

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight

2000-06 ELECTRICAL

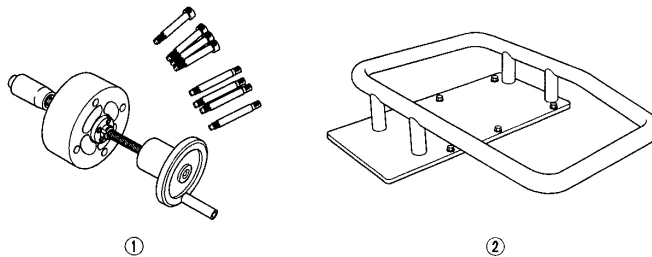
IMA System - Insight

SPECIAL TOOLS.

Ref. No.	Tool Number	Description	Qty
①	07YAC-PHM010B	Rotor Puller* ¹	1
②	07YAK-001010A	Battery Module Lift* ²	1

* 1: This tool is available for loan or purchase from AHM Special Tools

* 2: This tool is available for loan from AHM Special Tools



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Fig. 1: Identifying Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SERVICE PRECAUTIONS

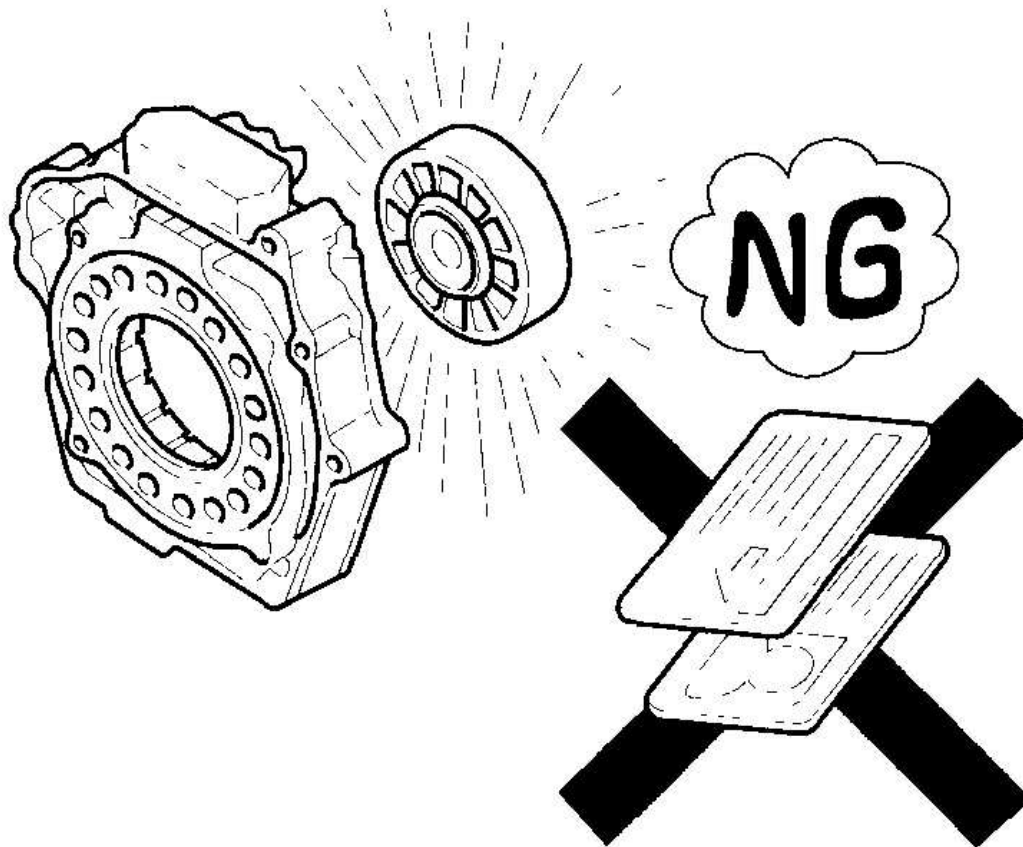
IMA SYSTEM

- The Insight is equipped with the IMA (Integrated Motor Assisted) system that uses high voltage (144 V) circuits. Be sure to shut off the electrical circuits and isolate the IMA system and its related parts before servicing the IMA system.
- The high voltage cables and their covers are identified by orange coloring. The caution labels are attached to high voltage and other related parts (see **DANGER/WARNING/CAUTION LABEL LOCATIONS**). Be careful not to touch these cables and parts without adequate protective gear. The front floor under-cover protecting the high voltage cables is marked.
- If the 12V battery has been discharged, its cable has been disconnected, or the MCM (motor control module) has been reset, the IMA battery level gauge (BAT) will not display the state of charge when the engine is started. Start the engine, and hold it between 3,500 RPM and 4,000 RPM without load (in Park or neutral) until the BAT displays at least three segments.

- Observe the following instructions when inspecting or servicing the IMA system.
 - When the IMA system indicator is on, perform the IMA system troubleshooting first (see **GENERAL TROUBLESHOOTING INFORMATION**).
 - Wear insulated gloves whenever you inspect or service the IMA system. Be sure to check the gloves for pin holes, tears, and other damage.
 - Turn the battery module switch OFF, and secure the switch in the OFF position with the locking cover before servicing the IMA system (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
 - Wait for 5 or more minutes after turning off the battery module switch, then disconnect the negative cable from the 12 V battery (it takes about 5 minutes for the PDU capacitor to discharge).
 - Before disconnecting the high voltage cable terminals, make sure that the voltage between the terminals is below 30 V when measured with a voltmeter.
- When servicing the parts without the insulating sheath, be sure to use insulated tools to prevent short circulation.
- The rotor assembly contains very strong magnets and should be handled with special care. People with pacemakers or other magnetically sensitive medical devices should not handle the rotor assembly.
- Use the special tool to remove or install the rotor assembly.

WARNING: If the rotor is installed by hand, it may suddenly be pulled toward the stator with great force causing serious hand or finger injury. Always use the special tool to remove or install a rotor assembly.

- Do not use the rotor if the fiberglass band is damaged. If the band breaks during use, magnets may come loose from the rotor.
- Keep the rotor assembly away from magnetically sensitive devices.



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Fig. 2: Keeping Rotor Assembly Away From Magnetically Sensitive Devices

Courtesy of AMERICAN HONDA MOTOR CO., INC.

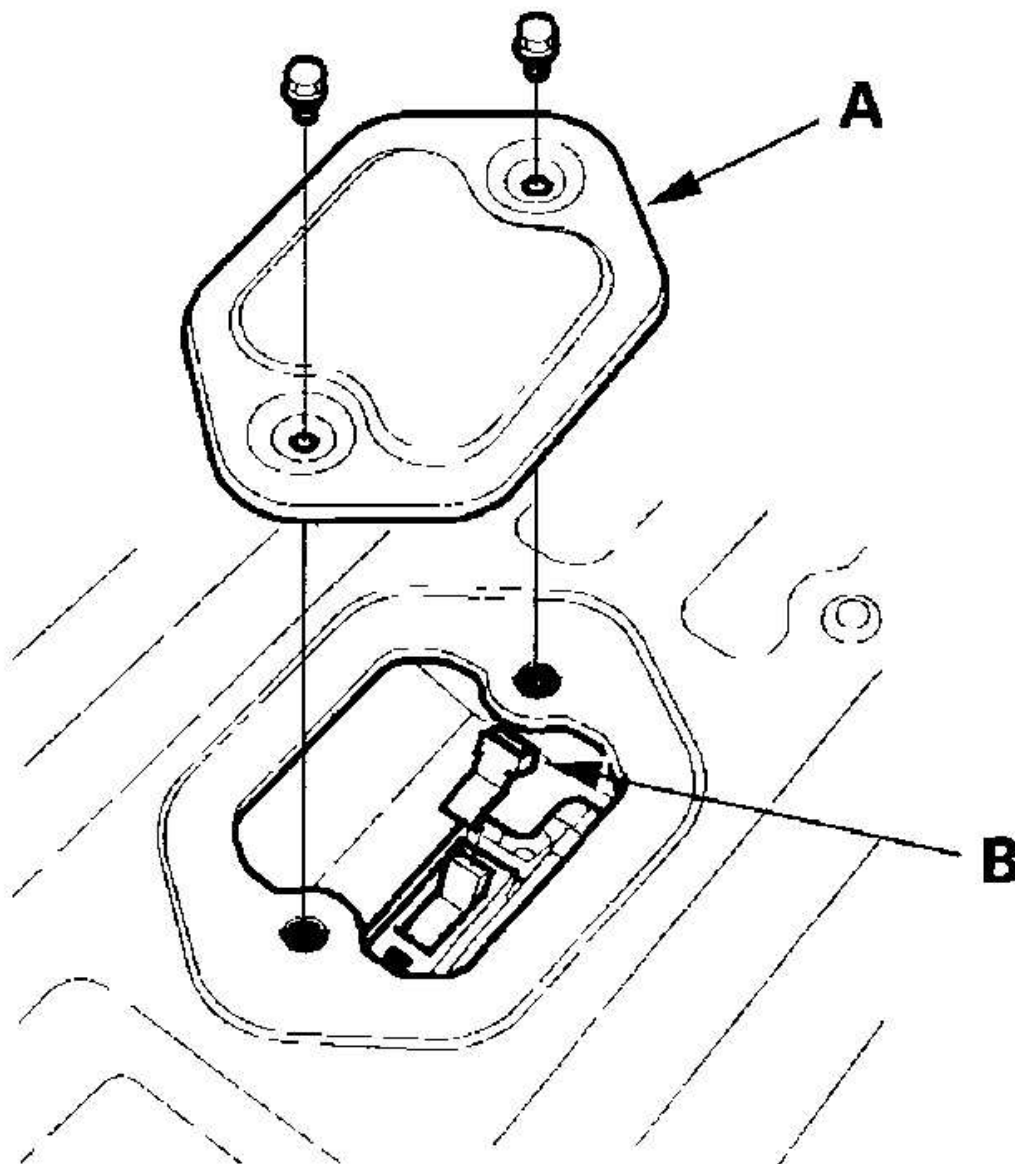
- After disconnecting the high voltage terminals, busbars, etc., insulate the parts with insulated tape.
- As a safety warning, attach a sign saying, "WORKING ON HIGH VOLTAGE PARTS. DO NOT TOUCH!" to the steering wheel.

TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT

The following procedure should be performed prior to working on or near any high voltage components. Follow the procedure exactly. Otherwise, you may be injured

or damage equipment.

1. Turn the ignition switch OFF.
2. Remove the cargo floor mat (see **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
3. Remove the battery module cover (A) from the IPU lid, and remove the locking cover (B).



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Fig. 3: Removing Battery Module Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the battery module switch (A) OFF, then install the locking cover (B).

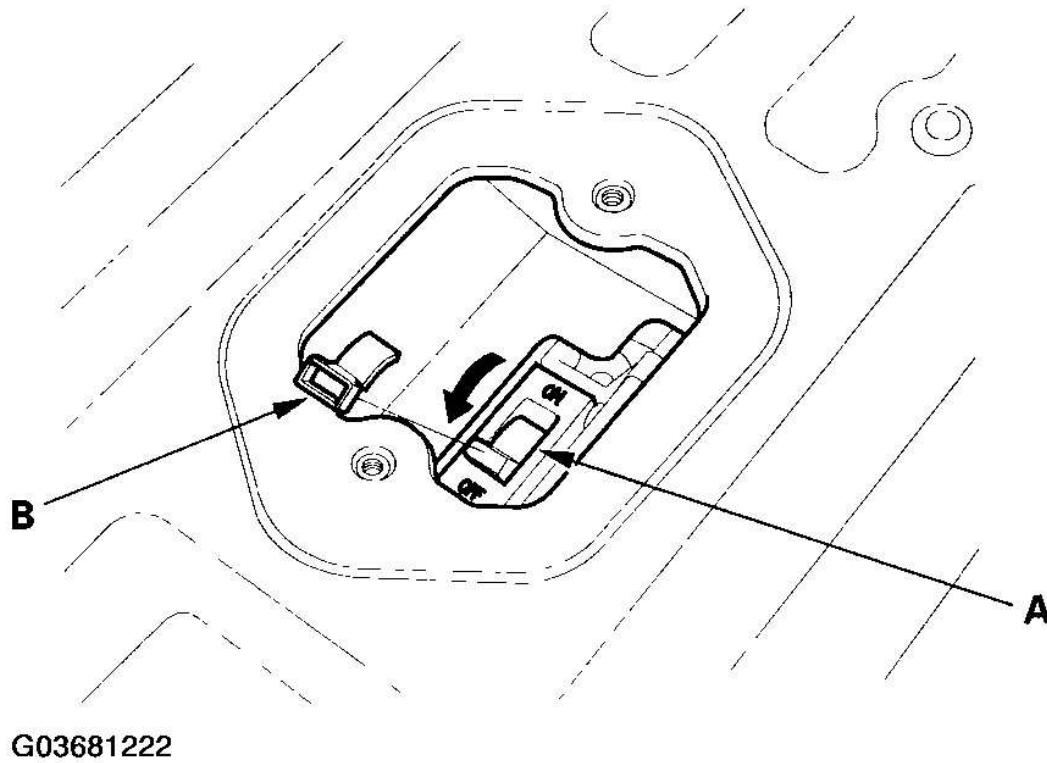
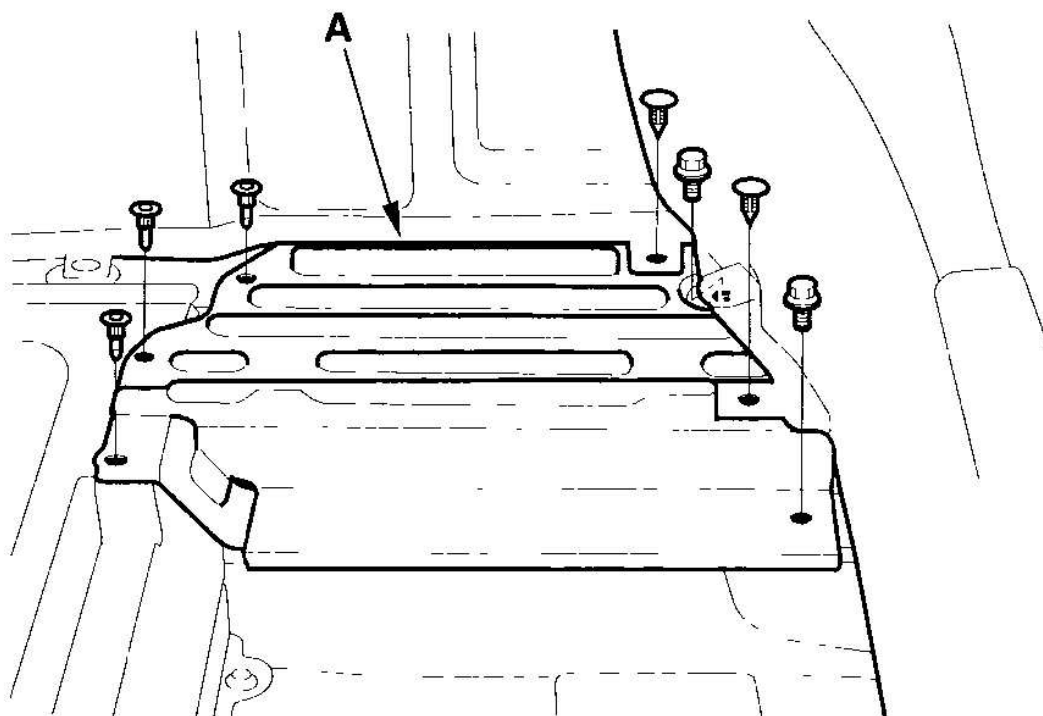


Fig. 4: Turning Battery Module Switch OFF
Courtesy of AMERICAN HONDA MOTOR CO., INC.

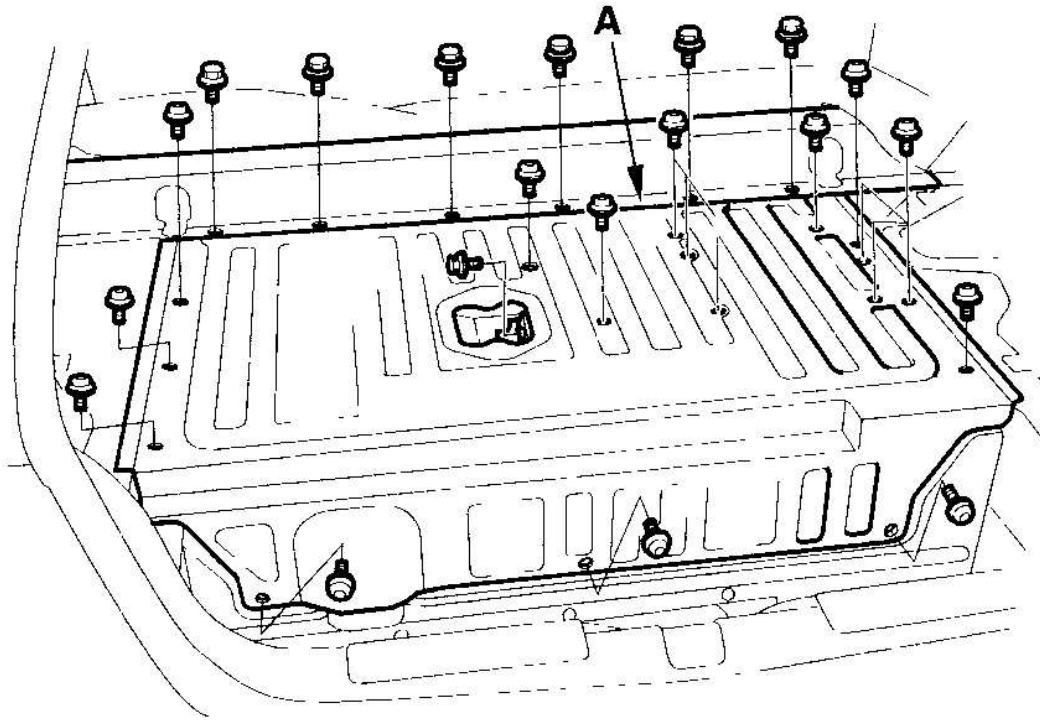
5. Wait for at least 5 minutes to allow the PDU capacitor to discharge.
6. Remove the right side trunk shelf support (A).



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Fig. 5: Removing Right Side Trunk Shelf Support
Courtesy of AMERICAN HONDA MOTOR CO., INC.

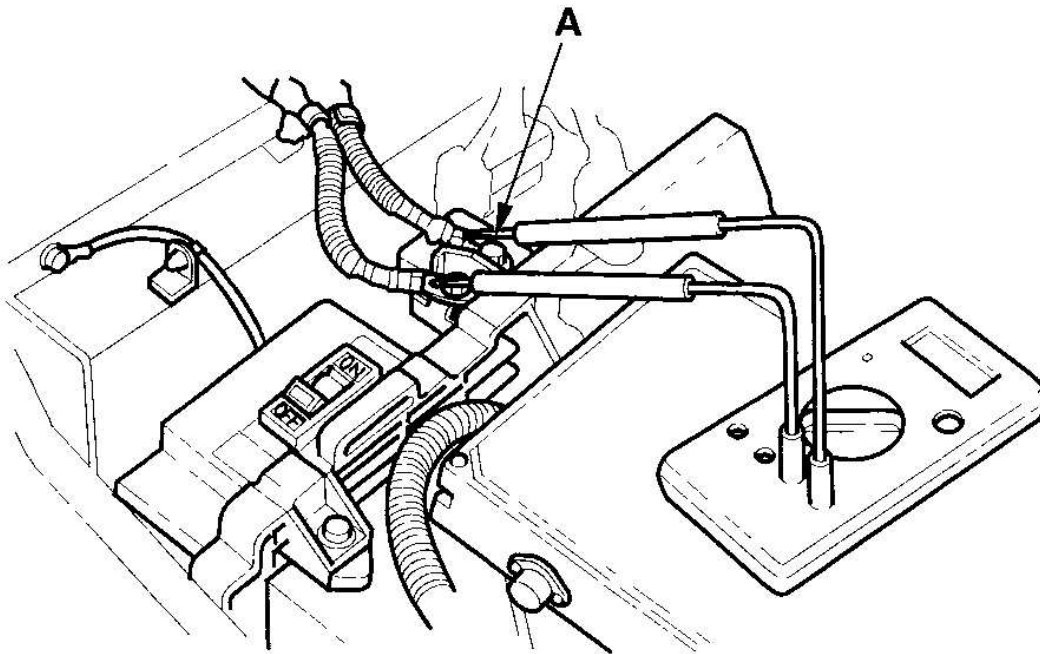
7. Remove the mid-frame cover clips and the IPU lid (A).



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Fig. 6: Removing Mid-Frame Cover Clips And IPU Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Measure voltage at the junction board terminals (A). There should be 30 V or less. If more than 30 V is present, there is a problem in the circuit; do the DTC troubleshooting first.



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Fig. 7: Measuring Voltage At Junction Board Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

INTERMITTENT FAILURES

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If the IMA system indicator on the dash does not come on, check for poor connections or loose terminals at all connectors related to the circuit that you are troubleshooting.

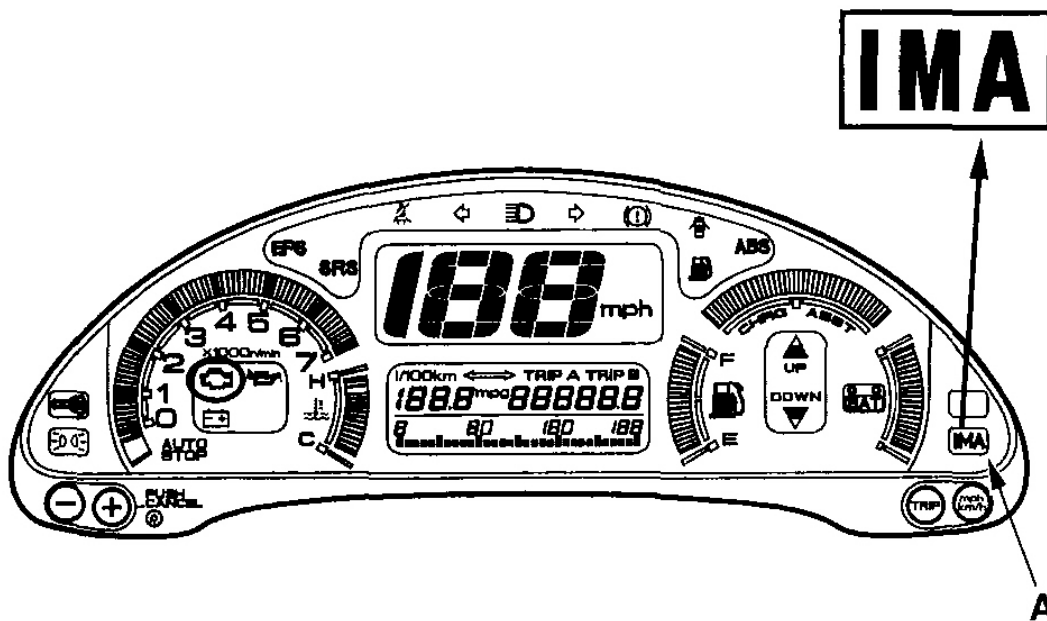
OPENS AND SHORTS

"Open" and "Short" are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics such as the MCM, this can mean something works, but not the

way it's supposed to.

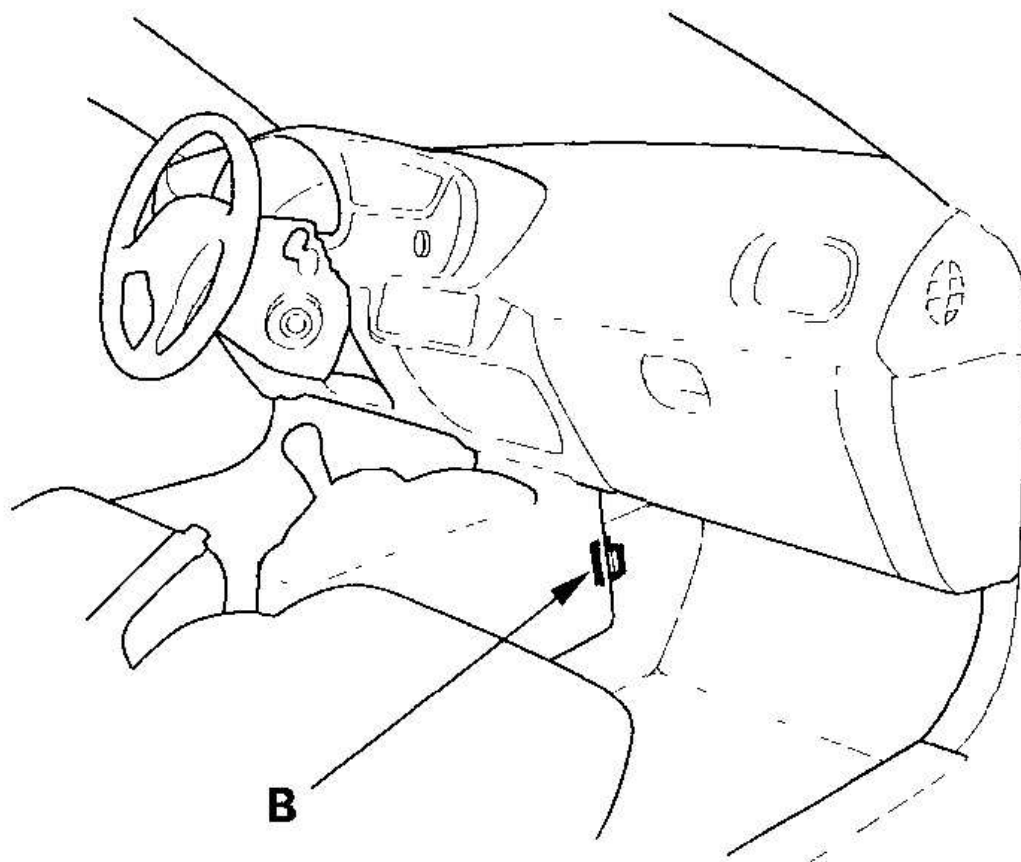
HOW TO CHECK FOR DTCS

1. If the IMA system indicator (A) stays on, turn the ignition switch OFF. Connect the HDS to the data link connector (DLC) (B) located under the passenger's side (2001-2006 models: driver's side) of the dashboard.



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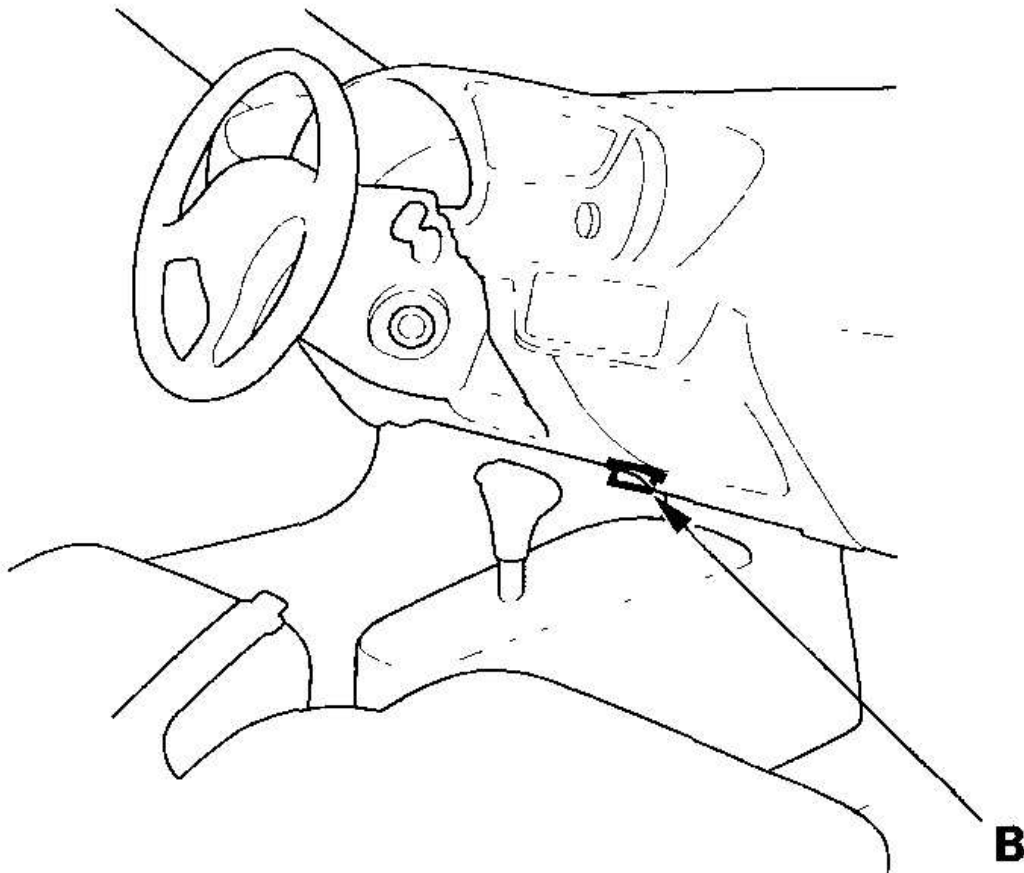
Fig. 8: Identifying IMA System Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.



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Fig. 9: Connecting HDS To DLC (2000 Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2001-2006 models



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Fig. 10: Connecting HDS To DLC (2001-2006 Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Jump the SCS line with the HDS.
3. Turn the ignition switch ON (II).
4. Check the diagnostic trouble code (DTC): The IMA system indicator indicates a DTC by the length and the number of blinks. The indicator can indicate multiple problems by blinking separate DTCs, one after another. DTCs 1 through 9 are indicated by individual short blinks. DTCs 10 and above are indicated by a series of long and short blinks. One long blink equals 10 short blinks.

5. Refer to the **DTC TROUBLESHOOTING** , and begin the appropriate troubleshooting procedure.

HOW TO RESET THE MCM

You can reset the motor control module (MCM) using either of these two methods:

- Use the HDS to clear the MCM memory. See the HDS user's manual for specific instructions.
- Turn the ignition switch OFF, and remove the No. 18 BACK UP (7.5 A) fuse (A) from the under-dash fuse/ relay box (B) for 10 seconds.

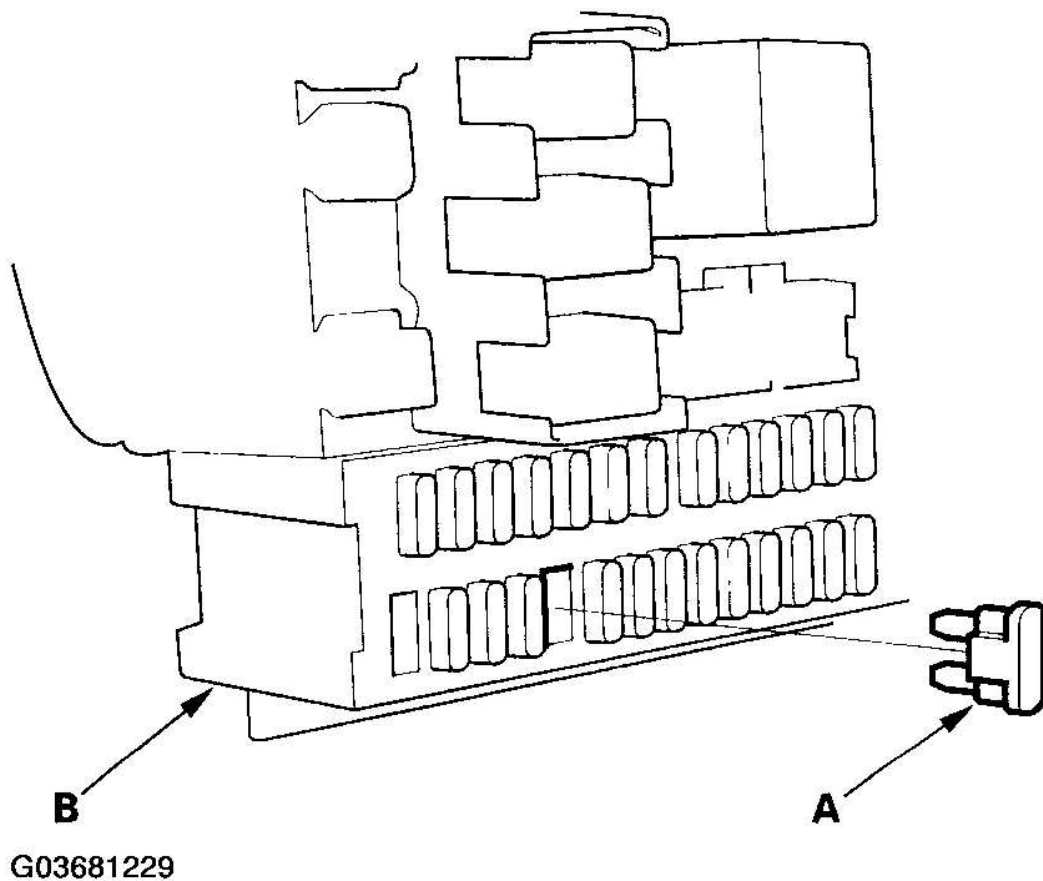


Fig. 11: Removing No. 18 Back Up (7.5 A) Fuse From Under-Dash Fuse/Relay Box

Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- If the MCM has been reset, the IMA battery level indicator (BAT) will not indicate the state of charge when the engine is started. Refer to "HOW TO END A TROUBLESHOOTING SESSION " to set the correct state of charge.
- Removing the No. 18 fuse may also reset the ECM. Do the ECM idle learn procedure (see ECM IDLE LEARN PROCEDURE) after resetting the ECM.
- CVT: Removing the No. 18 fuse may also reset the TCM. Do the start clutch calibration procedure (see START CLUTCH CALIBRATION PROCEDURES) after resetting the TCM.

HOW TO END A TROUBLESHOOTING SESSION

1. Reset the MCM.
2. Turn the ignition switch OFF.
3. Remove the No. 15 EPS (40 A) fuse from the under-hood fuse/relay box.
4. Start the engine, and hold it between 3,500 RPM and 4,000 RPM without load (in Park or neutral) until the BAT displays at least three segments.
5. Reinstall the No. 15 EPS (40 A) fuse.

DTC TROUBLESHOOTING INDEX

DTC TROUBLESHOOTING INDEX

SAE DTC (IMA System Indicator indication) (1)	Detection Item	Action
P0725(43) ⁽³⁾	Engine Speed Signal Circuit Problem	(see <u>ENGINE SPEED SIGNAL CIRCUIT PROBLEM</u>)

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P0A27 (46) (3)	High Voltage Contactor/Bypass Contactor Stays Activated	(see <u>HIGH VOLTAGE CONTACTOR/ BYPASS CONTACTOR STAYS ACTIVATED</u>)
P0A3C(39) (3)	Motor Drive Module (MDM) Overheating	(see <u>MOTOR DRIVER MODULE (MDM) OVERHEATING</u>)
P0A5E(24) (3)	Motor Current U Phase Signal Circuit Low Input	(see <u>MOTOR CURRENT U PHASE SIGNAL CIRCUIT LOW INPUT</u>)
P0A5F(25) (3)	Motor Current U Phase Signal Circuit High Input	(see <u>MOTOR CURRENT U PHASE SIGNAL CIRCUIT HIGH INPUT</u>)
P0A61 (26) (3)	Motor Current V Phase Signal Circuit Low Input	(see <u>MOTOR CURRENT V PHASE SIGNAL CIRCUIT LOW INPUT</u>)
P0A62(27) (3)	Motor Current V Phase Signal Circuit High Input	(see <u>MOTOR CURRENT V PHASE SIGNAL CIRCUIT HIGH INPUT</u>)
P0A64(28) (3)	Motor Current W Phase Signal Circuit Low Input	(see <u>MOTOR CURRENT W PHASE SIGNAL CIRCUIT LOW INPUT</u>)
P0A65(29) (3)	Motor Current W Phase Signal Circuit High Input	(see <u>MOTOR CURRENT W PHASE SIGNAL CIRCUIT HIGH INPUT</u>)
P0A7E(72) (3)	Battery Module Overheating	(see <u>BATTERY MODULE OVERHEATING</u>)
P0A7F(78) (3)	Battery Module Deterioration	(see <u>Battery Module Deterioration</u>)
P0A82(63) (3)	Battery Module Overheating	(see <u>BATTERY MODULE OVERHEATING</u>)
P0A9B(67) (3)	Battery Module Temperature Signal	(see <u>BATTERY MODULE TEMPERATURE SIGNAL CIRCUIT</u>)

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	Circuit Problem	<u>PROBLEM)</u>
P0AA6(59) (3)	High Voltage Short Circuit	(see <u>HIGH VOLTAGE SHORT CIRCUIT)</u>)
P1429(38) (3)	Motor Drive Module (MDM) Overheating Signal Circuit Problem	(see <u>MOTOR DRIVER MODULE (MDM) OVERHEATING SIGNAL CIRCUIT PROBLEM)</u>)
P1430(40) (3)	Motor Drive Module (MDM) Short Circuit Sensor Problem	(see <u>MOTOR DRIVER MODULE (MDM) SHORT CIRCUIT SENSOR PROBLEM)</u>)
P1432(73) (3)	Battery Cell Overheating	(see <u>BATTERY CELL OVERHEATING)</u>)
P1437(41) (3)	Motor Drive Module (MDM) Short Circuit	(see <u>Motor Driver Module (MDM) Short Circuit)</u>)
P1438(38) (2)	Motor Drive Module (MDM) Overheating Signal Circuit Problem	(see <u>MOTOR DRIVER MODULE (MDM) OVERHEATING SIGNAL CIRCUIT PROBLEM)</u>)
P1438(39) (2)	Motor Drive Module (MDM) Overheating	(see <u>MOTOR DRIVER MODULE (MDM) OVERHEATING)</u>)
P1439(40) (2)	Motor Drive Module (MDM) Short Circuit Sensor Problem	(see <u>MOTOR DRIVER MODULE (MDM) SHORT CIRCUIT SENSOR PROBLEM)</u>)
P1439(41) (2)	Motor Drive Module (MDM) Short Circuit	(see <u>Motor Driver Module (MDM) Short Circuit)</u>)
P1440(57)	IMA System Problem	(see <u>IMA SYSTEM PROBLEM)</u>)
P1443(46) (2)	High Voltage Contactor/Bypass Contactor Stays Activated	(see <u>HIGH VOLTAGE CONTACTOR/ BYPASS CONTACTOR STAYS ACTIVATED)</u>)
P1444(59) (2)	High Voltage Short Circuit	(see <u>HIGH VOLTAGE SHORT CIRCUIT)</u>)
P1445(62)	Bypass Contactor Problem	(see <u>BYPASS CONTACTOR PROBLEM)</u>)
	Battery Module	(see <u>BATTERY MODULE</u>)

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P1446(74) ⁽³⁾	Individual Voltage Input Deviation	<u>INDIVIDUAL VOLTAGE INPUT DEVIATION</u>)
P1447(77) ⁽²⁾	Battery Module Deterioration	(see <u>BATTERY MODULE DETERIORATION</u>)
P1448(63) ⁽²⁾	Battery Module Overheating	(see <u>BATTERY MODULE OVERHEATING</u>)
P1449(72) ⁽²⁾	Battery Module Overheating	(see <u>BATTERY MODULE OVERHEATING</u>)
P1449(73) ⁽²⁾	Battery Cell Overheating	(see <u>BATTERY CELL OVERHEATING</u>)
P1449(74) ⁽²⁾	Battery Module Individual Voltage Input Deviation	(see <u>BATTERY MODULE INDIVIDUAL VOLTAGE INPUT DEVIATION</u>)
P1449(78) ⁽²⁾	Battery Module Deterioration	(see <u>BATTERY MODULE OVERHEATING</u>)
P1559(16) ⁽³⁾	Motor Commutation Sensor A Circuit Low Input	(see <u>MOTOR COMMUTATION SENSOR A CIRCUIT LOW INPUT</u>)
P1560(17) ⁽³⁾	Motor Commutation Sensor A Circuit High Input	(see <u>MOTOR COMMUTATION SENSOR A CIRCUIT HIGH INPUT</u>)
P1561 (18) ⁽³⁾	Motor Commutation Sensor B Circuit Low Input	(see <u>MOTOR COMMUTATION SENSOR B CIRCUIT LOW INPUT</u>)
P1562(52) ⁽³⁾	Motor Commutation Sensor B Circuit High Input	(see <u>MOTOR COMMUTATION SENSOR B CIRCUIT HIGH INPUT</u>)
P1563(53) ⁽³⁾	Motor Commutation Sensor C Circuit Low Input	(see <u>MOTOR COMMUTATION SENSOR C CIRCUIT LOW INPUT</u>)
P1564(54) ⁽³⁾	Motor Commutation Sensor C Circuit High Input	(see <u>MOTOR COMMUTATION SENSOR C CIRCUIT HIGH INPUT</u>)
	Motor Commutation	(see <u>MOTOR COMMUTATION</u>)

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P1565(42) ⁽²⁾	Signal Problem	<u>SIGNAL PROBLEM</u>)
P1566(42) ⁽³⁾	Motor Commutation Signal Problem	(see <u>MOTOR COMMUTATION SIGNAL PROBLEM</u>)
P1568(66) ⁽²⁾	Battery Module Individual Voltage Input Problem	(see <u>BATTERY MODULE INDIVIDUAL VOLTAGE INPUT PROBLEM</u>)
P1568(67) ⁽²⁾	Battery Module Temperature Signal Circuit Problem	(see <u>BATTERY MODULE TEMPERATURE SIGNAL CIRCUIT PROBLEM</u>)
P1568(70) ⁽²⁾	Battery Cell Temperature Signal Circuit Problem	(see <u>BATTERY CELL TEMPERATURE SIGNAL CIRCUIT PROBLEM</u>)
P1569(70) ⁽³⁾	Battery Cell Temperature Signal Circuit Low Input	(see <u>BATTERY CELL TEMPERATURE SIGNAL CIRCUIT LOW INPUT</u>)
P1570(66) ⁽³⁾	Battery Module Individual Voltage Input Problem	(see <u>BATTERY MODULE INDIVIDUAL VOLTAGE INPUT PROBLEM</u>)
P1571(55) ⁽³⁾	Motor Commutation Sensor Voltage Input Problem	(see <u>MOTOR COMMUTATION SENSOR VOLTAGE INPUT PROBLEM</u>)
P1572(32) ⁽²⁾	Motor Drive Module (MDM) Temperature Signal Circuit Low	(see <u>MOTOR DRIVER MODULE (MDM) TEMPERATURE SIGNAL CIRCUIT LOW INPUT</u>)
P1572(33) ⁽²⁾	Motor Drive Module (MDM) Temperature Signal Circuit high	(see <u>DTC P1572 (33): MOTOR DRIVER MODULE (MDM) TEMPERATURE SIGNAL CIRCUIT HIGH INPUT DTC P15A1 (33): MOTOR DRIVER MODULE (MDM) TEMPERATURE SIGNAL CIRCUIT HIGH INPUT</u>)
P1573(36)	DC-DC Converter Temperature Signal Circuit Low Input	(see <u>DC-DC CONVERTER TEMPERATURE SIGNAL CIRCUIT LOW INPUT</u>)

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P1573(37)	DC-DC Converter Temperature Signal Circuit High Input	(see <u>DC-DC CONVERTER TEMPERATURE SIGNAL CIRCUIT HIGH INPUT</u>)
P1575(12) ⁽³⁾	Motor Drive Module (MDM) Voltage problem	(see <u>MOTOR DRIVER MODULE (MDM) VOLTAGE PROBLEM</u>)
P1576 (10) ⁽²⁾	Motor Drive Module (MDM) Voltage Signal Circuit Low Input	(see <u>MOTOR DRIVER MODULE (MDM) VOLTAGE SIGNAL CIRCUIT LOW INPUT</u>)
P1576(11) ⁽²⁾	Motor Drive Module (MDM) Voltage Signal Circuit High Input	(see <u>MOTOR DRIVER MODULE (MDM) VOLTAGE SIGNAL CIRCUIT HIGH INPUT</u>)
P1576(12) ⁽²⁾	Motor Drive Module (MDM) Voltage Problem	(see <u>MOTOR DRIVER MODULE (MDM) VOLTAGE PROBLEM</u>)
P1577(8)	High Voltage Detection Circuit Problem	(see <u>HIGH VOLTAGE DETECTION SIGNAL CIRCUIT PROBLEM</u>)
P1580(65)	Battery Current Circuit Problem	(see <u>BATTERY CURRENT CIRCUIT PROBLEM</u>)
P1581(19) ⁽²⁾	Motor Power Inverter (MPI) Module Current Signal Circuit Low	(see <u>MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT LOW INPUT</u>)
P1581 (20) ⁽²⁾	Motor Power Inverter (MPI) Module Current Signal Circuit High	(see <u>MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT HIGH</u>)
P1581 (21) ⁽²⁾	Motor Power Inverter (MPI) Module Current Signal Circuit	(see <u>DTC P1581 (21): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT</u>)
P1582(24) ⁽²⁾	Motor Current U Phase Signal Circuit	(see <u>MOTOR CURRENT U PHASE SIGNAL CIRCUIT LOW INPUT</u>)

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	Low Input	
P1582(25) ⁽²⁾	Motor Current U Phase Signal Circuit High Input	(see <u>DTC P0A5F (25): MOTOR CURRENT U PHASE SIGNAL CIRCUIT HIGH INPUT, DTC P1582 (25): MOTOR CURRENT U PHASE SIGNAL CIRCUIT HIGH INPUT</u>)
P1583(26) ⁽²⁾	Motor Current V Phase Signal Circuit Low Input	(see <u>MOTOR CURRENT V PHASE SIGNAL CIRCUIT LOW INPUT</u>)
P1583(27) ⁽²⁾	Motor Current V Phase Signal Circuit High Input	(see <u>MOTOR CURRENT V PHASE SIGNAL CIRCUIT HIGH INPUT</u>)
P1584(28) ⁽²⁾	Motor Current W Phase Signal Circuit Low Input	(see <u>DTC P1584 (28): MOTOR CURRENT W PHASE SIGNAL CIRCUIT LOW INPUT</u>)
P1584(29) ⁽²⁾	Motor Current W Phase Signal Circuit High Input	(see <u>MOTOR CURRENT W PHASE SIGNAL CIRCUIT HIGH INPUT</u>)
P1585(30)	Motor Current Signal Circuit Problem	(see <u>MOTOR CURRENT SIGNAL CIRCUIT PROBLEM</u>)
P1586(23)	Motor Power Inverter (MPI) Module Current Signal/Battery Current Signal Circuit Problem	(see <u>MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL/BATTERY CURRENT SIGNAL CIRCUIT PROBLEM</u>)
P1587(19) ⁽³⁾	Motor Power Inverter (MPI) Module Current Signal Circuit Low	(see <u>MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT LOW INPUT</u>)
P1588(20) ⁽³⁾	Motor Power Inverter (MPI) Module Current Signal Circuit High	(see <u>MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT HIGH INPUT</u>)
P1589(21) ⁽³⁾	Motor Power Inverter (MPI) Module Current Signal Circuit	(see <u>MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT PROBLEM</u>)
P15A0(32)	Motor Drive Module	(see <u>MOTOR DRIVER MODULE</u>)

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(3)	(MDM) Temperature Signal Circuit Low	(MDM) TEMPERATURE SIGNAL CIRCUIT LOW INPUT)
P15A1(33) (3)	Motor Drive Module (MDM) Temperature Signal Circuit High	(see MOTOR DRIVER MODULE (MDM) TEMPERATURE SIGNAL CIRCUIT HIGH INPUT)
P15A2(10) (3)	Motor Drive Module (MDM) Voltage Signal Circuit Low Input	(see MOTOR DRIVER MODULE (MDM) VOLTAGE SIGNAL CIRCUIT LOW INPUT)
P15A3(11) (3)	Motor Drive Module (MDM) Voltage Signal Circuit High Input	(see MOTOR DRIVER MODULE (MDM) VOLTAGE SIGNAL CIRCUIT HIGH INPUT)
P1635(79)	Battery Condition Monitor (BCM) Module Problem	(see BATTERY CONDITION MONITOR (BCM) MODULE PROBLEM)
P1638(50)	Motor Control Module (MCM) Internal Circuit Problem	(see MOTOR CONTROL MODULE (MCM) INTERNAL CIRCUIT PROBLEM)
P1647(1) ⁽²⁾	Power Command Signal Circuit Low Input	(see POWER COMMAND SIGNAL CIRCUIT LOW INPUT)
P1647(2) ⁽²⁾	Power Command Signal Circuit High Input	(see DTC P1647 (2): POWER COMMAND SIGNAL CIRCUIT HIGH INPUT)
P1647(3) ⁽²⁾	Engine Torque Signal Circuit Low Input	(see ENGINE TORQUE SIGNAL CIRCUIT LOW INPUT)
P1647(4) ⁽²⁾	Engine Torque Signal Circuit High Input	(see ENGINE TORQUE SIGNAL CIRCUIT HIGH INPUT)
P1647(5) ⁽²⁾	Mode Signal Circuit 1 Low Input	(see MODE SIGNAL CIRCUIT 1 LOW INPUT)
P1647(6) ⁽²⁾	Mode Signal Circuit 1 High Input	(see MODE SIGNAL CIRCUIT 1 HIGH INPUT)
	Mode Signal Circuit 2	(see MODE SIGNAL CIRCUIT 2

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P1647(7) ⁽²⁾	Problem	<u>PROBLEM</u>)
P1647(43) ⁽²⁾	Engine Speed Signal Circuit Problem	(see <u>ENGINE SPEED SIGNAL CIRCUIT PROBLEM</u>)
P1648(64)	Battery Condition Monitor (BCM) Module Communication Signal Circuit Problem	(see <u>BCM MODULE COMMUNICATION SIGNAL CIRCUIT PROBLEM</u>)
P1648(75)	Motor Control Module (MCM) Communication Signal Circuit Problem	(see <u>MCM COMMUNICATION SIGNAL CIRCUIT PROBLEM</u>)
P1649(13)	ABS Operation Signal Circuit Problem	(see <u>ABS OPERATION SIGNAL CIRCUIT PROBLEM</u>)
P16B3(1) ⁽³⁾	Power Command Signal Circuit Low Input	(see <u>POWER COMMAND SIGNAL CIRCUIT LOW INPUT</u>)
P16B4(2) ⁽³⁾	Power Command Signal Circuit High Input	(see <u>POWER COMMAND SIGNAL CIRCUIT HIGH INPUT</u>)
P16B5(3) ⁽³⁾	Engine Torque Signal Circuit Low Input	(see <u>ENGINE TORQUE SIGNAL CIRCUIT LOW INPUT</u>)
P16B6(4) ⁽³⁾	Engine Torque Signal Circuit High Input	(see <u>ENGINE TORQUE SIGNAL CIRCUIT HIGH INPUT</u>)
P16B7(5) ⁽³⁾	Mode Signal Circuit 1 Low Input	(see <u>MODE SIGNAL CIRCUIT 1 LOW INPUT</u>)
P16B8(6) ⁽³⁾ 3	Mode Signal Circuit 1 High Input	(see <u>MODE SIGNAL CIRCUIT 1 HIGH INPUT</u>)
P16B9(7) ⁽³⁾ 3	Mode Signal Circuit 2 Problem	(see <u>MODE SIGNAL CIRCUIT 2 PROBLEM</u>)
P16BA(71) (3)	Battery Cell Temperature Signal Circuit High Input	(see <u>BATTERY CELL TEMPERATURE SIGNAL CIRCUIT HIGH INPUT</u>)

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-(44)	Vehicle Speed Signal Circuit Problem	(see <u>VEHICLE SPEED SIGNAL CIRCUIT PROBLEM</u>)
-(49)	Motor Control Module (MCM) Internal Circuit Problem	(see <u>MOTOR CONTROL MODULE (MCM) INTERNAL CIRCUIT PROBLEM</u>)
-(51)	Motor Control Module (MCM) Internal Circuit Problem	(see <u>MOTOR CONTROL MODULE (MCM) INTERNAL CIRCUIT PROBLEM</u>)
-(58)	Charge/Discharge Balance Problem	(see <u>CHARGE/DISCHARGE BALANCE PROBLEM</u>)

NOTE:

The above DTCs are indicated when the IMA system is selected in the HDS.

(1) The above DTCs are indicated by a blinking IMA system indicator when the SCS is jumped with the HDS.

(2) 2000-2004 models

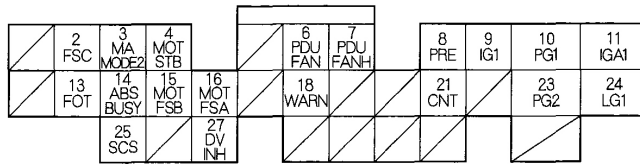
(3) 2005-2006 models

SYSTEM DESCRIPTION

MCM INPUTS AND OUTPUTS AT CONNECTOR A (32P)

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight



Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
2	LT GRN	FSC (SHORT CIRCUIT CURRENT FAIL FLAG)	Detects MDM short circuit signal	With ignition switch ON (II): about 5 V
3	BLK/YEL	MAMODE2 (MOTOR ASSIST MODE 2)	Detects motor assist mode signal	With ignition switch ON (II): about 5 V With engine running (IMA controlled): 0 V or about 5 V
4	YEL/RED	MOTSTB (MOTOR STAND-BY)	Detects motor assist stand-by signal	With ignition switch ON (II): pulses
6	YEL/BLK	PDUFAN (MPI MODULE FAN)	Drives low speed MPI module fan control relay	MPI module fan OFF: battery voltage MPI module fan LOW: 0 V
7	WHT	PDUFANH (MPI MODULE FAN HIGH SPEED)	Drives high speed MPI module fan control relay	MPI module fan OFF: battery voltage MPI module fan HIGH: 0 V
8	GRY/RED	PRE (PRE CHARGE CONTACTOR)	Drives bypass contactor	With ignition switch ON (II): battery voltage momentarily (after that 0 V)
9	BLK/YEL	IG1 (POWER SOURCE)	Power source for the MCM	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
10	BLK	PG1 (POWER GROUND)	Ground for the MCM control circuit	Less than 0.1 V at all times
11	PNK/BLU	IGA1 (IGNITION FOR ASSIST SYSTEM)	Power source for the MCM control circuit	With ignition switch ON (II): battery voltage With ignition switch OFF: battery voltage several seconds, then 0 V
13	GRN/WHT	FOT (OVER TEMPERATURE FAIL FLAG)	Detects MDM overheating signal	With ignition switch ON (II): about 5 V
14	LT GRN/RED	ABSBUSY (ABS SYSTEM BUSY)	Detects ABS operating signal	ABS OFF: 0 V ABS ON: about 5 V
15	BLU/WHT	MOTFSB (MOTOR ASSIST FAIL SAFE B)	Sends motor fail signal	With ignition switch ON (II): pulses
16	BLU/RED	MOTFSA (MOTOR ASSIST FAIL SAFE A)	Sends motor fail signal	With ignition switch ON (II): pulses
18	RED/WHT	WARN (WARNING INDICATOR)	Drives IMA system indicator	With IMA system indicator turned ON: 0 V With IMA system indicator turned OFF: battery voltage
21	BLU/BLK	CNT (CONTACTOR)	Drives high voltage contactor control relay	With ignition switch ON (II): battery voltage
23	BLK	PG2 (POWER GROUND)	Ground for the MCM control circuit	Less than 0.1 V at all times
24	BRN/YEL	LG1 (LOGIC GROUND)	Ground for the MCM control circuit	Less than 0.1 V at all times
25	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check connector signal (the signal causing a DTC indication)	With the terminal connected: 0 V With the terminal disconnected: about 5 V
27	GRN/BLK	DVINH (DC-DC CONVERTER INHIBIT)	Sends DC-DC converter inhibit signal	DC-DC converter ON: about 5 V DC-DC converter OFF: 0 V

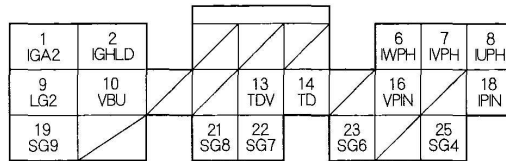
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Fig. 12: Identifying MCM Inputs And Outputs Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MCM INPUTS AND OUTPUTS AT CONNECTOR B (25P)

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight



Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
1	PNK/BLU	IGA2 (IGNITION FOR ASSIST SYSTEM)	Power source for the MCM control circuit	With ignition switch ON (II): battery voltage With ignition switch OFF: battery voltage for several seconds, then 0 V
2	YEL/BLK	IGHLD (IGNITION HOLD)	Drives MCM relay (ignition hold relay)	With ignition switched from ON (II) to OFF: 0—1 V for several seconds, then battery voltage
6	GRN	IWPH (I. W. PHASE)	Detects W phase motor current sensor signal	With ignition switch ON (II) and engine stopped: about 2.5 V
7	RED/BLU	IVPH (I. V. PHASE)	Detects V phase motor current sensor signal	With ignition switch ON (II) and engine stopped: about 2.5 V
8	WHT	IUPH (I. U. PHASE)	Detects U phase motor current sensor signal	With ignition switch ON (II) and engine stopped: about 2.5 V
9	BRN/YEL	LG2 (LOGIC GROUND)	Ground for the MCM control circuit	Less than 0.1 V at all times
10	WHT/RED	VBU (VOLTAGE BACK UP)	Power source for the MCM control circuit Power source for the DTC memory	Battery voltage at all times
13	YEL/BLU	TDV (DC-DC CONVERTER TEMPERATURE)	Detects DC-DC converter temperature signal	With ignition switch ON (II): about 0.5—4.6 V (depending on DC-DC converter temperature)
14	BLU/RED	TD (DRIVER MODULE TEMPERATURE)	Detects MDM temperature signal	With ignition switch ON (II): about 0.5—4.5 V (depending on MDM)
16	ORN	VPIN (PDU INPUT VOLTAGE)	Detects MDM input voltage signal	With ignition switch ON (II) and battery module switch ON and battery module 0 V: 0 V
18	YEL/BLK	IPIN (I PDU INPUT)	Detects MDM input current signal	With ignition switch ON (II) and engine stopped: about 2.5 V
19	RED/BLK	SG9 (SENSOR GROUND)	Ground for voltage converter module	Less than 0.1 V at all times
21	BRN	SG8 (SENSOR GROUND)	Ground for W phase motor current sensor	Less than 0.1 V at all times
22	GRY	SG7 (SENSOR GROUND)	Ground for V phase motor current sensor	Less than 0.1 V at all times
23	BLU/ORN	SG6 (SENSOR GROUND)	Ground for U phase motor current sensor	Less than 0.1 V at all times
25	RED/YEL	SG4 (SENSOR GROUND)	Ground for MPI module current sensor	Less than 0.1 V at all times

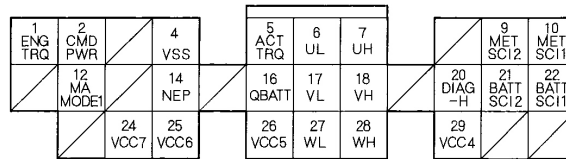
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Fig. 13: Identifying MCM Inputs And Outputs Connector B (25P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MCM INPUTS AND OUTPUTS AT CONNECTOR C (31P)

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight



Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
1	BLU/YEL	ENGTRQ (ENGINE TORQUE)	Detects engine torque signal	With ignition switch ON (II): pulses
2	BLU/BLK	CMDPWR (COMMAND POWER)	Detects motor power command signal	With ignition switch ON (II): pulses
4	BLU/WHT	VSS (VEHICLE SPEED SENSOR)	Detects vehicle speed signal	With vehicle moving: pulses
5	YEL/BLK	ACTTRQ (ACTUAL TORQUE)	Sends actual motor torque signal	With ignition switch ON (II): pulses
6	LT GRN/RED	UL (U PHASE LOW SIDE)	Sends U phase low side inverter gate drive signal	With engine running: pulses
7	BLU/BLK	UH (U PHASE HIGH SIDE)	Sends U phase high side inverter gate drive signal	With engine running: pulses
9	BLU/ORN	METSCI2 (METER SERIAL COMMUNICATION 2)	Sends IMA system operation signal	With ignition switch ON (II): pulses
10	WHT/BLU	METSCI1 (METER SERIAL COMMUNICATION 1)	Sends IMA system operation signal	With ignition switch ON (II): pulses
12	RED/YEL	MAMODE1 (MOTOR ASSIST MODE 1)	Detects motor assist mode signal	With ignition switch ON (II): pulses
14	BLU	NEP (ENGINE SPEED PULSE)	Outputs engine speed pulse	With engine running: pulses
16	PNK	QBATT (QUANTITY OF BATTERY)	Sends battery module SOC signal	With ignition switch ON (II): pulses
17	YEL/RED	VL (V PHASE LOW SIDE)	Sends V phase low side inverter gate drive signal	With engine running: pulses
18	BLK/ORN	VH (V PHASE HIGH SIDE)	Sends V phase high side inverter gate drive signal	With engine running: pulses
20	LT BLU	DIAG-H	Data communication with HDS	With ignition switch ON (II): about 5 V
21	WHT	BATTSCI2 (BATTERY ECM SERIAL COMMUNICATION 2)	Detects battery module condition signal	With ignition switch ON (II): pulses
22	ORN	BATTSCI1 (BATTERY ECM SERIAL COMMUNICATION 1)	Detects battery module condition signal	With ignition switch ON (II): pulses
24	GRN/WHT	VCC7 (SENSOR VOLTAGE)	Power source to MPI module current sensor	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
25	YEL	VCC6 (SENSOR VOLTAGE)	Power source to W phase motor current sensor	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
26	YEL/BLU	VCC5 (SENSOR VOLTAGE)	Power source to V phase motor current sensor	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
27	GRY/RED	WL (W PHASE LOW SIDE)	Sends W phase low side inverter gate drive signal	With engine running: pulses
28	BLK/YEL	WH (W PHASE HIGH SIDE)	Sends W phase high side inverter gate drive signal	With engine running: pulses
29	GRN/BLK	VCC4 (SENSOR VOLTAGE)	Power source to U phase motor current sensor	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V

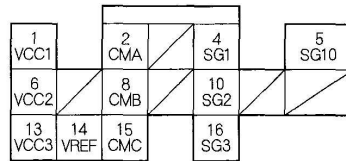
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Fig. 14: Identifying MCM Inputs And Outputs Connector C (31P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MCM INPUTS AND OUTPUTS AT CONNECTOR D (16P)

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight



Wire side of female terminals

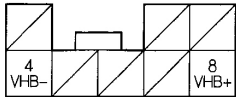
NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
1	BLK	VCC1 (SENSOR VOLTAGE)	Power source to motor commutation sensor (sensor A)	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
2	WHT	CMA (COMMUTATION SENSOR A)	Detects motor commutation sensor A signal	With engine running: pulses
4	RED	SG1 (SENSOR GROUND)	Ground for motor commutation sensor (sensor A)	Less than 0.1 V at all times
5	BLU/WHT	SG10 (SENSOR GROUND)	Ground for DC-DC converter, voltage converter module	Less than 0.1 V at all times
6	YEL	VCC2 (SENSOR VOLTAGE)	Power source to motor commutation sensor (sensor B)	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
8	GRN	CMB (COMMUTATION SENSOR B)	Detects motor commutation sensor B signal	With engine running: pulses
10	BLU	SG2 (SENSOR GROUND)	Ground for motor commutation sensor (sensor B)	Less than 0.1 V at all times
13	GRN/BLU	VCC3 (SENSOR VOLTAGE)	Power source to motor commutation sensor (sensor C)	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
14	RED	VREF (REFERENCE VOLTAGE)	Provides reference voltage	With ignition switch ON (II): about 5 V
15	BRN	CMC (COMMUTATION SENSOR C)	Detects motor commutation sensor C signal	With engine running: pulses
16	WHT	SG3 (SENSOR GROUND)	Ground for motor commutation sensor (sensor C)	Less than 0.1 V at all times

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Fig. 15: Identifying MCM Inputs and Outputs Connector D (16P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MCM INPUTS AND OUTPUTS AT CONNECTOR E (8P)



Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
4	WHT	VHB- (HIGH VOLTAGE BATTERY VOLTAGE-)	Detects battery module voltage -side	With battery module switch ON: about 144 V (compared to VHB+)
8	RED	VHB+ (HIGH VOLTAGE BATTERY VOLTAGE+)	Detects battery module voltage +side	With battery module switch ON: about 144 V (compared to VHB-)

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Fig. 16: Identifying MCM Inputs And Outputs Connector E (8P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BCM MODULE INPUTS AND OUTPUTS AT CONNECTOR A (26P)

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight

1	2	3	4		7	8		11	12	13
IGA2	IGA1	IPWR +	ISOC		BATT SCI2	MET SCI2		BATT FANL	PG1	VBU
14	15	16			20	21		24	25	
LG2	LG1	IPWR -			BATT SCI1	MET SCI1		BATT FANH	PG2	

Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
1	PNK/BLU	IGA2 (IGNITION FOR ASSIST SYSTEM)	Power source for the BCM module circuit	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
2	PNK/BLU	IGA1 (IGNITION FOR ASSIST SYSTEM)	Power source for the BCM module circuit	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
3	BLU/RED	IPWR (+) (ISOC SENSOR POWER+)	Provides power source +side for battery current sensor	With ignition switch ON (II): battery voltage
4	RED/WHT	ISOC (I. STATE OF CHARGE)	Detects battery current sensor signal	With ignition switch ON (II): about 0 V
7	WHT	BATTSCI2 (BATTERY ECM SERIAL COMMUNICATION 2)	Sends battery module condition (SOC) signal	With ignition switch ON (II): pulses
8	BLU/ORN	METSCI2 (METER SERIAL COMMUNICATION 2)	Receives IMA condition signal from MCM	With ignition switch ON (II): pulses
11	BLU/BLK	BATTFANL (BATTERY FAN LOW SPEED)	Drives low speed battery module fan control relay	Battery module fan OFF: battery voltage Battery module fan LOW: 0 V
12	BLK	PG1 (POWER GROUND)	Ground for the BCM module control circuit	Less than 0.1 V at all times
13	WHT/RED	VBU (VOLTAGE BACK UP)	Power source for the BCM module control circuit	Battery voltage at all times
14	BRN/YEL	LG2 (LOGIC GROUND)	Ground for the BCM module control circuit	Less than 0.1 V at all times
15	BRN/YEL	LG1 (LOGIC GROUND)	Ground for the BCM module control circuit	Less than 0.1 V at all times
16	LT GRN	IPWR (-) (ISOC SENSOR POWER-)	Provides power source -side for battery current sensor	With ignition switch ON (II): about -12 V
20	ORN	BATTSCI1 (BATTERY ECM SERIAL COMMUNICATION 1)	Sends battery module condition (SOC) signal	With ignition switch ON (II): pulses
21	WHT/BLU	METSCI1 (METER SERIAL COMMUNICATION 1)	Receives IMA condition signal from MCM	With ignition switch ON (II): pulses
24	BLU/YEL	BATTFANH (BATTERY FAN HIGH SPEED)	Drives high speed battery module fan control relay	Battery module fan OFF: battery voltage Battery module fan HIGH: 0 V
25	BLK	PG2 (POWER GROUND)	Ground for the BCM module control circuit	Less than 0.1 V at all times

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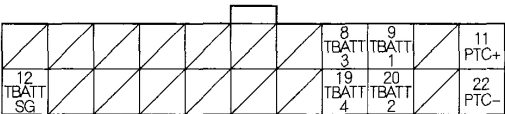
Fig. 17: Identifying BCM Module Inputs And Outputs Connector A (26P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

BCM MODULE INPUTS AND OUTPUTS AT CONNECTOR B (22P)

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight



Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
8	WHT	TBATT3 (BATTERY 3 TEMPERATURE)	Detects battery module temperature signal	With ignition switch ON (II): about 0.5—4.5 V (depending on battery module temperature)
9	YEL	TBATT1 (BATTERY 1 TEMPERATURE)	Detects battery module temperature signal	With ignition switch ON (II): about 0.5—4.5 V (depending on battery module temperature)
11	RED	PTC+ (POSITIVE TEMPERATURE COEFFICIENT THERMISTOR +)	Detects battery module overheating signal	With ignition switch ON (II): about 2.5—4.5 V (depending on battery module temperature)
12	BLK	TBATT SG (BATTERY TEMPERATURE SENSOR GROUND)	Ground for battery module (temperature sensor)	Less than 1.0 V at all times
19	BLU	TBATT4 (BATTERY 4 TEMPERATURE)	Detects battery module temperature signal	With ignition switch ON (II): about 0.5—4.5 V (depending on battery module temperature)
20	GRY	TBATT2 (BATTERY 2 TEMPERATURE)	Detects battery module temperature signal	With ignition switch ON (II): about 0.5—4.5 V (depending on battery module temperature)
22	BLK	PTC— (POSITIVE TEMPERATURE COEFFICIENT THERMISTOR —)	Detects battery module overheating signal	With ignition switch ON (II): about 0.5—2.5 V (depending on battery module temperature)

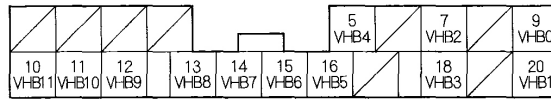
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Fig. 18: Identifying BCM Module Inputs And Outputs Connector B (22P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BCM MODULE INPUTS AND OUTPUTS AT CONNECTOR C (20P)

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight



Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
5	GRN/RED	VHB4 (HIGH VOLTAGE BATTERY 4 VOLTAGE)	Detects battery module No. 4 terminal voltage	With battery module switch ON: about 6/10 of VHB0 voltage (compared to VHB11 terminal)
7	BLK	VHB2 (HIGH VOLTAGE BATTERY 2 VOLTAGE)	Detects battery module No. 2 terminal voltage	With battery module switch ON: about 8/10 of VHB0 voltage (compared to VHB11 terminal)
9	RED	VHB0 (HIGH VOLTAGE BATTERY 0 VOLTAGE)	Detects battery module No. 0 terminal voltage	With battery module switch ON: below 200 V (compared to VHB11 terminal)
10	WHT	VHB11 (HIGH VOLTAGE BATTERY 11 VOLTAGE)	Detects battery module No. 11 terminal voltage	
11	BLU	VHB10 (HIGH VOLTAGE BATTERY 10 VOLTAGE)	Detects battery module No. 10 terminal voltage	With battery module switch ON: about 1/10 of VHB0 voltage (compared to VHB11 terminal)
12	YEL	VHB9 (HIGH VOLTAGE BATTERY 9 VOLTAGE)	Detects battery module No. 9 terminal voltage	With battery module switch ON: about 2/10 of VHB0 voltage (compared to VHB11 terminal)
13	GRN/BLK	VHB8 (HIGH VOLTAGE BATTERY 8 VOLTAGE)	Detects battery module No. 8 terminal voltage	With battery module switch ON: about 3/10 of VHB0 voltage (compared to VHB11 terminal)
14	BLU/RED	VHB7 (HIGH VOLTAGE BATTERY 7 VOLTAGE)	Detects battery module No. 7 terminal voltage	With battery module switch ON: about 4/10 of VHB0 voltage (compared to VHB11 terminal)
15	BLU/YEL	VHB6 (HIGH VOLTAGE BATTERY 6 VOLTAGE)	Detects battery module No. 6 terminal voltage	With battery module switch ON: about 5/10 of VHB0 voltage (compared to VHB11 terminal)
16	GRN/WHT	VHB5 (HIGH VOLTAGE BATTERY 5 VOLTAGE)	Detects battery module No. 5 terminal voltage	With battery module switch ON: about 6/10 of VHB0 voltage (compared to VHB11 terminal)
18	GRN	VHB3 (HIGH VOLTAGE BATTERY 3 VOLTAGE)	Detects battery module No. 3 terminal voltage	With battery module switch ON: about 7/10 of VHB0 voltage (compared to VHB11 terminal)
20	GRN/YEL	VHB1 (HIGH VOLTAGE BATTERY 1 VOLTAGE)	Detects battery module No. 1 terminal voltage	With battery module switch ON: about 9/10 of VHB0 voltage (compared to VHB11 terminal)

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Fig. 19: Identifying BCM Module Inputs And Outputs Connector C (20P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

IMA SYSTEM

The IMA (integrated motor assist) system is a high efficiency hybrid system that consists of a gasoline-powered engine and an electric motor.

The IMA system uses the engine as its main source and the motor as a supplemental source. By using the two units, overall weight is lower than a powertrain that uses an electric motor as its only source of power.

High voltage DC circuits such as the battery module, junction board, PCU (power control unit), etc. are stored in the IPU (intelligent power unit), which is located at the rear of the vehicle for efficient packaging and for safety.

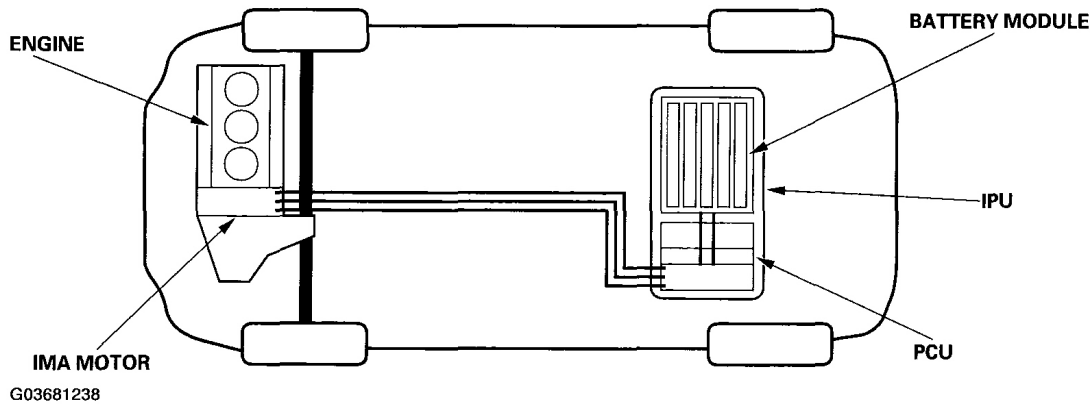


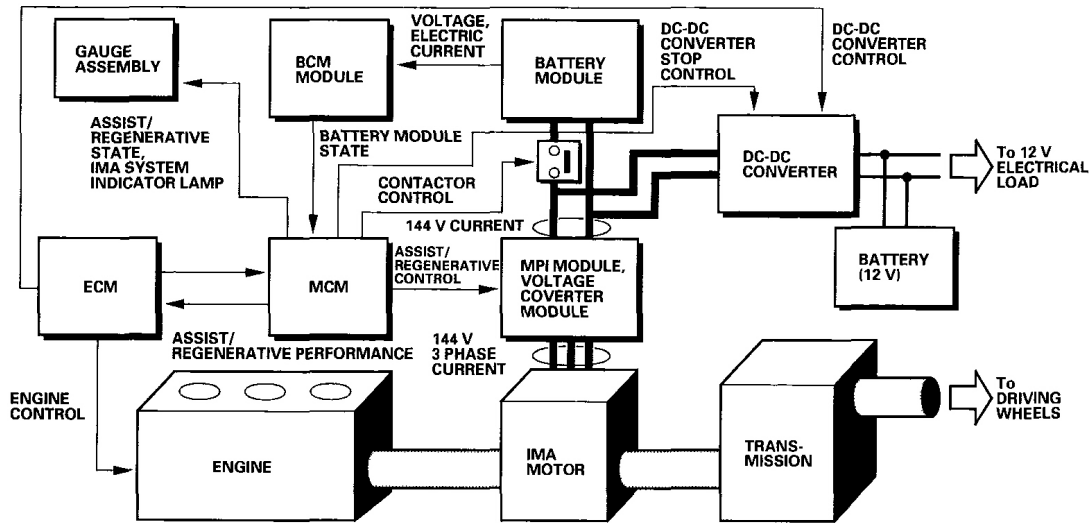
Fig. 20: Identifying IMA System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The inline, 3-cylinder, SOHC, 12-valve engine displaces 0.995 liter. It is a sequential multipoint fuel-injected engine specially developed for the IMA system.

The motor is a DC brushless type located between the engine and the transmission. In addition to assisting the engine, it starts the engine and acts as a generator to recharge the battery.

The MCM (motor control module) controls the motor through the MPI (motor power inverter) module and the voltage control unit. The MCM determines the amount of assist and regenerative power needed by communicating with the BCM (battery condition monitor) module to prevent excessive battery drain and to prevent battery overcharging.

A 144 V Ni-MH (nickel-metal hydride) battery powers the motor. Power to the vehicle's conventional 12 V circuits is supplied by the battery module with voltage reduction done through the DC-DC converter.

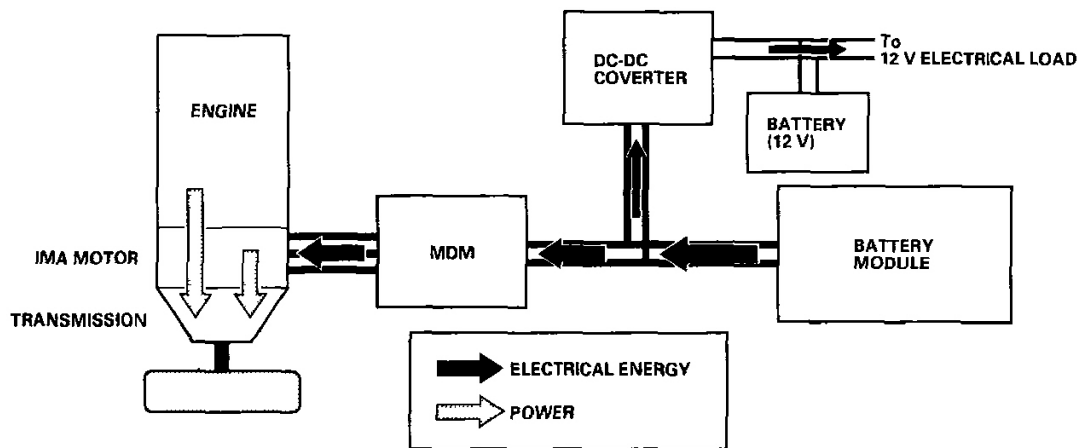


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Fig. 21: IMA System Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Motor Assist (acceleration)

During acceleration, the motor assists the engine by generating up to 49 N.m (5 kg-m, 36 lbf.ft) of torque. The motor assists the engine until the battery condition monitor (BCM) determines the battery state of charge is at or below a predetermined limit. At that point, motor assist will stop to prevent battery discharge.

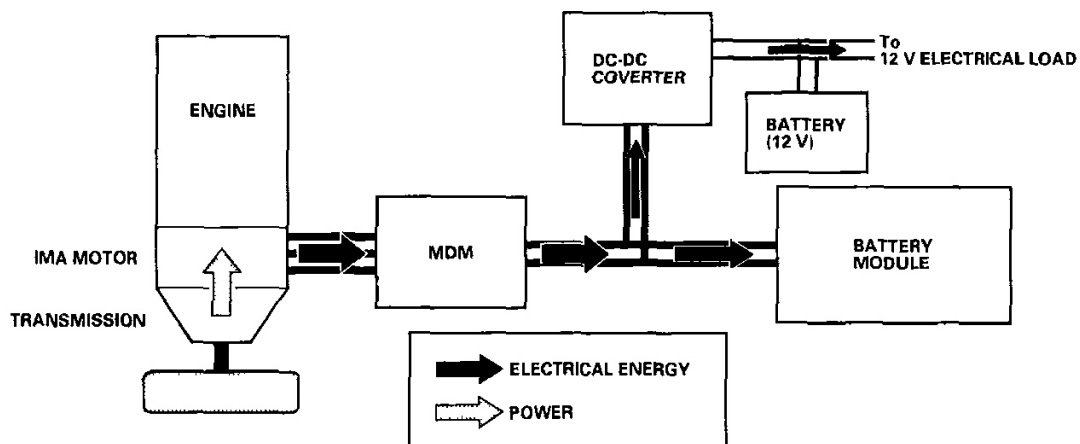


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Fig. 22: Identifying IMA System (Motor Assist (Acceleration))
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Regenerative Control (deceleration)

During deceleration, the motor functions as an electrical generator to charge the battery. Kinetic energy that is normally wasted during braking is transformed into electrical energy. The motor will charge the battery until the BCM sees that the battery state of charge reaches a predetermined limit. At that point, the motor stops regeneration to prevent battery overcharge.

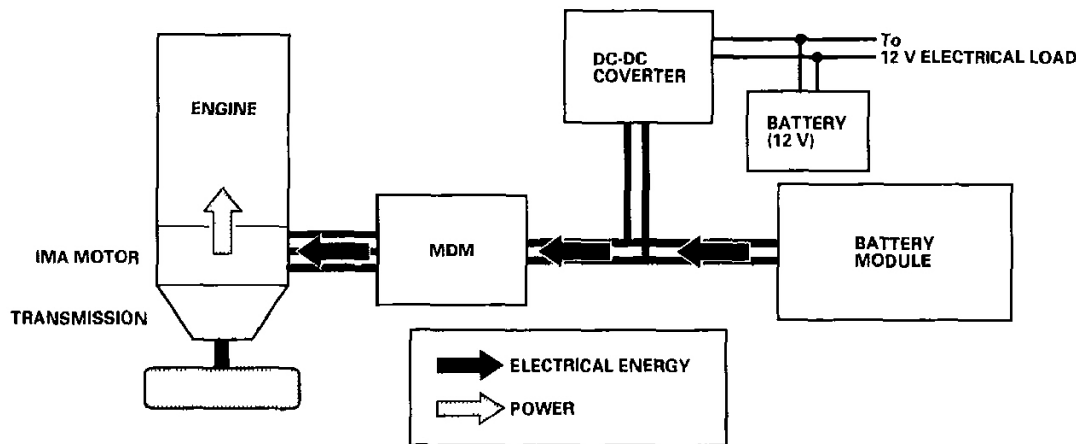


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Fig. 23: Identifying IMA System (Regenerative Control (Deceleration))
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Starter Function (at start-up)

The motor starts the engine under normal conditions. Because the motor is directly connected to the engine's crankshaft, it is much quieter and smoother than the vehicle's conventional starter. When outside temperature is extremely low, when the battery state of charge is low, or if there is a problem with the IMA system, the conventional starter starts the engine.



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Fig. 24: Identifying IMA System (Starter Function (At Start-Up))
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Auto-Stop System

Under certain conditions, the ECM stops the engine to conserve fuel and minimize tailpipe emissions when the vehicle comes to a stop. When this happens, the AUTO-STOP indicator comes on, either as a steady or a blinking light, to alert the driver that the auto-stop system is on.

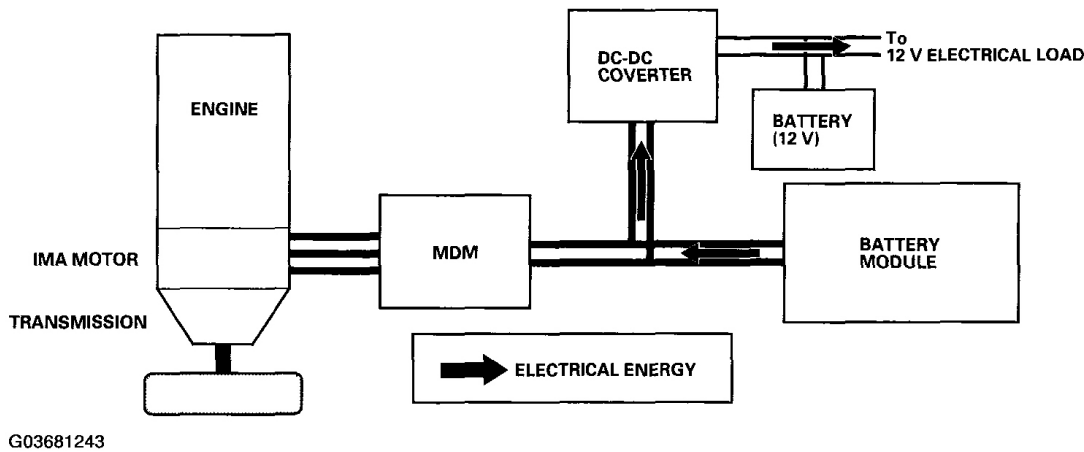


Fig. 25: Identifying IMA System (Auto-Stop System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The engine will not enter auto-stop mode under these conditions:

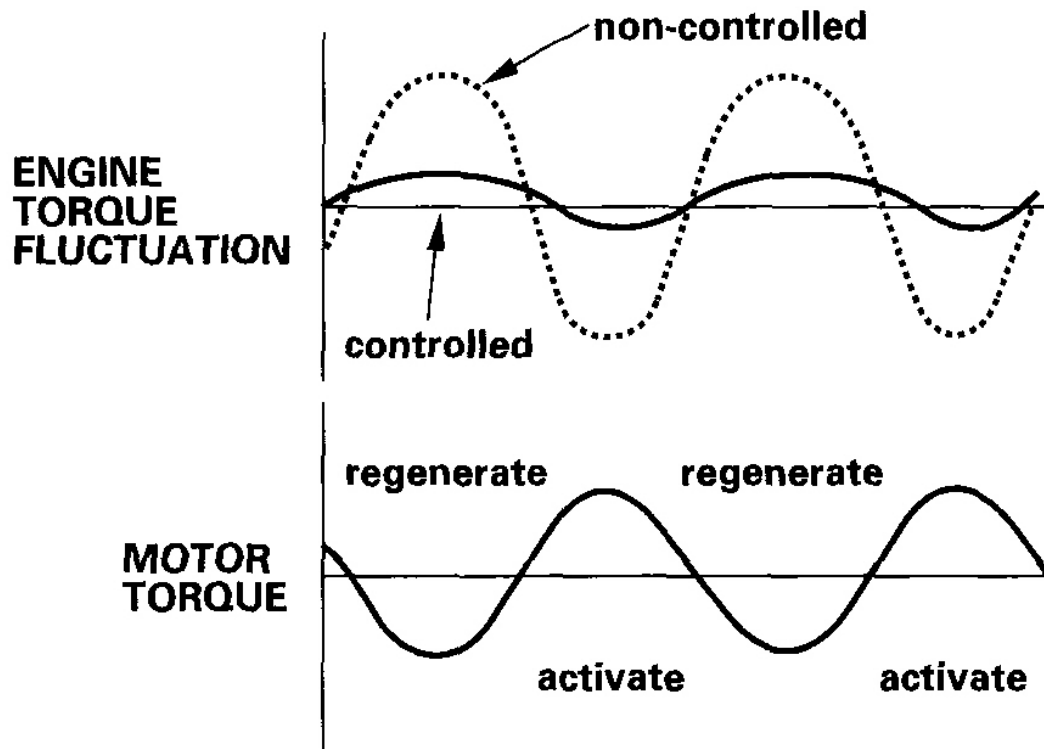
- When the transmission is in the R position, L position, or S mode.
- When the vehicle is stopped using heavy braking.
- When the AUTO or DEF button of the climate control unit is pushed, or when the passenger compartment temperature has not stabilized at the set temperature.
- When the engine coolant temperature is about 122°F (50°C) or below.
- For about 2 minutes after starting the engine.
- When the battery state of charge is low.
- When the electric load on the 12 V system is high.
- When the accelerator pedal is pressed.
- When an auto-stop related component is faulty.
- When the MIL is on.
- When the climate control system is in the economy (ECON) mode and the outside temperature is below 41°F (5°C).

When the engine is stopped by auto-stop system, it will restart under these conditions:

- When the transmission is moved into any position other than neutral with the clutch pedal pressed (M/T).
- When the accelerator pedal is pressed, the transmission is in neutral and the clutch pedal is pressed (M/T).
- When the brake pedal is released.
- When the accelerator pedal is pressed while the brake pedal is pressed.
- When the vehicle moves while the brakes are lightly applied.
- When the transmission is in the R position or the L position while the brake pedal is pressed (CVT).

Idle Vibration Reduction

The IMA system is equipped with an idle vibration reduction control that minimizes fluctuations in the engine's crankshaft. The motor applies opposite phase torque to the engine when the crankshaft is rotating.



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Fig. 26: Identifying Idle Vibration Reduction
Courtesy of AMERICAN HONDA MOTOR CO., INC.

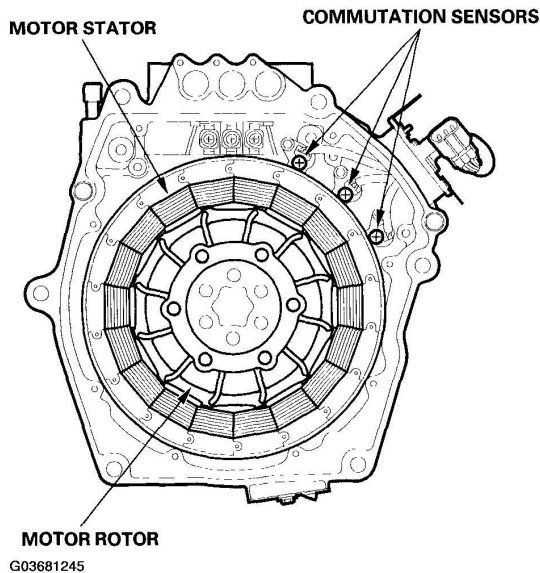
IMA Motor

The motor is a synchronous AC type that serves three functions; it converts kinetic energy into electrical energy, it assists the engine during acceleration, and it starts the engine.

The motor is between the engine and the transmission. It has a three-phase coil stator and a permanent magnet rotor that is directly connected to the engine crankshaft. Three commutation sensors are mounted inside the housing to detect the position of the rotor.

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2000-06 ELECTRICAL IMA System - Insight



Model	MF2
Rated Voltage	144 V
Stator Length (inside diameter/ outside diameter/width)	170/254/40 mm (6.7/10/1.6 in.)
Maximum Output	10.0/3,000 kW/rpm
Maximum Torque	49.0/1,000 N·m/rpm

Fig. 27: Identifying IMA Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MCM (Motor Control Module)

The MCM controls the amount of assist that the motor produces and the amount of regenerative power that the motor absorbs based on input from the ECM and the BCM. The MCM converts DC power into three-phase AC power required during assist, and converts AC power into DC power during regeneration.

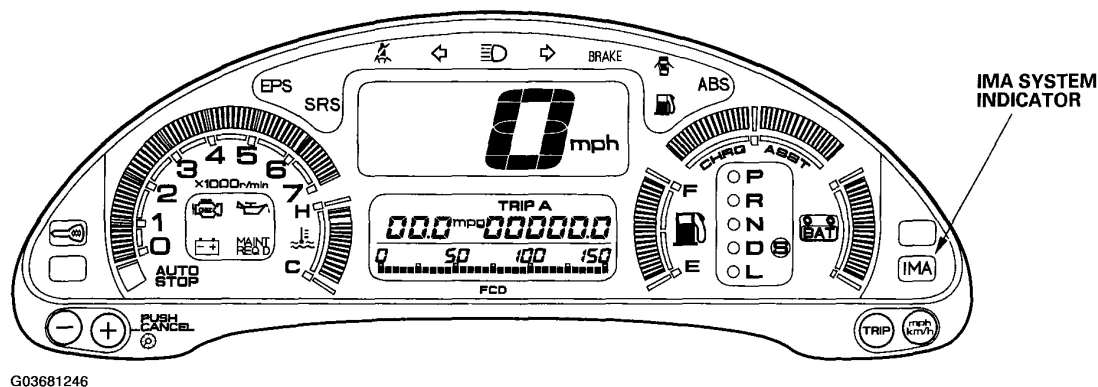


Fig. 28: Identifying IMA System Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

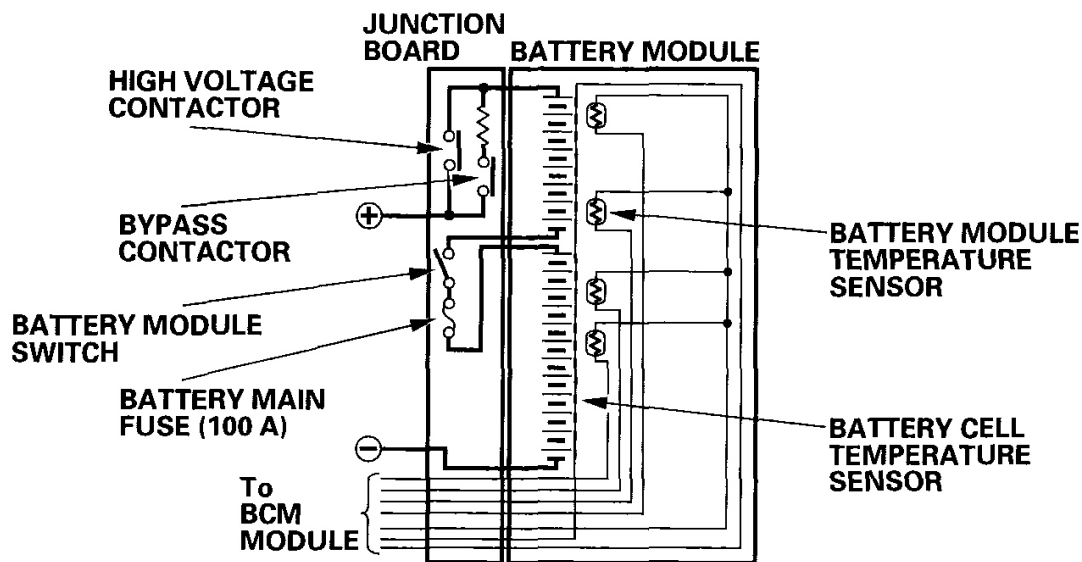
The MCM also communicates with the HDS through the 16P data link connector for better serviceability. If any sensors or circuits in the IMA system are abnormal, the MCM turns on the IMA system indicator to warn the driver that there is a problem.

Battery Module

A light-weight, compact Ni-MH (nickel-metal hydride) battery supplies energy to the IMA system.

The battery has 20 modules connected in series. Within each module are six 1.2 V cells. The total battery voltage is 144 V, and maximum capacity is 6.5 Ah.

The battery module has four built-in thermistor-type temperature sensors and a PTC (positive temperature coefficient)-type temperature sensor for each cell.



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Fig. 29: Identifying Battery Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BCM (Battery Condition Monitor) Module

The BCM module determines the battery state of charge and controls the battery fan

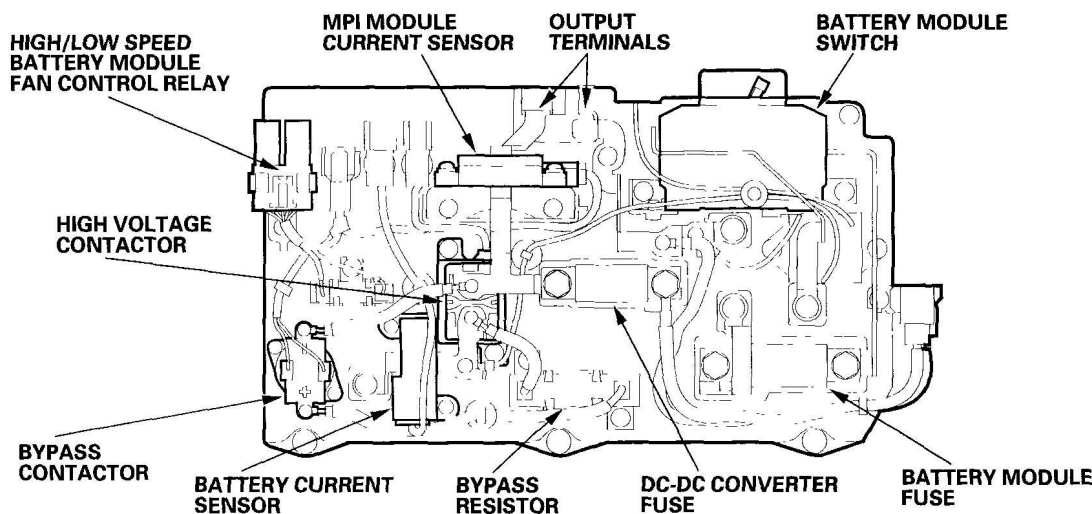
speed by looking at battery voltage, battery input/output current, and battery temperature. The BCM module then sends this information to the MCM to indicate the battery's state of charge and to keep the battery within predetermined limits.

Because battery charging and discharging generates heat in the battery module, the BCM module also controls a fan that keeps the battery module from overheating. The fan operates in one of three modes; off, low, or high.

If the BCM module detects an abnormality, it sends a signal to the MCM, which then turns on the IMA system indicator on the gauge assembly.

Junction Board

The junction board, mounted on the battery module, houses some high voltage components of the IMA system. The battery module switch, contactors, fuses, and current sensors are on the junction board.



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Fig. 30: Identifying Junction Board
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Battery Module Switch

The battery module switch is connected in series to the battery module fuse. Always turn the battery module switch to the OFF position whenever service or checks are

required on or around the high voltage circuits. Follow these steps exactly:

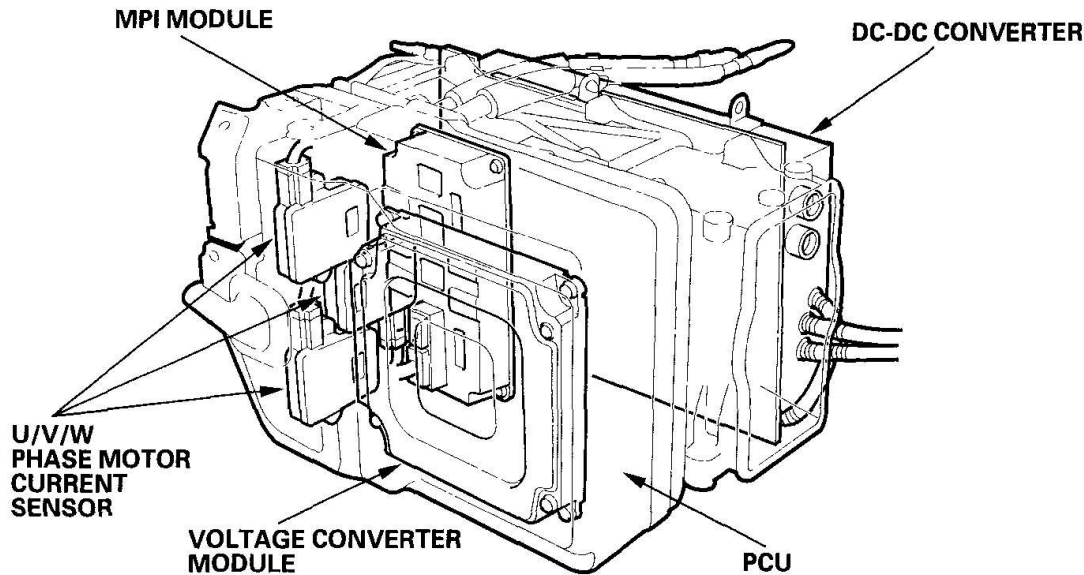
1. Remove the switch cover from the IPU lid, then turn the switch OFF.
2. Wait at least 5 minutes.
3. Remove the IPU lid.
4. Measure the voltage at the output terminals. Make sure the voltage is low enough for safe operation before any service is done.

Contactors

The high voltage contactor and bypass contactor are connected at the positive (+) output side of the battery module. These contactors are controlled by the MCM, connecting the IMA battery to the high voltage circuits. The current flows through the bypass contactor and bypass resistor when first, starting to charge the capacitors in the power control unit (PCU).

PCU (Power Control Unit)

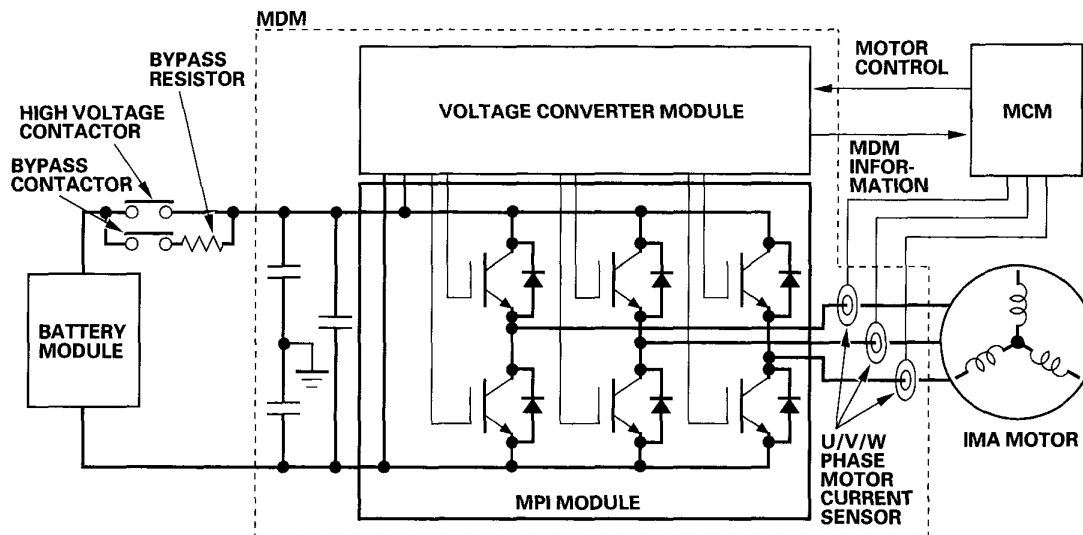
The PCU consists of the motor drive module (MDM), the DC-DC converter, and a heat sink that cools these units. These components are integrated into a single, compact unit. The fan circulates air over the heat sink and cools the MDM and the DC-DC converter.



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Fig. 31: Identifying PCU**Courtesy of AMERICAN HONDA MOTOR CO., INC.****MDM (Motor Driver Module)**

The MDM consists of the MPI module, voltage converter module, capacitor, and the U/V/W phase motor current sensors. The voltage converter acts as a preamplifier for the IGBTs. The IGBTs are used to transfer electrical energy to the motor from the 144 V battery and vice versa. The IGBTs are activated by the MCM based on the amount of assist/ regeneration needed. The voltage converter module monitors voltage and temperature of the MDM, and sends this information to the MCM.



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Fig. 32: Identifying MDM Diagram**Courtesy of AMERICAN HONDA MOTOR CO., INC.****DC-DC Converter**

Instead of using an alternator to maintain the 12 V battery, a DC-DC converter is used. The converter converts high voltage direct current into low voltage direct current with little energy loss.

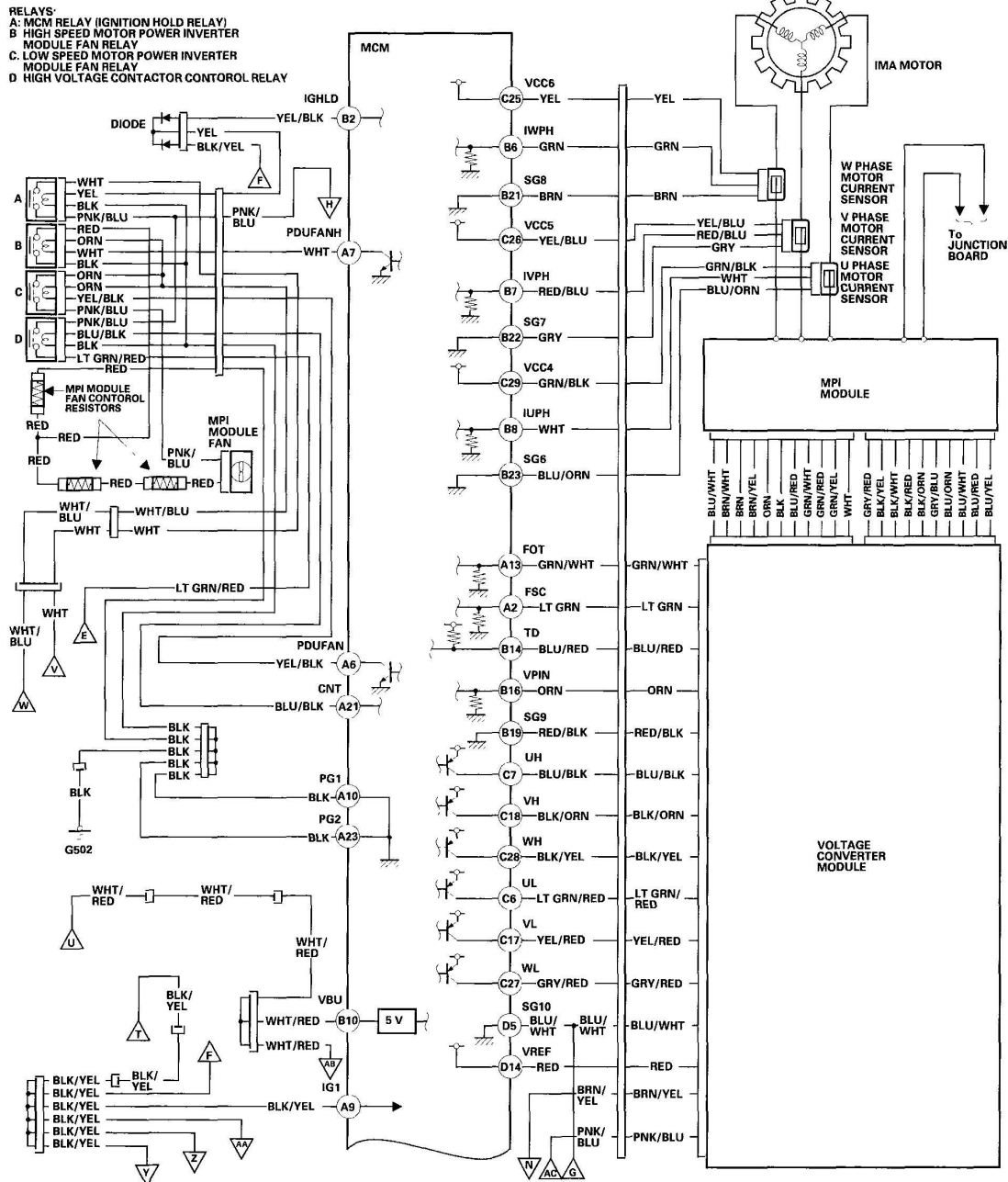
The DC-DC converter turns on the charging system indicator in the gauge assembly if a problem is detected in the 12 V charging system.

The DC-DC converter has a temperature monitoring system that signals the MCM if its temperature is abnormally high. If needed, the MCM can signal the DC-DC converter to shut down.

CIRCUIT DIAGRAM

2006 Honda Insight

2000-06 ELECTRICAL IMA System - Insight

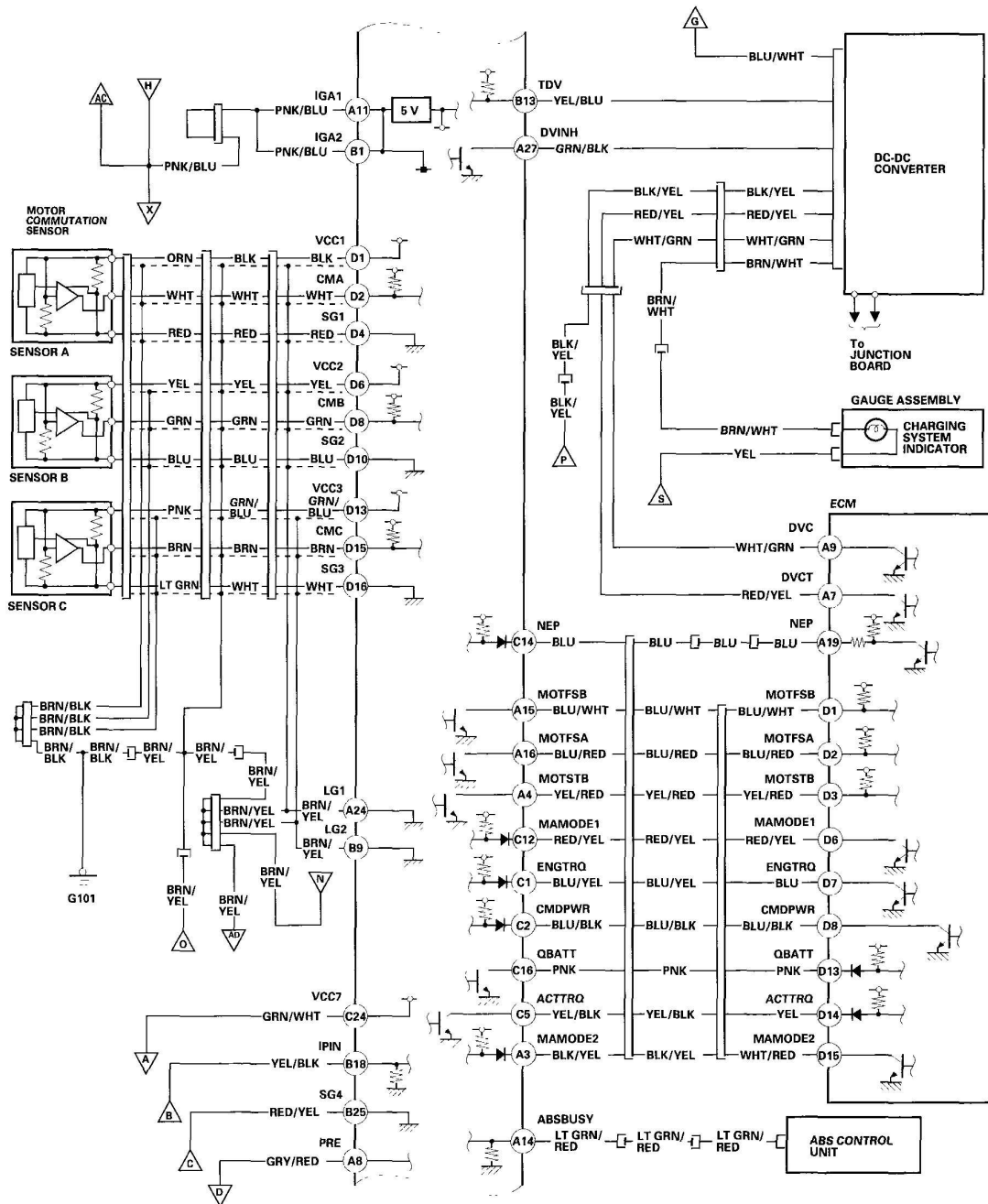


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Fig. 33: Circuit Diagram - IMA System (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2000-06 ELECTRICAL IMA System - Insight

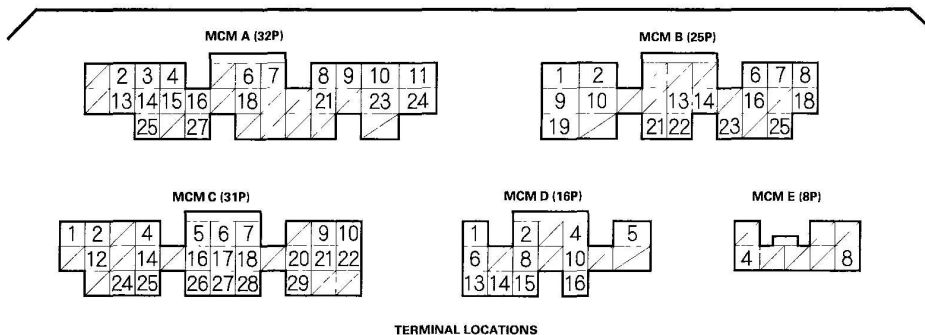
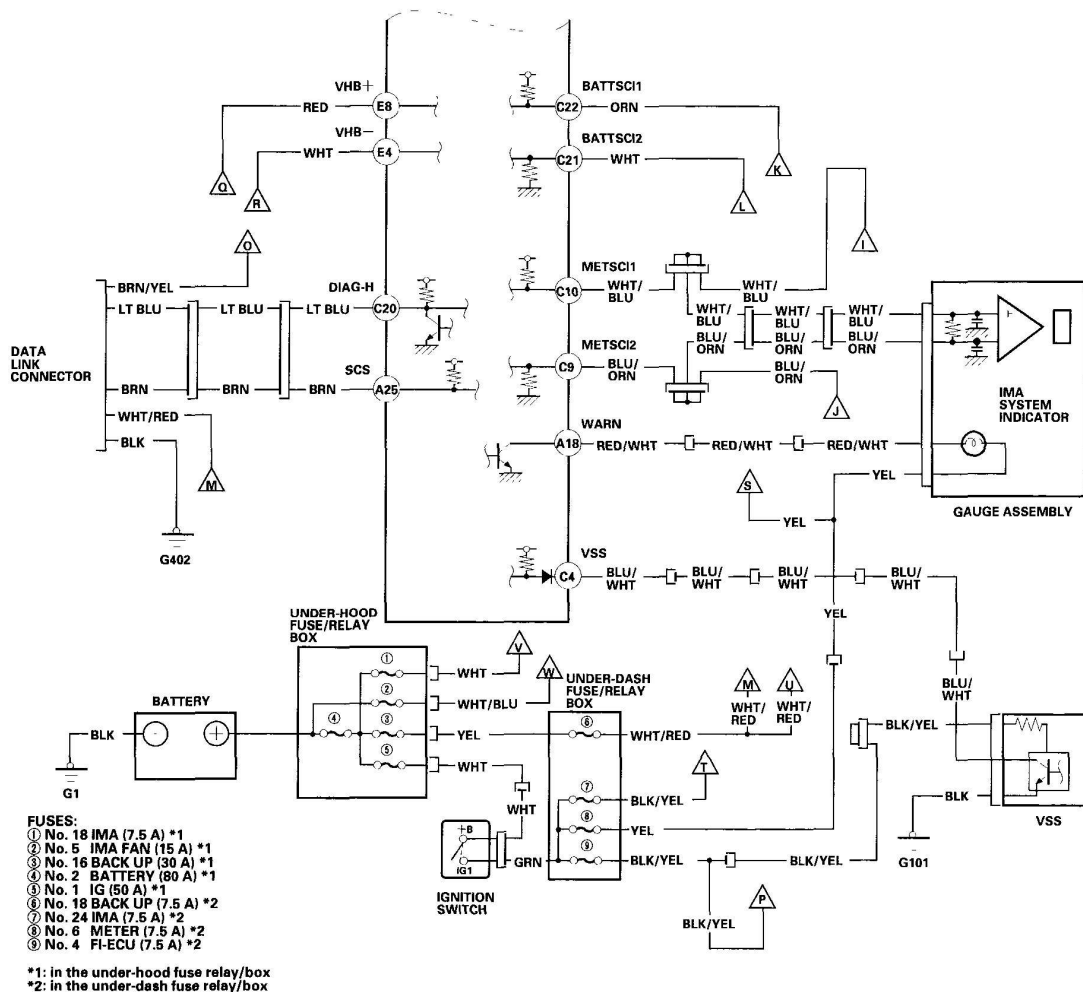


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Fig. 34: Circuit Diagram - IMA System (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2000-06 ELECTRICAL IMA System - Insight

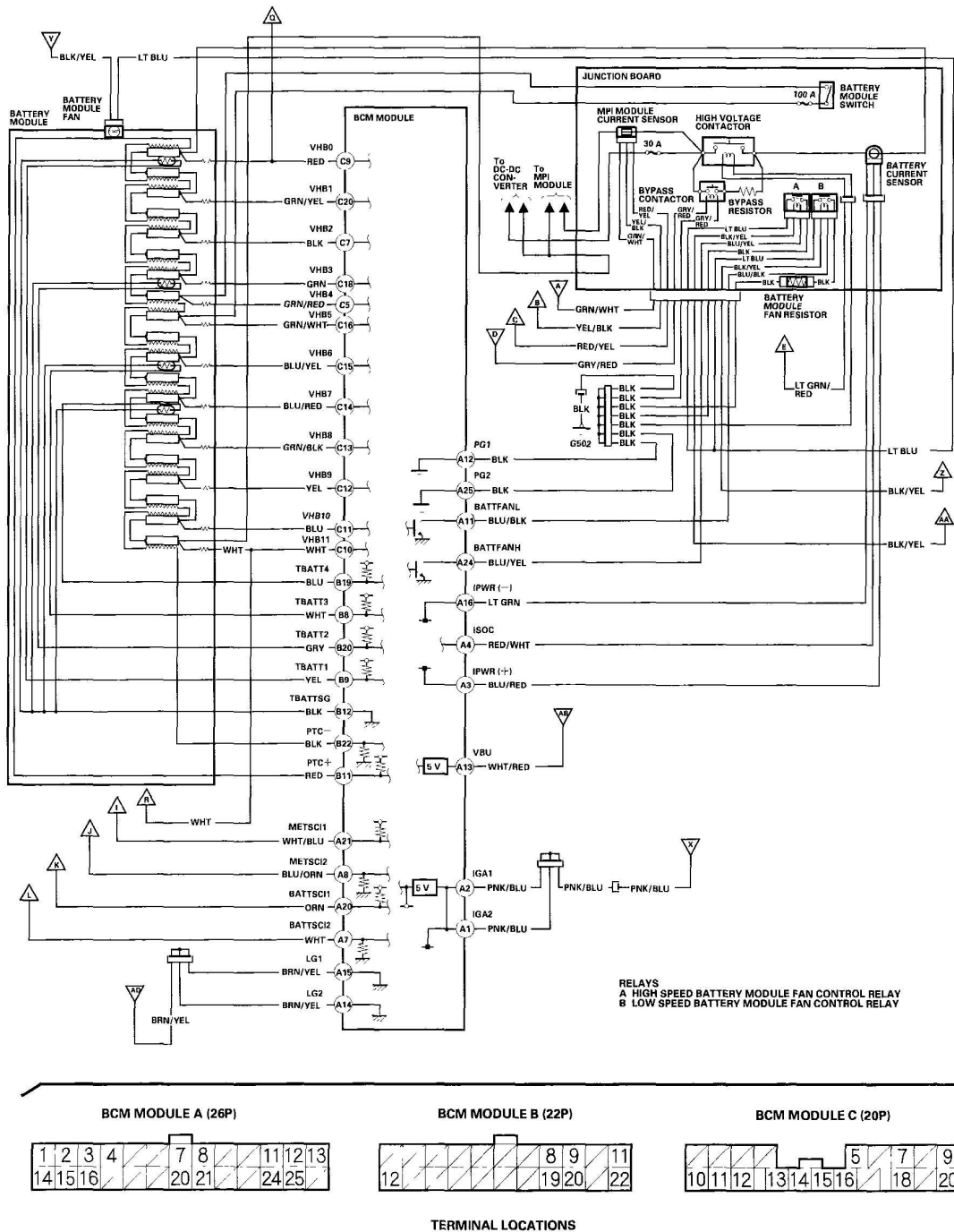


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Fig. 35: Circuit Diagram - IMA System (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2000-06 ELECTRICAL IMA System - Insight



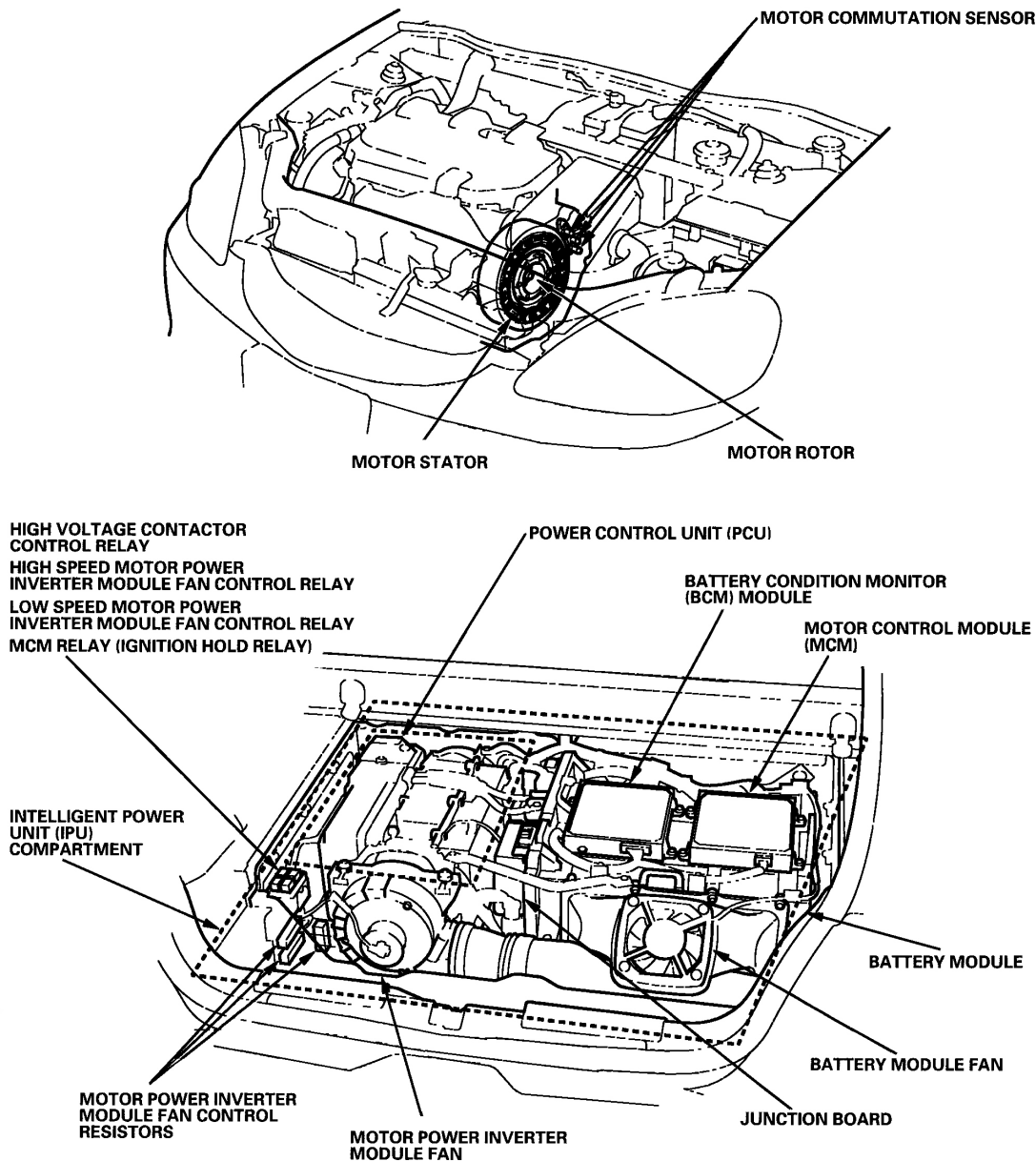
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Fig. 36: Circuit Diagram - IMA System (4 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

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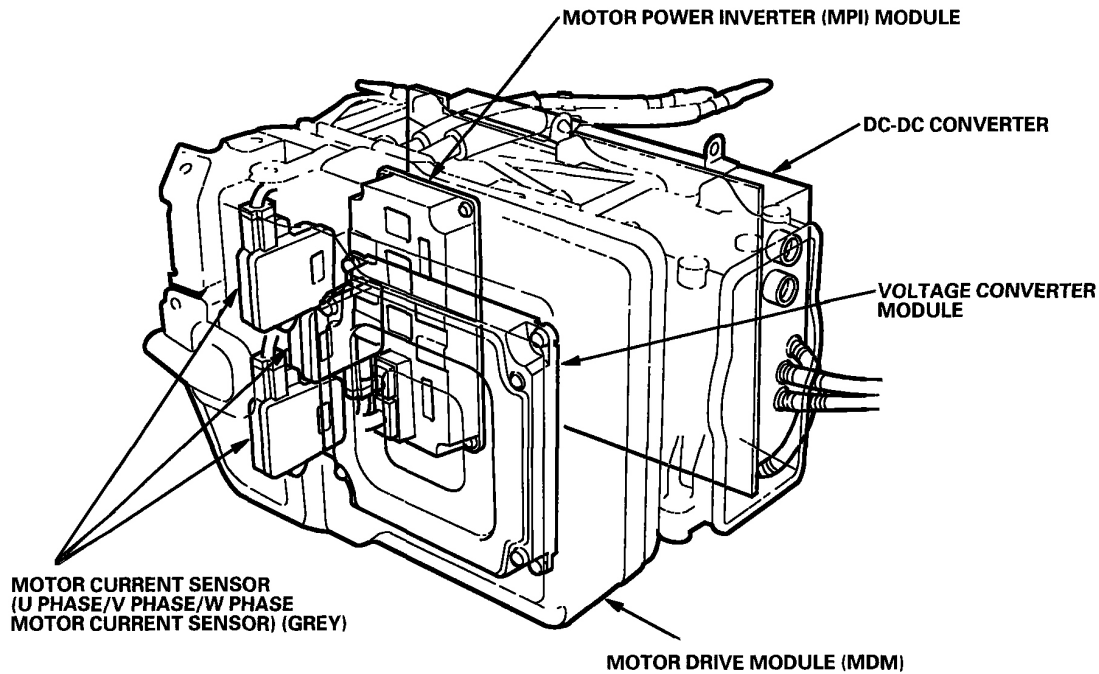
2000-06 ELECTRICAL IMA System - Insight



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Fig. 37: Identifying IMA System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER CONTROL UNIT (PCU)



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Fig. 38: Identifying PCU Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

JUNCTION BOARD

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2000-06 ELECTRICAL IMA System - Insight

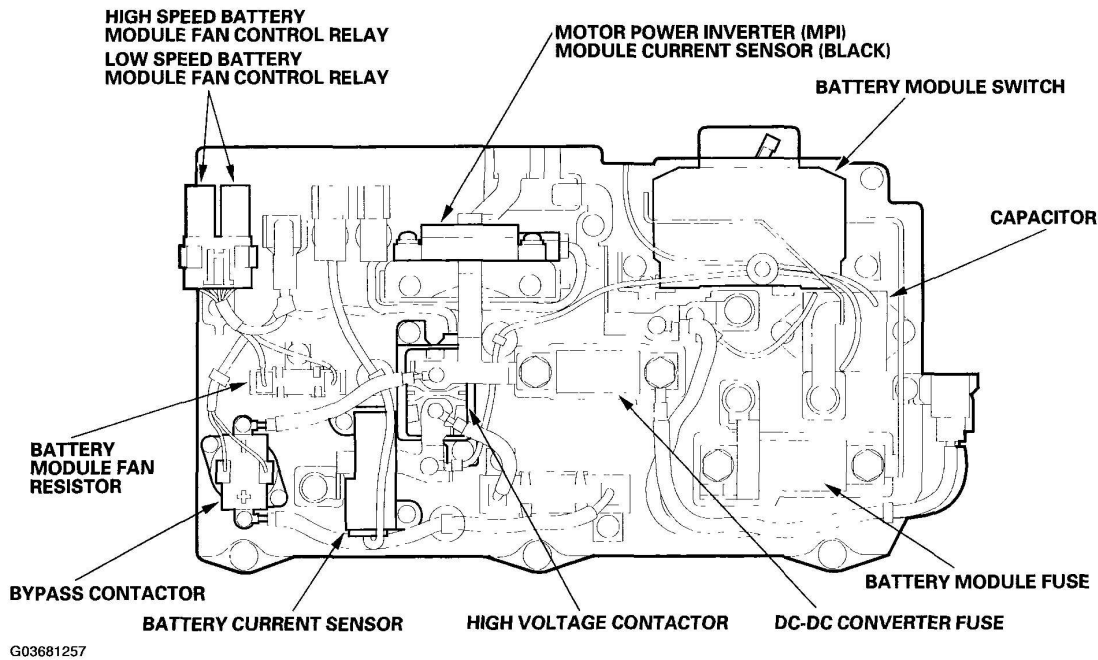


Fig. 39: Identifying Junction Board Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC INDEX

DTC	Description
DTC P0725 (43), P1647 (43)	Engine Speed Signal Circuit Problem, Engine Speed Signal Circuit Problem
DTC P0A27 (46), P1443 (46)	High Voltage Contactor/ Bypass Contactor Stays Activated, High Voltage Contactor/ Bypass Contactor Stays Activated
DTC P0A3C (39), P1438 (39)	Motor Driver Module (MDM) Overheating, Motor Driver Module (MDM) Overheating
DTC P0A5E (24), P1582 (24)	Motor Current U Phase Signal Circuit Low Input, Motor Current U Phase Signal Circuit Low Input
DTC P0A5F (25), P1582 (25)	Motor Current U Phase Signal Circuit

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	High Input, Motor Current U Phase Signal Circuit High Input
<u>DTC P0A61 (26), P1583 (26)</u>	Motor Current V Phase Signal Circuit Low Input, Motor Current V Phase Signal Circuit Low Input
<u>DTC P0A62 (27), P1583 (27)</u>	Motor Current V Phase Signal Circuit High Input, Motor Current V Phase Signal Circuit High Input
<u>DTC P0A64 (28), P1584 (28)</u>	Motor Current W Phase Signal Circuit Low Input, Motor Current W Phase Signal Circuit Low Input
<u>DTC P0A65 (29), P1584 (29)</u>	Motor Current W Phase Signal Circuit High Input, Motor Current W Phase Signal Circuit High Input
<u>DTC P0A7E (72), P1449 (1449)</u>	Battery Module Overheating, Battery Module Overheating
<u>DTC P0A7F (78), P1449 (78)</u>	Battery Module Deterioration, Battery Module Deterioration
<u>DTC P0A82 (63), P1448 (63)</u>	Battery Module Overheating, Battery Module Overheating
<u>DTC P0A9B (67), P1568 (67)</u>	Battery Module Temperature Signal Circuit Problem, Battery Module Temperature Signal Circuit Problem
<u>DTC P0AA6 (59), P1444 (59)</u>	High Voltage Short Circuit, High Voltage Short Circuit
<u>DTC P1429 (38), P1438 (38)</u>	Motor Driver Module (MDM) Overheating Signal Circuit Problem, Motor Driver Module (MDM) Overheating Signal Circuit Problem
<u>DTC P1430 (40), P1439 (40)</u>	Motor Driver Module (MDM) Short Circuit Sensor Problem, Motor Driver Module (MDM) Short Circuit Sensor Problem
<u>DTC P1432 (73), P1449 (73)</u>	Battery Cell Overheating, Battery Cell

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	Overheating
DTC P1437 (41), P1439 (41)	Motor Driver Module (MDM) Short Circuit, Motor Driver Module (MDM) Short Circuit
DTC P1440 (57)	IMA System Problem
DTC P1445 (62)	Bypass Contactor Problem
DTC P1446 (74), P1449 (74)	Battery Module Individual Voltage Input Deviation, Battery Module Individual Voltage Input Deviation
DTC P1447 (77)	Battery Module Deterioration
DTC P1559 (16)	Motor Commutation Sensor A Circuit Low Input
DTC P1560 (17)	Motor Commutation Sensor A Circuit High Input
DTC P1561 (18)	Motor Commutation Sensor B Circuit Low Input
DTC P1562 (52)	Motor Commutation Sensor B Circuit High Input
DTC P1563 (53)	Motor Commutation Sensor C Circuit Low Input
DTC P1564 (54)	Motor Commutation Sensor C Circuit High Input
DTC P1565 (42), P1566 (42)	Motor Commutation Signal Problem, Motor Commutation Signal Problem
DTC P1568 (66), P1570 (66)	Battery Module Individual Voltage Input Problem, Battery Module Individual Voltage Input Problem
DTC P1568 (70), P1569 (70), P16BA (71)	Battery Cell Temperature Signal Circuit Problem, Battery Cell Temperature Signal Circuit Low Input, Battery Cell Temperature Signal Circuit High Input
DTC P1571 (55)	Motor Commutation Sensor Voltage Input Problem

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2000-06 ELECTRICAL IMA System - Insight

<u>DTC P1572 (32), P15A0 (32)</u>	Motor Driver Module (MDM) Temperature Signal Circuit Low Input, Motor Driver Module (MDM) Temperature Signal Circuit Low Input
<u>DTC P1572 (33), P15A1 (33)</u>	Motor Driver Module (MDM) Temperature Signal Circuit High Input, Motor Driver Module (MDM) Temperature Signal Circuit High Input
<u>DTC P1573 (37)</u>	DC-DC Converter Temperature Signal Circuit High Input
<u>DTC P1575 (12), P1576 (12)</u>	Motor Driver Module (MDM) Voltage Problem, Motor Driver Module (MDM) Voltage Problem
<u>DTC P1576 (10), P15A2 (10)</u>	Motor Driver Module (MDM) Voltage Signal Circuit Low Input, Motor Driver Module (MDM) Voltage Signal Circuit Low Input
<u>DTC P1576 (11), P15A3 (11)</u>	Motor Driver Module (MDM) Voltage Signal Circuit High Input, Motor Driver Module (MDM) Voltage Signal Circuit High Input
<u>DTC P1577 (8)</u>	High Voltage Detection Signal Circuit Problem
<u>DTC P1580 (65)</u>	Battery Current Circuit Problem
<u>DTC P1581 (19), P1587 (19)</u>	Motor Power Inverter (MPI) Module Current Signal Circuit Low Input, Motor Power Inverter (MPI) Module Current Signal Circuit Low Input
<u>DTC P1581 (20), P1588 (20)</u>	Motor Power Inverter (MPI) Module Current Signal Circuit High Input, Motor Power Inverter (MPI) Module Current Signal Circuit High Input
<u>DTC P1581 (21), P1589 (21)</u>	Motor Power Inverter (MPI) Module Current Signal Circuit Problem, Motor

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2000-06 ELECTRICAL IMA System - Insight

	Power Inverter (MPI) Module Current Signal Circuit Problem
DTC P1585 (30)	Motor Current Signal Circuit Problem
DTC P1586 (23)	Motor Power Inverter (MPI) Module Current Signal/Battery Current Signal Circuit Problem
DTC P1635 (79)	Battery Condition Monitor (BCM) Module Problem
DTC P1638 (50)	Motor Control Module (MCM) Internal Circuit Problem
DTC P1647 (1), P16B3 (1)	Power Command Signal Circuit Low Input, Power Command Signal Circuit Low Input
DTC P1647 (2), P16B4 (2)	Power Command Signal Circuit High Input, Power Command Signal Circuit High Input
DTC P1647 (3), P16B5 (3)	Engine Torque Signal Circuit Low Input, Engine Torque Signal Circuit Low Input
DTC P1647 (4), P16B6 (4)	Engine Torque Signal Circuit High Input, Engine Torque Signal Circuit High Input
DTC P1647 (5), P16B7 (5)	Mode Signal Circuit 1 Low Input, Mode Signal Circuit 1 Low Input
DTC P1647 (6), P16B8 (6)	Mode Signal Circuit 1 High Input, Mode Signal Circuit 1 High Input
DTC P1647 (7), P16B9 (7)	Mode Signal Circuit 2 Problem, Mode Signal Circuit 2 Problem
DTC P1648 (64)	BCM Module Communication Signal Circuit Problem
DTC P1648 (75)	MCM Communication Signal Circuit Problem
DTC P1649 (13)	ABS Operation Signal Circuit Problem

DTC P0725 (43): ENGINE SPEED SIGNAL CIRCUIT PROBLEM; DTC P1647 (43): ENGINE SPEED SIGNAL CIRCUIT PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Turn the ignition switch ON (II), and watch the MIL.

Does the MIL come on for the first 2 seconds?

YES - Go to step 2.

NO - Do the MIL circuit troubleshooting; 2000-2004 models (see **2000-2004 MODELS**), 2005-2006 models (see **2005-2006 MODELS**), and recheck.

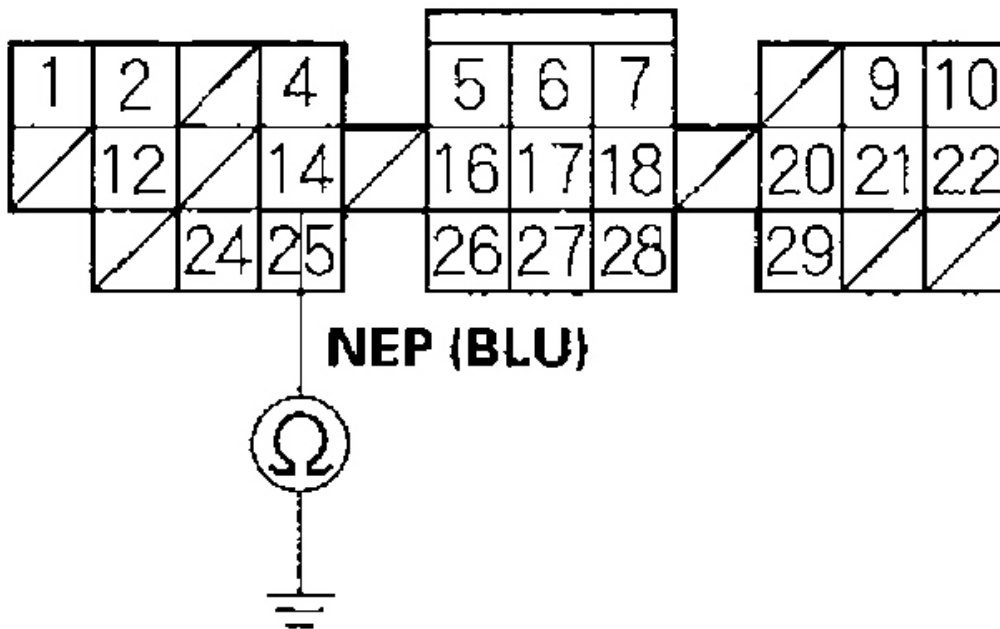
2. Reset the MCM (see **HOW TO RESET THE MCM**).
3. Start the engine, and hold it at 2,000 RPM for 5 seconds.

Is DTC P0725 (43)* (P1647 (43)) indicated?**

YES - Go to step 5 .

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM and at the MCM.

4. Turn the ignition switch OFF.
5. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
7. Disconnect ECM connector A (32P), and MCM connector C (31P).
8. Check for continuity between body ground and MCM connector terminal C14.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681258

Fig. 40: Checking Continuity Between Body Ground And MCM Connector Terminal C14

Courtesy of AMERICAN HONDA MOTOR CO., INC.

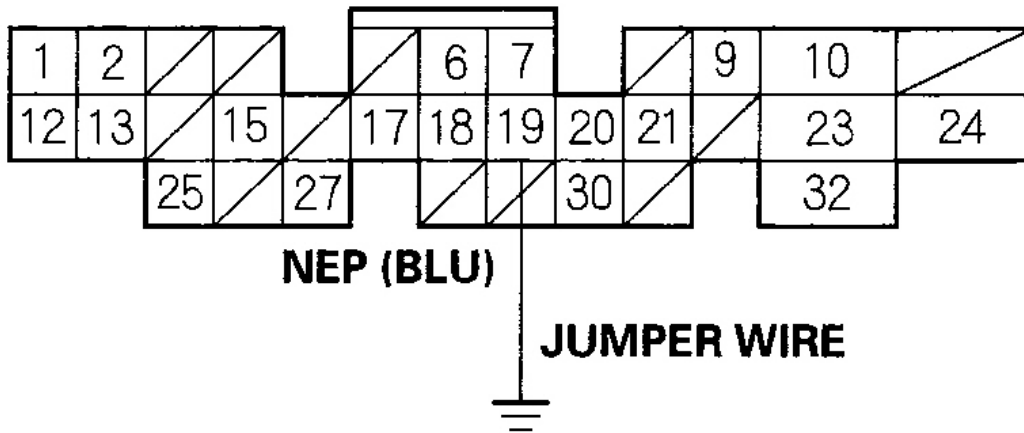
Is there continuity?

YES - Repair short to ground in the wire between the ECM (A19) and the MCM (CU).

NO - Go to step 10 .

9. Connect ECM connector terminal A19 to body ground with a jumper wire.

ECM CONNECTOR A (32P)



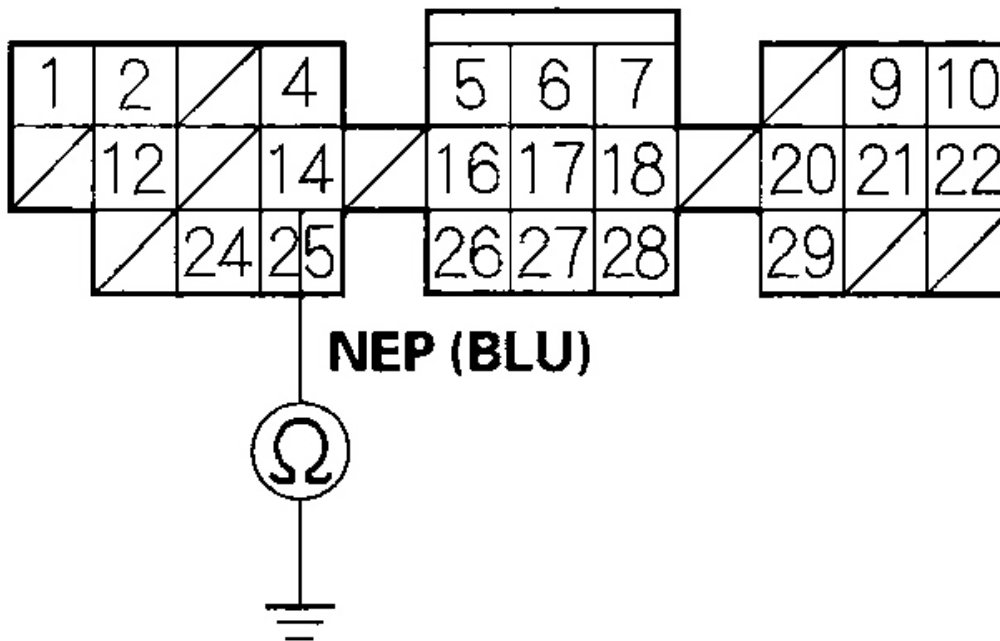
Wire side of female terminals

G03681259

Fig. 41: Connecting ECM Connector Terminal A19 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between body ground and MCM connector terminal C14.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681260

Fig. 42: Checking Continuity Between Body Ground And MCM Connector Terminal C14

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good MCM and ECM; 2000-2001 models (see HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)), 2002-2006 models (see ECM UPDATING AND SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL), and recheck. If the symptom/indication

goes away, replace the original MCM and ECM.

NO - Repair open in the wire between the ECM (A19) and the MCM (C14).

**DTC P0A27 (46): HIGH VOLTAGE CONTACTOR/BYPASS CONTACTOR STAYS ACTIVATED;
DTC P1443 (46): HIGH VOLTAGE CONTACTOR/ BYPASS CONTACTOR STAYS ACTIVATED**

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).
3. Turn the ignition switch OFF. Wait for 30 seconds.
4. Turn the ignition switch ON (II).

Is DTC P0A27 (46)* (P1443 (46)) indicated?**

YES - Go to step 5.

NO - Intermittent failure, systems OK at this time. Check for poor connections or loose terminals at the DC-DC converter and at the MCM.

5. Watch the charging system indicator.

Does the charging system indicator come on?

YES - Go to step 6.

NO - Go to step 10 .

6. Turn the ignition switch OFF.
7. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
8. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
9. Check for an open in the 30 A fuse or the harness on the junction board.

Are the fuse and the harness OK?

YES - Replace the DC-DC converter (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

10. Turn the ignition switch OFF.
11. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
12. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
13. Turn the battery module switch ON, and measure voltage at the battery module junction terminals.

Is there 100 V or more?

YES - Go to step 14.

NO - Go to step 15 .

14. Disconnect the junction board 16P connector.

Does the voltage drop rapidly below 100 V within 30 seconds?

YES - Substitute a known-good MCM, then recheck. If the symptom/indication goes away with a known-good MCM, replace the original MCM.

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

15. Turn the ignition switch ON (II).
16. Turn the ignition switch OFF, and wait for 1 minute.
17. Measure voltage at the battery module junction terminals.

Is there 100 V or more?

YES - Replace the DC-DC converter (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Replace the MPI module (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).

DTC P0A3C (39): MOTOR DRIVER MODULE (MDM) OVERHEATING; DTC P1438 (39): MOTOR DRIVER MODULE (MDM) OVERHEATING

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Turn the ignition switch ON (II), and check for DTCs.

Is DTC P1429 (38)* (P1438 (38)) indicated?**

YES - Do the troubleshooting procedure for DTC P1429 (38)* (P1438 (38)**) (see **DTC P1429 (38): MOTOR DRIVER MODULE (MDM) OVERHEATING SIGNAL CIRCUIT PROBLEM, DTC P1438 (38): MOTOR DRIVER MODULE (MDM) OVERHEATING SIGNAL CIRCUIT PROBLEM**), and recheck.

NO - Go to step 2.

2. Check for DTCs.

Is DTC P0A3C (39)* (P1438 (39)) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Check the MPI module fan (see **MOTOR POWER INVERTER (MPI)**).

MODULE FAN TEST) and MPI module fan duct line.

Are the MPI module fan and MPI fan duct line OK?

YES - Replace the voltage converter module and the MPI module (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Replace the MPI module fan (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**) and/or repair the MPI fan duct line.

DTC P0A5E (24): MOTOR CURRENT U PHASE SIGNAL CIRCUIT LOW INPUT; DTC P1582 (24): MOTOR CURRENT U PHASE SIGNAL CIRCUIT LOW INPUT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

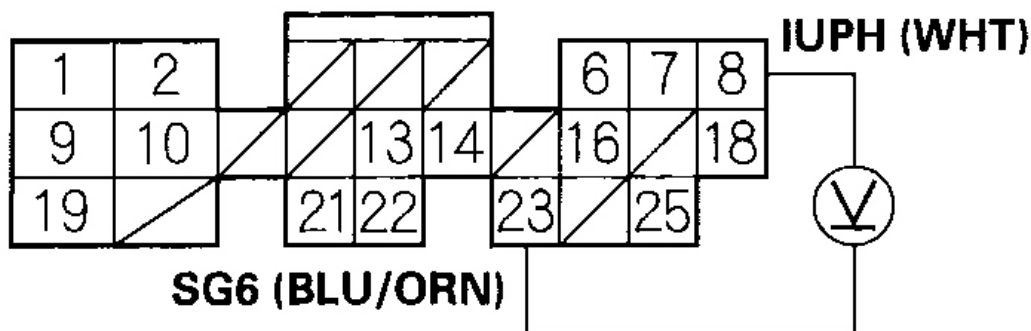
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P0A5E (24)* (P1582 (24)) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the U phase motor module current sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B8 and B23.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681261

Fig. 43: Measuring Voltage Between MCM Connector Terminals B8 And B23

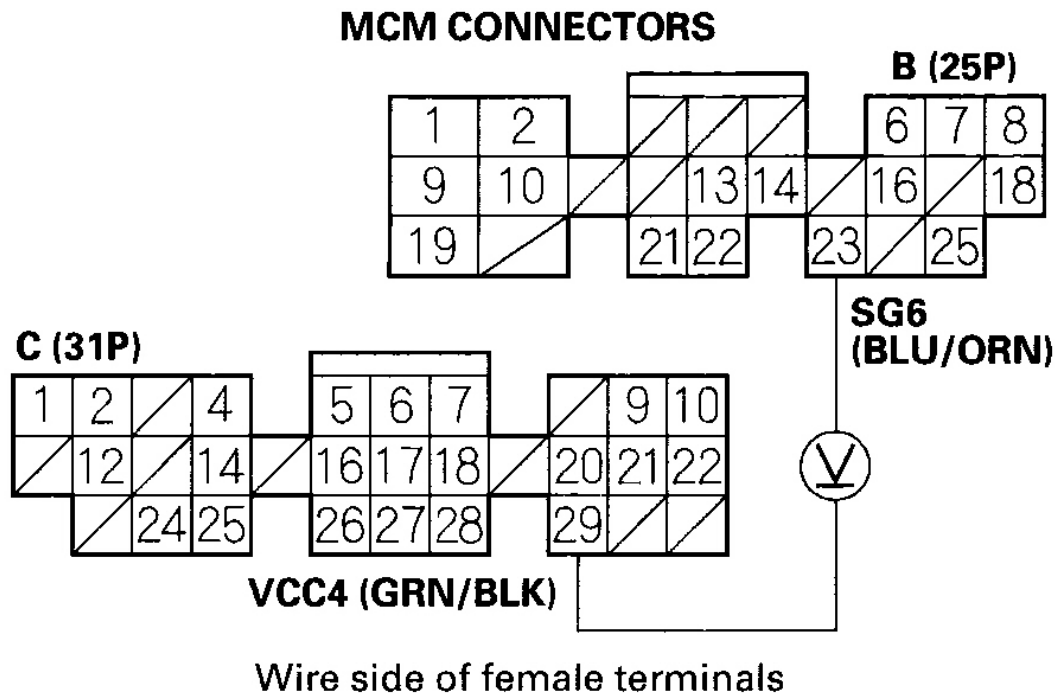
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.2 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Measure voltage between MCM connector terminals B23 and C29.



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Fig. 44: Measuring Voltage Between MCM Connector Terminals B23 And C29

Courtesy of AMERICAN HONDA MOTOR CO., INC.

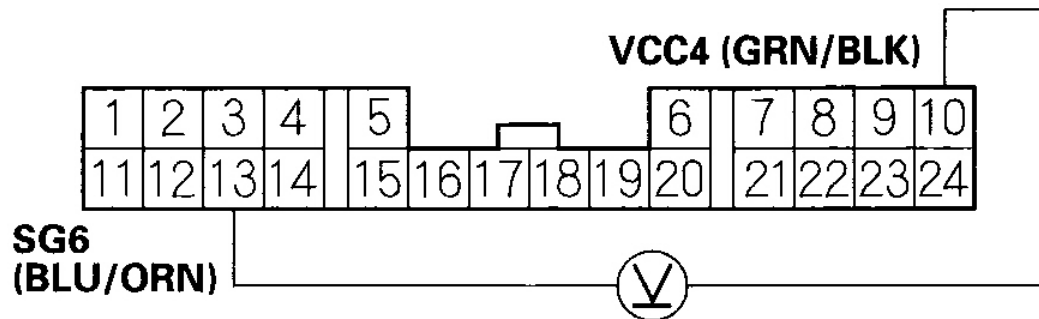
Is there about 5 V?

YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

9. Measure voltage between power converter wire harness 24P connector terminals No. 10 and No. 13.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681263

Fig. 45: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No.10 And 13

Courtesy of AMERICAN HONDA MOTOR CO., INC.

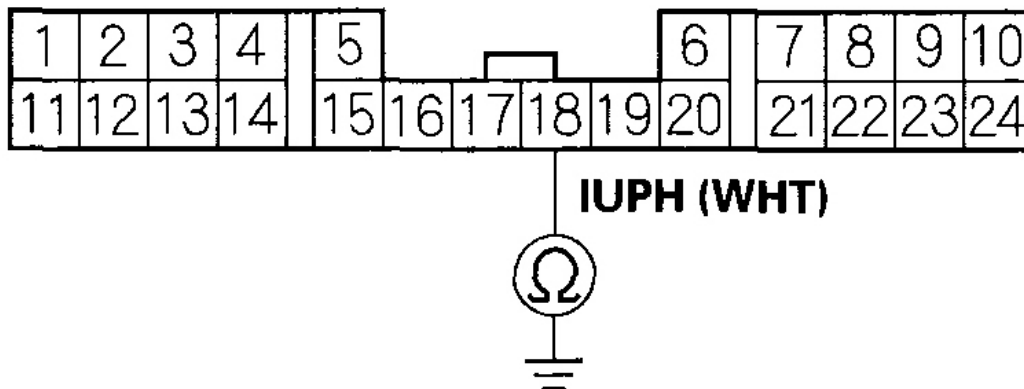
Is there about 5 V?

YES - Go to step 10.

NO - Repair open in the wire between the MCM (C29) and power converter wire harness 24P connector.

10. Turn the ignition switch OFF.
11. Check for continuity between body ground and the power converter wire harness 24P connector terminal No. 18.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681264

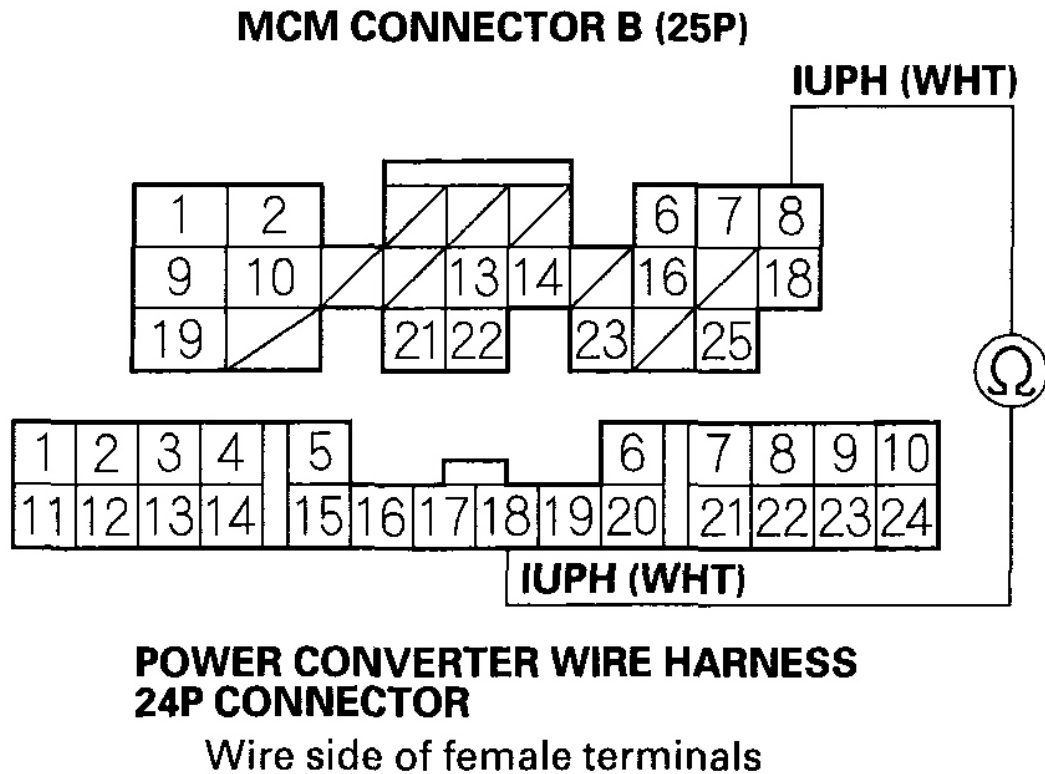
Fig. 46: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 18
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16 .

NO - Go to step 12.

12. Disconnect the power converter wire harness 24P connector.
13. Check for continuity between MCM connector terminal B8 and power converter wire harness 24P connector terminal No. 18.



G03681265

Fig. 47: Checking Continuity Between MCM Connector Terminal B8 And Power Converter Wire Harness 24P Connector Terminal No.18
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

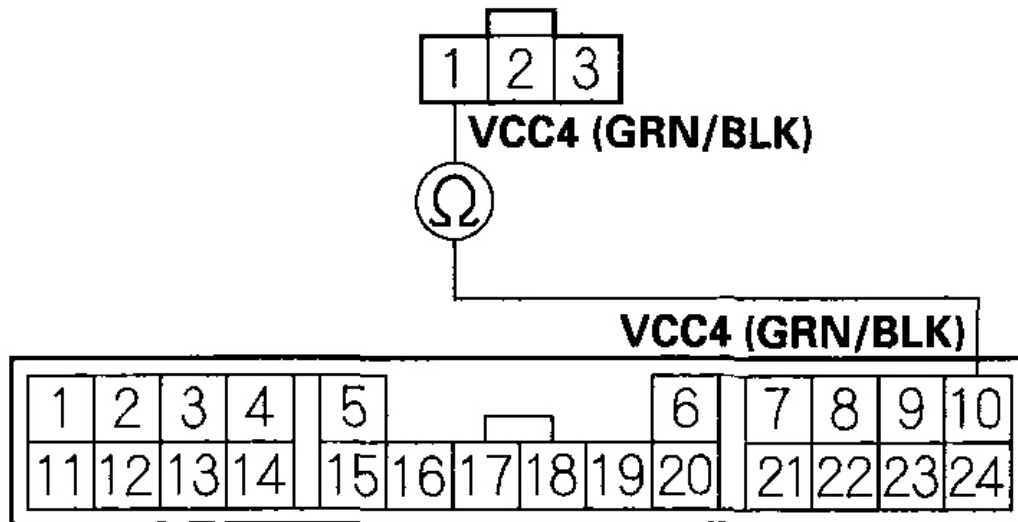
YES - Go to step 14.

NO - Repair open in the wire between the MCM (B8) and the power converter wire harness 24P connector.

14. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**). Check for continuity between U phase motor current sensor 3P connector terminal No. 1 and power converter wire harness 24P connector terminal No. 10.

U PHASE MOTOR CURRENT SENSOR 3P CONNECTOR

Wire side of female terminals



POWER CONVERTER WIRE HARNESS 24P CONNECTOR

Terminal side of male terminals

G03681266

Fig. 48: Checking Continuity Between U Phase Motor Current Sensor 3P Connector Terminal No. 1 And Power Converter Wire Harness 24P Connector Terminal No. 10

Courtesy of AMERICAN HONDA MOTOR CO., INC.

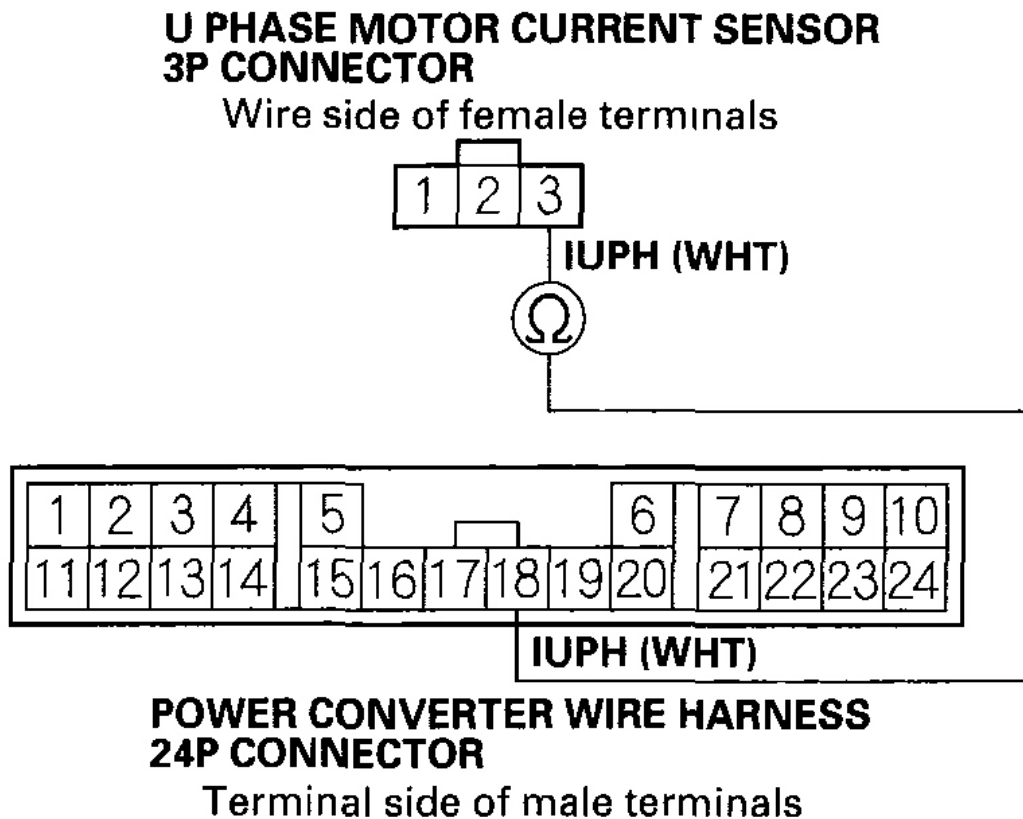
Is there continuity?

YES - Go to step 15.

NO - Repair open in wire between the U phase motor current sensor and the power converter wire harness 24P connector.

15. Check for continuity between U phase motor current sensor 3P connector

terminal No. 3 and power converter wire harness 24P connector terminal No. 18.



G03681267

Fig. 49: Checking Continuity Between U Phase Motor Current Sensor 3P Connector Terminal No. 3 And Power Converter Wire Harness 24P Connector Terminal No. 18

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

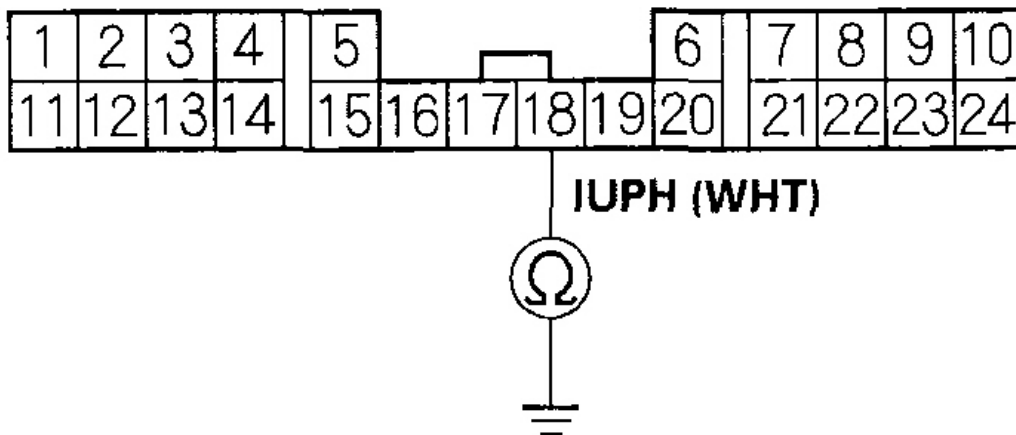
YES - Replace the U phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Repair open in the wire between the U phase motor current sensor

and the power converter wire harness 24P connector.

16. Disconnect MCM connector B (25P).
17. Check for continuity between body ground and power converter wire harness 24P connector terminal No. 18.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681268

Fig. 50: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 18
Courtesy of AMERICAN HONDA MOTOR CO., INC.

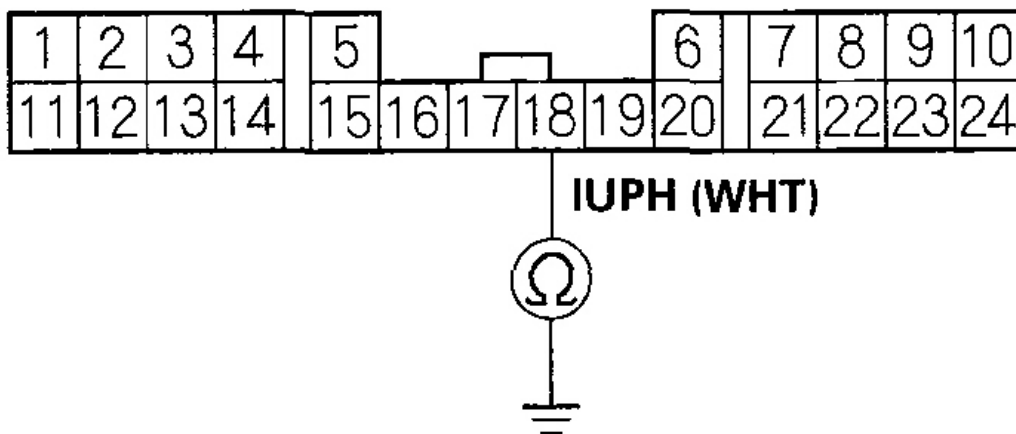
Is there continuity?

YES - Go to step 18.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

18. Disconnect the power converter wire harness 24P connector.
19. Check for continuity between body ground and power converter wire harness 24P connector terminal No. 18.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681269

Fig. 51: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 18
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (B8) and the power converter wire harness 24P connector.

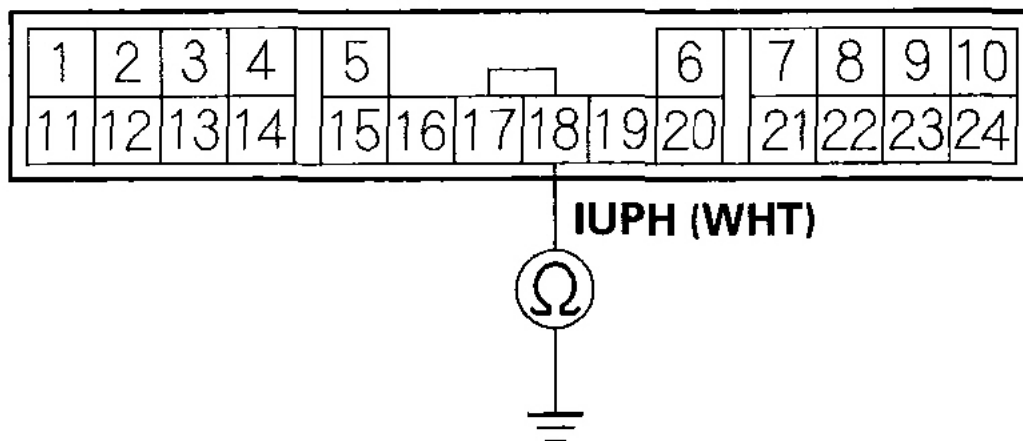
NO - Go to step 20.

20. Remove the PCU (see **POWER CONTROL UNIT (PCU)**)

REMOVAL/INSTALLATION). Disconnect the U phase motor current sensor 3P connector.

21. Check for continuity between body ground and power converter wire harness 24P connector terminal No. 18.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



IUPH (WHT)

Terminal side of male terminals

G03681270

Fig. 52: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 18
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the U phase motor current sensor and the power converter wire harness 24P connector.

NO - Replace the U phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

DTC P0A5F (25): MOTOR CURRENT U PHASE SIGNAL CIRCUIT HIGH INPUT; DTC P1582 (25): MOTOR CURRENT U PHASE SIGNAL CIRCUIT HIGH INPUT

NOTE:

- **Information marked with an asterisk (*) applies to 2005-2006 models.**
- **Information marked with double asterisk (**) applies to 2000-2004 models.**

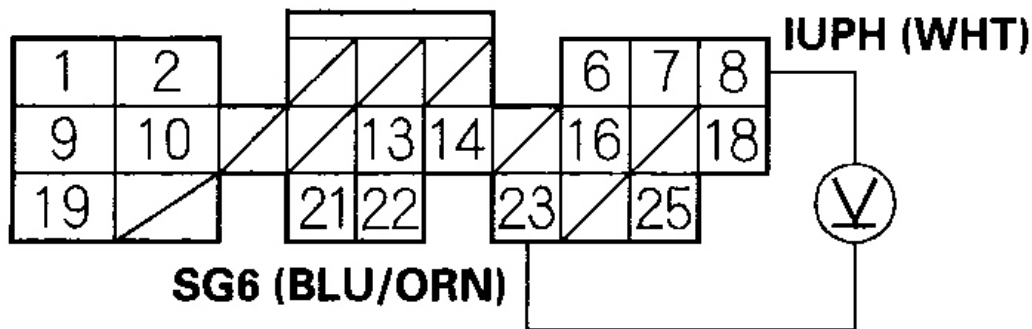
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P0A5F (25)* (P1582 (25)) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the U phase motor current sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B8 and B23.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681271

Fig. 53: Measuring Voltage Between MCM Connector Terminals B8 And B23

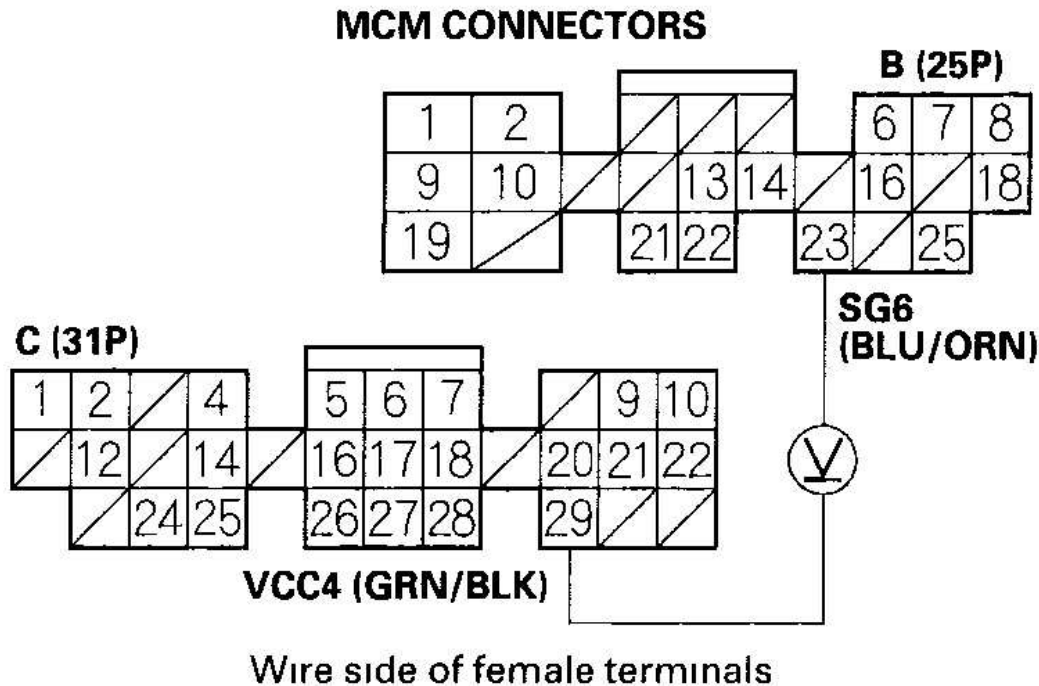
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 4.8 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Measure voltage between MCM connector terminals B23 and C29.



G03681272

Fig. 54: Measuring Voltage Between MCM Connector Terminals B23 And C29

Courtesy of AMERICAN HONDA MOTOR CO., INC.

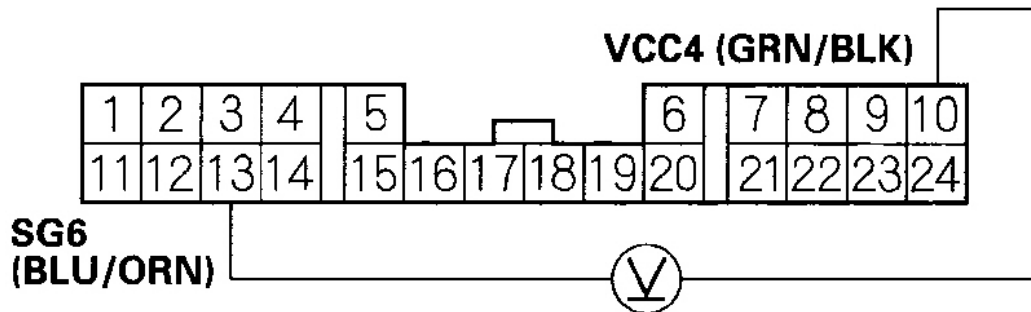
Is there about 5 V?

YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

9. Turn the ignition switch OFF.
10. Disconnect the power converter wire harness 24P connector.
11. Turn the ignition switch ON (II).
12. Measure voltage between power converter wire harness 24P connector terminals No. 10 and No. 13.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681273

Fig. 55: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No. 10 And 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 13.

NO - Repair open in the wire between the MCM (B23) and the power converter wire harness 24P connector.

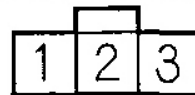
13. Turn the ignition switch OFF.

14. Remove the PCU (see **POWER CONTROL UNIT (PCU)**

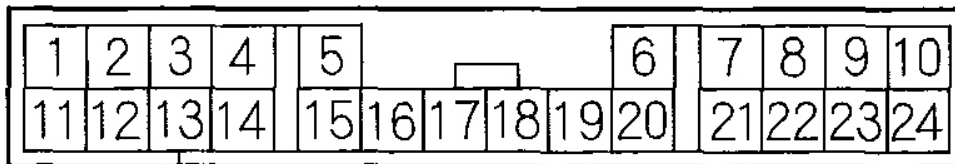
REMOVAL/INSTALLATION). Check for continuity between U phase motor current sensor 3P connector terminal No. 2 and power converter wire harness 24P connector terminal No. 13.

U PHASE MOTOR CURRENT SENSOR 3P CONNECTOR

Wire side of female terminals



SG6 (BLU/ORN)



SG6 (BLU/ORN)

POWER CONVERTER WIRE HARNESS 24P CONNECTOR

Terminal side of male terminals

G03681274

Fig. 56: Checking Continuity Between U Phase Motor Current Sensor 3P Connector Terminal No. 2 And Power Converter Wire Harness 24P Connector Terminal No. 13

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the U phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Repair open in the wire between the U phase motor current sensor and the power converter wire harness 24P connector.

- NOTE:**
- 1. Information marked with an asterisk (*) applies to 2005-2006 models.**
 - 2. Information marked with double asterisk (**) applies to 2000-2004 models.**

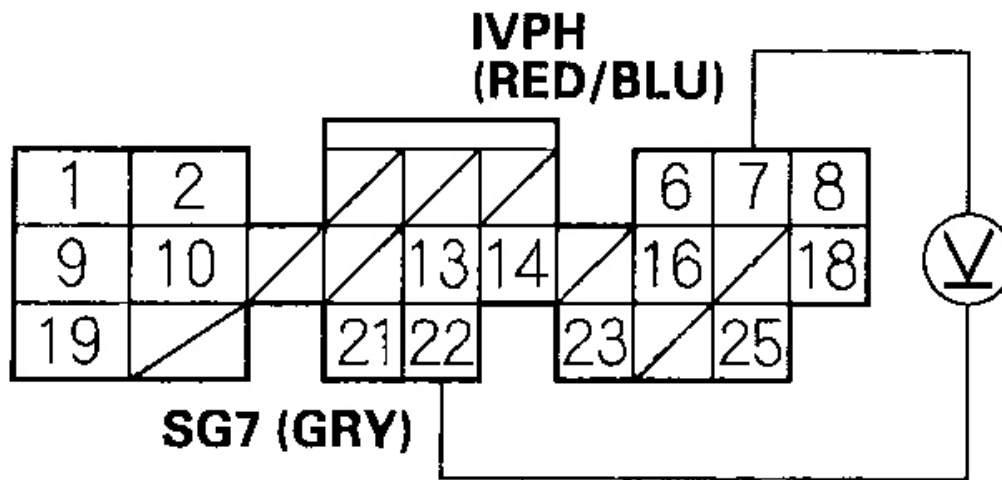
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P0A61 (26)* (P1583 (26)) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the V phase motor current sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B7 and B22.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681275

Fig. 57: Measuring Voltage Between MCM Connector Terminals B7 And B22

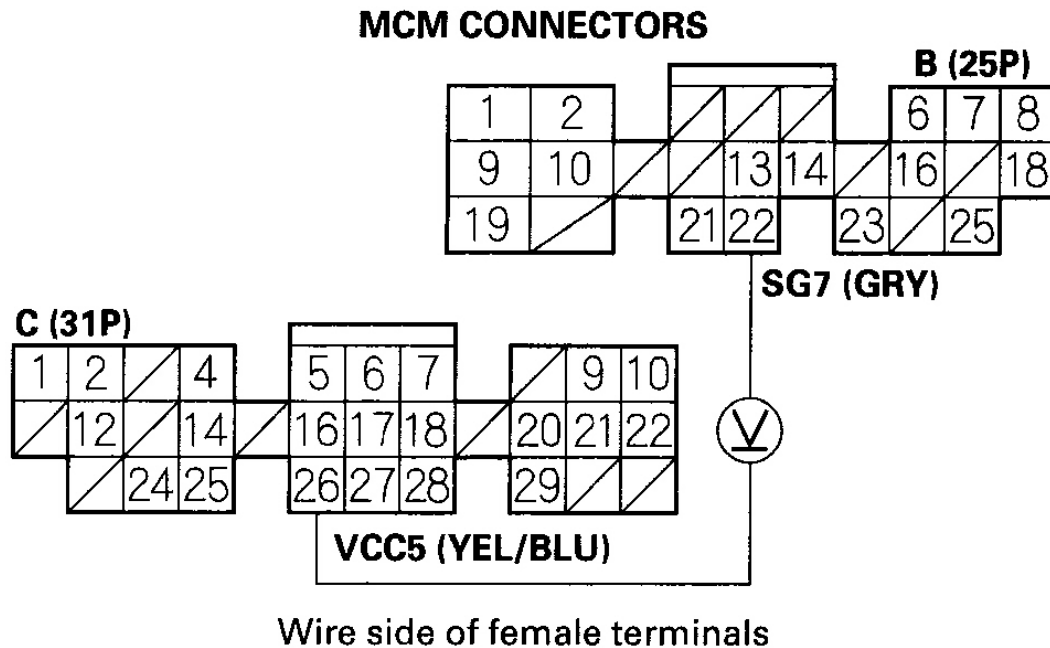
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.2 V?

YES - Substitute a known-good MCM, and recheck. If symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Measure voltage between MCM connector terminals B22 and C26.



G03681276

Fig. 58: Measuring Voltage Between MCM Connector Terminals B22 And C26

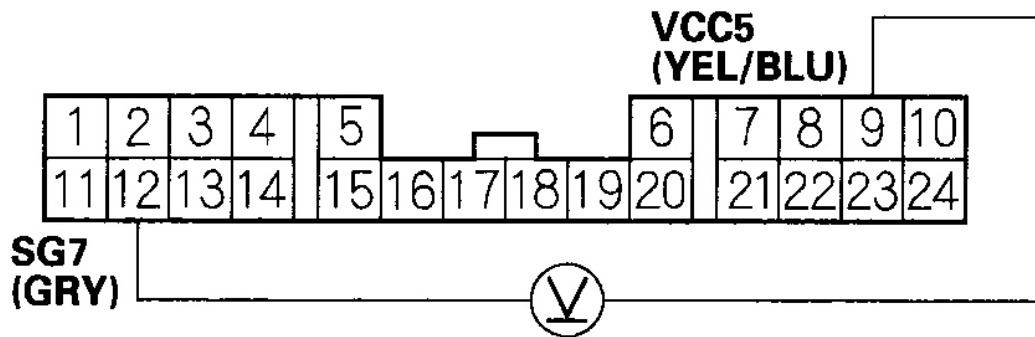
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

9. Measure voltage between power converter wire harness 24P connector terminals No. 9 and No. 12.

**POWER CONVERTER WIRE HARNESS
24P CONNECTOR**

Wire side of female terminals

G03681277

Fig. 59: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No. 9 And 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

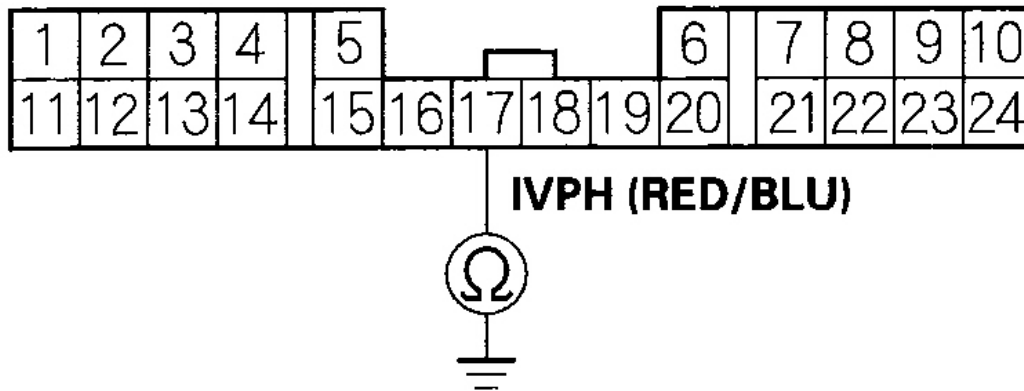
Is there about 5 V?

YES - Go to step 10.

NO - Repair open in the wire between the MCM (C26) and the power converter wire harness 24P connector.

10. Turn the ignition switch OFF.
11. Check for continuity between body ground and the power converter wire harness 24P connector terminal No. 17.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681278

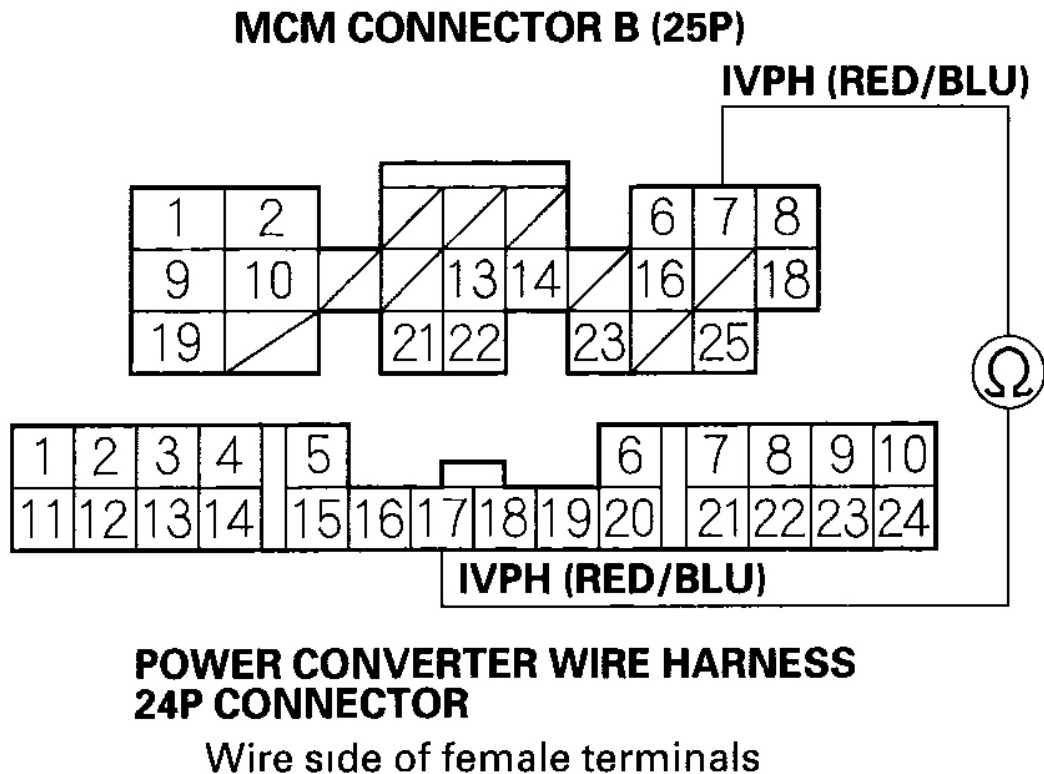
Fig. 60: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16 .

NO - Go to step 12.

12. Disconnect the power converter wire harness 24P connector.
13. Check for continuity between MCM connector terminal B7 and power converter wire harness 24P connector terminal No. 17.



G03681279

Fig. 61: Checking Continuity Between MCM Connector Terminal B7 And Power Converter Wire Harness 24P Connector Terminal No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

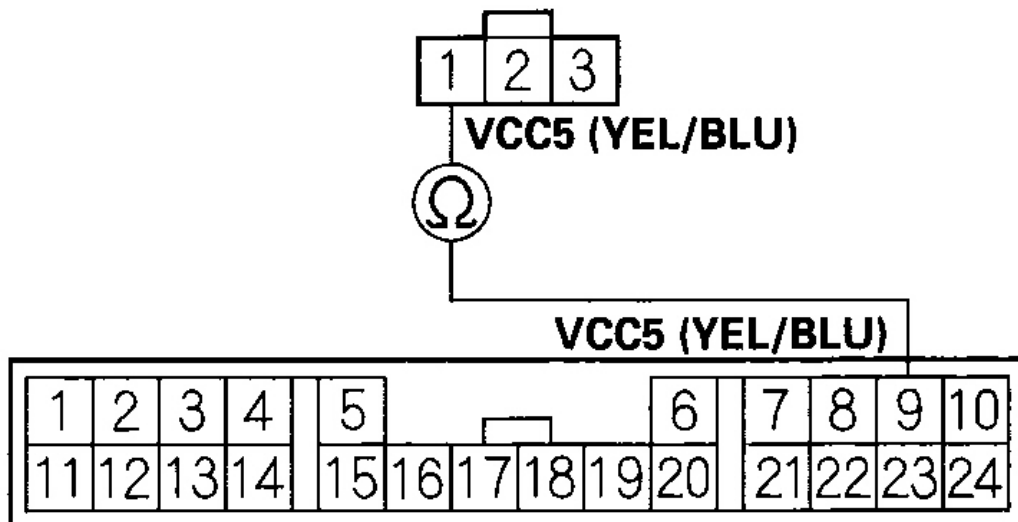
YES - Go to step 14.

NO - Repair open in the wire between the MCM (B7) and the power converter wire harness 24P connector.

14. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**). Check for continuity between V phase motor current sensor 3P connector terminal No. 1 and power converter wire harness 24P connector terminal No. 9.

V PHASE MOTOR CURRENT SENSOR 3P CONNECTOR

Wire side of female terminals



POWER CONVERTER WIRE HARNESS 24P CONNECTOR

Terminal side of male terminals

G03681280

Fig. 62: Checking Continuity Between V Phase Motor Current Sensor 3P Connector Terminal No. 1 And Power Converter Wire Harness 24P Connector Terminal No. 9

Courtesy of AMERICAN HONDA MOTOR CO., INC.

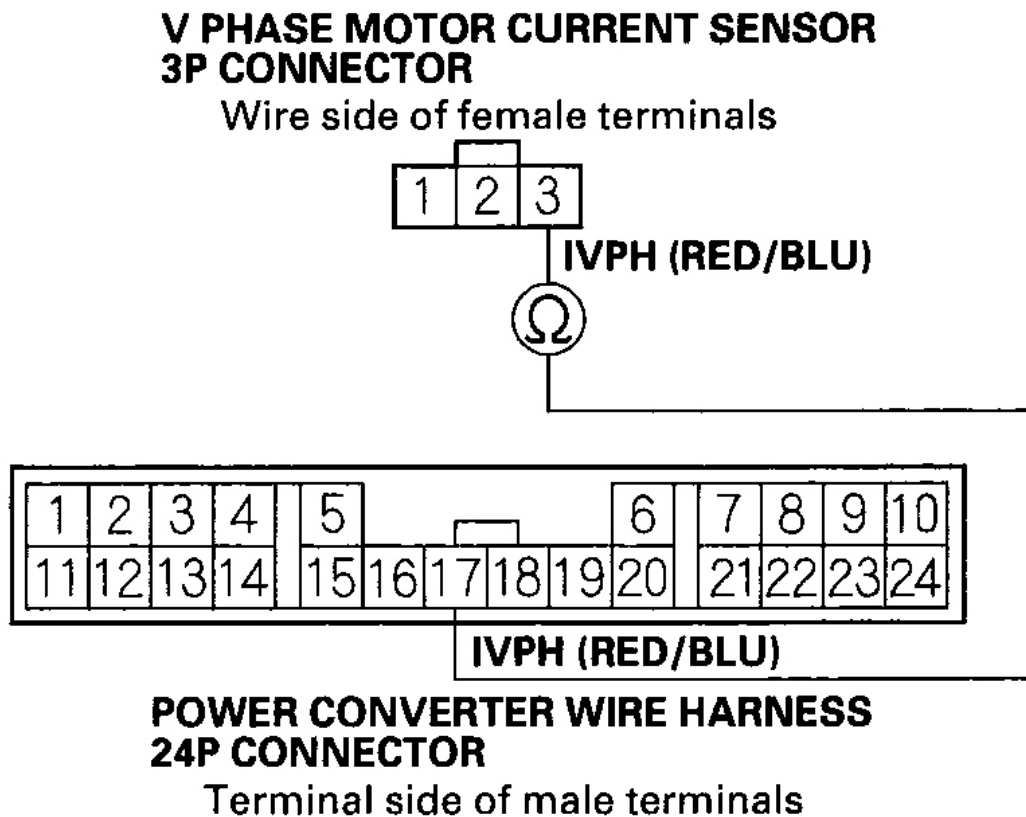
Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the V phase motor current sensor and the power converter wire harness 24P connector.

15. Check for continuity between V phase motor current sensor 3P connector

terminal No. 3 and power converter wire harness 24P connector terminal No. 17.



G03681281

Fig. 63: Checking Continuity Between V Phase Motor Current Sensor 3P Connector Terminal No. 3 And Power Converter Wire Harness 24P Connector Terminal No. 17

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

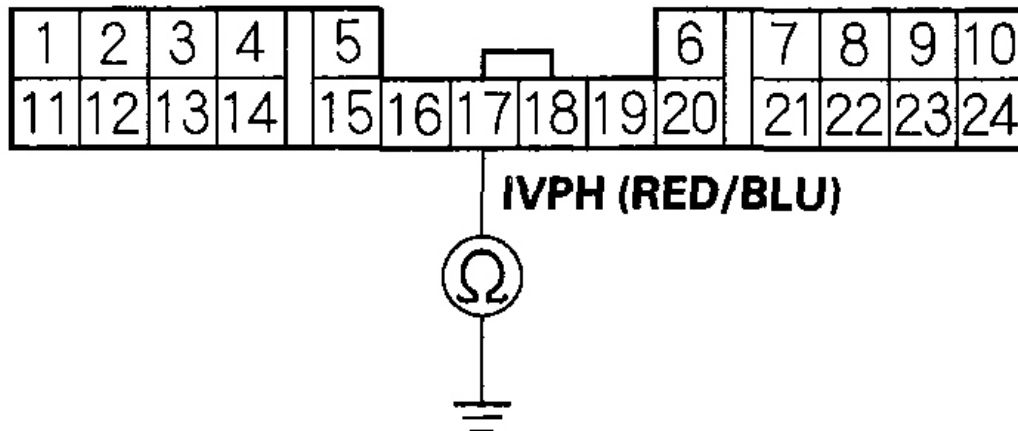
YES - Replace the V phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Repair open in the wire between the V phase motor current sensor

and the power converter wire harness 24P connector.

16. Disconnect MCM connector B (25P).
17. Check for continuity between body ground and power converter wire harness 24P connector terminal No. 17.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681282

Fig. 64: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

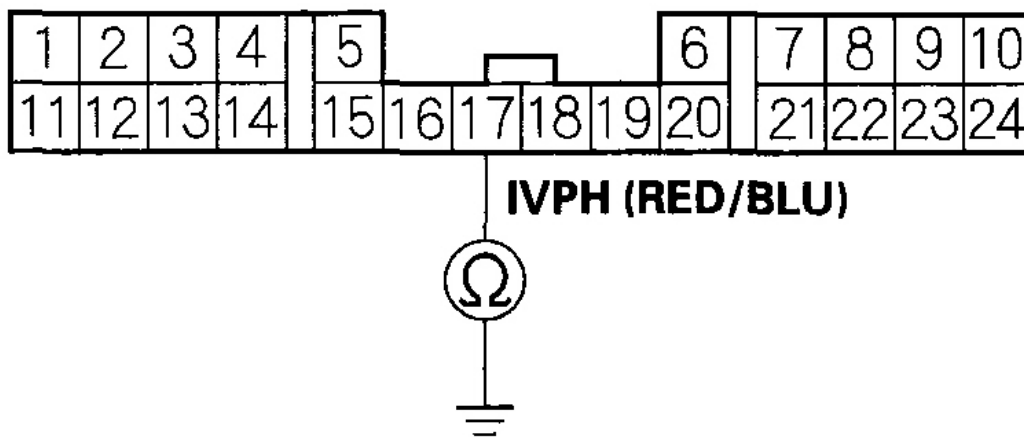
Is there continuity?

YES - Go to step 18.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

18. Disconnect the power converter wire harness 24P connector.
19. Check for continuity between body ground and the power converter wire harness 24P connector terminal No. 17.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681283

Fig. 65: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 17
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (B7) and the power converter wire harness 24P connector.

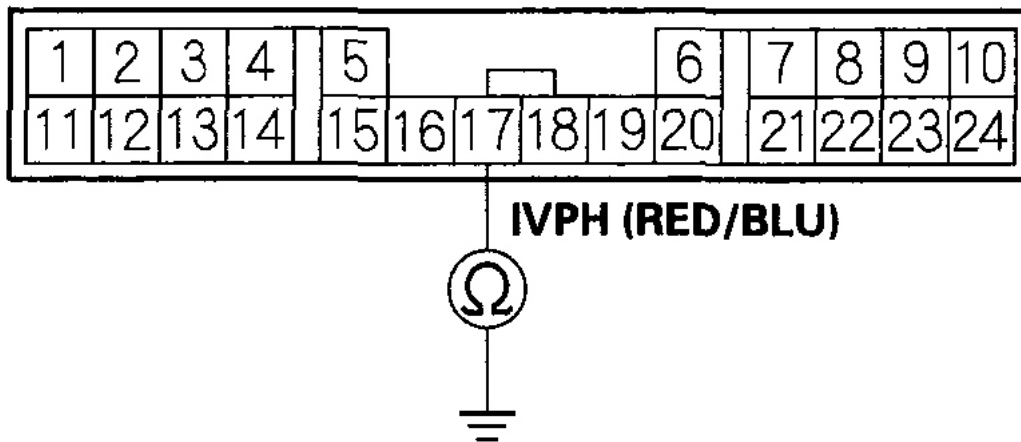
NO - Go to step 20.

20. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**). Disconnect the V phase motor current

sensor 3P connector.

21. Check for continuity between body ground and power converter wire harness 24P connector terminal No. 17.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Terminal side of male terminals

G03681284

Fig. 66: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 17
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the V phase motor current sensor and the power wire harness 24P connector.

NO - Replace the V phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

MOTOR CURRENT V PHASE SIGNAL CIRCUIT HIGH INPUT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

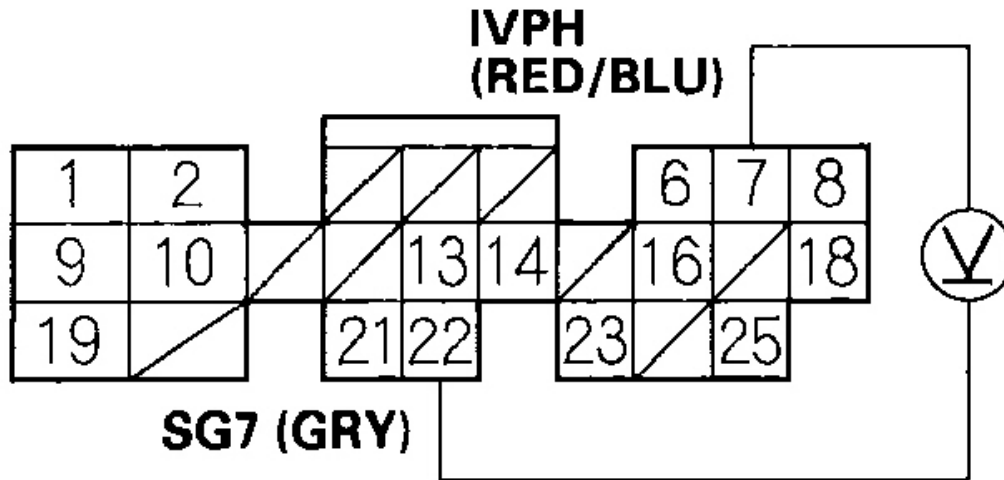
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P0A62 (27)* (P1583 (27)) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the V phase motor current sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B7 and B22.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681285

Fig. 67: Measuring Voltage Between MCM Connector Terminals B7 And B22

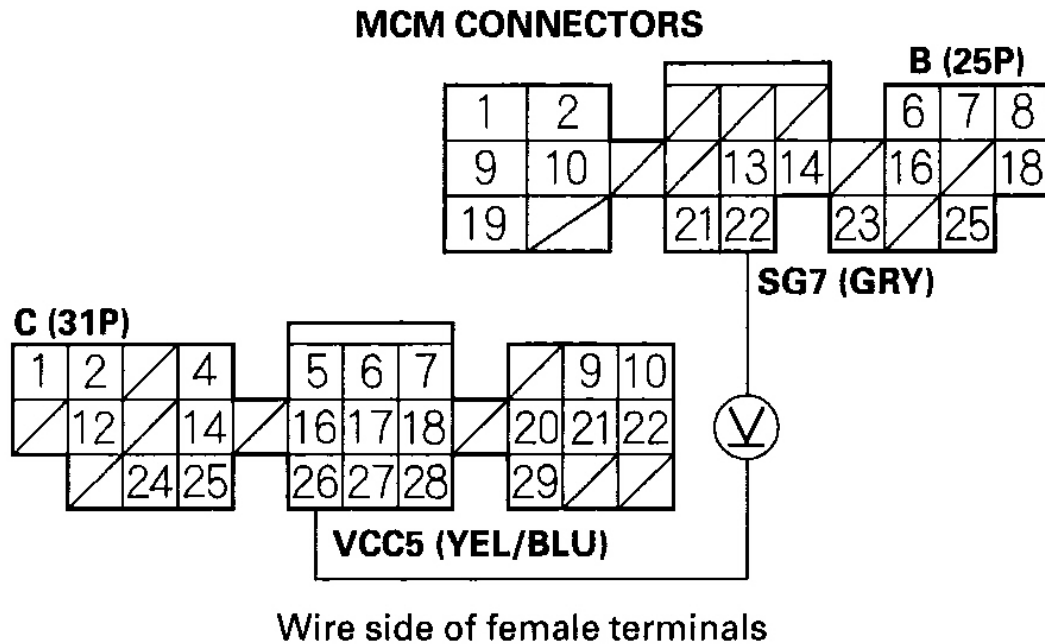
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 4.8 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Measure voltage between MCM connector terminals B22 and C26.



G03681286

Fig. 68: Measuring Voltage Between MCM Connector Terminals B22 And C26

Courtesy of AMERICAN HONDA MOTOR CO., INC.

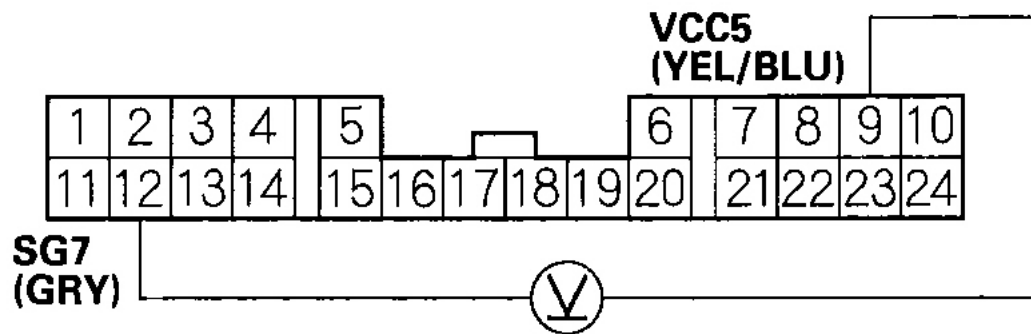
Is there about 5 V?

YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

9. Turn the ignition switch OFF.
10. Disconnect the power converter wire harness 24P connector.
11. Turn the ignition switch ON (II).
12. Measure voltage between power converter wire harness 24P connector terminals No. 9 and No. 12.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681287

Fig. 69: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No. 9 And 12

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 13.

NO - Repair open in the wire between the MCM (B22) and the power converter wire harness 24P connector.

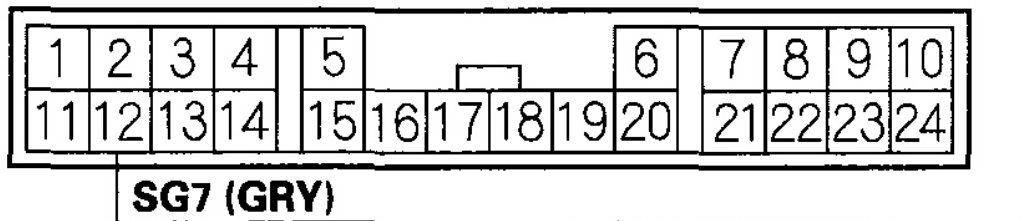
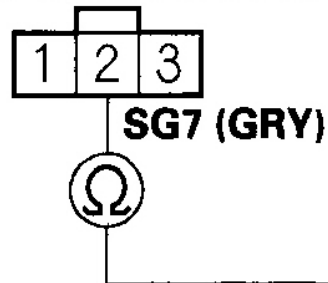
13. Turn the ignition switch OFF.

14. Remove the PCU (see **POWER CONTROL UNIT (PCU)**

REMOVAL/INSTALLATION). Check for continuity between V phase motor current sensor 3P connector terminal No. 2 and power converter wire harness 24P connector terminal No. 12.

V PHASE MOTOR CURRENT SENSOR 3P CONNECTOR

Wire side of female terminals



POWER CONVERTER WIRE HARNESS 24P CONNECTOR

Terminal side of male terminals

G03681288

Fig. 70: Checking Continuity Between 3P Connector Terminal No. 2 And Power Converter Wire Harness 24P Connector Terminal No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the V phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Repair open in the wire between the V phase motor current sensor and the power converter wire harness 24P connector.

DTC P0A64 (28): MOTOR CURRENT W PHASE SIGNAL CIRCUIT LOW INPUT; DTC P1584 (28): MOTOR CURRENT W PHASE SIGNAL CIRCUIT LOW INPUT

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.

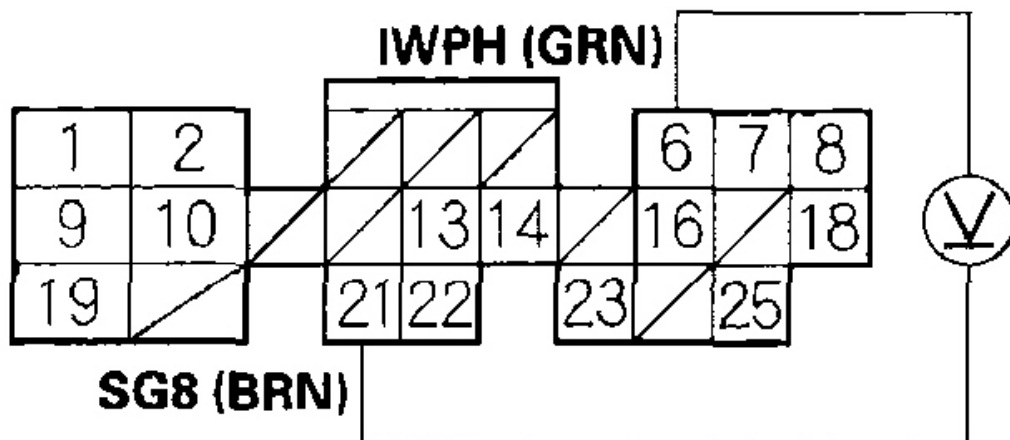
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P0A64 (28)* (P1584 (28)) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the W phase motor current sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B6 and B21.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681289

Fig. 71: Measuring Voltage Between MCM Connector Terminals B6 And B21

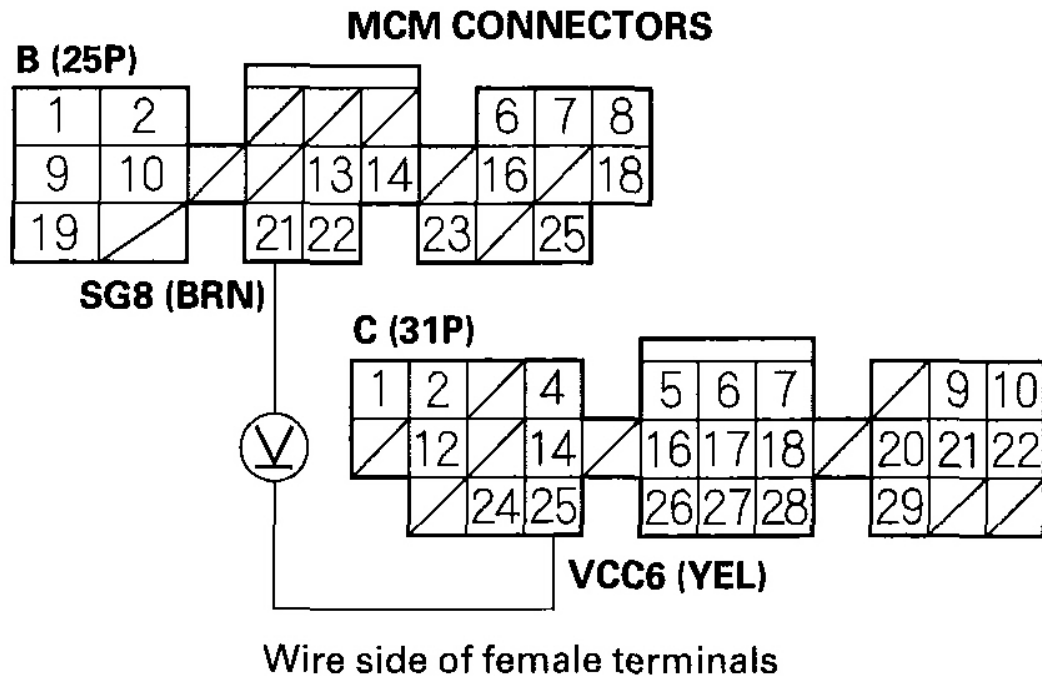
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.2 V?

YES - Substitute a known-good MCM, and recheck. If symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Measure voltage between MCM connector terminals B21 and C25.



G03681290

Fig. 72: Measuring Voltage Between MCM Connector Terminals B21 And C25

Courtesy of AMERICAN HONDA MOTOR CO., INC.

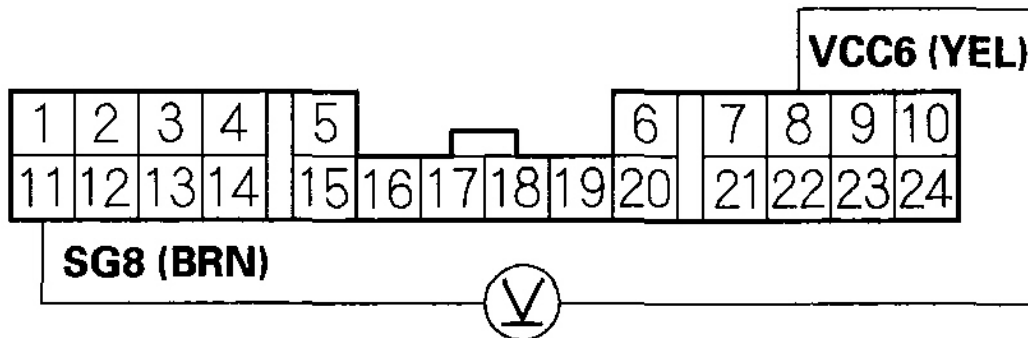
Is there about 5 V?

YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If symptom/indication goes away, replace the original MCM.

9. Measure voltage between power converter wire harness 24P connector terminals No. 8 and No. 11.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681291

Fig. 73: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No. 8 And 11

Courtesy of AMERICAN HONDA MOTOR CO., INC.

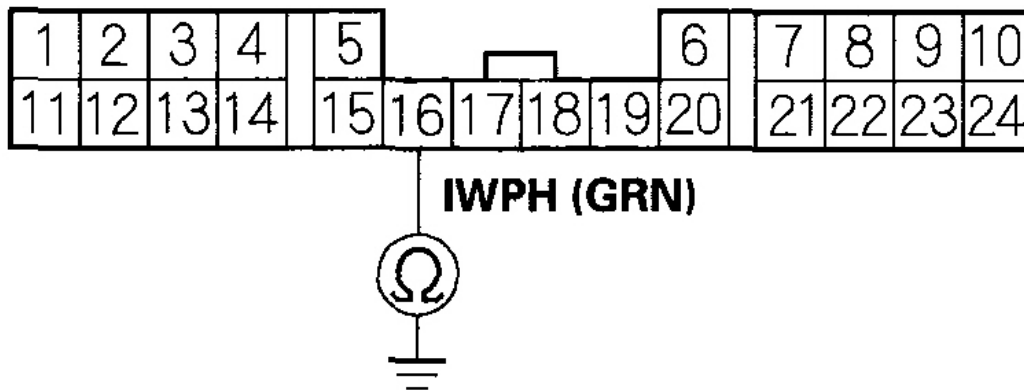
Is there about 5 V?

YES - Go to step 10.

NO - Repair open in the wire between the MCM (C25) and the power converter wire harness 24P connector.

10. Turn the ignition switch OFF.
11. Check for continuity between body ground and the power converter wire harness 24P connector terminal No. 16.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681292

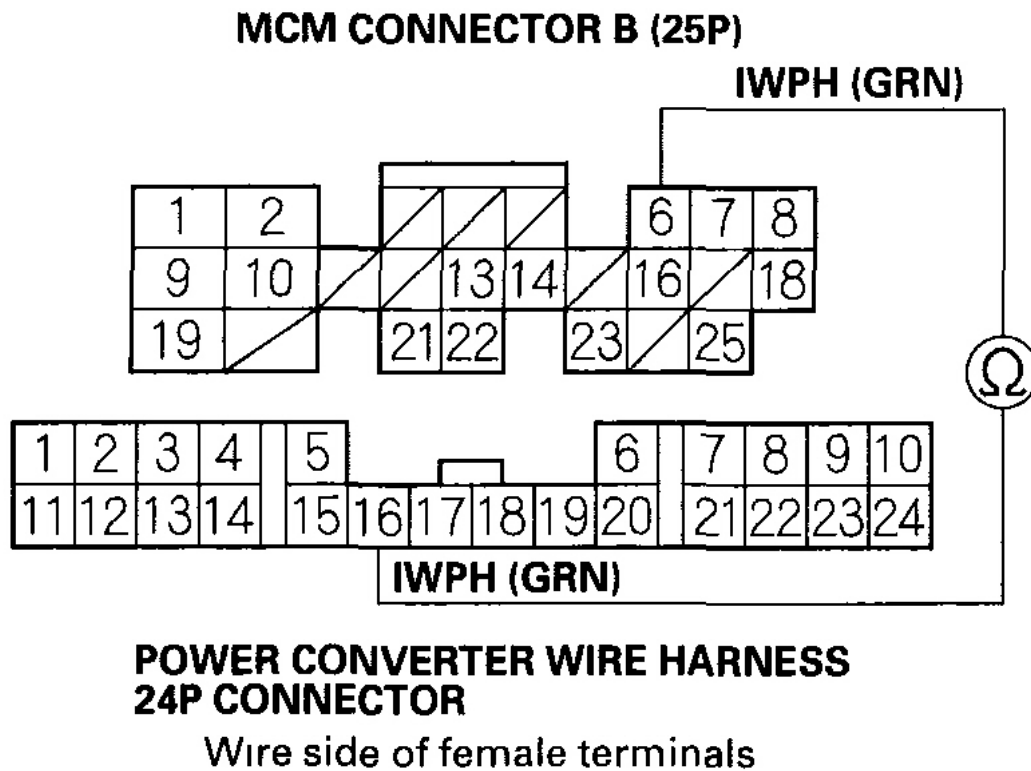
Fig. 74: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16 .

NO - Go to step 12.

12. Disconnect the power converter wire harness 24P connector.
13. Check for continuity between MCM connector terminal B6 and power converter wire harness 24P connector terminal No. 16.



G03681293

Fig. 75: Checking Continuity Between MCM Connector Terminal B6 And Power Converter Wire Harness 24P Connector Terminal No. 16
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

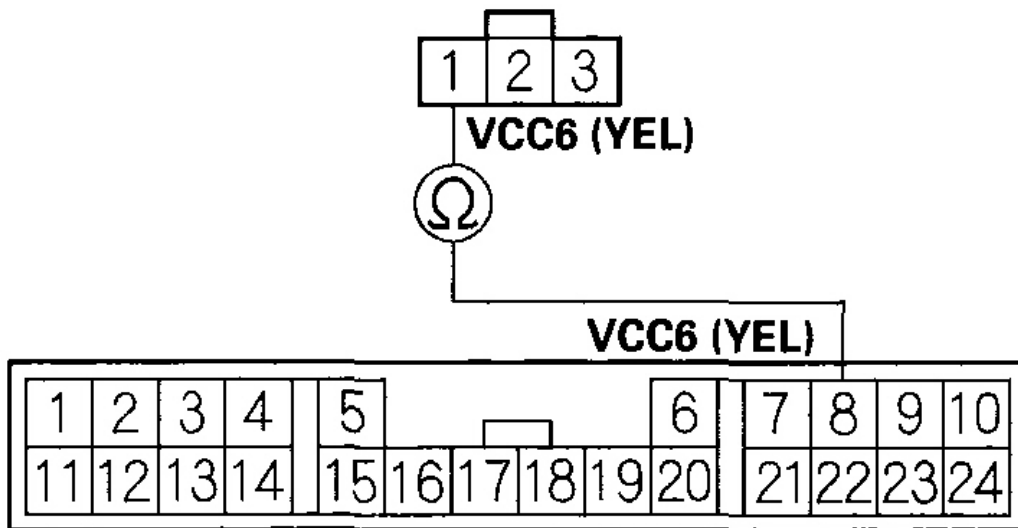
YES - Go to step 14.

NO - Repair open in the wire between the MCM (B6) and the power converter wire harness 24P connector.

14. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**). Check for continuity between W phase motor current sensor 3P connector terminal No. 1 and power converter wire harness 24P connector terminal No. 8.

W PHASE MOTOR CURRENT SENSOR 3P CONNECTOR

Wire side of female terminals



POWER CONVERTER WIRE HARNESS 24P CONNECTOR

Terminal side of male terminals

G03681294

Fig. 76: Checking Continuity Between W Phase Motor Current Sensor 3P Connector Terminal No. 1 And 24P Connector Terminal No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

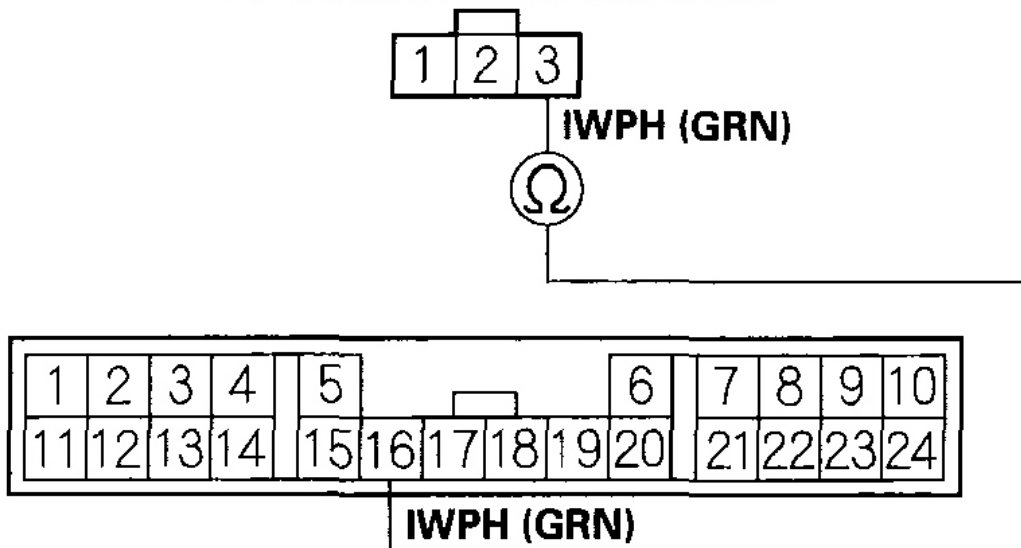
NO - Repair open in wire between the W phase motor current sensor and the power converter wire harness 24P connector.

15. Check for continuity between W phase motor current sensor 3P connector terminal No. 3 and power converter wire harness 24P connector terminal No.

16.

**W PHASE MOTOR CURRENT SENSOR
3P CONNECTOR**

Wire side of female terminals



**POWER CONVERTER WIRE HARNESS
24P CONNECTOR**

Terminal side of male terminals

G03681295

Fig. 77: Checking Continuity Between W Phase Motor Current Sensor 3P Connector Terminal No. 3 And Power Converter Wire Harness 24P Connector Terminal No. 16

Courtesy of AMERICAN HONDA MOTOR CO., INC.

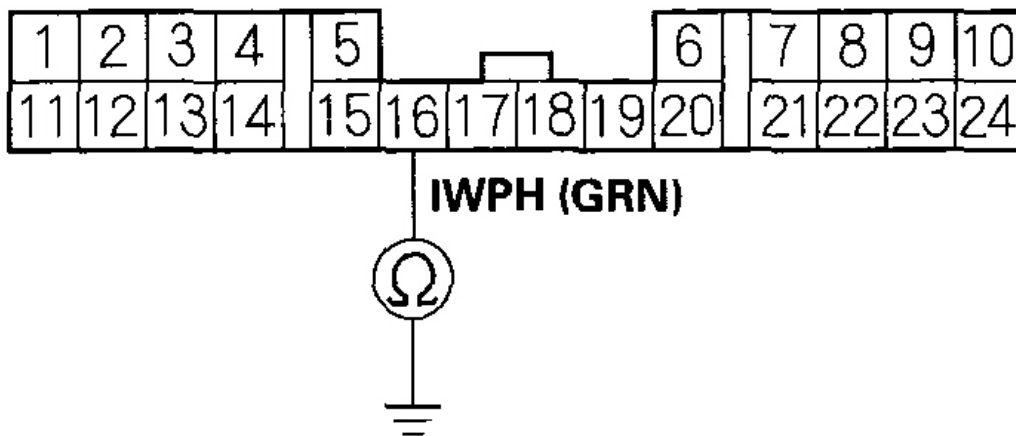
Is there continuity?

YES - Replace the W phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Repair open in the wire between the W phase motor current sensor and the power converter wire harness 24P connector.

16. Disconnect MCM connector B (25P).
17. Check for continuity between body ground and power converter wire harness 24P connector terminal No. 16.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681296

Fig. 78: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

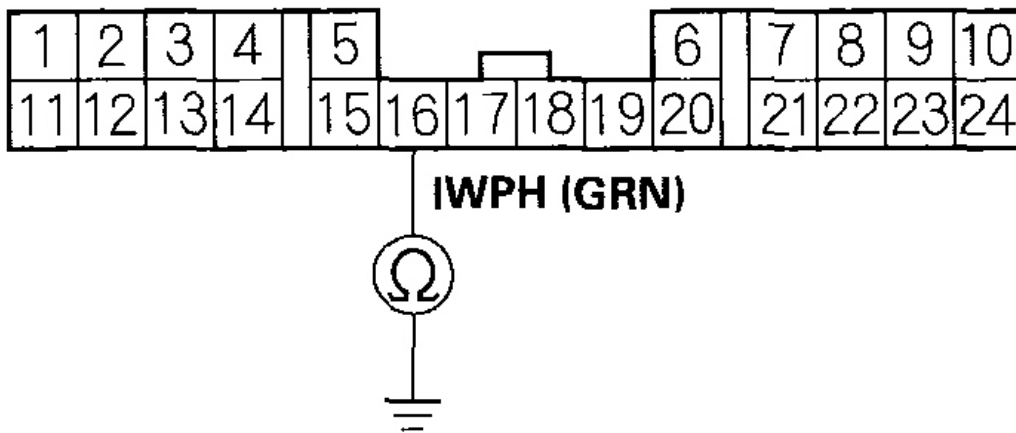
YES - Go to step 18.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

18. Disconnect the power converter wire harness 24P connector.

19. Check for continuity between body ground and power converter wire harness 24P connector terminal No. 16.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681297

Fig. 79: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

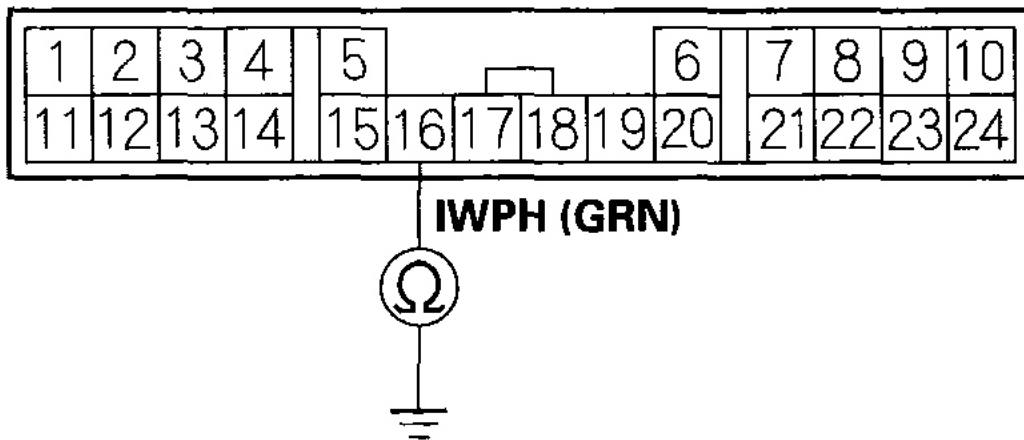
YES - Repair short to ground in the wire between the MCM (B6) and the power converter wire harness 24P converter.

NO - Go to step 20.

20. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**). Disconnect the W phase motor current sensor 3P connector.

21. Check for continuity between body ground and power converter wire harness 24P connector terminal No. 16.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Terminal side of male terminals

G03681298

Fig. 80: Checking Continuity Between Body Ground And Power Converter Wire Harness 24P Connector Terminal No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the W phase motor current sensor and the power converter wire harness 24P connector.

NO - Replace the W phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

DTC P0A65 (29): MOTOR CURRENT W PHASE SIGNAL CIRCUIT HIGH INPUT; DTC P1584 (29): MOTOR CURRENT W PHASE SIGNAL CIRCUIT HIGH INPUT

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.

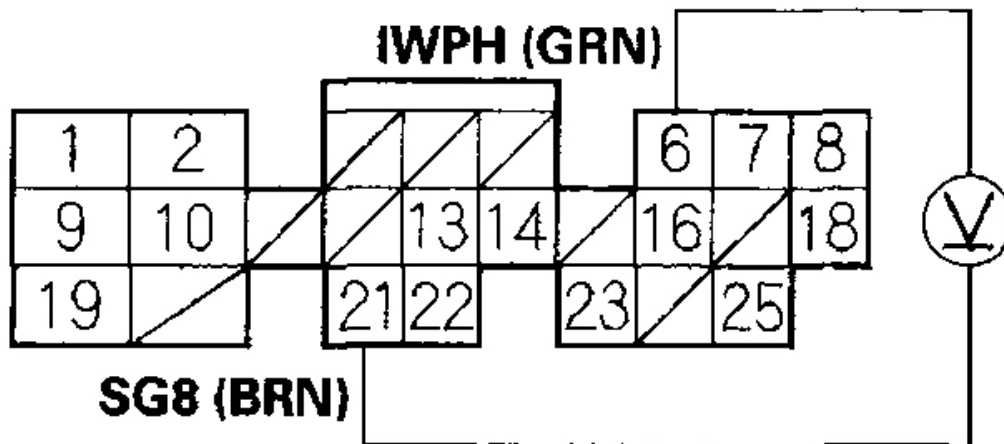
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P0A65 (29)* (P1584 (29)) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the W phase motor current sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B6 and B21.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681299

Fig. 81: Measuring Voltage Between MCM Connector Terminals B6 And B21

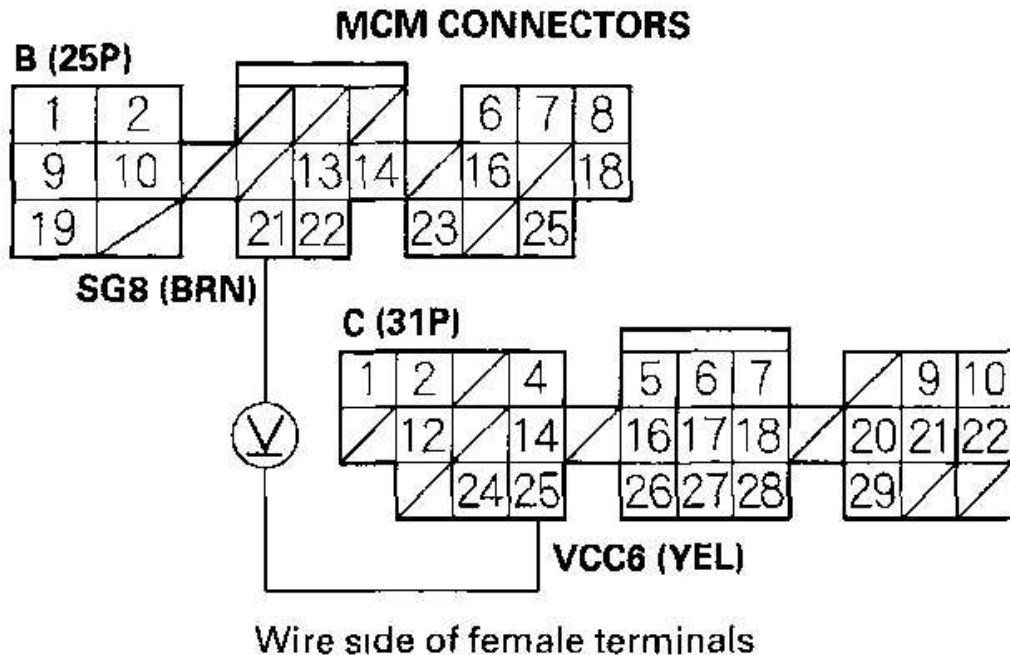
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 4.8 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Measure voltage between MCM connector terminals B21 and C25.



G03681300

Fig. 82: Measuring Voltage Between MCM Connector Terminals B21 And C25

Courtesy of AMERICAN HONDA MOTOR CO., INC.

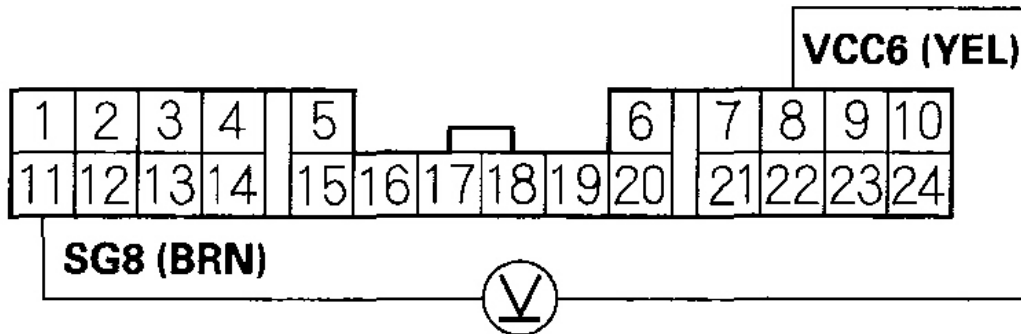
Is there about 5 V?

YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

9. Turn the ignition switch OFF.
10. Disconnect the power converter wire harness 24P connector.
11. Turn the ignition switch ON (II).
12. Measure voltage between power converter wire harness 24P connector terminals No. 8 and No. 11.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681301

Fig. 83: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No. 8 And 11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

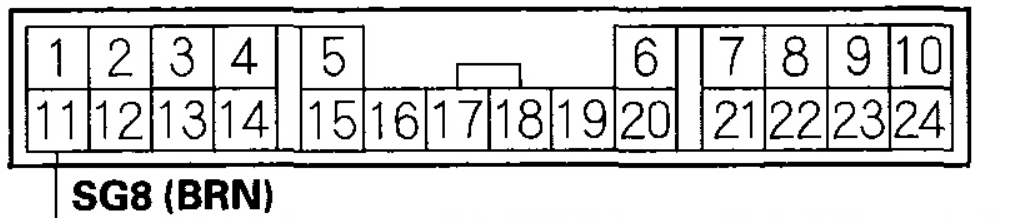
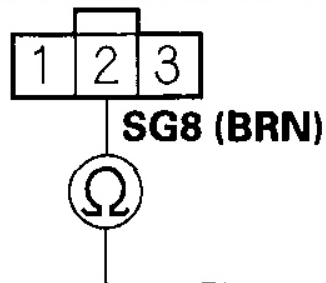
YES - Go to step 13.

NO - Repair open in the wire between the MCM (B21) and the power connector wire harness 24P connector.

13. Turn the ignition switch OFF.
14. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**). Check for continuity between W phase motor current sensor 3P connector terminal No. 2 and power converter wire harness 24P connector terminal No. 11.

W PHASE MOTOR CURRENT SENSOR 3P CONNECTOR

Wire side of female terminals



POWER CONVERTER WIRE HARNESS 24P CONNECTOR

Terminal side of male terminals

G03681302

Fig. 84: Checking Continuity Between W Phase Motor Current Sensor 3P Connector Terminal No. 2 And 24P Connector Terminal No. 11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the W phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Repair open in wire between the W phase motor current sensor and the power converter wire harness 24P connector.

Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

DTC P0A7F (78): BATTERY MODULE DETERIORATION; DTC P1449 (78): BATTERY MODULE DETERIORATION

Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

DTC P0A82 (63): BATTERY MODULE OVERHEATING; DTC P1448 (63): BATTERY MODULE OVERHEATING

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.
- The IMA system indicator may indicate DTC P0A82 (63)* (P1448 (63)**) when the inlet port of the duct or the area around the spare tire is blocked.

1. Turn the ignition switch ON (II).

Is DTC P0A82 (63)* (P1448 (63)) or P0A7E (72)* (P1449 (72)**) indicated?**

YES - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

NO - Go to step 2.

2. Turn the ignition switch OFF.
3. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
4. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Check the battery module fan (see **BATTERY MODULE FAN TEST**) and battery module fan duct.

Are the battery module fan and battery module fan duct OK?

YES - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

NO - Replace the battery module fan or repair the duct as necessary.

DTC P0A9B (67): BATTERY MODULE TEMPERATURE SIGNAL CIRCUIT PROBLEM; DTC P1568 (67): BATTERY MODULE TEMPERATURE SIGNAL CIRCUIT PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II), and wait for 5 seconds.

Is DTC P0A9B (67)* (P1568 (67)**) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the BCM module and at the battery module.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Check BCM module connector B (22P) for a poor connection.

Is the connection OK?

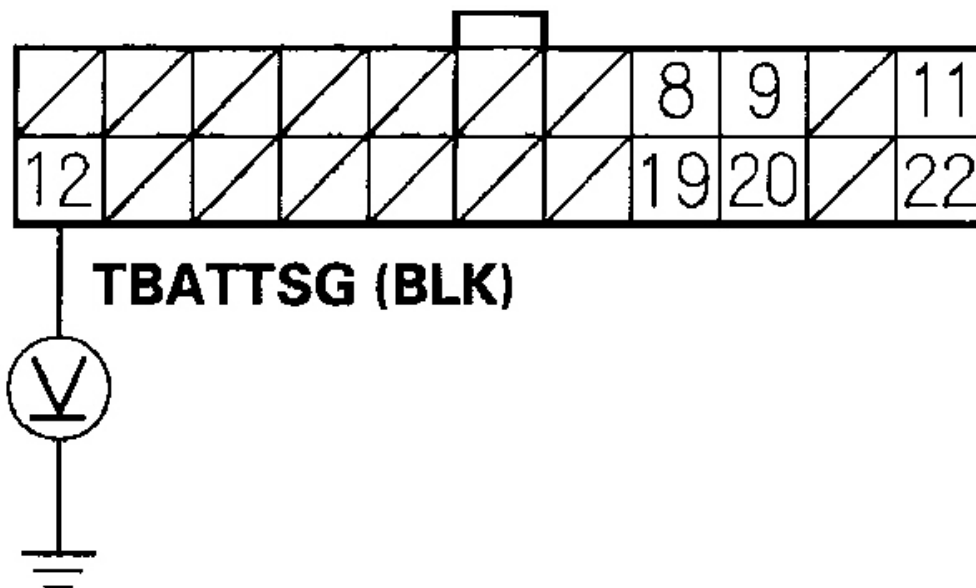
YES - Go to step 7.

NO - Repair as necessary.

7. Turn the ignition switch ON (II).

8. Measure voltage between BCM module connector terminal B12 and body ground.

BCM MODULE CONNECTOR B (22P)



Wire side of female terminals

G03681303

Fig. 85: Measuring Voltage Between BCM Module Connector Terminal B12 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.0 V or less?

YES - Replace the battery module (see **BATTERY MODULE**)

REMOVAL/INSTALLATION).

NO - Substitute a known-good BCM module, turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original BCM module.

DTC P0AA6 (59): HIGH VOLTAGE SHORT CIRCUIT DTC P1444 (59): HIGH VOLTAGE SHORT CIRCUIT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P0AA6 (59)* (P1444 (59)) indicated?**

YES - Go to step 4 .

NO - Go to step 3.

3. Start the engine, and do a test-drive.

Is DTC P0AA6 (59)* (P1444 (59)) indicated?**

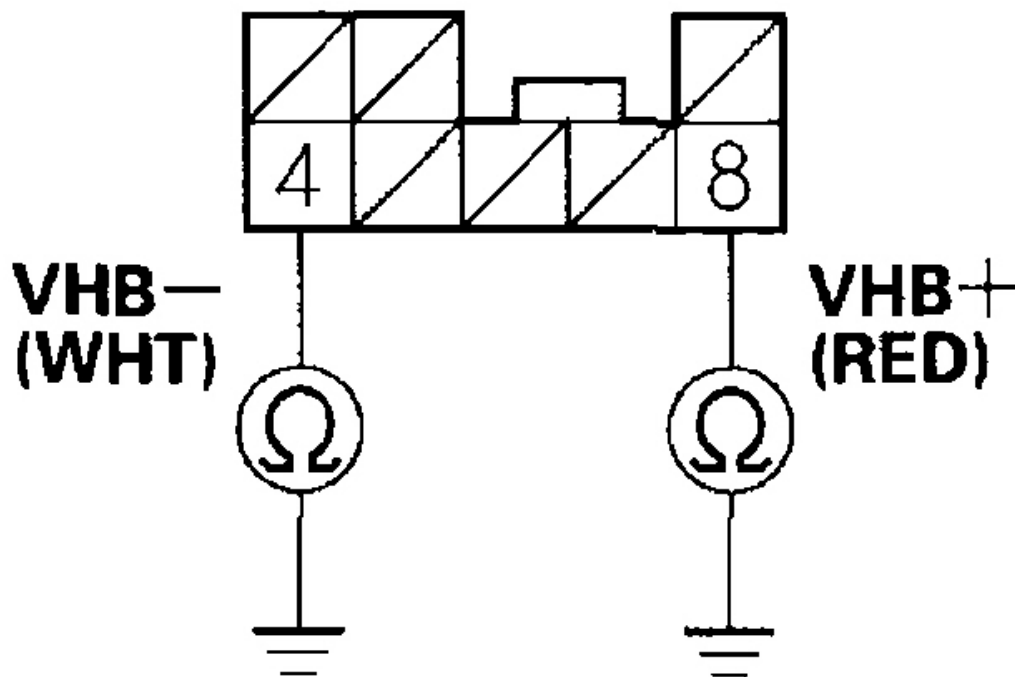
YES - Go to step 13 .

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module, the DC-DC converter, and the MCM.

4. Turn the ignition switch OFF.
5. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
7. Disconnect MCM connector E (8P).
8. Measure resistance between body ground and MCM connector terminals E4

and E8 individually.

MCM CONNECTOR E (8P)



Wire side of female terminals

G03681304

Fig. 86: Measuring Resistance Between Body Ground And MCM Connector Terminals E4 And E8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

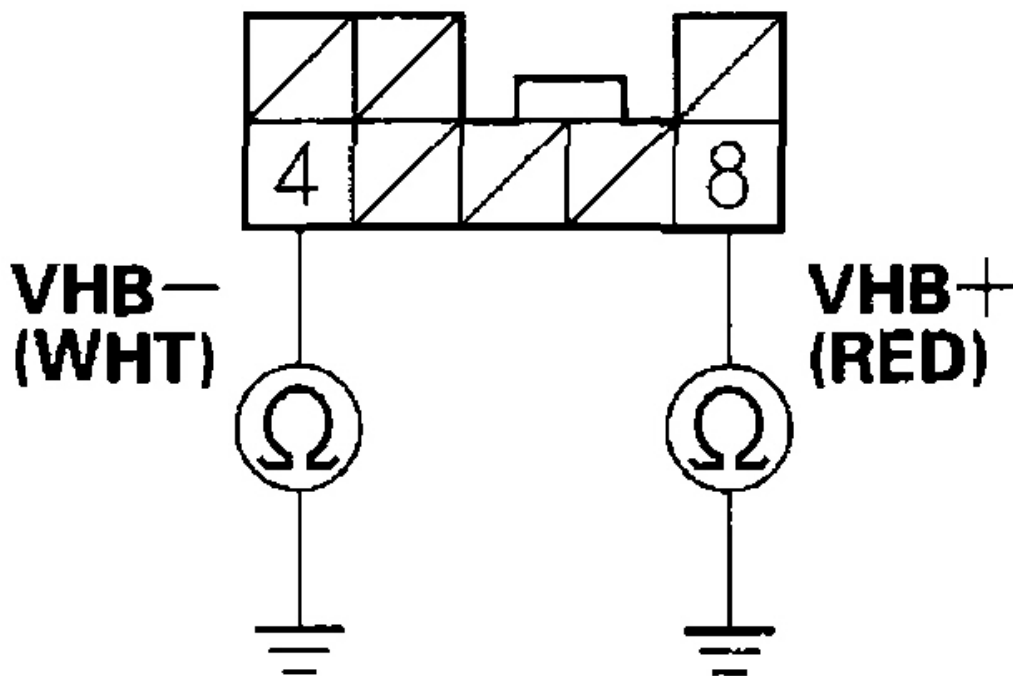
Is there 300 kohm, or more?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 9.

9. Disconnect BCM module connector C (20P).
10. Measure resistance between body ground and MCM connector terminals E4 and E8 individually.

MCM CONNECTOR E (8P)



Wire side of female terminals

G03681305

Fig. 87: Measuring Resistance Between Body Ground And MCM Connector Terminals E4 And E8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 300 kohm, or more?

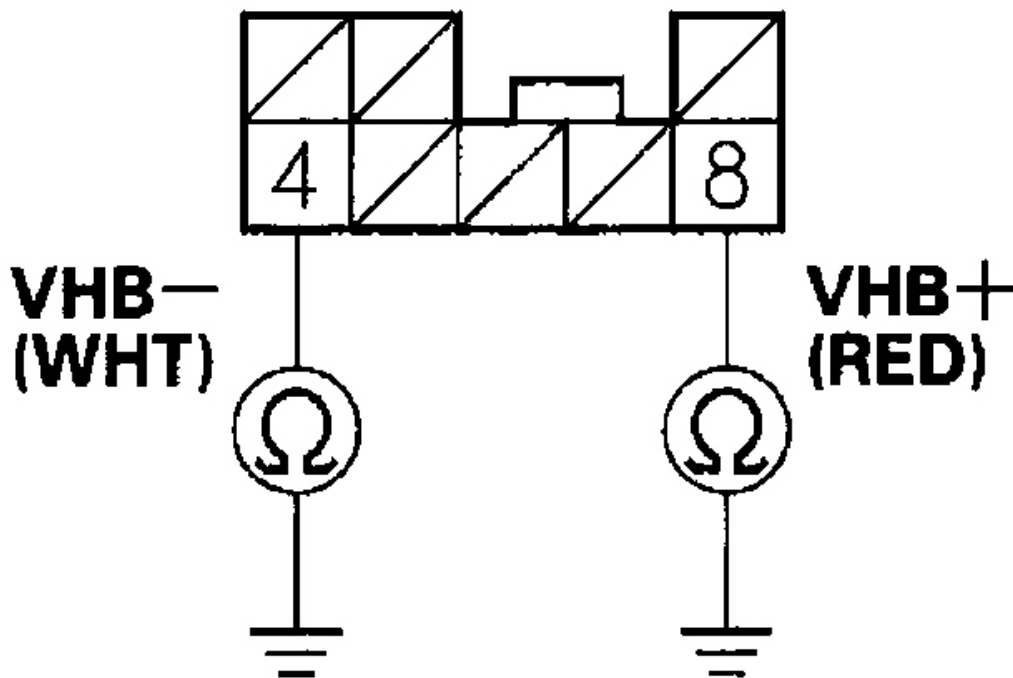
2006 Honda Insight
2000-06 ELECTRICAL IMA System - Insight

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 11.

11. Disconnect the DC-DC converter 2P connector.
12. Measure resistance between body ground and MCM connector terminals E4 and E8 individually.

MCM CONNECTOR E (8P)



Wire side of female terminals

G03681306

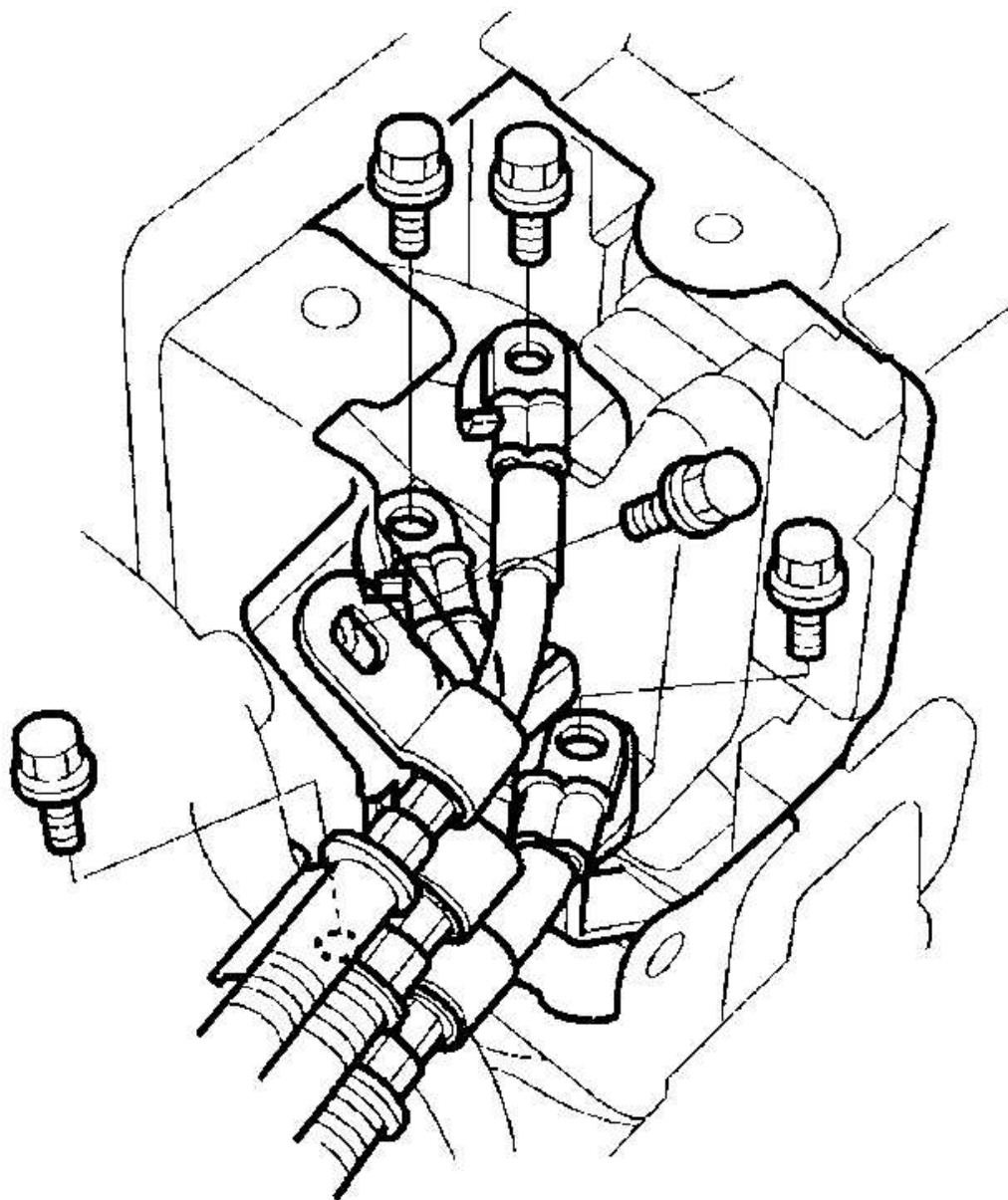
Fig. 88: Measuring Resistance Between Body Ground And MCM Connector Terminals E4 And E8 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 300 kohm, or more?

YES - Replace the DC-DC converter (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

13. Turn the ignition switch OFF.
14. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
15. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
16. Disconnect the motor power cables from the PCU terminals.



G03681307

Fig. 89: Disconnecting Motor Power Cables From PCU Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Measure resistance between body ground and the motor power cable terminals

individually.

Is there 300 kohm. or more?

YES - Replace the voltage converter module and the MPI module.

NO - Go to step 18.

18. Disconnect the motor power cable from the motor stator terminals.
19. Measure resistance between body ground and the motor power cable terminals individually.

Is there 300 kohm, or more?

YES - Replace the motor stator (see **IMA MOTOR REMOVAL/INSTALLATION**).

NO - Replace the motor power cable.

DTC P1429 (38): MOTOR DRIVER MODULE (MDM) OVERHEATING SIGNAL CIRCUIT PROBLEM; DTC P1438 (38): MOTOR DRIVER MODULE (MDM) OVERHEATING SIGNAL CIRCUIT PROBLEM

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1429 (38)* (P1438 (38)) indicated?**

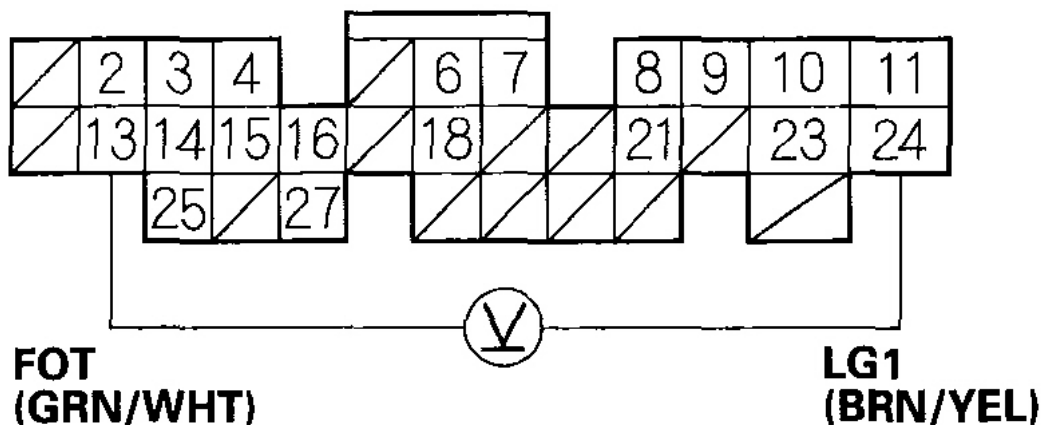
YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE**

HIGH VOLTAGE CIRCUIT).

5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals A13 and A24.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681308

Fig. 90: Measuring Voltage Between MCM Connector Terminals A13 And A24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

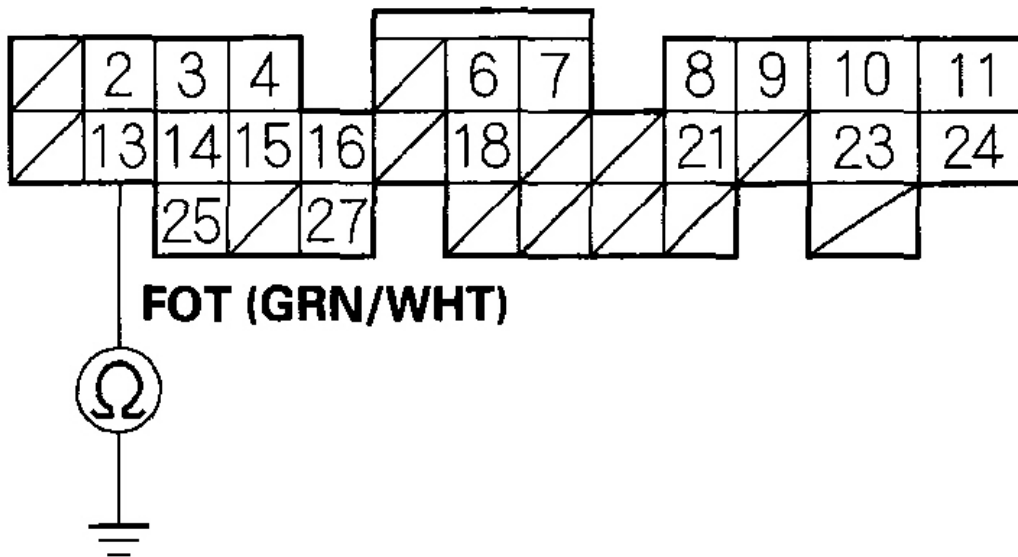
Is there about 5 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Turn the ignition switch OFF.
9. Check for continuity between MCM connector terminal A13 and body ground.

MCM CONNECTOR A (32P)



Wire side of female terminals

G03681309

Fig. 91: Checking Continuity Between MCM Connector Terminal A13 And Body Ground

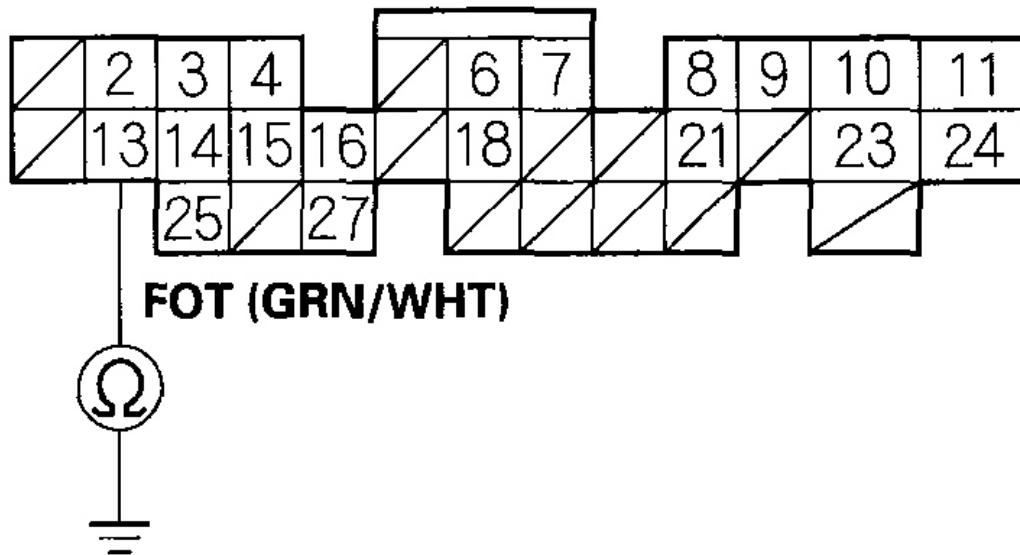
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Go to step 14 .

10. Disconnect the power converter wire harness 24P connector.
11. Check for continuity between MCM connector terminal A13 and body ground.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681310

Fig. 92: Checking Continuity Between MCM Connector Terminal A13 And Body Ground

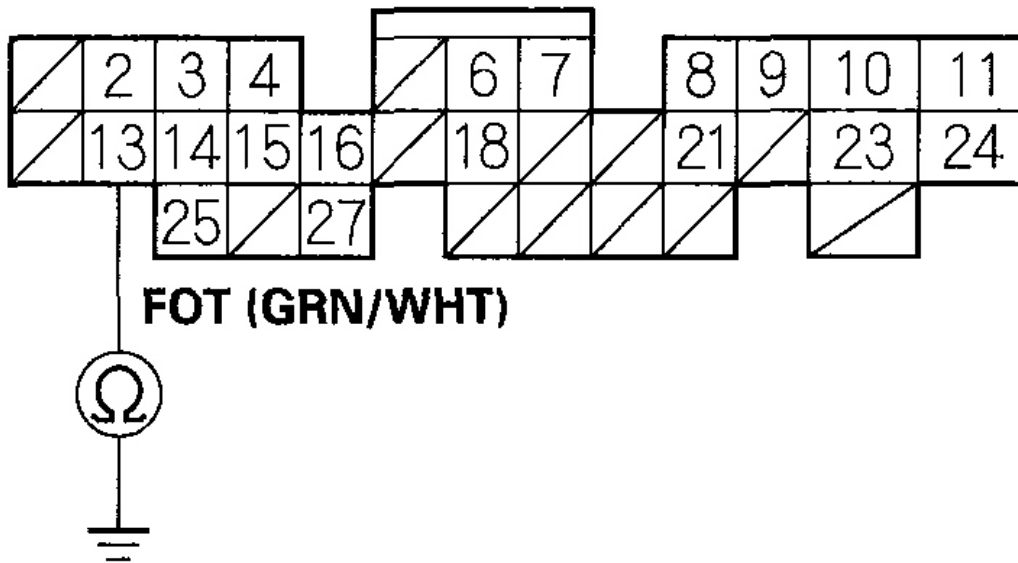
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Check for a short to ground in the wire between the power converter harness 24P connector and the voltage converter module. If the wire is OK, replace the voltage converter module.

12. Disconnect MCM connector A (32P).
13. Check for continuity between MCM connector terminal A13 and body ground.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681311

Fig. 93: Checking Continuity Between MCM Connector Terminal A13 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

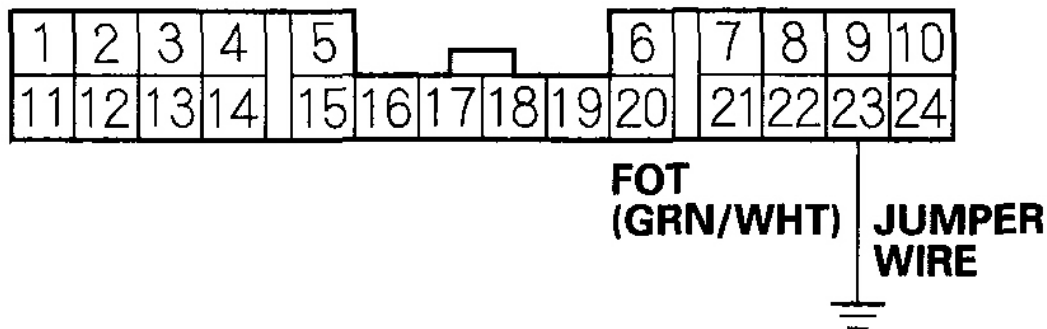
Is there continuity?

YES - Repair short to ground in the wire between the power converter wire harness 24P connector and the MCM (A13).

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

14. Disconnect the power converter wire harness 24P connector.
15. Connect power converter wire harness 24P connector terminal No. 23 to body ground with a jumper wire.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR

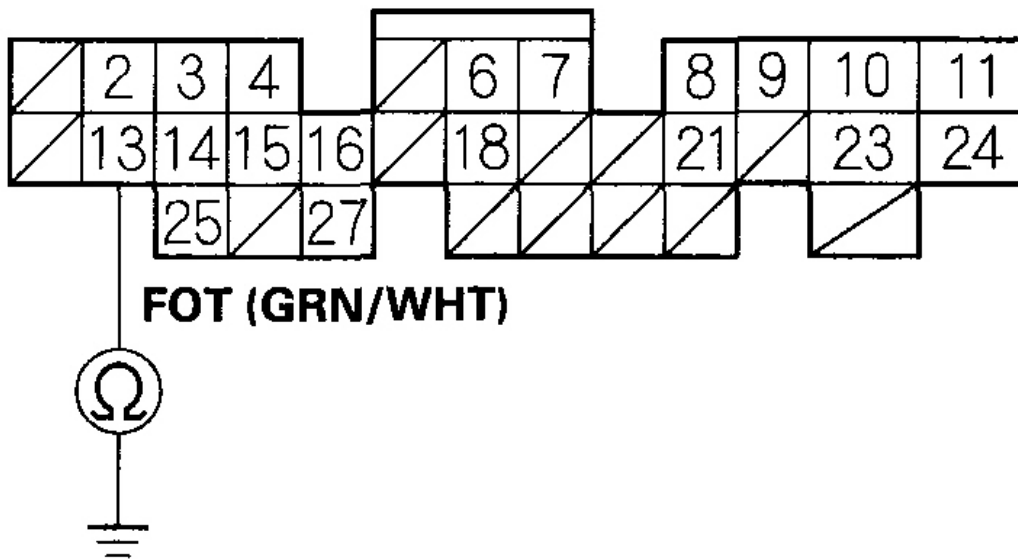


Wire side of female terminals

G03681312

**Fig. 94: Connecting Power Converter Wire Harness 24P Connector
Terminal No. 23 To Body Ground Using Jumper Wire**
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between MCM connector terminal A13 and body ground.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681313

Fig. 95: Checking Continuity Between MCM Connector Terminal A13 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for an open in the wire between the power converter wire harness 24P connector and the voltage converter module (B4). If the wire is OK, replace the voltage converter module.

NO - Repair open in the wire between the power converter wire harness 24P connector and the MCM (A13).

DTC P1430 (40): MOTOR DRIVER MODULE (MDM) SHORT CIRCUIT SENSOR PROBLEM; DTC P1439 (40): MOTOR DRIVER MODULE (MDM) SHORT CIRCUIT SENSOR PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Turn the ignition switch ON (II), and check for DTCs.

Is DTC P0A3C (39)* (P1438 (39)) indicated?**

YES - Do the troubleshooting for DTC P0A3C (39)* (P1438 (39)**) (see **DTC P0A3C (39): MOTOR DRIVER MODULE (MDM) OVERHEATING; DTC P1438 (39): MOTOR DRIVER MODULE (MDM) OVERHEATING**), and recheck.

NO - Go to step 2.

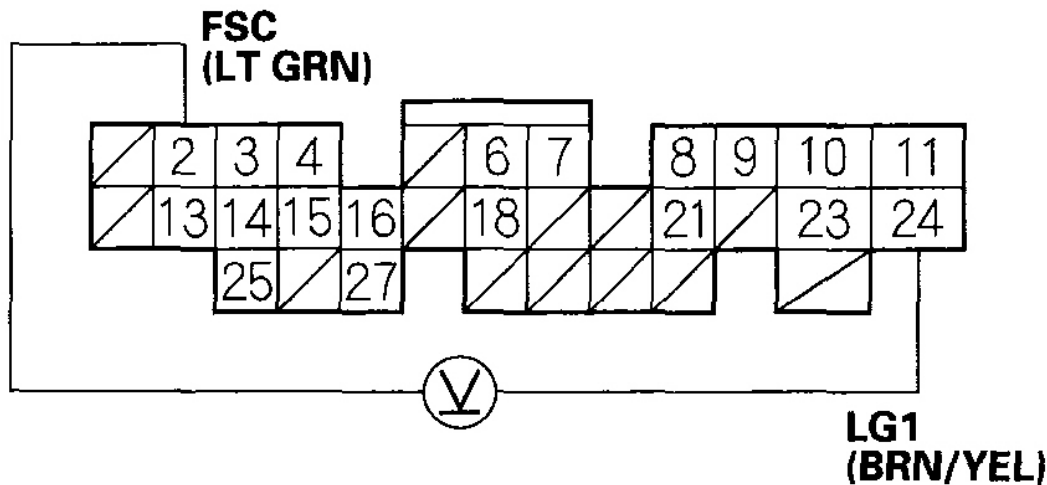
2. Reset the MCM (see **HOW TO RESET THE MCM**).
3. Turn the ignition switch ON (II).

Is DTC P1430 (40)* (P1439 (40)) indicated?**

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module and at the MCM.

4. Turn the ignition switch OFF.
5. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
7. Turn the ignition switch ON (II).
8. Measure voltage between MCM connector terminals A2 and A24.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681314

Fig. 96: Measuring Voltage Between MCM Connector Terminals A2 And A24

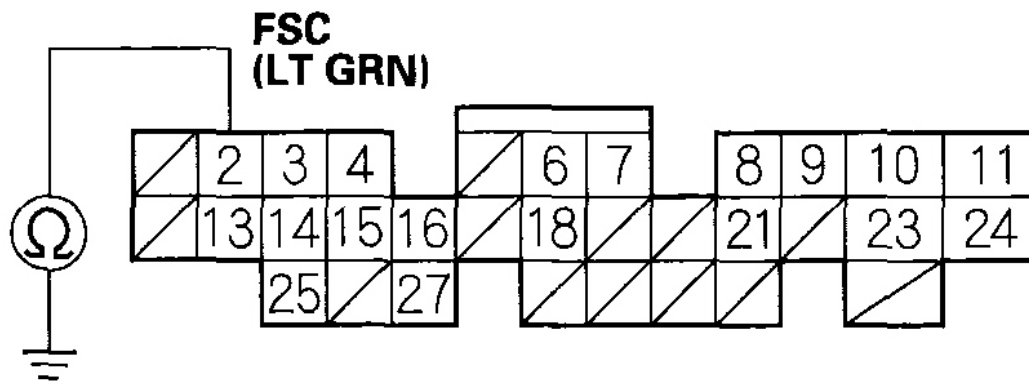
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Check for continuity between MCM connector terminal A2 and body ground.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681315

Fig. 97: Checking Continuity Between MCM Connector Terminal A2 And Body Ground

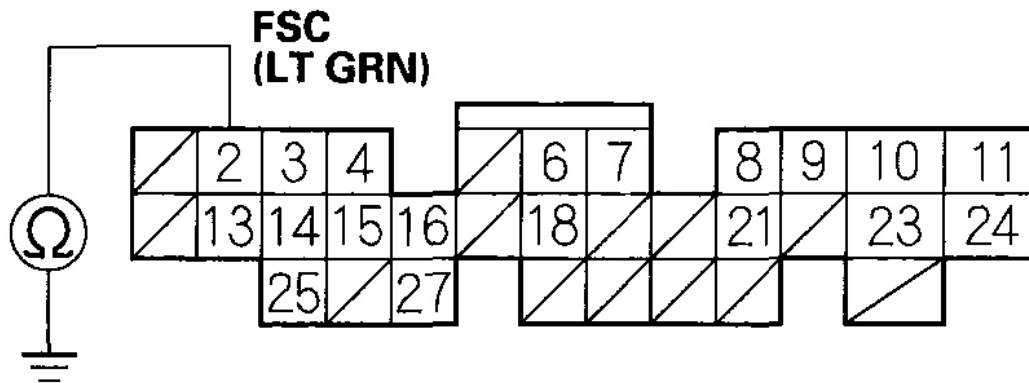
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Go to step 15 .

11. Disconnect the power converter wire harness 24P connector.
12. Check for continuity between MCM connector terminal A2 and body ground.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681316

Fig. 98: Checking Continuity Between MCM Connector Terminal A2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

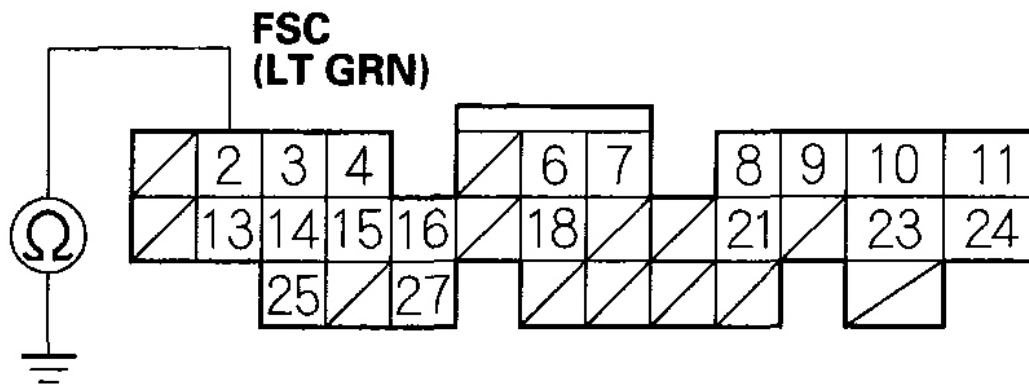
Is there continuity?

YES - Go to step 13.

NO - Check for a short to ground in the wire between the power converter wire harness 24P connector and the voltage converter module (B12). If the wire is OK, replace the voltage converter module.

13. Disconnect MCM connector A (32P).

14. Check for continuity between MCM connector terminal A2 and body ground.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681317

Fig. 99: Checking Continuity Between MCM Connector Terminal A2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

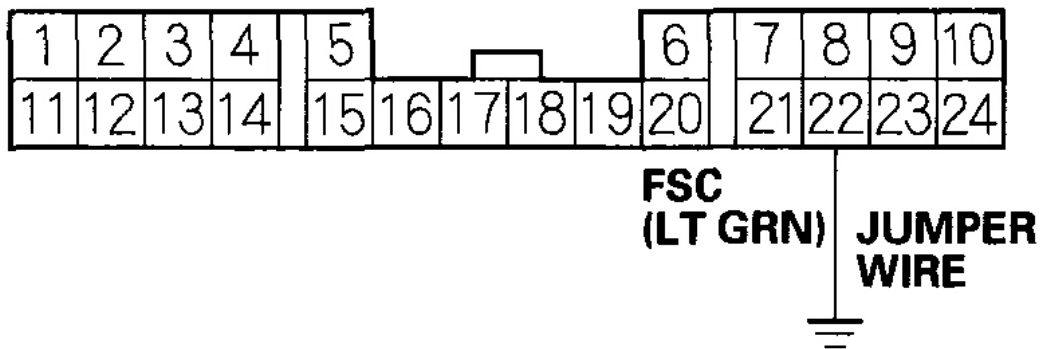
Is there continuity?

YES - Repair short to ground in the wire between the power converter wire harness 24P connector and the MCM (A2).

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

15. Disconnect the power converter wire harness 24P connector.
16. Connect power converter wire harness 24P connector terminal No. 22 to body ground with a jumper wire.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR

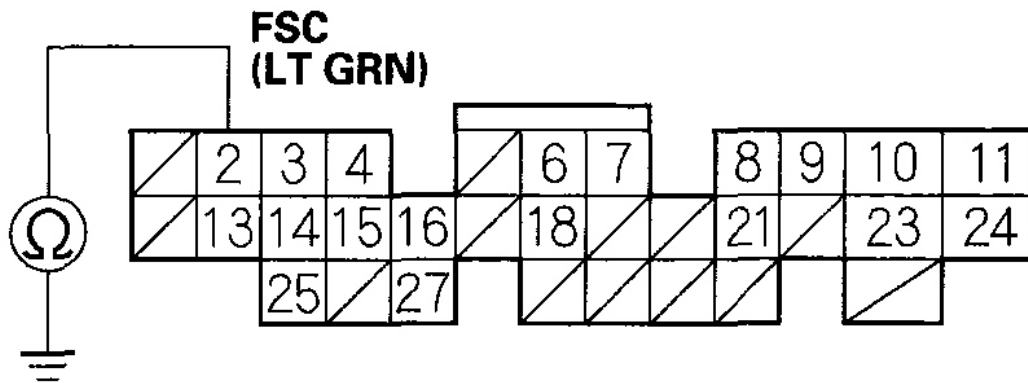


Wire side of female terminals

G03681318

**Fig. 100: Connecting Power Converter Wire Harness 24P Connector
Terminal No. 22 To Body Ground Using Jumper Wire**
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between MCM connector terminal A2 and body ground.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681319

Fig. 101: Checking Continuity Between MCM Connector Terminal A2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for an open in the wire between the power converter wire harness 24P connector and the voltage converter module (B12). If the wire is OK, replace the voltage converter module.

NO - Repair open in the wire between the power converter wire harness 24P connector and the MCM(A2).

DTC P1432 (73): BATTERY CELL OVERHEATING; DTC P1449 (73): BATTERY CELL OVERHEATING

Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

DTC P1437 (41): MOTOR DRIVER MODULE (MDM) SHORT CIRCUIT; DTC P1439 (41): MOTOR DRIVER MODULE (MDM) SHORT CIRCUIT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Turn the ignition switch ON (II), and watch the IMA system indicator.

Is DTC P1430 (40) (P1439 (40)*) indicated?**

YES - Do the troubleshooting for DTC P1430 (40)**(P1439 (40)*) (see **DTC P1430 (40): MOTOR DRIVER MODULE (MDM) SHORT CIRCUIT SENSOR PROBLEM; DTC P1439 (40): MOTOR DRIVER MODULE (MDM) SHORT CIRCUIT SENSOR PROBLEM**), and recheck.

NO - Go to step 2.

2. Reset the MCM (see **HOW TO RESET THE MCM**).
3. Start the engine.

Is DTC P1437 (41) (P1439 (41)*) indicated?**

YES - Replace the MPI module (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module and at the MCM.

DTC P1440 (57): IMA SYSTEM PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Turn the ignition switch ON (II).

Is DTC P1437 (41)* (P1439 (41)) indicated?**

YES - Do the troubleshooting for DTC P1437 (41)* (P1439 (41)**)(see **DTC P1432 (73): BATTERY CELL OVERHEATING; DTC P1449 (73): BATTERY CELL OVERHEATING**).

NO - Go to step 2.

2. Reset the MCM (see **HOW TO RESET THE MCM**).
3. Remove the No. 15 EPS (40 A) fuse from the under-hood fuse/relay box.
4. Start the engine, and hold it between 3,500 RPM and 4,000 RPM without load (in Park or neutral) until the BAT displays at least three segments.
5. Reinstall the No. 15 EPS (40 A) fuse.
6. Accelerate for 2 seconds using wide open throttle above an engine speed of 2,000 RPM.

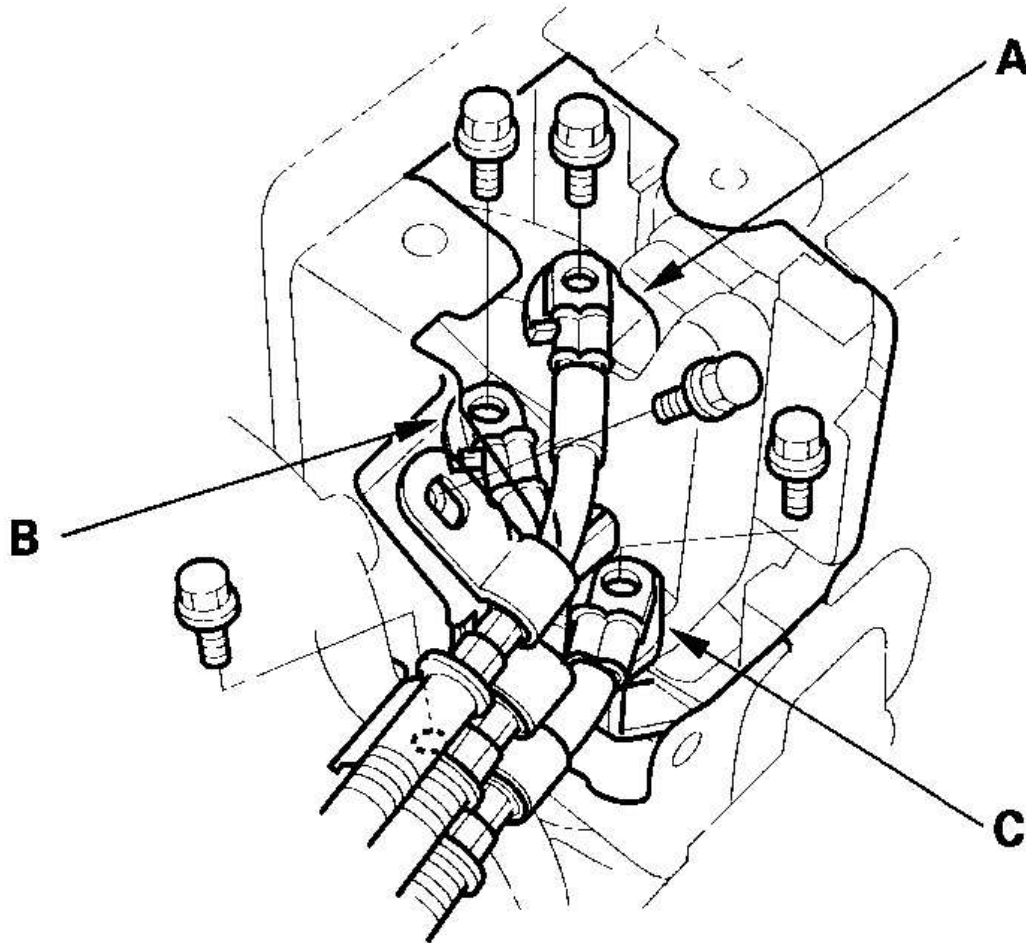
Is DTC P1440 (57) indicated?

YES - Go to step 7.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the U phase/V phase/W phase motor current sensor and at the MCM.

7. Turn the ignition switch OFF.
8. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
9. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
10. Disconnect the motor power cables. Connect (clamp) your voltmeter leads (AC range) to these terminals. Start the engine, and measure voltage between these terminals at idle:
 - The U phase terminal (A) and V phase terminal (B).
 - The W phase terminal (C) and V phase terminal (B).
 - The U phase terminal (A) and W phase terminal (C).

NOTE: When using clamp-type voltmeter leads, be careful not to touch any other terminals.



G03681320

Fig. 102: Disconnecting Motor Power Cables
Courtesy of AMERICAN HONDA MOTOR CO., INC.

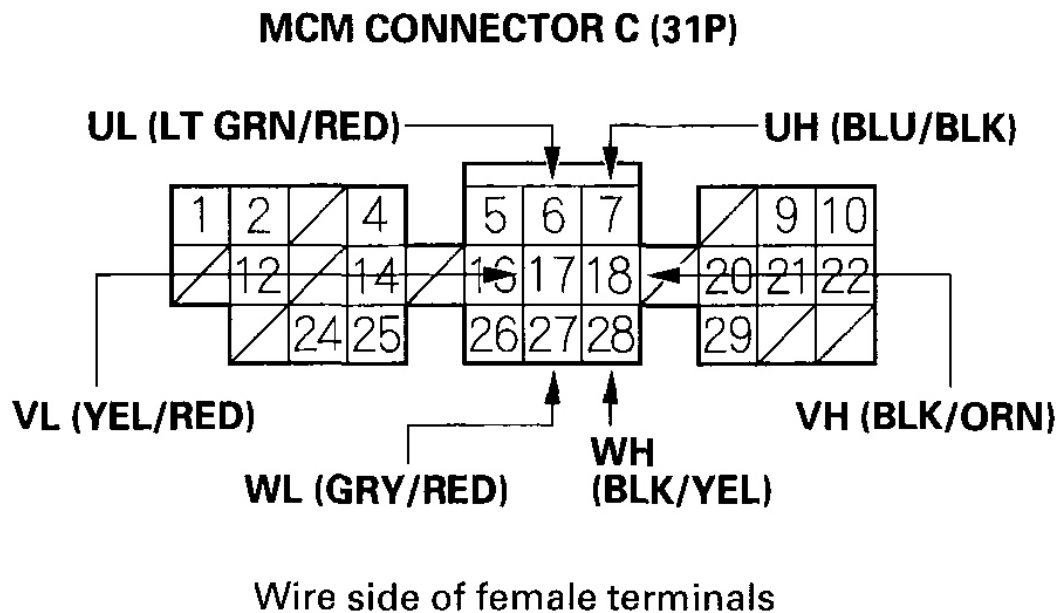
Do each of the terminals have the same voltage?

YES - Go to step 11.

NO - Check the motor power cable connection between the motor stator

and the MPI module. If the connection is OK, replace the motor stator and motor rotor.

11. Turn the ignition switch OFF.
12. Disconnect MCM connector C (31P) and the power converter wire harness 24P connector.
13. Check for continuity between body ground and MCM connector terminals C6, C7, C17, C18, C27, and C28 individually.



G03681321

Fig. 103: Checking Continuity Between Body Ground And MCM Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

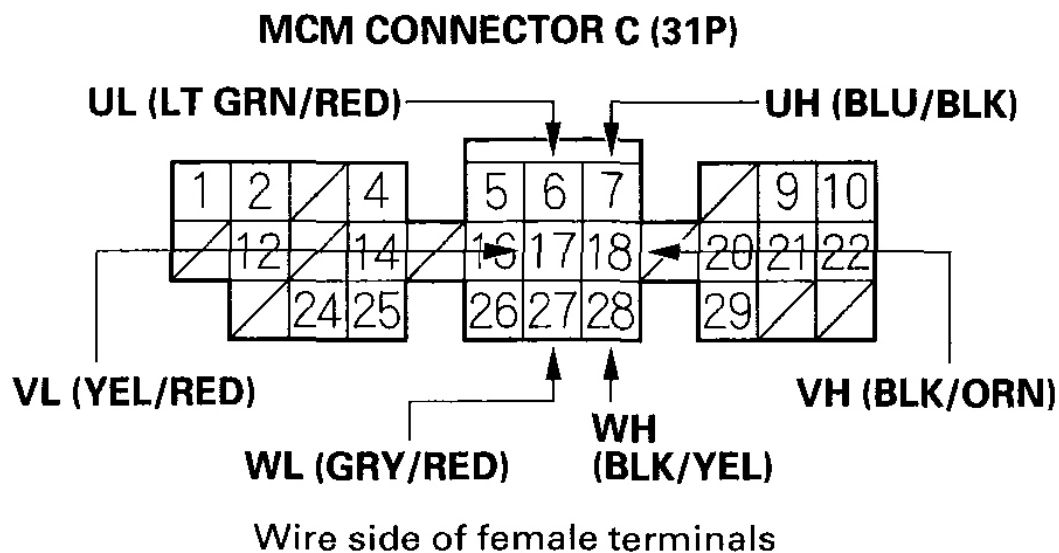
Is there continuity?

YES - Repair short to ground in the wire(s) that had continuity between the power converter wire harness 24P connector and the MCM (C6, C7, C17, C18, C27, C28).

NO - Go to step 14.

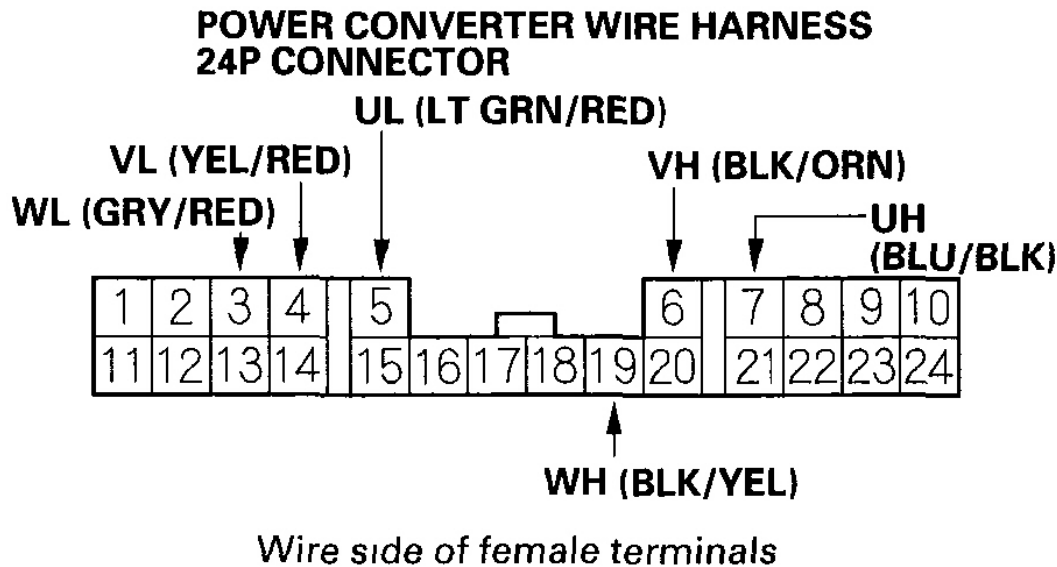
14. Check for continuity between these terminals:

- MCM connector terminal C6 and power converter wire harness 24P connector terminal No. 5
- MCM connector terminal C7 and power converter wire harness 24P connector terminal No. 7
- MCM connector terminal C17 and power converter wire harness 24P connector terminal No. 4
- MCM connector terminal C18 and power converter wire harness 24P connector terminal No. 6
- MCM connector terminal C27 and power converter wire harness 24P connector terminal No. 3
- MCM connector terminal C28 and power converter wire harness 24P connector terminal No. 19



G03681322

Fig. 104: Checking Continuity Between MCM Connector C Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



G03681323

Fig. 105: Checking Continuity Between Power Converter Wire Harness 24P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire(s) that had no continuity between the power converter wire harness 24P connector and the MCM (C6, C7, C17, C18, C27, C28).

15. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).
16. Disconnect the voltage converter module 16P connector.
17. Check for continuity between the voltage converter module case ground and terminals No. 5, No. 6, No. 7, No. 13, No. 14, and No. 15 individually.

Is there continuity?

YES - Repair short to ground in the wire(s) that had continuity between

the voltage converter module 16P connector and the case.

NO - Go to step 18.

18. Check for continuity between the power converter wire harness 24P connector and the voltage converter module 16P connector terminals.

POWER CONVERTER WIRE HARNESS 24P AND VOLTAGE CONVERTER MODULE 16P

24P	16P
3	13
4	14
5	15
6	6
7	7
19	5

Is there continuity?

YES - Replace these items:

- Voltage converter module (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).
- Motor commutation sensors (see **IMA MOTOR REMOVAL/INSTALLATION**).
- Phase motor current sensors (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).
- Sensor disc (M/T).
- Drive plate (CVT).

NO - Repair open in the wire(s) that had no continuity between the power converter wire harness 24P connector and the voltage converter module.

DTC P1445 (62): BYPASS CONTACTOR PROBLEM

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II), and turn off all accessories that create load: headlights, blower fan, rear defogger, and air conditioner.

Is DTC P1445 (62) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the DC-DC converter, the bypass contactor, and the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid, and make sure there is 30 V or less at the junction terminals.
6. Disconnect the DC-DC converter 8P connector.
7. Turn the battery module switch ON.
8. Turn the ignition switch ON (II).

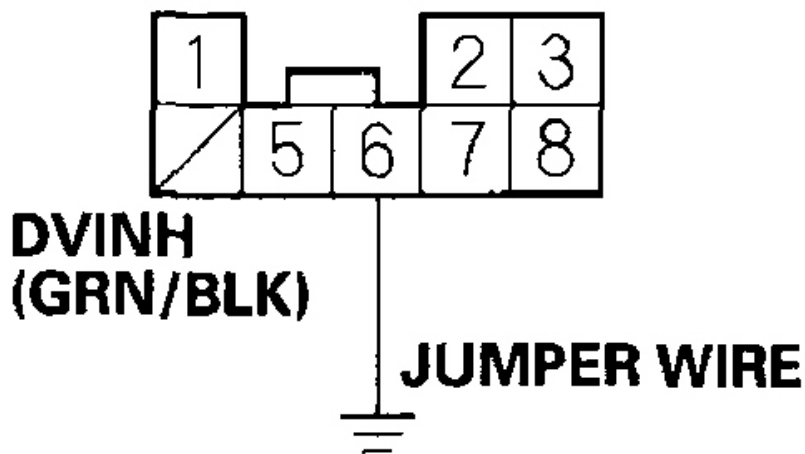
Is DTC P1445 (62) indicated?

YES - Go to step 13 .

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
11. Connect DC-DC converter 8P connector terminal No. 6 to body ground with a jumper wire.

DC-DC CONVERTER 8P CONNECTOR



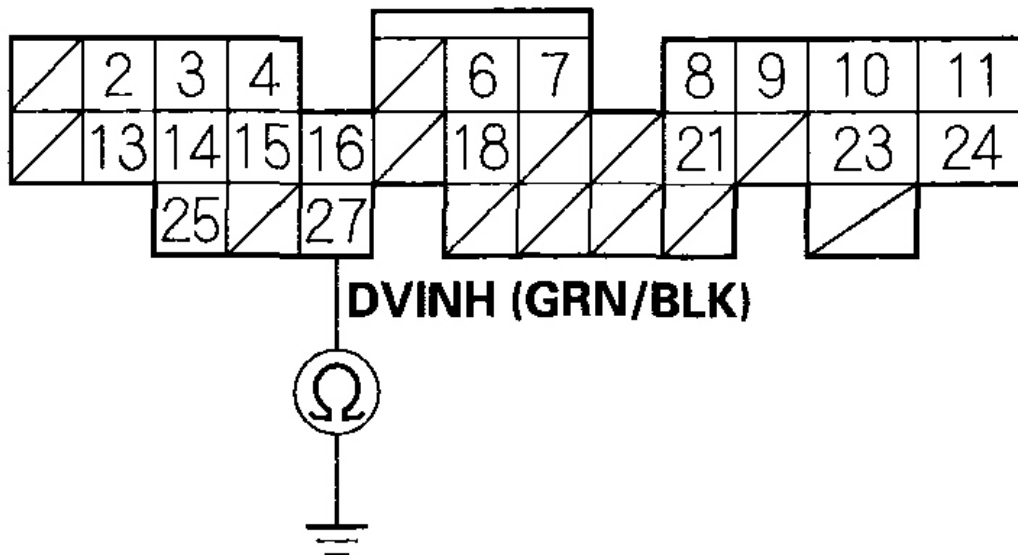
Wire side of female terminals

G03681324

Fig. 106: Connecting DC-DC Converter 8P Connector Terminal No. 6 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between body ground and MCM connector terminal A27.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681325

Fig. 107: Checking Continuity Between Body Ground And MCM Connector Terminal A27

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the high voltage line. If the line is OK, replace these items:

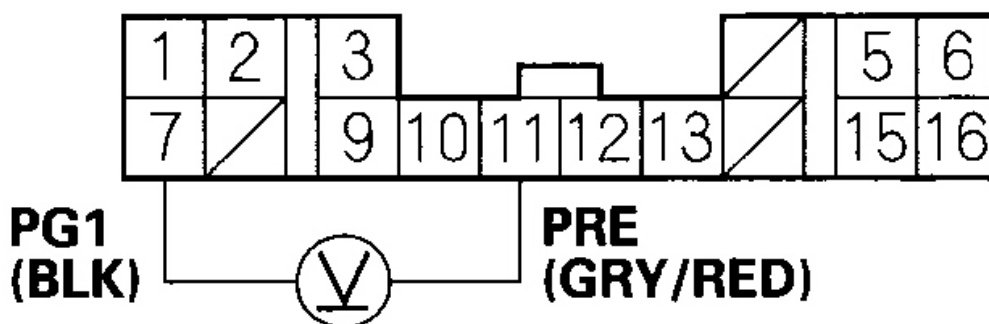
- Substitute a known-good MCM and BCM module, and recheck. If the symptom/indication goes away, replace the original MCM and BCM module.
- Battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

- DC-DC converter (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Repair open in the wire between the DC-DC converter and the MCM (A27).

13. Turn the ignition switch OFF.
14. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
15. Disconnect the junction board 16P connector.
16. Connect a voltmeter between junction board 16P connector terminals No. 7 and No. 10, then turn the ignition switch ON (II).

JUNCTION BOARD 16P CONNECTOR



Wire side of female terminals

G03681326

**Fig. 108: Connecting Voltmeter Between Junction Board 16P Connector
Terminals No. 7 And 10**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

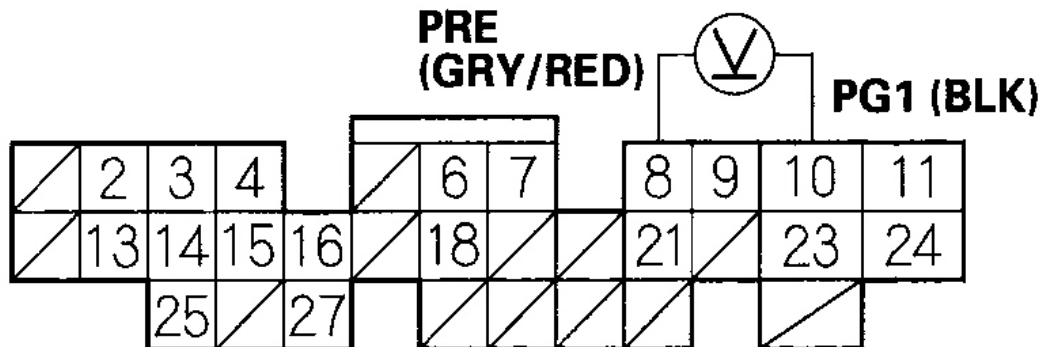
Is there battery voltage momentarily?

YES -

- Replace the battery module (see **BATTERY MODULE
REMOVAL/INSTALLATION**).
- Substitute a known-good MCM and BCM module, and recheck. If the symptom/indication goes away, replace the original MCM and BCM module.

NO - Go to step 17.

17. Turn the ignition switch OFF.
18. Measure voltage between MCM connector terminals A8 and A10, then turn the ignition switch ON (II).

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681327

Fig. 109: Measuring Voltage Between MCM Connector Terminals A8 And A10

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage momentarily?

YES - Repair open in the wire between the junction board 16P connector and the MCM (A8).

NO -

- Replace the MPI module and voltage converter module (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).
- Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II), and wait for 20 seconds.

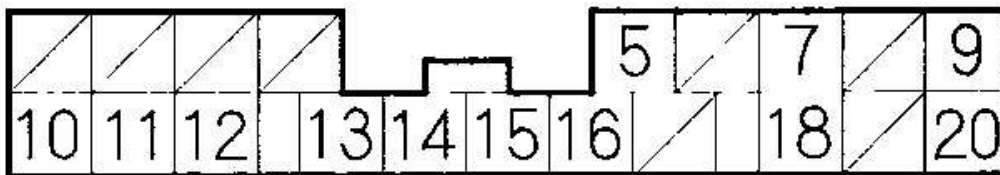
Is DTC P1446 (74)* (P1449 (74)) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the BCM module and the battery module.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Measure voltage between these BCM module connector terminals:
 - C9 and C20
 - C20 and C7
 - C7 and C18
 - C18 and C5
 - C16 and C15
 - C15 C and C14
 - C14 and C13
 - C13 and C12
 - C12 and C11
 - C11 and C10

BCM MODULE CONNECTOR C (20P)



Wire side of female terminals

G03681328

Fig. 110: Measuring Voltage Between These BCM Module Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the difference between the highest and lowest voltage more than 1.2 V?

YES - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

NO - Substitute a known-good BCM module, and recheck. If the symptom/indication goes away, replace the original BCM module.

DTC P1447 (77): BATTERY MODULE DETERIORATION

Replace the battery module (see **BATTERY MODULE**

REMOVAL/INSTALLATION).

DTC P1559 (16): MOTOR COMMUTATION SENSOR A CIRCUIT LOW INPUT

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch OFF.
3. Start the engine.

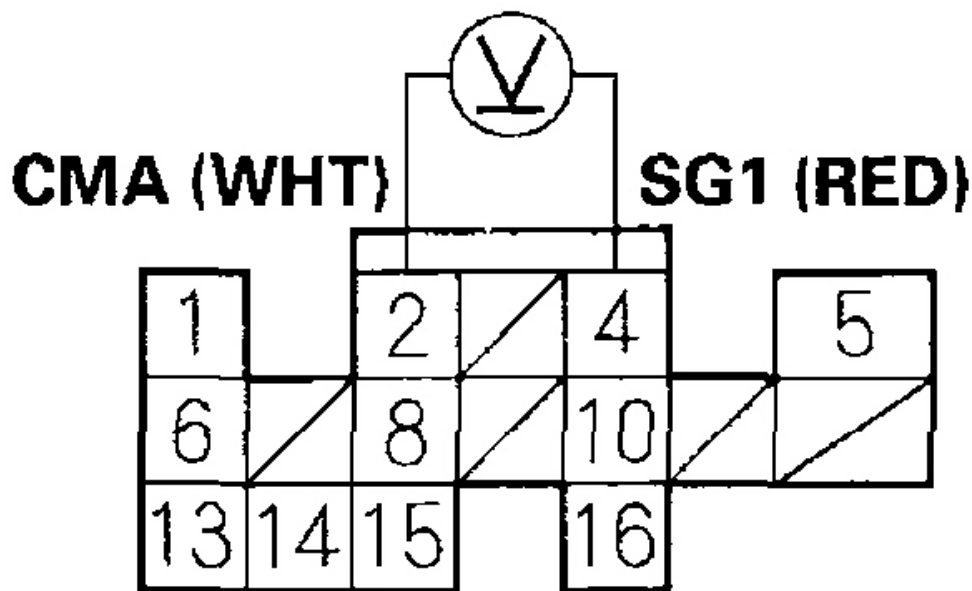
Is DTC P1559 (16) indicated?

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at motor commutation sensor A and at the MCM.

4. Turn the ignition switch OFF.
5. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
7. Start the engine, and let it idle.
8. Measure voltage between MCM connector terminals D2 and D4.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681329

Fig. 111: Measuring Voltage Between MCM Connector Terminals D2 And D4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2-4 V?

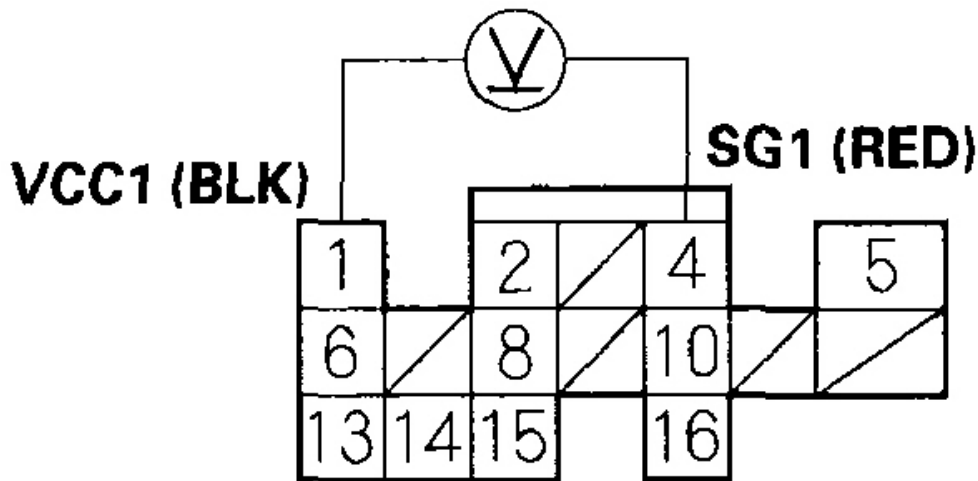
YES - Substitute a known-good MCM, and recheck. If the

symptom/indication goes away, replace the original MCM.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Turn the ignition switch ON (II).
11. Measure voltage between MCM connector terminals D1 and D4.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681330

Fig. 112: Measuring Voltage Between MCM Connector Terminals D1 And D4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

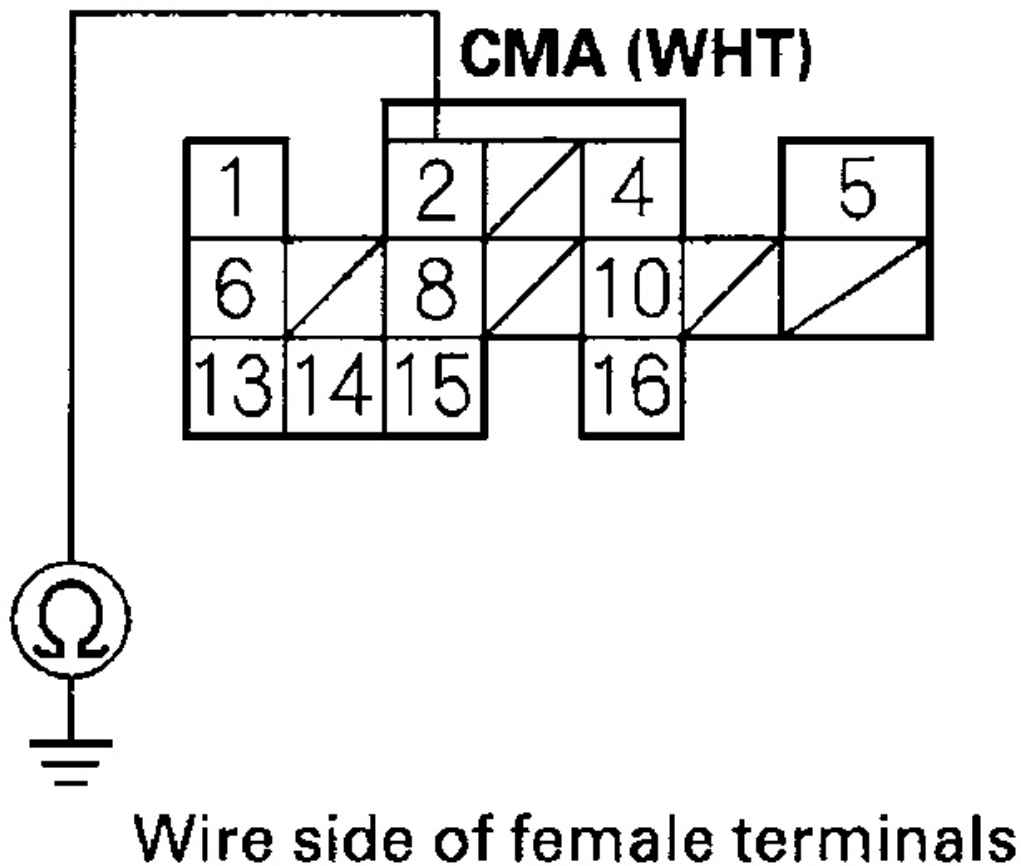
Is there more than 4 V?

YES - Go to step 12.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

12. Turn the ignition switch OFF.
13. Disconnect MCM connector D (16P).
14. Disconnect the motor commutation sensor 10P connector.
15. Check for continuity between body ground and MCM connector terminal D2.

MCM CONNECTOR D (16P)



G03681331

Fig. 113: Checking Continuity Between Body Ground And MCM Connector Terminal D2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the motor commutation sensor and the MCM (D2).

NO - Go to step 16.

16. M/T model: Remove the transmission (see **TRANSMISSION REMOVAL**) and the clutch (see **CLUTCH REPLACEMENT**).
17. CVT model: Remove the transmission (see **TRANSMISSION REMOVAL**).
18. Inspect the sensor plate for bending, and the motor commutation sensor connection.

Is the sensor plate and the connection OK?

YES - Replace the motor commutation sensor (see **IMA MOTOR REMOVAL/INSTALLATION**).

NO - Replace the sensor plate (see **IMA MOTOR REMOVAL/INSTALLATION**) or repair the motor commutation sensor connection.

DTC P1560 (17): MOTOR COMMUTATION SENSOR A CIRCUIT HIGH INPUT

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Start the engine.

Is DTC P1560 (17) indicated?

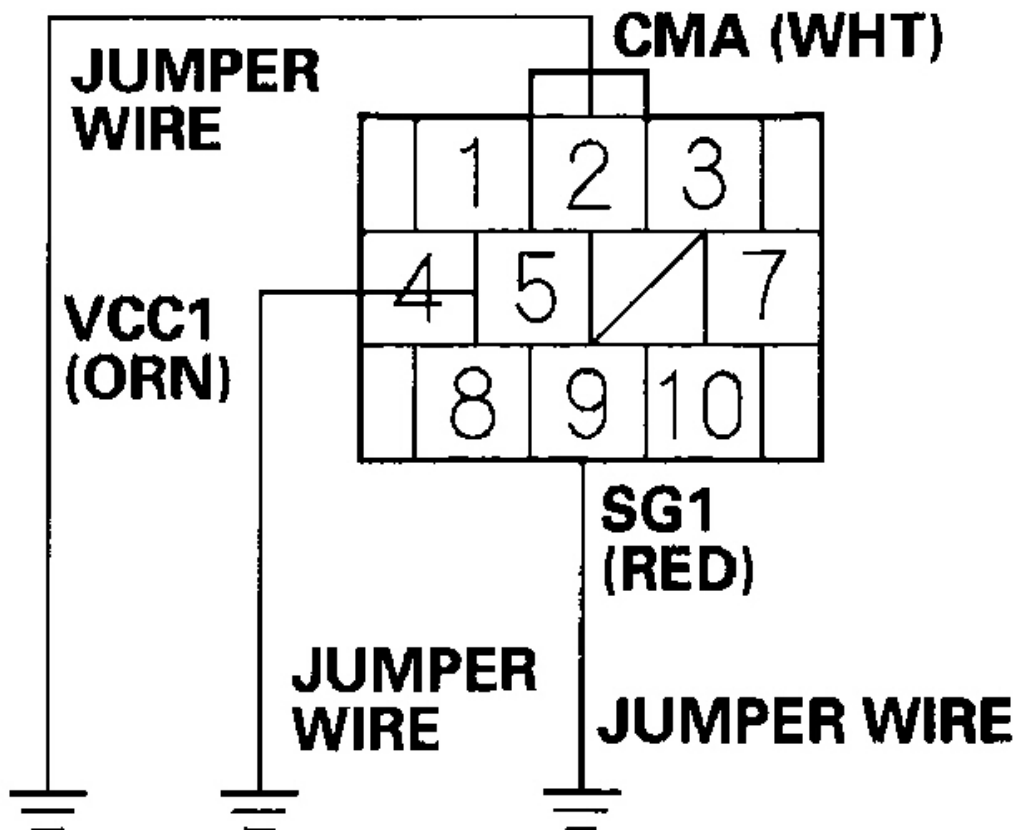
YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at motor commutation sensor A and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Disconnect the MCM connector D (16P).
7. Disconnect the motor commutation sensor 10P connector.
8. Connect motor commutation sensor 10P connector terminals No. 2, No. 5, and

No. 9 to body ground with a jumper wire.

MOTOR COMMUTATION SENSOR 10P CONNECTOR

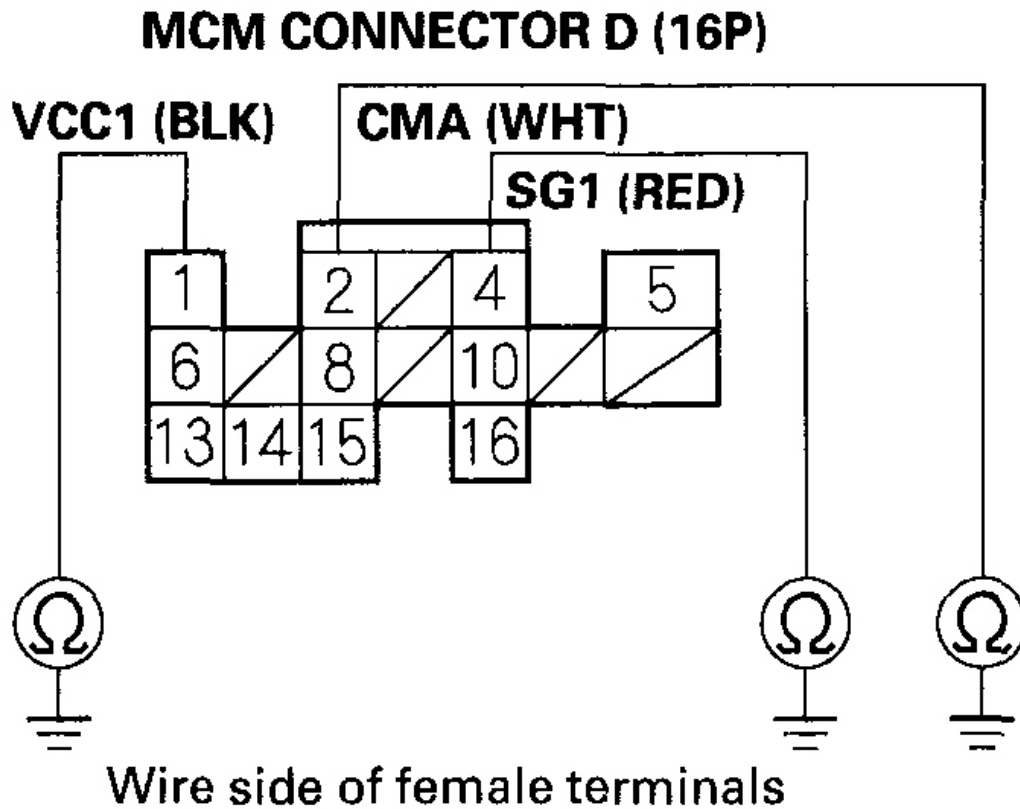


Wire side of female terminals

G03681332

**Fig. 114: Connecting Motor Commutation Sensor 10P Connector
Terminals To Body Ground Using Jumper Wire**
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check for continuity between MCM connector terminals D1, D2, D4, and body ground individually.



G03681333

Fig. 115: Checking Continuity Between MCM Connector Terminals D1, D2, D4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

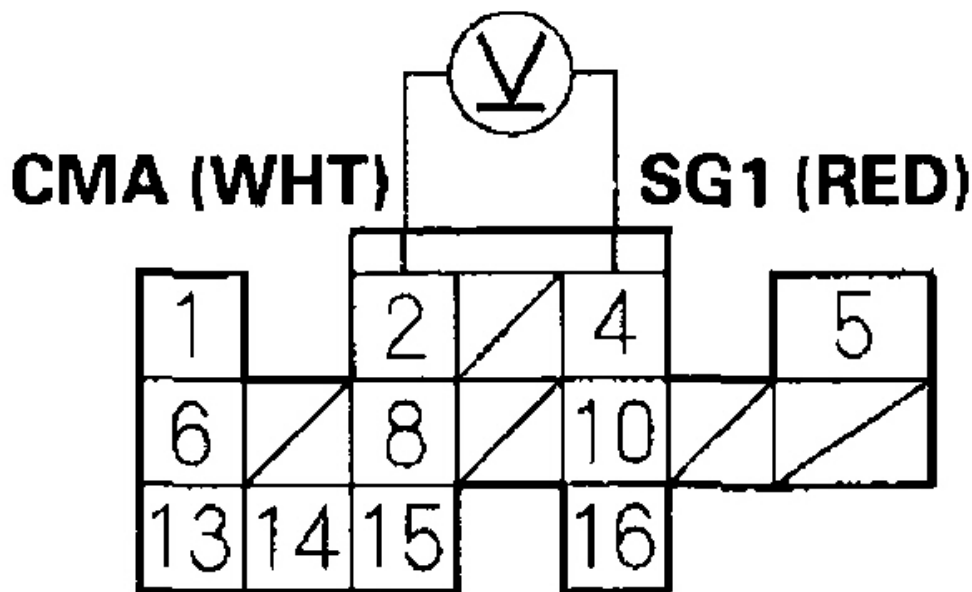
Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire(s) between the motor commutation sensor and the MCM (D1, D2, D4).

10. Remove the jumper wires.
11. Reconnect MCM connector D(16P).
12. Turn the ignition switch ON (II).
13. Measure voltage between MCM connector terminals D2 and D4.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681334

Fig. 116: Measuring Voltage Between MCM Connector Terminals D2 And D4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

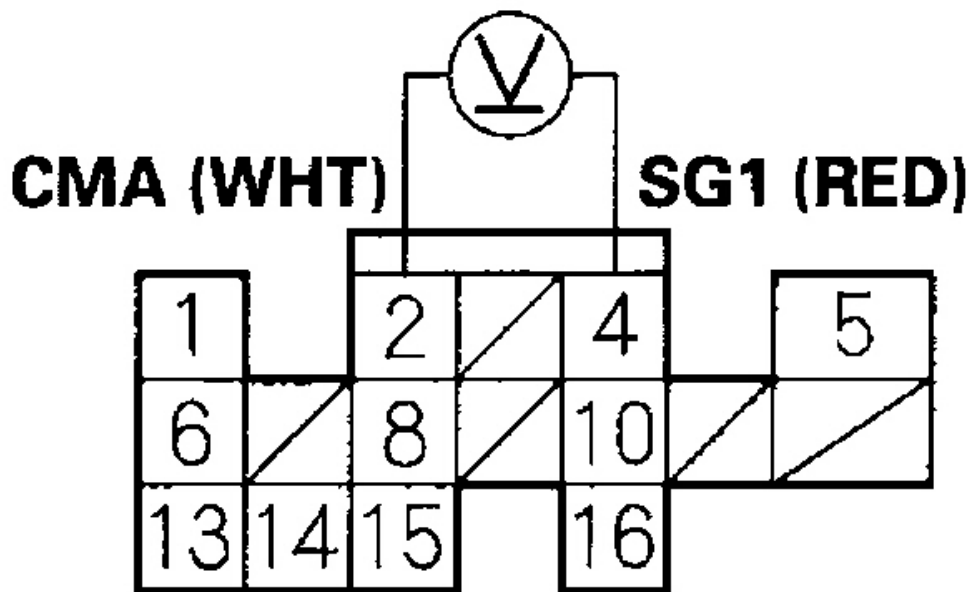
Is there more than 4.0 V?

YES - Go to step 14.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

14. Turn the ignition switch OFF.
15. Reconnect the motor commutation sensor 10P connector.
16. Start the engine, and let it idle.
17. Measure voltage between MCM connector terminals D2 and D4.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681335

Fig. 117: Measuring Voltage Between MCM Connector Terminals D2 And D4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2-4 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Replace the sensor plate (see **IMA MOTOR REMOVAL/INSTALLATION**) or the motor commutation sensor (see **IMA MOTOR REMOVAL/INSTALLATION**).

DTC P1561 (18): MOTOR COMMUTATION SENSOR B CIRCUIT LOW INPUT

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch OFF.
3. Start the engine.

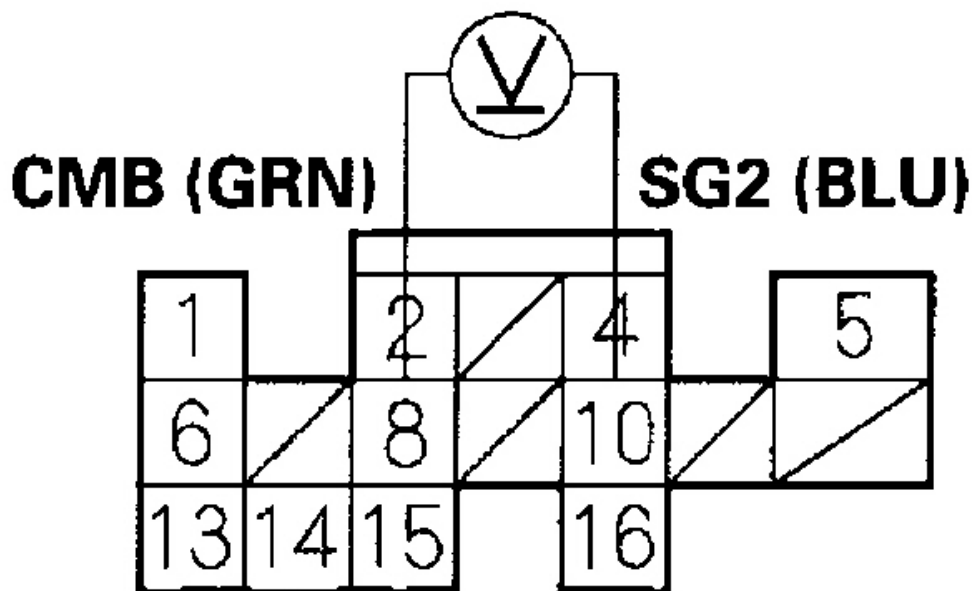
Is DTC P1561 (18) indicated?

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at motor commutation sensor B and the MCM.

4. Turn the ignition switch OFF.
5. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
7. Start the engine, and let it idle.
8. Measure voltage between MCM connector terminals D8 and D10.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681336

Fig. 118: Measuring Voltage Between MCM Connector Terminals D8 And D10

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2-4 V?

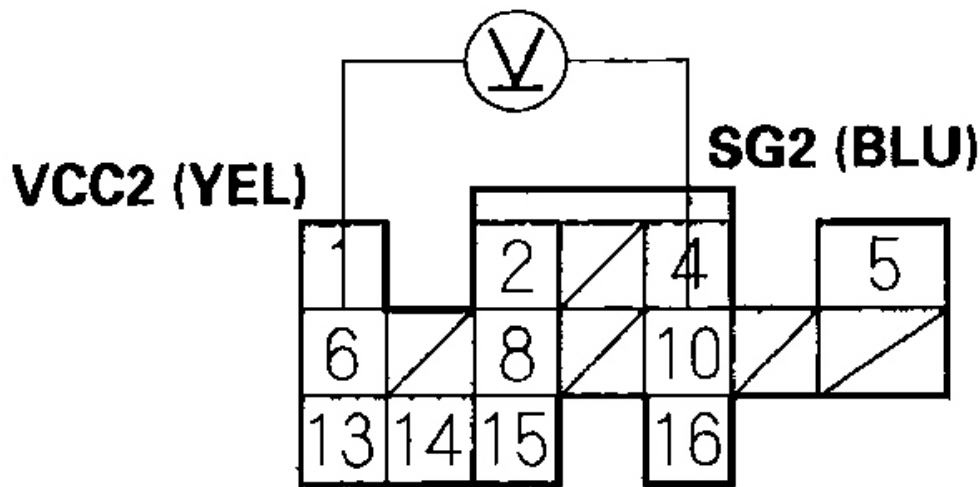
YES - Substitute a known-good MCM, and recheck. If the

symptom/indication goes away, replace the original MCM.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Turn the ignition switch ON (II).
11. Measure voltage between MCM connector terminals D6 and D10.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681337

Fig. 119: Measuring Voltage Between MCM Connector Terminals D6 And D10

Courtesy of AMERICAN HONDA MOTOR CO., INC.

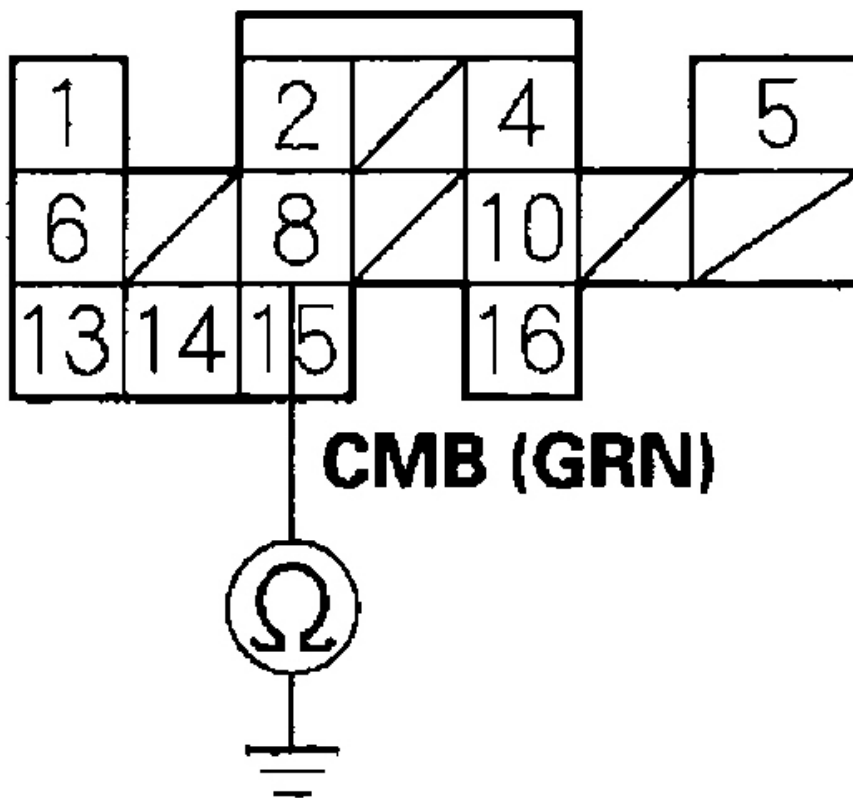
Is there more than 4 V?

YES - Go to step 12.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

12. Turn the ignition switch OFF.
13. Disconnect MCM connector D (16P).
14. Disconnect the motor commutation sensor 10P connector.
15. Check for continuity between body ground and MCM connector terminal D8.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681338

Fig. 120: Checking Continuity Between Body Ground And MCM Connector Terminal D8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the motor commutation sensor and the MCM (D8).

NO - Go to step 16.

16. M/T model: Remove the transmission (see **TRANSMISSION REMOVAL**) and the clutch (see **CLUTCH**).
17. CVT model: Remove the transmission (see **TRANSMISSION REMOVAL**).
18. Inspect the sensor plate for bending, and the motor commutation sensor connection.

Is the sensor plate and the connection OK ?

YES - Replace the motor commutation sensor (see **IMA MOTOR REMOVAL/INSTALLATION**).

NO - Replace the sensor plate (see **IMA MOTOR REMOVAL/INSTALLATION**) or repair the motor commutation sensor connection.

DTC P1562 (52): MOTOR COMMUTATION SENSOR B CIRCUIT HIGH INPUT

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Start the engine.

Is DTC P1562 (52) indicated?

YES - Go to step 3

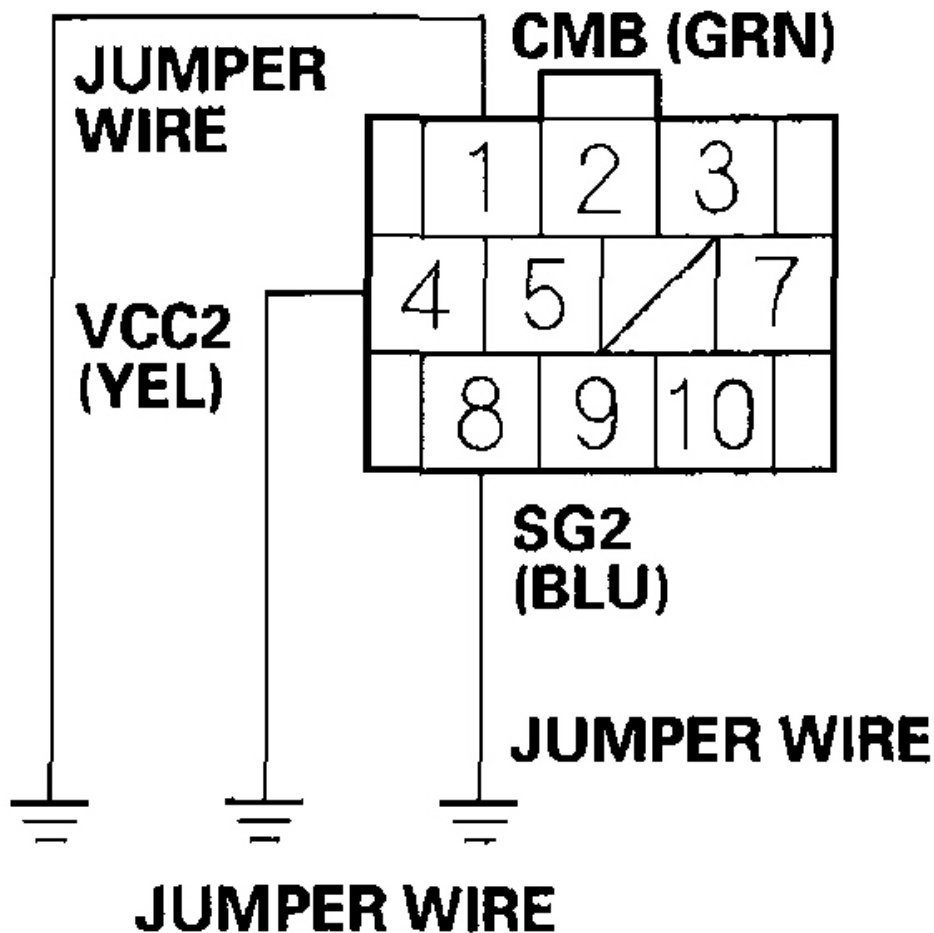
NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at motor commutation sensor B and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Disconnect MCM connector D(16P).

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2000-06 ELECTRICAL IMA System - Insight

7. Disconnect the motor commutation sensor 10P connector.
8. Connect motor commutation sensor 10P connector terminals No. 1, No. 4, and No. 8 to body ground with a jumper wire.

MOTOR COMMUTATION SENSOR 10P CONNECTOR



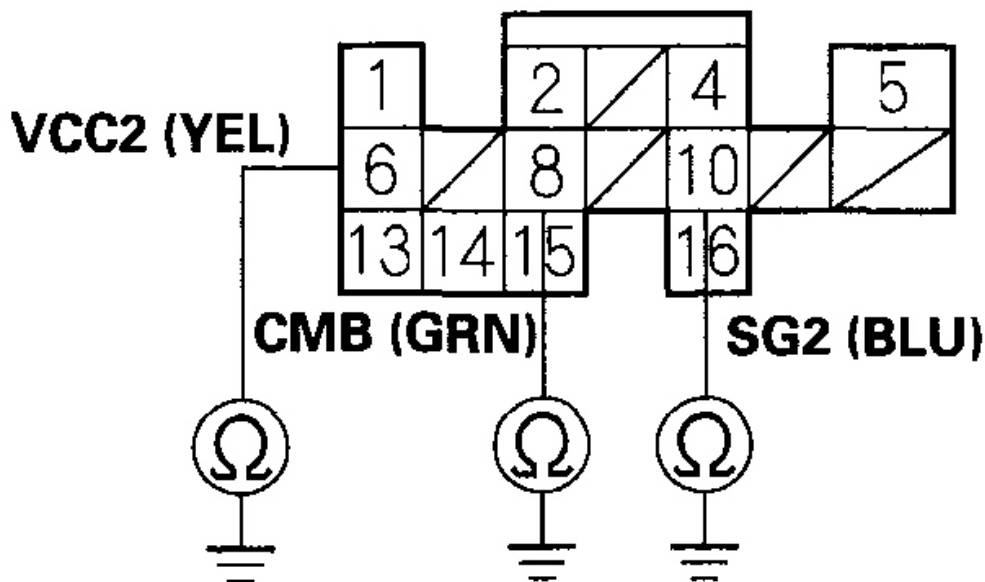
Wire side of female terminals

G03681339

**Fig. 121: Connecting Motor Commutation Sensor 10P Connector
Terminals To Body Ground Using Jumper Wire**
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check for continuity between MCM connector terminals D6, D8, D10, and body ground individually.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681340

Fig. 122: Checking Continuity Between MCM Connector Terminals D6, D8, D10 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

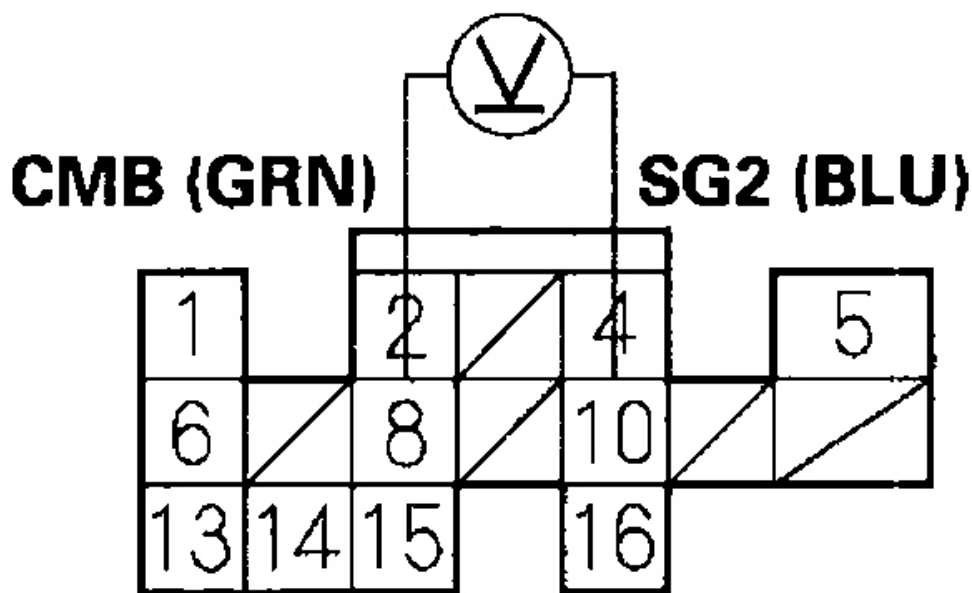
YES - Go to step 10.

NO - Repair open in the wire(s) between the motor commutation sensor

and the MCM (D6, D8, D10).

10. Remove the jumper wires.
11. Reconnect MCM connector D (16P).
12. Turn the ignition switch ON (II).
13. Measure voltage between MCM connector terminals D8 and D10.

MCM CONNECTOR D (16P)



Wire side of female terminals

Fig. 123: Measuring Voltage Between MCM Connector Terminals D8 And D10

Courtesy of AMERICAN HONDA MOTOR CO., INC.

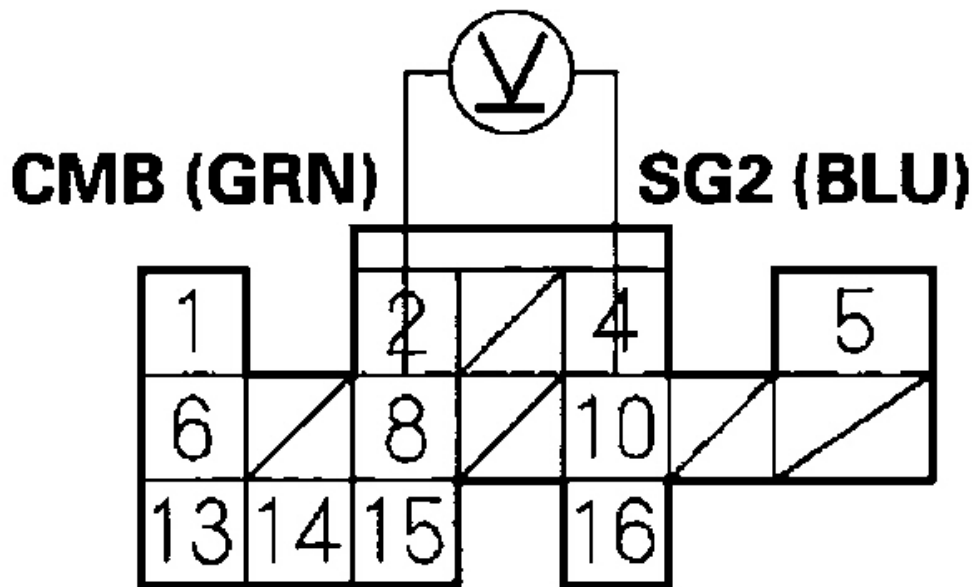
Is there more than 4.0 V?

YES - Go to step 14.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

14. Turn the ignition switch OFF.
15. Reconnect the motor commutation sensor 10P connector.
16. Start the engine, and let it idle.
17. Measure voltage between MCM connector terminals D8 and D10.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681342

Fig. 124: Measuring Voltage Between MCM Connector Terminals D8 And D10

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2-4 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Replace the sensor plate (see **IMA MOTOR REMOVAL/INSTALLATION**) or the motor commutation sensor (see **IMA MOTOR REMOVAL/INSTALLATION**).

DTC P1563 (53): MOTOR COMMUTATION SENSOR C CIRCUIT LOW INPUT

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch OFF.
3. Start the engine.

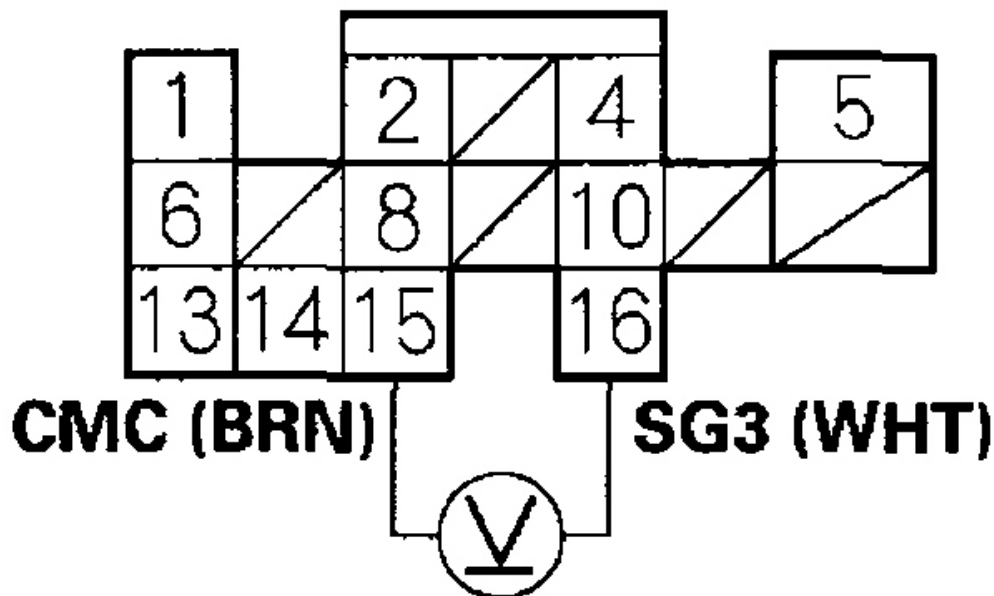
Is DTC P1563 (53) indicated?

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at motor commutation sensor C and the MCM.

4. Turn the ignition switch OFF.
5. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
7. Start the engine, and let it idle.
8. Measure voltage between MCM connector terminals D15 and D16.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681343

Fig. 125: Measuring Voltage Between MCM Connector Terminals D15 And D16

Courtesy of AMERICAN HONDA MOTOR CO., INC.

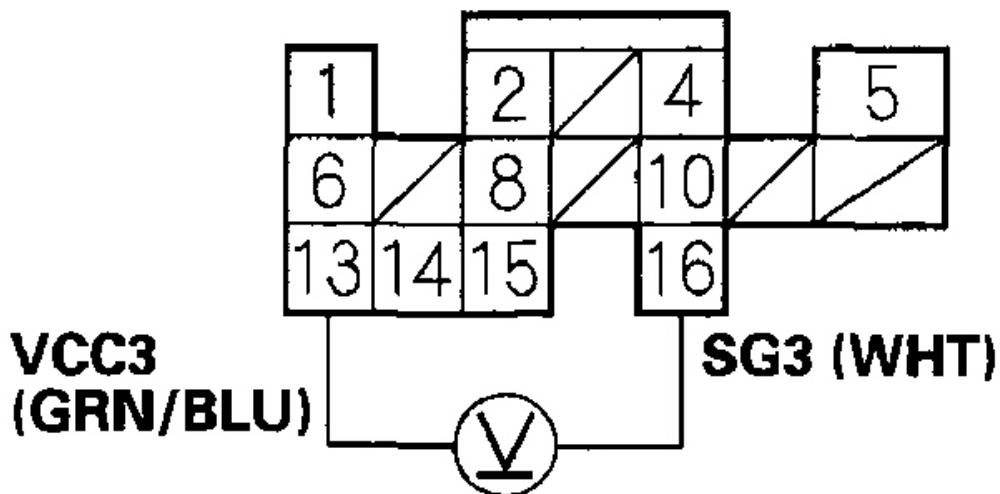
Is there about 2-4 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Turn the ignition switch ON (II).
11. Measure voltage between MCM connector terminals D13 and D16.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681344

Fig. 126: Measuring Voltage Between MCM Connector Terminals D13 And D16

Courtesy of AMERICAN HONDA MOTOR CO., INC.

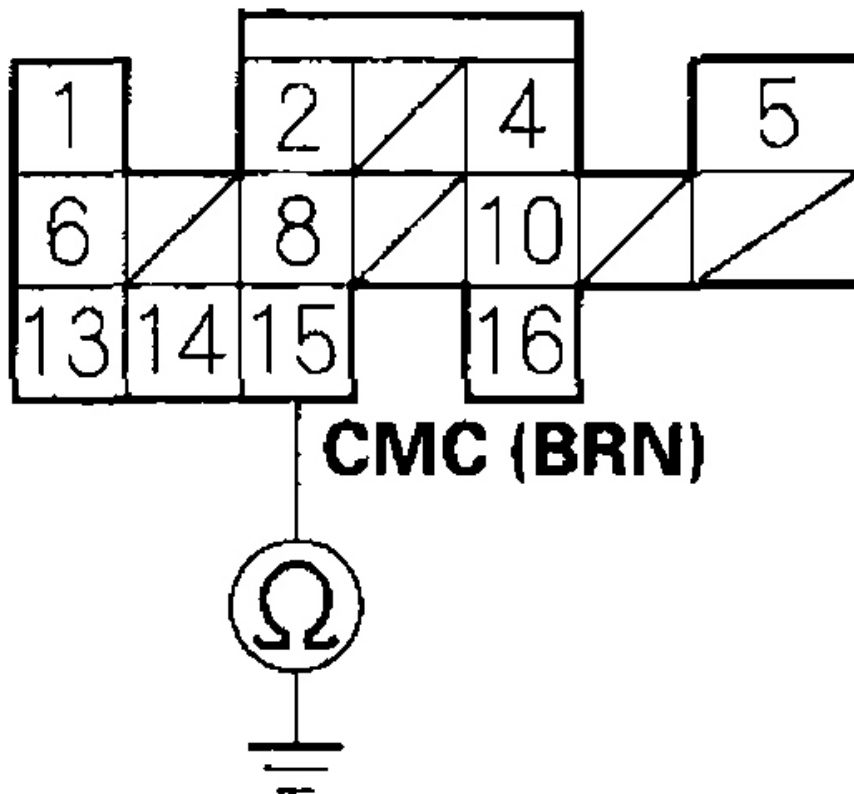
Is there more than 4 V?

YES - Go to step 12.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

12. Turn the ignition switch OFF.
13. Disconnect MCM connector D (16P).
14. Disconnect the motor commutation sensor 10P connector.
15. Check for continuity between body ground and MCM connector terminal D15.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681345

Fig. 127: Checking Continuity Between Body Ground And MCM Connector Terminal D15

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the motor commutation sensor and the MCM (D15).

NO - Go to step 16.

16. M/T model: Remove the transmission (see **TRANSMISSION INSTALLATION**) and the clutch (see **CLUTCH**).
17. CVT model: Remove the transmission (see **TRANSMISSION REMOVAL**).
18. Inspect the sensor plate for bending, and the motor commutation sensor connection.

Are the sensor plate and the connection OK?

YES - Replace the motor commutation sensor (see **IMA MOTOR REMOVAL/INSTALLATION**).

NO - Replace the sensor plate (see **IMA MOTOR REMOVAL/INSTALLATION**) or repair motor commutation sensor connection.

DTC P1564 (54): MOTOR COMMUTATION SENSOR C CIRCUIT HIGH INPUT

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Start the engine.

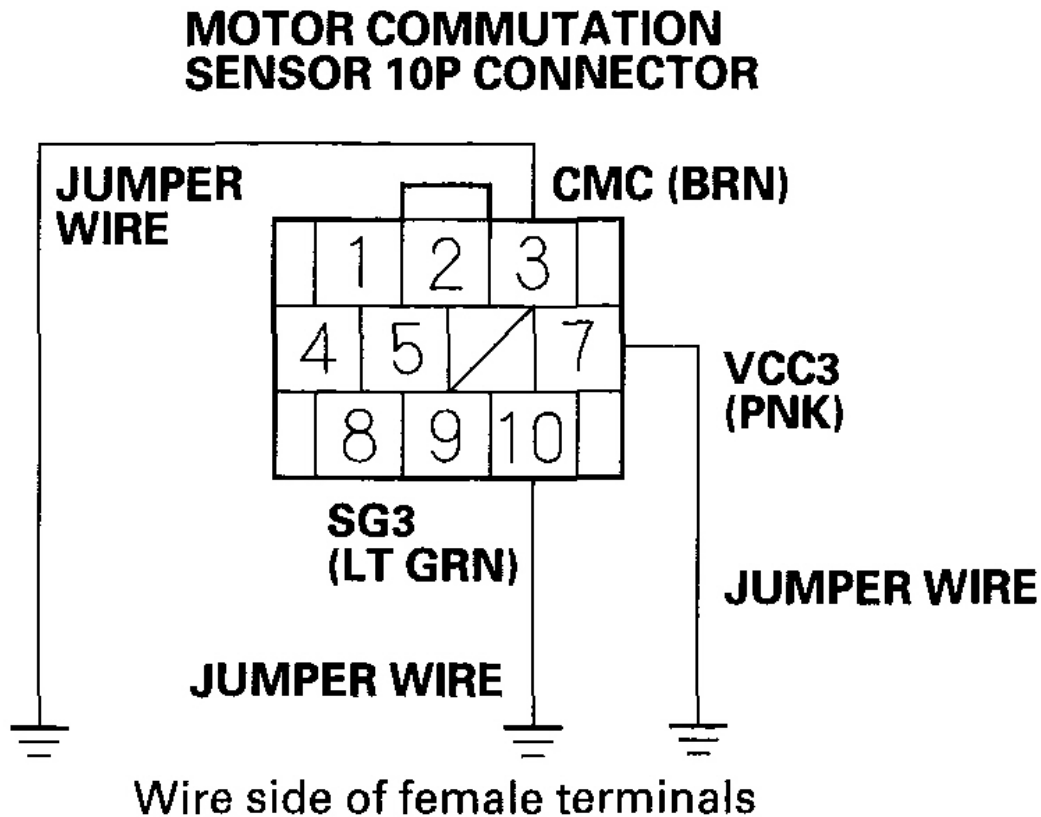
Is DTC P1564 (54) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at motor commutation sensor C and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Disconnect MCM connector D (16P).

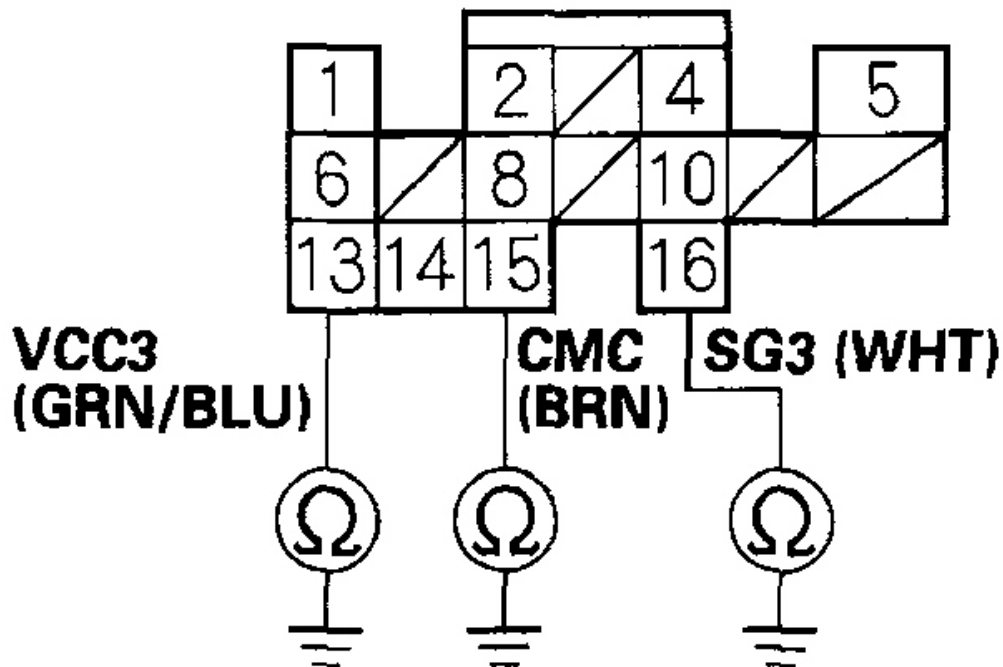
7. Disconnect the motor commutation sensor 10P connector.
8. Connect motor commutation sensor 10P connector terminals No. 3, No. 7, and No. 10 to body ground with a jumper wire.



G03681346

**Fig. 128: Connecting Motor Commutation Sensor 10P Connector
Terminals To Body Ground Using Jumper Wire**
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check for continuity between MCM connector terminals D13, D15, D16, and body ground individually.

MCM CONNECTOR D (16P)

Wire side of female terminals

G03681347

Fig. 129: Checking Continuity Between MCM Connector Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

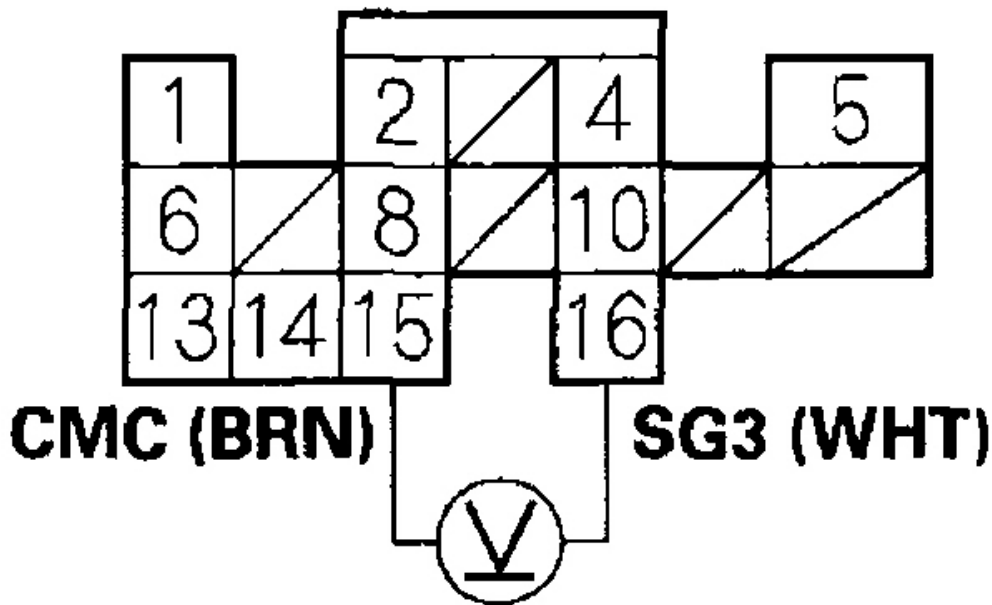
YES - Go to step 10.

NO - Repair open in the wire(s) between the motor commutation sensor and the MCM (D13, D15, D16).

10. Remove the jumper wires.

11. Reconnect the MCM connector D (16P).
12. Turn the ignition switch ON (II).
13. Measure voltage between MCM connector terminals D15 and D16.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681348

Fig. 130: Measuring Voltage Between MCM Connector Terminals D15

And D16

Courtesy of AMERICAN HONDA MOTOR CO., INC.

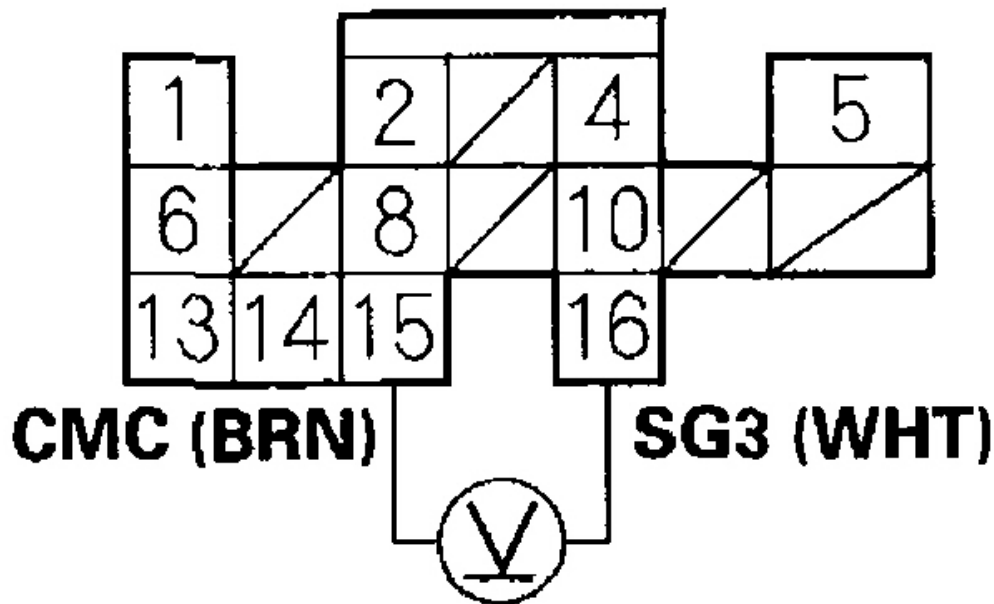
Is there more than 4.0 V?

YES - Go to step 14.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

14. Turn the ignition switch OFF.
15. Reconnect the motor commutation sensor 10P connector.
16. Start the engine, and let it idle.
17. Measure voltage between MCM connector terminals D15 and D16.

MCM CONNECTOR D (16P)



Wire side of female terminals

G03681349

Fig. 131: Measuring Voltage Between MCM Connector Terminals D15 And D16

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2-4 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Replace the sensor plate (see **IMA MOTOR REMOVAL/INSTALLATION**) or the motor commutation sensor (see **IMA MOTOR REMOVAL/INSTALLATION**).

DTC P1565 (42): MOTOR COMMUTATION SIGNAL PROBLEM; DTC P1566 (42): MOTOR COMMUTATION SIGNAL PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

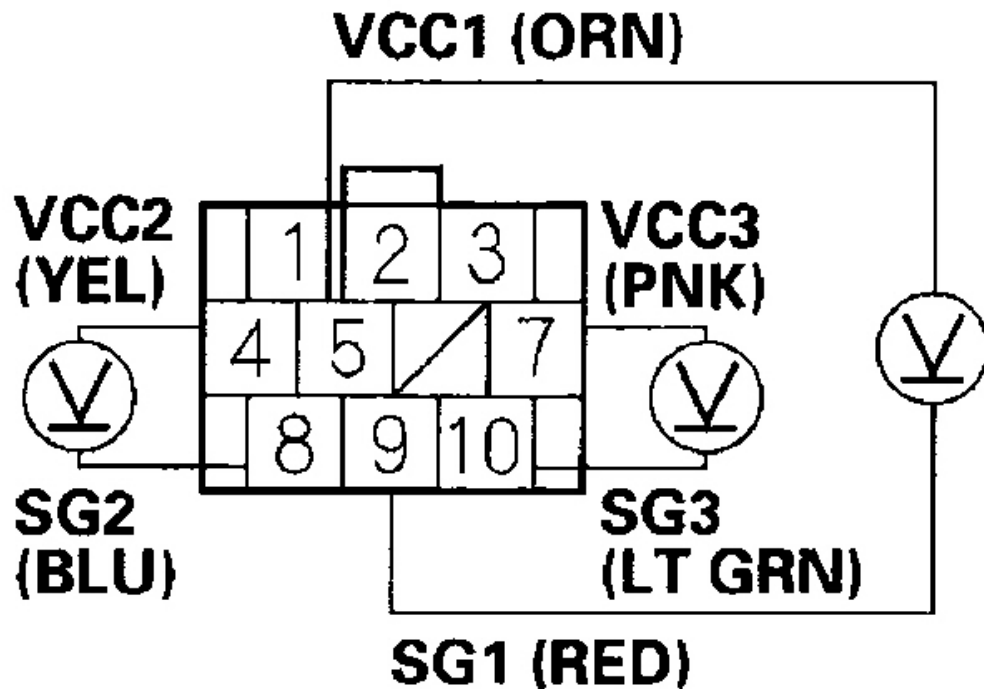
Is DTC P1565 (42) (P1566 (42)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the motor commutation sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Disconnect the motor commutation sensor 10P connector.
5. Turn the ignition switch ON (II).
6. In the engine compartment, measure voltage between motor commutation sensor 10P connector terminals No. 5 and No. 9, No. 4 and No. 8, and No. 7 and No. 10.

MOTOR COMMUTATION SENSOR 10P CONNECTOR



Wire side of female terminals

G03681350

Fig. 132: Measuring Voltage Between Motor Commutation Sensor 10P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

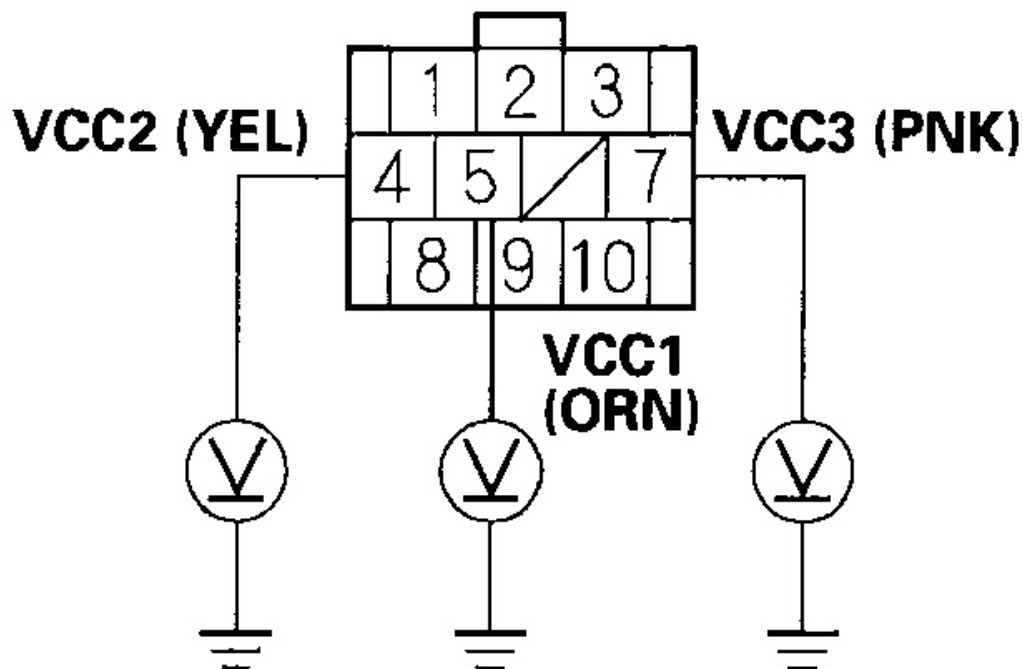
Is there about 5 V?

YES - Go to step 13 .

NO - Go to step 7.

7. Measure voltage between body ground and motor commutation sensor 10P connector terminals No. 5, No. 4, and No. 7.

MOTOR COMMUTATION SENSOR 10P CONNECTOR



Wire side of female terminals

G03681351

Fig. 133: Measuring Voltage Between Body Ground And Motor Commutation Sensor 10P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

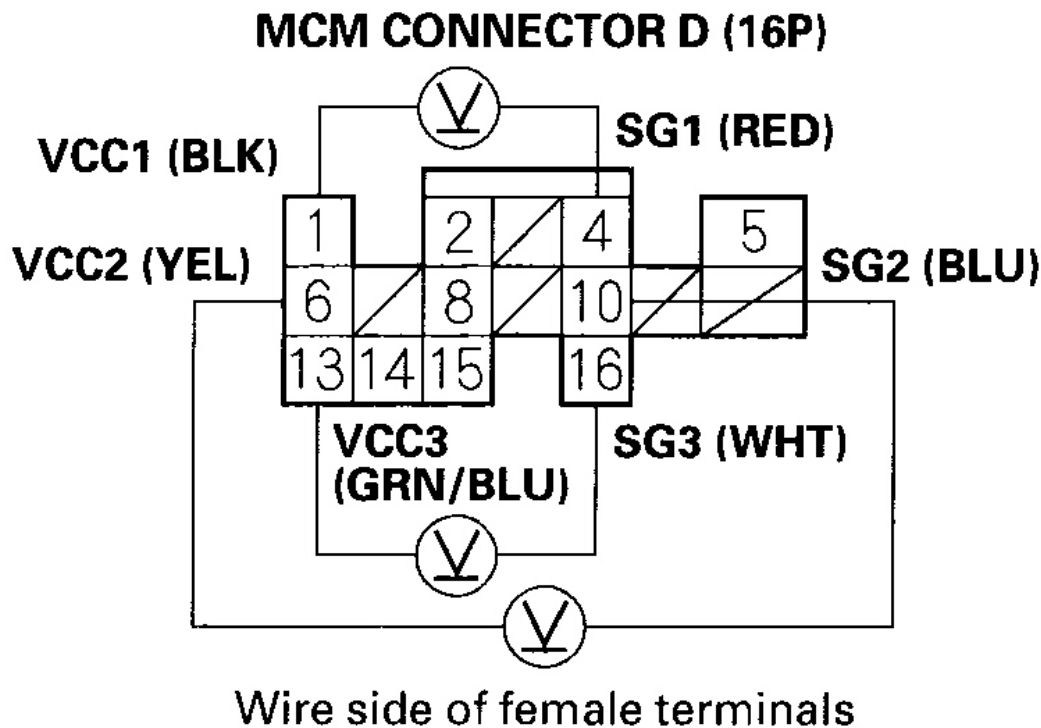
Is there about 5 V?

YES - Repair open in the wire between the motor commutation sensor and

the MCM (D4, D10, D16).

NO - Go to step 8.

8. Turn the ignition switch OFF.
9. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
10. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
11. Turn the ignition switch ON (II).
12. Measure voltage between MCM connector terminals D1 and D4, D6 and D10, and D13 and D16.



G03681352

Fig. 134: Measuring Voltage Between MCM Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

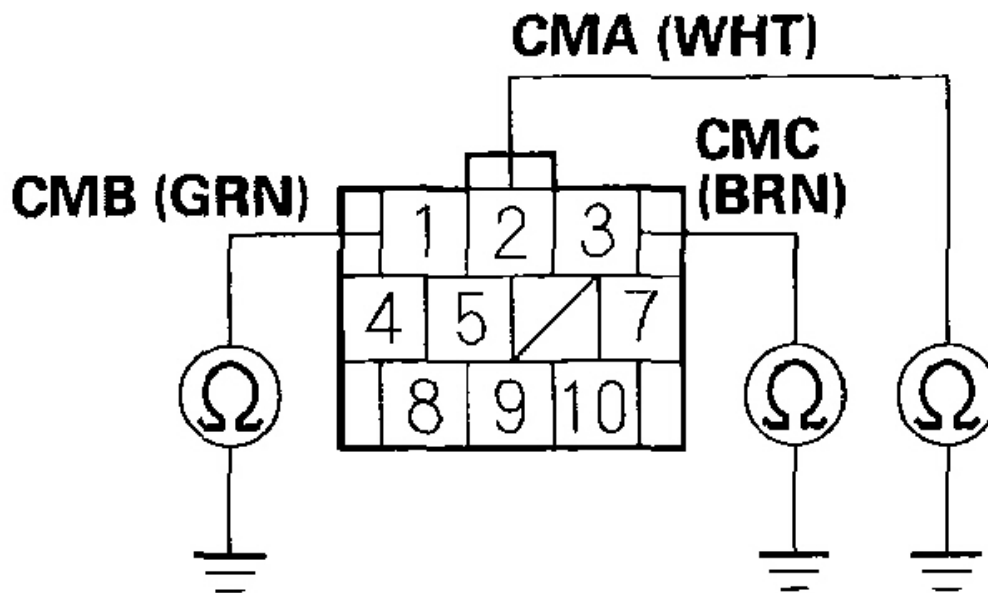
Is there about 5 V?

YES - Repair open in the wire between the motor commutation sensor and the MCM (D1, D6, D13).

NO - Substitute a known-good MCM and commutation sensor, and recheck. If the symptom/ indication goes away, replace the original MCM and commutation sensor.

13. Turn the ignition switch OFF.
14. Check for continuity between body ground and motor commutation sensor 10P connector terminals No. 1, No. 2, and No. 3 individually.

MOTOR COMMUTATION SENSOR 10P CONNECTOR



Wire side of female terminals

G03681353

Fig. 135: Checking Continuity Between Body Ground And Motor Commutation Sensor 10P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Go to step 17 .

15. Disconnect MCM connector D.

16. Check for continuity between body ground and motor commutation sensor 10P

connector terminals No. 1, No. 2, and No. 3 individually.

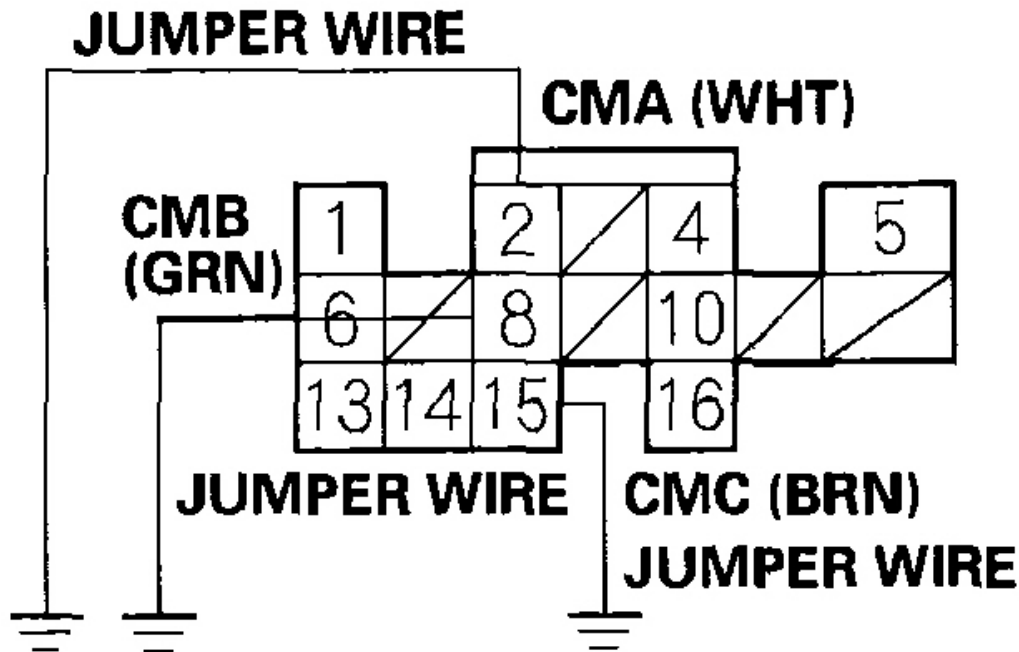
Is there continuity?

YES - Repair short to ground in the wire between the motor commutation sensor and the MCM (D2, D8, D15).

NO - Replace the MCM.

17. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
18. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
19. Connect MCM connector terminals D2, D8, and D15 to body ground with a jumper wire.

MCM CONNECTOR D (16P)



Wire side of female terminals

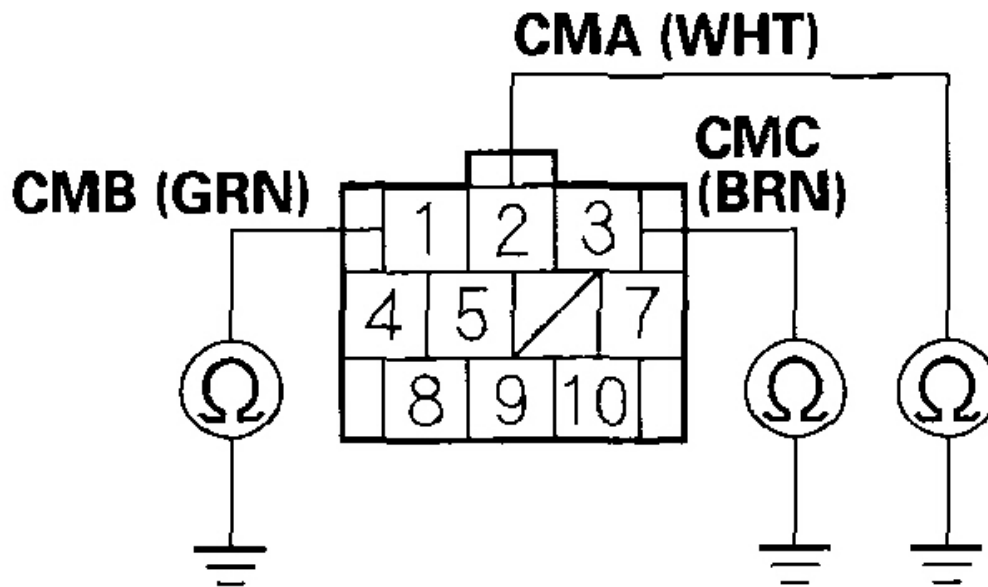
G03681354

Fig. 136: Connecting MCM Connector Terminals D2, D8 And D15 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Check for continuity between body ground and motor commutation sensor 10P connector terminals No. 1, No. 2, and No. 3 individually.

MOTOR COMMUTATION SENSOR 10P CONNECTOR



Wire side of female terminals

G03681355

Fig. 137: Checking Continuity Between Body Ground And Motor Commutation Sensor 10P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good MCM and motor commutation sensor, and recheck. If the symptom/ indication goes away, replace the original MCM and motor commutation sensor.

NO - Repair open in the wire between the motor commutation sensor and

the MCM (D2, D8, D15).

DTC P1568 (66): BATTERY MODULE INDIVIDUAL VOLTAGE INPUT PROBLEM; DTC P1570 (66): BATTERY MODULE INDIVIDUAL VOLTAGE INPUT PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1568 (66) (P1570 (66)*) indicated?**

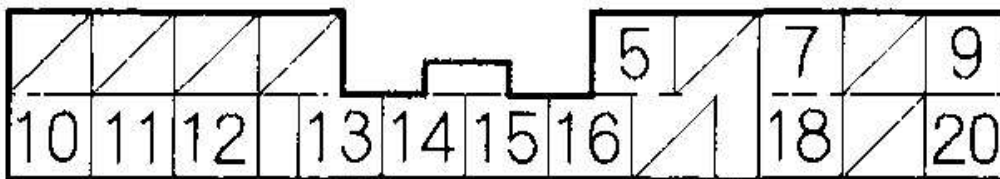
YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the BCM module and at the battery module.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Disconnect BCM module connector C (20P).
7. Measure voltage between these BCM module connector terminals:
 - C9 and C20
 - C20 and C7
 - C7 and C18
 - C18 and C5
 - C16 and C15
 - C15 and C14
 - C14 and C13

- C13 and C12
- C12 and C11
- C11 and C10

BCM MODULE CONNECTOR C (20P)



Wire side of female terminals

G03681356

Fig. 138: Measuring Voltage Between These BCM Module Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is each measurement about 7 V or more?

YES - Substitute a known-good BCM module, turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original BCM module.

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

DTC P1568 (70): BATTERY CELL TEMPERATURE SIGNAL CIRCUIT PROBLEM; DTC P1569 (70): BATTERY CELL TEMPERATURE SIGNAL CIRCUIT LOW INPUT; DTC P16BA (71): BATTERY CELL TEMPERATURE SIGNAL CIRCUIT HIGH INPUT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II), and wait for 5 seconds.

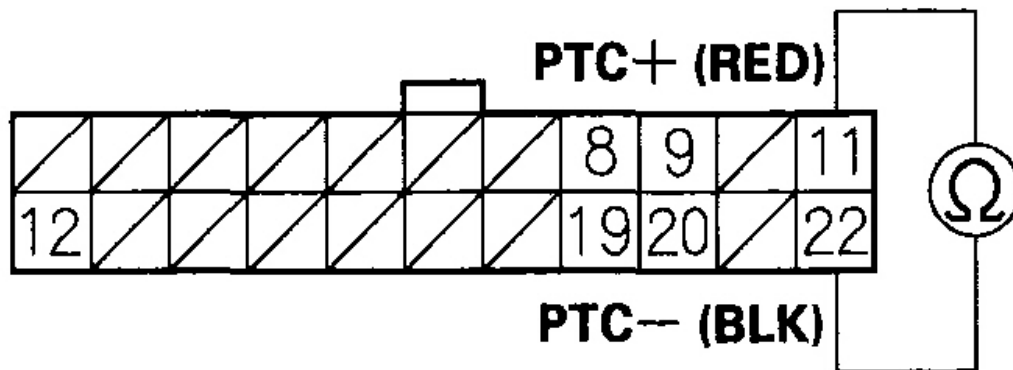
Is DTC P1568 (70) (P1569 (70)*) or P16BA (71)* Indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the BCM module and at the battery module.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Measure resistance between BCM module connector terminals B11 and B22.

BCM MODULE CONNECTOR B (22P)



Wire side of female terminals

G03681357

Fig. 139: Measuring Resistance Between BCM Module Connector Terminals B11 And B22

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 10 ohm-1 kohm ?

YES - Substitute a known-good BCM module, and recheck. If the symptom/indication goes away, replace the original BCM module.

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

NOTE: If some of the DTCs listed below are stored at the same time as DTC P1571 (55), troubleshoot those DTCs first, then recheck for DTC P1571 (55).

DTC P1559 (16), P1560 (17): Motor commutation sensor A

DTC P1561 (18), P1562 (52): Motor commutation sensor B

DTC P1563 (53), P1564 (54): Motor commutation sensor C

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Start the engine.

Is DTC P1571 (55) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the motor commutation sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Check for a poor connection at the motor commutation sensor 10P connector.

Is the connection OK?

YES - Go to step 5.

NO - Repair the poor connection at the motor commutation sensor 10P connector, then go to step 8 .

5. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
7. Check the connection at MCM connector D (16P).

Is the connection OK?

YES - Go to step 8.

NO - Repair the poor connection at MCM connector D (16P), then go to step 8.

8. Reset the MCM (see **HOW TO RESET THE MCM**).
9. Start the engine.

Is DTC P1571 (55) indicated?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the motor commutation sensor and at the MCM.

DTC P1572 (32): MOTOR DRIVER MODULE (MDM) TEMPERATURE SIGNAL CIRCUIT LOW INPUT; DTC P15A0 (32): MOTOR DRIVER MODULE (MDM) TEMPERATURE SIGNAL CIRCUIT LOW INPUT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1572 (32) (P15A0 (32)*) indicated?**

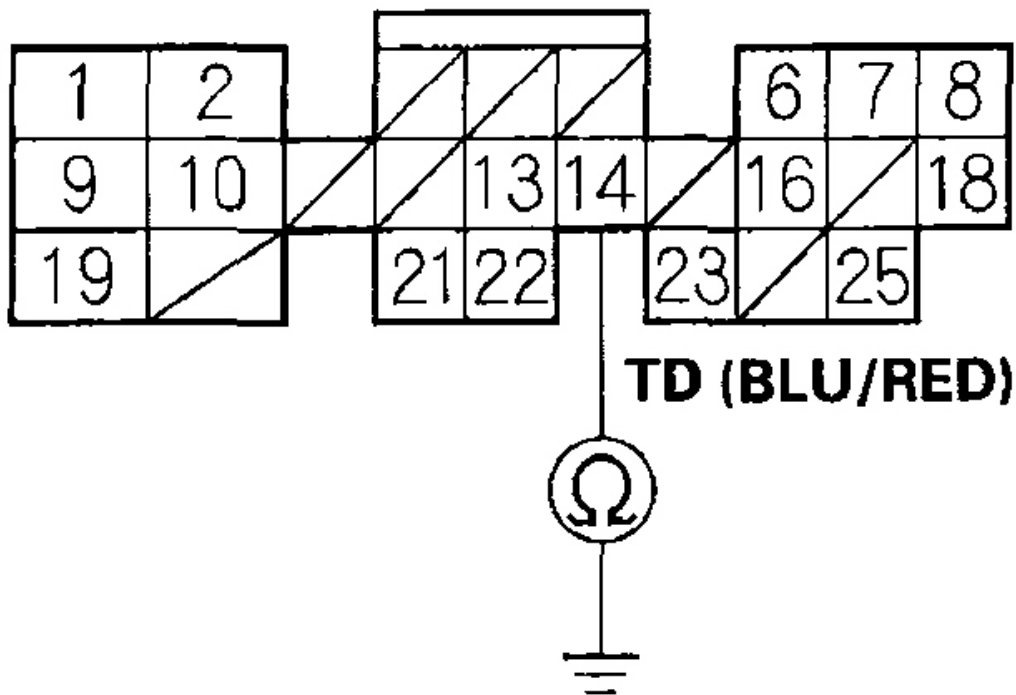
YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH**

VOLTAGE CIRCUIT).

6. Check for continuity between body ground and MCM connector terminal B14.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681358

Fig. 140: Checking Continuity Between Body Ground And MCM Connector Terminal B14

Courtesy of AMERICAN HONDA MOTOR CO., INC.

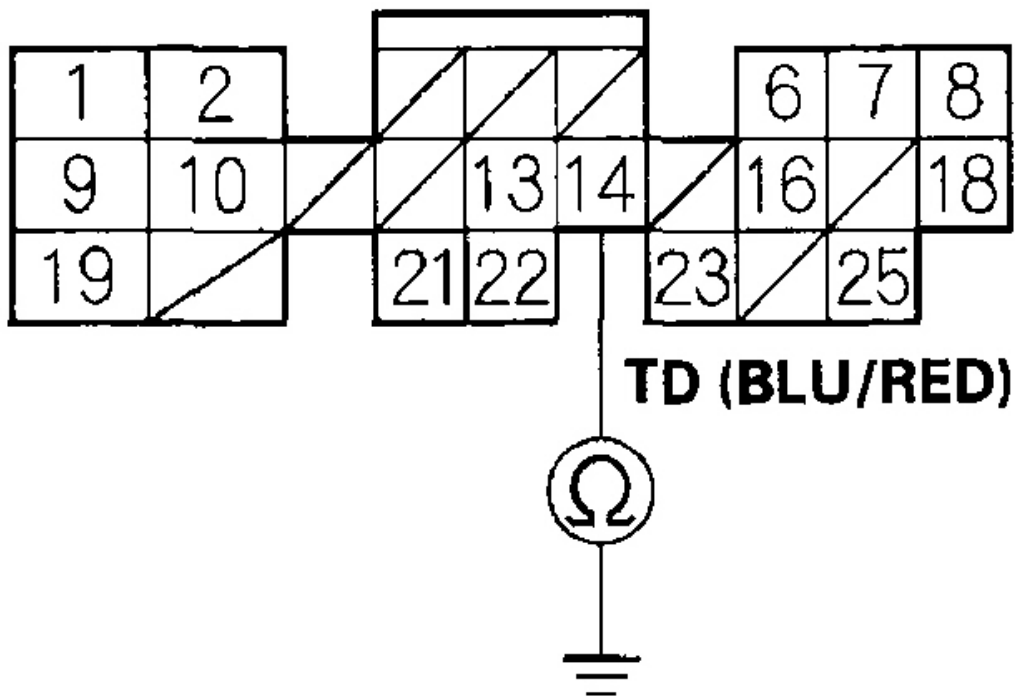
Is there continuity?

YES - Go to step 7.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

7. Disconnect the power converter wire harness 24P connector.
8. Check for continuity between body ground and MCM connector terminal B14.

MCM CONNECTOR B (25P)



Wire side of female terminals

G03681359

Fig. 141: Checking Continuity Between Body Ground And MCM Connector Terminal B14

Courtesy of AMERICAN HONDA MOTOR CO., INC.

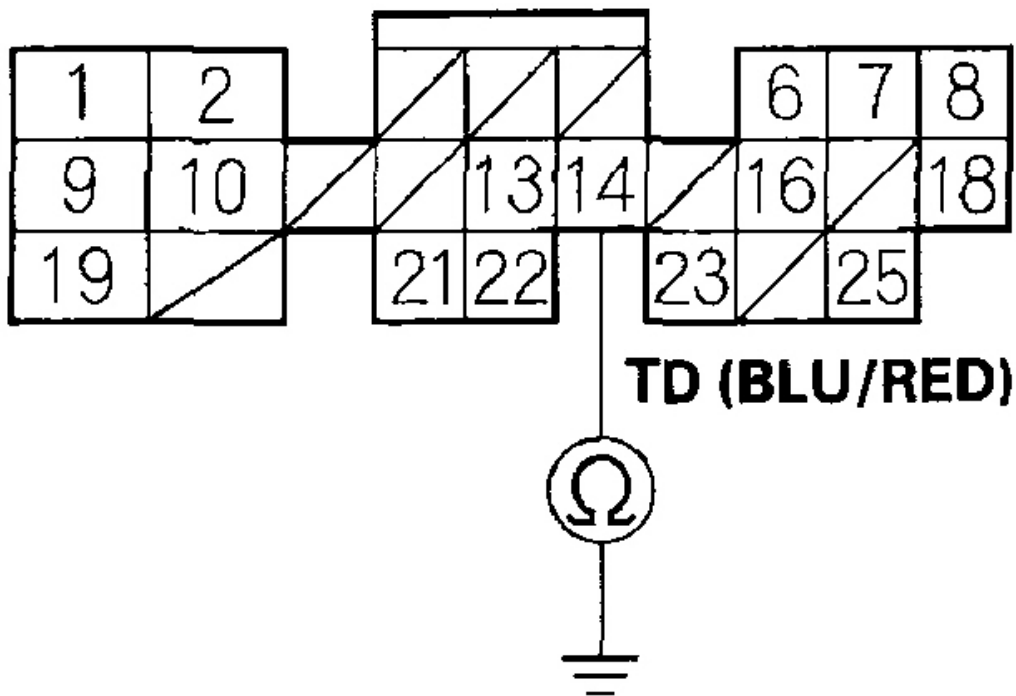
Is there continuity?

YES - Go to step 9.

NO - Go to step 11 .

9. Disconnect MCM connector B (25P).
10. Check for continuity between body ground and MCM connector terminal B14.

MCM CONNECTOR B (25P)



Wire side of female terminals

G03681360

Fig. 142: Checking Continuity Between Body Ground And MCM Connector Terminal B14

Courtesy of AMERICAN HONDA MOTOR CO., INC.

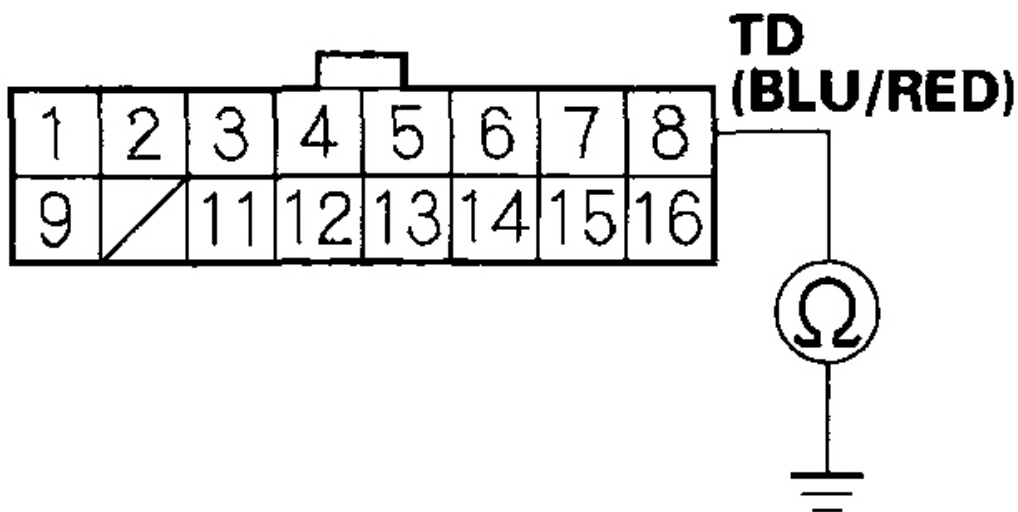
Is there continuity?

YES - Repair short to ground in the wire between the MCM (B14) and the voltage converter module.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

11. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**), and disconnect the voltage converter module 16P connector.
12. Check for continuity between the voltage converter module case and voltage converter module 16P connector terminal No. 8.

VOLTAGE CONVERTER MODULE 16P CONNECTOR



Wire side of female terminals

G03681361

Fig. 143: Checking Continuity Between Voltage Converter Module Case And Voltage Converter Module 16P Connector Terminal No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the power converter wire harness 24P connector and the voltage converter module.

NO - Replace the voltage converter module and the MPI module (see **POWER CONTROL UNIT (PCU)**)

DISASSEMBLY/REASSEMBLY).

DTC P1572 (33): MOTOR DRIVER MODULE (MDM) TEMPERATURE SIGNAL CIRCUIT HIGH INPUT; DTC P15A1 (33): MOTOR DRIVER MODULE (MDM) TEMPERATURE SIGNAL CIRCUIT HIGH INPUT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

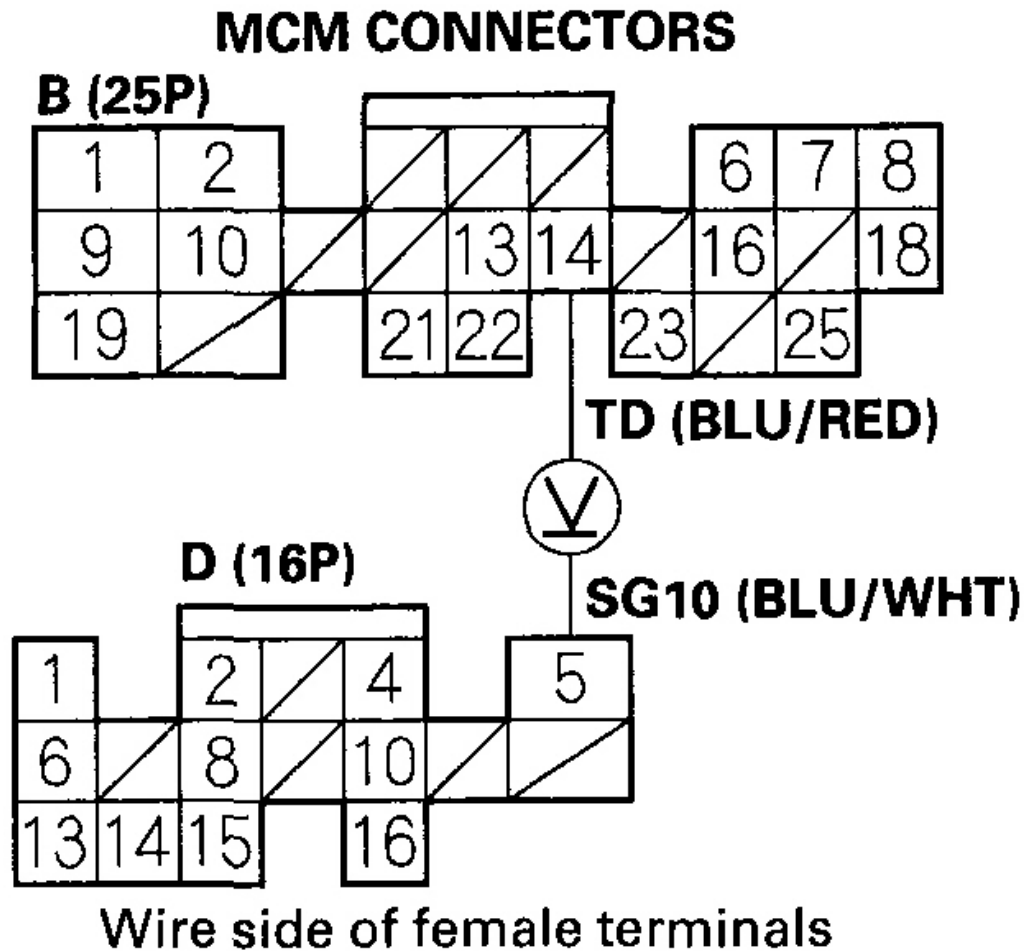
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1572 (33) (P15A1 (33)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B14 and D5.



G03681362

Fig. 144: Measuring Voltage Between MCM Connector Terminals B14 And D5

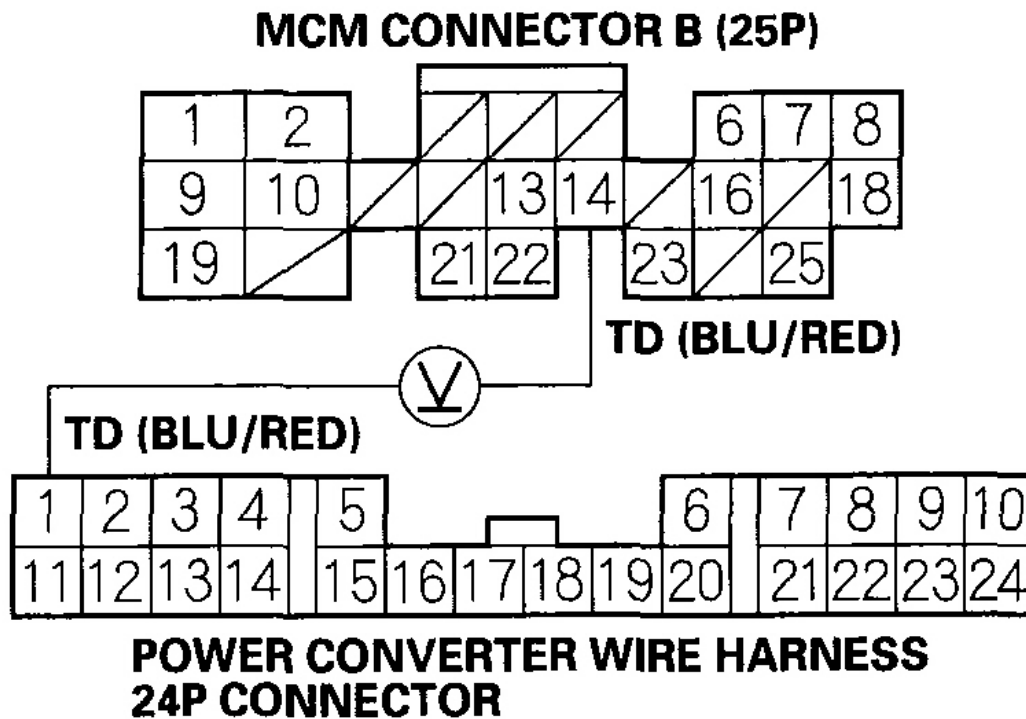
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 8.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

8. Measure voltage between power converter wire harness 24P connector terminal No. 1 and MCM connector terminal B14.



G03681363

Fig. 145: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminal No. 1 And MCM Connector Terminal B14
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

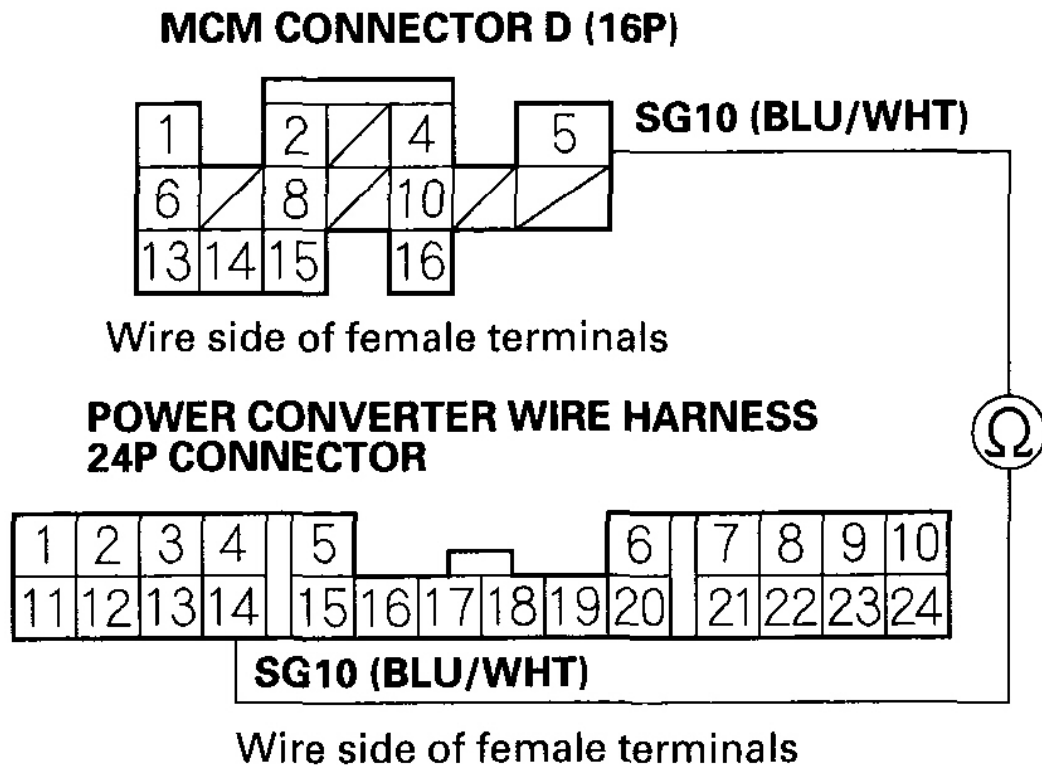
Is there about 5 V?

YES - Repair open in the wire between the MCM (B14) and the power converter wire harness 24P connector.

NO - Go to step 9.

9. Turn the ignition switch OFF.

10. Check for continuity between power converter wire harness 24P connector terminal No. 14 and MCM connector terminal D5.



G03681364

Fig. 146: Checking Continuity Between Power Converter Wire Harness 24P Connector Terminal No. 14 And MCM Connector Terminal D5
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

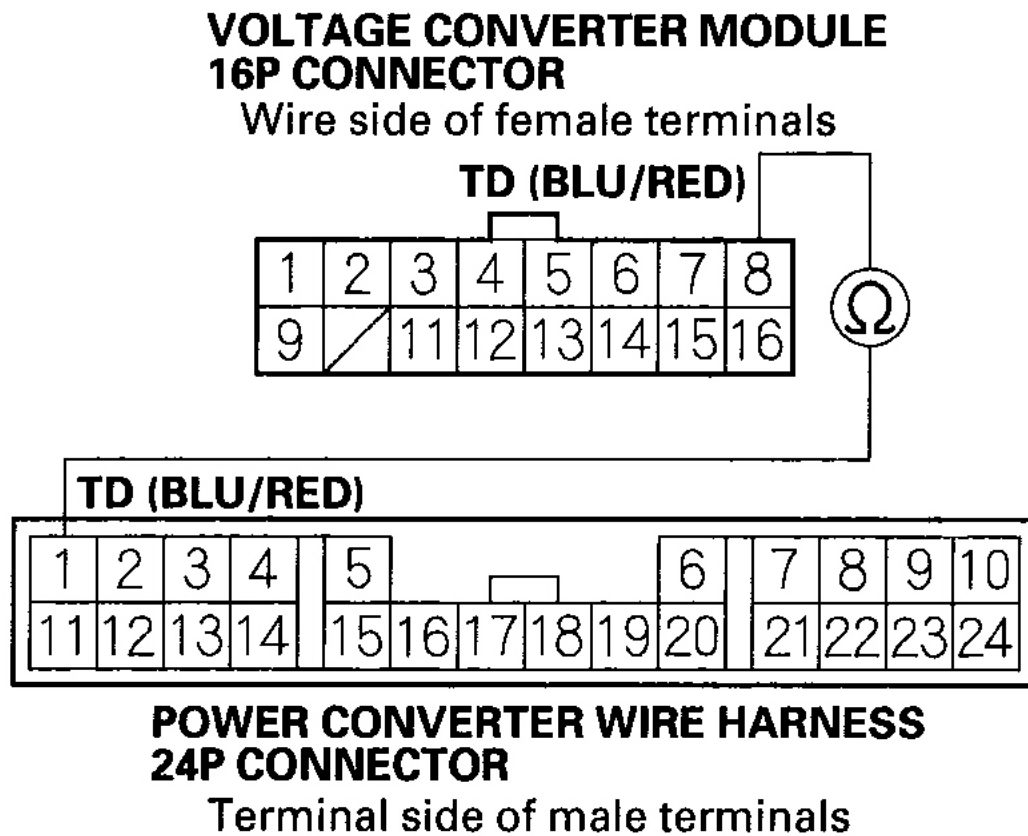
Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the MCM (D5) and the power converter wire harness 24P connector.

11. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**). Check for continuity between power

converter wire harness 24P connector terminal No. 1 and voltage converter module 16P connector terminal No. 8.



G03681365

Fig. 147: Checking Continuity Between Power Converter Wire Harness 24P Connector Terminal No. 1 And Voltage Converter Module 16P Connector Terminal No. 8

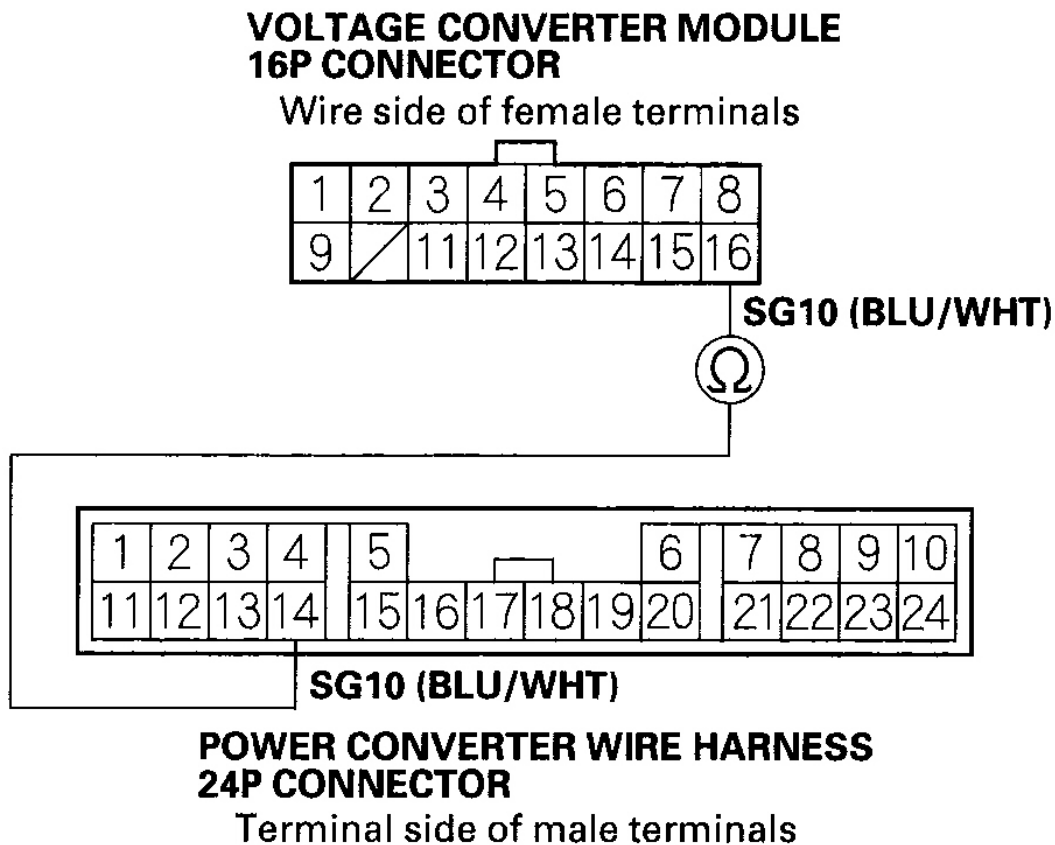
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair open in the wire between the power converter wire harness 24P connector and the voltage converter module.

12. Check for continuity between power converter wire harness 24P connector terminal No. 14 and voltage converter module 16P connector terminal No. 16.



G03681366

Fig. 148: Checking Continuity Between Power Converter Wire Harness 24P Connector Terminal No. 14 And Voltage Converter Module 16P Connector Terminal No. 16

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the voltage converter module and the MPI module (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Repair open in the wire between the power converter wire harness 24P connector and the voltage converter module.

DTC P1573 (36): DC-DC CONVERTER TEMPERATURE SIGNAL CIRCUIT LOW INPUT

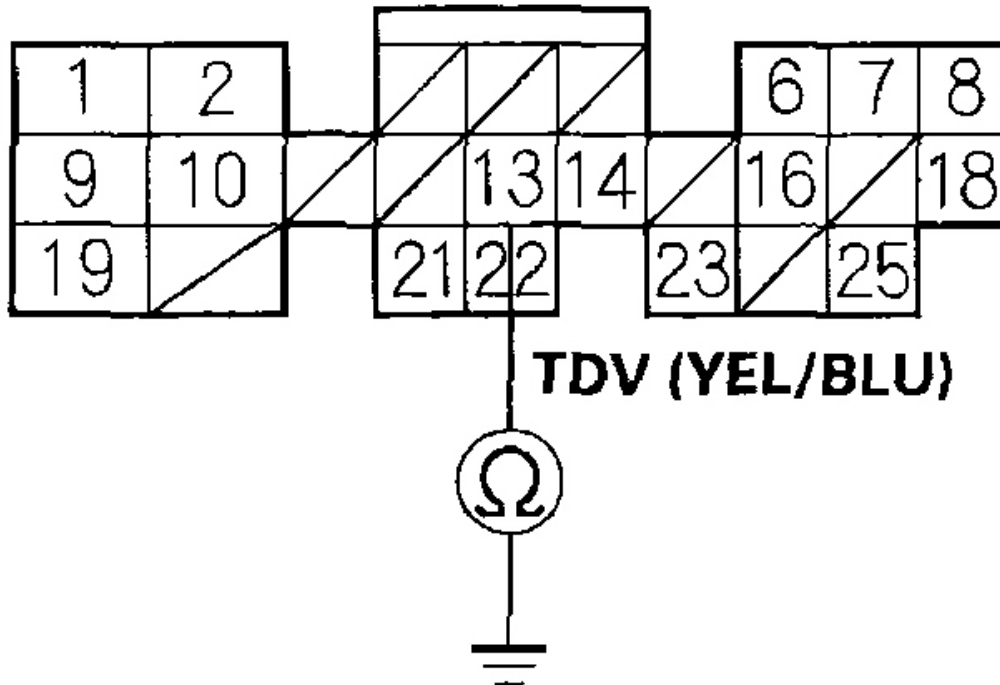
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1573 (36) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the DC-DC converter and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Check for continuity between body ground and MCM connector terminal B13.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681367

Fig. 149: Checking Continuity Between Body Ground And MCM Connector Terminal B13

Courtesy of AMERICAN HONDA MOTOR CO., INC.

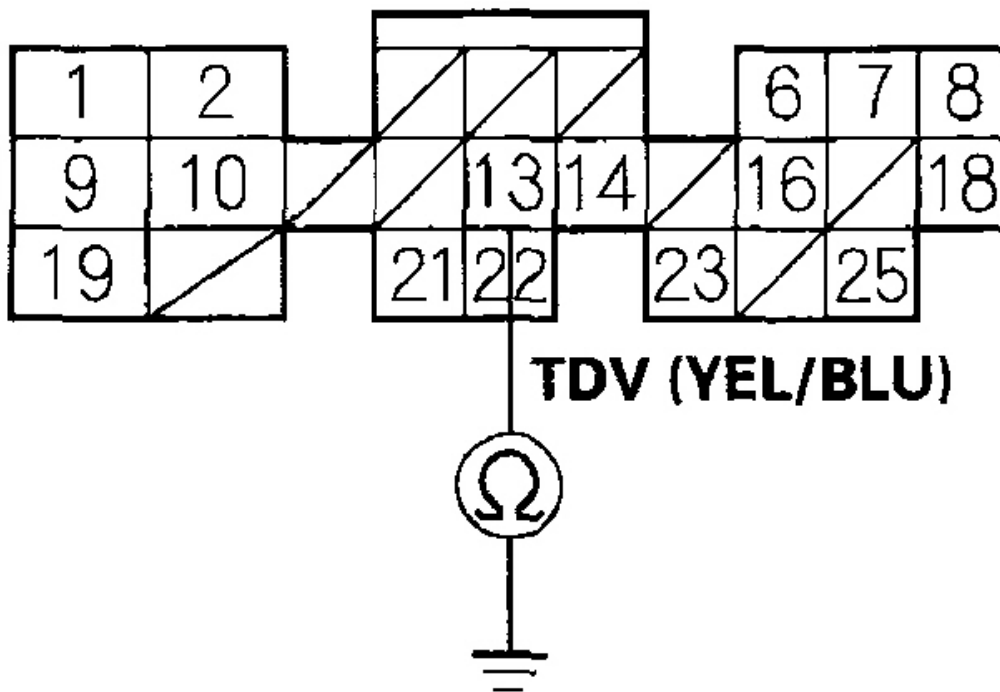
Is there continuity?

YES - Go to step 7.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

7. Disconnect the DC-DC converter 8P connector.
8. Check for continuity between body ground and MCM connector terminal B13.

MCM CONNECTOR B (25P)



Wire side of female terminals

G03681368

Fig. 150: Checking Continuity Between Body Ground And MCM Connector Terminal B13

Courtesy of AMERICAN HONDA MOTOR CO., INC.

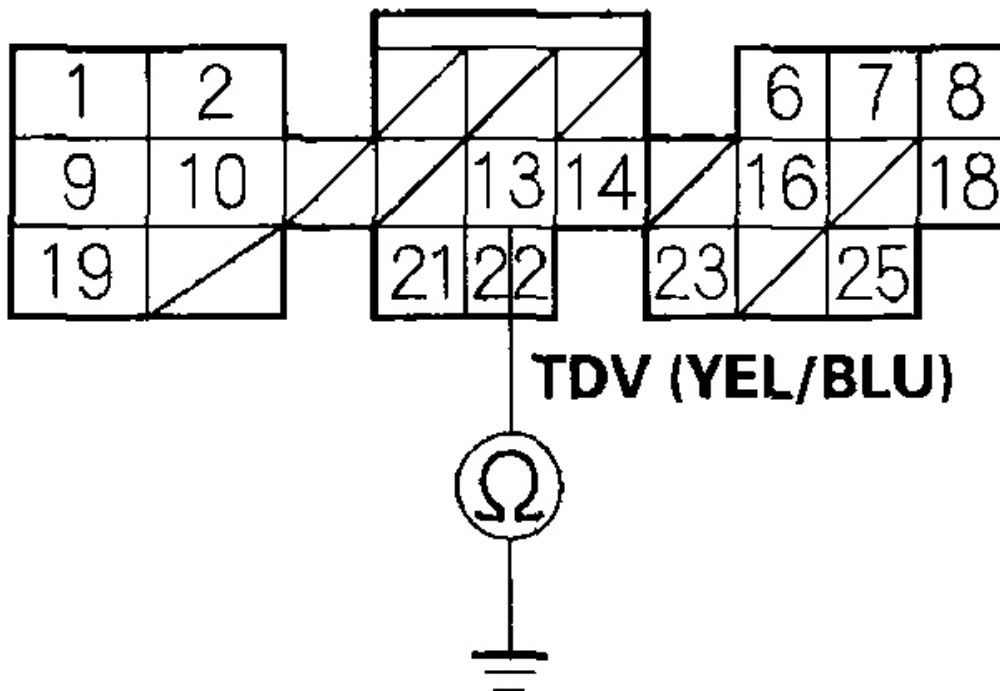
Is there continuity?

YES - Go to step 9.

NO - Replace the DC-DC converter (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

9. Disconnect MCM connector B (25P).
10. Check for continuity between body ground and MCM connector terminal B13.

MCM CONNECTOR B (25P)



Wire side of female terminals

G03681369

Fig. 151: Checking Continuity Between Body Ground And MCM Connector Terminal B13

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the DC-DC converter and the MCM (B13).

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

DTC P1573 (37): DC-DC CONVERTER TEMPERATURE SIGNAL CIRCUIT HIGH INPUT

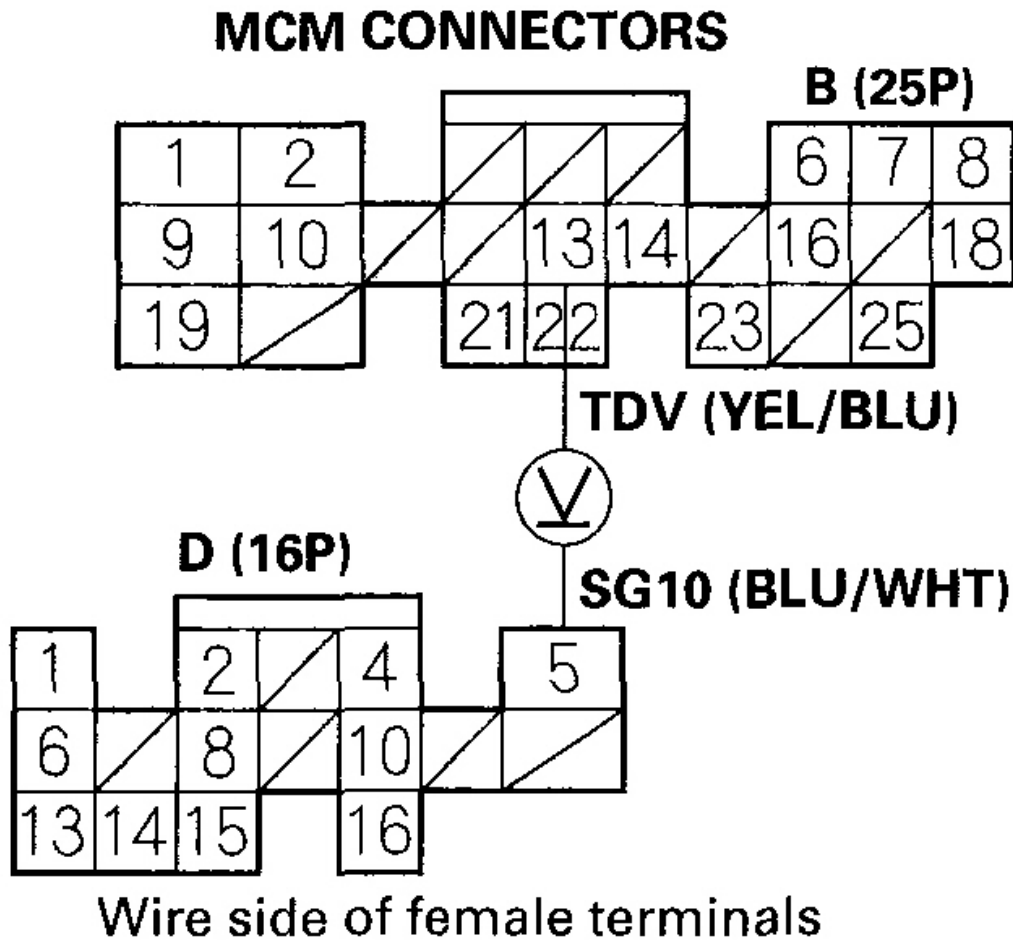
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1573 (37) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the DC-DC converter and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B13 and D5.



G03681370

Fig. 152: Measuring Voltage Between MCM Connector Terminals B13 And D5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

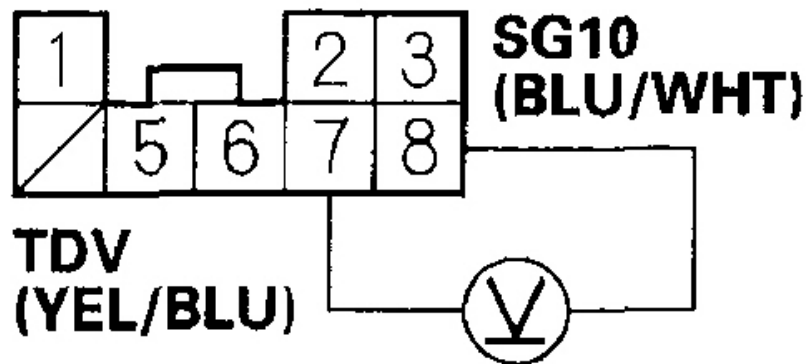
Is there about 5 V?

YES - Go to step 8.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

8. Turn the ignition switch OFF.
9. Disconnect the DC-DC converter 8P connector.
10. Turn the ignition switch ON (II).
11. Measure voltage between DC-DC converter 8P connector terminals No. 7 and No. 8.

DC-DC CONVERTER 8P CONNECTOR



Wire side of female terminals

G03681371

Fig. 153: Measuring Voltage Between DC-DC Converter 8P Connector Terminals No. 7 And 8

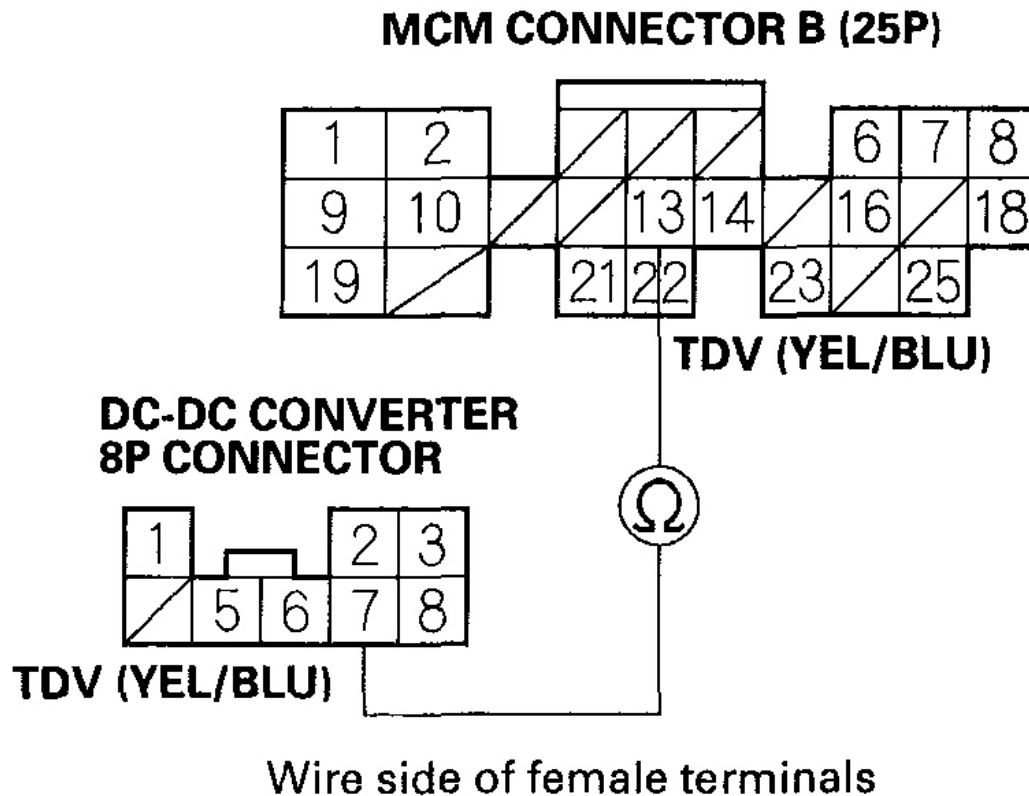
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the DC-DC converter (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Go to step 12.

12. Turn the ignition switch OFF.
13. Check for continuity between DC-DC converter 8P connector terminal No. 7 and MCM converter terminal B13.



G03681372

Fig. 154: Checking Continuity Between DC-DC Converter 8P Connector Terminal No. 7 And MCM Converter Terminal B13
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between the DC-DC converter and the MCM (D5).

NO - Repair open in the wire between the DC-DC converter and the MCM (B13).

DTC P1575 (12): MOTOR DRIVER MODULE (MDM) VOLTAGE PROBLEM, DTC P1576 (12): MOTOR DRIVER MODULE (MDM) VOLTAGE PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Check to see if the battery module switch is ON.

Is the switch ON?

YES - Go to step 2.

NO - Turn the battery module switch ON.

2. Reset the MCM (see **HOW TO RESET THE MCM**).
3. Turn the ignition switch ON (II).
4. Check for DTCs.

Is DTC P1635 (79) Indicated?

YES - Do the troubleshooting for DTC P1635 (79) (see **DTC P1586 (23): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL/BATTERY CURRENT SIGNAL CIRCUIT PROBLEM**), and recheck.

NO - Go to step 5.

5. Check for DTCs.

Is DTC P1446 (74)* (P1449 (74)**) indicated?

YES - Do the troubleshooting for P1446 (74)* (P1449 (74)**) (see **DTC P1446 (74): BATTERY MODULE INDIVIDUAL VOLTAGE INPUT DEVIATION** **DTC P1449 (74): BATTERY MODULE INDIVIDUAL VOLTAGE INPUT DEVIATION**), and recheck.

NO - Go to step 6.

6. Check for DTCs.

Is DTCM P1575 (12)(P1576 (12)*) indicated?**

YES - Go to step 8 .

NO - Go to step 7.

7. Start the engine, and hold the speed at 4,000 RPM for 2 seconds.

Is DTC P1575 (12) (P1576 (12)*) indicated?**

YES - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the high voltage contactor, high voltage contactor relay, BCM module, battery module, and at the MCM.

8. Turn the ignition switch OFF.

9. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).

10. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).

11. Check the connection at the BCM module C (20P) connector.

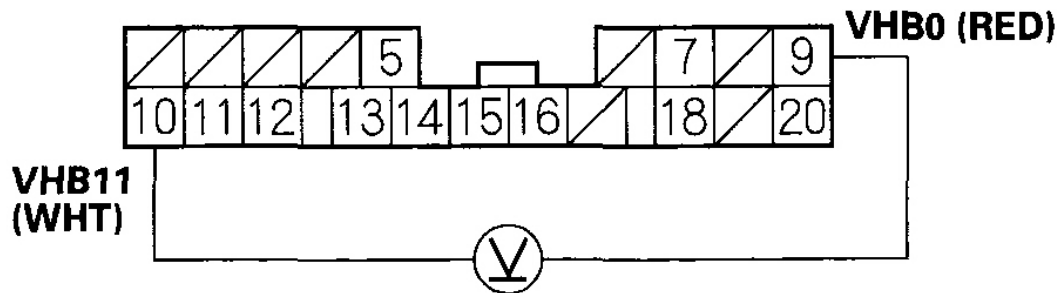
Is the connection OK?

YES - Go to step 12.

NO - Repair the connection.

12. Turn the ignition switch ON (II).

13. Measure voltage between BCM module connector terminals C9 and C10.

BCM MODULE CONNECTOR C (20P)

Wire side of female terminals

G03681373

Fig. 155: Measuring Voltage Between BCM Module Connector Terminals C9 And C10

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 140 V or more?

YES - Replace the MPI module, the voltage converter module, and the BCM module.

NO - Go to step 14.

14. Turn the battery module switch ON.

15. Turn the ignition switch ON (II).

16. Measure voltage between the main output terminals on the junction board.

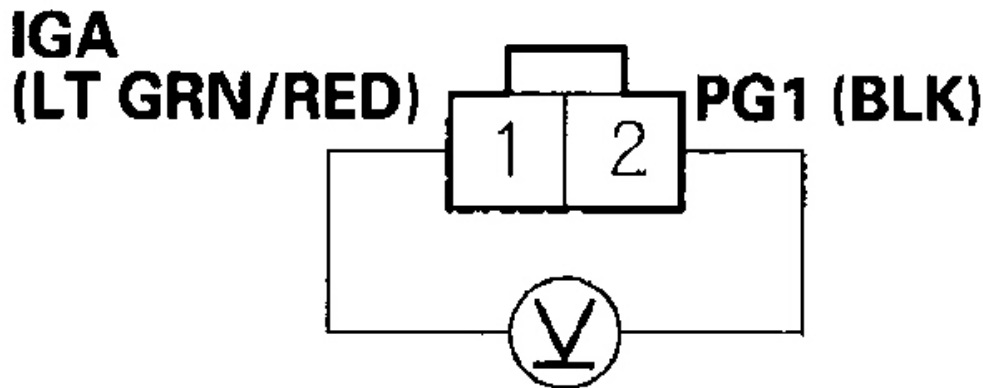
Is there about 140 V or more?

YES - Replace the MPI module, the voltage converter module, and the BCM module.

NO - Go to step 17.

17. Measure voltage between high voltage contactor 2P connector terminals No. 1 and No. 2.

HIGH VOLTAGE CONTACTOR 2P CONNECTOR



Wire side of female terminals

G03681374

Fig. 156: Measuring Voltage Between High Voltage Contactor 2P Connector Terminals No. 1 And 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the battery module (see BATTERY MODULE REMOVAL/INSTALLATION).

NO - Go to step 18.

18. Check the high voltage contactor control relay (see **POWER RELAY TEST**).

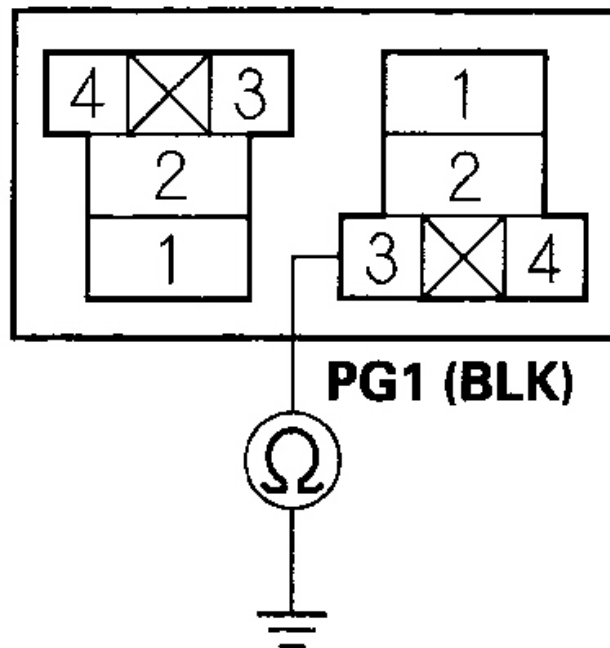
Is the relay OK?

YES - Go to step 19.

NO - Replace the high voltage contactor control relay.

19. Check for continuity between high voltage contactor control relay 4P connector terminal No. 3 and body ground.

HIGH VOLTAGE CONTACTOR CONTROL RELAY 4P CONNECTOR



Wire side of female terminals

G03681375

Fig. 157: Checking Continuity Between High Voltage Contactor Control

Relay 4P Connector Terminal No. 3 And Body Ground **Courtesy of AMERICAN HONDA MOTOR CO., INC.**

Is there continuity?

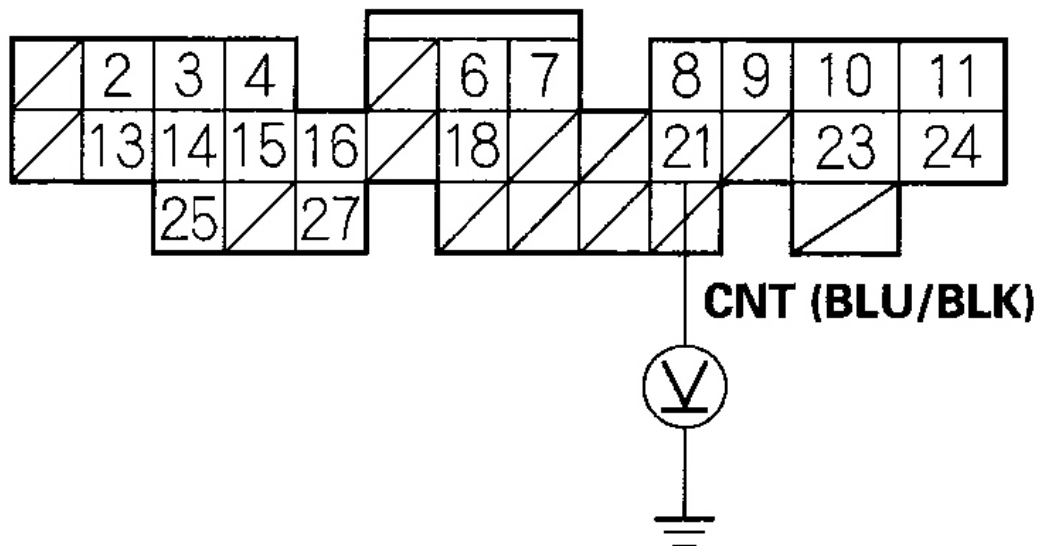
YES - Go to step 20.

NO - Repair open in the wire between the high voltage contactor control relay and G502.

20. Turn the ignition switch ON (II).

21. Measure voltage between MCM connector terminal A21 and body ground.

MCM CONNECTOR A (32P)



Wire side of female terminals

G03681376

Fig. 158: Measuring Voltage Between MCM Connector Terminal A21 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair open in the wire between the MCM (A21) and the high voltage contactor control relay.

NO - Substitute a known-good MCM, and recheck. If normal voltage is indicated, replace the original MCM.

**DTC P1576 (10): MOTOR DRIVER MODULE (MDM) VOLTAGE SIGNAL CIRCUIT LOW INPUT;
DTC P15A2 (10): MOTOR DRIVER MODULE (MDM) VOLTAGE SIGNAL CIRCUIT LOW INPUT**

NOTE:

- **Information marked with an asterisk (*) applies to 2005-2006 models.**
- **Information marked with double asterisk (**) applies to 2000-2004 models.**

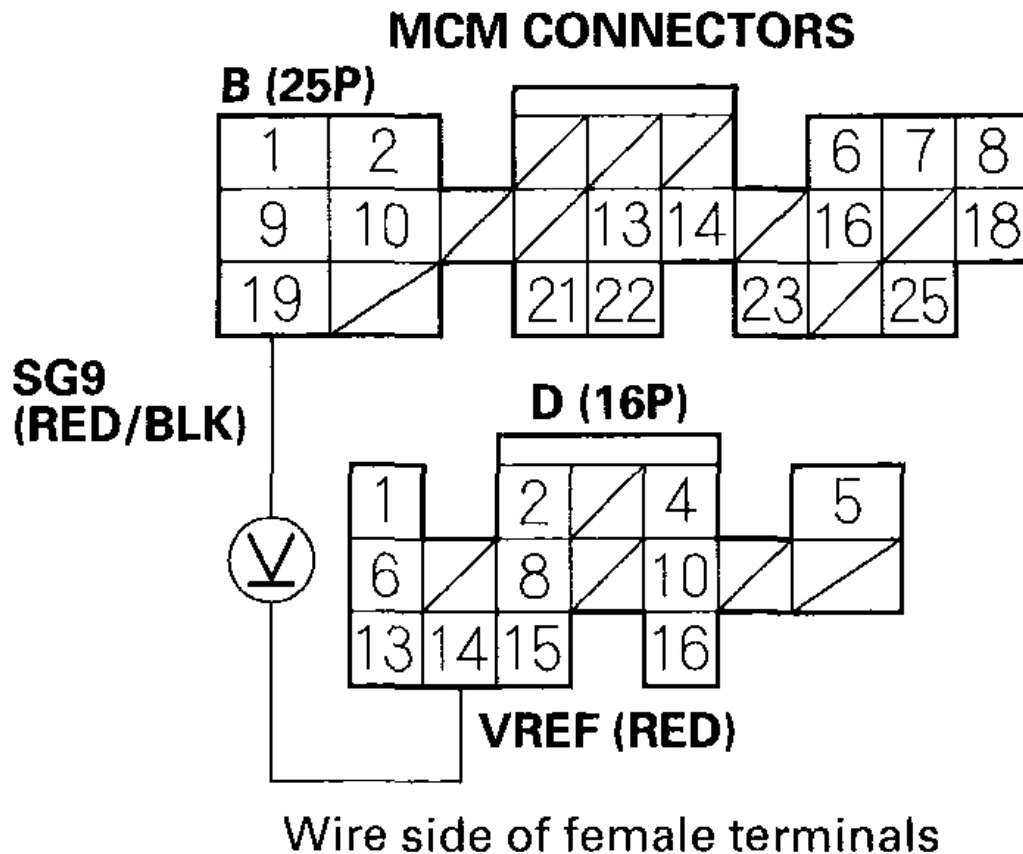
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1576 (10) (P15A2 (10)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals D14 and B19.



G03681377

Fig. 159: Measuring Voltage Between MCM Connector Terminals D14 And B19

Courtesy of AMERICAN HONDA MOTOR CO., INC.

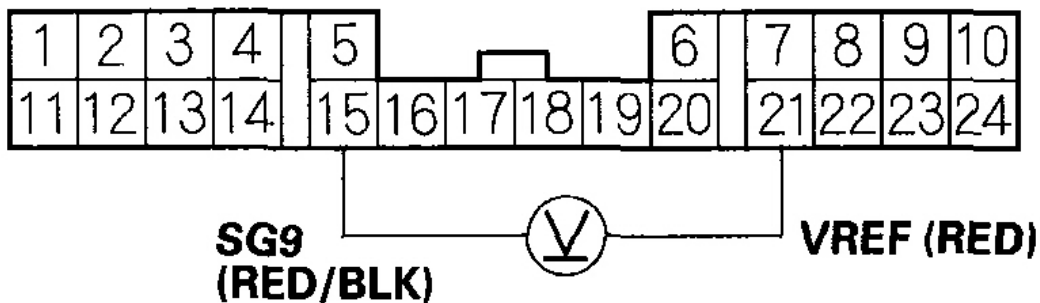
Is there about 5 V?

YES - Go to step 8.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

8. Measure voltage between the power converter wire harness 24P connector terminals No. 15 and No. 21.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681378

Fig. 160: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No. 15 And 21

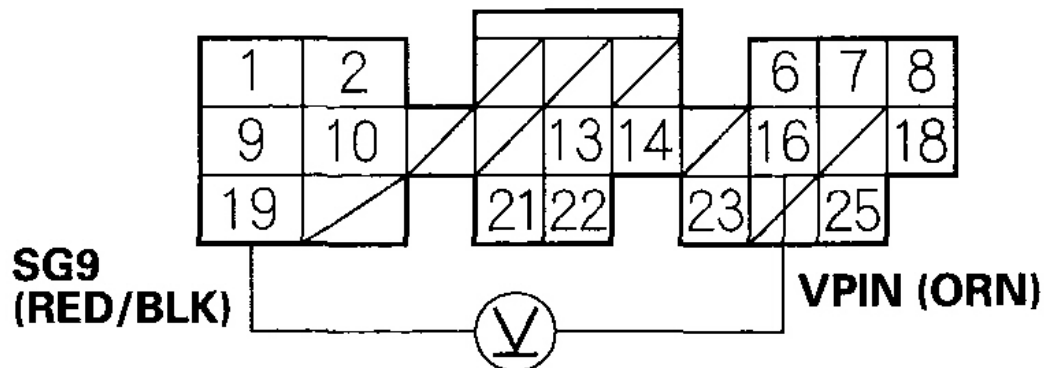
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 9.

NO - Repair open in the wire between the MCM (D14) and the voltage converter module.

9. Measure voltage between MCM connector terminals B16 and B19.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681379

Fig. 161: Measuring Voltage Between MCM Connector Terminals B16 And B19

Courtesy of AMERICAN HONDA MOTOR CO., INC.

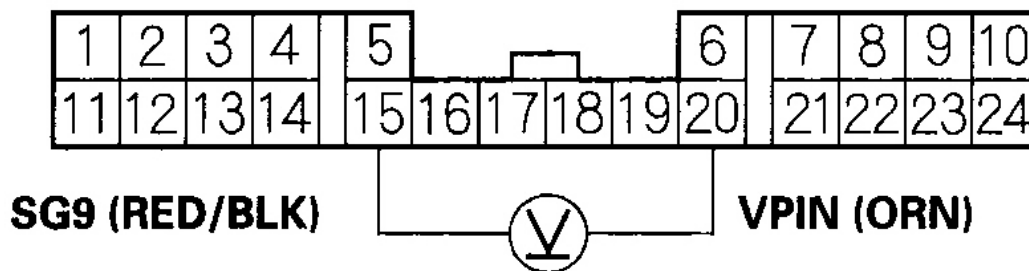
Is there about 0.5 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 10.

10. Measure voltage between power converter wire harness 24P connector terminals No. 15 and No. 20.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681380

Fig. 162: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No. 15 And 20

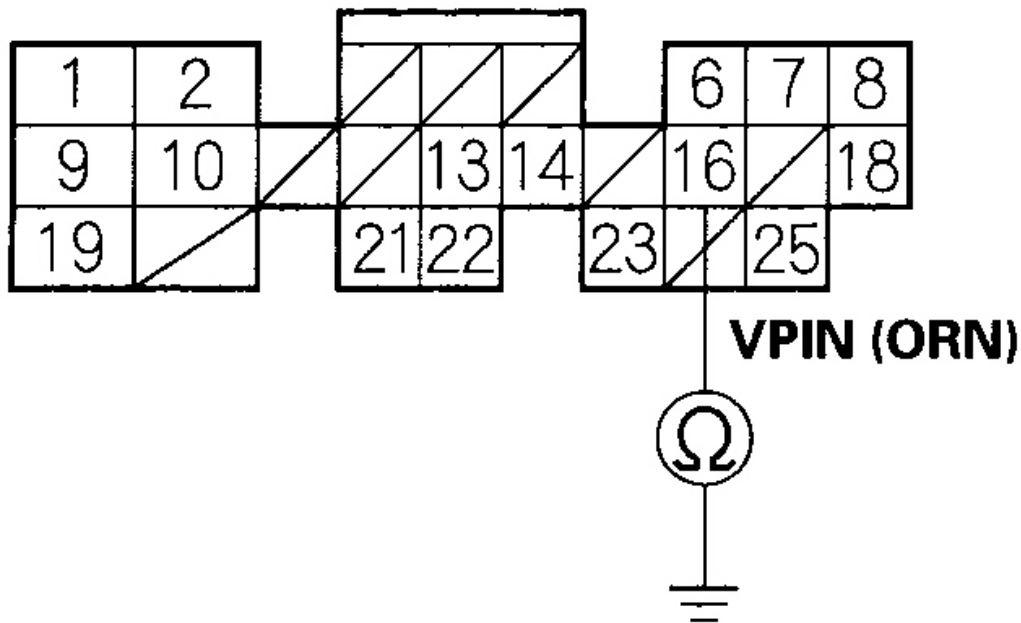
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.5 V?

YES - Repair open in wire between the MCM (B16) and power converter wire harness 24P connector.

NO - Go to step 11.

11. Turn the ignition switch OFF.
12. Disconnect the power converter wire harness 24P connector.
13. Check for continuity between MCM connector terminal B16 and body ground.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681381

Fig. 163: Checking Continuity Between MCM Connector Terminal B16 And Body Ground

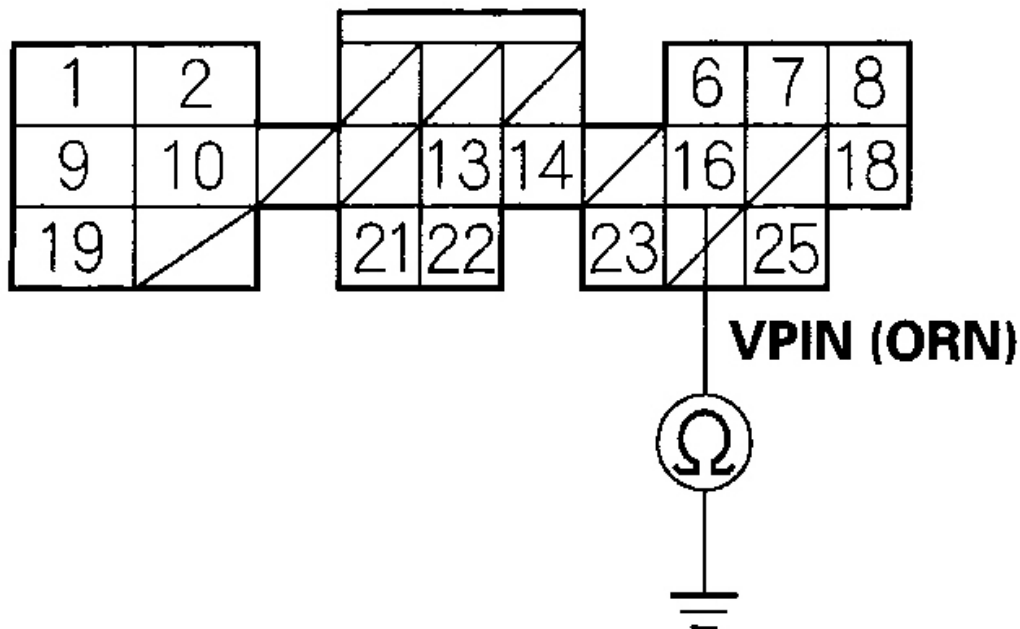
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Go to step 16 .

14. Disconnect MCM connector B (25P).
15. Check for continuity between MCM connector terminals B16 and body ground.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681382

Fig. 164: Checking Continuity Between MCM Connector Terminal B16 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (B16) and the voltage converter module.

NO - Substitute a known-good MCM and recheck. If the symptom/indication goes away, replace the original MCM.

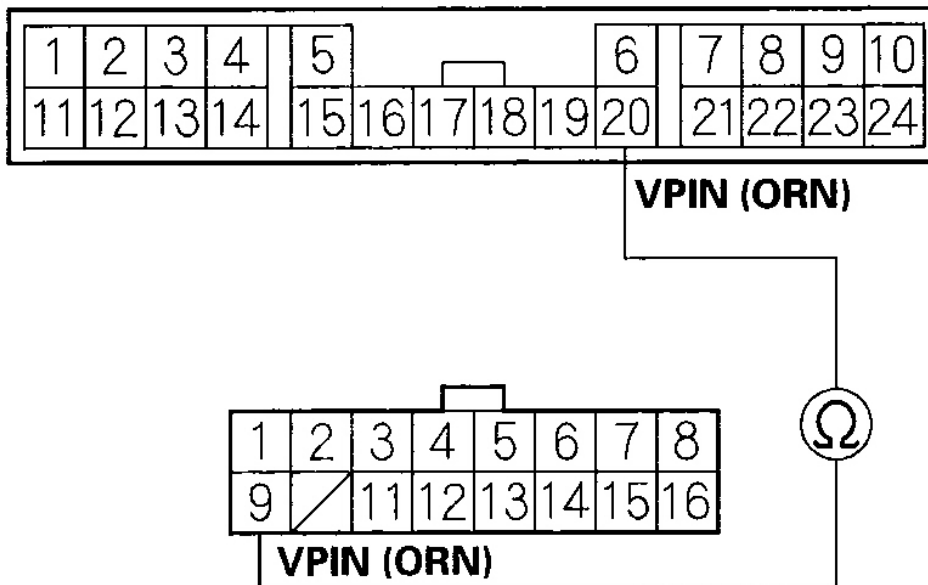
16. Remove the PCU (see **POWER CONTROL UNIT (PCU)**)

REMOVAL/INSTALLATION).

17. Check for continuity between voltage converter module 16P connector terminal No. 9 and power converter wire harness 24P connector terminal No. 20.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR

Terminal side of male terminals

**VOLTAGE CONVERTER MODULE 16P CONNECTOR**

Wire side of female terminals

G03681383

Fig. 165: Checking Continuity Between Voltage Converter Module 16P Connector Terminal No. 9 And Power Converter Wire Harness 24P Connector Terminal No. 20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

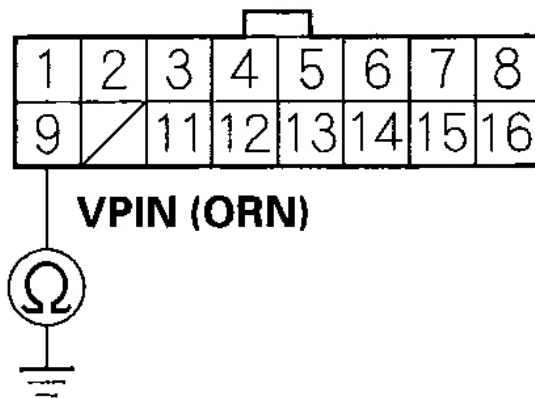
Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the voltage converter module and the power converter wire harness 24P connector.

18. Check for continuity between voltage converter module 16P connector terminal No. 9 and the metal PCU case.

VOLTAGE CONVERTER MODULE 16P CONNECTOR



Wire side of female terminals

G03681384

Fig. 166: Checking Continuity Between Voltage Converter Module 16P Connector Terminal No. 9 And Metal PCU Case
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

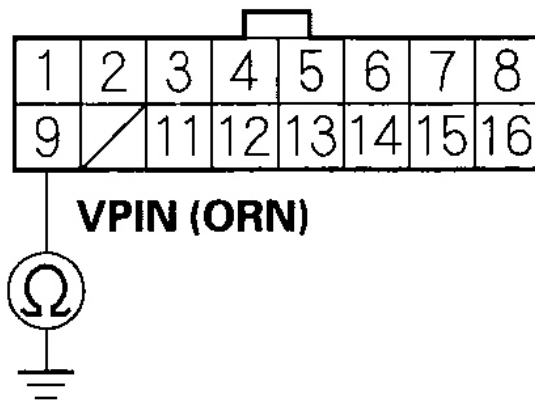
YES - Go to step 19.

NO - Replace the voltage converter module.

19. Disconnect the voltage converter module 16P connector.
20. Check for continuity between voltage converter module 16P connector

terminal No. 9 and the metal PCU case.

VOLTAGE CONVERTER MODULE 16P CONNECTOR



Wire side of female terminals

G03681385

Fig. 167: Checking Continuity Between Voltage Converter Module 16P Connector Terminal No. 9 And Metal PCU Case
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the voltage converter module and the power converter wire harness 24P connector.

NO - Replace the voltage converter module (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

DTC P1576 (11): MOTOR DRIVER MODULE (MDM) VOLTAGE SIGNAL CIRCUIT HIGH INPUT;
DTC P15A3 (11): MOTOR DRIVER MODULE (MDM) VOLTAGE SIGNAL CIRCUIT HIGH INPUT

NOTE:

• Information marked with an asterisk (*) applies to 2005-

2006 models.

- **Information marked with double asterisk (**) applies to 2000-2004 models.**

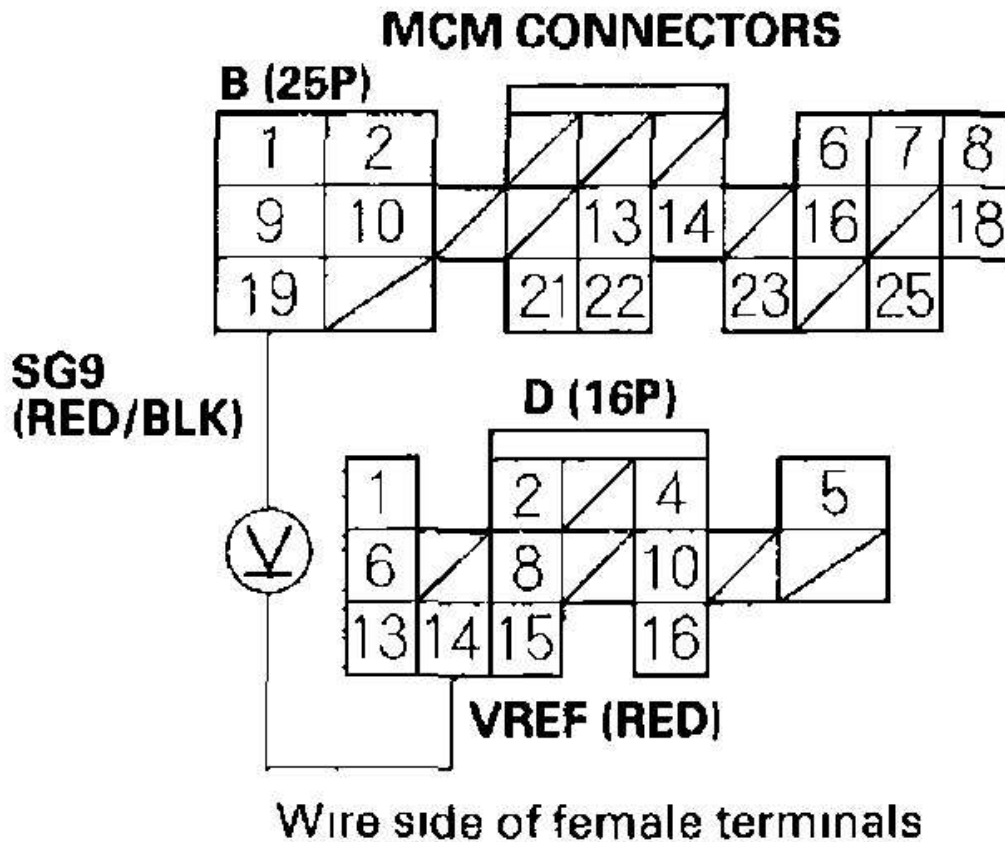
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1576(11) (P15A3(11)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the voltage converter module and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals D14 and B19.



G03681386

Fig. 168: Measuring Voltage Between MCM Connector Terminals D14 And B19

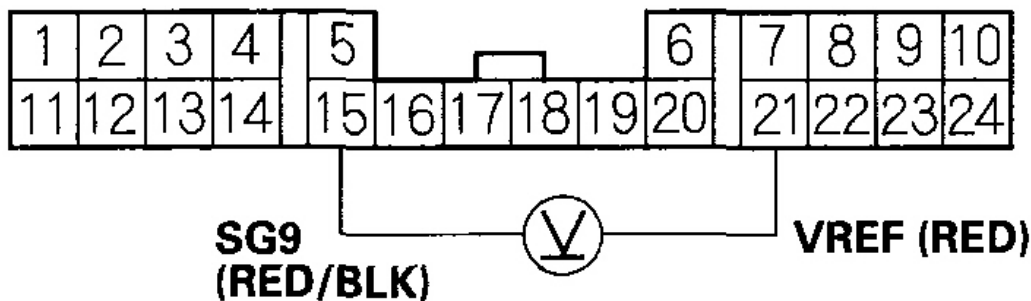
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 8.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

8. Measure voltage between power converter wire harness 24P connector terminals No. 15 and No. 21.

**POWER CONVERTER WIRE HARNESS
24P CONNECTOR**

Wire side of female terminals

G03681387

Fig. 169: Measuring Voltage Between Power Converter Wire Harness 24P Connector Terminals No. 15 And 21

Courtesy of AMERICAN HONDA MOTOR CO., INC.

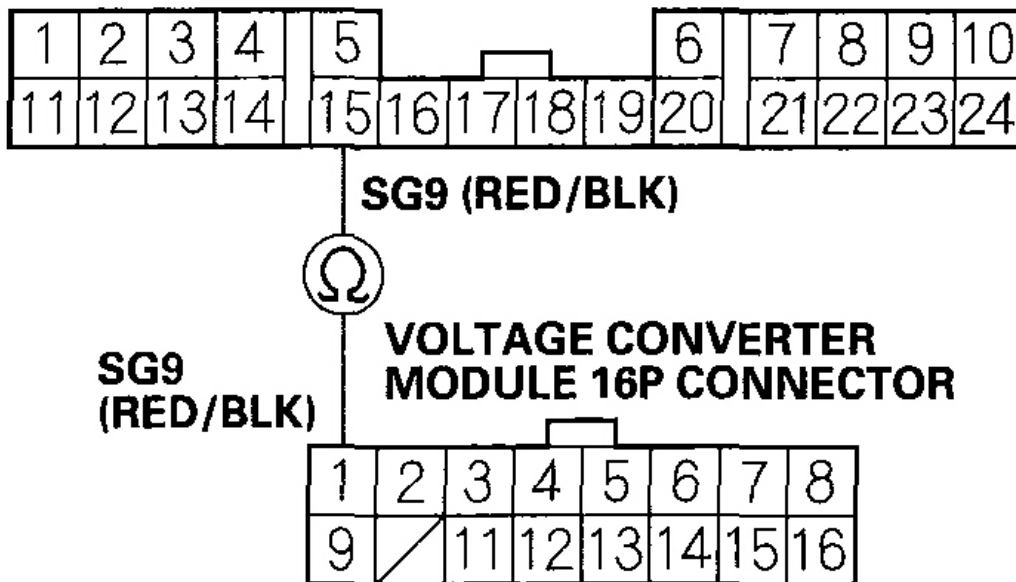
Is there about 5 V?

YES - Go to step 9.

NO - Repair open in the wire between the MCM (B19) and the voltage converter module.

9. Turn the ignition switch OFF.
10. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).
11. Check for continuity between power converter wire harness 24P connector terminal No. 15 and voltage converter module 16P connector terminal No. 1.

POWER CONVERTER WIRE HARNESS 24P CONNECTOR



Wire side of female terminals

G03681388

**Fig. 170: Checking Continuity Between Power Converter Wire Harness
24P Connector Terminal No. 15 And Voltage Converter Module 16P
Connector Terminal No. 1**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the voltage converter module and the MPI module (see **POWER CONTROL UNIT (PCU)
DISASSEMBLY/REASSEMBLY**).

NO - Repair open in the wire between the voltage converter module and the power converter wire harness 24P connector.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

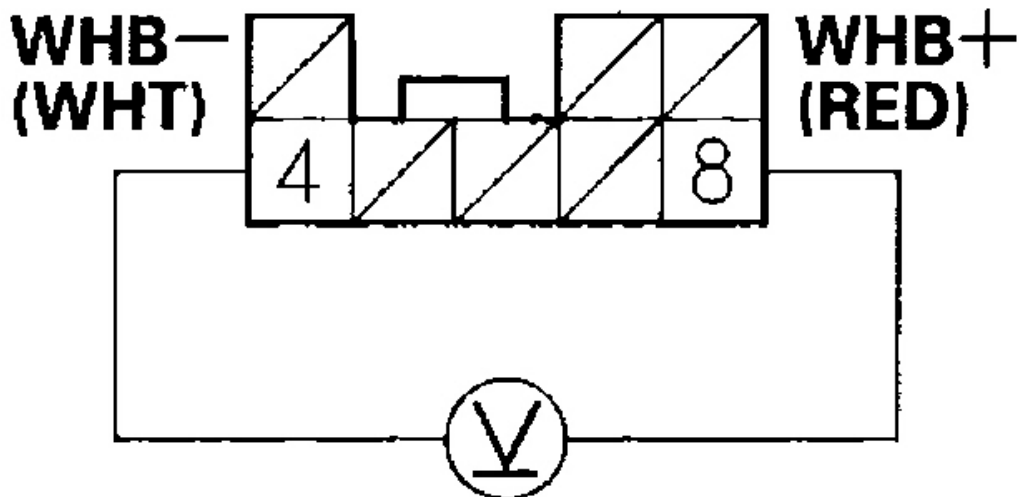
Is DTC P157 (8) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the battery module and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Connect the voltmeter positive probe to MCM connector terminal E8, and connect the negative probe to MCM connector terminal E4. Turn the battery module switch ON and measure the voltage.

MCM CONNECTOR E (8P)



Wire side of female terminals

G03681389

Fig. 171: Measuring Voltage Between MCM Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 100V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

DTC P1580 (65): BATTERY CURRENT CIRCUIT PROBLEM

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

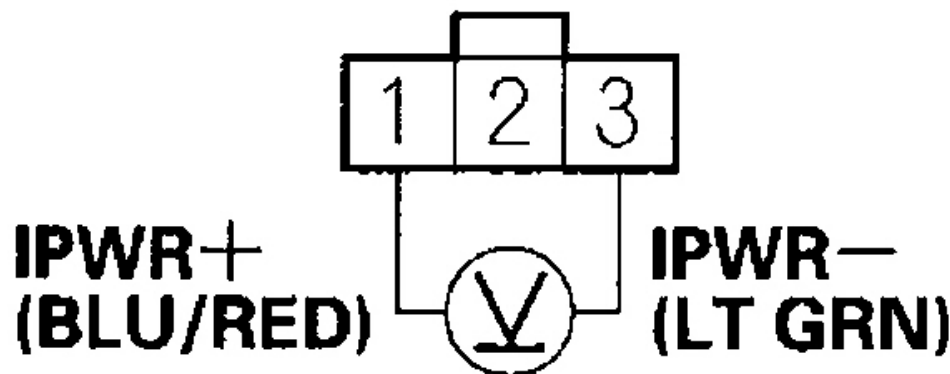
Is DTC P1580 (65) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the battery current sensor and at the BCM module.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between battery current sensor 3P connector terminals No. 1 and No. 3.

BATTERY CURRENT SENSOR 3P CONNECTOR



Wire side of female terminals

G03681390

Fig. 172: Measuring Voltage Between Battery Current Sensor 3P Connector Terminals No. 1 And 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 24 V?

YES - Go to step 8.

NO - Go to step 12 .

8. Turn the ignition switch OFF.
9. Disconnect the battery current sensor 3P connector.
10. Reset the MCM (see **HOW TO RESET THE MCM**).
11. Turn the ignition switch ON (II).

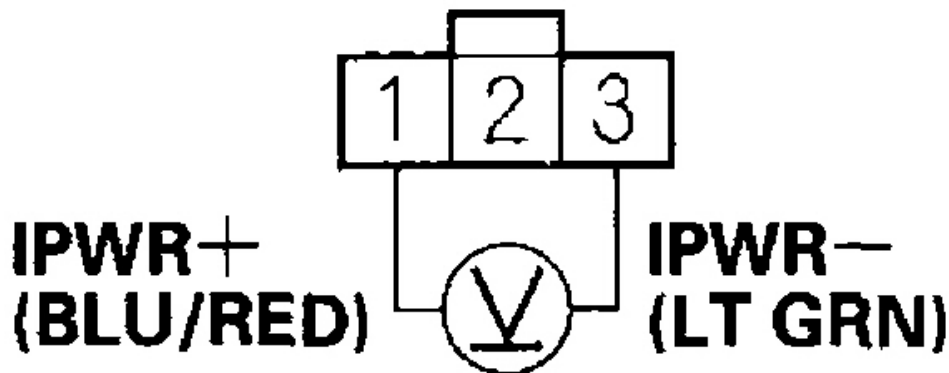
Is DTC P1580 (65) indicated?

YES - Substitute a known-good BCM module and recheck. If the symptom/indication goes away, replace the original BCM module.

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

12. Turn the ignition switch OFF.
13. Disconnect the battery current sensor 3P connector.
14. Turn the ignition switch ON (II).
15. Measure voltage between battery current sensor P connector terminals No. 1 and No. 3.

BATTERY CURRENT SENSOR 3P CONNECTOR



Wire side of female terminals

G03681391

Fig. 173: Measuring Voltage Between Battery Current Sensor 3P Connector Terminals No. 1 And 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

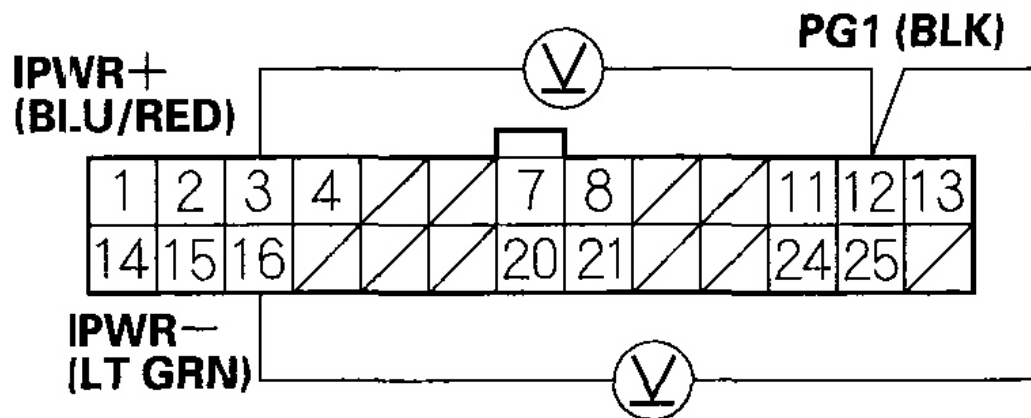
Is there about 24 V?

YES - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

NO - Go to step 16.

16. Measure voltage between BCM module connector terminals A3 and A12, and between A16 and A12.

BCM MODULE CONNECTOR A (26P)



Wire side of female terminals

G03681392

Fig. 174: Measuring Voltage Between BCM Module Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 12 V?

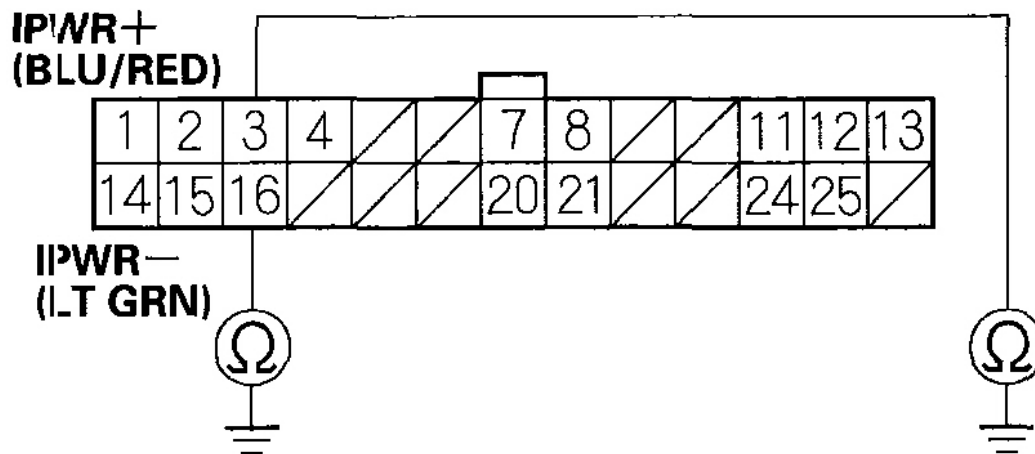
YES - Repair open in the wire between the BCM module (A3, A16) and the battery current sensor.

NO - Go to step 17.

17. Turn the ignition switch OFF.
 18. Disconnect BCM module connector A (26P).
 19. Check for continuity between body ground and BCM module connector

terminals A3 and A16 individually.

BCM MODULE CONNECTOR A (26P)



Wire side of female terminals

G03681393

Fig. 175: Checking Continuity Between Body Ground And BCM Module Connector Terminals A3 And A16

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the BCM module and the battery current sensor.

NO - Replace the BCM module.

DTC P1581 (19): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT LOW INPUT; DTC P1587 (19): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT LOW INPUT

NOTE: • Information marked with a asterisk (*) applies to 2005-

2006 models.

- **Information marked with double asterisk (**) applies to 2000-2004 models.**

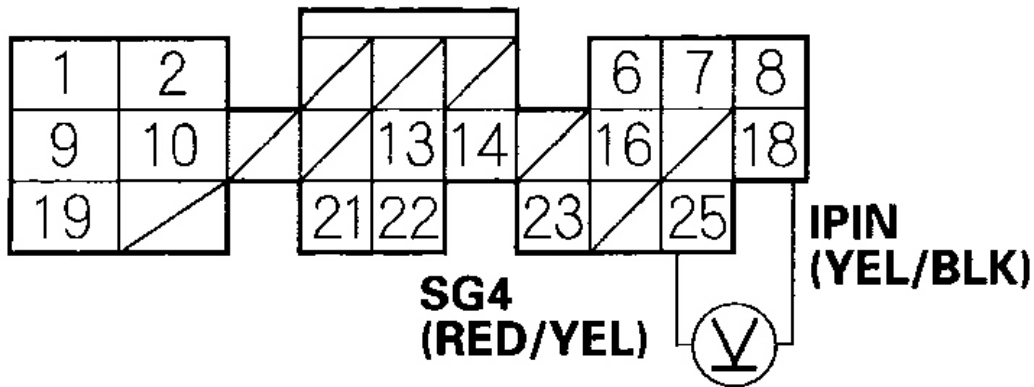
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1581 (19) (P1587 (19)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the MPI module current sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B18 and B25.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681394

Fig. 176: Measuring Voltage Between MCM Connector Terminals B18 And B25

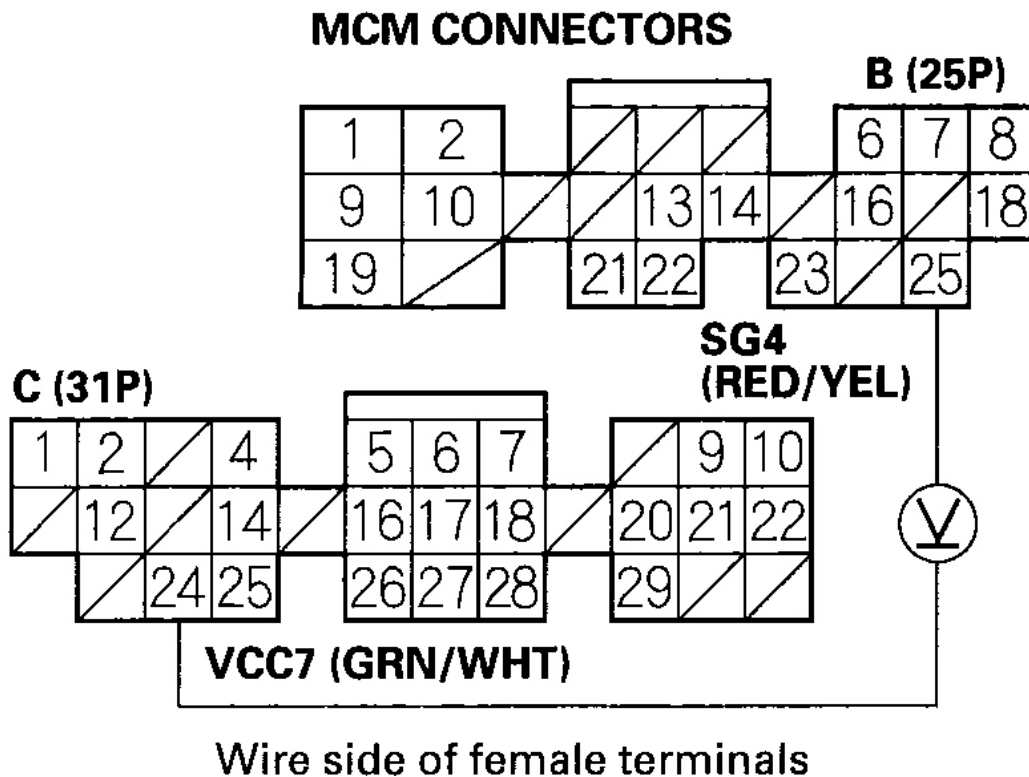
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.2 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Measure voltage between MCM connector terminals B25 and C24.



G03681395

Fig. 177: Measuring Voltage Between MCM Connector Terminals B25 And C24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

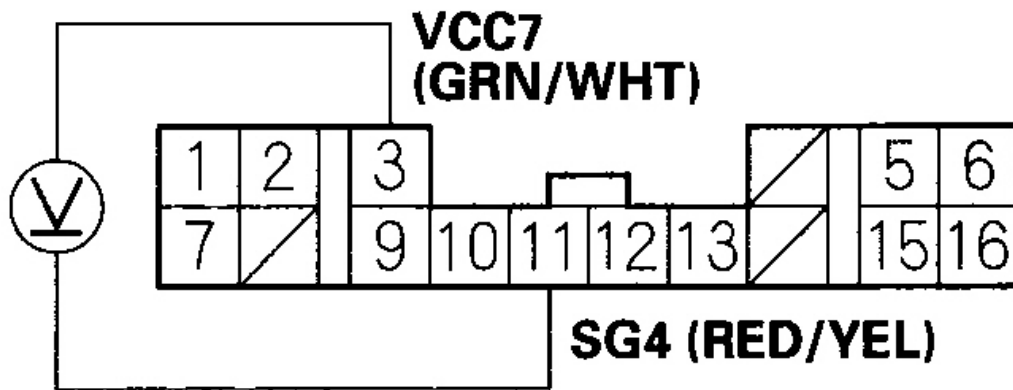
Is there about 5 V?

YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

9. Measure voltage between junction board 16 connector terminals No. 3 and No. 11.

JUNCTION BOARD 16P CONNECTOR



Wire side of female terminals

G03681396

**Fig. 178: Measuring Voltage Between Junction Board 16 Connector
Terminals No. 3 And 11**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

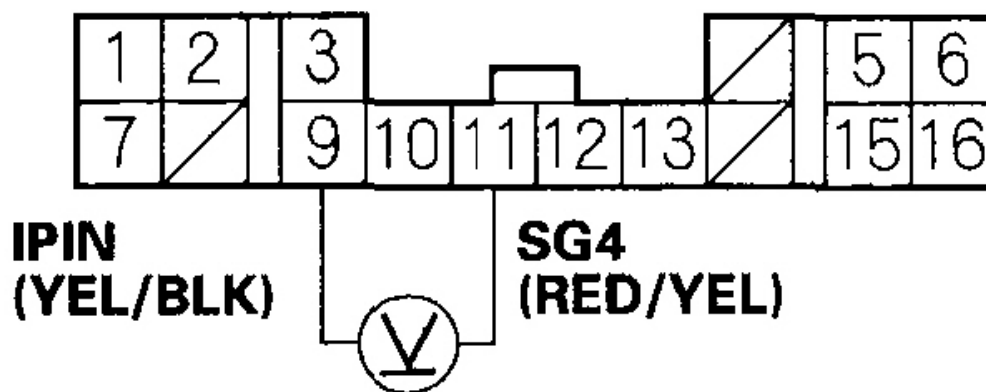
Is there about 5 V?

YES - Go to step 10.

NO - Repair open in the wire between the MCM (C24) and the junction board.

10. Measure voltage between junction board 16 connector terminals No. 9 and No. 11.

JUNCTION BOARD 16P CONNECTOR



Wire side of female terminals

G03681397

Fig. 179: Measuring Voltage Between Junction Board 16 Connector Terminals No. 9 And 11

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2.5 V?

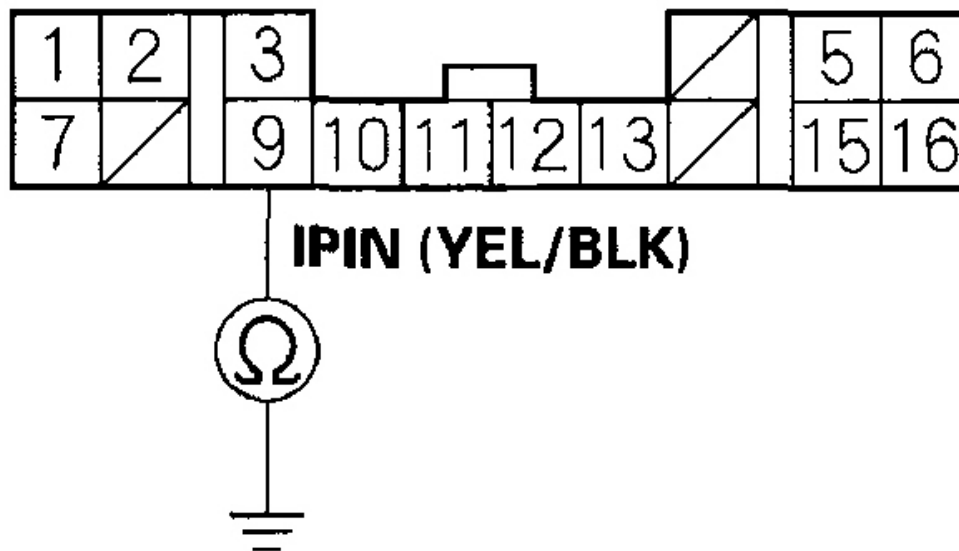
YES - Repair open in the wire between the MCM (B18) and the junction board.

NO - Go to step 11.

11. Disconnect MCM connector B (25P).

12. Check for continuity between junction board 16P connector terminal No. 9 and body ground.

JUNCTION BOARD 16P CONNECTOR



Wire side of female terminals

G03681398

Fig. 180: Checking Continuity Between Junction Board 16P Connector Terminal No. 9 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

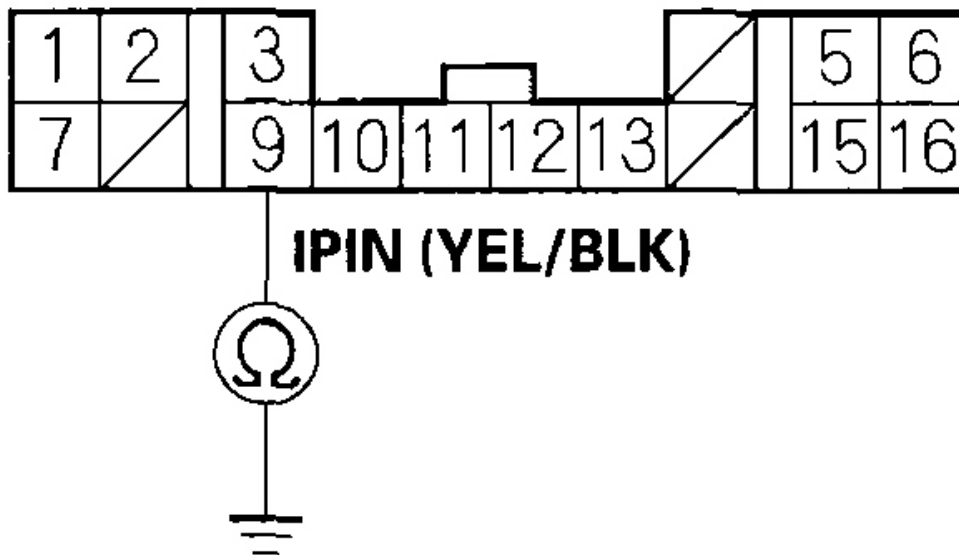
Is there continuity?

YES - Go to step 13.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

13. Disconnect the junction board 16P connector.
14. Check for continuity between body ground and junction board 16P connector terminal No. 9.

JUNCTION BOARD 16P CONNECTOR



Wire side of female terminals

G03681399

Fig. 181: Checking Continuity Between Body Ground And Junction Board 16P Connector Terminal No. 9

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (B18) and the junction board 16P connector.

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

DTC P1581 (20): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT HIGH INPUT; DTC P1588 (20): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT HIGH INPUT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

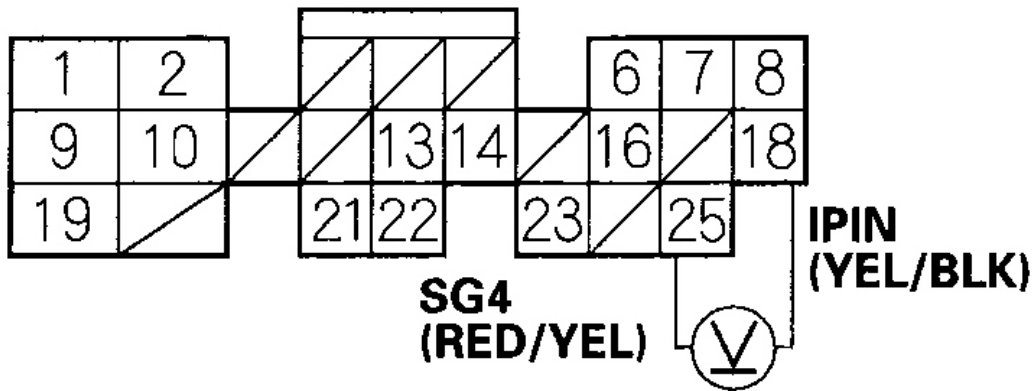
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1581 (20) (P1588 (20)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the MPI module current sensor and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Turn the ignition switch ON (II).
7. Measure voltage between MCM connector terminals B18 and B25.

MCM CONNECTOR B (25P)

Wire side of female terminals

G03681400

Fig. 182: Measuring Voltage Between MCM Connector Terminals B18 And B25

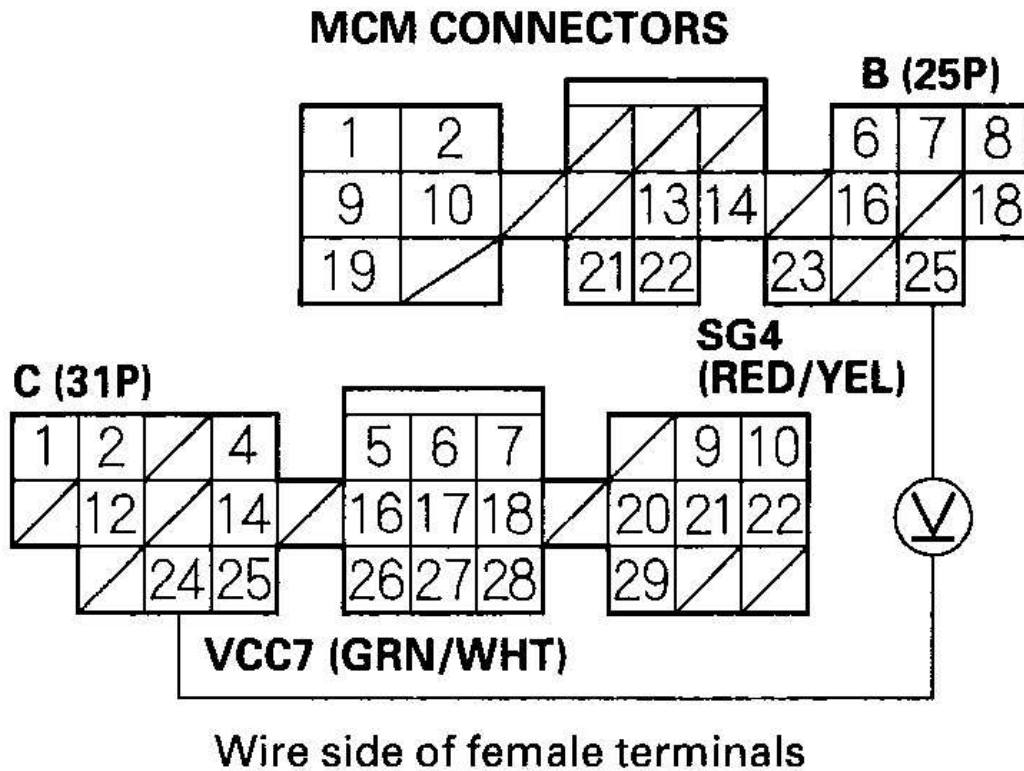
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 4.8 V?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Go to step 8.

8. Measure voltage between MCM connector terminals B25 and C24.



G03681401

Fig. 183: Measuring Voltage Between MCM Connector Terminals B25 And C24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

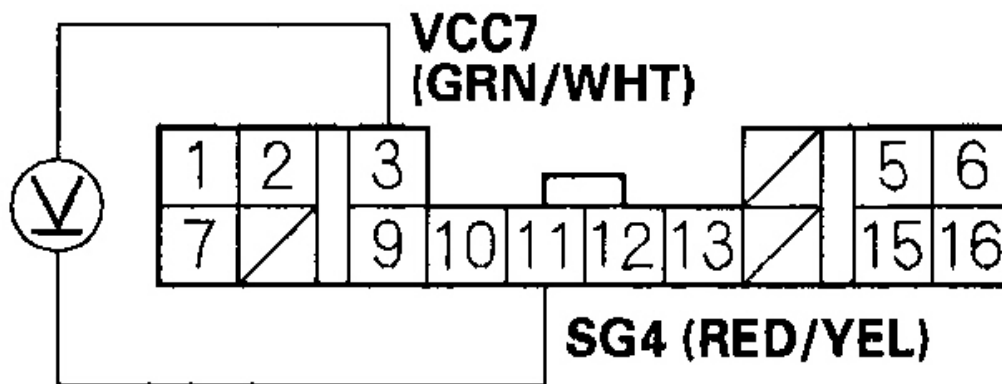
YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

9. Turn the ignition switch OFF.
10. Disconnect the junction board 16P connector.
11. Turn the ignition switch ON (II).
12. Measure voltage between junction board 16P connector terminals No. 3 and

No. 11.

JUNCTION BOARD 16P CONNECTOR



Wire side of female terminals

G03681402

Fig. 184: Measuring Voltage Between Junction Board 16P Connector Terminals No. 3 And 11

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

NO - Repair open in the wire between the MCM (B25) and the junction board.

DTC P1581 (21): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT PROBLEM; DTC P1589 (21): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL CIRCUIT PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1581 (21) (P1589 (21)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the MPI module current sensor and at the MCM.

3. Substitute a known-good MCM and recheck.

Is DTC P1581 (21) (P1589 (21)*) indicated?**

YES - Replace these items:

- MPI module.
- Battery module.

NO - Replace the original MCM.

DTC P1585 (30): MOTOR CURRENT SIGNAL CIRCUIT PROBLEM

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Remove the No. 15 EPS (40 A) fuse from the under-hood fuse/relay box.
3. Start the engine, and hold it between 3,500 RPM and 4,000 RPM without load (in Park or neutral) until the BAT displays at least three segments.
4. Reinstall the No. 15 EPS (40 A) fuse.
5. Accelerate using wide open throttle from 32-64 mph (20-40 km/h) in 3rd gear

(M/T) or the D position (CVT).

Is DTC P1585 (30) indicated?

YES - Replace the U phase motor current sensor, V phase motor current sensor, and W phase motor current sensor (see **POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY**).

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose wires at the U phase motor current sensor/V phase motor current sensor/W phase motor current sensor and at the MCM.

DTC P1586 (23): MOTOR POWER INVERTER (MPI) MODULE CURRENT SIGNAL/BATTERY CURRENT SIGNAL CIRCUIT PROBLEM

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II) and check for DTCs.

Is DTC P1580 (65) or P1635 (79) indicated?

YES - Do the troubleshooting for P1580 (65) (see **DTC P1580 (65): BATTERY CURRENT CIRCUIT PROBLEM**) or the DTC for P1635 (79) (see **DTC P1635 (79): BATTERY CONDITION MONITOR (BCM) MODULE PROBLEM**), and recheck.

NO - Go to step 3.

3. Remove the No. 15 EPS (40 A) fuse from the under-hood fuse/relay box.
4. Start the engine, and hold it between 3,500 RPM and 4,000 RPM without load (in Park or neutral) until the BAT displays at least three segments.
5. Reinstall the No. 15 EPS (40 A) fuse.
6. Accelerate using wide open throttle from 12-25 mph (20-40 km/h) in 3rd gear, and decelerate with a fully closed throttle to 12 mph (20 km/h).
7. Check for DTCs.

Is DTC P1586 (23) indicated?

YES - Substitute a known-good BCM module and battery module, then recheck. If the symptom/ indication goes away, replace the original BCM

module and the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose wires at the MPI module current sensor/battery current sensor and at the MCM.

DTC P1635 (79): BATTERY CONDITION MONITOR (BCM) MODULE PROBLEM

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II), and wait for 5 seconds.

Is DTC P1635 (79) indicated?

YES - Substitute a known-good BCM module, and recheck. If the symptom/indication goes away, replace the original BCM module.

NO - Intermittent failure, system is OK at this time.

DTC P1638 (50): MOTOR CONTROL MODULE (MCM) INTERNAL CIRCUIT PROBLEM

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1638 (50) indicated?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Intermittent failure, system is OK at this time.

DTC P1647 (1): POWER COMMAND SIGNAL CIRCUIT LOW INPUT; DTC P16B3 (1): POWER COMMAND SIGNAL CIRCUIT LOW INPUT

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.

1. Reset the MCM (see **HOW TO RESET THE MCM**).

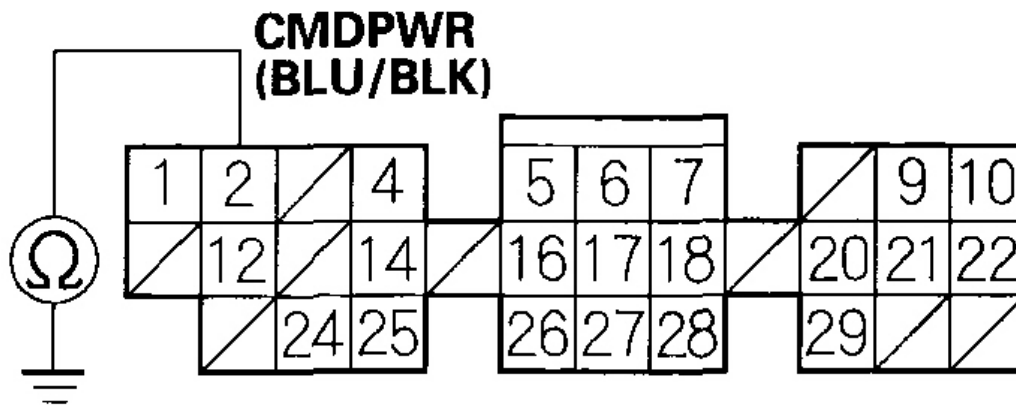
2. Turn the ignition switch ON (II).

Is DTC P1647 (1) (P16B3(1)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Check for continuity between body ground and MCM connector terminal C2.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681403

Fig. 185: Checking Continuity Between Body Ground And MCM Connector Terminal C2

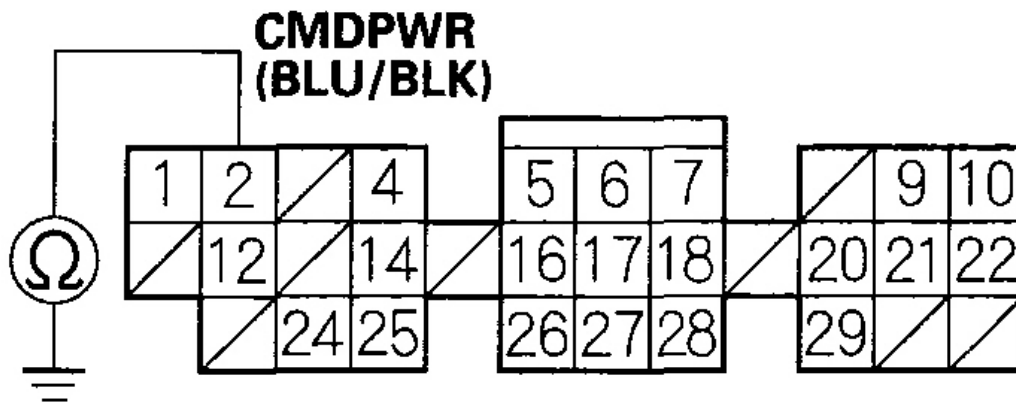
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Substitute a known-good MCM and recheck. If the symptom/indication goes away, replace the original MCM.

7. Disconnect MCM connector C (31P).
8. Check for continuity between body ground and MCM connector terminal C2.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681404

Fig. 186: Checking Continuity Between Body Ground And MCM Connector Terminal C2

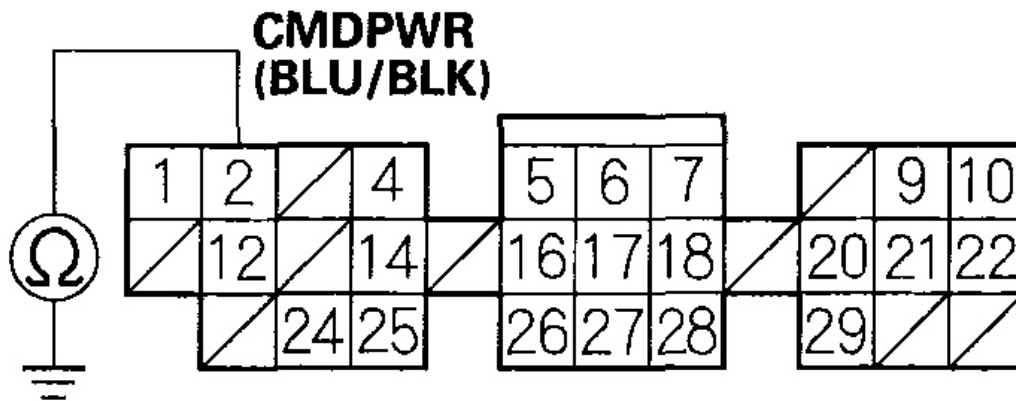
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Substitute a known-good MCM and recheck. If the symptom/indication goes away, replace the original MCM.

9. Disconnect ECM connector D (16P).
10. Check for continuity between body ground and MCM connector terminal C2.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681405

Fig. 187: Checking Continuity Between Body Ground And MCM Connector Terminal C2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (C2) and the ECM (D8).

NO - Substitute a known-good ECM; 2000-2001 models (see **HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)**), 2002-2006 models (see **ECM UPDATING AND SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL**), and recheck. If the symptom/ indication goes away,

replace the original ECM.

DTC P1647 (2): POWER COMMAND SIGNAL CIRCUIT HIGH INPUT; DTC P16B4 (2): POWER COMMAND SIGNAL CIRCUIT HIGH INPUT

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.
- If DTCs P1647 (2)** (P16B4 (2) *), P1647 (4)** (P16B6 (4) *), and P1647 (6)**(P16B8 (6)*) are stored at the same time after the ECM is updated, do the troubleshooting for DTC P1647 (7)** (P16B9(7)*) (see DTC P1647 (7): MODE SIGNAL CIRCUIT 2 PROBLEM; DTC P16B9 (7): MODE SIGNAL CIRCUIT 2 PROBLEM).

1. Turn the ignition switch ON (II) and watch the MIL.

Does the MIL come on for the first 2 seconds?

YES - Go to step 2.

NO - Do the MIL circuit troubleshooting, 2000-2004 models (see 2000-2004 MODELS), 2005-2006 models (see 2005-2006 MODELS), and recheck.

2. Reset the MCM (see HOW TO RESET THE MCM).
3. Turn the ignition switch ON (II).

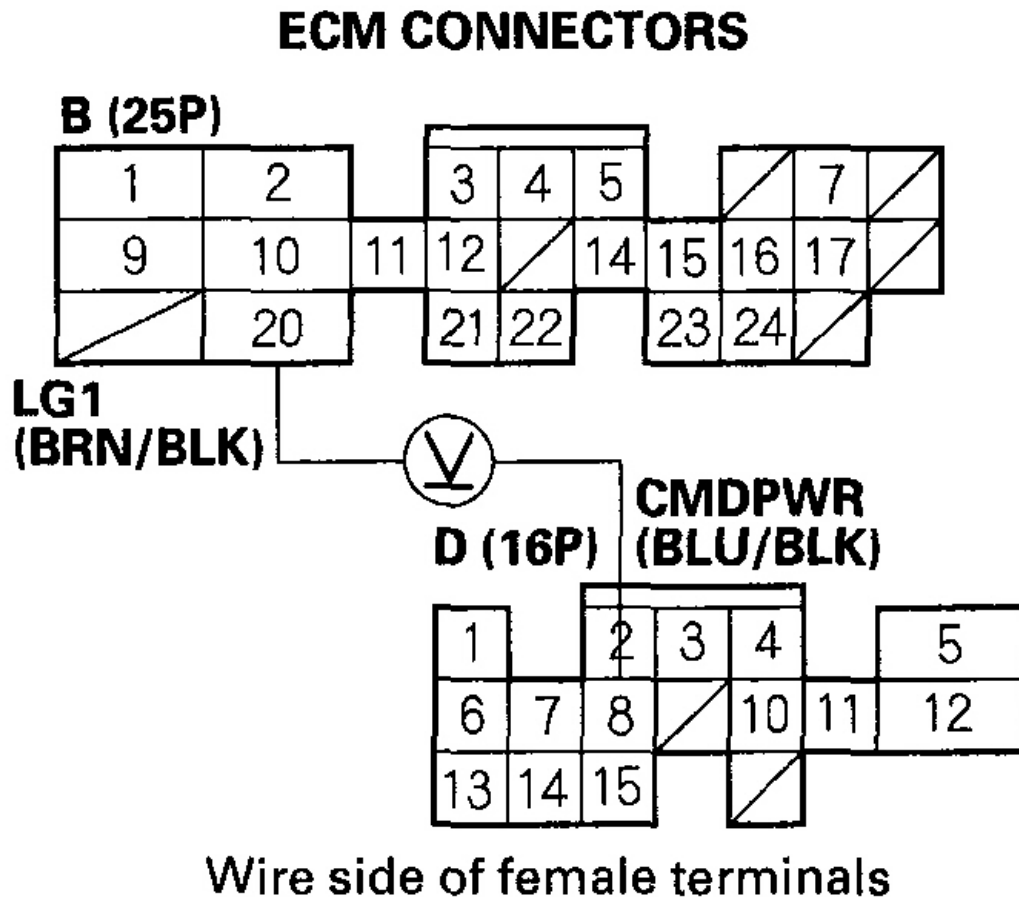
Is DTC P1647 (2) (P16B4 (2)*) indicated?**

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM and at the MCM.

4. Turn the ignition switch OFF.
5. Disconnect ECM connector D (16P).
6. Turn the ignition switch ON (II).

7. Measure voltage between ECM connector terminals D8 and B20.



G03681406

Fig. 188: Measuring Voltage Between ECM Connector Terminals D8 And B20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

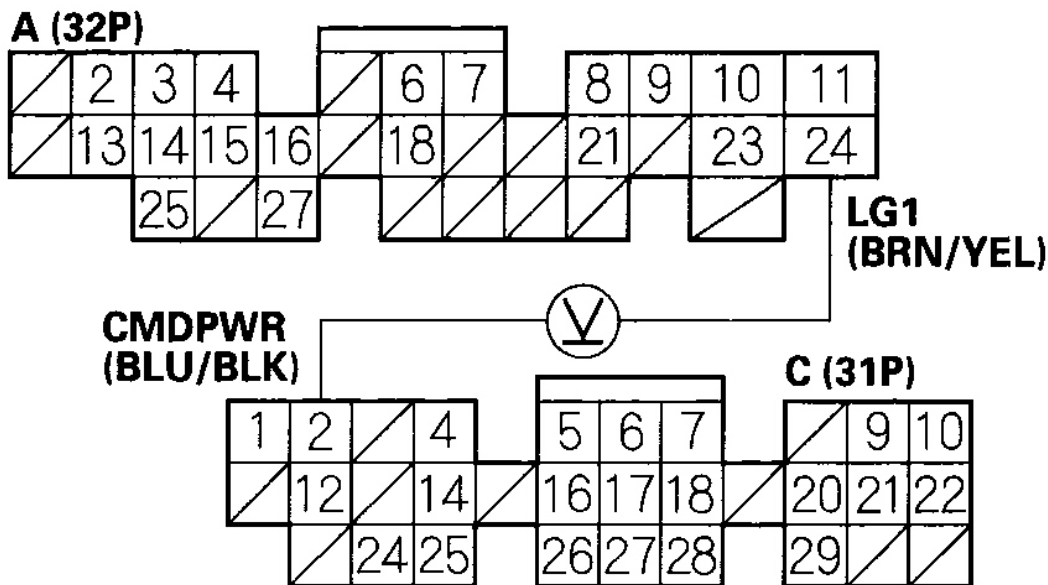
YES - Substitute a known-good ECM; 2000-2001 models (see **HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)**), 2002-2006 models (see **ECM UPDATING AND**

SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL), and recheck. If the symptom/ indication goes away, replace the original ECM.

NO - Go to step 8.

8. Turn the ignition switch OFF.
9. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
10. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
11. Turn the ignition switch ON (II).
12. Measure voltage between MCM connector terminals C2 and A24.

MCM CONNECTORS



Wire side of female terminals

G03681407

Fig. 189: Measuring Voltage Between MCM Connector Terminals C2 And A24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Repair open in the wire between the MCM (C2) and the ECM (D8).

NO - Substitute a known-good MCM, turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original MCM.

DTC P1647 (3): ENGINE TORQUE SIGNAL CIRCUIT LOW INPUT; DTC P16B5 (3): ENGINE TORQUE SIGNAL CIRCUIT LOW INPUT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

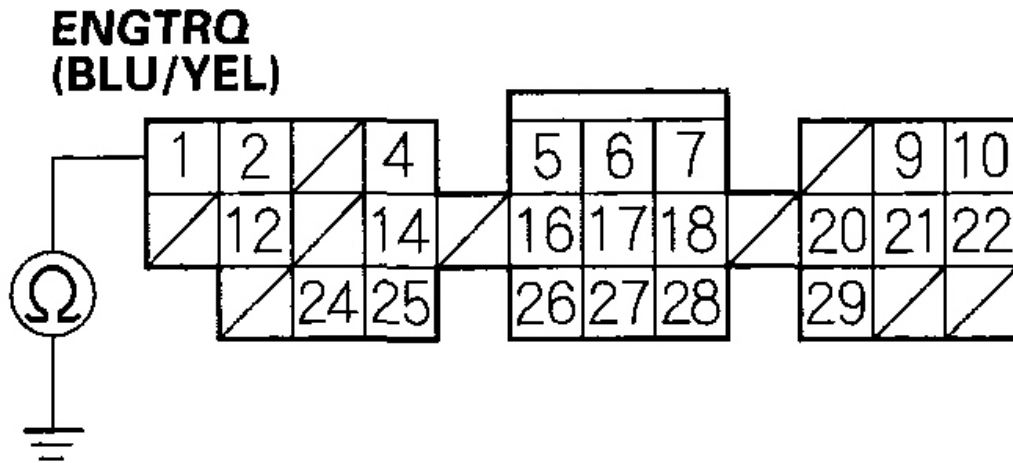
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1647 (3)** (P16B5 (3)*) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM and the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Check for continuity between body ground and MCM connector terminal C1.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681408

Fig. 190: Checking Continuity Between Body Ground And MCM Connector Terminal C1

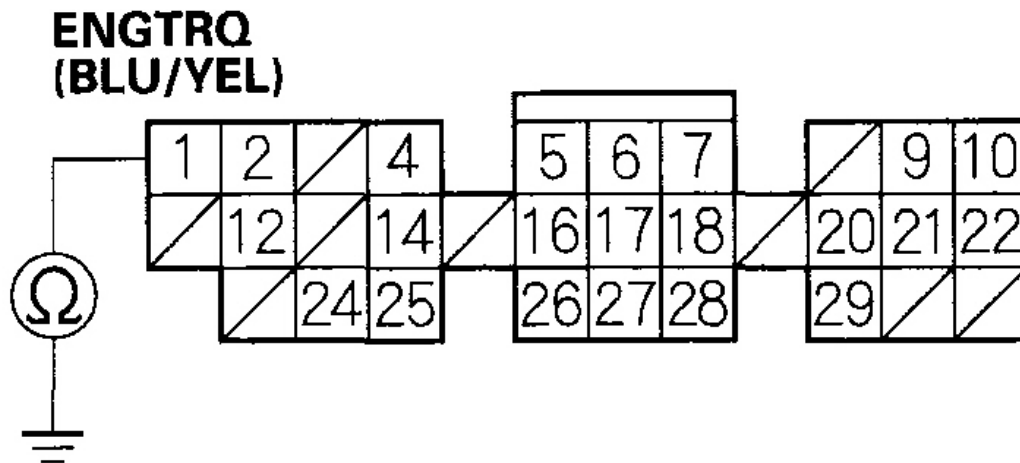
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Substitute a known-good MCM, turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original MCM.

7. Disconnect MCM connector C (31P).
8. Check for continuity between body ground and MCM connector terminal C1.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681409

Fig. 191: Checking Continuity Between Body Ground And MCM Connector Terminal C1

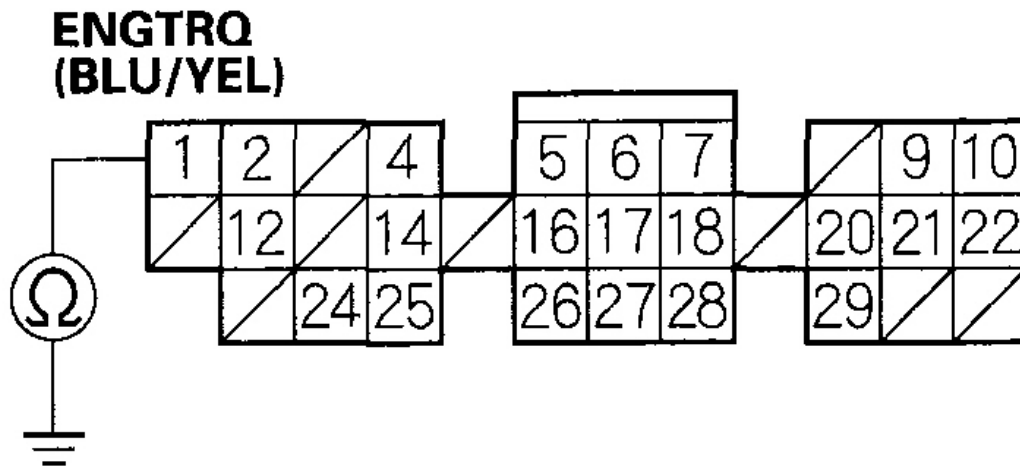
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

9. Disconnect ECM connector D (16P).
10. Check for continuity between body ground and MCM connector terminal C1.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681410

Fig. 192: Checking Continuity Between Body Ground And MCM Connector Terminal C1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (C1) and the ECM (D7).

NO - Substitute a known-good ECM; 2000-2001 models (see **HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)**), 2002-2006 models (see **ECM UPDATING AND SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL**), turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original ECM.

DTC P1647 (4): ENGINE TORQUE SIGNAL CIRCUIT HIGH INPUT; DTC P16B6 (4): ENGINE TORQUE SIGNAL CIRCUIT HIGH INPUT

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.
- If DTCs P1647 (2) ** (P16B4 (2)*), P1647 (4)** (P16B6 (4)*), and P1647 (6)** (P16B8 (6)*) are stored at the same time after the ECM is updated, do the troubleshooting for DTC P1647 (7)** (P16B9 (7)*) (see DTC P1647 (7): MODE SIGNAL CIRCUIT 2 PROBLEM; DTC P16B9 (7): MODE SIGNAL CIRCUIT 2 PROBLEM).

1. Turn the ignition switch ON (II) and watch the MIL.

Does the MIL come on for the first 2 seconds?

YES - Go to step 2.

NO - Do the MIL circuit troubleshooting; 2000-2004 models (see 2000-2004 MODELS), 2005-2006 models (see 2005-2006 MODELS), and recheck.

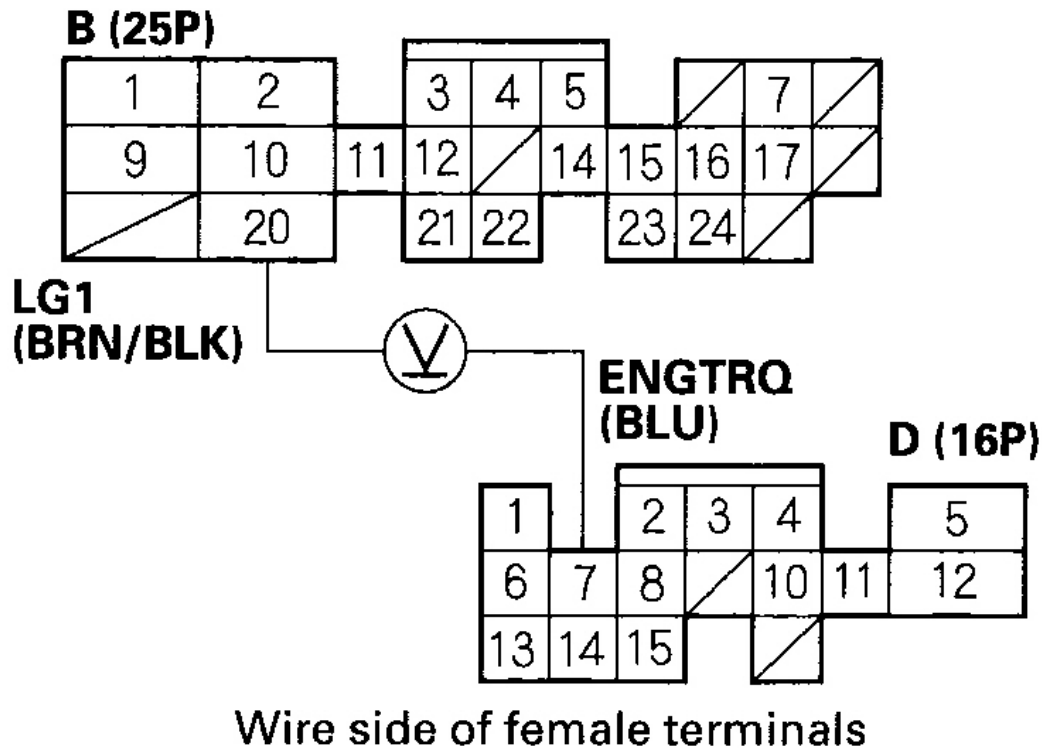
2. Reset the MCM (see HOW TO RESET THE MCM).
3. Turn the ignition switch ON (II).

Is DTC P1647 (4) (P16B6 (4)*) indicated?**

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM and at the MCM.

4. Turn the ignition switch OFF.
5. Disconnect ECM connector D(16P).
6. Turn the ignition switch ON (II).
7. Measure voltage between ECM connector terminals D7 and B20.

ECM CONNECTORS

G03681411

Fig. 193: Measuring Voltage Between ECM Connector Terminals D7 And B20

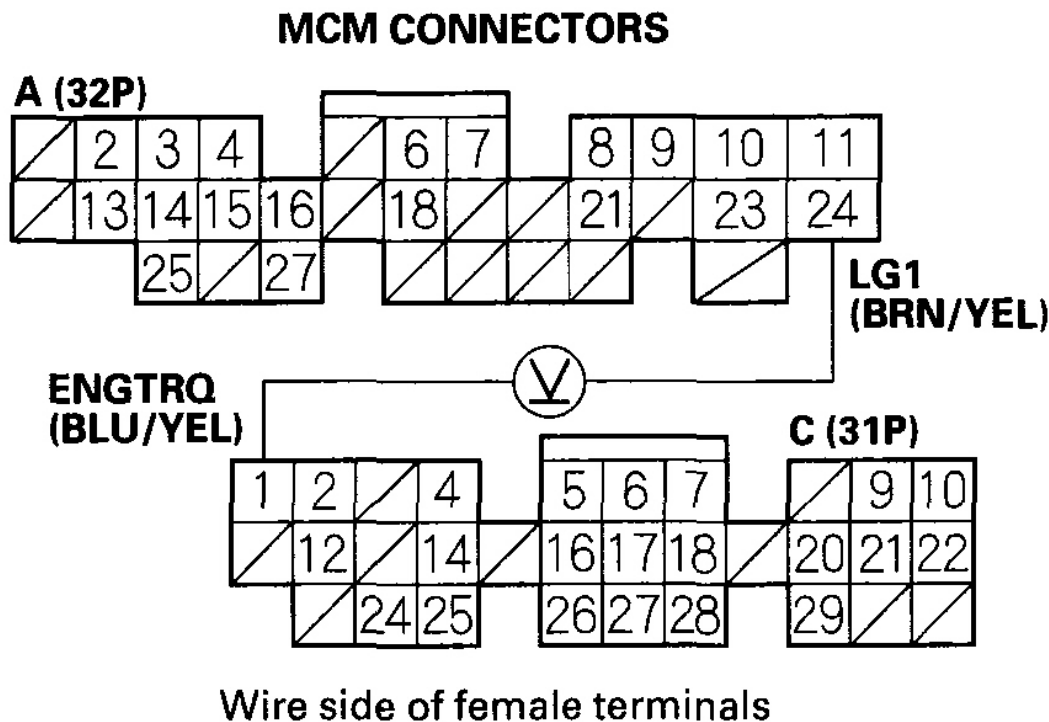
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Substitute a known-good ECM, and recheck; 2000-2001 models (see **HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)**), 2002-2006 models (see **ECM UPDATING AND SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL**), and recheck. If symptom/ indication goes away, replace the original ECM.

NO - Go to step 8.

8. Turn the ignition switch OFF.
9. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
10. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
11. Turn the ignition switch ON (II).
12. Measure voltage between MCM connector terminals C1 and A24.



G03681412

Fig. 194: Measuring Voltage Between MCM Connector Terminals C1 And A24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Repair open in the wire between the MCM (C1) and the ECM (D7).

NO - Substitute a known-good MCM, turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original MCM.

DTC P1647 (5): MODE SIGNAL CIRCUIT 1 LOW INPUT; DTC P16B7 (5): MODE SIGNAL CIRCUIT 1 LOW INPUT

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

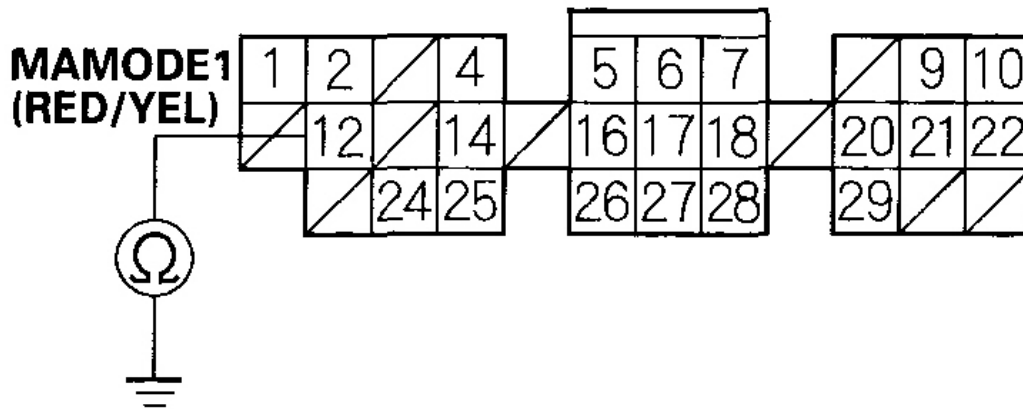
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1647 (5) (P16B7 (5)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Check for continuity between body ground and MCM connector terminal C12.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681413

Fig. 195: Checking Continuity Between Body Ground And MCM Connector Terminal C12

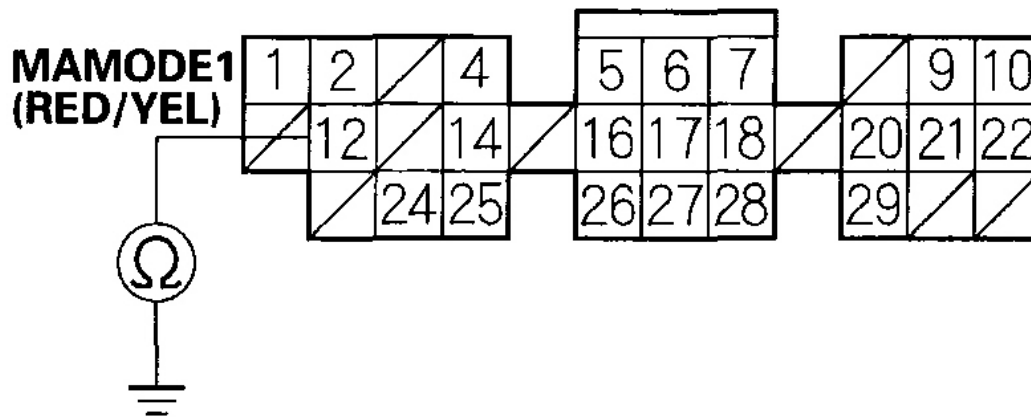
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Substitute a known-good MCM, turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original MCM.

7. Disconnect MCM connector C (31P).
8. Check for continuity between body ground and MCM connector terminal C12.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681414

Fig. 196: Checking Continuity Between Body Ground And MCM Connector Terminal C12

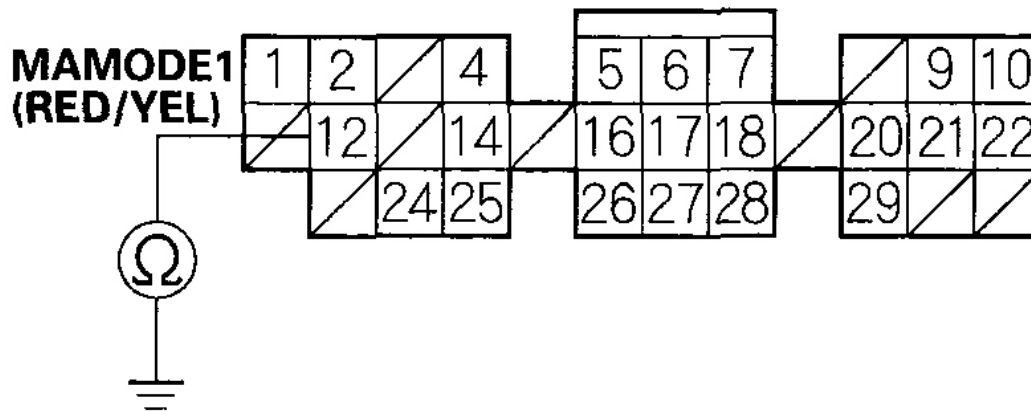
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Substitute a known-good MCM and recheck. If the symptom/indication goes away, replace the original MCM.

9. Disconnect ECM connector D (16P).
10. Check for continuity between body ground and MCM connector terminal C12.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681415

Fig. 197: Checking Continuity Between Body Ground And MCM Connector Terminal C12

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (C12) and the ECM (D6).

NO - Substitute a known-good ECM; 2000-2001 models (see **HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)**), 2002-2006 models (see **ECM UPDATING AND SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL**), turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original ECM.

NOTE:

- Information marked with an asterisk (*) applies to 2005-2006 models.
- Information marked with double asterisk (**) applies to 2000-2004 models.
- If DTCs P1647 (2) ** (P16B4 (2)*), P1647 (4) ** (P16B6 (4)*), and P1647 (6)** (P16B8 (6)*) are stored at the same time after the ECM is updated, do the troubleshooting for DTC P1647 (7)** (P16B9 (7)) (see DTC P1647 (7): MODE SIGNAL CIRCUIT 2 PROBLEM; DTC P16B9 (7): MODE SIGNAL CIRCUIT 2 PROBLEM).

1. Turn the ignition switch ON (II) and watch the MIL.

Does the MIL come on for the first 2 seconds?

YES - Go to step 2.

NO - Do the MIL circuit troubleshooting; 2000-2004 models (see 2000-2004 MODELS), 2005-2006 models (see 2005-2006 MODELS), and recheck.

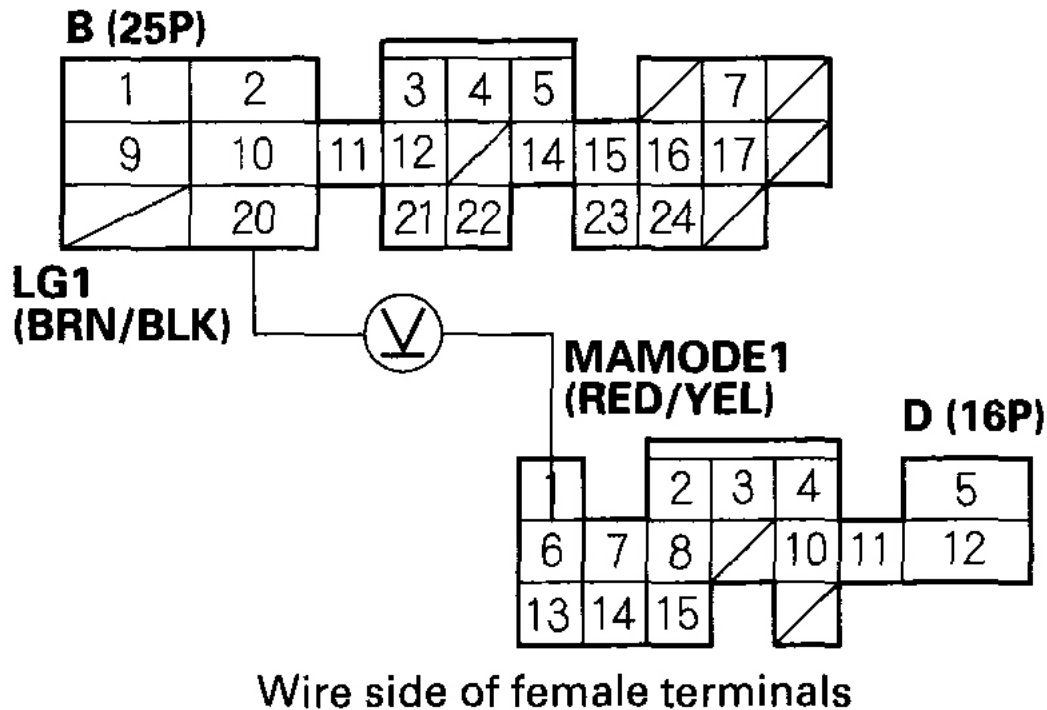
2. Reset the MCM (see HOW TO RESET THE MCM).
3. Turn the ignition switch ON (II).

Is DTC P1647 (6) (P16B8 (6)*) indicated?**

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM and at the MCM.

4. Turn the ignition switch OFF.
5. Disconnect ECM connector D(16P).
6. Turn the ignition switch ON (II).
7. Measure voltage between ECM connector terminals D6 and B20.

ECM CONNECTORS

G03681416

Fig. 198: Measuring Voltage Between ECM Connector Terminals D6 And B20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

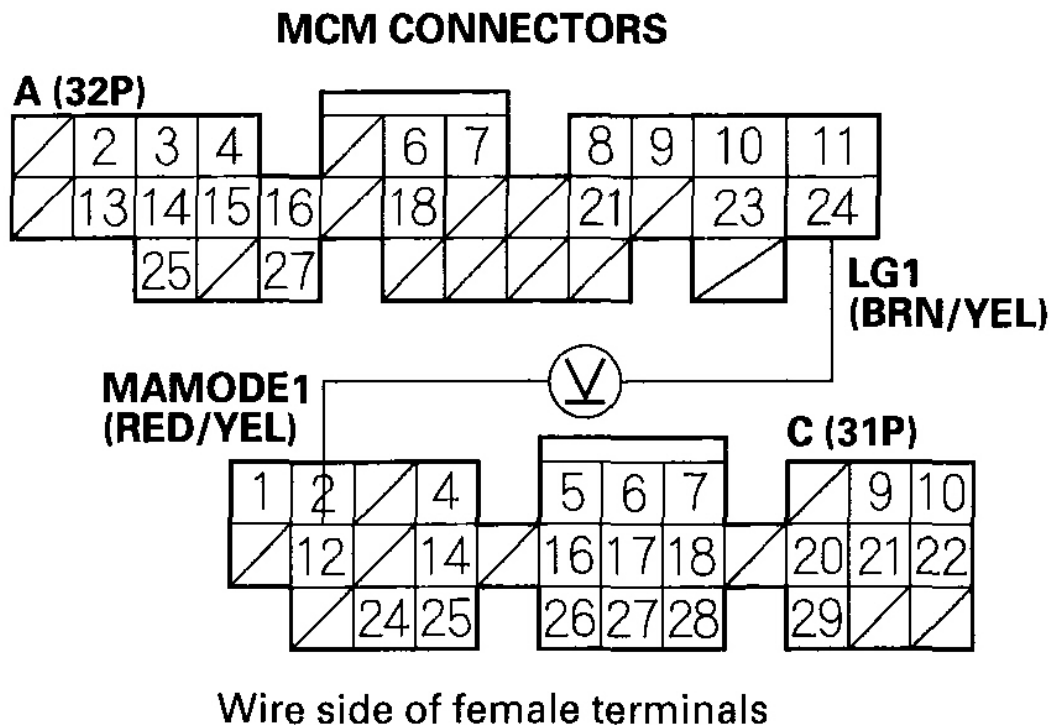
Is there about 5 V?

YES - Substitute a known-good ECM; 2000-2001 models (see **HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)**), 2002-2006 models (see **ECM UPDATING AND SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL**), and recheck. If the symptom/ indication goes away, replace the original ECM.

NO - Go to step 8.

8. Turn the ignition switch OFF.

9. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
10. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
11. Turn the ignition switch ON (II).
12. Measure voltage between MCM connector terminals C12 and A24.



G03681417

Fig. 199: Measuring Voltage Between MCM Connector Terminals C12 And A24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Repair open in the wire between the MCM (C12) and the ECM (D6).

NO - Substitute a known-good MCM, turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original MCM.

DTC P1647 (7): MODE SIGNAL CIRCUIT 2 PROBLEM; DTC P16B9 (7): MODE SIGNAL CIRCUIT 2 PROBLEM

- NOTE:**
- Information marked with an asterisk (*) applies to 2005-2006 models.
 - Information marked with double asterisk (**) applies to 2000-2004 models.

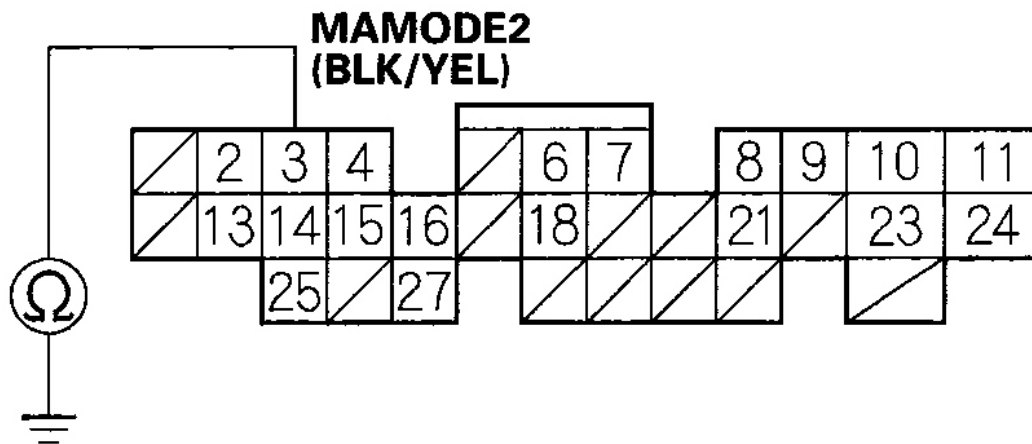
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Test-drive the vehicle. Accelerate for 3 seconds, and decelerate for 3 seconds.

Is DTC P1647 (7) (P16B9 (7)*) indicated?**

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ECM and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Check for continuity between body ground and MCM connector terminal A3.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681418

Fig. 200: Checking Continuity Between Body Ground And MCM Connector Terminal A3

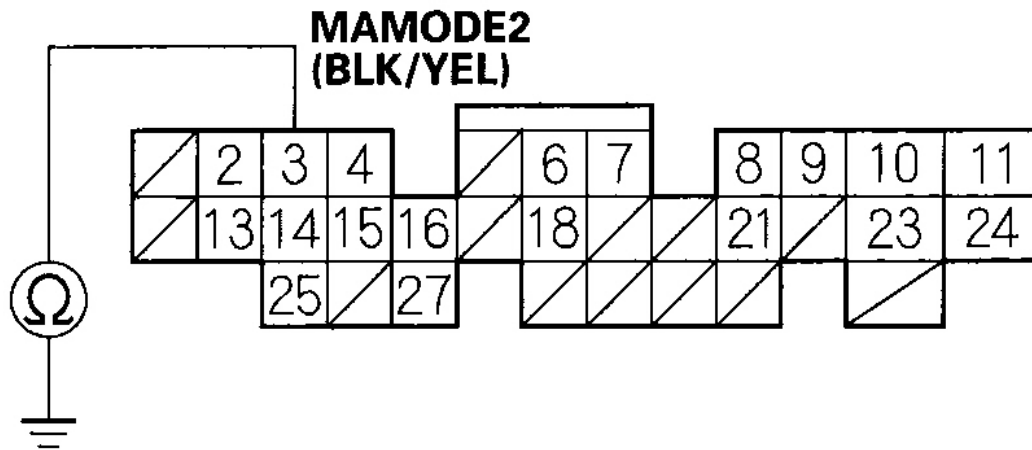
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Go to step 11 .

7. Disconnect ECM connector D (16P).
8. Check for continuity between body ground and MCM connector terminals A3.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681419

Fig. 201: Checking Continuity Between Body Ground And MCM Connector Terminal A3

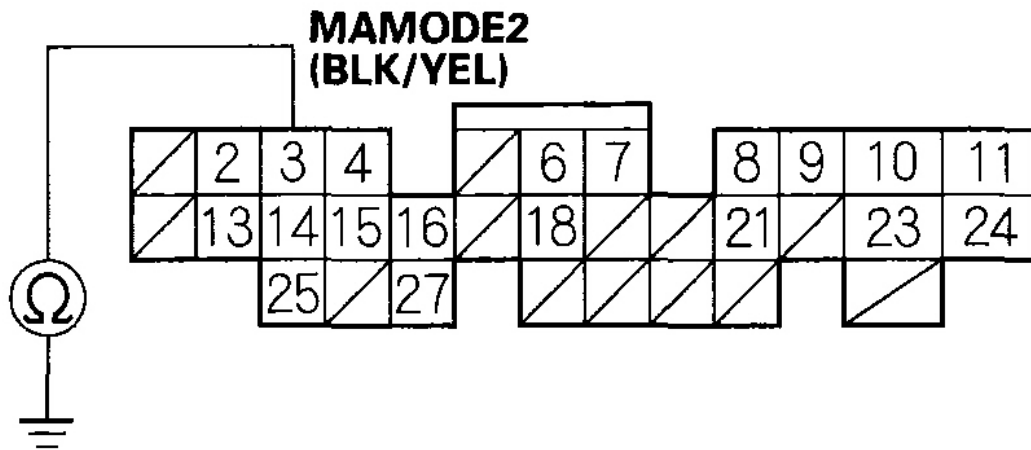
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Substitute a known-good ECM; 2000-2001 models (see **HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)**), 2002-2006 models (see **ECM UPDATING AND SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL**), turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original ECM.

9. Disconnect MCM connector A (32P).
10. Check for continuity between body ground and MCM connector terminals A3.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681420

Fig. 202: Checking Continuity Between Body Ground And MCM Connector Terminal A3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

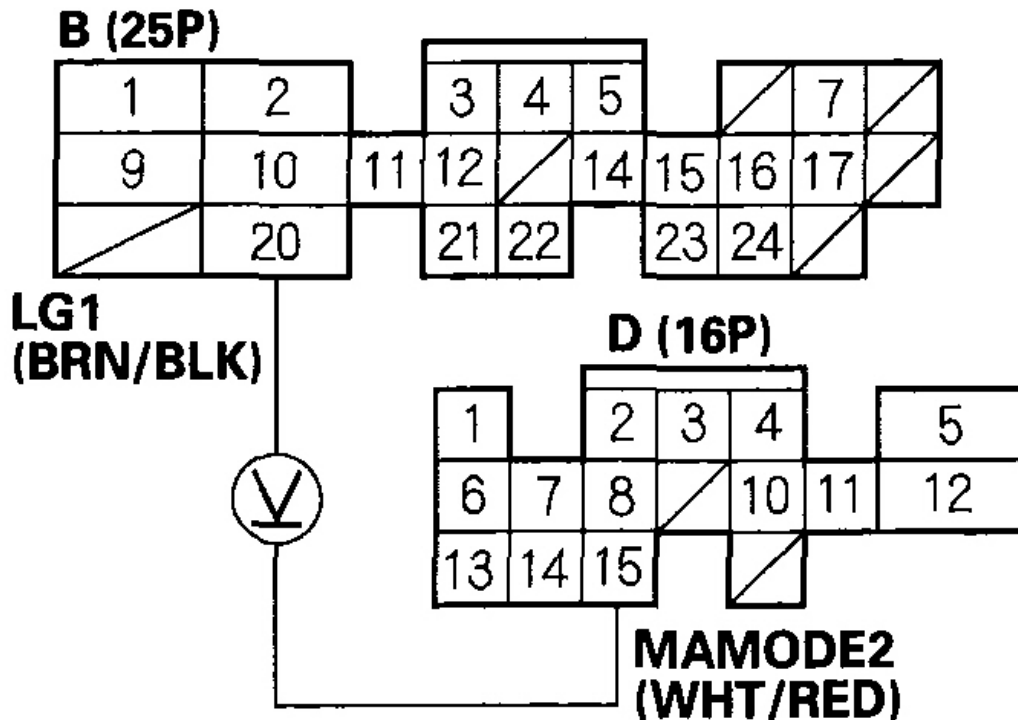
Is there continuity?

YES - Repair short to ground in the wire between the MCM (A3) and the ECM (D15).

NO - Substitute a known-good MCM, turn the battery module switch ON, and recheck. If the symptom/indication goes away, replace the original MCM.

11. Disconnect ECM connector D(16P).
12. Turn the ignition switch ON (II).
13. Measure voltage between ECM connector terminal D15 and B20.

ECM CONNECTORS



Wire side of female terminals

G03681421

Fig. 203: Measuring Voltage Between ECM Connector Terminal D15 And B20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

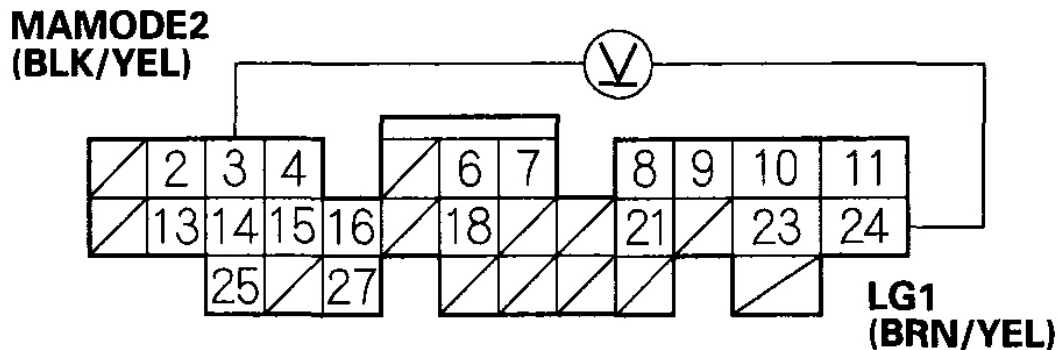
YES - Substitute a known-good ECM; 2000-2001 models (see **HOW TO SUBSTITUTE THE ECM FOR TESTING PURPOSE (2000-2001 M/T MODELS)**), 2002-2006 models (see **ECM UPDATING AND SUBSTITUTION FOR TESTING-2002-2006 M/T MODELS AND CVT MODEL**), turn the battery module switch ON, and recheck. If the

symptom/indication goes away, replace the original ECM.

NO - Go to step 14.

14. Measure voltage between body ground and MCM connector terminals A3 and A24.

MCM CONNECTOR A (32P)



Wire side of female terminals

G03681422

Fig. 204: Measuring Voltage Between Body Ground And MCM Connector Terminals A3 And A24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Repair open in the wire between the MCM (A3) and the ECM (D15).

NO - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

DTC P1648 (64): BCM MODULE COMMUNICATION SIGNAL CIRCUIT PROBLEM

NOTE: Information marked with an asterisk (*) applies to the

BATTSCI 2 line.

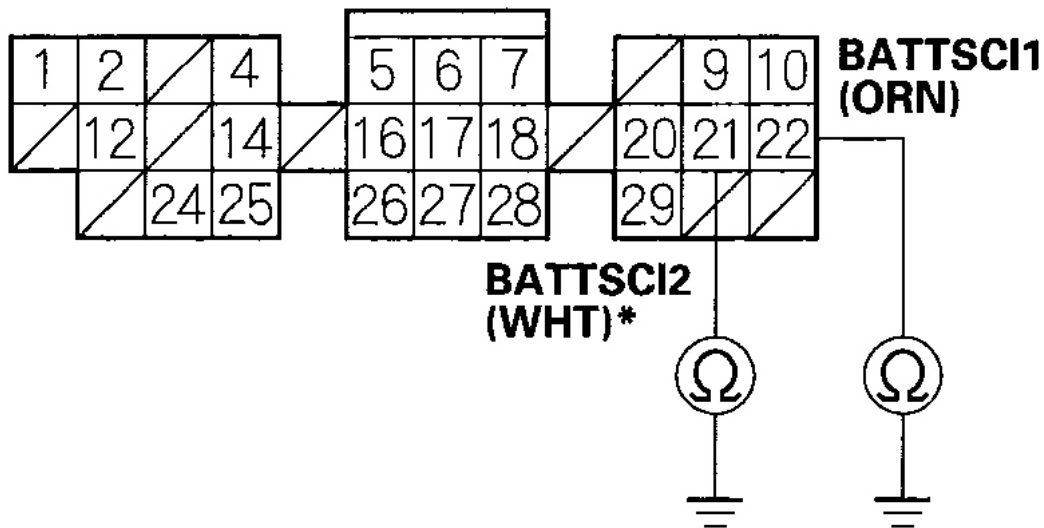
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1648 (64) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the BCM module and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Disconnect MCM connector C (31P) and BCM module connector A (26P).
7. Check for continuity between body ground and MCM connector terminals C22 and C21* individually.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681423

Fig. 205: Checking Continuity Between Body Ground And MCM Connector Terminals C22 And C21

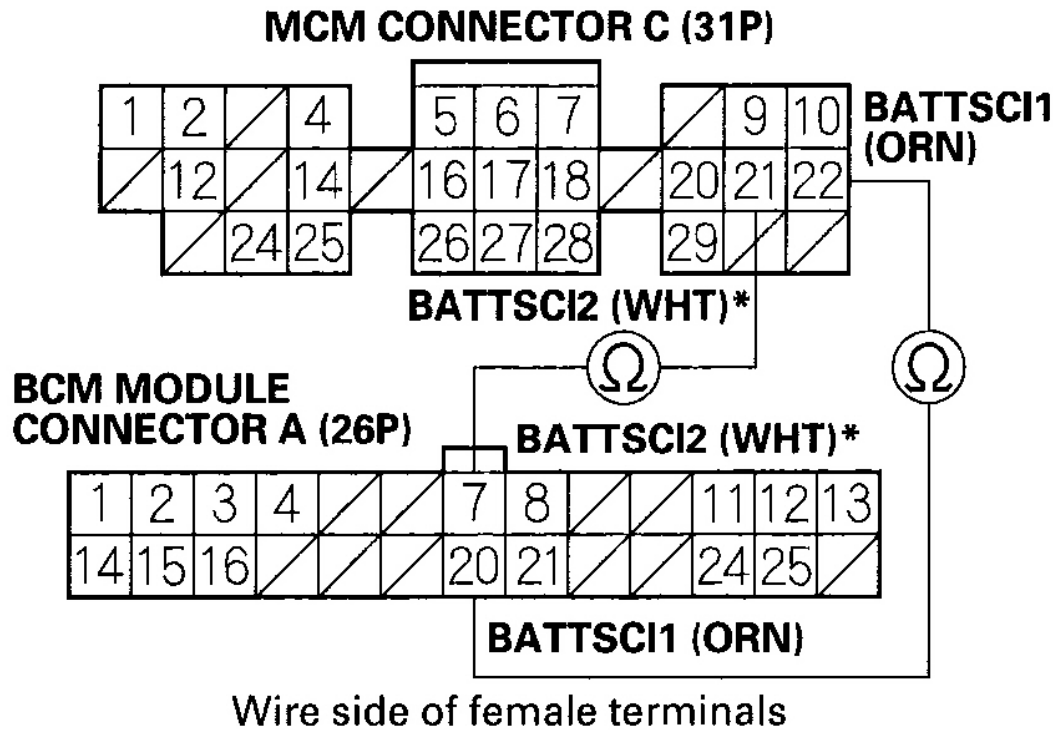
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (C22 or C21*) or the BCM module (A20 or A7*).

NO - Go to step 8.

8. Check for continuity between BCM module connector terminal A20 and MCM connector terminal C22, and between BCM module connector terminal A7* and MCM connector terminal C21*.



G03681424

Fig. 206: Checking Continuity Between BCM Module Connector Terminal A20 (A7*) And MCM Connector Terminal C22 (C21*)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good MCM and BCM module, and recheck. If the symptom/indication goes away, replace the original MCM and BCM module.

NO - Repair open in the wire between the MCM (C22, C21*) and the BCM model (A20, A7*).

DTC P1648 (75): MCM COMMUNICATION SIGNAL CIRCUIT PROBLEM

NOTE: Information marked with an asterisk (*) applies to the METSCI 2 line.

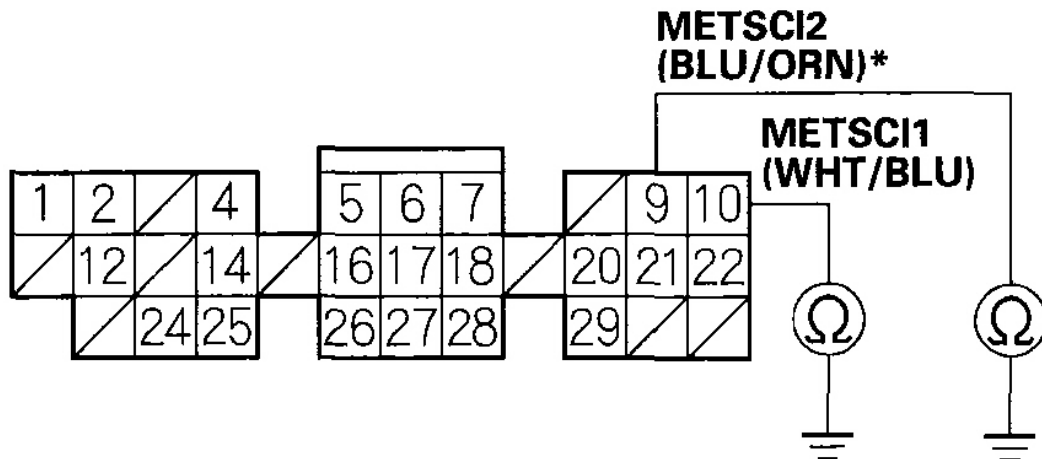
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1648 (75) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the gauge assembly, the BCM module, and the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Disconnect MCM connector C (31P), BCM module connector A (26P), and the gauge assembly 22P connector.
7. Check for continuity between body ground and MCM connector terminals C10 and C9* individually.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681425

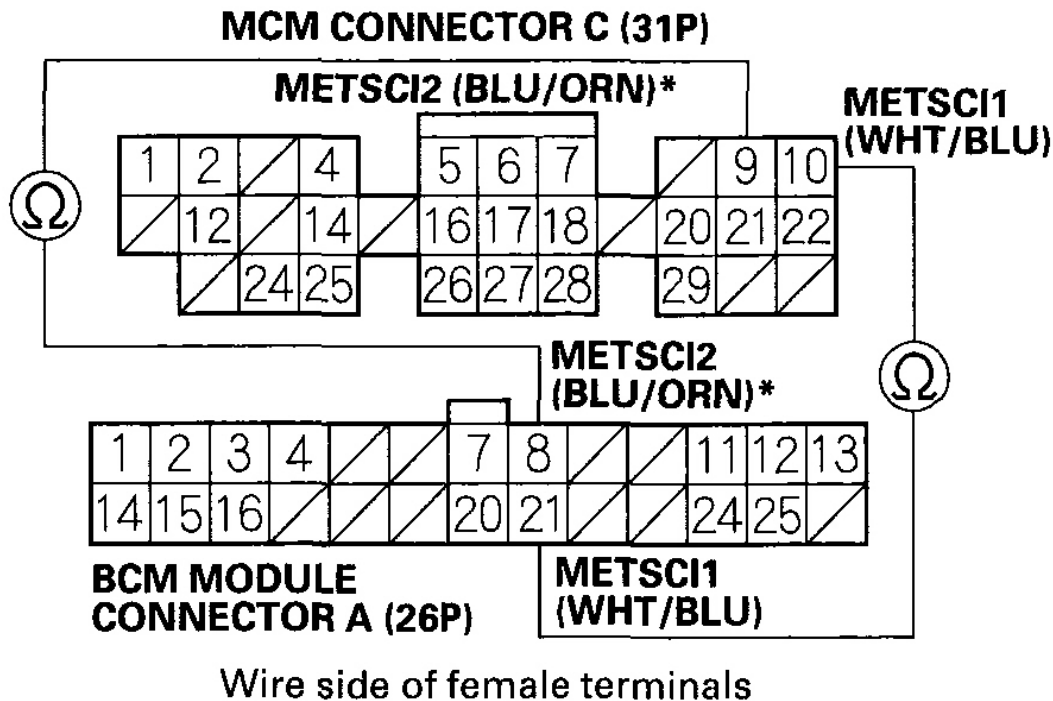
Fig. 207: Checking Continuity Between Body Ground And MCM Connector Terminals C10 And C9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (C10 or C9*) and the BCM module (A21 or A8*).

NO - Go to step 8.

8. Check for continuity between BCM module connector terminal A21 and MCM connector terminal C10, and between BCM module connector terminals A8* and MCM connector terminal C9*.



G03681426

Fig. 208: Checking Continuity Between BCM Connector Terminal A21 (A8*) And MCM Connector Terminal C10 (C9*)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good MCM and BCM module, and recheck. If the symptom/indication goes away, replace the original MCM and BCM module.

NO - Repair open in the wire between the MCM (C10, C9*) and the BCM module (A21, A8*).

DTC P1649 (13): ABS OPERATION SIGNAL CIRCUIT PROBLEM

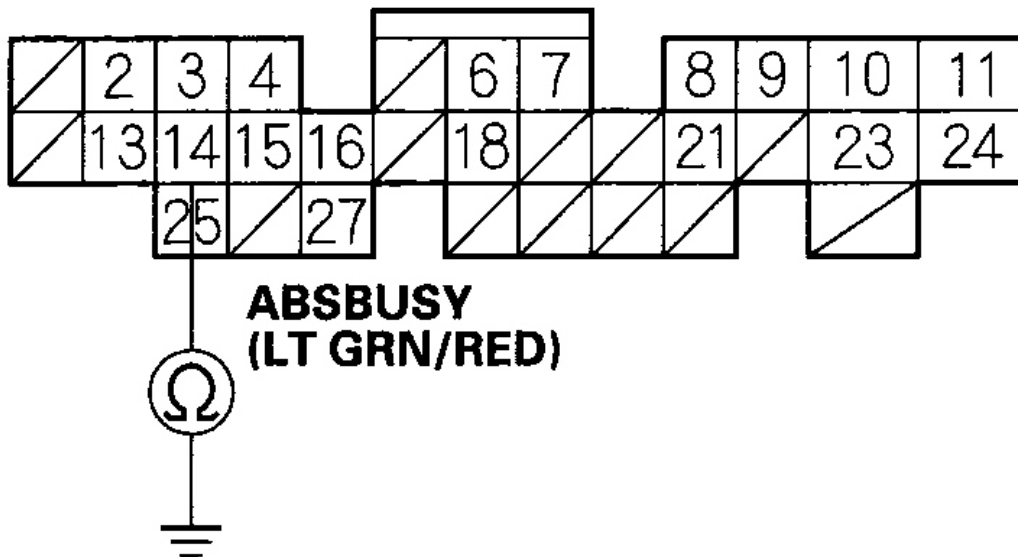
1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC P1649 (13) indicated?

YES - Go to step 3.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the ABS modulator-control unit and at the MCM.

3. Turn the ignition switch OFF.
4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Disconnect MCM connector A (32P) and the ABS modulator-control unit 25P connector.
7. Check for continuity between body ground and MCM connector terminal A14.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681427

Fig. 209: Checking Continuity Between Body Ground And MCM Connector Terminal A14

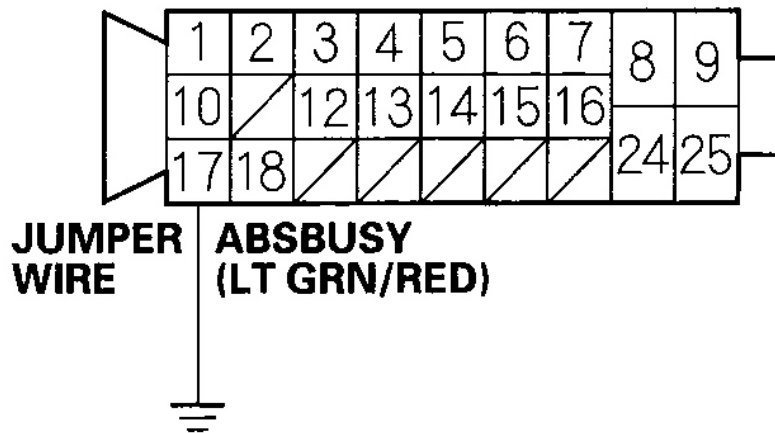
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (A14) and the ABS modulator-control unit.

NO - Go to step 8.

8. Connect ABS modulator-control unit 25P connector terminal No. 17 to body ground with a jumper wire.

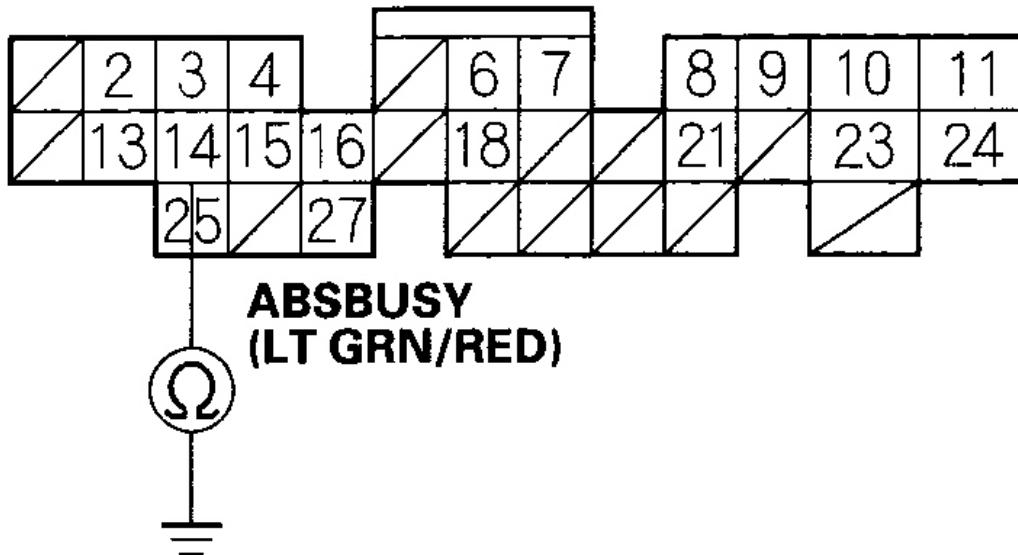
ABS MODULATOR-CONTROL UNIT 25P CONNECTOR

Wire side of female terminals

G03681428

Fig. 210: Connecting ABS Modulator-Control Unit 25P Connector Terminal No. 17 To Body Ground Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check for continuity between body ground and MCM connector terminal A14.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681429

Fig. 211: Checking Continuity Between Body Ground And MCM Connector Terminal A14

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good MCM and ABS modulator-control unit, then recheck. If the symptom/indication goes away, replace the original MCM and the ABS modulator-control unit.

NO - Repair open in the wire between the MCM (A14) and the ABS modulator-control unit.

DTC-(44): VEHICLE SPEED SIGNAL CIRCUIT PROBLEM

1. Turn the ignition switch ON (II), and watch the MIL.

Does the MIL come on for the first 2 seconds?

YES - Go to step 2.

NO - Do the MIL circuit troubleshooting; 2000-2004 models (see **2000-2004 MODELS**), 2005-2006 models (see **2005-2006 MODELS**), and recheck.

2. Reset the MCM (see **HOW TO RESET THE MCM**).
3. Reset the ECM (see **ECM RESET**).
4. Start the engine.
5. Test-drive the vehicle, then decelerate for 5 seconds in 2nd gear (M/T) or the D position (CVT). Check for DTCs in the ECM.

Is DTC P0500 indicated?

YES - Do the troubleshooting for P0500 (see **DTC P0500: VSS CIRCUIT MALFUNCTION**).

NO - Go to step 6.

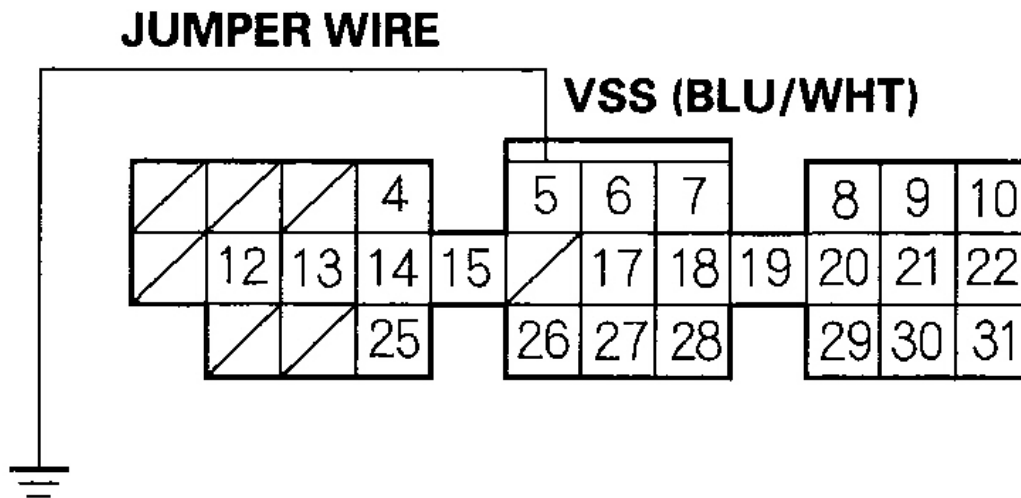
6. Check for DTCs.

Is DTC 44 indicated?

YES - Go to step 7.

NO - Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the vehicle speed sensor and at the MCM.

7. Turn the ignition switch OFF.
8. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
9. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
10. Connect ECM connector terminal C5 to body ground with a jumper wire.

ECM CONNECTOR C (31P)

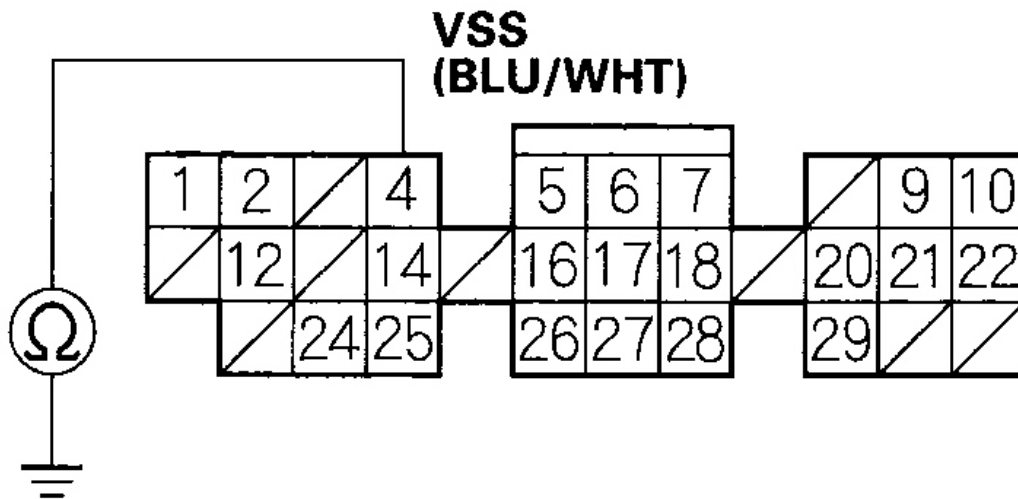
Wire side of female terminals

G03681430

Fig. 212: Connecting ECM Connector Terminal C5 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between body ground and MCM connector terminal C4.

MCM CONNECTOR C (31P)

Wire side of female terminals

G03681431

Fig. 213: Checking Continuity Between Body Ground And MCM Connector Terminal C4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Repair open in the wire between the MCM (C4) and the ECM (C5).

DTC-(49): MOTOR CONTROL MODULE (MCM) INTERNAL CIRCUIT PROBLEM

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC 49 indicated?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Intermittent failure, system is OK at this time.

DTC-(51): MOTOR CONTROL MODULE (MCM) INTERNAL CIRCUIT PROBLEM

1. Reset the MCM (see **HOW TO RESET THE MCM**).
2. Turn the ignition switch ON (II).

Is DTC 51 indicated?

YES - Substitute a known-good MCM, and recheck. If the symptom/indication goes away, replace the original MCM.

NO - Intermittent failure, system is OK at this time.

DTC-(58): CHARGE/DISCHARGE BALANCE PROBLEM

1. Check the 12 V battery (see **12 VOLT BATTERY TEST**).

Is the 12 V battery OK?

YES - Go to step 3 .

NO - Go to step 2.

2. Charge or replace the 12 V battery.
3. Turn the ignition switch ON (II), start the engine, and watch the charging system indicator.

Does the charging system indicator come on and then go off after the engine starts?

YES - The system is OK at this time.

NO - Go to step 4.

4. Check the idle speed (see **IDLE SPEED ADJUSTMENT**).

Is it within the specification?

YES - Intermittent failure, system is OK at this time.

NO - Adjust or repair as necessary.

IMA SYSTEM IMA SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch ON (II), and watch the IMA system indicator.

Does the IMA indicator come on and stay on?

YES - Go to step 17 .

NO - Go to step 2.

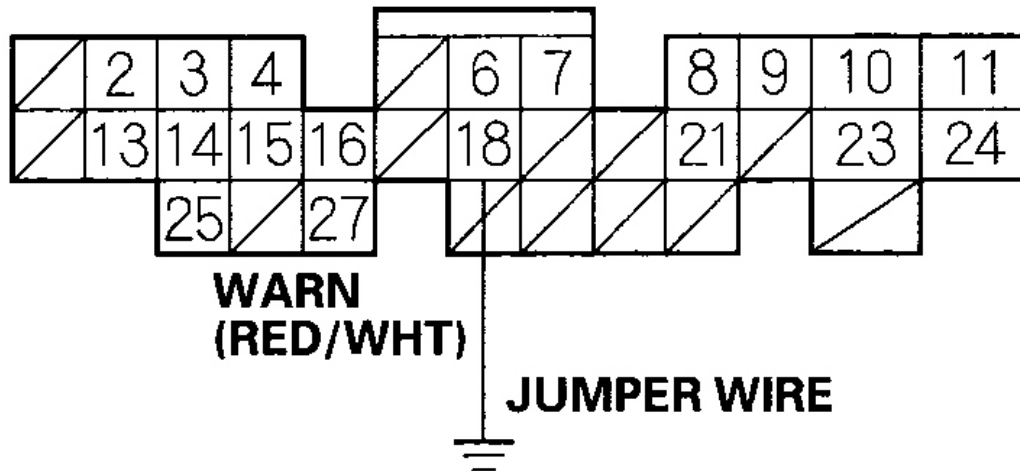
2. Turn the ignition switch OFF.
3. Check the No. 6 METER (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES - Go to step 3.

NO - Check for a short or open in the wire between the No. 6 METER (7.5 A) fuse in the under-dash fuse/relay box and the gauge assembly.

4. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
6. Connect MCM connector terminal A18 to body ground with a jumper wire.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681432

Fig. 214: Connecting MCM Connector Terminal A18 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ignition switch ON (II).

Is the IMA system indicator ON?

YES - Go to step 9 .

NO - Go to step 8.

8. Check the IMA system indicator bulb.

Is IMA system indicator bulb OK?

YES - Repair open in the wire between the MCM (A18) and the gauge

assembly.

NO - Replace the IMA system indicator bulb.

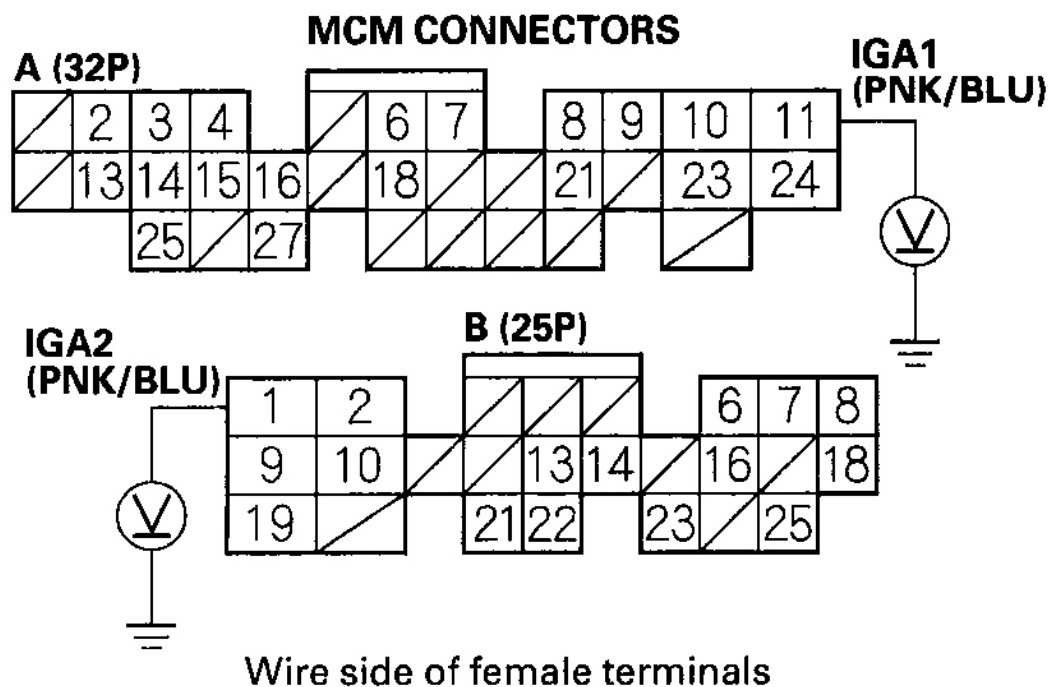
9. Check the No. 24 IMA (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES - Go to step 10.

NO - Check for a short or open in the wire between the No. 24 IMA (7.5 A) fuse in the under-dash fuse/ relay box and the MCM.

10. Measure voltage between body ground and MCM connector terminals A11 and B1 individually.



G03681433

Fig. 215: Measuring Voltage Between Body Ground And MCM Connector Terminals A11 And B1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16 .

NO - Go to step 11.

11. Turn the ignition switch OFF.

12. Check the MCM relay (ignition hold relay) (see **POWER RELAY TEST**).

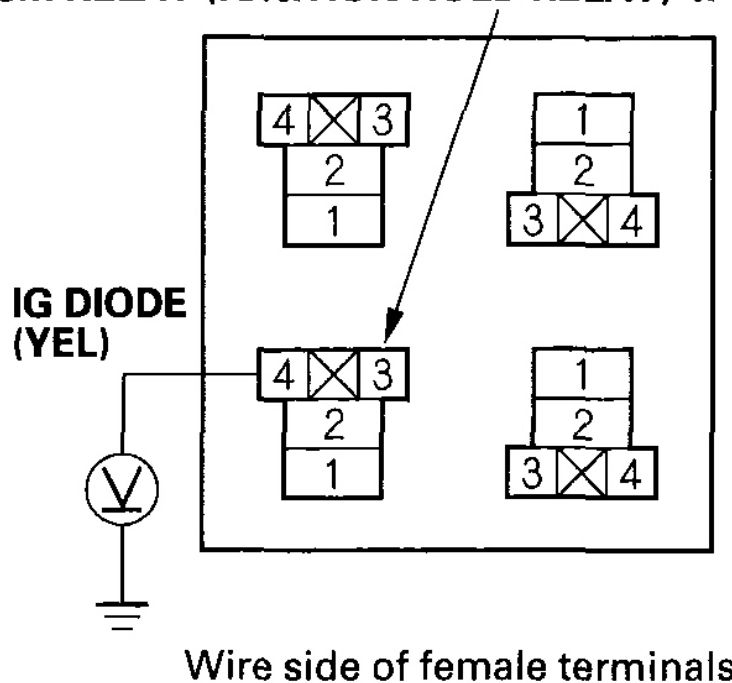
Is the relay OK?

YES - Go to step 13.

NO - Replace the MCM relay (ignition hold relay).

13. Turn the ignition switch ON (II).

14. Measure voltage between MCM relay (ignition hold relay) 4P connector terminal No. 4 and body ground.

MCM RELAY (IGNITION HOLD RELAY) 4P CONNECTOR

**Fig. 216: Measuring Voltage Between MCM Relay 4P Connector
Terminal No. 4 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

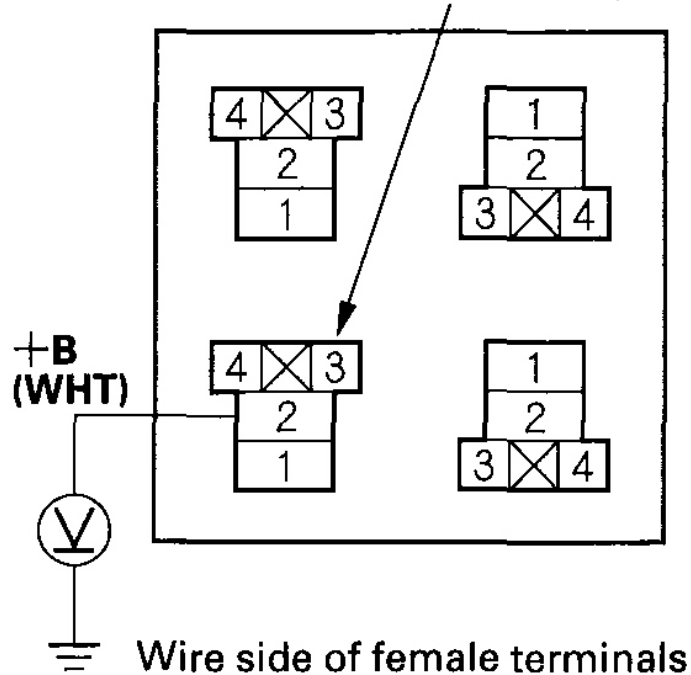
Is there battery voltage?

YES - Go to step 15.

NO - Check for:

- Repair open in the wire between the No. 24 IMA (7.5 A) fuse in the under-dash fuse/relay box and the diode.
- Repair open in the wire between the MCM relay (ignition hold relay) and the diode.
- A faulty diode.

15. Measure voltage between MCM relay (ignition hold relay) 4P connector terminal No. 2 and body ground.

MCM RELAY (IGNITION HOLD RELAY) 4P CONNECTOR

G03681435

Fig. 217: Measuring Voltage Between MCM Relay 4P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

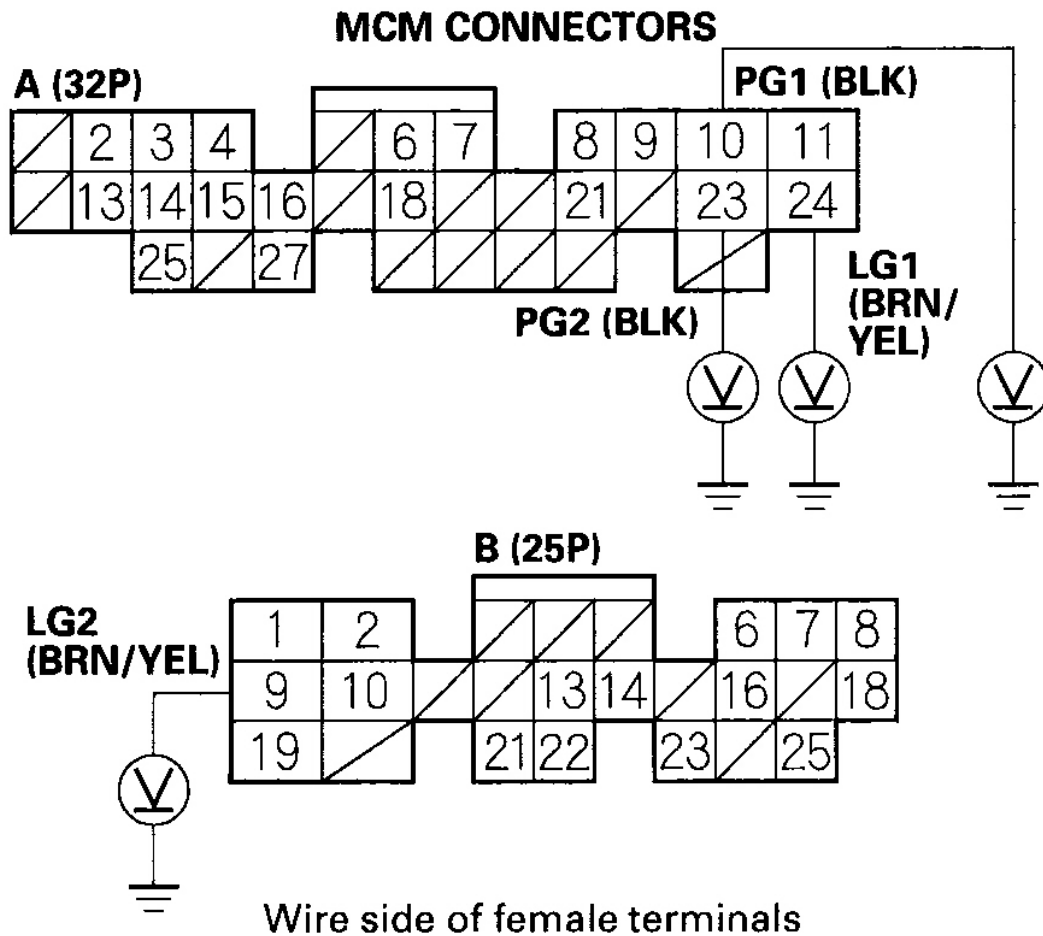
Is there battery voltage?

YES - Repair open in the wire between the MCM (A11, B1) and the MCM relay (ignition hold relay).

NO - Check for:

- A blow No. 18 IMA (7.5) fuse in the under-dash fuse/relay box.
- An open in the wire between the No. 18 IMA (7.5 A) fuse in the under-dash fuse/relay box and the MCM relay (ignition hold relay).

16. Measure voltage between body ground and MCM connector terminals A10, A23, A24, and B9 individually



G03681436

Fig. 218: Measuring Voltage Between Body Ground And MCM Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less 1.0 V?

YES - Substitute a known-good MCM, then recheck. If the symptom/indication goes away replace the original MCM.

NO - Repair open in the wire(s) that had than 1.0 V between G101, G502 and the MCM (A10, A23, A24, B9).

17. Check for DTCs

Are any DTCs indicated?

YES - Troubleshoot the DTC indicate.

NO - Go to step 18.

18. Turn the ignition switch OFF.
19. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
20. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
21. Disconnect MCM connector A.
22. Turn the ignition switch ON (II).

Does the IMA system indicator stay on?

YES - Repair short to ground in the wire between the MCM (A18) and the gauge assembly.

NO - Substitute a known-good MCM, and recheck. If the symptom/goes away, replace the original MCM.

CHARGING SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch OFF.
2. Check the 12 V battery (see **12 VOLT BATTERY TEST**).

Is the 12 V battery OK?

YES - Go to step 3.

NO - Charge or replace the 12 V battery, then go to step 3.

3. Check for DTCs.

Are any DTCs indicated?

YES - Troubleshoot the DTC indicated.

NO - Go to step 4.

4. Turn the ignition switch ON.(II).

Is charging system indicator ON?

YES - Go to step 5.

NO - Go to step 26 .

5. Start the engine.

Does charging system indicator go off?

YES - Intermittent failure, system is OK at this time.

NO - Go to step 6.

6. Let the engine idle for 2 minutes.

Are any DTCs indicated?

YES - Troubleshoot the DTC indicated.

NO - Go to step 7.

7. Let the engine idle for 2 more minutes.

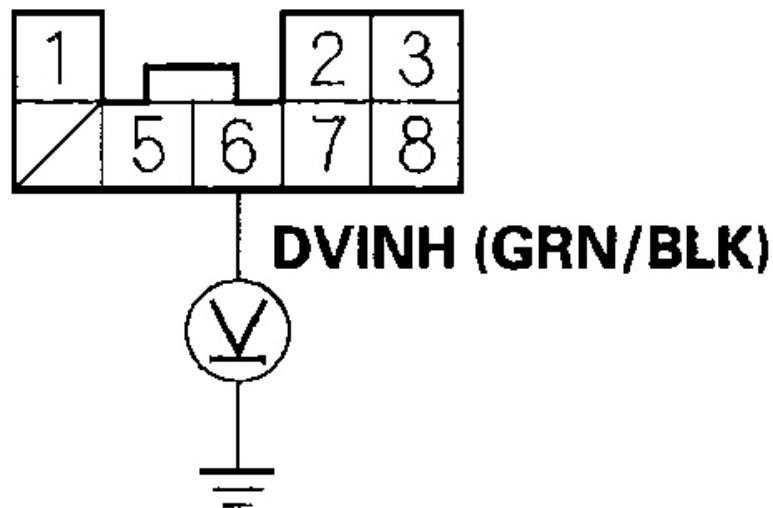
Is the charging system indicator on?

YES - Go to step 8.

NO - Intermittent failure, system is OK at this time.

8. Turn the ignition switch OFF.
9. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
10. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
11. Turn the battery module switch ON (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
12. Start the engine.
13. Measure voltage between DC-DC converter 8P connector terminal No. 6 and body ground.

DC-DC CONVERTER 8P CONNECTOR



Wire side of female terminals

G03681437

Fig. 219: Measuring Voltage Between DC-DC Converter 8P Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 1 V?

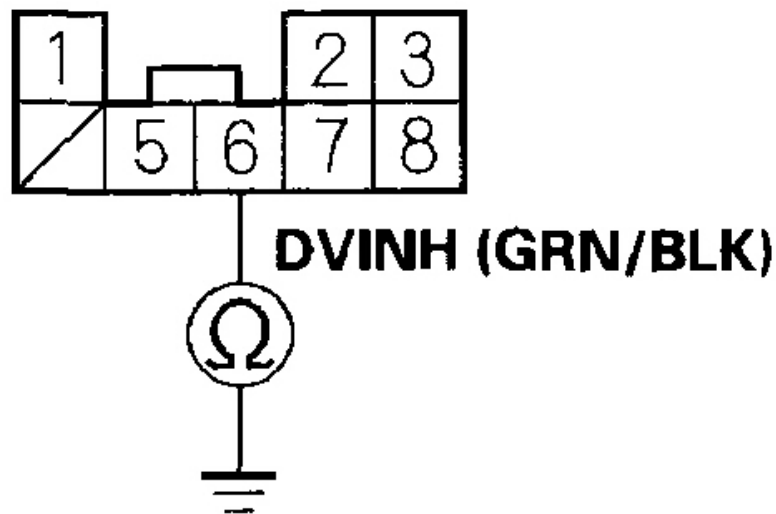
YES - Go to step 14.

NO - Go to step 20 .

14. Turn the ignition switch OFF.

15. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
16. Disconnect MCM connector A (32P).
17. Check for continuity between DC-DC converter 8P connector terminal No. 6 and body ground.

DC-DC CONVERTER 8P CONNECTOR



Wire side of female terminals

G03681438

Fig. 220: Checking Continuity Between DC-DC Converter 8P Connector Terminal No. 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

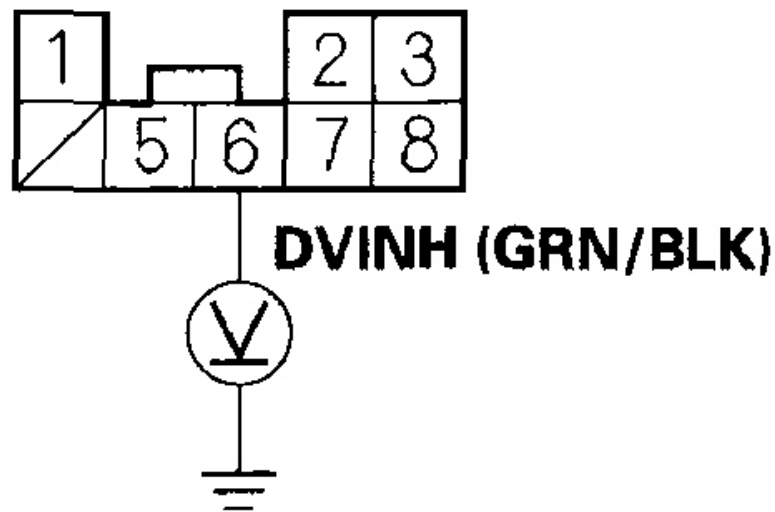
Is there continuity?

YES - Go to step 18.

NO - Substitute a known-good MCM, then recheck. If the symptom/indication goes away with a known-good MCM, replace the original MCM.

18. Disconnect the DC-DC converter 8P connector.
19. Check for continuity between DC-DC converter 8P connector terminal No. 6 and body ground.

DC-DC CONVERTER 8P CONNECTOR



Wire side of female terminals

G03681439

Fig. 221: Checking Continuity Between DC-DC Converter 8P Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

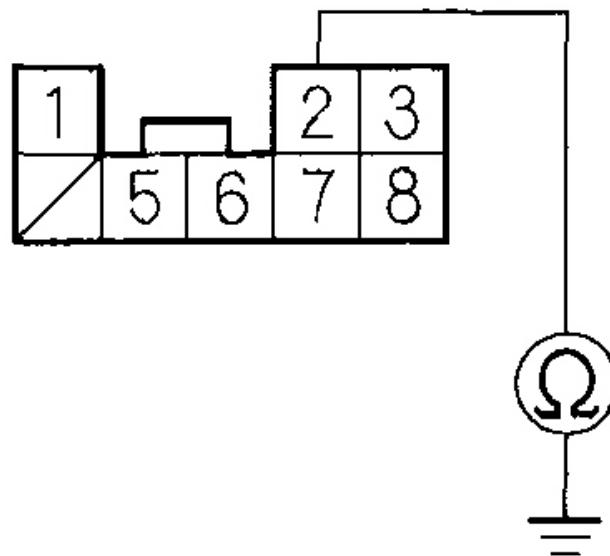
YES - Repair short to ground in the wire between the DC-DC converter and the MCM (A14).

NO - Replace the DC-DC converter (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).

20. Turn the ignition switch OFF.
21. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
22. Disconnect the DC-DC converter 8P connector.
23. Check for continuity between DC-DC converter 8P connector terminal No. 2 and body ground.

DC-DC CONVERTER 8P CONNECTOR

CHGLMP (BRN/WHT)



Wire side of female terminals

G03681440

Fig. 222: Checking Continuity Between DC-DC Converter 8P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Replace the DC-DC converter (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).

24. Disconnect the gauge assembly 22P connector.
25. Check for continuity between DC-DC converter 8P connector terminal No. 2 and body ground.

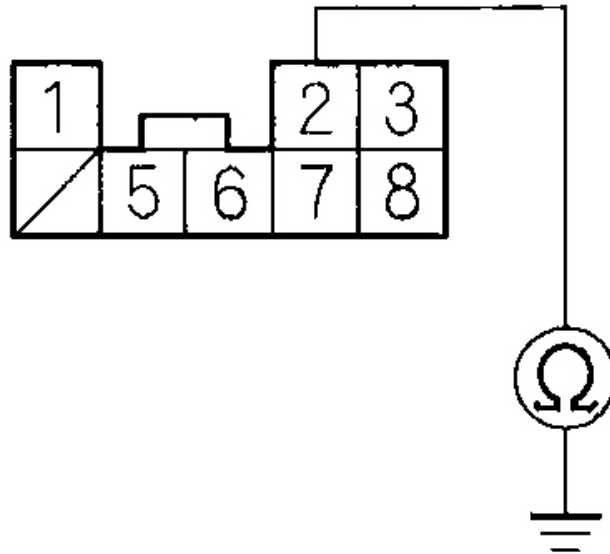
DC-DC CONVERTER 8P CONNECTOR**CHGLMP (BRN/WHT)****Wire side of female terminals****G03681441**

Fig. 223: Checking Continuity Between DC-DC Converter 8P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

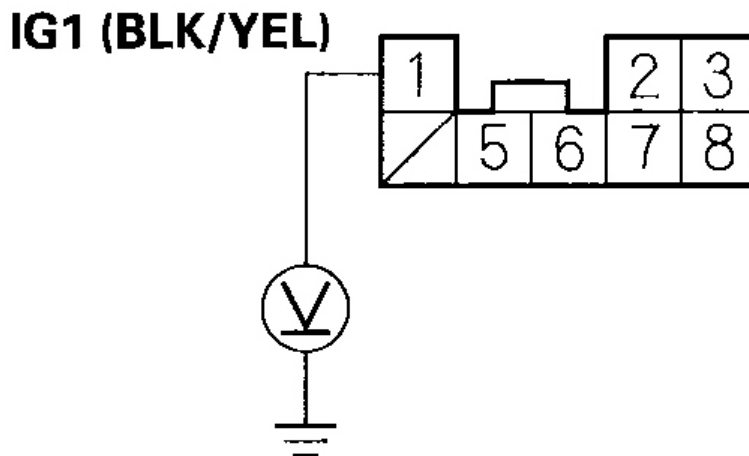
YES - Repair short to ground in the wire between the DC-DC converter and the gauge assembly.

NO - Replace the gauge assembly.

26. Turn the ignition switch OFF.

27. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
28. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
29. Turn the ignition switch ON (II).
30. Measure voltage between DC-DC converter 8P connector terminal No. 1 and body ground.

DC-DC CONVERTER 8P CONNECTOR



Wire side of female terminals

G03681442

Fig. 224: Measuring Voltage Between DC-DC Converter 8P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

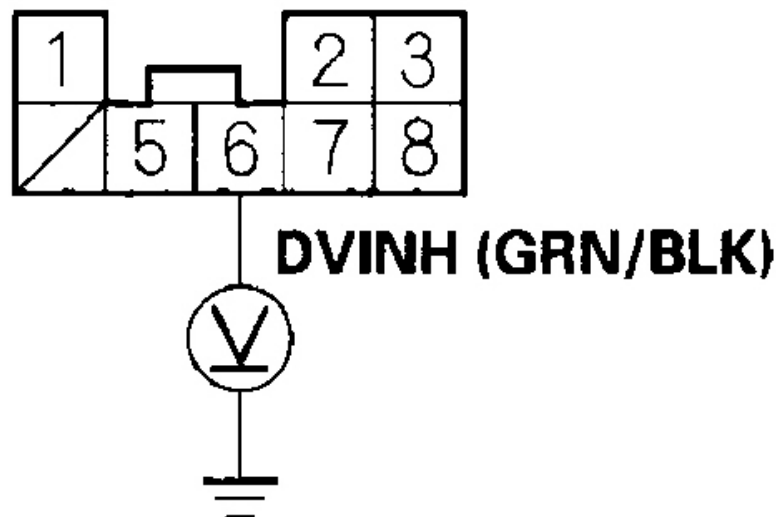
Is there battery voltage?

YES - Go to step 31.

NO - Go to step 44 .

31. Measure voltage between DC-DC converter 8P connector terminal No. 6 and body ground.

DC-DC CONVERTER 8P CONNECTOR



Wire side of female terminals

G03681443

Fig. 225: Measuring Voltage Between DC-DC Converter 8P Connector Terminal No. 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

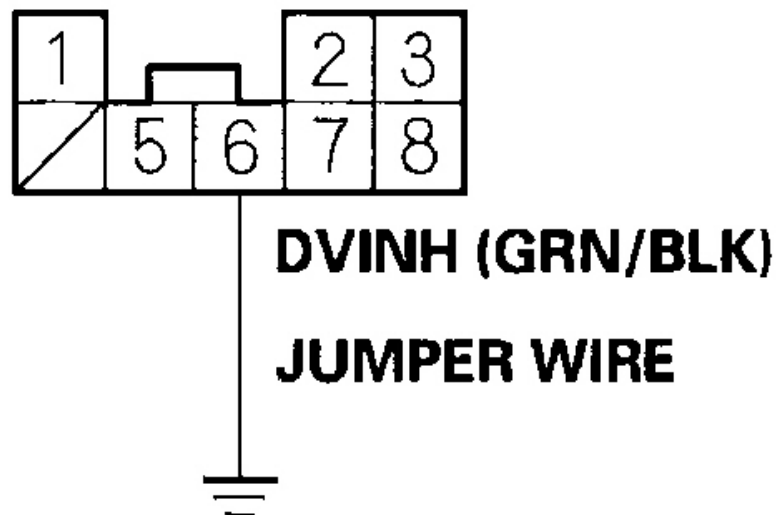
Is there about 5 V?

YES - Go to step 32.

NO - Go to step 36 .

32. Turn the ignition switch OFF.
33. Connect DC-DC converter 8P connector terminal No. 6 to body ground with a jumper wire.

DC-DC CONVERTER 8P CONNECTOR



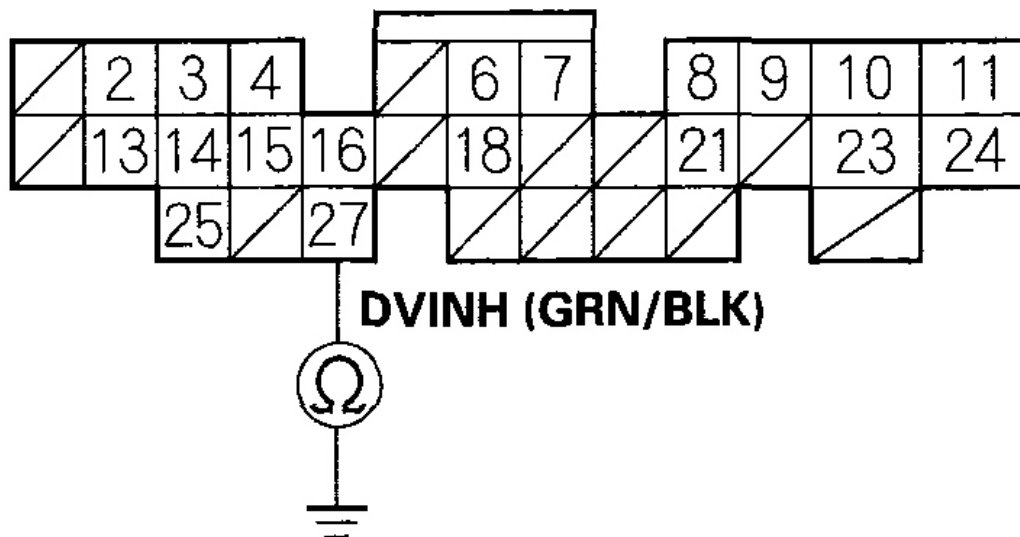
Wire side of female terminals

G03681444

Fig. 226: Connecting DC-DC Converter 8P Connector Terminal No. 6 To

Body Ground With Jumper Wire**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

34. Disconnect MCM connector A (32P).
35. Check for continuity between body ground and MCM connector terminal A27.

MCM CONNECTOR A (32P)**Wire side of female terminals**

G03681445

Fig. 227: Checking Continuity Between Body Ground And MCM Connector Terminal A27**Courtesy of AMERICAN HONDA MOTOR CO., INC.****Is there continuity?**

YES - Substitute a known-good MCM, then recheck. If the symptom/indication goes away with a known-good MCM, replace the

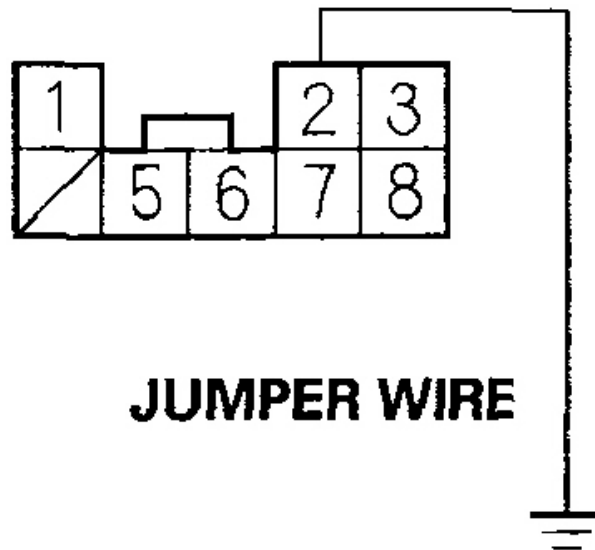
original MCM.

NO - Repair open in the wire between the DC-DC converter and the MCM (A27).

36. Turn the ignition switch OFF.
37. Disconnect the DC-DC converter 8P connector.
38. Connect DC-DC converter 8P connector terminal No. 2 to body ground with a jumper wire.

DC-DC CONVERTER 8P CONNECTOR

CHGLMP (BRN/WHT)



JUMPER WIRE

Wire side of female terminals

G03681446

Fig. 228: Connecting DC-DC Converter 8P Connector Terminal No. 2 To

Body Ground Using Jumper Wire**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

39. Turn the ignition switch ON (II).

Is the charging system indicator on?

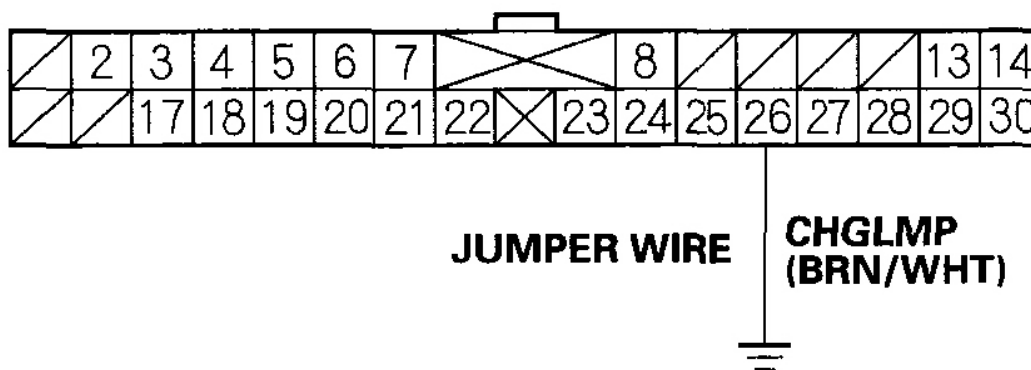
YES - Replace the DC-DC converter (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).

NO - Go to step 40.

40. Turn the ignition switch OFF.

41. Disconnect the gauge assembly 30P connector.

42. Connect gauge assembly 30P connector terminal No. 26 to body ground with a jumper wire.

GAUGE ASSEMBLY 30P CONNECTOR

Wire side of female terminals

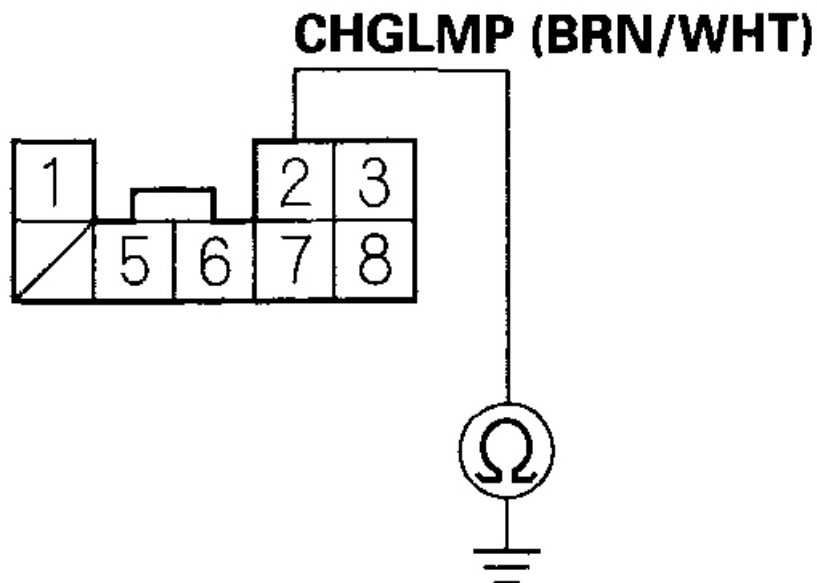
G03681447

Fig. 229: Connecting Gauge Assembly 30P Connector Terminal No. 26 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Check for continuity between DC-DC converter 8P connector terminal No. 2 and body ground.

DC-DC CONVERTER 8P CONNECTOR



Wire side of female terminals

G03681448

Fig. 230: Checking Continuity Between DC-DC Converter 8P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge assembly.

NO - Repair open in the wire between the DC-DC converter and the gauge assembly.

44. Check the No. 4 ECU (ECM) (7.5 A) fuse in the under-dash fuse/relay box.

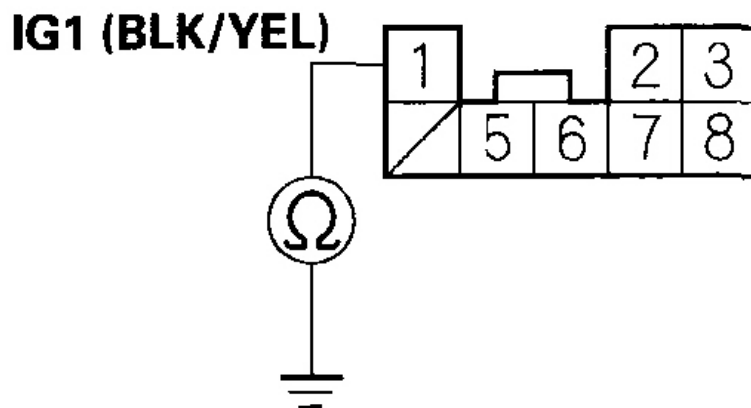
Is the fuse OK?

YES - Repair open in the wire between the No. 4 ECU (ECM) (7.5 A) fuse in the under-dash fuse/relay box and the DC-DC converter.

NO - Go to step 45.

45. Check for continuity between body ground and DC-DC converter terminal No. 1.

DC-DC CONVERTER 8P CONNECTOR



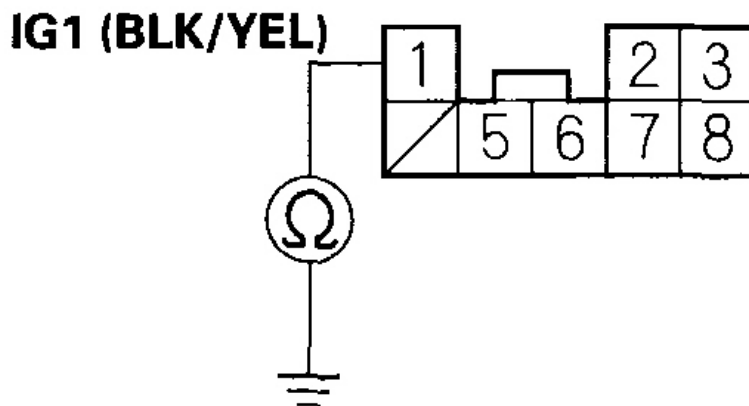
Wire side of female terminals

G03681449

Fig. 231: Checking Continuity Between Body Ground And DC-DC

Converter Terminal No. 1**Courtesy of AMERICAN HONDA MOTOR CO., INC.****Is there continuity?****YES** - Go to step 46.**NO** - Replace the No. 4 ECU (ECM) (7.5 A) fuse in the under-dash fuse/relay box.

46. Disconnect the DC-DC converter 8P connector.
47. Check for continuity between body ground and DC-DC converter terminal No. 1.

DC-DC CONVERTER 8P CONNECTOR**Wire side of female terminals****G03681450****Fig. 232: Checking Continuity Between Body Ground And DC-DC Converter Terminal No. 1**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

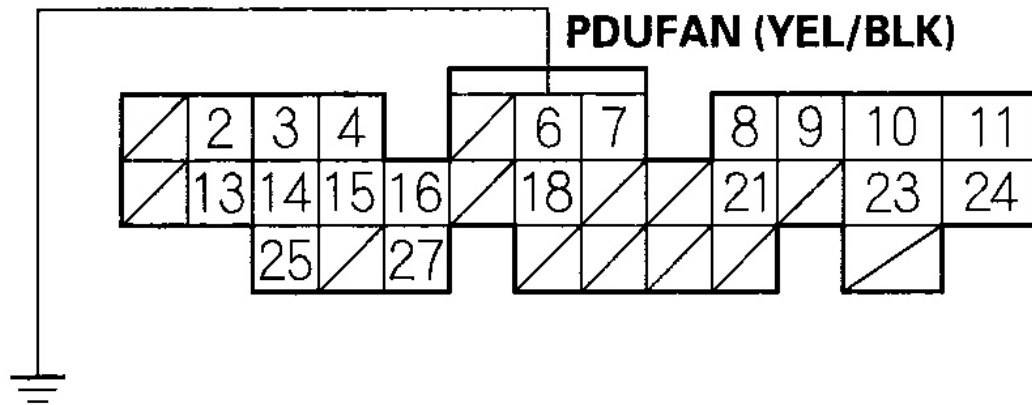
YES - Repair short to ground in the wire between No. 4 ECU (ECM) (7.5 A) fuse in the under-dash fuse/relay box and the DC-DC converter.

NO - Replace the No. 4 ECU (ECM) (7.5 A) fuse in the under-dash fuse/relay box, and the DC-DC converter (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).

MOTOR POWER INVERTER (MPI) MODULE FAN TEST

MOTOR POWER INVERTER (MPI) MODULE FAN DOES NOT RUN

1. Turn the ignition switch OFF.
2. Remove the cargo floor mat (see **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
3. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
4. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Connect MCM connector terminal A6 to body ground with a jumper wire.

MCM CONNECTOR A (32P)**JUMPER WIRE**

Wire side of female terminals

G03681451

Fig. 233: Connecting MCM Connector Terminal A6 To Body Ground Using Jumper Wire

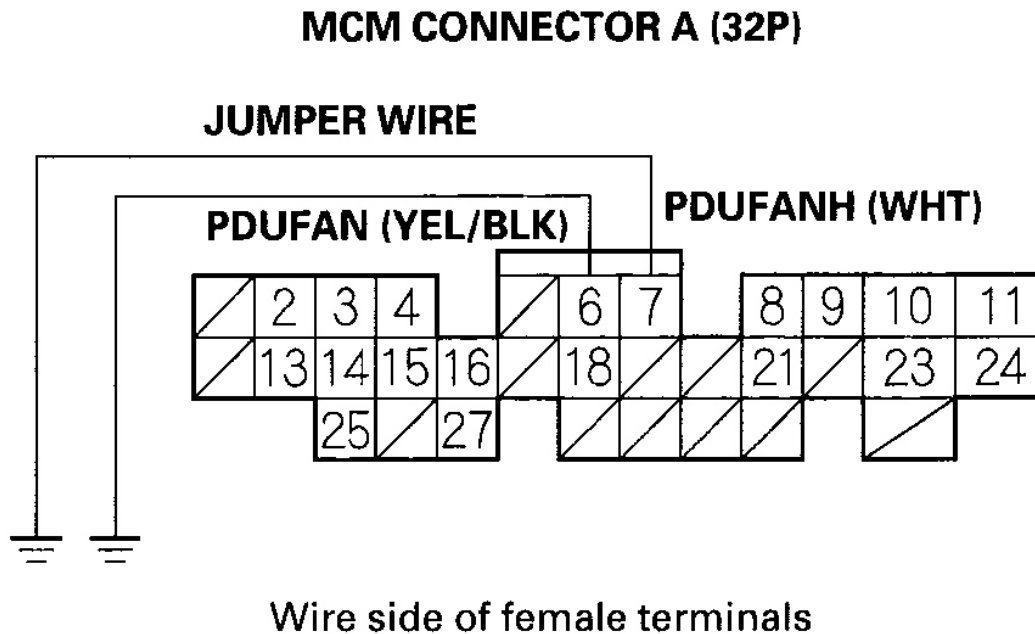
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the MPI module fan run?

YES - Go to step 6.

NO - Go to step 7 .

6. Connect MCM connector terminals A6 and A7 to body ground with jumper wires.



G03681452

Fig. 234: Connecting MCM Connector Terminals A6 And A7 To Body Ground Using Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the MPI module fan run at high speed?

YES - The MPI module fan is OK.

NO - Go to step 15 .

7. Check the low speed MPI module fan control relay (see **POWER RELAY TEST**).

Is the relay OK?

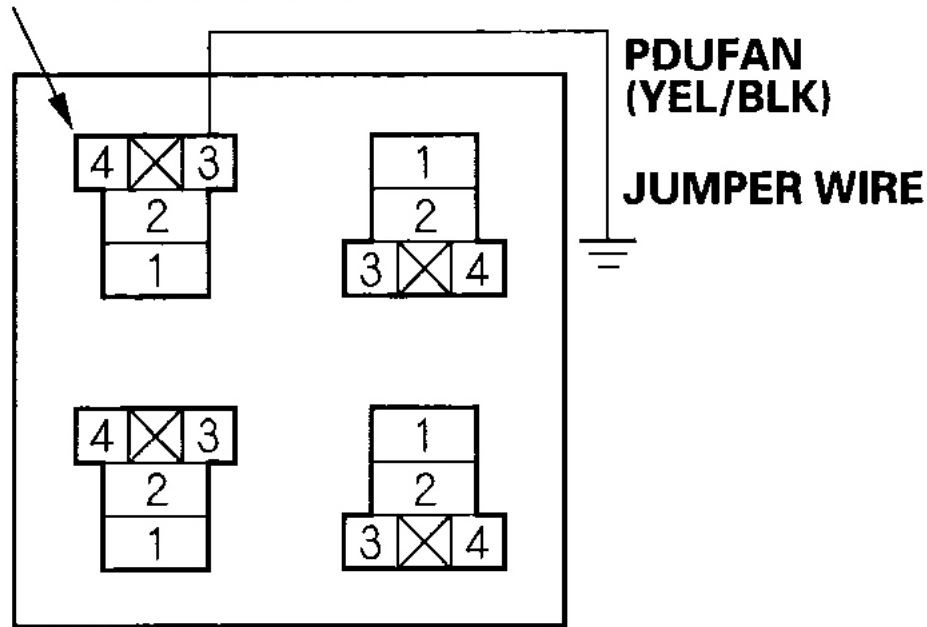
YES - Go to step 8.

NO - Replace the low speed MPI module fan control relay.

8. Disconnect MCM connector A (32P) and the low speed MPI module fan control relay 4P connector.

9. Connect low speed MPI module fan control relay 4P connector terminal No. 3 to body ground with a jumper wire.

**LOW SPEED MPI MODULE FAN CONTROL
RELAY 4P CONNECTOR**

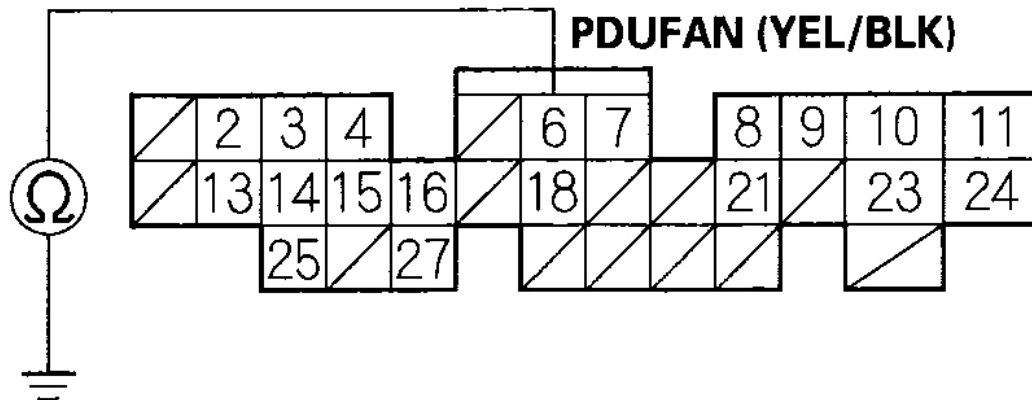


Wire side of female terminals

G03681453

Fig. 235: Connecting Low Speed MPI Module Fan Control Relay 4P Connector Terminal No. 3 To Body Ground Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between body ground and MCM connector terminal A6.

MCM CONNECTOR A (32P)

Wire side of female terminals

G03681454

Fig. 236: Checking Continuity Between Body Ground And MCM Connector Terminal A6

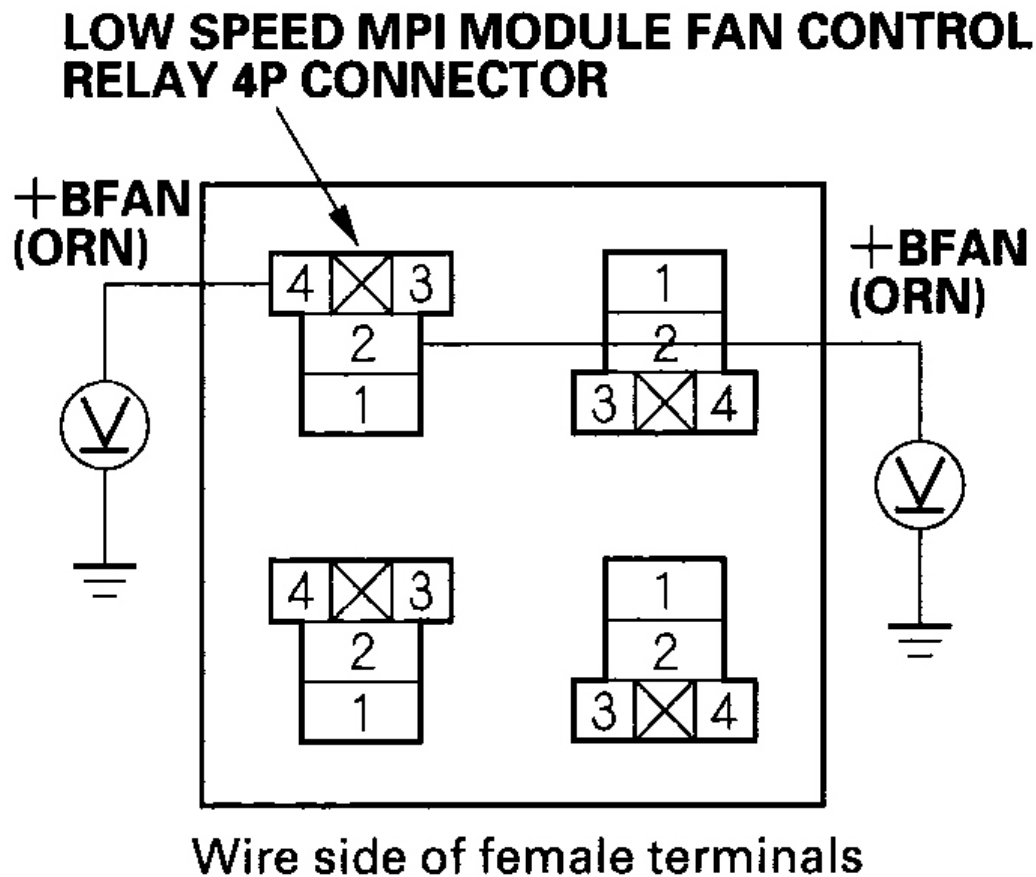
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the MCM (A6) and the low speed MPI module fan control relay.

11. Measure voltage between body ground and low speed MPI module fan control relay 4P connector terminals No. 2 and No. 4 individually.



G03681455

Fig. 237: Measuring Voltage Between Body Ground And Low Speed MPI Module Fan Control Relay 4P Connector Terminals No. 2 And 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 12.

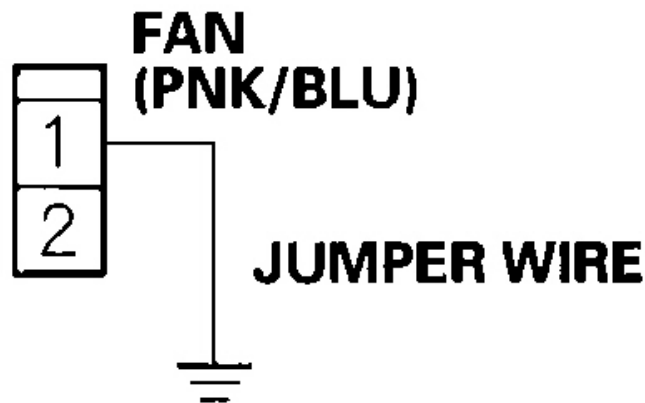
NO - Check for:

- A blown No. 5 IMA FAN (15 A) fuse in the under-hood fuse/relay box.
- An open in the wire between the No. 5 IMA FAN (15 A) fuse in the

under-hood fuse/relay box and the low speed MPI module fan control relay.

12. Disconnect the MPI module fan 2P connector.
13. Connect MPI module fan 2P connector terminal No. 1 to body ground with a jumper wire.

MPI MODULE FAN 2P CONNECTOR



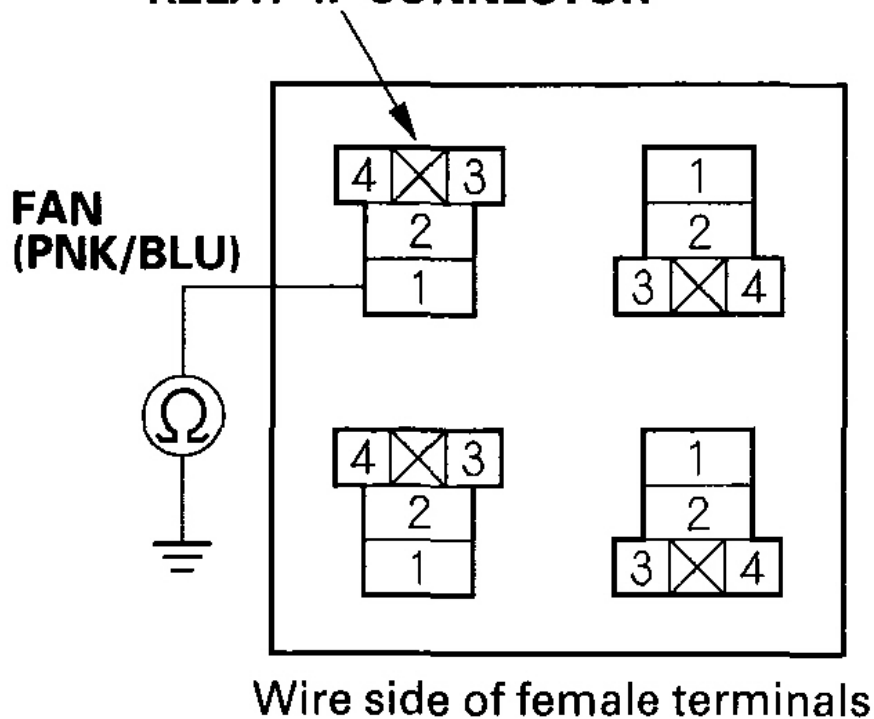
Wire side of female terminals

G03681456

Fig. 238: Connecting MPI Module Fan 2P Connector Terminal No. 1 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between body ground and low speed MPI module fan control relay 4P connector terminal No. 1.

**LOW SPEED MPI MODULE FAN CONTROL
RELAY 4P CONNECTOR**

G03681457

Fig. 239: Checking Continuity Between Body Ground And Low Speed MPI Module Fan Control Relay 4P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good MCM and MPI module fan, and recheck. If the symptom/indication goes away, replace the original MCM and the MPI module fan.

NO - Repair open in the wire between the MPI module fan and the low speed MPI module fan control relay.

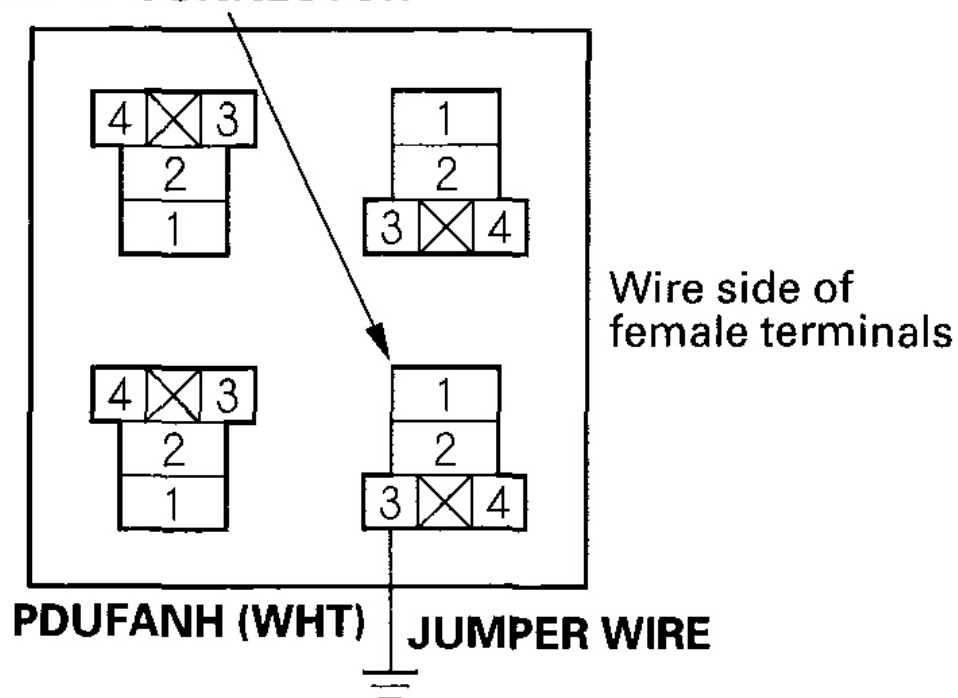
15. Check the high speed MPI module fan control relay (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 16.

NO - Replace the high speed MPI module fan control relay.

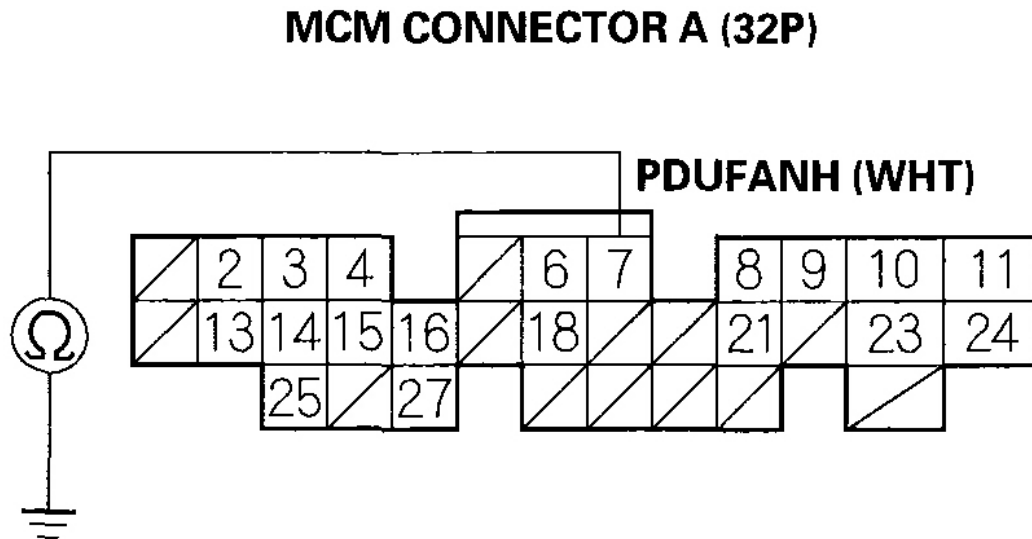
16. Disconnect MCM connector A (32P) and the high speed MPI module fan control relay 4P connector.
17. Connect high speed MPI module fan control relay 4P connector terminal No. 3 to body ground with a jumper wire.

HIGH SPEED MPI MODULE FAN CONTROL RELAY 4P CONNECTOR

G03681458

Fig. 240: Connecting High Speed MPI Module Fan Control Relay 4P Connector Terminal No. 3 To Body Ground Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Check for continuity between body ground and MCM connector terminal A7.



Wire side of female terminals

G03681459

Fig. 241: Checking Continuity Between Body Ground And MCM Connector Terminal A7

Courtesy of AMERICAN HONDA MOTOR CO., INC.

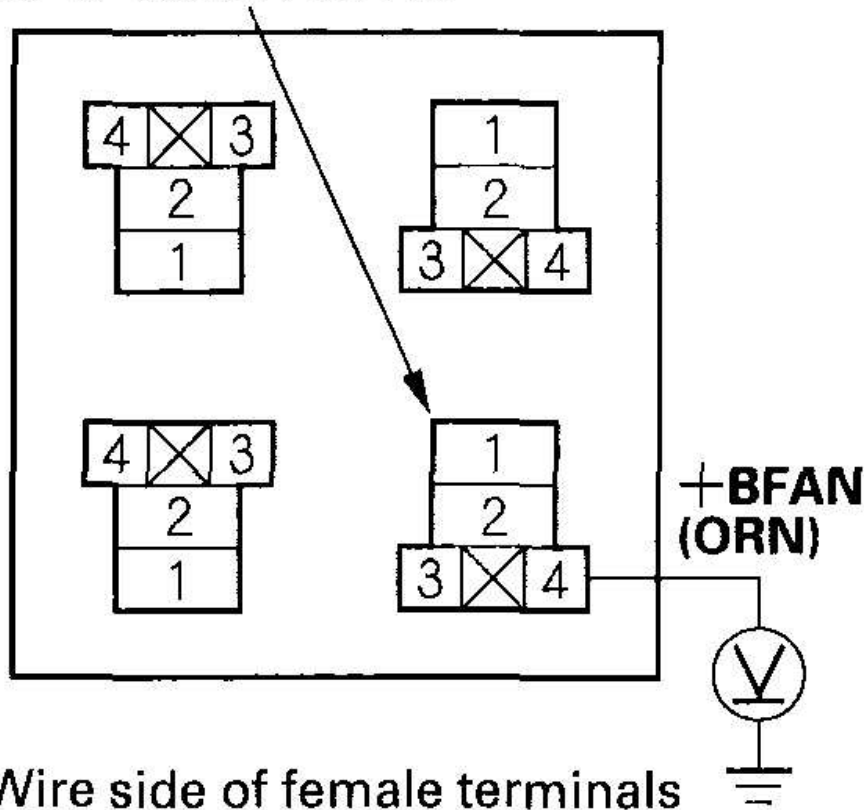
Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the MCM (A7) and the high speed MPI module fan control relay.

19. Measure voltage between body ground and high speed MPI module fan control relay 4P connector terminal No. 4.

HIGH SPEED MPI MODULE FAN CONTROL RELAY 4P CONNECTOR



G03681460

Fig. 242: Measuring Voltage Between Body Ground And High Speed MPI Module Fan Control Relay 4P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

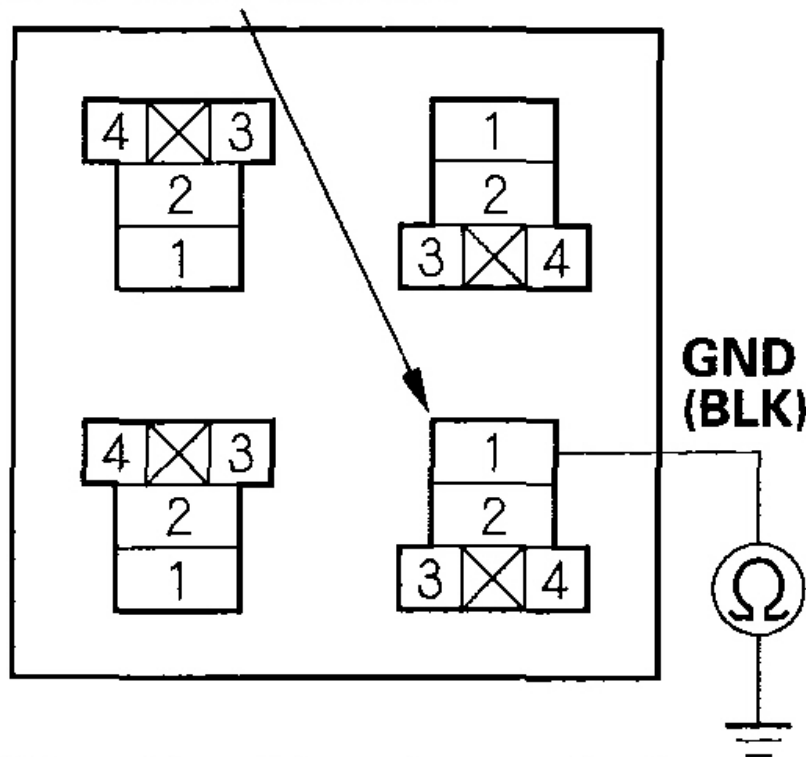
YES - Go to step 20.

NO - Check for:

- A blown No. 5 IMA FAN (15 A) fuse in the under-hood fuse/relay box.

- An open in the wire between the No. 5 IMA FAN (15 A) fuse in the under-hood fuse/relay box and the high speed MPI module fan control relay.
20. Check for continuity between body ground and high speed MPI module fan control relay 4P connector terminal No. 1

HIGH SPEED MPI MODULE FAN CONTROL RELAY 4P CONNECTOR



Wire side of female terminals

G03681461

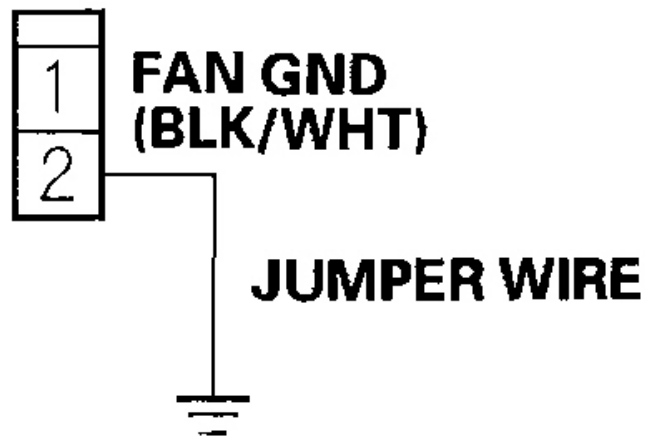
Fig. 243: Checking Continuity Between Body Ground And High Speed MPI Module Fan Control Relay 4P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire between G502 and the high speed MPI module fan control relay.

21. Disconnect the MPI module fan 2P connector.
22. Connect MPI module fan 2P connector terminal No. 2 to body ground with a jumper wire.

MPI MODULE FAN 2P CONNECTOR

Wire side of female terminals

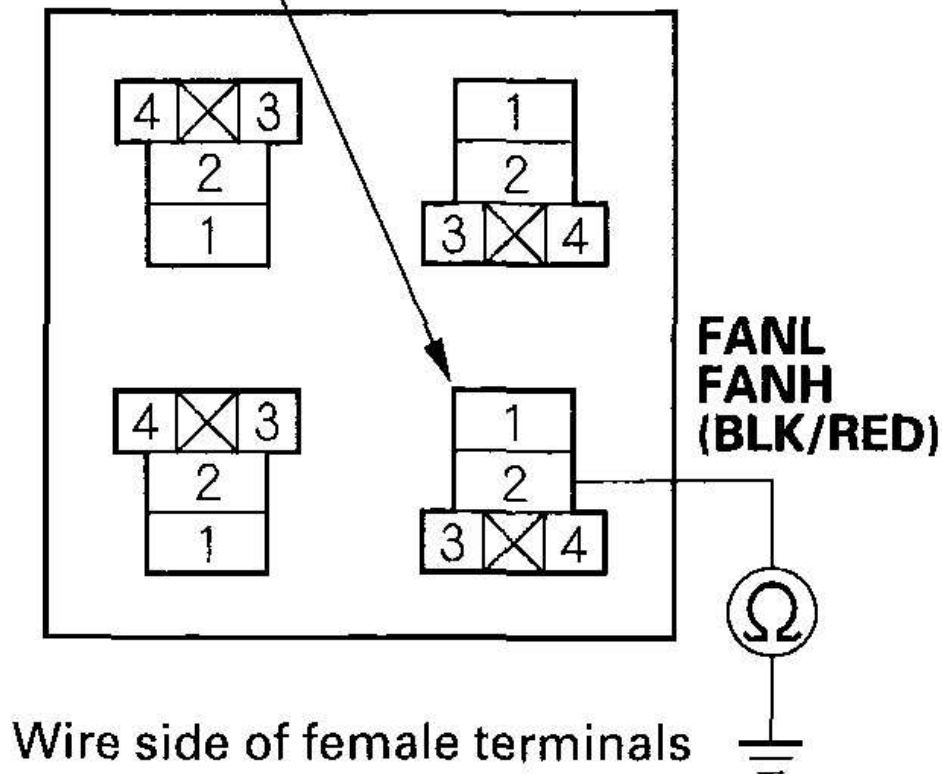
G03681462

Fig. 244: Connecting MPI Module Fan 2P Connector Terminal No. 2 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Check for continuity between body ground and high speed MPI module fan control relay 4P connector terminal No. 2.

HIGH SPEED MPI MODULE FAN CONTROL RELAY 4P CONNECTOR



G03681463

Fig. 245: Checking Continuity Between Body Ground And High Speed MPI Module Fan Control Relay 4P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good MCM and MPI module fan, and recheck. If the symptom/indication goes away, replace the original MCM and the

MPI module fan.

NO - Check for:

- An open in the wire between the MPI module fan control resistor and the high speed MPI module fan relay.
- An open in the wire between the MPI module fan control resistor and the MPI module fan.
- An open in the wire between the MPI module fan control resistor and G502.
- Replace the MPI module fan control resistor.

MPI MODULE FAN KEEPS RUNNING, OR ALWAYS RUNS AT HIGH SPEED

NOTE: Information marked with an asterisk (*) applies to the **PDUFANH** line.

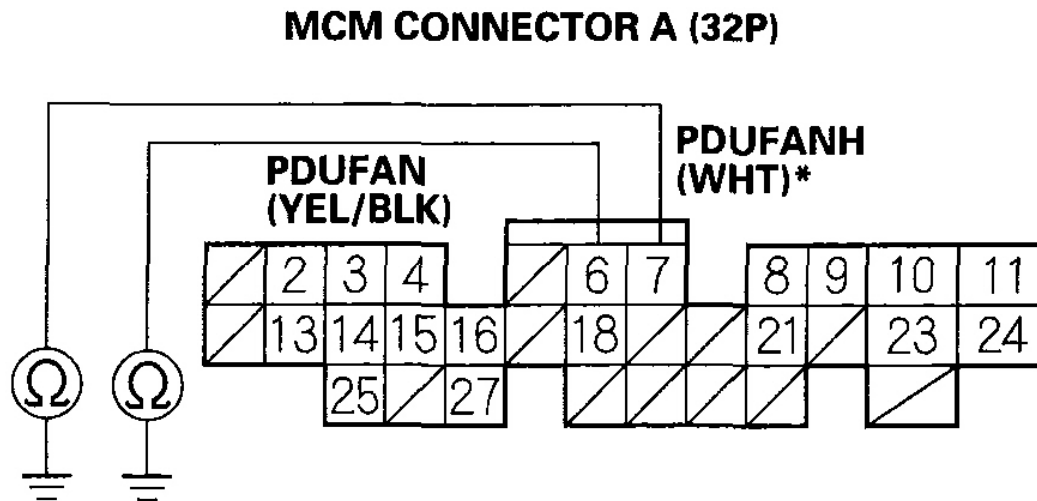
1. Turn the ignition switch OFF.
2. Remove the cargo floor mat (see **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
3. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
4. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Disconnect MCM connector A (32P).

Does the MPI module fan run?

YES - Go to step 6.

NO - Substitute a known-good MCM and recheck. If the symptom/indication goes away, replace the original MCM.

6. Remove the low speed MPI module fan control relay and high speed MPI module fan control relay.
7. Check for continuity between body ground and MCM connector terminals A6 and A7*.



Wire side of female terminals

G03681464

Fig. 246: Checking Continuity Between Body Ground And MCM Connector Terminals A6 And A7*

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the MCM (A6, A7*) and the low (high)* speed motor MPI module fan control relay.

NO - Go to step 8.

8. Check the low (high)* speed MPI module fan control relay (see **POWER RELAY TEST**).

Is the relay OK?

YES - Repair short to ground in the wire between the MPI module fan and high speed MPI module fan control relay.

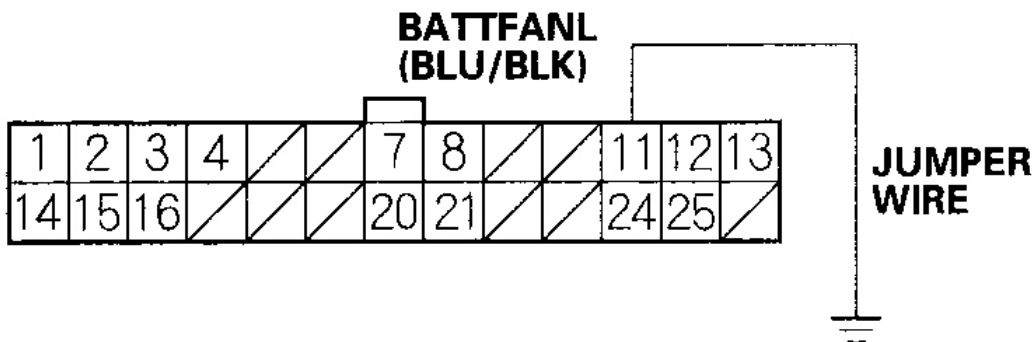
NO - Replace the low (high)* speed MPI module fan control relay.

BATTERY MODULE FAN TEST

BATTERY MODULE FAN DOES NOT RUN

1. Turn the ignition switch OFF.
2. Remove the cargo floor mat (see TRIM REMOVAL/INSTALLATION - CARGO AREA).
3. Turn the battery module switch OFF (see TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT).
4. Remove the IPU lid (see TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT).
5. Connect BCM module connector terminal A11 to body ground with a jumper wire, and turn the ignition switch ON (II).

BCM MODULE CONNECTOR A (26P)



Wire side of female terminals

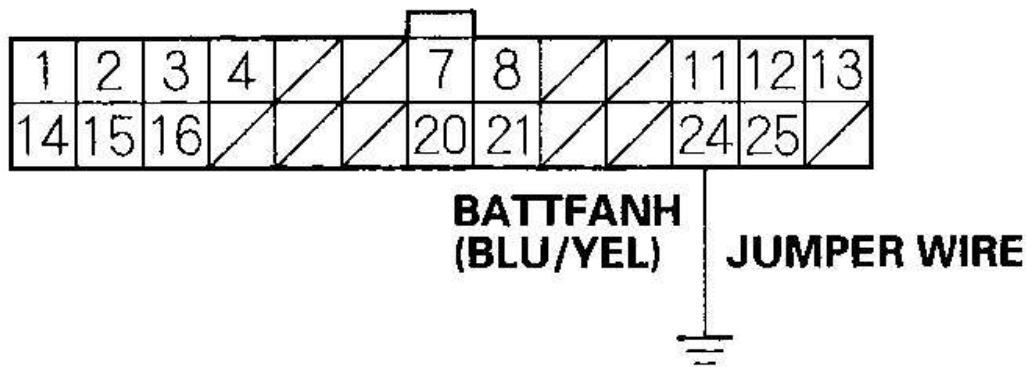
G03681465

Fig. 247: Connecting BCM Module Connector Terminal A11 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the battery module fan run?**YES** - Go to step 6.**NO** - Go to step 7 .

6. Connect BCM module connector terminal A24 to body ground with a jumper wire.

BCM MODULE CONNECTOR A (26P)

Wire side of female terminals

G03681466

Fig. 248: Connecting BCM Module Connector Terminal A24 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the battery module fan run at high speed?

YES - Substitute a known-good BCM module, and recheck. If the symptom goes away, replace the original BCM module.

NO - Go to step 20 .

7. Check the low speed battery module fan control relay (see **POWER RELAY**

TEST).

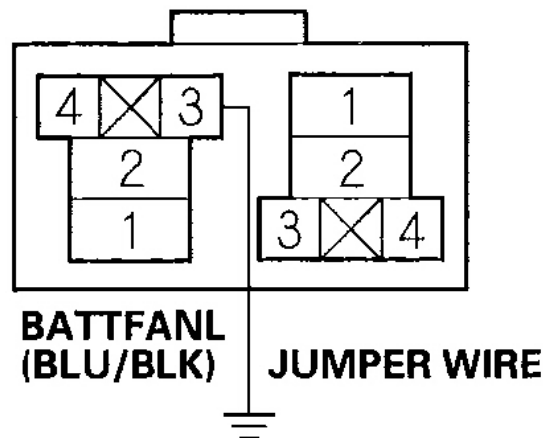
Is the relay OK?

YES - Go to step 8.

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

8. Disconnect BCM module connector A (26P), and remove the low speed battery module fan control relay.
9. Connect low speed battery module fan control relay 4P connector terminal No. 3 to body ground with a jumper wire.

LOW SPEED BATTERY MODULE FAN CONTROL RELAY 4P CONNECTOR



Wire side of female terminals

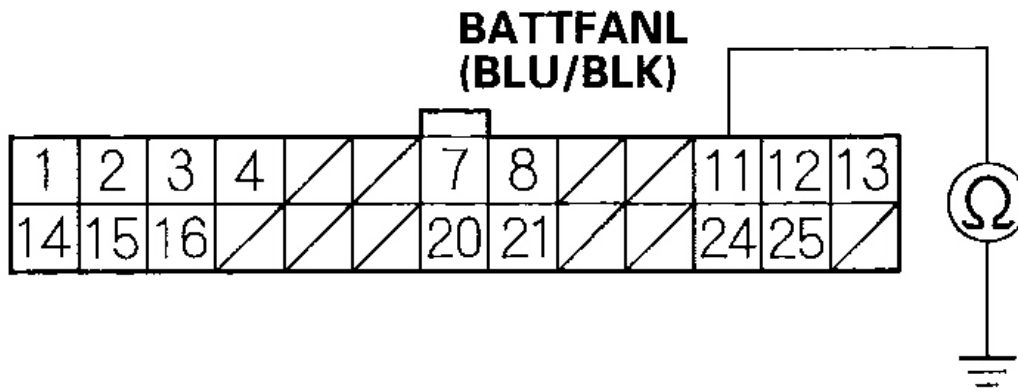
G03681467

Fig. 249: Connecting Low Speed Battery Module Fan Control Relay 4P Connector Terminal No. 3 To Body Ground Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between body ground and BCM module connector

terminal A11.

BCM MODULE CONNECTOR A (26P)



Wire side of female terminals

G03681468

Fig. 250: Checking Continuity Between Body Ground And BCM Module Connector Terminal A11

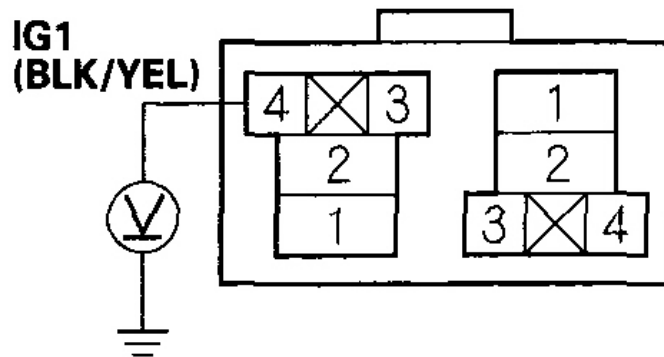
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the BCM module (A11) and the low speed battery module fan control relay.

11. Turn the ignition switch ON (II).
12. Measure voltage between body ground and low speed battery module fan control relay 4P connector terminal No. 4.

**LOW SPEED BATTERY MODULE FAN CONTROL RELAY
4P CONNECTOR**

Wire side of female terminals

G03681469

Fig. 251: Measuring Voltage Between Body Ground And Low Speed Battery Module Fan Control Relay 4P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

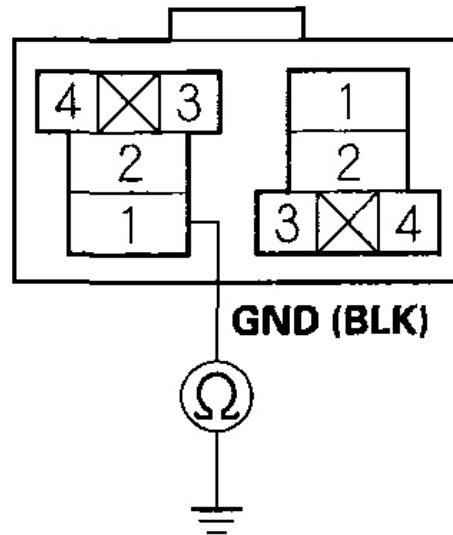
YES - Go to step 13.

NO - Check for:

- A blown No. 24 IMA (7.5 A) fuse in the under-hood fuse/relay box.
- An open in the wire between the No. 24 IMA (7.5 A) fuse in the under-hood fuse/relay box and the low speed battery module fan control relay.

13. Turn the ignition switch OFF.

14. Check for continuity between body ground and low speed battery module fan control relay 4P connector terminal No. 1.

**LOW SPEED BATTERY MODULE FAN CONTROL RELAY
4P CONNECTOR**

Wire side of female terminals

G03681470

Fig. 252: Checking Continuity Between Body Ground And Low Speed Battery Module Fan Control Relay 4P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

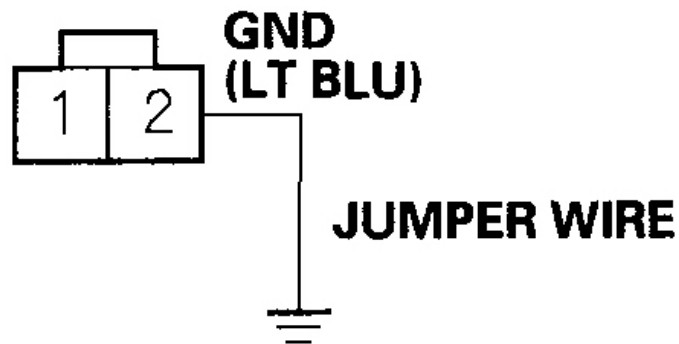
Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between G502 and the low speed motor power inverter module fan control relay.

15. Disconnect the battery module fan 2P connector.
16. Connect battery module fan 2P connector terminal No. 2 to body ground with a jumper wire.

BATTERY MODULE FAN 2P CONNECTOR



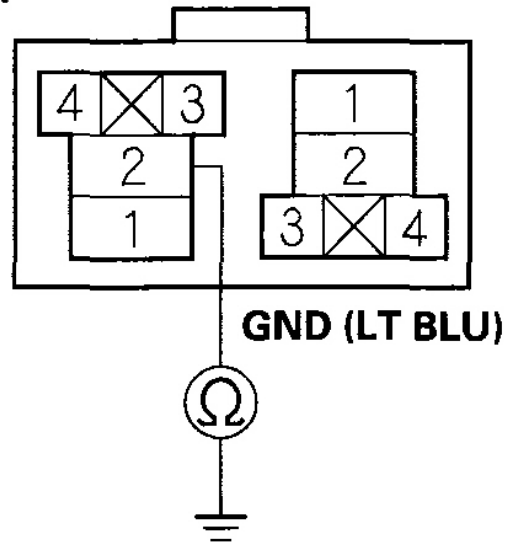
Wire side of female terminals

G03681471

Fig. 253: Connecting Battery Module Fan 2P Connector Terminal No. 2 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between body ground and low speed battery module fan control relay 4P connector terminal No. 2.

**LOW SPEED BATTERY MODULE FAN CONTROL RELAY
4P CONNECTOR**

Wire side of female terminals

G03681472

Fig. 254: Checking Continuity Between Body Ground And Low Speed Battery Module Fan Control Relay 4P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

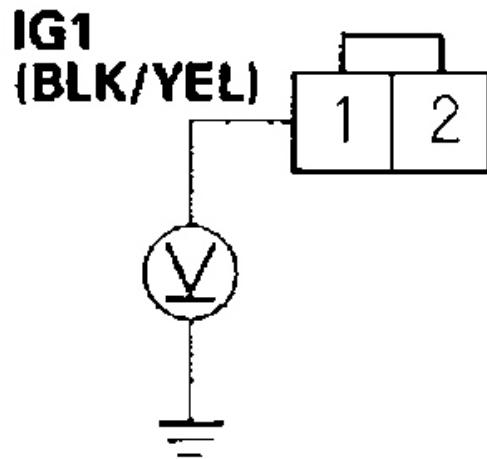
Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the battery module fan and the low speed battery module fan control relay.

18. Turn the ignition switch ON (II).
19. Measure voltage between body ground and battery module fan 2P connector terminal No. 1.

BATTERY MODULE FAN 2P CONNECTOR



Wire side of female terminals

G03681473

Fig. 255: Measuring Voltage Between Body Ground And Battery Module Fan 2P Connector Terminal No. 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Substitute a known-good BCM module and battery module fan, and recheck. If the symptom/indication goes away, replace the original BCM module and the battery module fan.

NO - Check for:

- A blown No. 24 IMA (7.5 A) fuse in the under-hood fuse/relay box.
- An open in the wire between the No. 24 IMA (7.5 A) fuse in the under-hood fuse/relay box and the battery module fan.

20. Check the high speed battery module fan control relay (see **POWER RELAY TEST**).

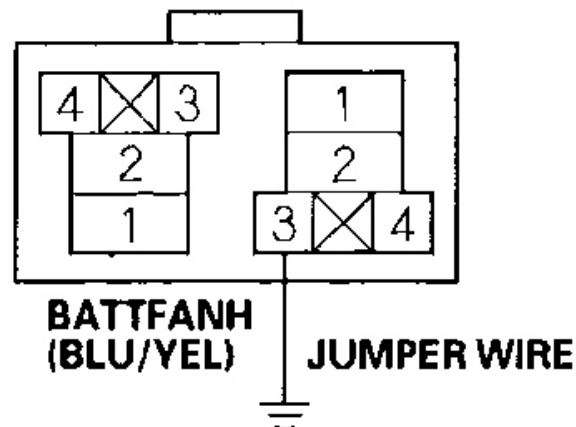
Is the relay OK?

YES - Go to step 21.

NO - Replace the battery module (see **BATTERY MODULE REMOVAL/INSTALLATION**).

21. Disconnect BCM module connector A (26P), and remove the high speed battery module fan control relay.
22. Connect high speed battery module fan control relay 4P connector terminal No. 3 to body ground with a jumper wire.

HIGH SPEED BATTERY MODULE FAN CONTROL RELAY 4P CONNECTOR



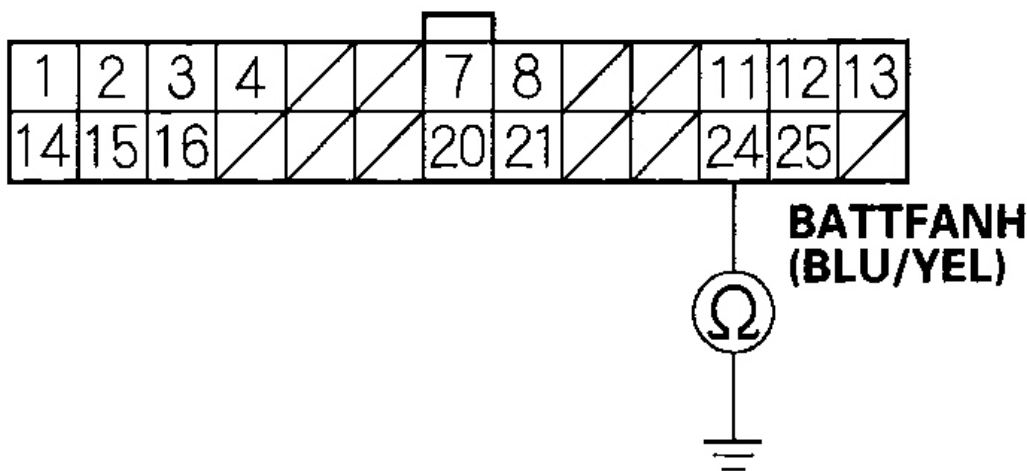
Wire side of female terminals

G03681474

Fig. 256: Connecting High Speed Battery Module Fan Control Relay 4P Connector Terminal No. 3 To Body Ground Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Check for continuity between body ground and BCM module connector terminal A24.

BCM MODULE CONNECTOR A (26P)



Wire side of female terminals

G03681475

Fig. 257: Checking Continuity Between Body Ground And BCM Module Connector Terminal A24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

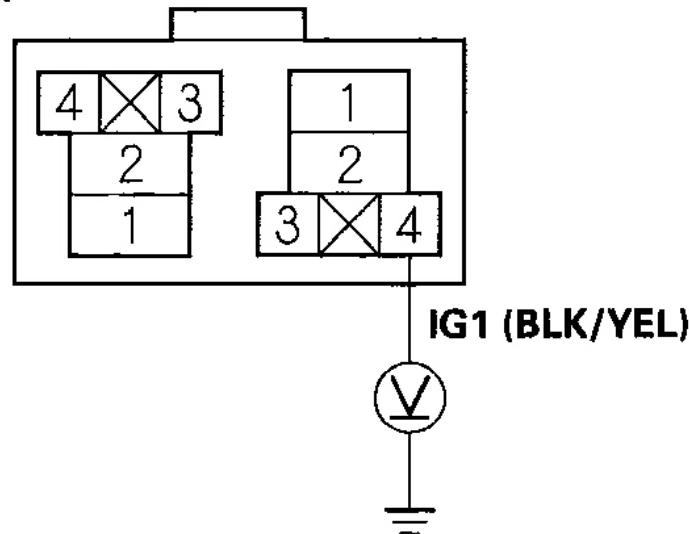
NO - Repair open in the wire between the BCM module (A24) and the high speed battery module fan control relay.

24. Turn the ignition switch ON (II).

25. Measure voltage between body ground and high speed battery module fan

control relay 4P connector terminal No. 4.

HIGH SPEED BATTERY MODULE FAN CONTROL RELAY 4P CONNECTOR



Wire side of female terminals

G03681476

Fig. 258: Measuring Voltage Between Body Ground And High Speed Battery Module Fan Control Relay 4P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

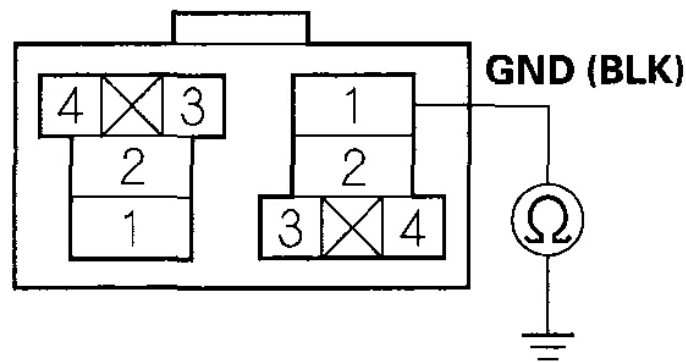
YES - Go to step 26.

NO - Check for:

- A blown No. 24 IMA (7.5 A) fuse in the under-hood fuse/relay box.
- An open in the wire between the No. 24 IMA (7.5 A) fuse in the under-hood fuse/relay box and the low speed battery module relay.

26. Turn the ignition switch OFF.

27. Check for continuity between body ground and high speed battery module fan control relay 4P connector terminal No. 1.

**HIGH SPEED BATTERY MODULE FAN CONTROL RELAY
4P CONNECTOR**

Wire side of female terminals

G03681477

Fig. 259: Checking Continuity Between Body Ground And High Speed Battery Module Fan Control Relay 4P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

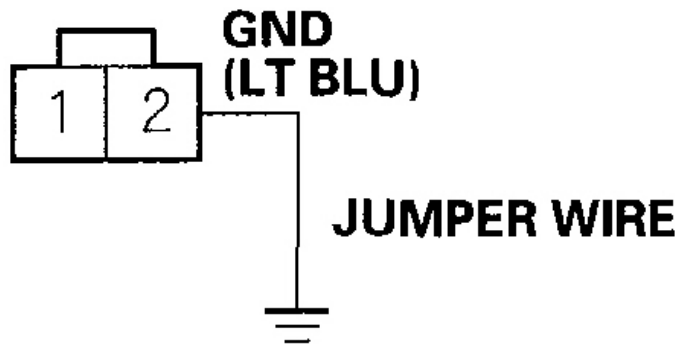
Is there continuity?

YES - Go to step 28.

NO - Repair open in the wire between G502 and the high speed motor power inverter module fan control relay.

28. Disconnect the battery module fan 2P connector.
29. Connect battery module fan 2P connector terminal No. 2 to body ground with a jumper wire.

BATTERY MODULE FAN 2P CONNECTOR



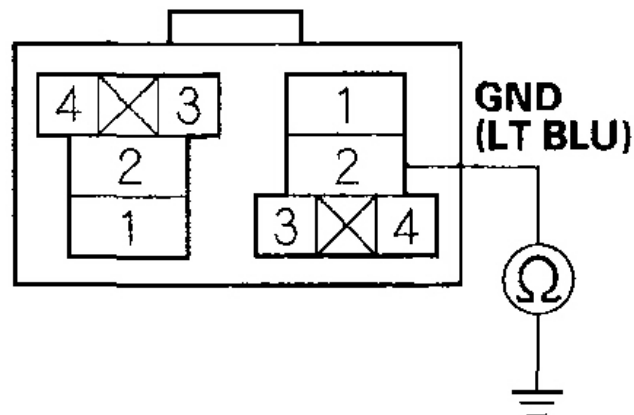
Wire side of female terminals

G03681478

Fig. 260: Connecting Battery Module Fan 2P Connector Terminal No. 2 To Body Ground Using Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Check for continuity between body ground and high speed battery module fan control relay 4P connector terminal No. 2.

**HIGH SPEED BATTERY MODULE FAN CONTROL RELAY
4P CONNECTOR**

Wire side of female terminals

G03681479

Fig. 261: Checking Continuity Between Body Ground And High Speed Battery Module Fan Control Relay 4P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

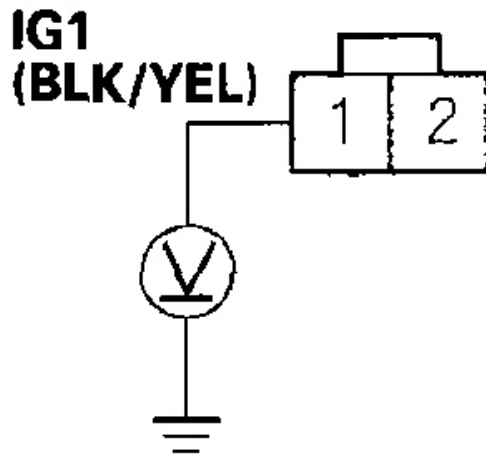
Is there continuity?

YES - Go to step 31.

NO - Repair open in the wire between the battery module fan and the high speed battery module fan control relay.

31. Turn the ignition switch ON (II).
32. Measure voltage between body ground and battery module fan 2P connector terminal No. 1.

BATTERY MODULE FAN 2P CONNECTOR



Wire side of female terminals

G03681480

Fig. 262: Measuring Voltage Between Body Ground And Battery Module Fan 2P Connector Terminal No. 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Substitute a known-good BCM module and battery module fan, and recheck. If the symptom/indication goes away, replace the original BCM module and the battery module fan.

NO - Check for:

- A blown No. 24 IMA (7.5 A) fuse in the under-hood fuse/relay box.
- An open in the wire between the No. 24 IMA (7.5 A) fuse in the under-hood fuse/relay box and the battery module fan.

BATTERY MODULE FAN KEEPS RUNNING, OR ALWAYS RUNS AT HIGH SPEED

NOTE: Information marked with an asterisk (*) applies to the **BATTFANH** line.

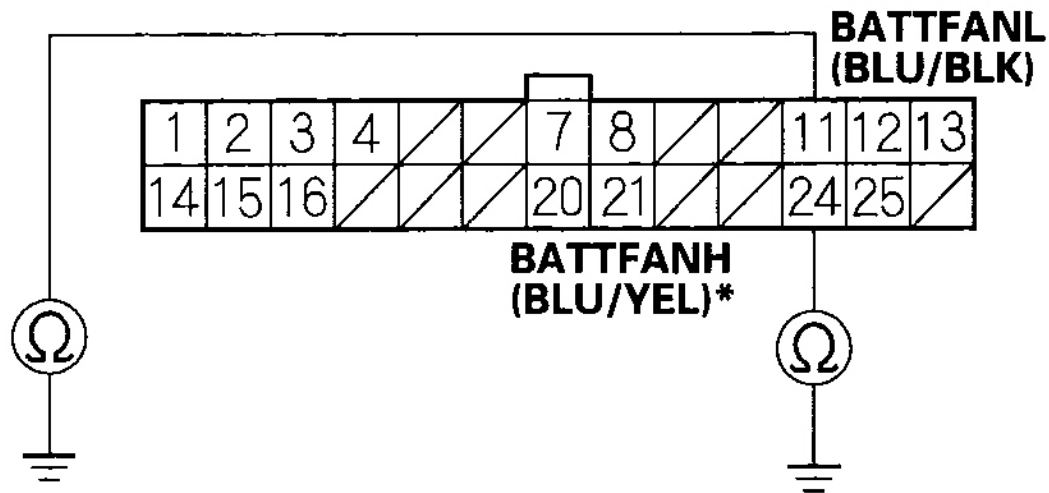
1. Turn the ignition switch OFF.
2. Remove the cargo floor mat (see **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
3. Turn the battery module switch OFF (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
4. Remove the IPU lid (see **TURNING OFF POWER TO THE HIGH VOLTAGE CIRCUIT**).
5. Disconnect BCM module connector A (26P).

Does the battery module fan run?

YES - Go to step 6.

NO - Substitute a known-good BCM module, and recheck. If the symptom goes away, replace the original BCM module.

6. Remove the low speed battery module fan control relay and the high speed battery module fan control relay.
7. Check for continuity between body ground and BCM module connector terminals A11 and A24*.

BCM MODULE CONNECTOR A (26P)

Wire side of female terminals

G03681481

Fig. 263: Checking Continuity Between Body Ground And BCM Module Connector Terminals A11 And A24*

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the BCM module (A11, A24*) and the low (high)* speed battery module fan control relay.

NO - Go to step 8.

8. Check the low (high)* speed battery module fan control relay (see **POWER RELAY TEST**).

Is relay OK?

YES - Repair short to ground in the wire between the battery module fan and high speed battery module fan control relay.

NO - Replace the battery module (see **BATTERY MODULE**

REMOVAL/INSTALLATION).

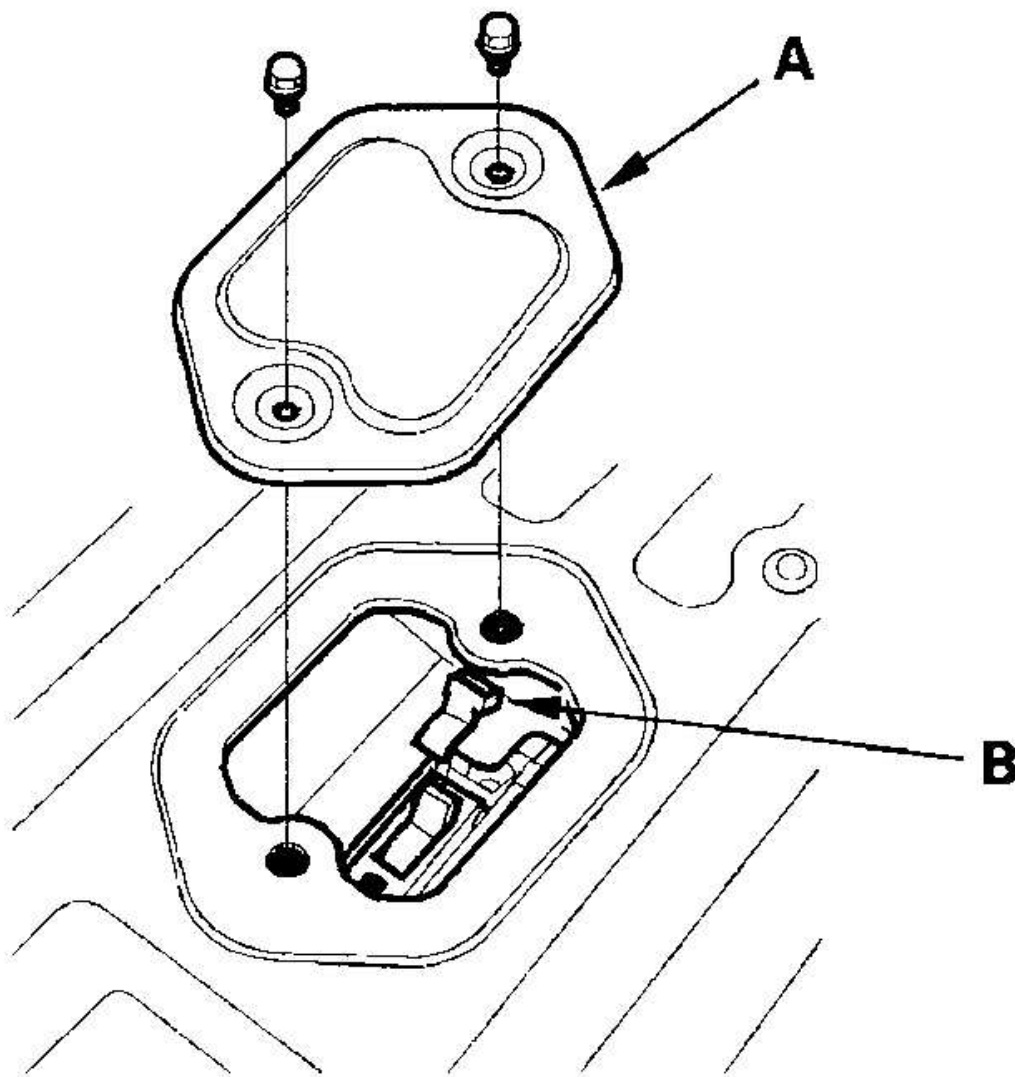
BATTERY MODULE REMOVAL/INSTALLATION

Special Tools Required

Battery Module Lift (Available for loan from AHM Special Tools) T/N 07YAK-001010A

IMA system components are located in this area. The IMA system is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the Service Precautions before performing repairs or service (see **SERVICE PRECAUTIONS**).

1. Turn the ignition switch OFF.
2. Remove the cargo floor mat (see **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
3. Remove the battery module switch cover (A) from the IPU lid, and remove the locking cover (B).



G03681482

Fig. 264: Removing Battery Module Switch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the battery module switch (A) OFF, then install the locking cover (B).

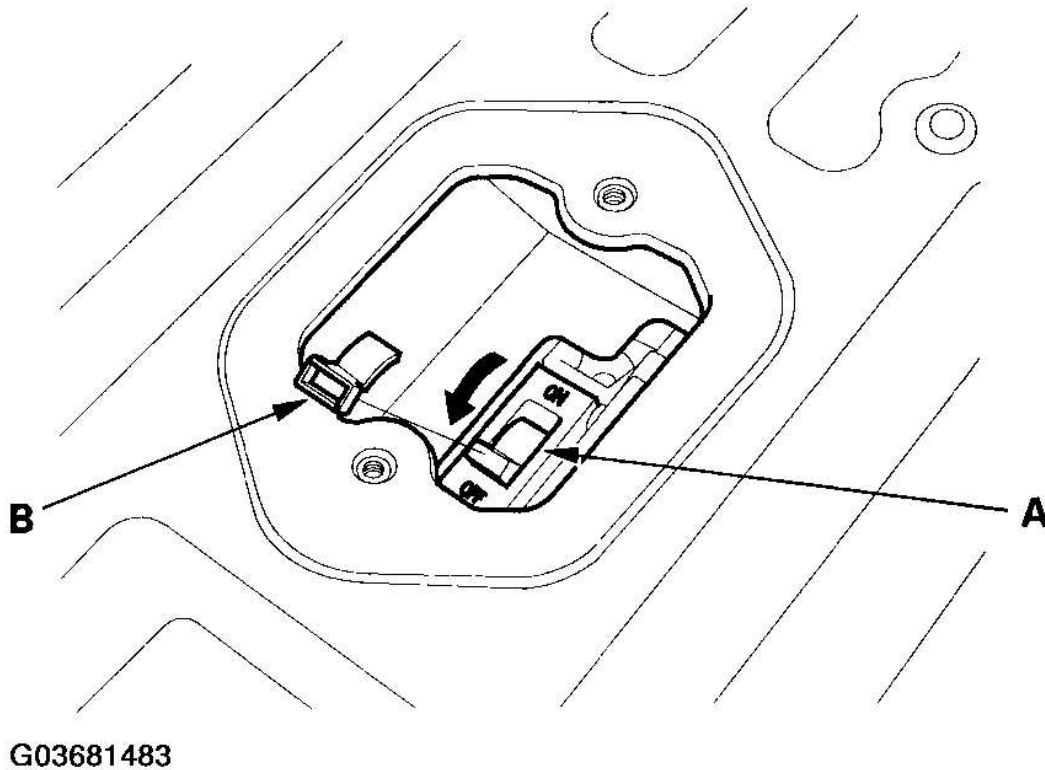
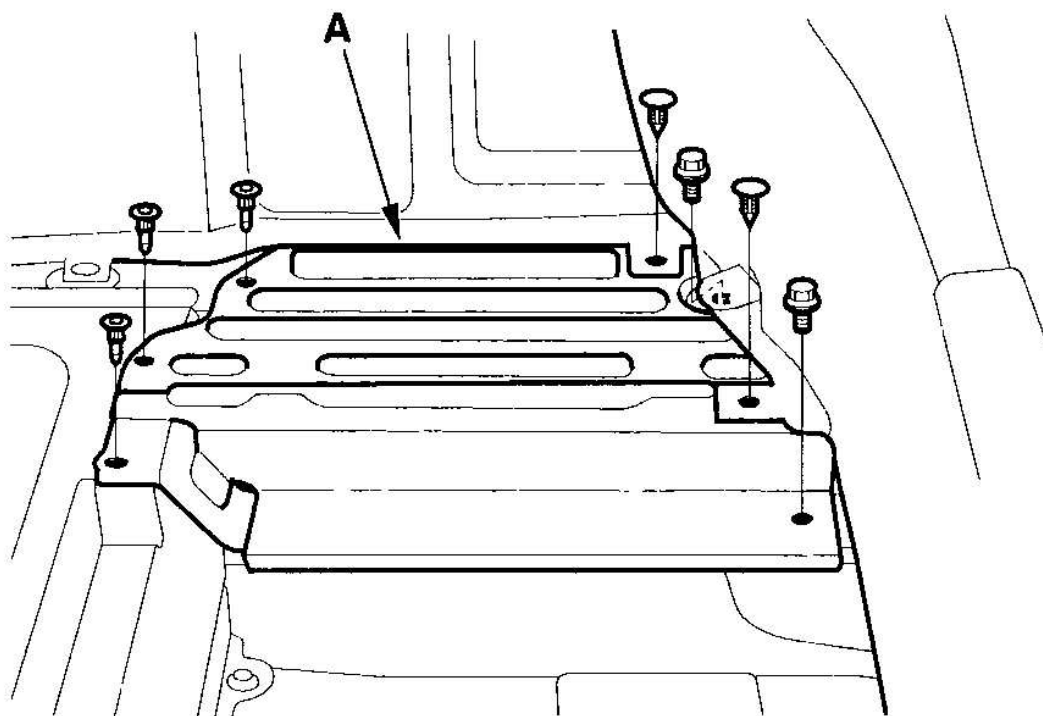


Fig. 265: Turning Battery Module Switch OFF
Courtesy of AMERICAN HONDA MOTOR CO., INC.

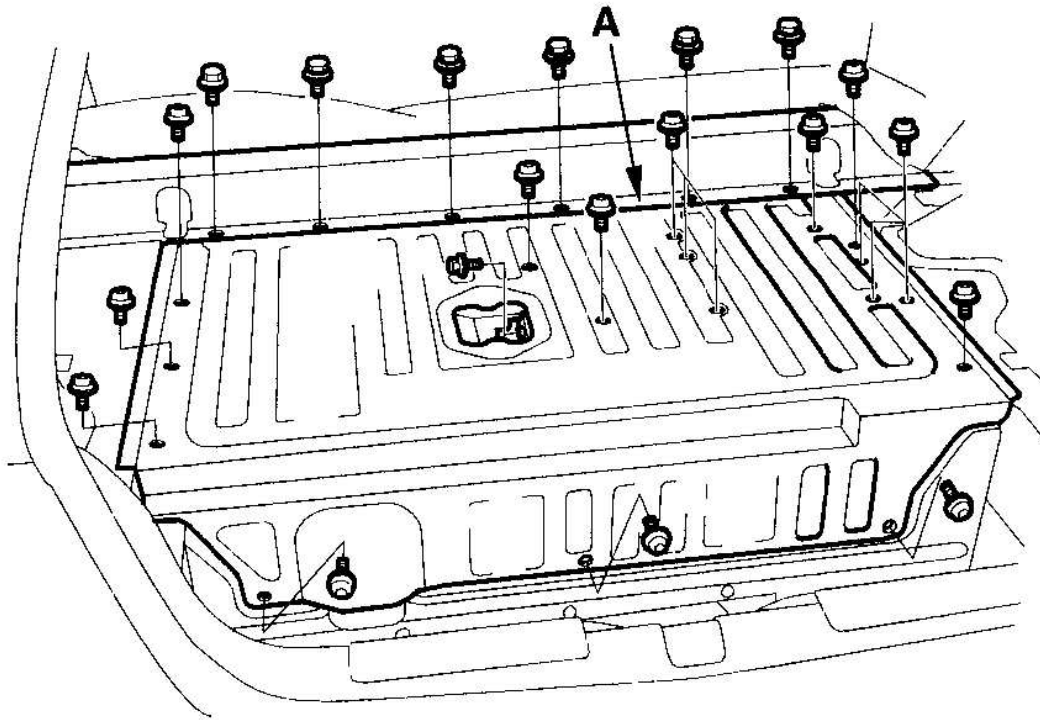
5. Wait for at least 5 minutes to allow the PDU capacitors to discharge.
6. Remove the trunk right side shelf support (A).



G03681484

Fig. 266: Removing Trunk Right Side Shelf Support
Courtesy of AMERICAN HONDA MOTOR CO., INC.

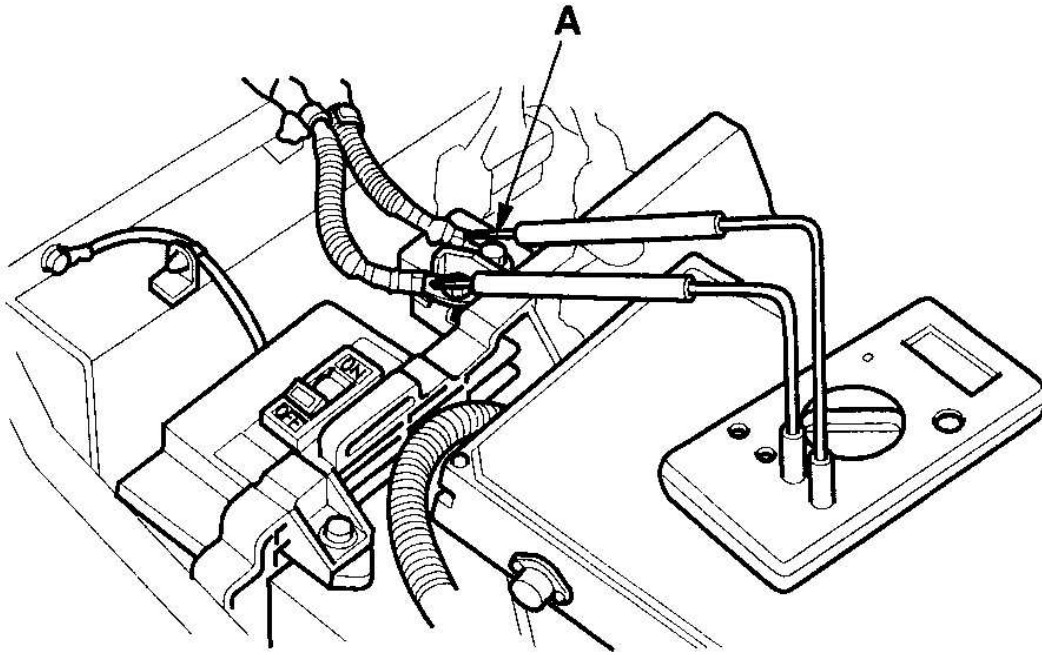
7. Remove the mid-frame cover clips and the IPU lid (A).



G03681485

Fig. 267: Removing Mid-Frame Cover Clips And IPU Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

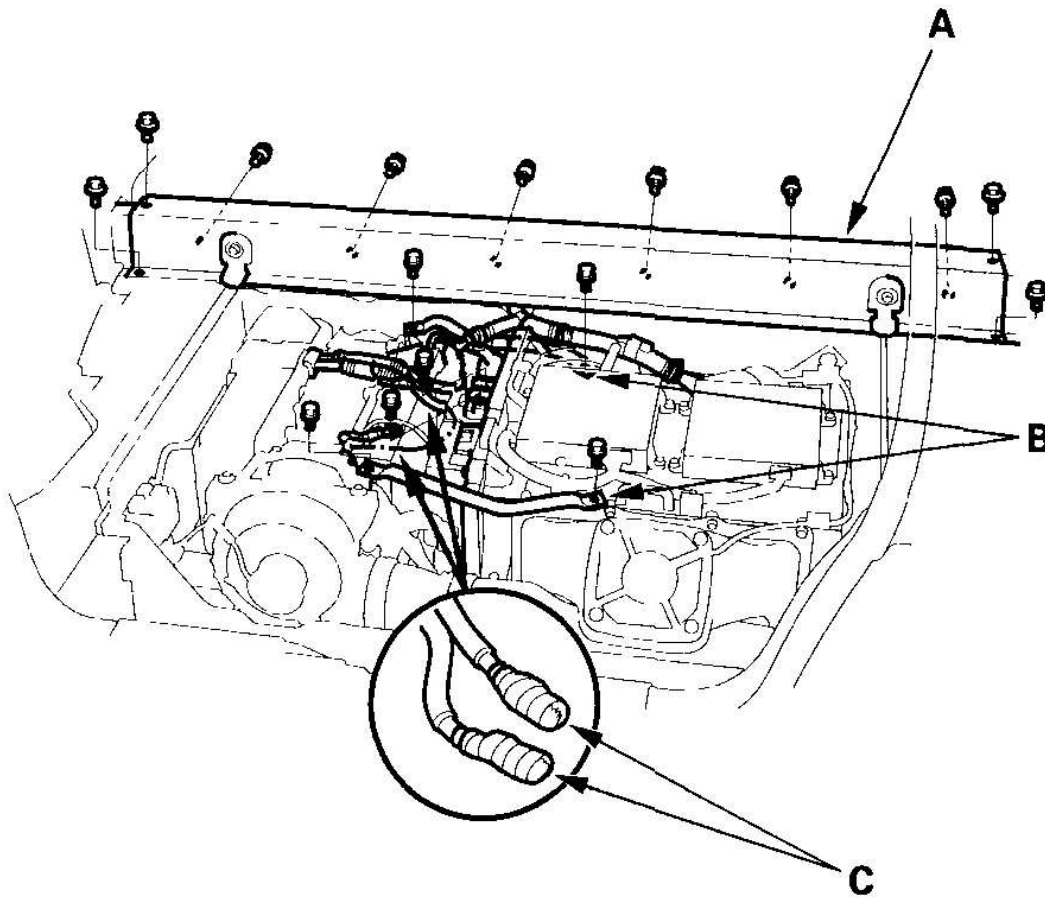
8. Measure voltage at the junction board terminals (A). There should be 30 V or less. If more than 30 V is present, there is a problem in the circuit; do the DTC troubleshooting before continuing.



G03681486

Fig. 268: Measuring Voltage At Junction Board Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

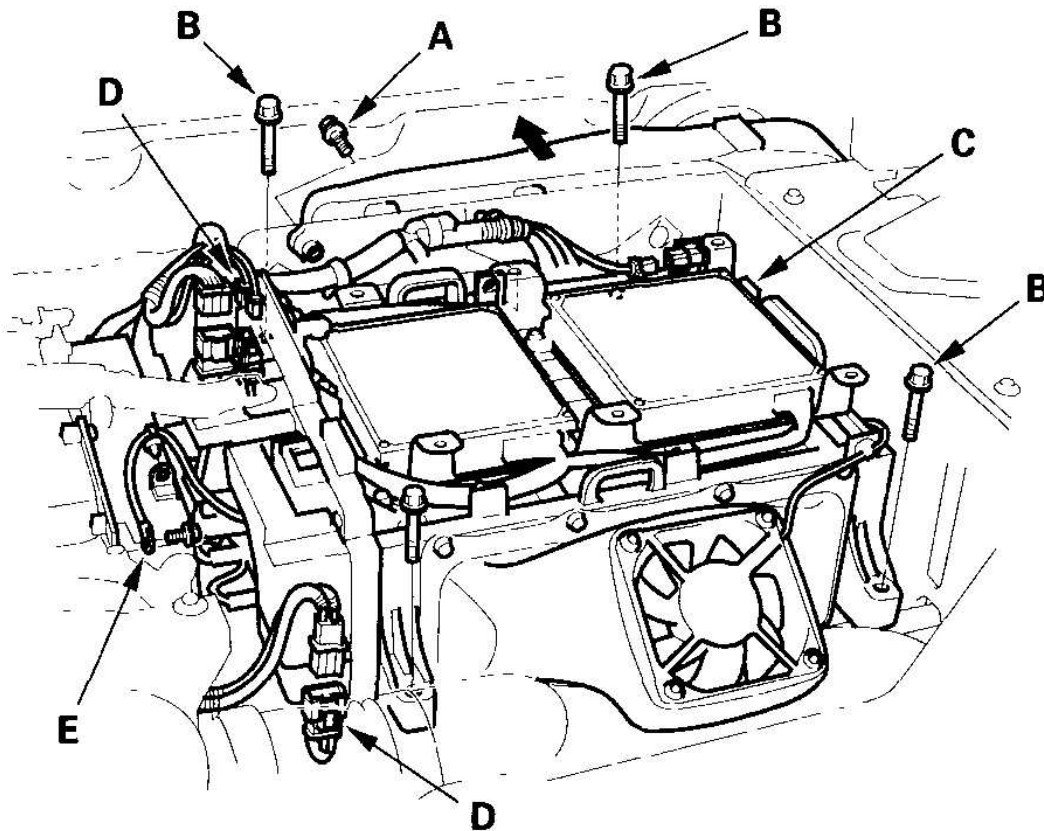
9. Remove the foam inserts.
10. Remove the mid-frame (A), then remove the front and rear IPU braces (B) from the junction board.



G03681487

Fig. 269: Removing Mid-Frame And Front And Rear IPU Braces
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect the high-voltage cables (C) from the output terminals on the junction board, and wrap them with insulating tape.
12. Remove the battery module air duct mounting bolt (A), then push the duct forward.



G03681488

Fig. 270: Removing Battery Module Air Duct Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the mounting bolts (B) from the battery module (C). Disconnect the connectors (D) and Y condenser terminal (E).

NOTE: After disconnection, temporarily secure the Y condenser harness on the junction board.

14. Set the battery module lifting tool on the module (A), and install the six knurled bolts (B).

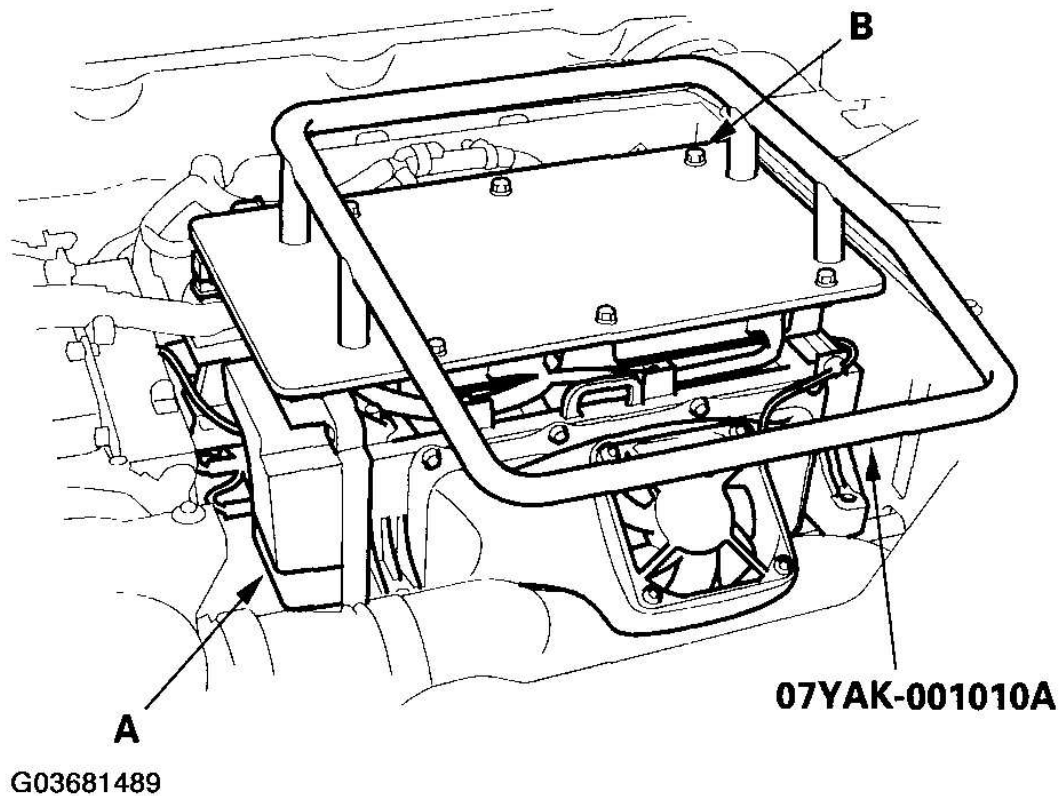


Fig. 271: Setting Battery Module Lifting Tool On Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. With the help of an assistant, lift the battery module out of the vehicle, and carefully set it down on a flat surface.
16. Install the battery module in the reverse order of removal.

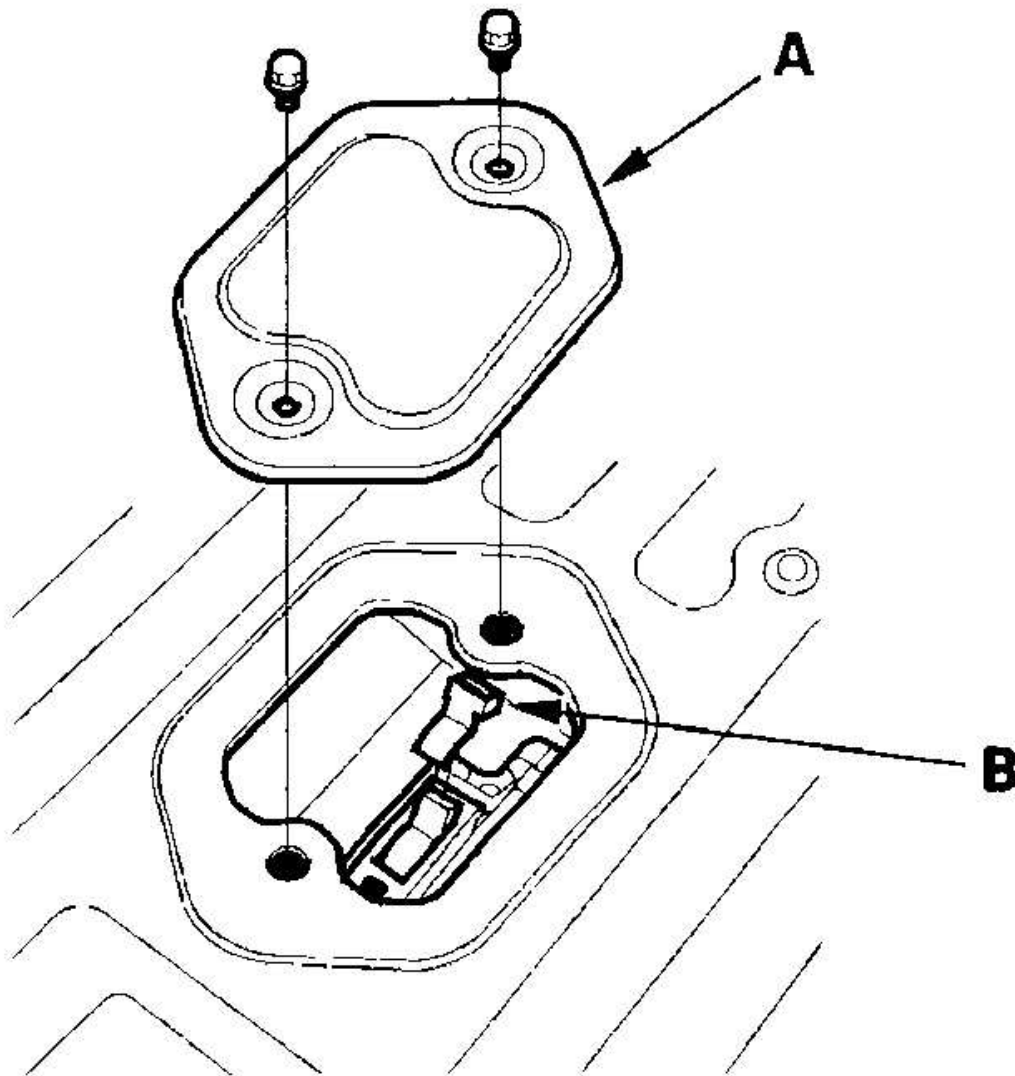
POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION

IMA system components are located in this area. The IMA system is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the Service Precautions before performing repairs or service (see **SERVICE PRECAUTIONS**).

1. Turn the ignition switch OFF.
2. Remove the cargo floor mat (see **TRIM REMOVAL/INSTALLATION** -

CARGO AREA).

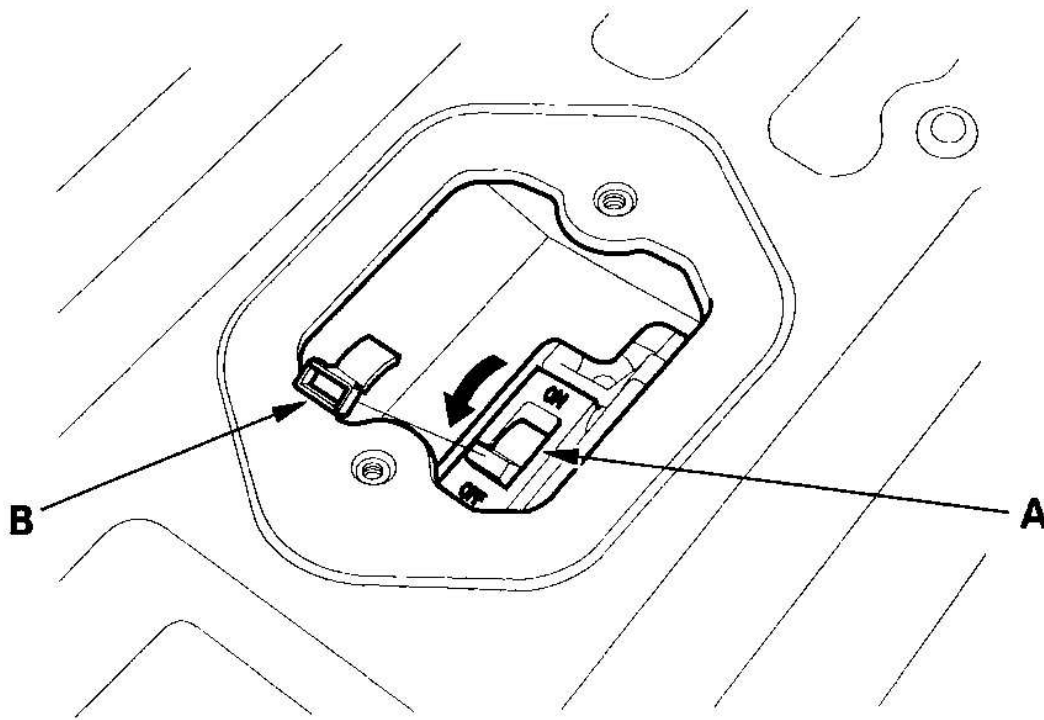
3. Remove the battery module switch cover (A) from the IPU lid, and remove the locking cover (B).



G03681490

Fig. 272: Removing Battery Module Switch Cover From IPU Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

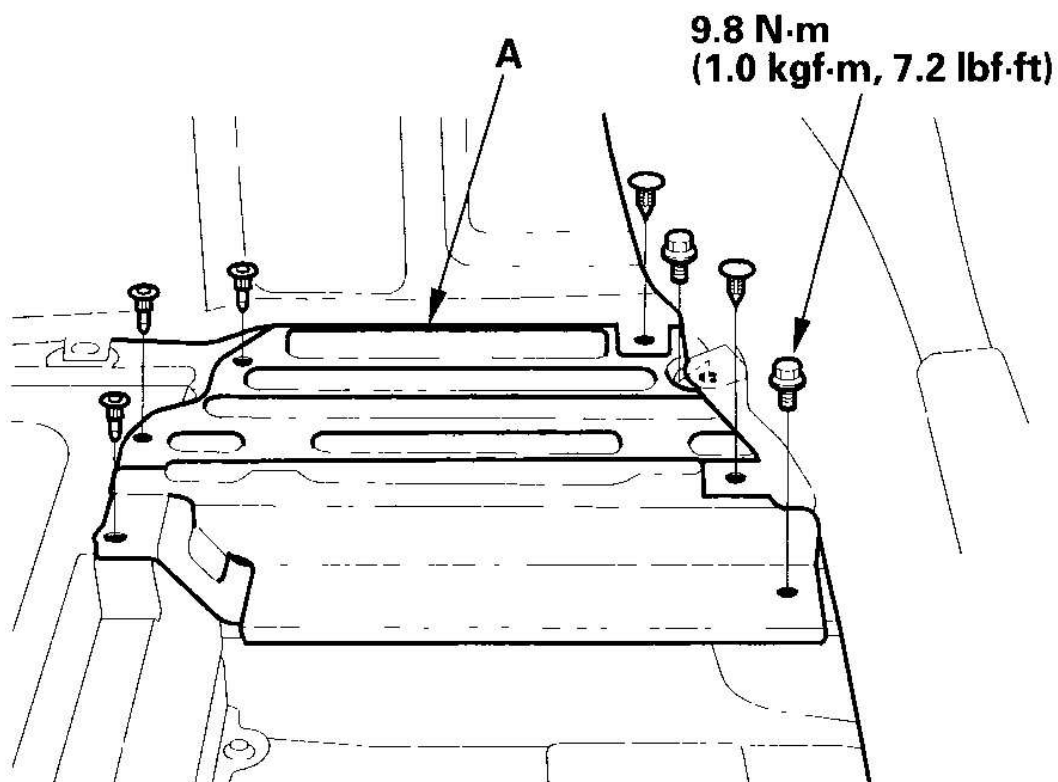
4. Turn the battery module switch (A) OFF, then install the locking cover (B).



G03681491

Fig. 273: Turning Battery Module Switch OFF
Courtesy of AMERICAN HONDA MOTOR CO., INC.

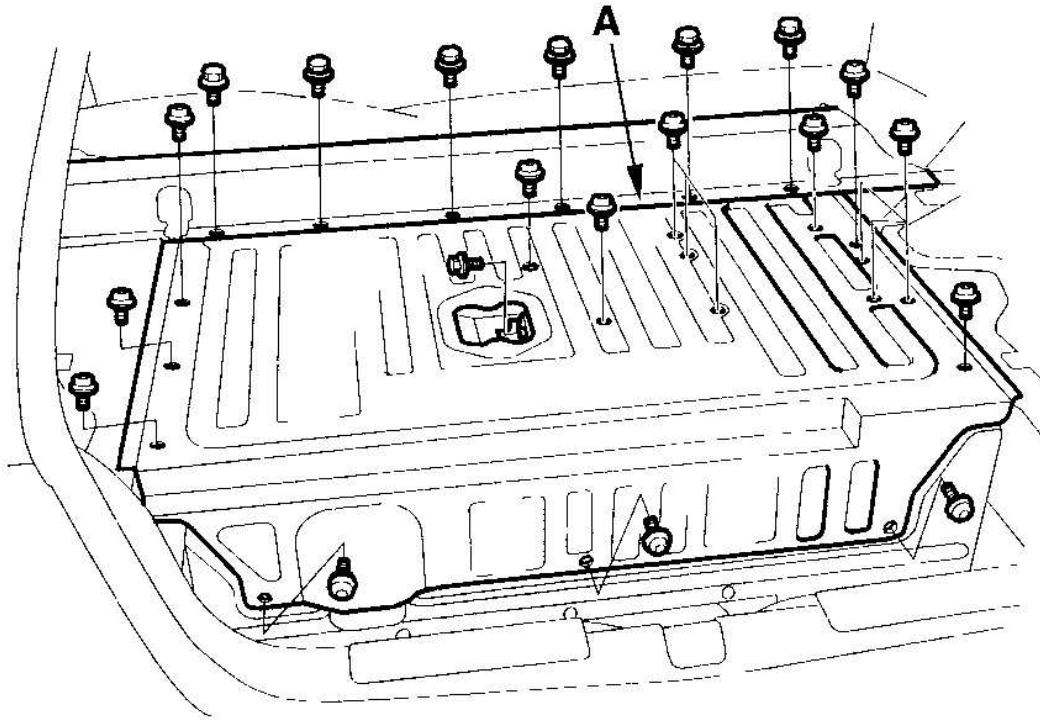
5. Wait for at least 5 minutes to allow the PCU capacitors to discharge.
6. Disconnect the negative cable from the 12 V battery in the engine compartment.
7. Remove the trunk right side shelf support (A).



G03681492

Fig. 274: Removing Trunk Right Side Shelf Support
Courtesy of AMERICAN HONDA MOTOR CO., INC.

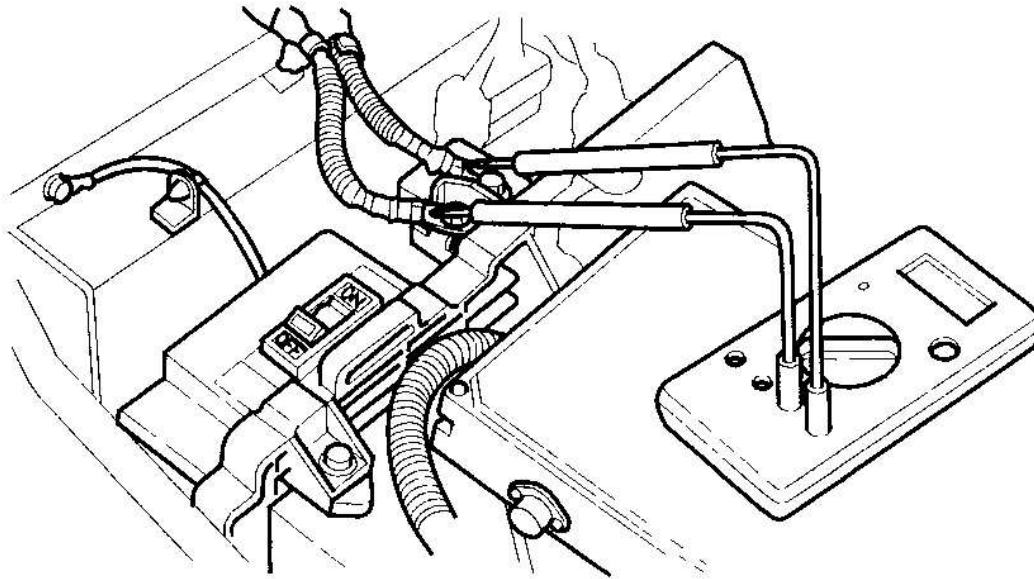
8. Remove the mid-frame cover clips and the IPU lid (A).



G03681493

Fig. 275: Removing Mid-Frame Cover Clips And IPU Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

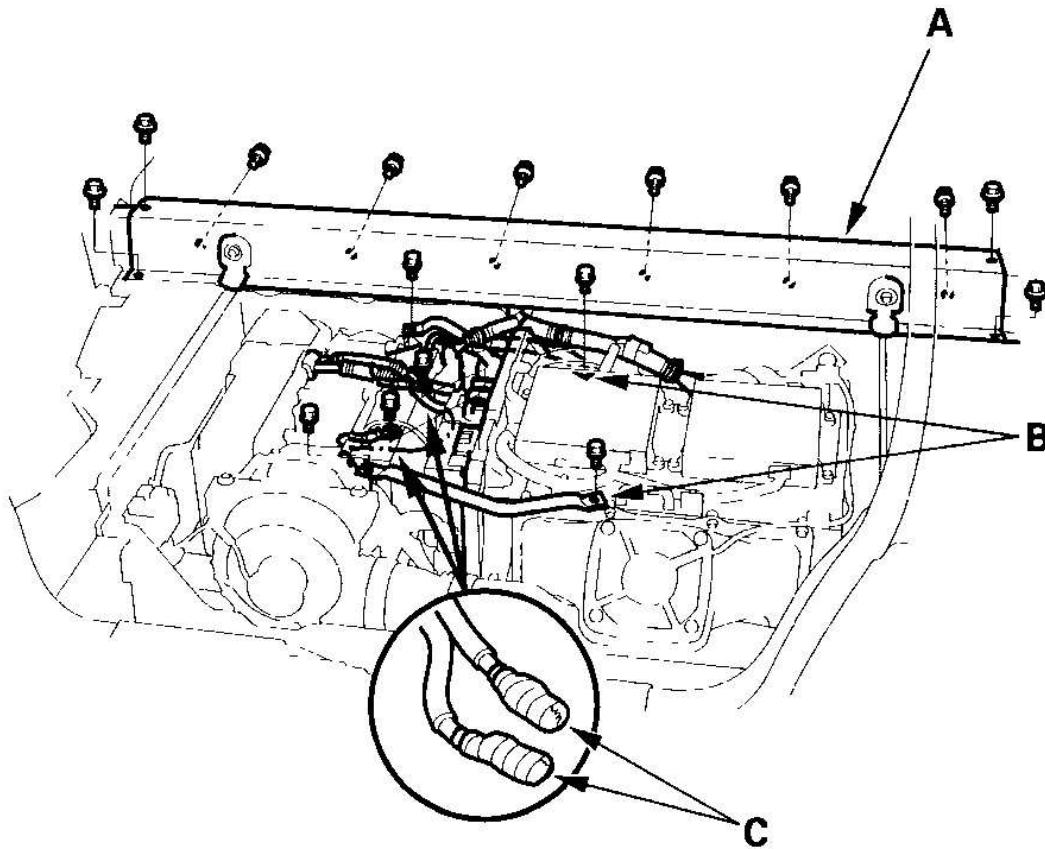
9. Measure voltage at the junction board terminals (A). There should be 30 V or less. If more than 30 V is present, there is a problem in the circuit; do the DTC troubleshooting before continuing.



G03681494

Fig. 276: Measuring Voltage At Junction Board Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the foam inserts.
11. Remove the mid-frame (A), then remove the front and rear IPU braces (B) from the junction board.



G03681495

Fig. 277: Removing Mid-Frame And Front & Rear IPU Braces
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Disconnect the high-voltage cables (C) from the output terminals on the junction board, and wrap them with insulating tape.
13. Disconnect the connector (A) from the rear of the cooling fan assembly (B), and remove the harness clip from the fan shroud (C).

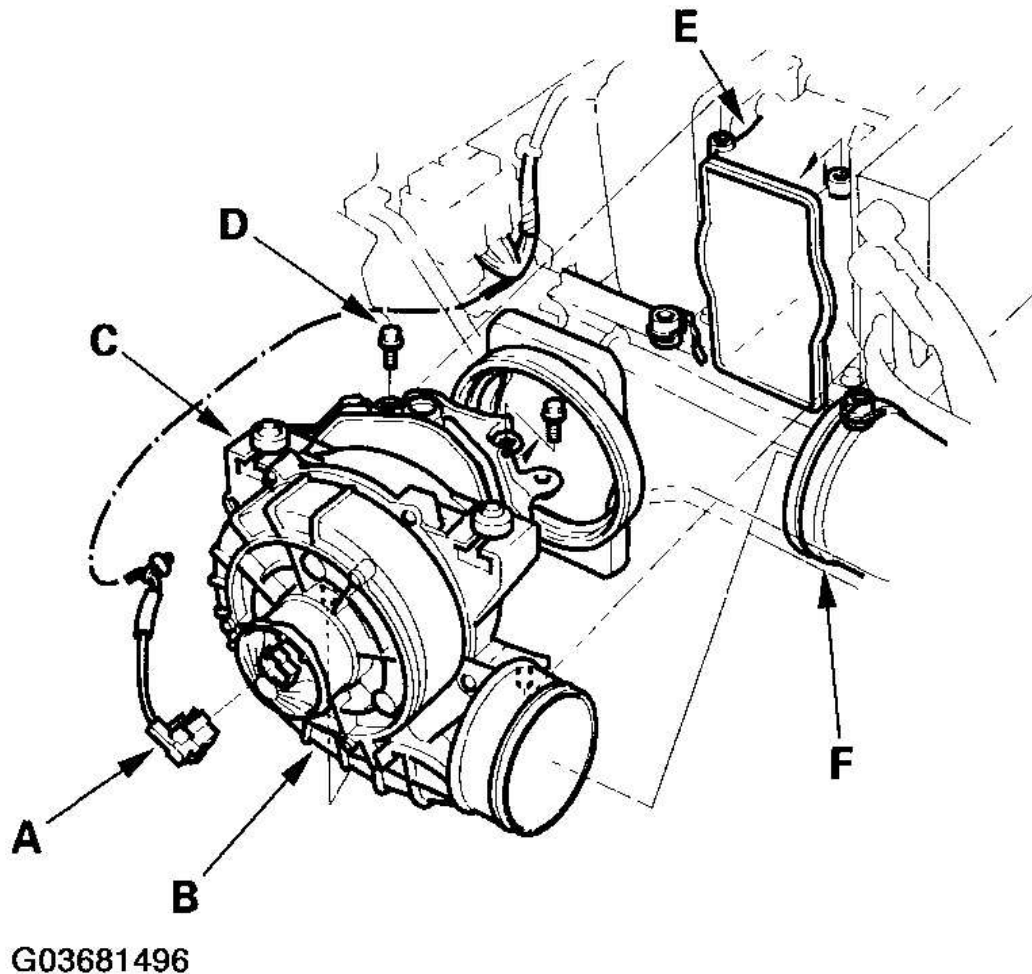
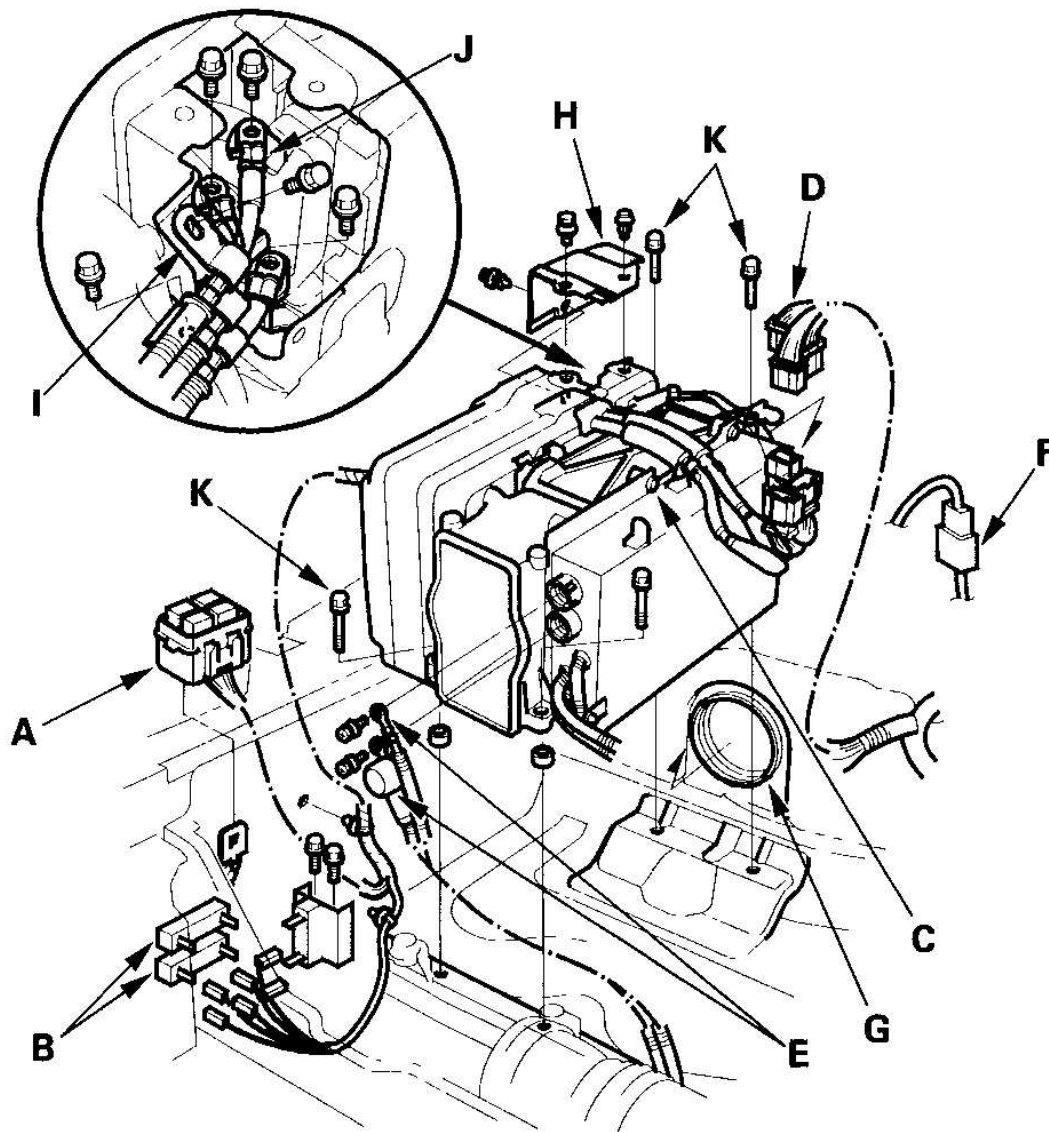


Fig. 278: Disconnecting Connector From Rear Of Cooling Fan Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the four fan bolts (D), and remove the fan bracket (E).
15. Remove the fan duct (F) from the fan (B), and remove the fan.
16. Lift the relay pack (A) from its holder. Disconnect the harness from the resistors (B), and remove the two harness clips from the panel.



G03681497

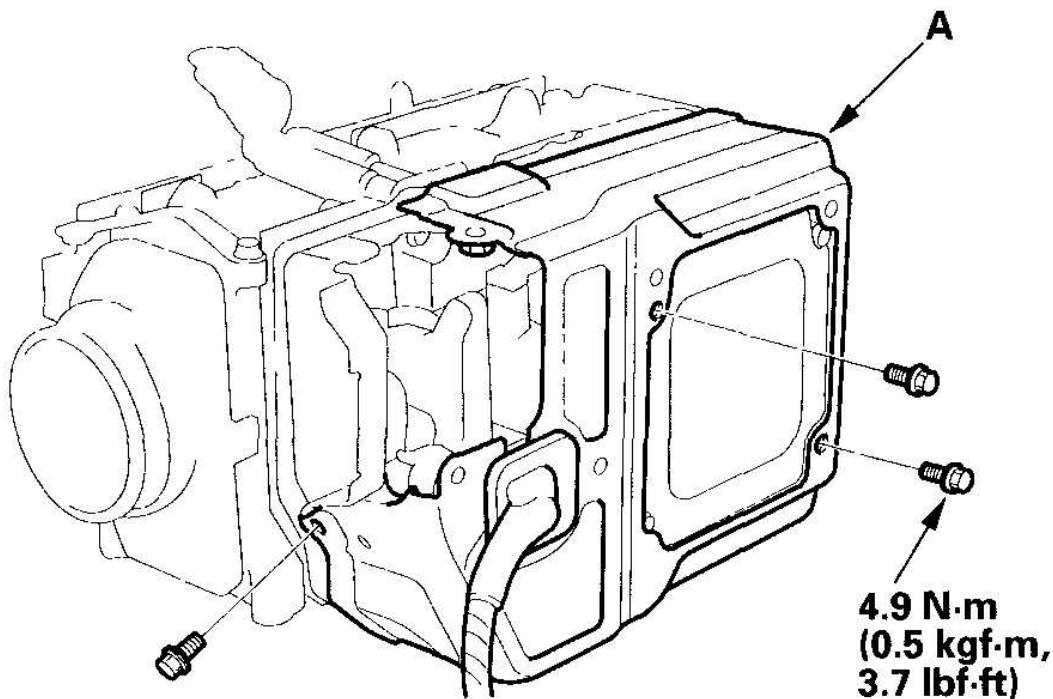
Fig. 279: Lifting Relay Pack From Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Disconnect the Y condenser ground (C).
18. Disconnect the connector (D) from the PCU, and disconnect the 12 V battery cables (E).
19. Disconnect the high voltage DC-DC converter 2P connector (F).

20. Pull the intake duct (G) away from the front of the PCU.
21. Remove the PCU terminal cover (H), and remove the clip (I) and three bolts that hold the three-phase cables (J) in place.
22. Remove the four PCU mounting bolts (K).
23. Carefully lift the PCU from the vehicle, and set it on a flat surface.
24. Install the PCU in the reverse order of removal.

POWER CONTROL UNIT (PCU) DISASSEMBLY/REASSEMBLY

1. Remove the PCU (see **POWER CONTROL UNIT (PCU) REMOVAL/INSTALLATION**).
2. Remove the cover (A).

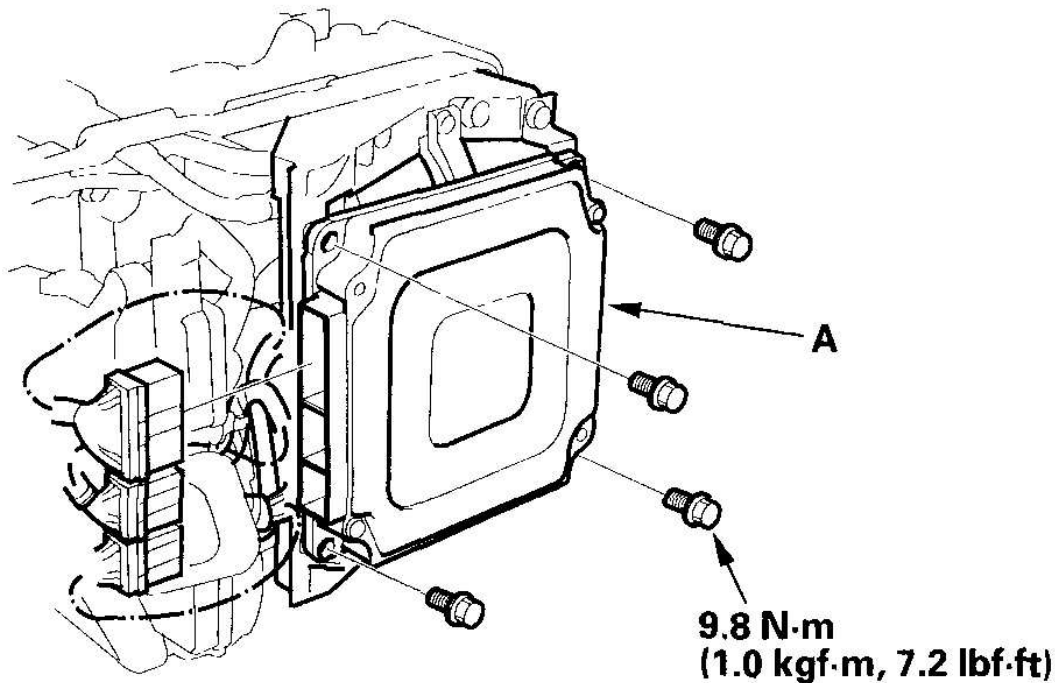


G03681498

Fig. 280: Removing Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the voltage converter module (A).



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Fig. 281: Removing Voltage Converter Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the motor current sensors (GRAY) (A).

NOTE: When reassembling the motor current sensors, align the bus bars so the motor cable connections are properly aligned.

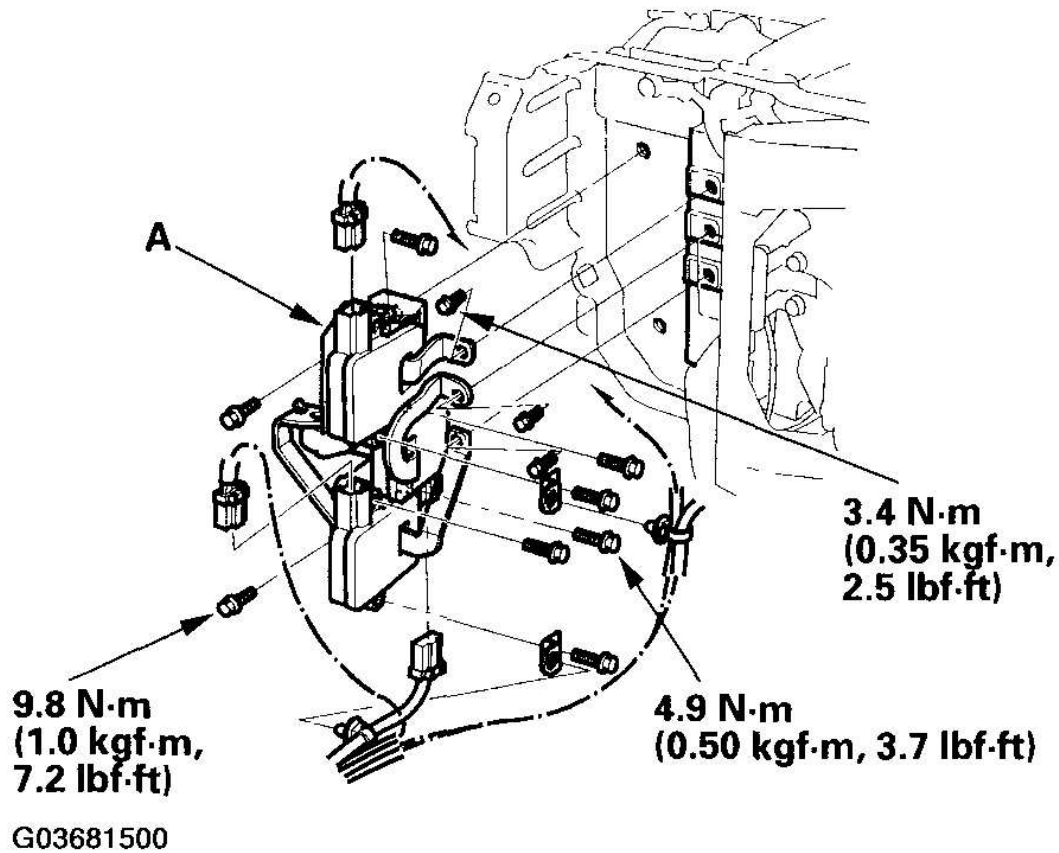


Fig. 282: Removing Motor Current Sensors (Gray)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the condenser (A) and MPI module (B).

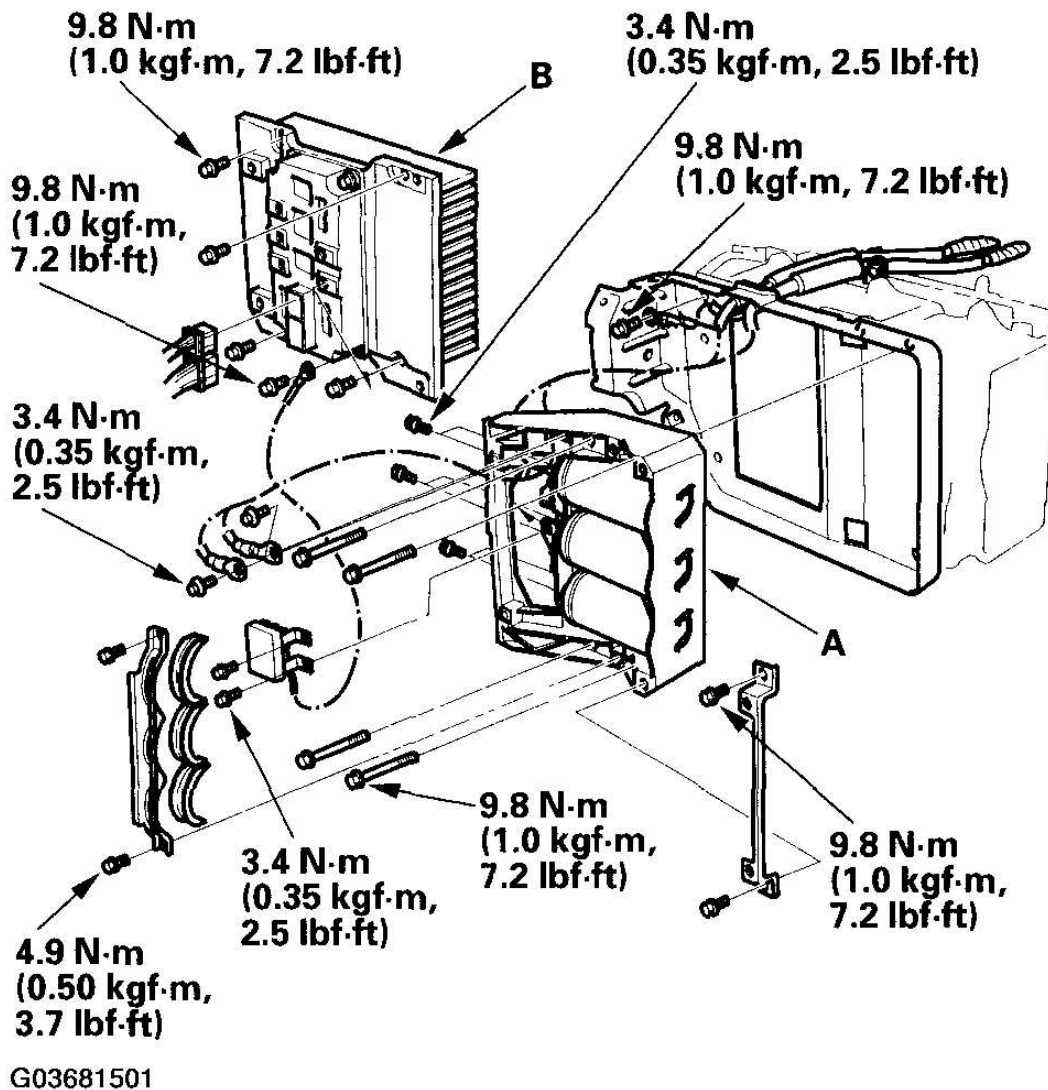


Fig. 283: Removing Condenser And MPI Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the DC-DC converter (A).

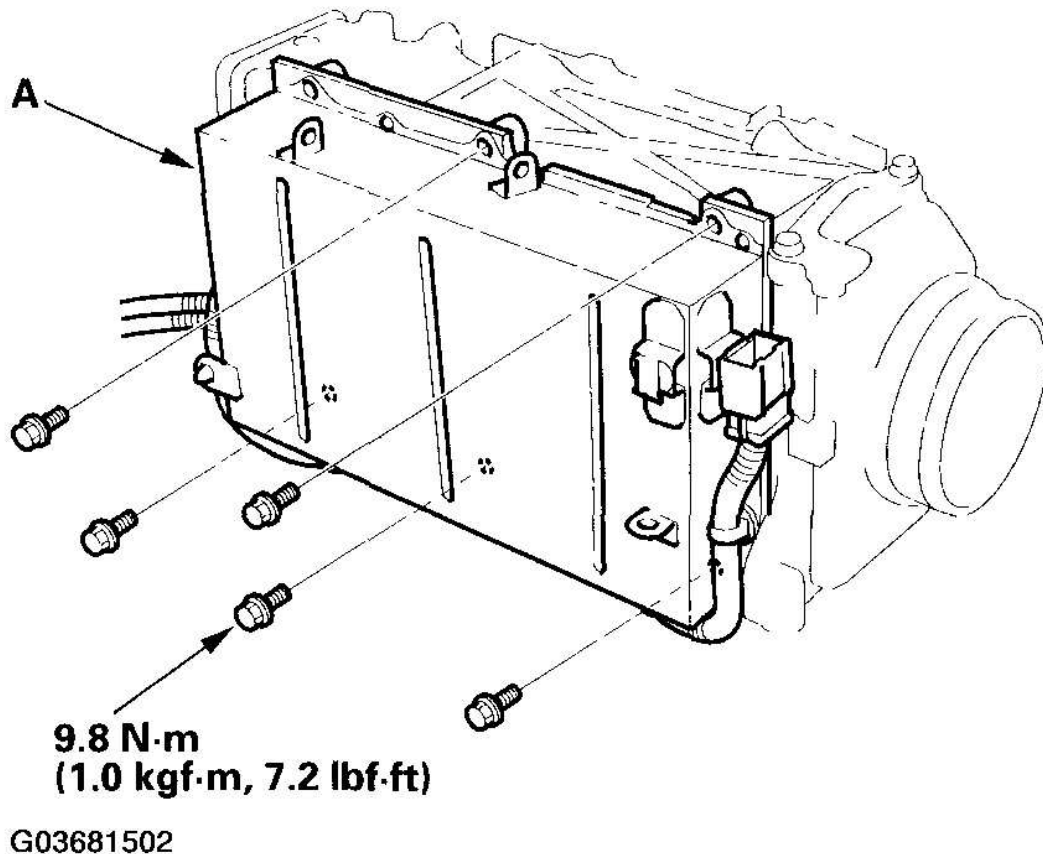


Fig. 284: Removing DC-DC Converter

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the parts in the reverse order of removal.

IMA MOTOR REMOVAL/INSTALLATION

Special Tools Required

Rotor puller (Available for loan or purchase from AHM Special Tools) 07YAC-PHM010B

The motor rotor contains very strong magnets and should be handled with special care. People with pacemakers or other sensitive medical devices should not handle the motor rotor.

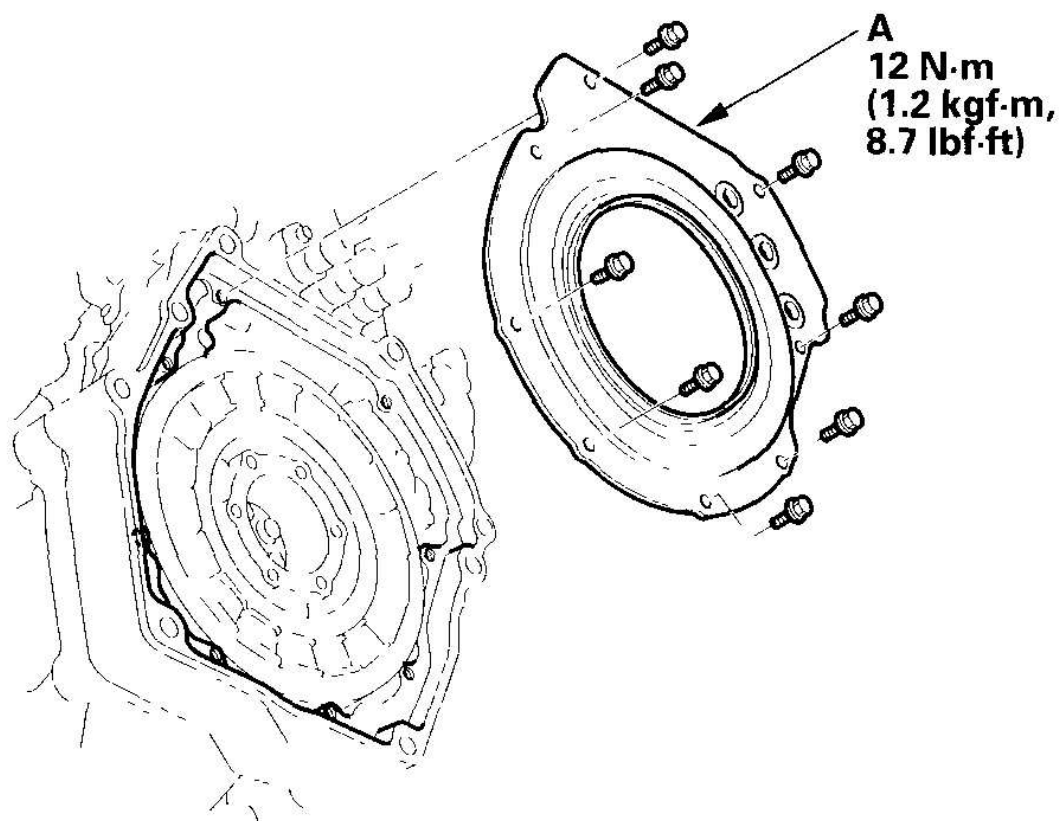
WARNING: If the motor rotor is installed by hand, it may suddenly be pulled toward the motor stator with great force, causing serious hand or finger injury. Always use the special tool to remove or install a motor rotor.

- Do not use the rotor motor if the fiberglass band is damaged. If the band breaks during use, magnets may come loose from the motor rotor.
- Keep the motor rotor away from magnetically sensitive devices.
- Store the rotor in the designated storage box and keep it away from sensitive devices during storage.
- Do not blow air near the rotor, as the metal particles may get on the magnet.

1. M/T model: Remove the transmission (see TRANSMISSION REMOVAL) and the clutch (see CLUTCH).

CVT model: Remove the transmission (see TRANSMISSION REMOVAL).

2. Remove the stator cover (A).

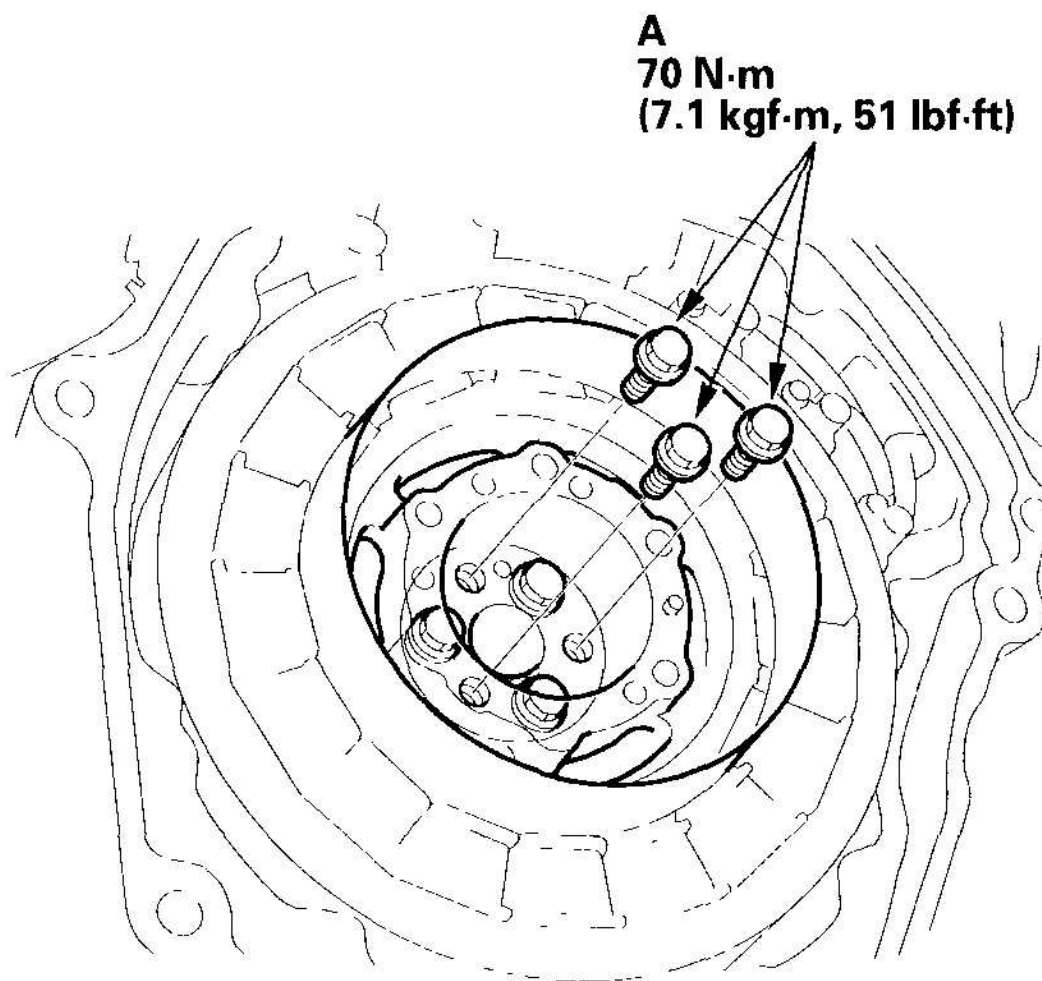


G03681503

Fig. 285: Removing Stator Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

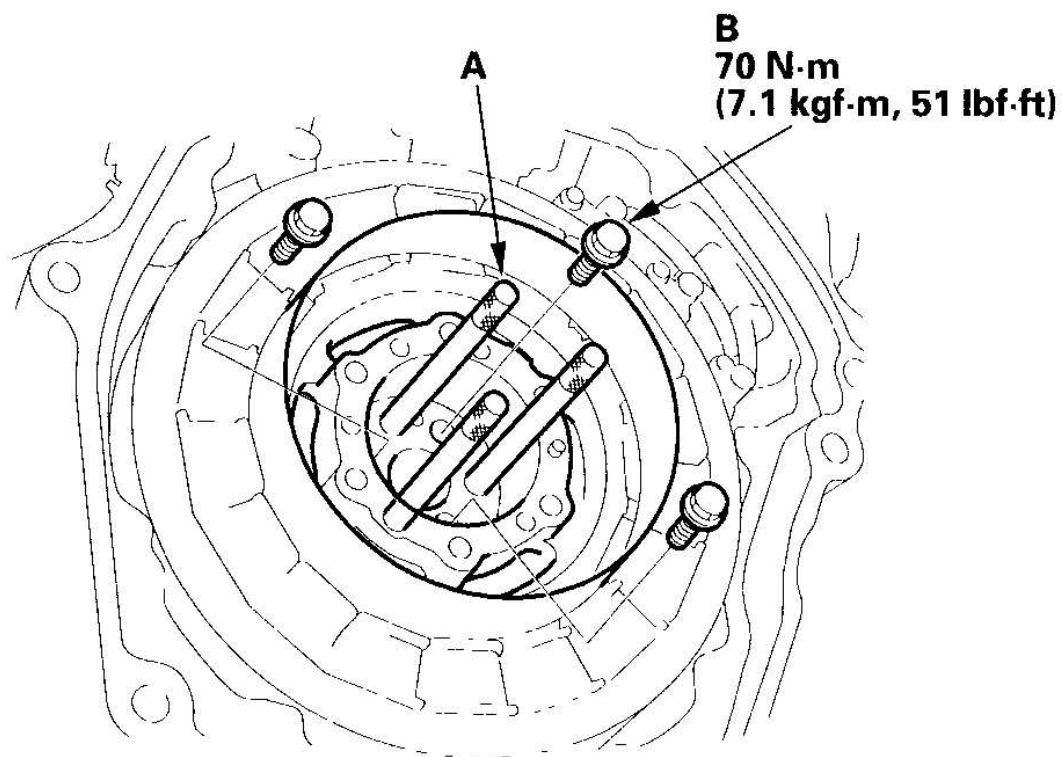
3. Remove three of the six bolts (A).



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Fig. 286: Removing Three Of Six Bolts Of Stator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the guide pins (A), then remove the remaining three bolts (B).

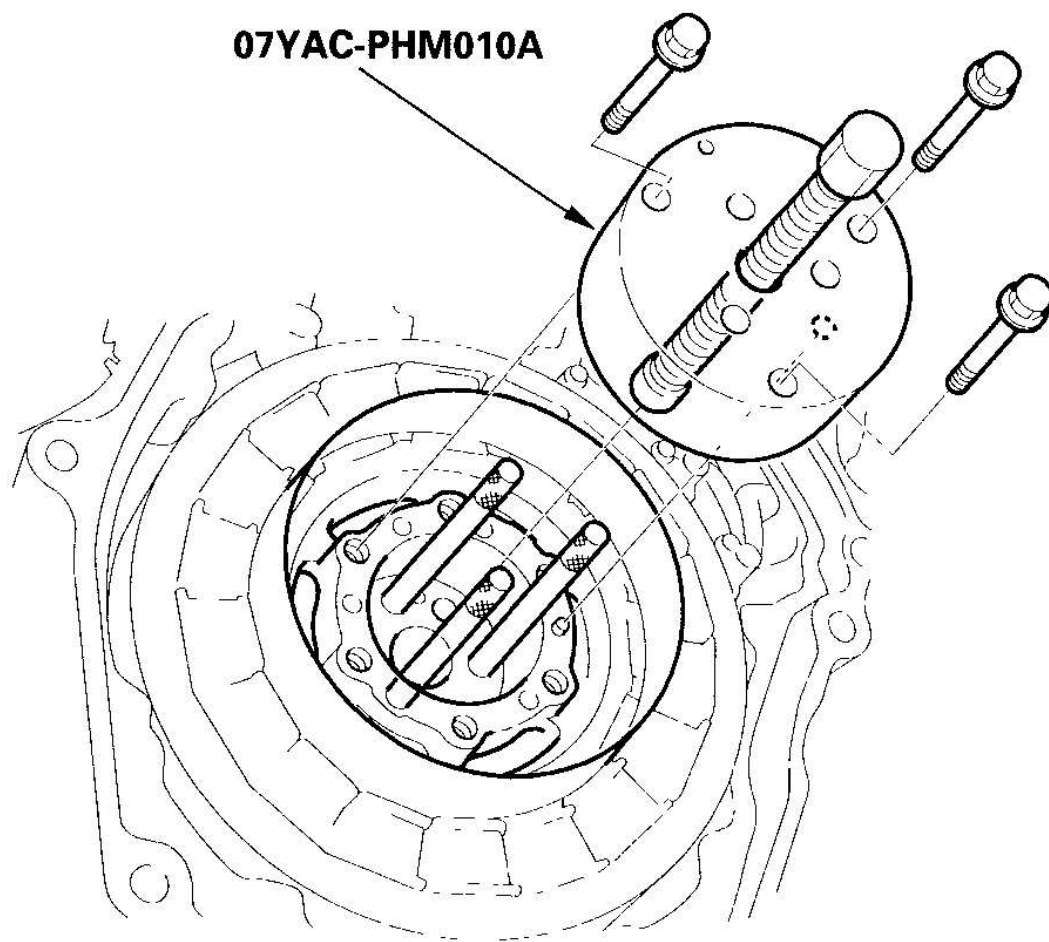


G03681505

Fig. 287: Installing Guide Pins

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Attach the rotor puller with the bolts supplied.

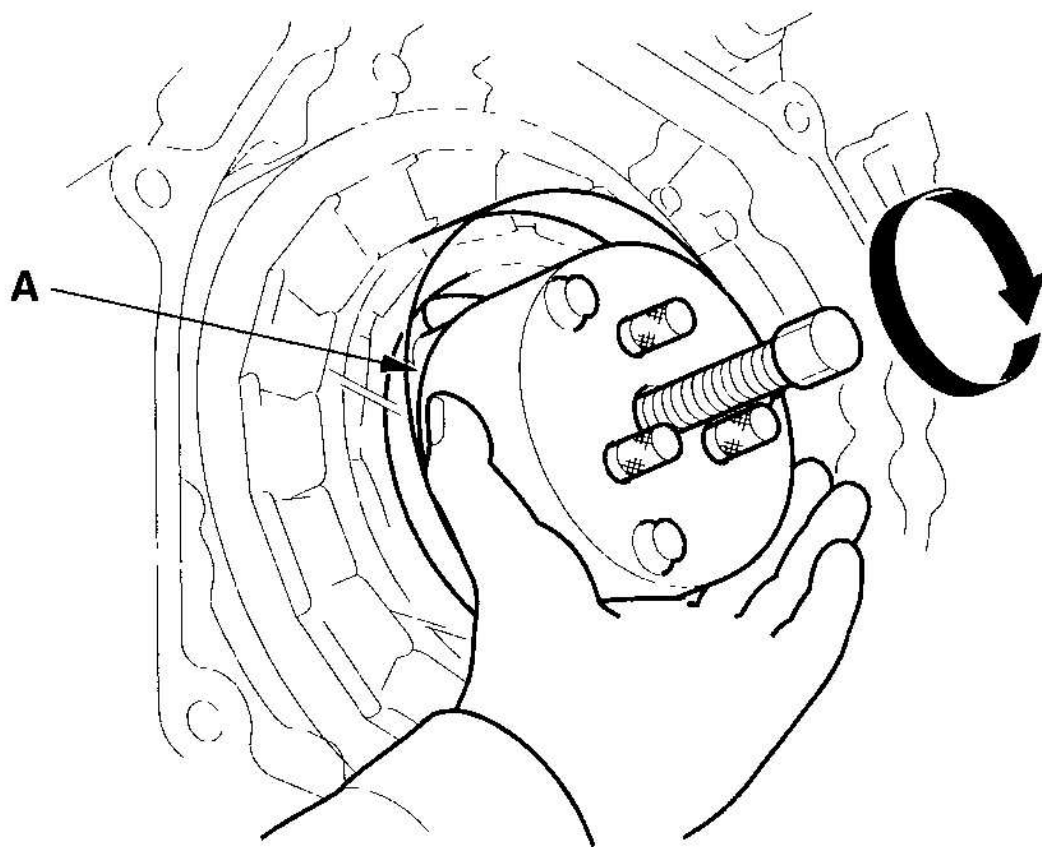


G03681506

Fig. 288: Attaching Rotor Puller

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the motor rotor (A).

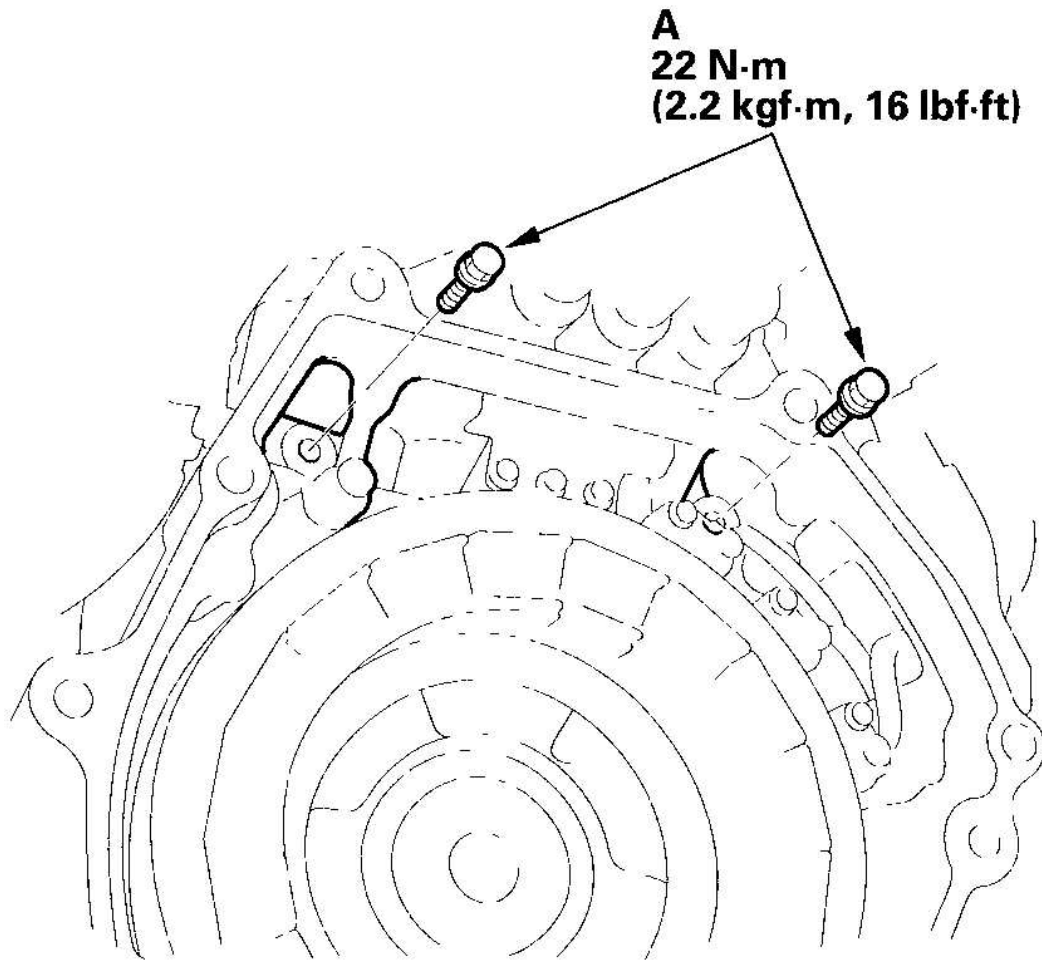


G03681507

Fig. 289: Removing Motor Rotor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the bolts (A).



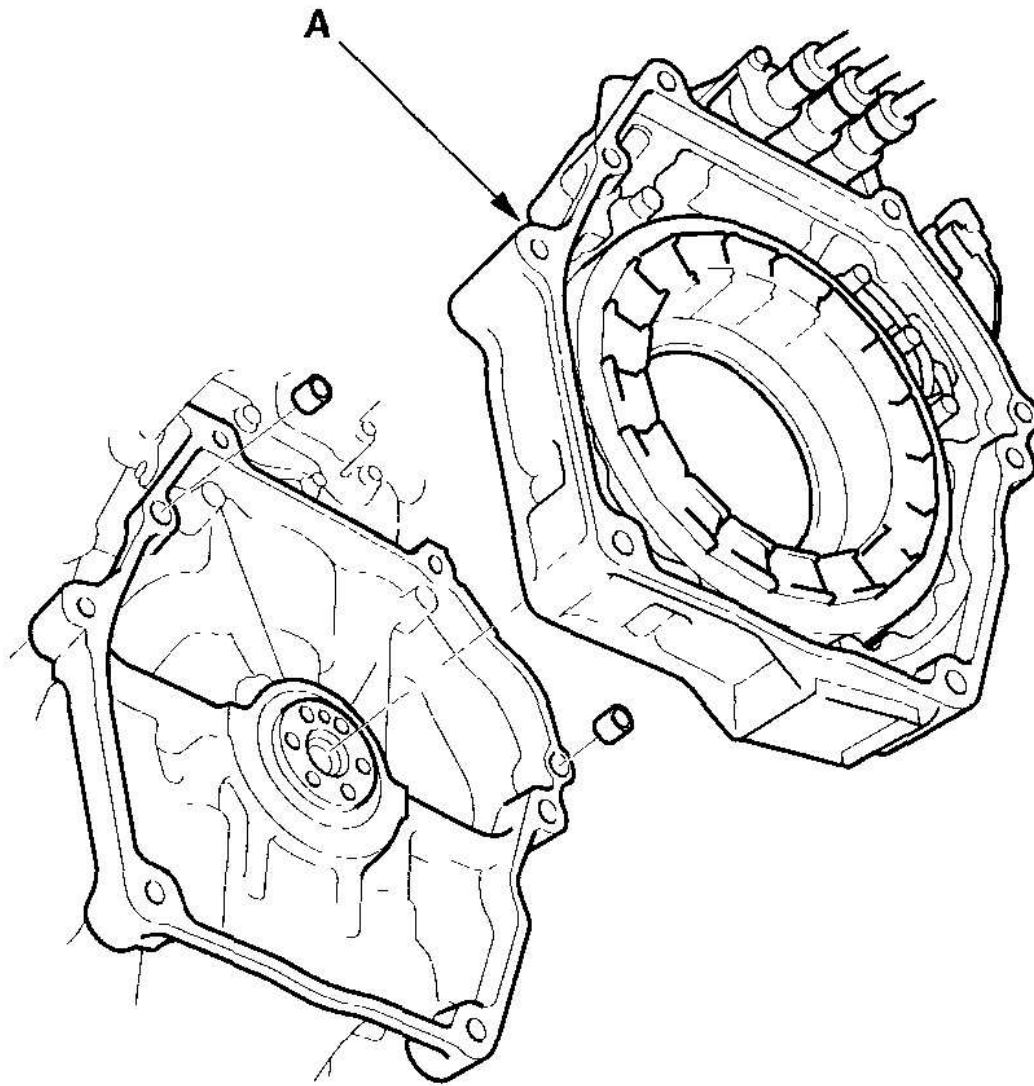
G03681508

Fig. 290: Removing Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the motor stator (A).

NOTE: Clean the mating surfaces of the housing assembly and engine block, and apply liquid gasket, P/N 08718-0009, to the mating surfaces just before installation.



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Fig. 291: Removing Motor Stator

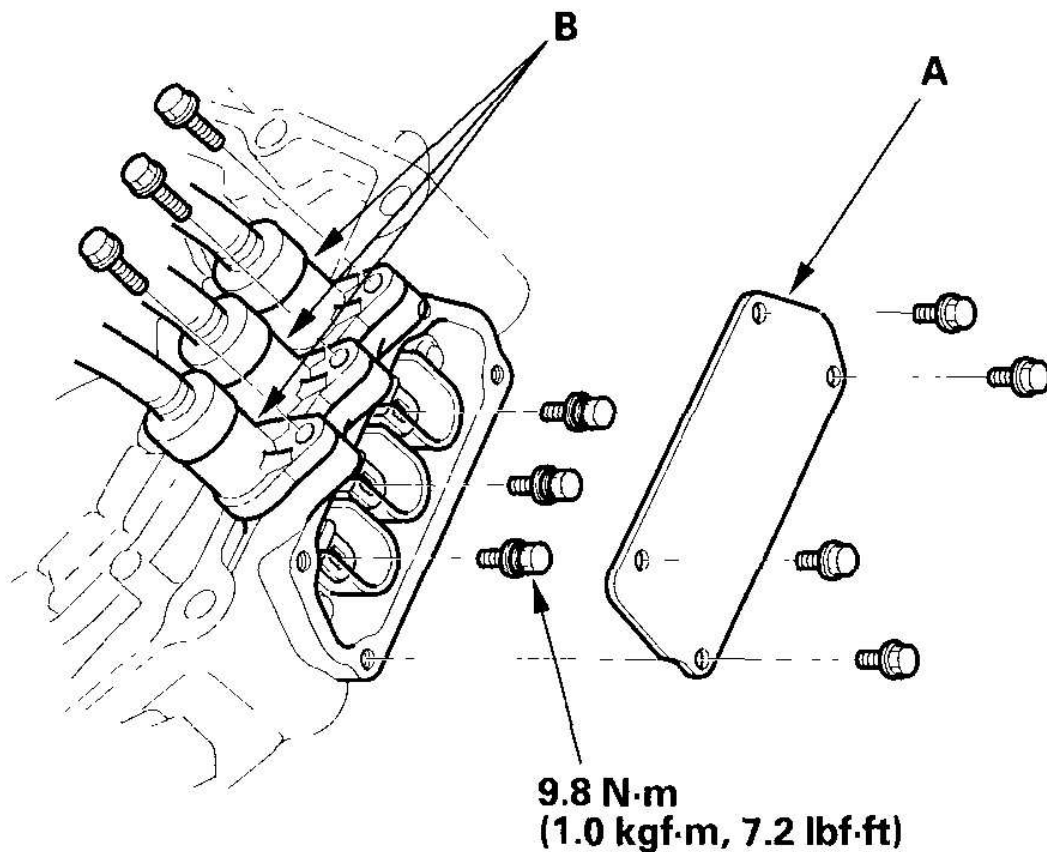
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the cover (A) and motor power cables (B).

NOTE:

- Check the position of the U phase, V phase, and W phase before disconnecting the motor power cable.

- Clean the mating surfaces of the housing assembly and cover, and be sure to apply the liquid gasket, P/N 08718-0009, to the mating surfaces just before installation.



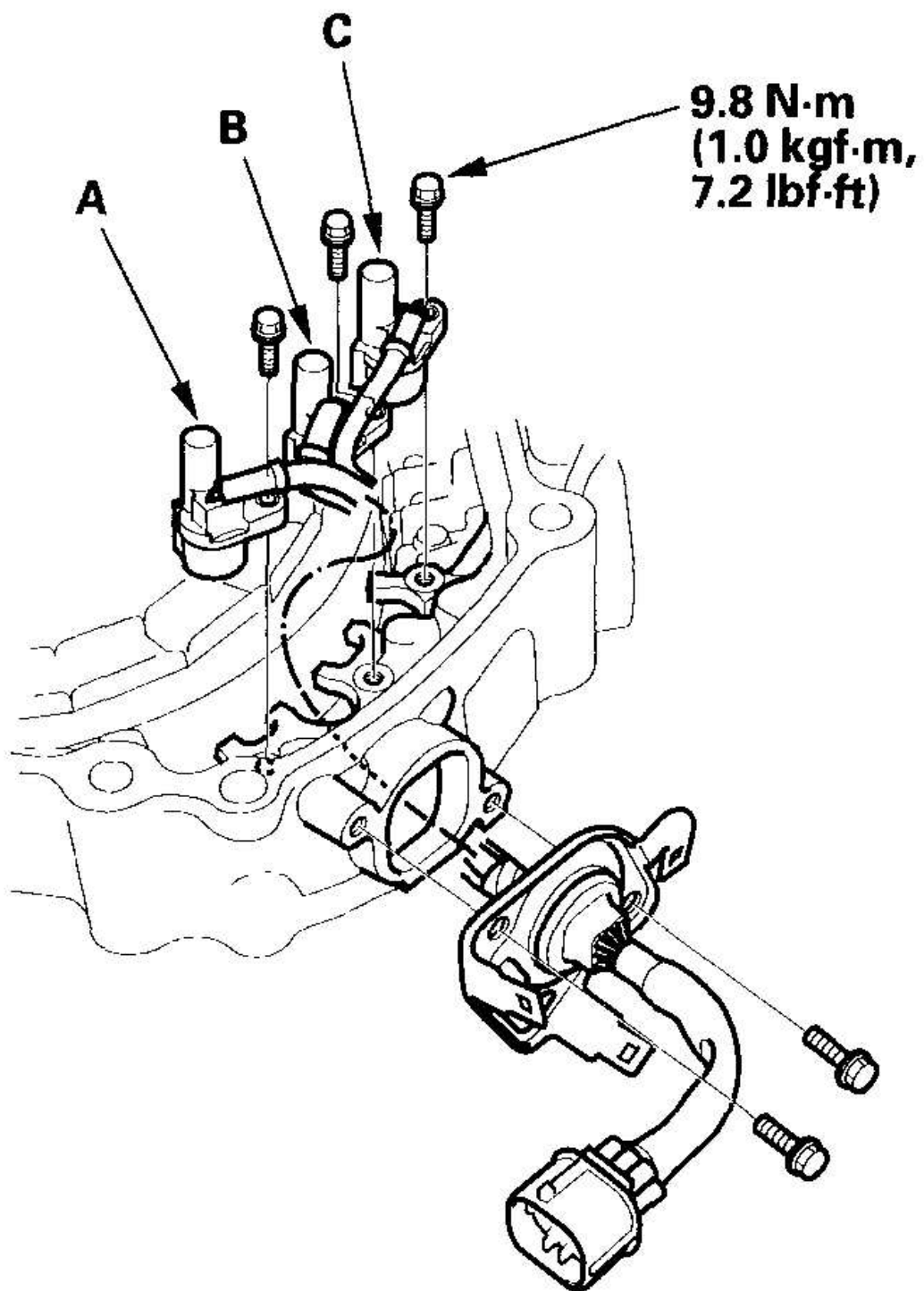
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Fig. 292: Removing Cover And Motor Power Cables
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove motor commutation sensors A, B, and C.

2006 Honda Insight

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G03681511

Fig. 293: Removing Motor Commutation Sensors A, B And C
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the IMA motor in the reverse order of removal.

NOTE:

- Install the commutation sensors properly. Do not set sensors A, B, and C in the wrong positions.
- Connect the motor power cable with the U phase, V phase, and W phase set in the correct positions.
- Clean the surfaces before applying liquid gasket, P/N 08718-0009.
- Set the rotor on the special tool, and install the rotor with the end of the special tool extended.
- Turn the handle of the special tool slowly when inserting the rotor into the stator. The rotor is drawn into the stator by magnetic force.

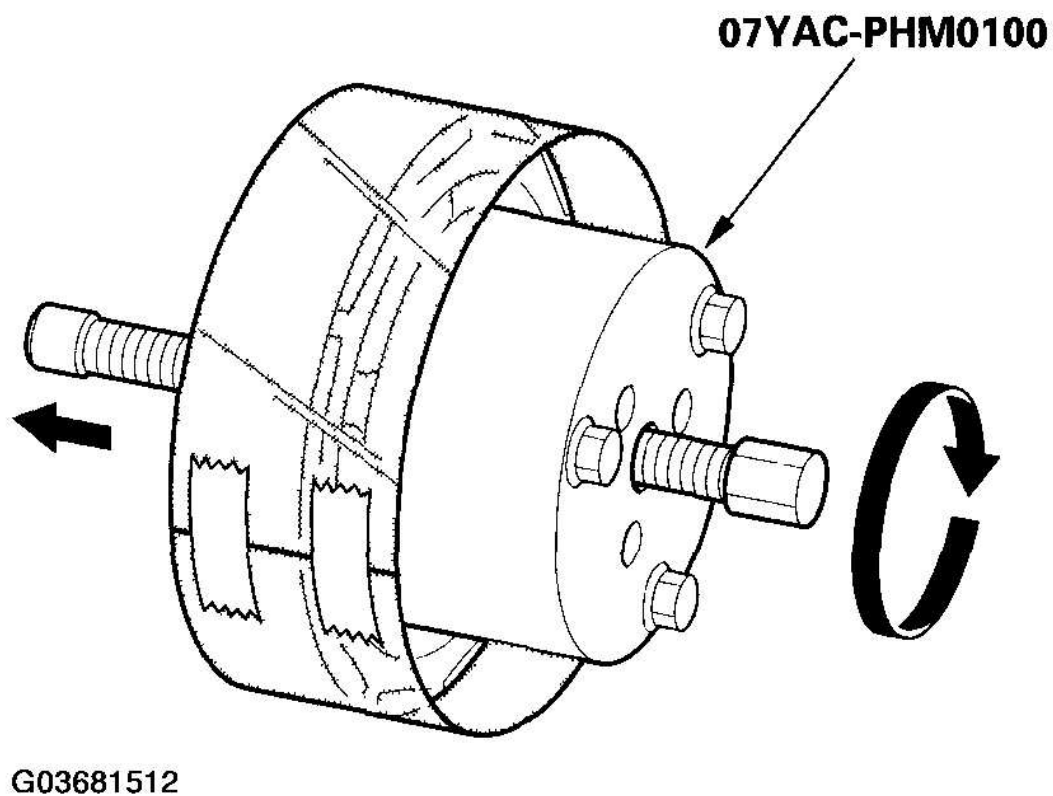


Fig. 294: Installing IMA Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.