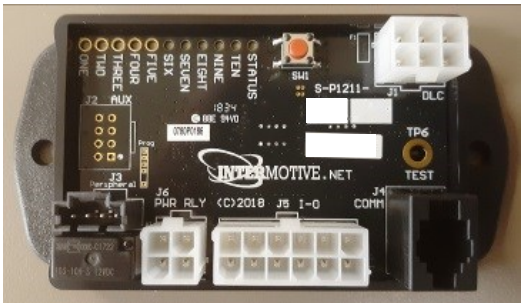
C-PIM701 (Police Interface Module)

2018-2020 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 an additional Secure Park Output, Auxiliary Switch control and Chime Mute. Optional features include a Trunk Release Kit, Display Panel, Blackout Mode and Surveillance mode.

	Base Features	Page #
	Secure Park Output	3
	Steering Wheel AUX Switches	4-5
	Chime Mute	6

Part Suffixes	Optional Features	Page #
W	Display Panel Option	4
T	Trunk Release Option	7-10
S	Surveillance Mode Option	11-12
B	Blackout Mode Option	13-15

Installation Instructions

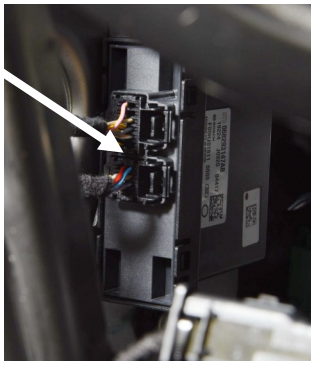
Disconnect vehicle battery before proceeding with the installation.

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 on module) The 2018-2020 Charger has a "gateway" module connected to the OBDII connector. The PIM's data link harness T's into both an 8 pin and 12 pin connector on this gateway module.



Charger gateway module with 8 & 12 pin connectors.

1. Locate the vehicle's Gateway module located next to the BCM and above the Park Brake.
2. Remove the 12-pin and 8-pin connectors from the Gateway module and plug in the 12-pin and 8-pin connectors from the Intermotive C-PIM701 Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-PIM701 Data Link harness.
3. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-PIM701 module.

Optional LED panel indicates switch status & Chime Mute active

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.

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 weapon 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. Once this time has expired, the weapon rack release button will be disabled.

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.

Weapon 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 weapon rack release wire through the PIM's relay.

4-Pin White Connector

- Pin #2 weapon Rack In, Purple wire on 4 pin PIM connector
- Pin #4 weapon 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 PIM's Secure Park output delay timer is set to 10 seconds. If already wired into the weapon rack release wire, verify that the weapon 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 weapon 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:

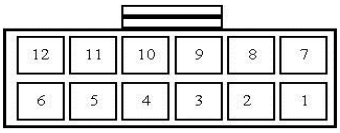
- Momentary
- Timed (1 - 1,800 seconds)
- Radio Button (only one Radio Button active at a time)
- Latching (toggle on—toggle off. This is how the switches work from the factory)

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, as delivered from the factory, 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

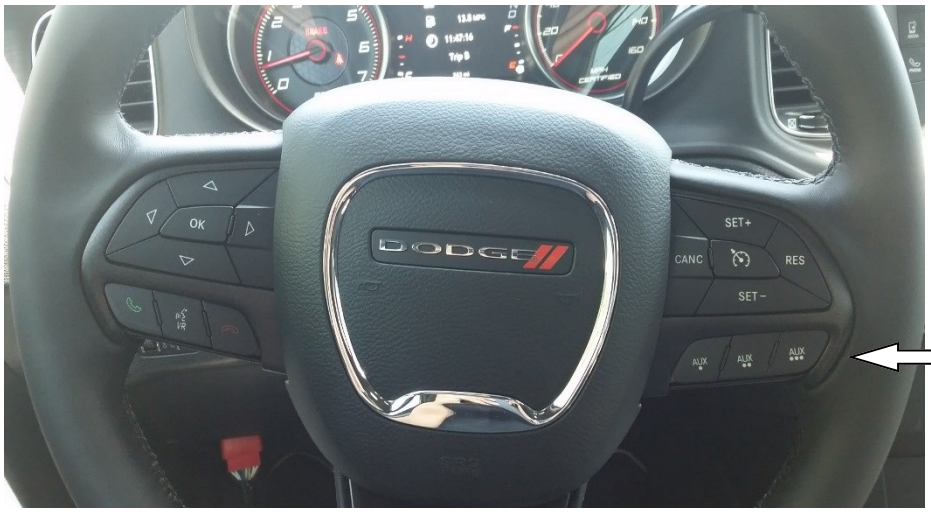
Charger AUX Switches (cont.)

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.



AUX Switches

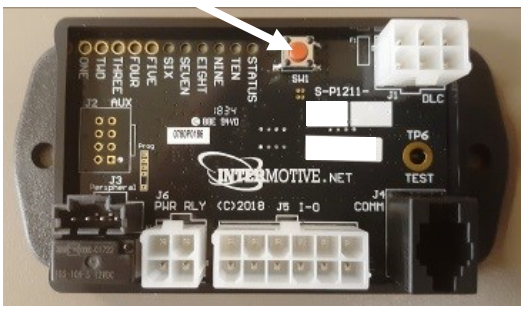
Diagnostics

The PIM has a Diagnostic mode which is entered by pressing the Red "Test" button. 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

Press the Red "Test" button to enter Diagnostics Mode



Chime Mute

This option will silence the following chimes from the interior of the vehicle when the door is opened:

- 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 ignition 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 OEM trunk release on the Dodge Charger Pursuit works only when the Key is in Run and is NOT disabled when the vehicle is in Secure Park. The C-PIM701 offers three different options for modifying this 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 which could be accessible from the passenger seat (page 10). **Note:** The Trunk Release Kit includes a Relay and Secondary trunk release switch.

Trunk Release: Hot in Run except in Secure Park

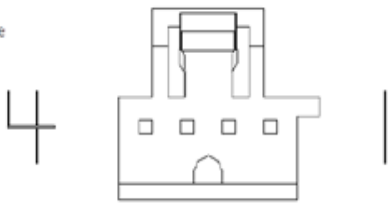
This option only allows the Trunk Release to be operational with the key in the Run position, but be disabled when the vehicle is in Secure Park.

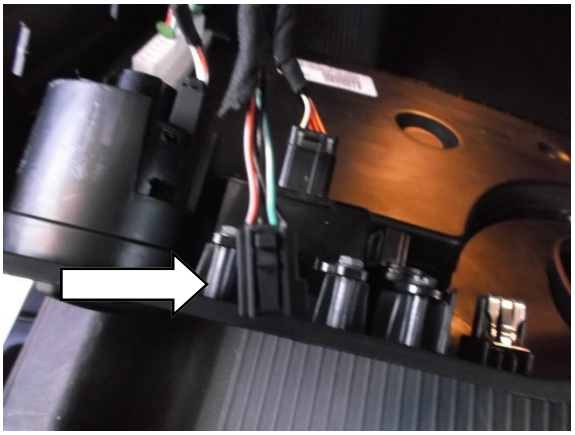
Installation Instructions

1. Remove the driver side panel to get access to the rear of 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

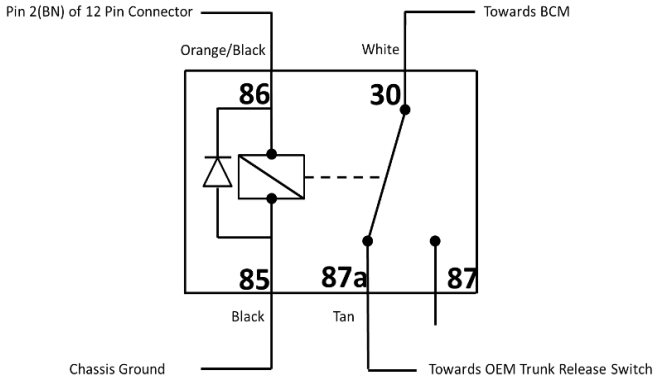
SWITCH-DECKLID RELEASE

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





Hot in RUN, Except in Secure Park



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	

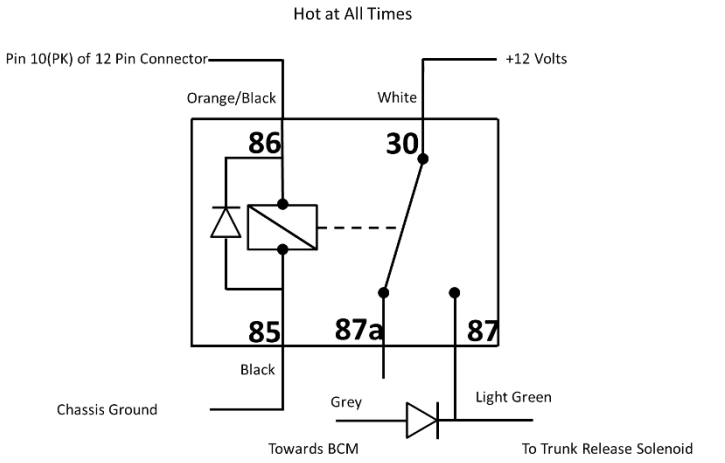
Trunk Release: Hot at All Times

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.



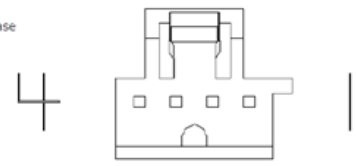
Disconnect Pin2(LG/WT) of OEM trunk release and connect to Pin 4(TN/BLK) of 12 pin connector

Trunk Release Switch

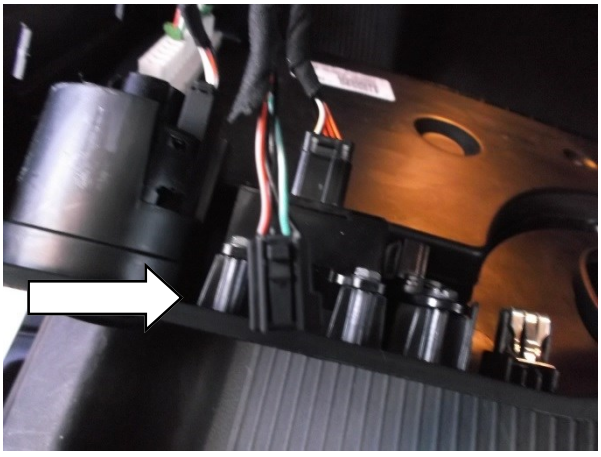
1. Remove the driver side panel to get to the trunk release switch.
2. Locate the trunk release connector (D2216A) and remove it from the switch.
3. Cut the Green/White wire (Pin 2 of D2216A) of the connector and attach the Switch side of this wire to the Tan Black wire (Pin 4 of the 12 pin connector) 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	



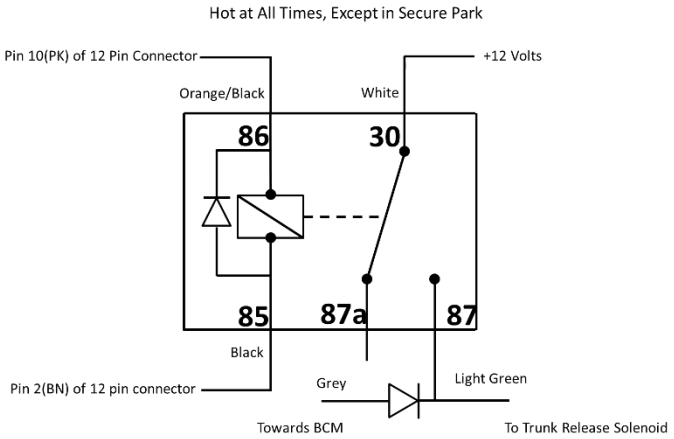
Trunk Release: Hot at All Times except Secure Park

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.



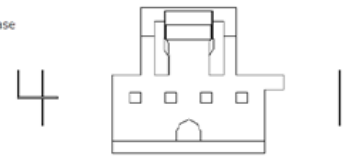
Disconnect Pin2(LG/WT) of OEM trunk release and connect to Pin 4(TN/BLK) of 12 pin connector

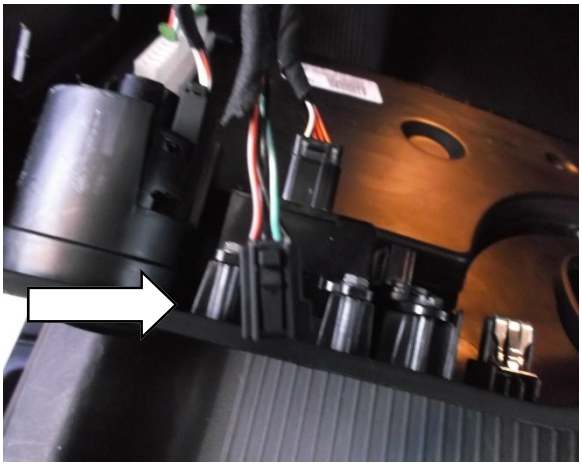
Trunk Release Switch

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.

Optional secondary truck release button and harness

Surveillance Mode Option (S)

Introduction

Surveillance Mode can warn an officer if someone approaches the rear of the parked vehicle. It can close the windows, lock the doors, and chime when the sensors trip. It takes advantage of the Park Assist sensors in the Charger. Surveillance Mode is enabled by pushing a button while sitting in a stationary vehicle. When enabled, Surveillance Mode will turn on the backup camera and LCD display to provide the officer a view of the rear of his vehicle.

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) is at 12 volts when Surveillance mode is active (enabled).

Surveillance Mode Operating Instructions :

To enter Surveillance Mode, all of the following 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/enabled.

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 Testing

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 Fob in Pocket when testing to avoid being locked out of vehicle.

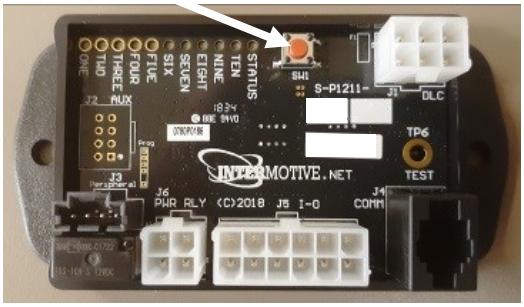
- Sit in drivers seat with transmission in Park and drivers door closed. Do not apply the Service Brake.
- Roll the driver and passenger door windows all the way down and unlock doors.
- Enable Surveillance Mode by pushing button (Apply power to the Yellow/Black Surveillance Mode input)
- Have another person trip the sensors by walking behind the vehicle.
- Verify the system trips: the windows close, the doors lock, and the vehicle chimes.
- Verify the Tail Lights are flashing.
- To exit surveillance mode, push Service Brake, shift out of Park, or push the Surveillance Mode button.
- Verify Tail lights are now off.

Surveillance Mode Diagnostics

For diagnostics for the SMM portion of the PIM module, press the Red "Test" button <u>Two</u> times. The Status LED will Flash 2 times repeatedly. The module provides diagnostic LEDs which illuminate according to the following table. To exit this mode, cycle the ignition to off.

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 Enable Input
10	Flashing Reverse Lights

Press the Red "Test" button TWO times to enter Diagnostics for SMM Mode



Blackout Mode Option (B)

Introduction

- The Blackout mode has the ability to eliminate all exterior lighting to aid in covert operations. This includes parking lamps, reverse lights, and Brake lights. A maximum speed 'exit 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 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 when Blackout mode is active. Connect to LED with integral resistor.

Blackout Mode Operating Instructions:

To enter Blackout Mode, all four 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).
- Push enable button (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:

- Cluster brightness turned to the On position.
- 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

US Vehicles Only (Optional on firmware 4.61 and above)

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.

Blackout Mode Post Installation Test

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

1. Start vehicle.
2. Cluster brightness must be turned Off.
3. Push Blackout enable button (Pink/Black wire).
4. Verify Blackout Mode LED comes on (if equipped).
5. Holding Service Brake down, place transmission in Reverse.
6. Have helper verify that neither the brake nor backup lights are on.
7. Blackout Mode output (Yellow wire) should be 12 Volts.
8. Disable Blackout Mode by turning the cluster brightness to the On position.
9. Verify the brake and backup lights now function properly.

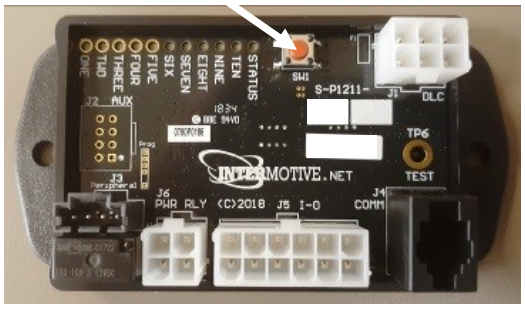
DO NOT PUT VEHICLE IN SERVICE IF IT DOES NOT PASS ALL OF THE ABOVE TESTS
Contact InterMotive at 530-823-1048 for technical assistance

Blackout Mode Diagnostics

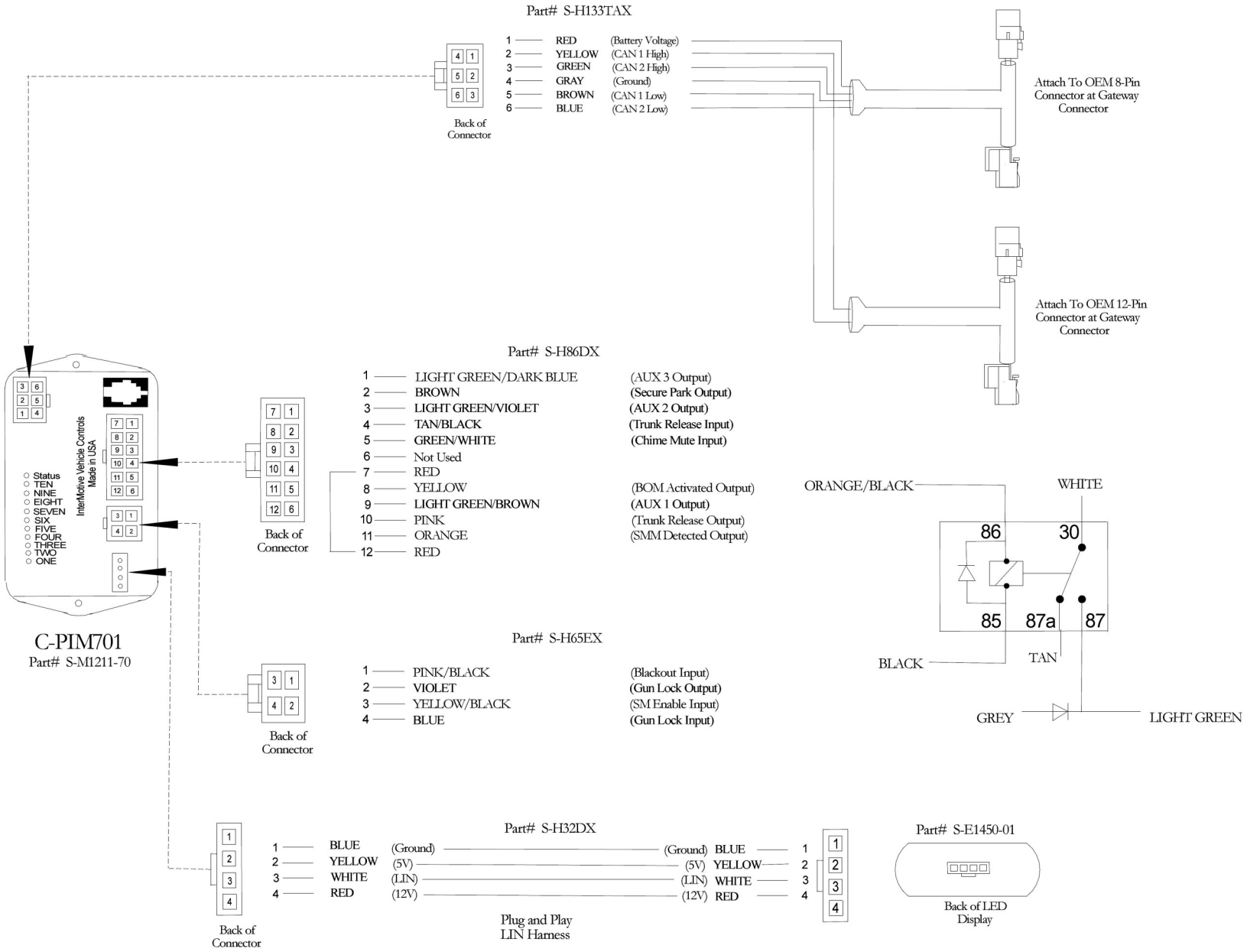
Diagnostic mode is entered by shorting the two "Test" pads together on the module. The module provides diagnostic LEDs which illuminate according to the following table. To exit this mode, cycle the key. **For diagnostics for the Blackout mode portion of the PIM module, momentarily short the two "Test"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

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

Press the Red "Test" button THREE times to enter diagnostics 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

C-PIM701-080420-CAD