

# ANTI-THEFT SYSTEM

1998 Mitsubishi Galant

1998 ACCESSORIES & EQUIPMENT  
Mitsubishi - Anti-Theft Systems

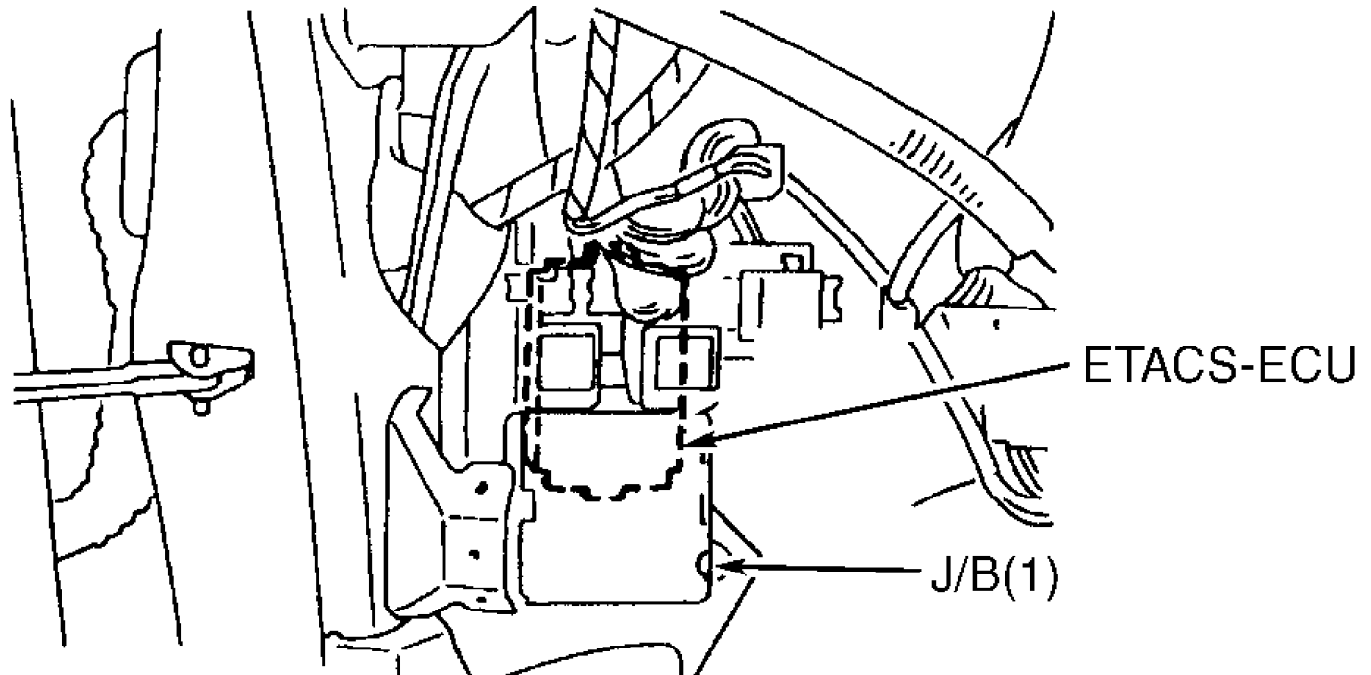
Galant

## DESCRIPTION & OPERATION

**WARNING:** Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEMS article. Do not apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

Anti-theft system electrically disables starter, flashes lights and sounds an alarm if any door, luggage compartment or hood is forcibly opened, or if battery cables are disconnected then reconnected when anti-theft system is active.

Anti-theft system is controlled by Electronic Timer Alarm Control System (ETACS). ETACS-ECU is located under instrument panel to left of footwell. See Fig. 1.



96A06790

Fig. 1: Locating ETACS-ECU  
Courtesy of Mitsubishi Motor Sales of America

**NOTE:** System will not arm if any door is ajar.

### Arming Anti-Theft System

Close all doors, hood and luggage compartment. Remove ignition key from ignition switch. Lock vehicle using key, remote control switch or by using power door lock switch.

After locking vehicle using one of these methods, indicator light (SECURITY) on instrument panel will light continuously for about

20 seconds. After about 20 seconds, indicator light will go out, indicating system is armed.

Anti-theft system will also be armed if while indicator light is on, hood or luggage compartment is opened or closed. System will be armed even if hood or luggage compartment is open, but when system is set, ensure hood and luggage compartment are locked. Luggage compartment can only be unlocked by using key without triggering or disarming system even after system has been armed. When luggage compartment is locked, system will be rearmed.

#### Alarm Stage

Alarm will be activated if driver's or passenger's door is opened without using key or remote control switch, luggage compartment is opened without using key, or if hood is opened from outside vehicle. If alarm is activated, headlights will blink on and off for 3 minutes. After 3 minutes, headlights automatically shut off. Horn will sound intermittently for 3 minutes and starter circuit will be shut off, preventing vehicle from being started without using key.

NOTE: Alarm will continue to operate for 3 minutes. After 3 minutes, alarm will automatically shut off to save battery power. System will be rearmed until proper disarming step is taken. When key is used, starter circuit shut off is cancelled and engine can be started.

NOTE: Once system has been disarmed, it cannot be rearmed except by repeating arming procedure.

#### Disarming Anti-Theft System

Anti-theft system can be disarmed by unlocking driver's or passenger's door using key or remote control switch. System can also be disarmed by inserting key in ignition switch and turning to ACC or ON position. System will be disarmed if while indicator light is on, driver's or passenger's door is unlocked. System can be deactivated by turning key in driver's or passenger's door in either direction (lock or unlock) or by using key to unlock luggage compartment.

#### Testing Anti-Theft System

Open driver's window. Arm anti-theft system. Ensure theft alarm indicator light comes on and goes out in about 20 seconds. Wait a few seconds, then unlock driver's door by using inside door lock knob. Open door. Ensure horn sounds intermittently when door is opened and headlights blink on and off. Disarm system by unlocking driver's or passenger's door using key or remote control switch.

To check hood or luggage compartment alarm operation, open hood using hood release lever, or luggage compartment using remote release lever either before alarm is activated by opening of a door, or after first 3-minute alarm is completed.

## COMPONENT LOCATIONS

For component locations, see Figs. 18-20.

## TROUBLE SHOOTING

NOTE: Verify power door lock system is operating properly before trouble shooting anti-theft system. See KEYLESS ENTRY & POWER DOOR LOCKS article. Ensure all component terminals and ground connections are clean and tight. Repair or replace components and circuits as necessary.

Trouble shooting anti-theft system is accomplished with diagnosis by symptom. Locate appropriate primary symptom in SYMPTOM CHART under SYMPTOM TESTS. See Fig. 2. Refer to appropriate test in CIRCUIT TESTS under SYMPTOM TESTS for diagnosing appropriate circuit.

## SYMPTOM TESTS

NOTE: If anti-theft system is not functioning properly after testing procedures are complete, substitute known-good ETACS-ECU and repeat test. ETACS-ECU is located under dash, to left of footwell.

NOTE: To diagnose symptom, see Fig. 2, then go to appropriate test under CIRCUIT TESTS.

Trouble Symptom		Circuit Test No.
Communication with scan tool is not possible.	Communication with all systems is not possible.	1
	Communication with one-shot pulse input signal only is not possible.	2
Arming/disarming relationship	The system is not armed (The SECURITY indicator doesn't illuminate, and the alarm doesn't function.)	3
	The arming procedures are followed, but the SECURITY indicator does not illuminate. (There is an alarm, however, when an alarm test is conducted after about 20 seconds have passed.)	4
	The alarm sounds in error when, while the system is armed, a door or the liftgate is unlocked by using the key.	-
Activation/deactivation relationship	There is no alarm when, as an alarm test, a door is opened without using the key. (The arming and disarming are normal, and the alarm is activated when the liftgate or hood is opened.)	-
	There is no alarm when, as an alarm test, the liftgate is opened without using the key. (The alarm is activated, however, by opening a door or the hood.)	-
	There is no alarm when, as an alarm test, the hood is opened from within the vehicle. (The alarm is activated, however, by opening a door or the liftgate.)	-
	Engine would not start	-
	When, as a test of the alarm, a door or the liftgate is opened without using the key, or the hood is opened from within the vehicle, the horn and the theft-alarm horn sound but the headlights don't flash. (The headlights can, however, be switched ON by using the passing switch.)	5
	The headlights flash during an alarm test but the horn or the theft alarm horn does not sound.	6
	The system is not deactivated when, during an alarm test in which the alarm is intentionally activated, the door or liftgate is unlocked by using the key. (The system cannot be disarmed, either.)	-

96C06791  
Fig. 2: Symptom Chart  
Courtesy of Mitsubishi Motor Sales of America

## CIRCUIT TESTS

CAUTION: Ensure ignition switch is in OFF position when connecting or disconnecting component connectors.

CAUTION: When battery is disconnected, radio will go into anti-theft protection mode. Obtain radio anti-theft protection code from owner prior to servicing vehicle.

NOTE: Use illustrations for ETACS-ECU and other connector terminal identification. See Figs. 4-17. For wiring diagram, see WIRING DIAGRAMS.

Test No. 1

1) Using a voltmeter, check voltage between Data Link Connector (DLC) terminal No. 16 (Brown/Red wire) and ground. See Fig. 3. If battery voltage is present, go to next step. If battery voltage is not present, inspect harness connectors to junction block, DLC and ETACS-ECU. See WIRING DIAGRAMS. If connectors are okay and malfunction persists, check circuit between power supply and DLC. Repair as necessary.

2) Using an ohmmeter, check continuity between ground and DLC terminals No. 4 (Black wire) and No. 5 (Black wire). If continuity is present, scan tool is faulty. Retest using a known-good scan tool. If continuity is not present, check junction block connector. If malfunction remains, check circuit between DLC and ground. Repair as necessary.

Test No. 2

1) Using an ohmmeter, check continuity between DLC terminal No. 9 (Green/Orange wire) and ETACS-ECU harness connector terminal No. 7 (Green/Orange wire). See Figs. 4-17. If continuity does not exist, repair open in Green/Orange wire. If continuity exists, go to next step.

2) Check harness connectors to DLC, ETACS-ECU and joint connector between DLC and ETACS-ECU. Repair as necessary. If connectors are okay, replace ETACS-ECU.

Test No. 3

1) Using a voltmeter, check for battery voltage at fuse No. 12 (10-amp). If battery voltage is not present, replace fuse. If fuse is okay, inspect fusible link No. 2. If fusible link is okay, go to next step. If blown, replace fusible link.

2) Disconnect ETACS-ECU harness connector. See Figs. 4-17. Check voltage between ground and ETACS-ECU harness-side connector terminal No. 19 (Red/Black wire). If battery voltage is present, go to next step. If battery voltage is not present, check joint connector and ETACS-ECU harness connector. Repair as necessary. If connectors are okay and malfunction persists, check circuit between fusible link No. 2 and ETACS-ECU. Repair as necessary.

3) Using an ohmmeter, verify continuity between ground and ETACS-ECU harness-side connector terminal No. 20 (Black wire). If continuity is present, replace ETACS-ECU. If continuity is not present, inspect harness connectors to ETACS-ECU and junction block. Repair as necessary. If connectors are okay, check circuit between ETACS-ECU and ground. Repair as necessary.

Test No. 4

1) Remove combination meter (instrument cluster). See INSTRUMENT PANELS article. If security indicator bulb is burned out, replace faulty bulb. If security indicator bulb is okay, go to next step.

2) Disconnect combination meter harness connectors. Using an ohmmeter, check continuity between harness connector terminals No. 47 (Red/Black wire) and No. 7 (Brown/White wire). If continuity is not

present, replace combination meter. If continuity is present, go to next step.

3) Using a voltmeter, check for battery voltage between combination meter harness-side connector terminal No. 47 (Red/Black wire) and ground. If battery voltage is present, go to next step. If battery voltage is not present, check harness connectors to combination meter and in-line connector. See Figs. 4-17. See WIRING DIAGRAMS. Repair as necessary. If connectors are okay and malfunction persists, check harness connectors between combination meter and junction block. Repair as necessary. If connectors are okay, check circuit between combination meter and junction block. Repair as necessary.

4) Disconnect ETACS-ECU harness connector. Ground ETACS-ECU harness-side connector terminal No. 29 (Brown/White wire). If security indicator illuminates, replace ETACS-ECU. If security indicator does not illuminate, check harness connectors to ETACS-ECU, combination meter and joint connector between ETACS-ECU and combination meter. If connectors are okay and malfunction persists, check circuit between combination meter and ETACS-ECU. Repair as necessary. If circuit is okay, replace ETACS-ECU.

#### Test No. 5

1) Disconnect headlight relay harness connector. Check for battery voltage between ground and headlight relay harness-side connector terminal No. 5 (Red wire). See Figs. 4-17. If battery voltage is present, go to next step. If battery voltage is not present, check and repair headlight relay harness connector. If harness connector is okay and malfunction persists, check circuit between fusible link and headlight relay. Repair as necessary.

2) Using an ohmmeter, check continuity between theft alarm horn relay harness connector terminal No. 1 (Green wire) and ETACS-ECU harness connector terminal No. 23 (Green/Yellow wire). If continuity is present, go to next step. If continuity is not present, check joint connector and ETACS-ECU harness connector. Repair as necessary. If connectors are okay and malfunction persists, check circuit between headlight relay and ETACS-ECU. Repair as necessary.

3) Check theft alarm horn relay harness connector and repair as necessary. If connector is okay and malfunction persists, replace headlight relay.

#### Test No. 6

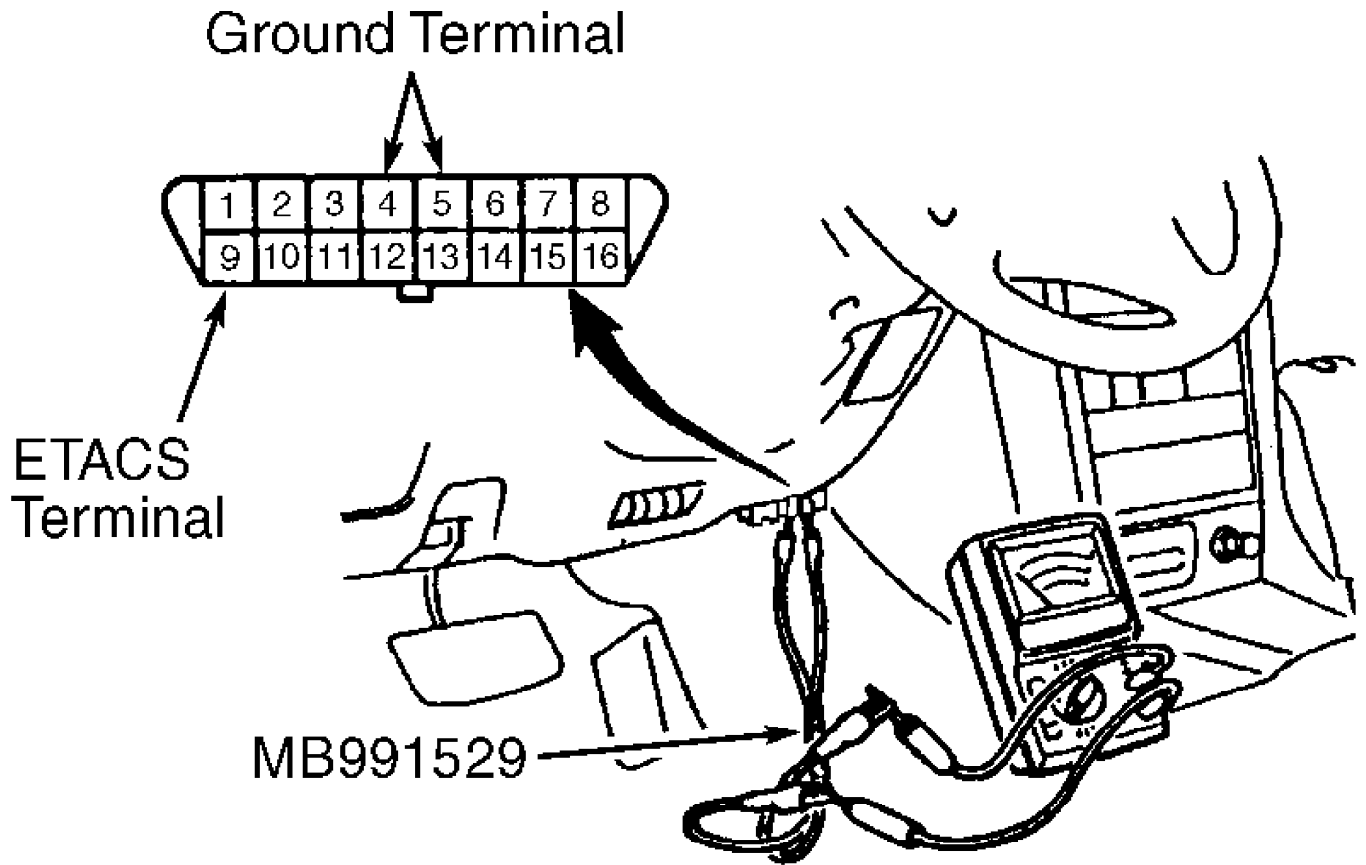
1) Check fuse No. 9 (10-amp) and replace if blown. If fuse is okay, check Red fusible link No. 3 (50-amp) and replace if blown. If fusible link is okay, check junction block connector C-48 (diode connector). Repair if necessary. If connector is okay, check diode. See WIRING DIAGRAMS. Replace if necessary. If diode is okay, go to next step.

2) Disconnect ETACS-ECU harness connector. Ground ETACS-ECU harness-side connector terminal No. 24 (Green/Black wire). See Figs. 4-17. If horn sounds, go to next step. If horn does not sound, check circuit between ETACS-ECU and theft-alarm horn relay, and between theft-alarm horn relay and ground. Repair as necessary.

3) Check continuity of theft-alarm horn relay. Replace relay as necessary. If relay is okay, go to next step.

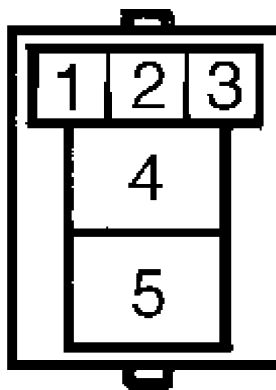
4) Disconnect theft-alarm horn relay harness connector. Check voltage between ground and relay harness-side connector terminals No. 2 (Red wire) and No. 3 (Red wire). If battery voltage is present, go to next step. If battery voltage is not present, check theft-alarm relay harness connector and repair as necessary.

5) Check harness connectors to theft-alarm horn and theft-alarm horn relay. Repair as necessary. If connectors are okay and malfunction persists, check circuit between theft-alarm relay and ground. If circuit is okay, replace theft-alarm relay.



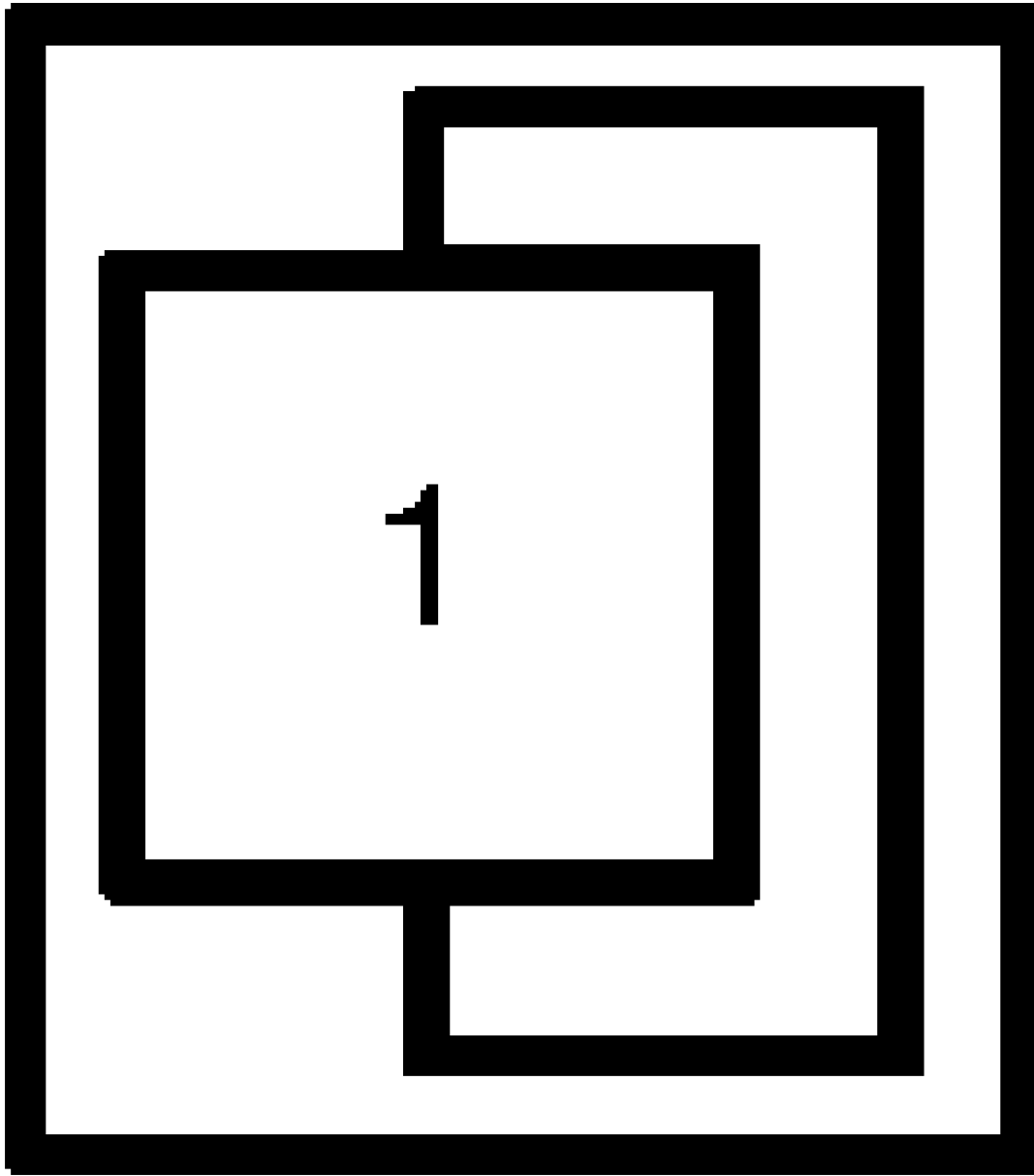
96E06792

Fig. 3: Identifying Data Link Connector Terminals  
 Courtesy of Mitsubishi Motor Sales of America



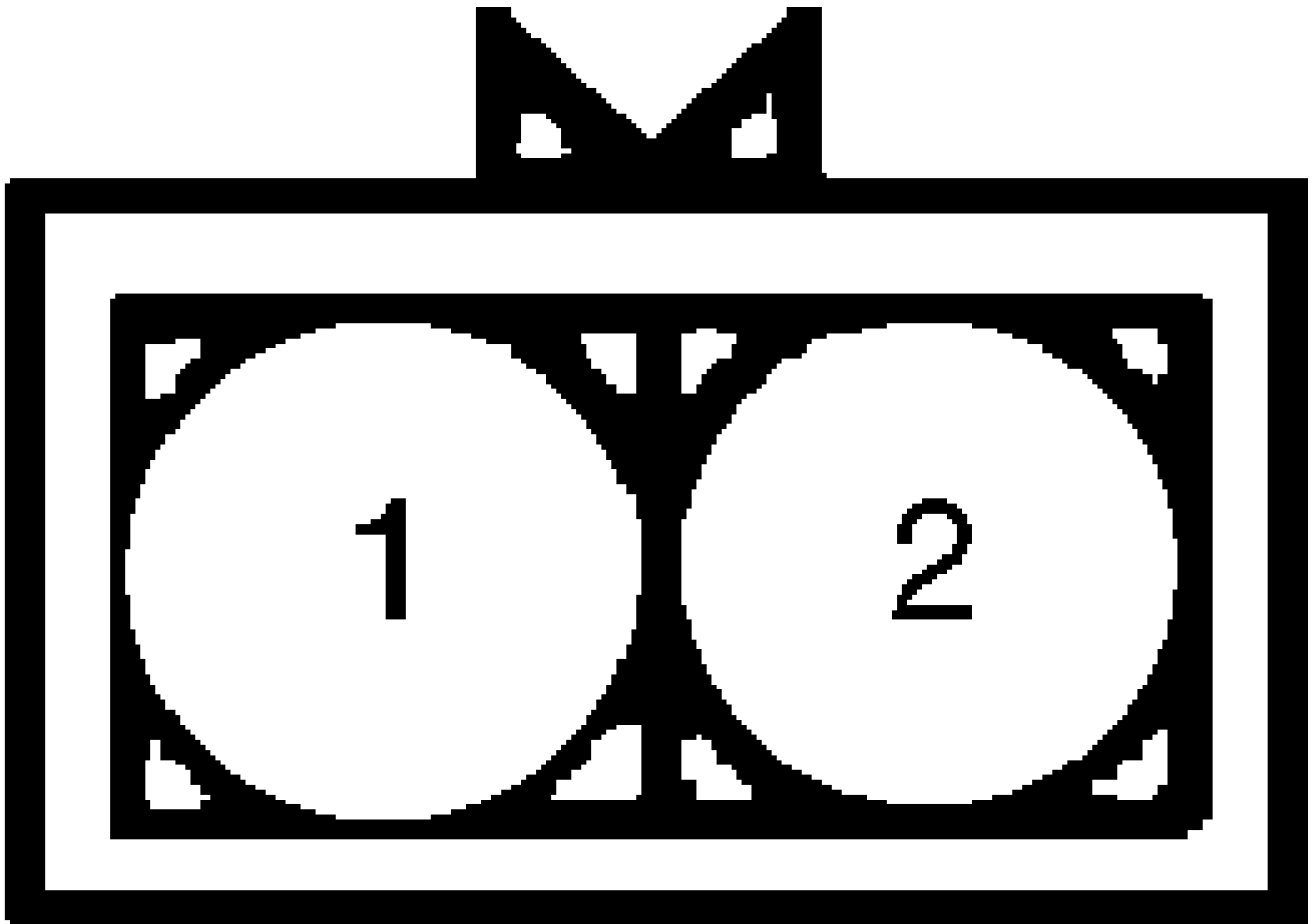
96J06365

Fig. 4: Identifying Connector Terminals: A-06X Horn Relay,  
 A-12X Headlight Relay  
 Courtesy of Mitsubishi Motor Sales of America



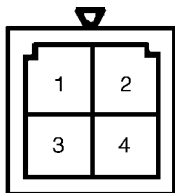
96J06799

Fig. 5: Identifying Connector Terminals: A-68 Theft Alarm Horn,  
A-83 Theft Alarm Horn  
Courtesy of Mitsubishi Motor Sales of America



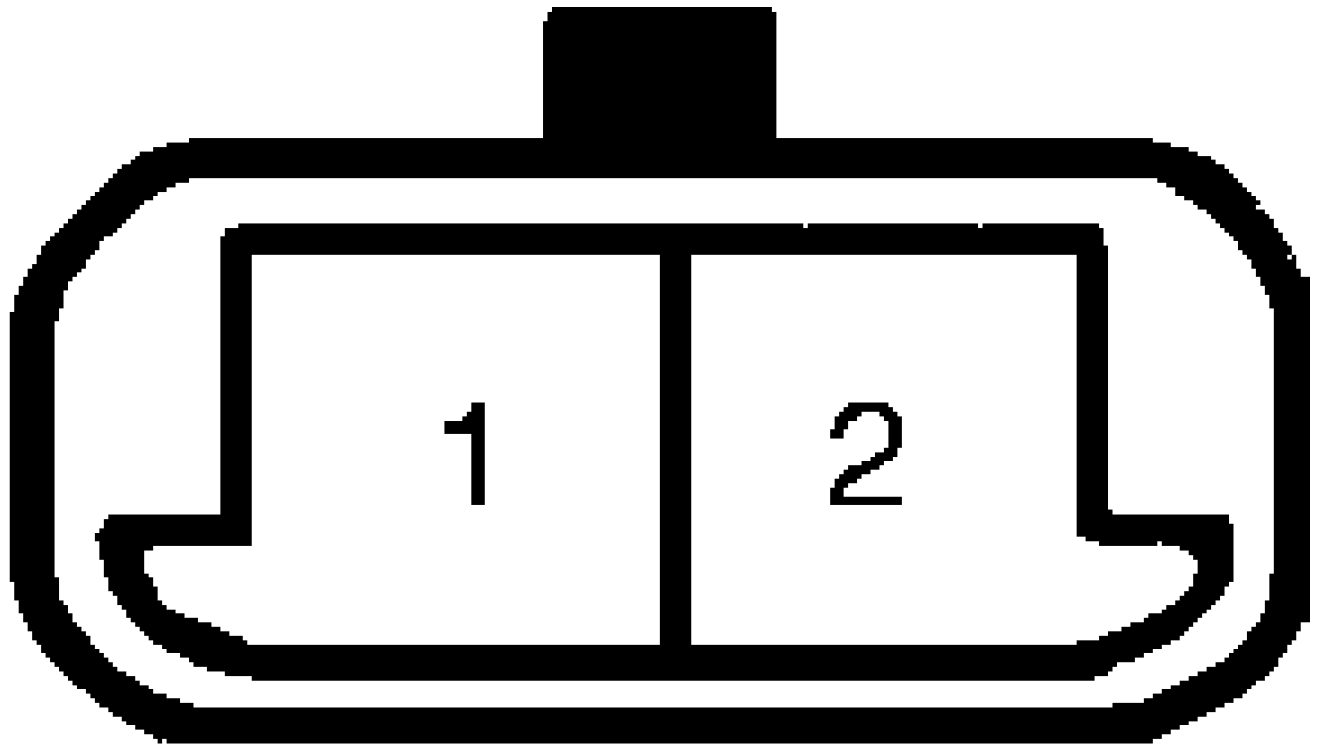
96H06798

Fig. 6: Identifying Connector Terminals: A-74 In-Line Connector  
Between Theft Alarm Horn Relay & Theft Alarm Horn  
Courtesy of Mitsubishi Motor Sales of America



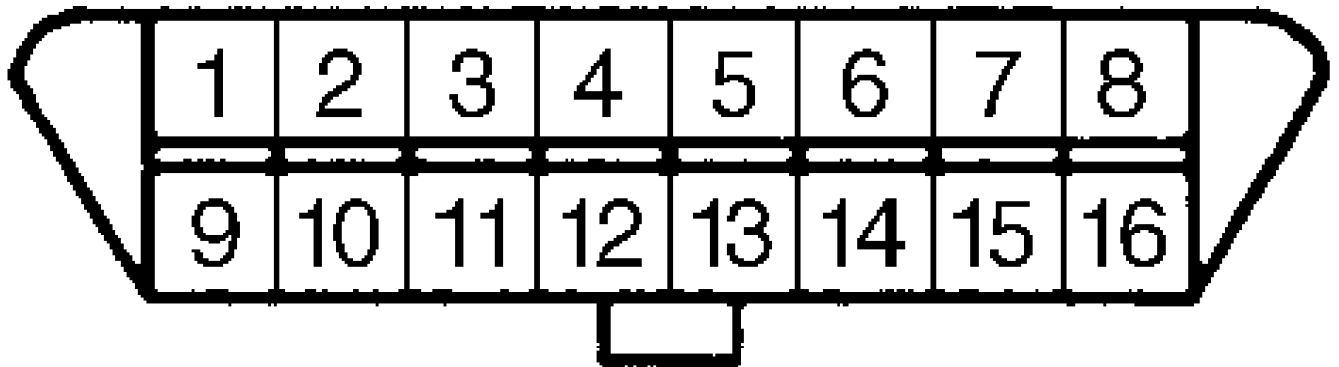
<sup>96D06800</sup>  
Fig. 7: Identifying Connector Terminals: A-82 Theft Alarm Horn Relay  
Courtesy of Mitsubishi Motor Sales of America





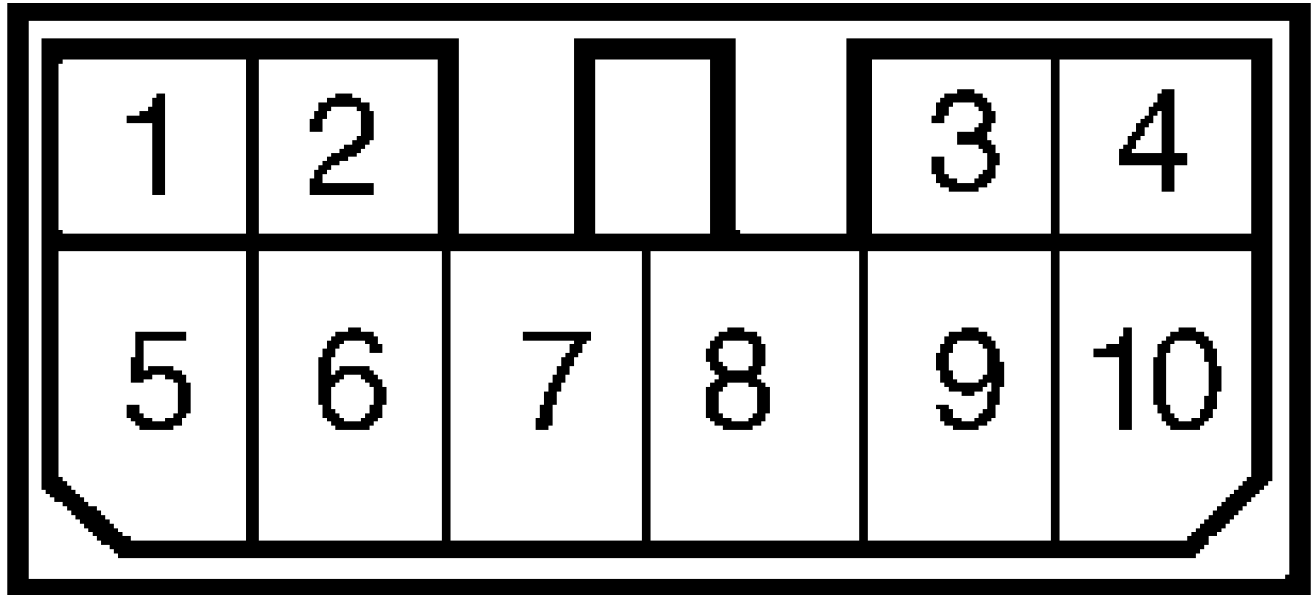
96C06362

Fig. 8: Identifying Connector Terminals: A-84 Lo Tone Horn  
 Courtesy of Mitsubishi Motor Sales of America



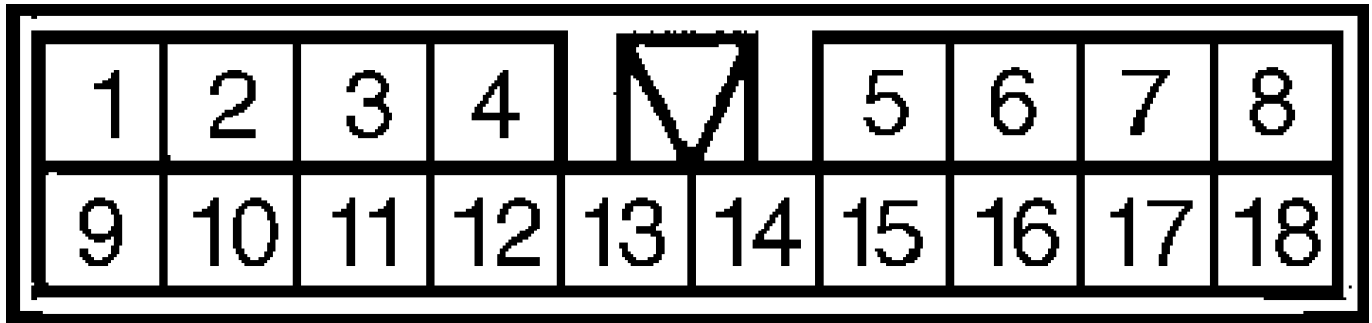
96G06364

Fig. 9: Identifying Connector Terminals: C-22 Data Link Connector  
 Courtesy of Mitsubishi Motor Sales of America



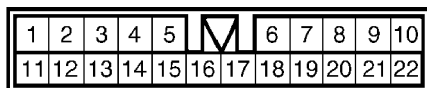
# 96F06368

Fig. 10: Identifying Connector Terminals: C-34 Junction Block To Column Switch  
 Courtesy of Mitsubishi Motor Sales of America



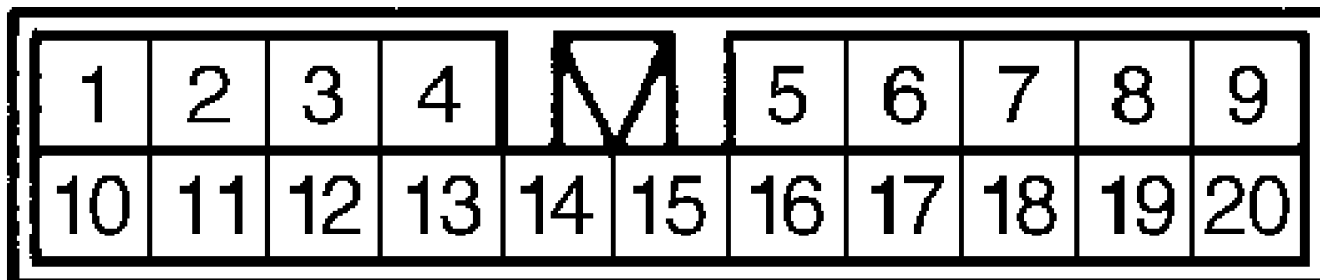
# 96H06369

Fig. 11: Identifying Connector Terminals:  
 C-35 In-Line Connector Between DLC & ETACS-ECU,  
 C-41 In-Line Connector Between ETACS-ECU & Horn Relay A-06X  
 Courtesy of Mitsubishi Motor Sales of America



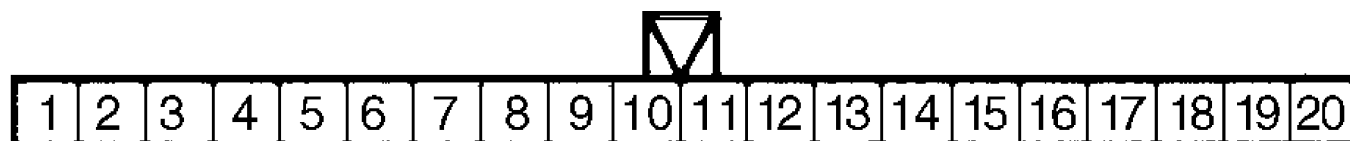
<sup>96B06371</sup>  
 Fig. 12: Identifying Connector Terminals:  
 C-37 Junction Block 1 Between ETACS-ECU & Combination Meter,  
 C-45 Junction Block 2 Between ETACS-ECU & Combination Meter,  
 C-48 Diode Connector,  
 C-50 Junction Block Between Diode Connector & Ground,

C-55 In-Line Connector Between Key Reminder Switch & Theft Alarm  
 Starter Relay,  
 D-14 In-Line Connector Between Combination Meter & ETACS-ECU  
 Courtesy of Mitsubishi Motor Sales of America



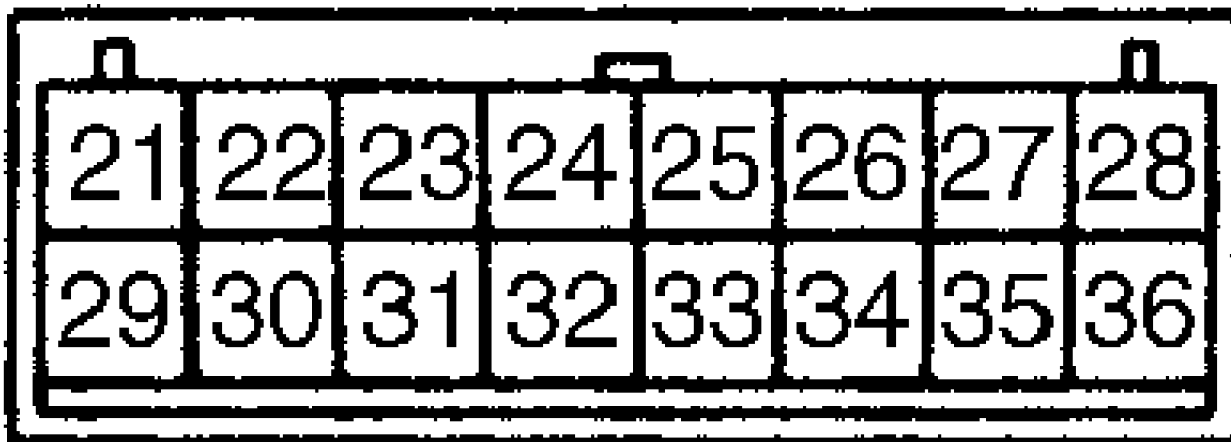
### 96J06370

Fig. 13: Identifying Connector Terminals: C-38 Junction Block  
 Between DLC & ETACS-ECU  
 Courtesy of Mitsubishi Motor Sales of America



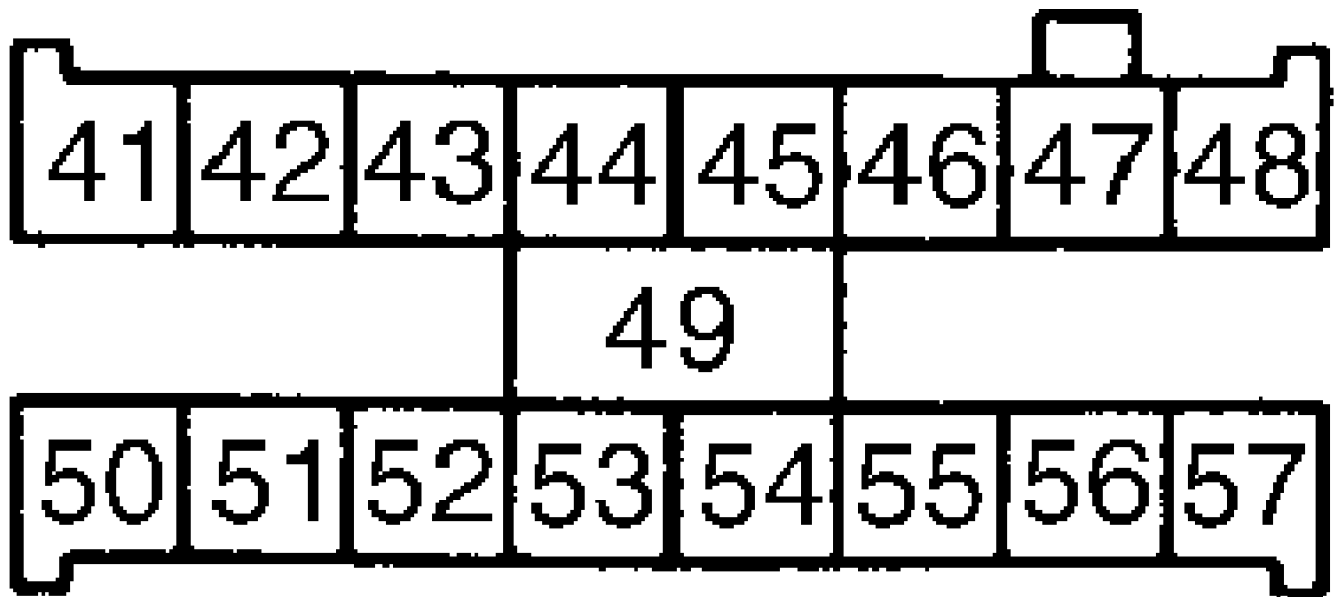
### 96B06366

Fig. 14: Identifying Connector Terminals: Connector C-43 ETACS-ECU  
 Courtesy of Mitsubishi Motor Sales of America



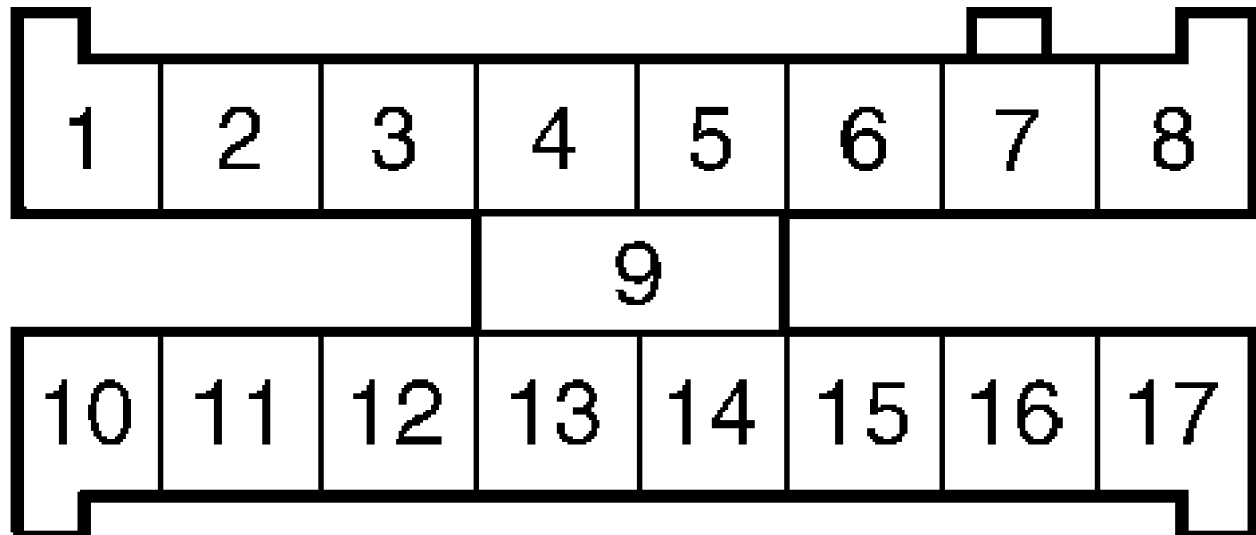
### 96G06793

Fig. 15: Identifying Connector Terminals: Connector C-109 ETACS-ECU  
 Courtesy of Mitsubishi Motor Sales of America



96F06797

Fig. 16: Identifying Connector Terminals: D-01 Combination Meter  
 Courtesy of Mitsubishi Motor Sales of America



93J83138

Fig. 17: Identifying Connector Terminals: D-03 Combination Meter  
 Courtesy of Mitsubishi Motor Sales of America

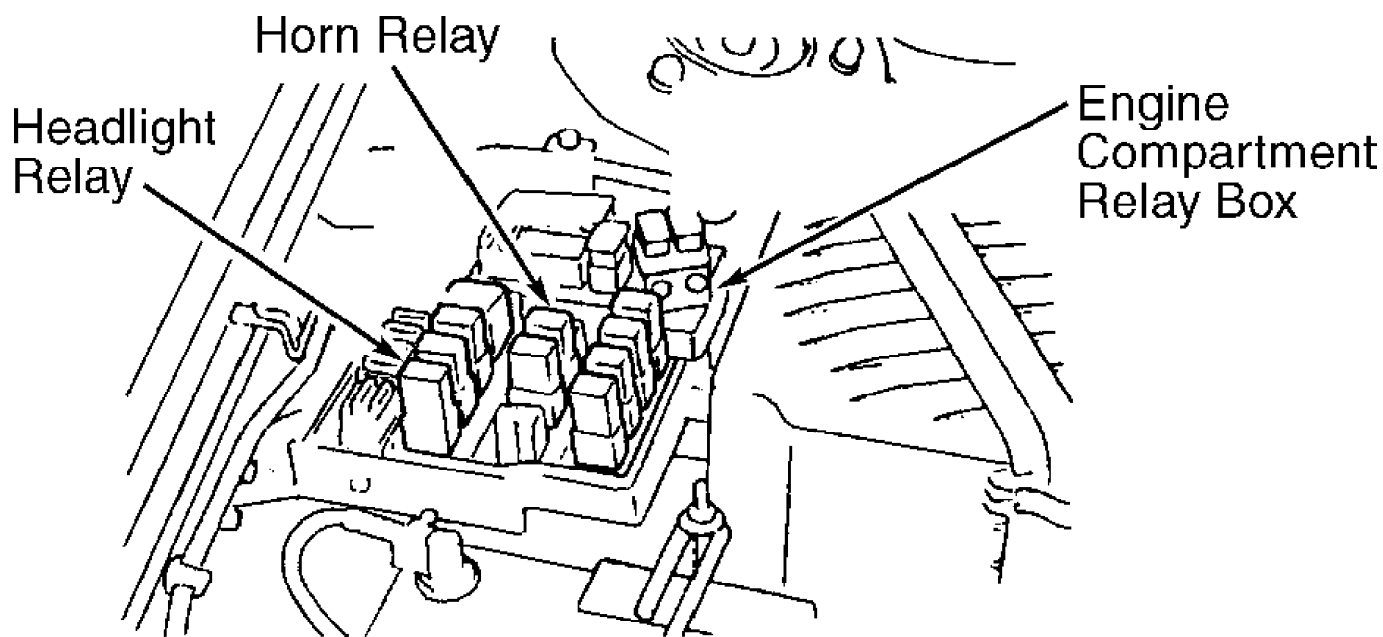
**PIN VOLTAGE TESTS**

ETACS-ECU PIN VOLTAGES TABLE (1) (2)

Application	Pin No.	Volts
Connector C-43		
Driver's Door Switch		
Door Open .....	9	0
Door Closed .....	9	5
ECU Power Supply		
At All Times .....	19	12
Connector C-109		
Passenger's Door Switch		
Door Open .....	21	0
Door Closed .....	21	5
Hood Switch		
Hood Open .....	22	0
Hood Closed .....	22	5
Front Door Actuator Switch (RH)		
Lock .....	25	5
Unlock .....	25	0
Rear Door Actuator Lock Knob		
Lock (OFF) .....	26	5
Unlock .....	26	0
Trunk Lock Cylinder Switch		
Open .....	27	0
Closed .....	27	5
Trunk Light Switch		
ON .....	28	0
OFF .....	28	5
Front Lock Actuator Switch (LH)		
Lock Knob Or Key (Lock) .....	30	5
Unlock .....	30	0
Door Lock Key Cylinder Switch (LH)		
Lock .....	31	0
Neutral .....	31	5
Transmitter Switch (Receiver Output Signal)		
ON .....	32	0
OFF .....	32	5
Key Cylinder Switch (LH)		
Unlock .....	33	0
Neutral .....	33	5
Key Cylinder Switch (RH)		
Lock .....	34	0
Neutral .....	34	5
Key Cylinder Switch (RH)		
Unlock .....	35	0
Neutral .....	35	5

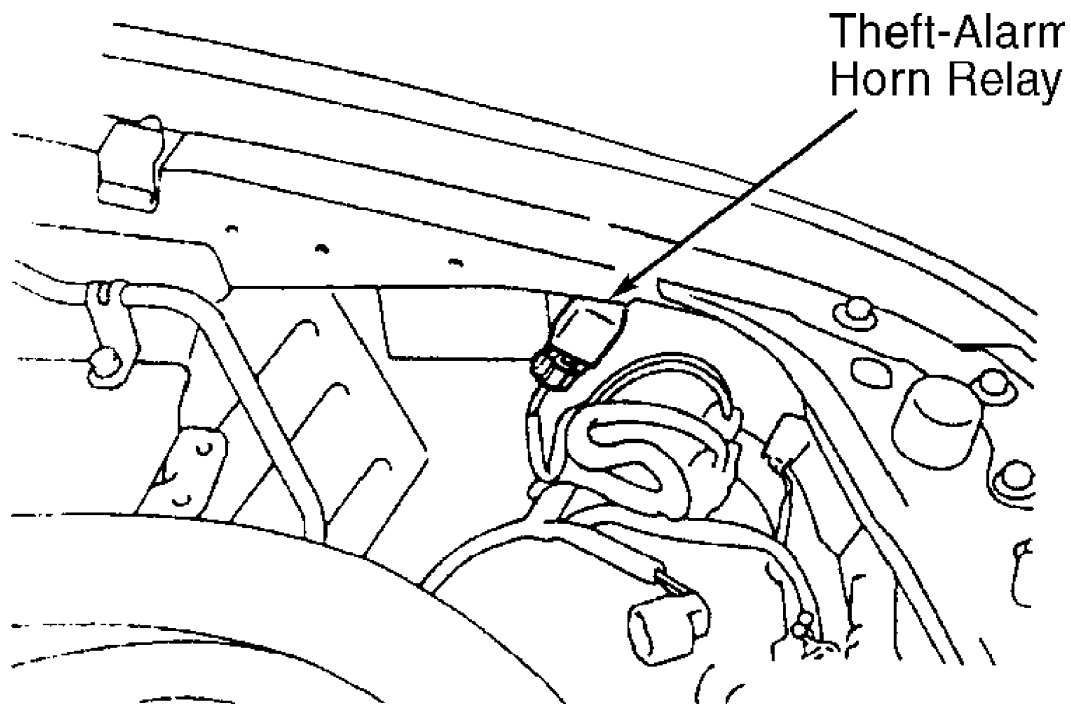
(1) - Oscilloscope must be used for measurements other than ETACS-ECU power supply check.

(2) - See Figs. 4-17.



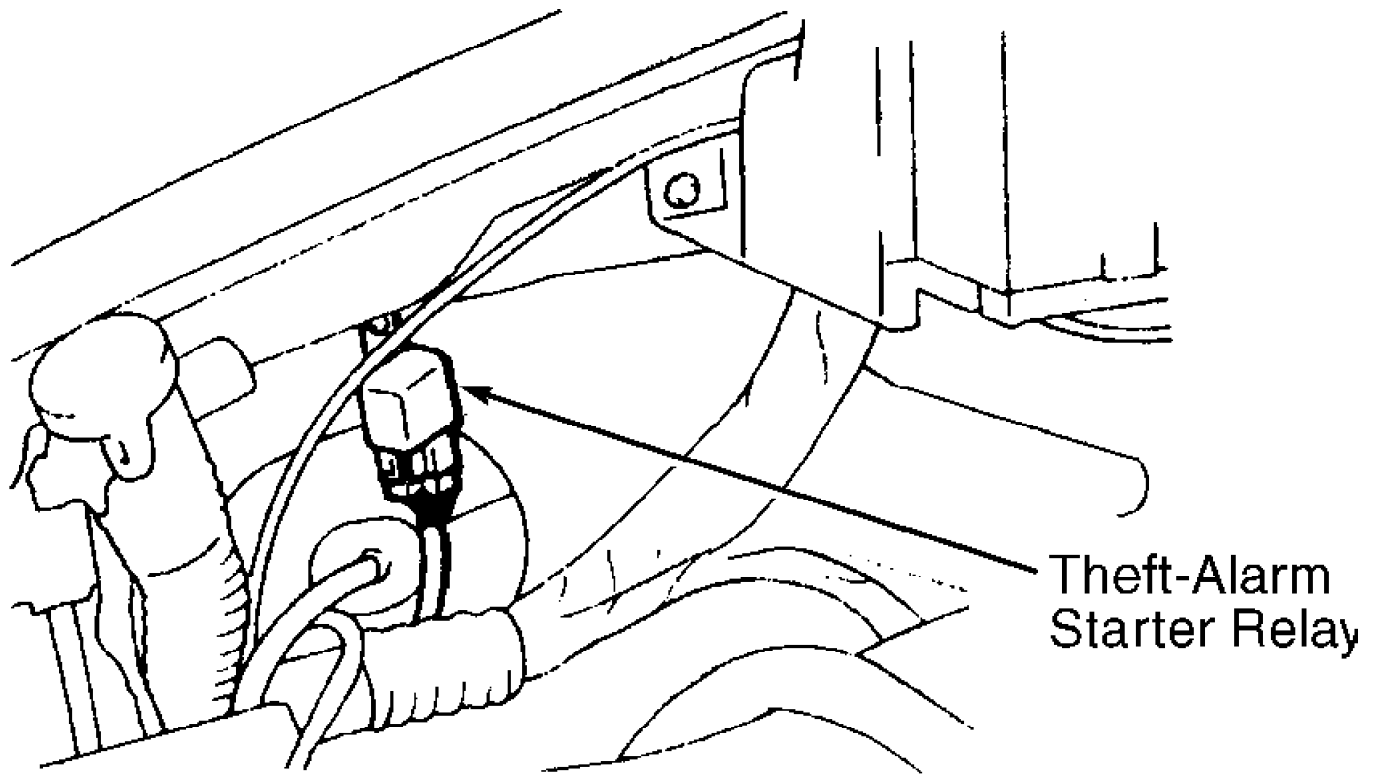
96I06794

Fig. 18: Identifying Relay Locations  
 Courtesy of Mitsubishi Motor Sales of America



96B06795

Fig. 19: Identifying Theft Alarm Horn Relay Location  
 Courtesy of Mitsubishi Motor Sales of America



96D06796

Fig. 20: Identifying Theft Alarm Starter Relay Location  
Courtesy of Mitsubishi Motor Sales of America

## WIRING DIAGRAMS

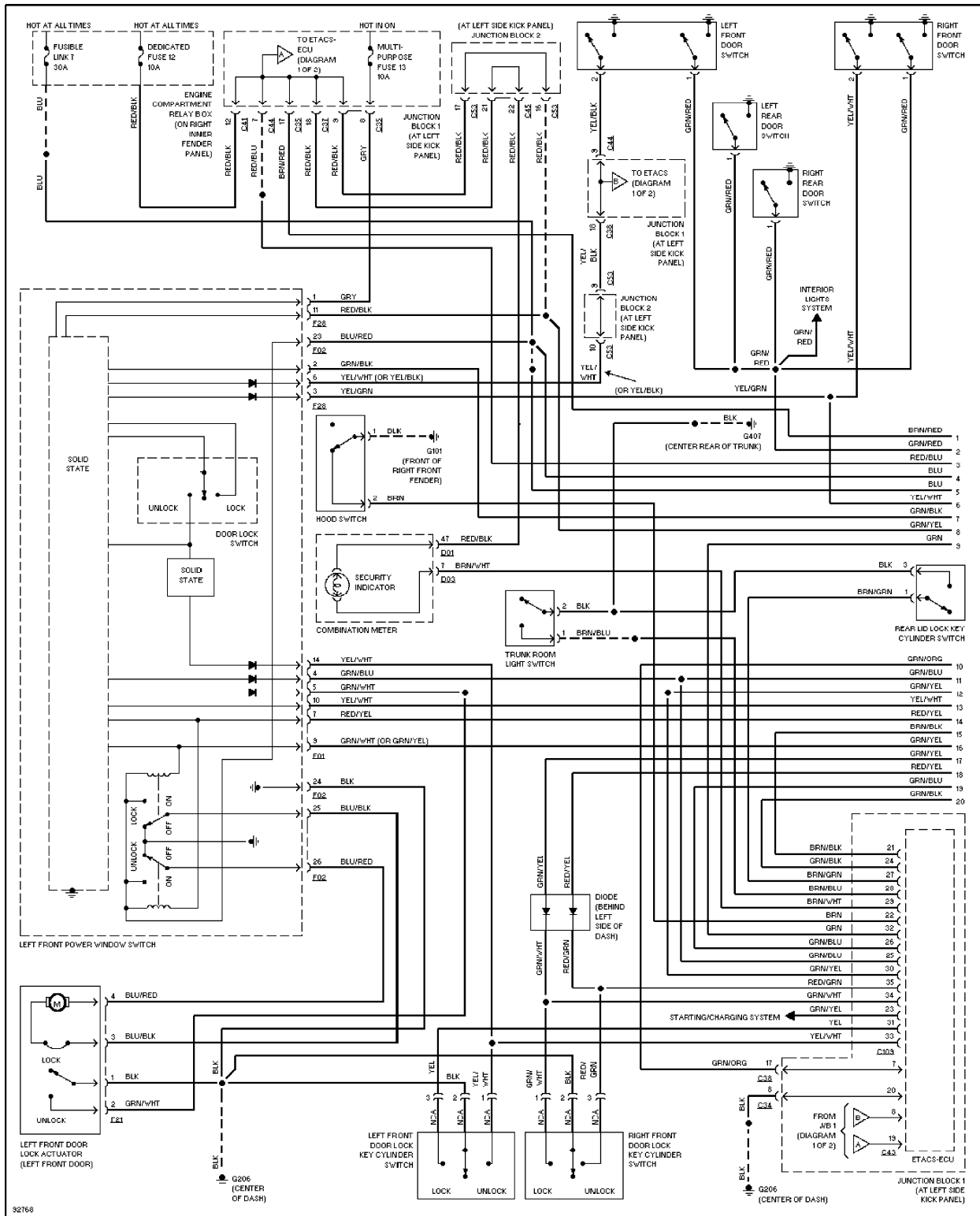


Fig. 21: Anti-Theft System Wiring Diagram (1 Of 2)



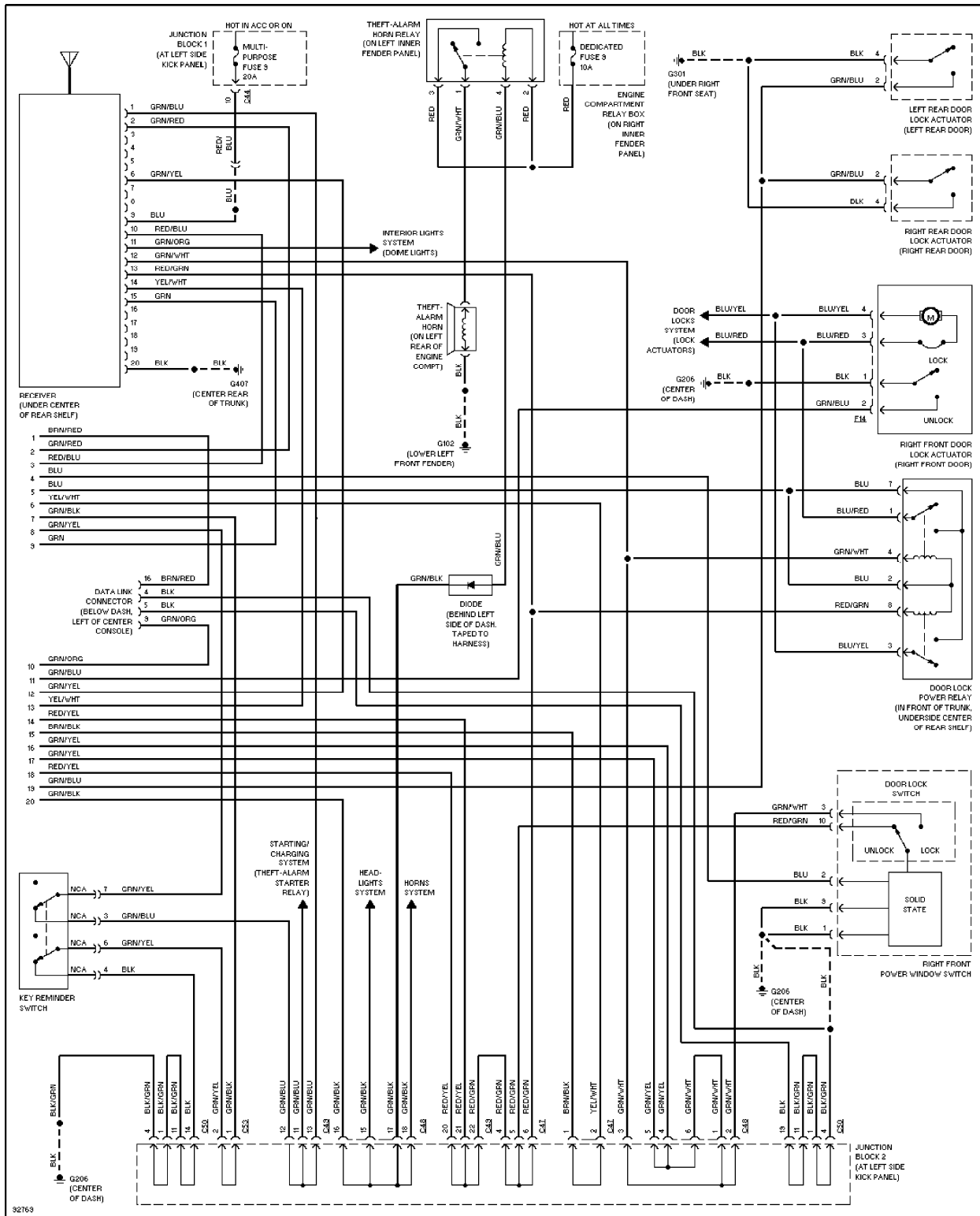


Fig. 22: Anti-Theft System Wiring Diagram (2 Of 2)