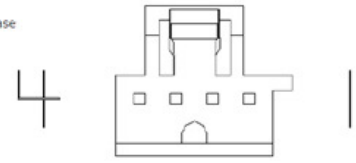
Disconnect Pin2(LG/WT) of OEM trunk release and connect to Pin 4(TN/BLK) of 12 pin connector

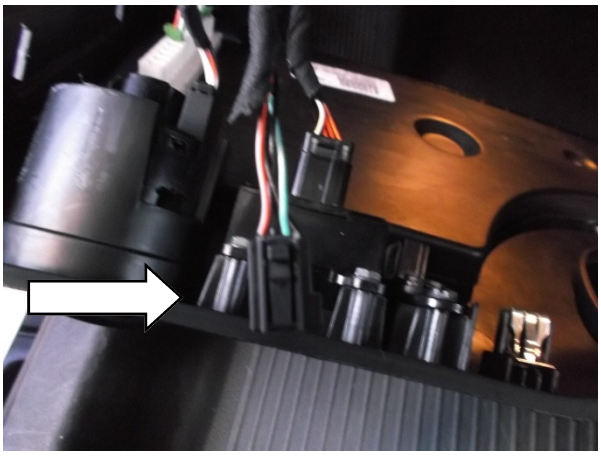
Trunk Release Switch

1. Remove the driver side panel to get to the trunk release switch.
2. Locate the trunk release connector (D2216A) and remove it from the switch.
3. Cut the Green/White wire (Pin 2 of D2216A) of the connector and attach the Switch side of this wire to the Tan/ Black wire (Pin 4 of the 12 pin connector) on the PIM module.
4. Heat shrink the BCM side of the Green/White wire (Pin 2 of D2216A) as it will not be used in this configuration.

SWITCH-DECKLID RELEASE

Harness Family: IP
Cavities: 4
Color: BLACK
Gender: FEMALE
Part Description: 1-929170-1
Engineering Name: Sw_Decklid_Release
Connector No: D2216A
Option: Standard
Available Views: Location View





Pin	Circuit	Wire Color	Gauge/Size	Function	Option
1	Z910	BK	0.35	GROUND	
2	P223	LG/WT	0.35	DECKLID/LIFTGATE RELEASE SWITCH SENSE	
3	Z910	BK	0.35	GROUND	
4	E12	OR/GY	0.35	PANEL LAMPS DRIVER	

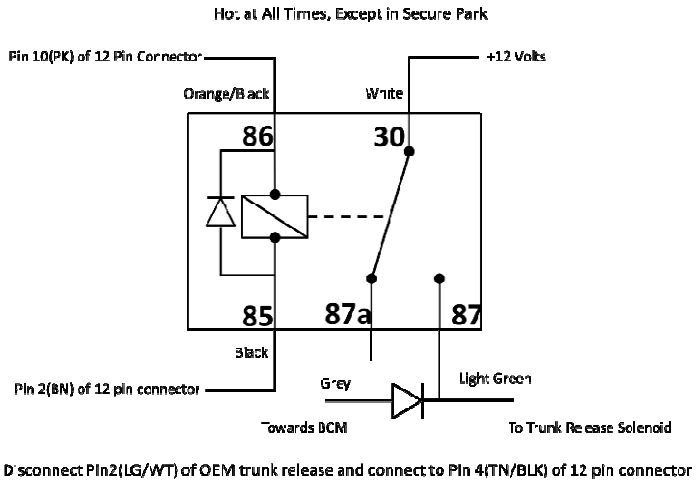
Hot at All Times except Secure Park

This option allows the Trunk Release to be operational with the key in the OFF, ACC or Run position.
The button will be disabled when the vehicle is in Secure Park.

Installation Instructions

Trunk Release Solenoid

1. Remove the passenger floor railing to get to the bundle of BCM wires.
2. Locate the Tan/Yellow wire used for the trunk release solenoid.
3. Confirm signal pulses +12 volts when the trunk release button is pressed.
4. Cut this wire and attach the BCM side to the Grey wire of the relay.
5. Attach the solenoid side of the Tan/Yellow wire to the Light Green wire of the relay.
6. On the PIM module, locate the Pink wire (Pin 10 of 12 pin connector) and attach to the Orange/Black wire of the relay.
7. On the PIM module, Locate the Brown wire (Pin 2 of 12 Pin connector) and attach to Black wire of the relay.
8. Attach +12volts to the White wire of the relay.



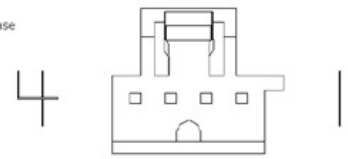
Disconnect Pin2(LG/WT) of OEM trunk release and connect to Pin 4(TN/BLK) of 12 pin connector

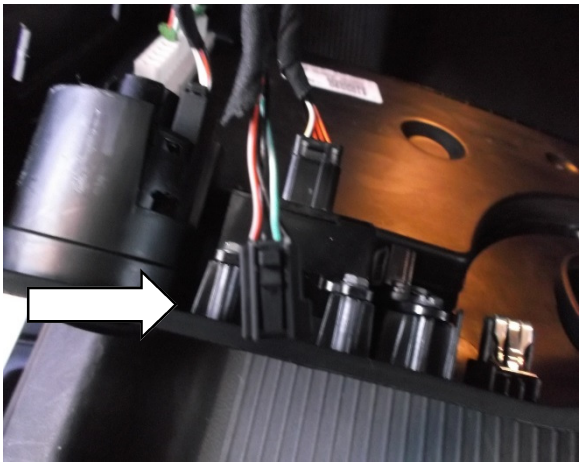
Trunk Release Switch

1. Remove the driver side panel to get to the trunk release switch.
2. Locate the trunk release connector (D2216A) and remove it from the switch.
3. Cut the Green/White wire (Pin 2 of D2216A) of the connector and attach the Switch side of this wire to the Tan/Black wire (Pin 4 of the 12 pin connector) on the PIM module.
4. Heat shrink the BCM side of the Green/White wire (Pin 2 of D2216A) as it will not be used in this configuration.

SWITCH-DECKLID RELEASE

Harness Family: IP
Cavities: 4
Color: BLACK
Gender: FEMALE
Part Description: 1-929170-1
Engineering Name: Sw_Decklid_Release
Connector No: D2216A
Option: Standard
Available Views: Location View





Pin	Circuit	Wire Color	Gauge/Size	Function	Option
1	Z910	BK	0.35	GROUND	
2	P223	LG/WT	0.35	DECKLID/LIFTGATE RELEASE SWITCH SENSE	
3	Z910	BK	0.35	GROUND	
4	E12	OR/GY	0.35	PANEL LAMPS DRIVER	

Secondary Trunk Release Button

A secondary button can be installed near the center stack to allow the passenger access to the trunk release.

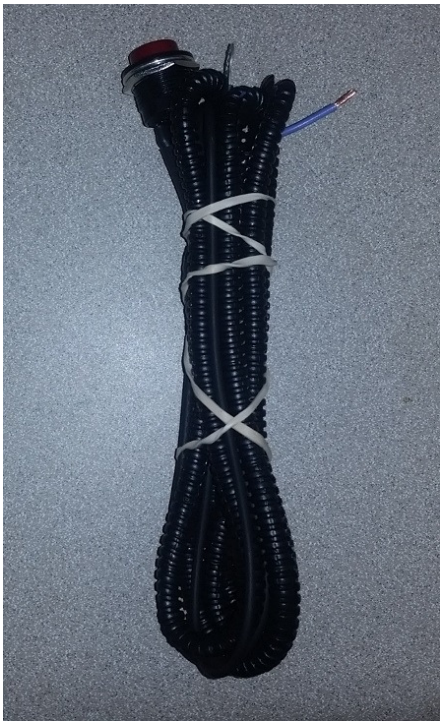
Attach the black wire with the eyelet to chassis ground .

Hot in Run
Attach the Light Blue wire to Pin 2 (Green/White) of the Trunk Release switch.

Hot in Run, Except in Secure Park
1. Must have Relay installed on the trunk release switch. (page 7)
2. Attach the Light Blue wire to the switch side of Pin 2 (Green/White) of the Trunk Release.

Hot at all times
1. Must have Relay installed on the trunk release solenoid. (page 8)
2. Attach the Light Blue wire to the Tan/Black wire (pin 4 of the 12 pin connector) of the PIM module.

Hot at all times, Except in Secure Park.
1. Must have Relay installed on the trunk release solenoid. (page 9)
2. Attach the Light Blue wire to the Tan/Black wire (pin 4 of the 12 pin connector) of the PIM module.



Surveillance Mode Option (S)

Introduction

Surveillance Mode uses Park Assist equipped in the Charger. If any of the sensors detect a presence while in Surveillance mode, the vehicle will chime indicating which sensor tripped, and then the PIM will lock the doors and roll the driver and passenger windows up.

Surveillance Mode Input

- The Yellow/Black wire (Pin 2 of the 4 pin connector) is input is used to enable Surveillance Mode. The input requires a momentary switch (not included) connected to +12 volts.

Surveillance Mode Status Output

- The Orange wire (Pin 11 of the 12 pin connector) will be +12 volts Surveillance mode is active.

Surveillance Mode Operating Instructions :

To enter Surveillance Mode. ALL preconditions must be met.

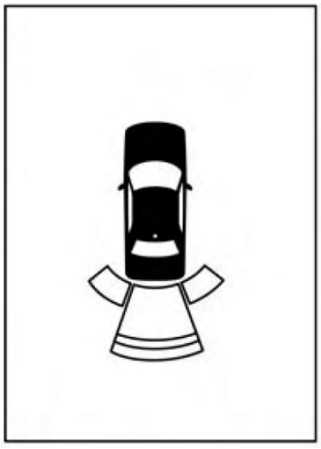
- Transmission must be in park.
- Vehicle speed must be zero.
- All doors must be closed.
- Service brake must not be applied .
- Momentarily apply +12 volts to Yellow/Black wire to enter Surveillance Mode

The reverse camera display will turn on when surveillance mode is active.

If the backup sensors detect an object the module will lock all the doors, roll the passenger and driver window up and toggle the reverse and stop lights.

To exit Surveillance Mode any condition may be applied:

- Driver door is opened.
- Service brake is pressed.
- Transmission cycled out of park.



Surveillance Mode Post Installation Instructions

Perform the following tests before mounting the module, to allow viewing of the diagnostic LED's, if needed. Preferably test with two people so one person can activate the rear sensors.

Always have Key in Pocket when testing .

- Place Car in Park, close the driver door, and do not apply the Service Brake.
- Roll the driver and passenger door windows all the way down and unlock doors.
- Apply power to the Yellow/Black Surveillance Mode input.
- Have one person trip the sensors by walking behind the vehicle.
- Verify that the window goes up, all doors lock.
- Verify the Tail Lights are flashing in a pattern.
- To exit surveillance mode, shift out of PARK or apply Surveillance Mode input.
- Verify Tail lights are off.

Surveillance Mode Diagnostics

Diagnostic mode is entered by shorting the two "Test" pads together on the module. The module provides diagnostic LEDs which illuminate according to the following table. To exit this mode, cycle the key. **For diagnostics for the SMM portion of the PIM module, momentarily short the two "Test" pads <u>Two</u> times. The Status LED will Flash 2-2 code.**

LED #	Diagnostic Mode LED Descriptions
1	Surveillance Mode Active
2	Transmission in Park
3	Vehicle speed Less than 2 MPH
4	Door Closed
5	Service Brake released
6	Surveillance Mode Input
10	Flashing Reverse Lights

Short pads together TWO times to enter diagnostic for Blackout mode

Blackout Mode Option (B)

Introduction

- The Blackout module has the ability to eliminate all exterior lighting to aid in covert operations. This includes parking lamps, reverse lights, and Service Brake lights. Its intended use is for Police Dodge Chargers. A maximum speed can be set to automatically return brake lights for safety purposes.

Blackout Input

- The Pink/Black wire (Pin 1 of the 4 pin connector) is input is used to enable Blackout Mode. The input requires a momentary switch (not included) connected to +12 volts.

Blackout Status Output

- The Yellow wire (Pin 8 of the 12 pin connector) will be +12 volts Blackout mode is active. Connect to LED.

<u>Blackout Mode Operating Instructions:</u>

To enter Blackout Mode. ALL five preconditions must be met.

- Cluster Brightness must be turned Off. (Described in page 14)
- DRL's must be turned off. (Described in page 14)
- Speed must be below configured maximum speed (5-20).
- Low Beams, High Beams, Parking Lamps must be turned off.
- Momentarily apply +12 volts to Pink/Black wire to enter Blackout Mode

Blackout Status Output will be +12v when Blackout Mode active.

To exit Blackout Mode any condition may be applied:

- Turn on any lights (DRL, Low, High, Parking).
- Vehicle is moving above maximum speed.

How to turn OFF Cluster Backlighting

Rotate the left dimmer control to the extreme bottom OFF position. The interior lights will remain off when the doors are open.

How to turn OFF Daytime Running Lights

Touch the Settings hard key, then Touch "Lights" soft-key

Touch the Daytime Running Lights soft-key to change this display. When this feature is selected, the headlights will turn on whenever the engine is running. To make your selection, touch the Daytime Running Lights soft-key and select OFF.

The Daytime Running Lights will turn ON the first time the vehicle is shifted out of PARK, and remain ON unless the Parking brake is applied. Upon Returning to the PARK position, the DRL's will turn OFF.

Post Installation / Check List

The following checks must be made after installation of the system, to ensure correct and safe operation of the lift. If any of the checks do not pass, do not deliver the vehicle. Recheck all connections per the installation instructions.

1. Turn ignition key on (to "Run").
2. Apply the Parking Brake and Turn Off all lights (High Beams, Low Beams, and Parking Lights).
3. Apply Blackout mode input (Pink/Black).
4. Blackout output (Yellow) will be +12 Volts
5. Hold Service Brake and verify the Brake lights are disabled.
6. Turn on Low Beams , Blackout output (Yellow) will be floating.
7. Hold Service Brake and verify the Brake Lights are ON.
8. Turn Off all lights (High Beams, Low Beams, and Parking Lights).
9. Apply Blackout mode input (Pink/Black).
10. Blackout output (Yellow) will be +12 Volts
11. Place transmission in Reverse and verify the reverse lights are not ON.
12. Turn on Low Beams and Black Out LED will be ON 100%.
13. Verify that the Reverse Lights are On.

DO NOT PUT VEHICLE IN SERVICE IF IT DOES NOT PASS ALL OF THE ABOVE TESTS
Contact InterMotive at 530-823-1048 for technical assistance

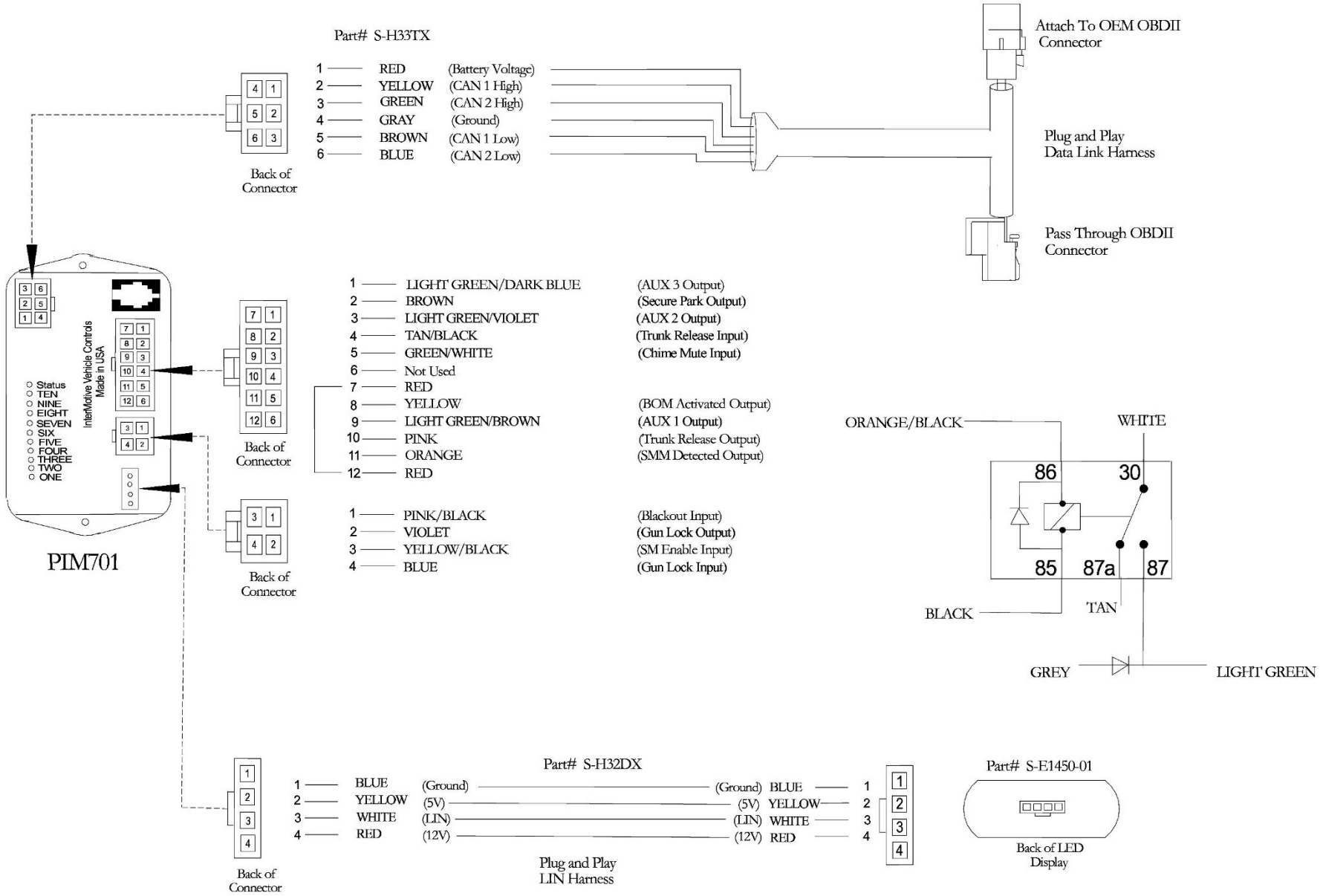
Blackout Mode Diagnostics

Diagnostic mode is entered by shorting the two "Test" pads together on the module. The module provides diagnostic LEDs which illuminate according to the following table. To exit this mode, cycle the key. **For diagnostics for the Blackout mode portion of the PIM module, momentarily short the two "Test" pads <u>Three</u> times. The Status LED will Flash a 3-3 code.**

LED #	Diagnostic Mode LED Descriptions
1	Blackout Mode Active
2	VSS less than 15mph
3	Low Beams Off
4	High Beams Off
5	Park Lamps Off
6	DRL Off
7	Cluster Off
8	Blackout Input Status
9	Speed Inhibit Enabled

Short pads together THREE times to enter diagnostic for Blackout mode

U.S. Patent #9,469,261



Submit product registration at www.intermotive.net

If the PIM fails any step in the System Operation Test, review the installation instructions and check all connections.
If necessary, call InterMotive Technical Support at (530) 823-1048

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