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2010 NISSAN Murano OEM Service and Repair Workshop Manual

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- *** : The scheduled departure time and the set temperature inside the vehicle are set from the display of the display unit of the integrated interface display.**
    - **When the empty lamp of Li-ion battery is turned ON, A/C is not operated.**

A/C CONTROL BEFORE GETTIN IN

- When VCM receives A/C request signal before getting in from TCU, VCM activates A/C for 15 to 60 minutes.
- For more information of A/C control function before getting in,

  refer to Remote Climate Control.

NOTE:
When the power switch is turned on while A/C before getting in is operating, the A/C before getting in ends.

DEICE CONTROL

- When VCM receives deice request signal from A/C auto amp and is in normal charge mode or quick charge mode, VCM turns on EV power relay and sends deice permission signal (permission) to A/C auto amplifier. A/C auto amp activates deice function upon receiving deice permission signal.
- If the charge mode ends due to full charge or timer charge end while the deice function is operating, the deice function continues to operate.

  NOTE:
  When the charge connector is disconnected from the charge port, VCM sends a deice permission signal (prohibited) and the deice function stops.

- After completing the compressor operation by the deice control function, VCM activates cooling fan based on cooling fan speed request signal received from A/C auto amp.
- The deice control function may operate even at the initial stage of timer A/C operation.
- For more information of the deice control function,

  refer to Heat Pump System Control.

SIEMD-7196743

DESIGN/PURPOSE

It warns the driver that he/she is trying to get out of the vehicle with the gear shift being placed at other than the P range.

Symbol	Message
 SIEMD-7196743-03-SCIA0763ZZ	Shift P position

SYNCHRONIZATION WITH MASTER WARNING LAMP

Applicable

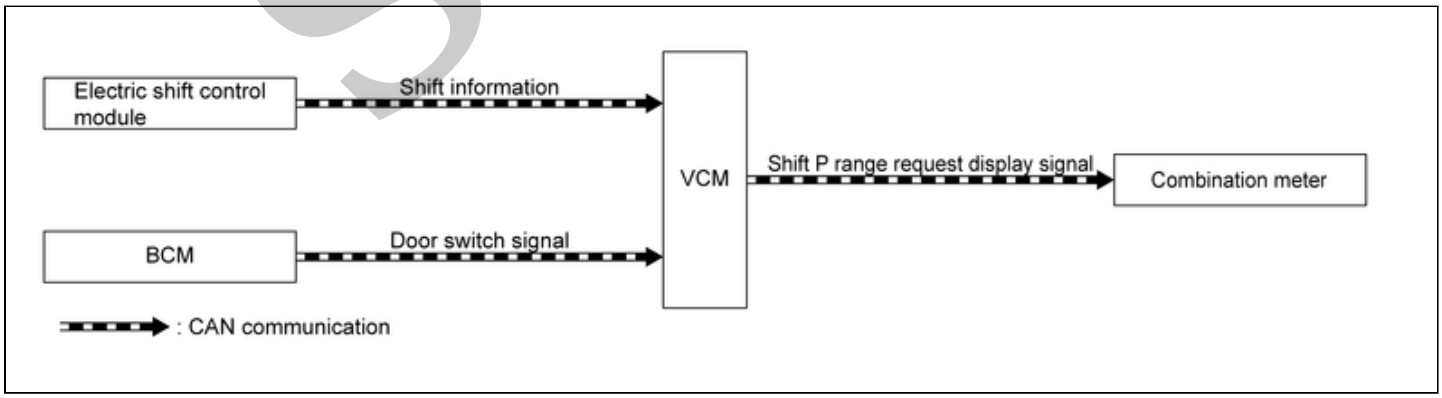
For master warning lamp, Refer to Master Warning Lamp.

SYNCHRONIZATION WITH WARNING CHIME

Synchronization is applied. (Shift P warning chime)

For warning chime, Refer to Shift P Warning Buzzer

SYSTEM DIAGRAM



SIEMD-7196743-01-000384993

SIGNAL PATH

- Electric shift control module transmits shift position information to VCM.
- BCM transmits a door switch signal to VCM.
- VCM judges the vehicle condition according to shift position information and a door switch signal. When the driver's door is opened with the shift position except P position, a warning indicator signal for forgetting to return to P position is transmitted to the combination meter.

INDICATOR OPERATING CONDITION

When all of the following conditions are satisfied:

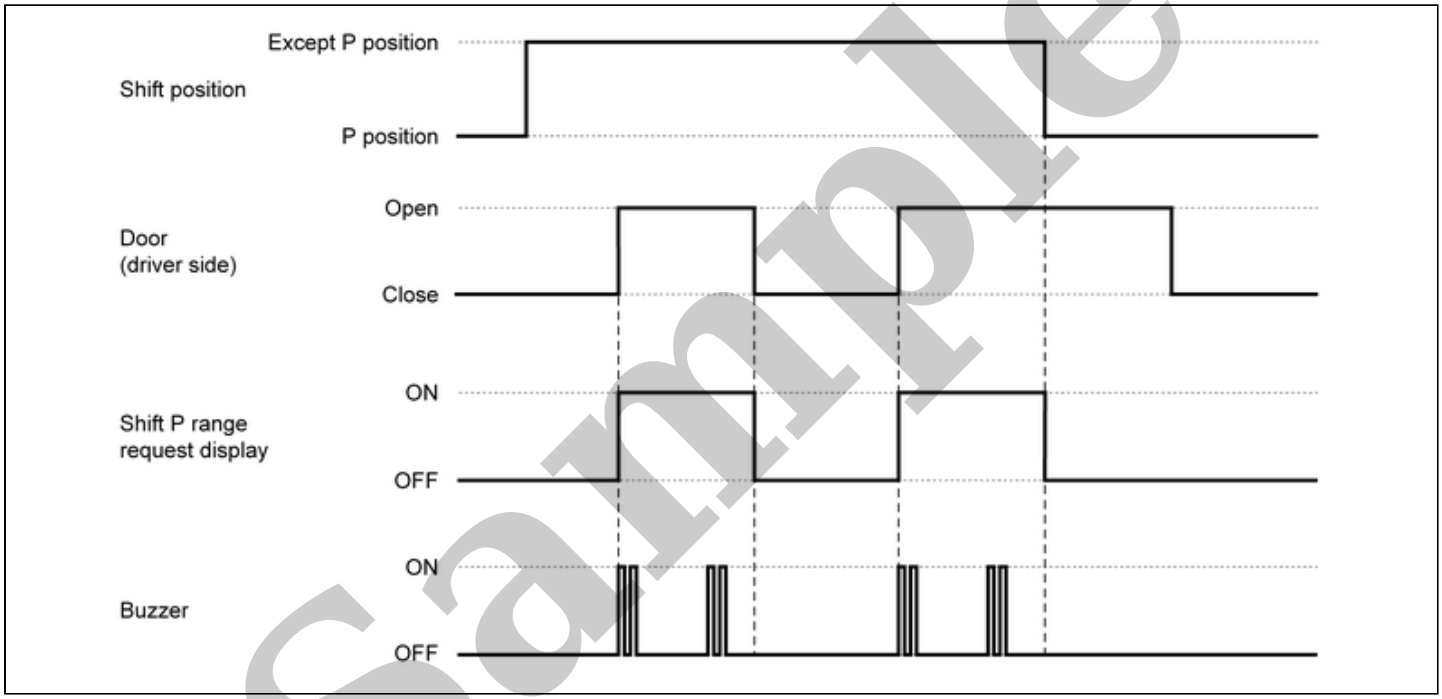
- Shift position: Except P range
- Front door (driver side): Open

INDICATOR CANCEL CONDITION

The indication is cancelled when any of the following conditions are satisfied:

- The shift position is changed to P position.
- The driver’s door is closed.

TIMING CHART



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SIEMD-7196742

2WD models

Design/Purpose

Power limitation warning shows that front traction motor output is limited below the threshold value.

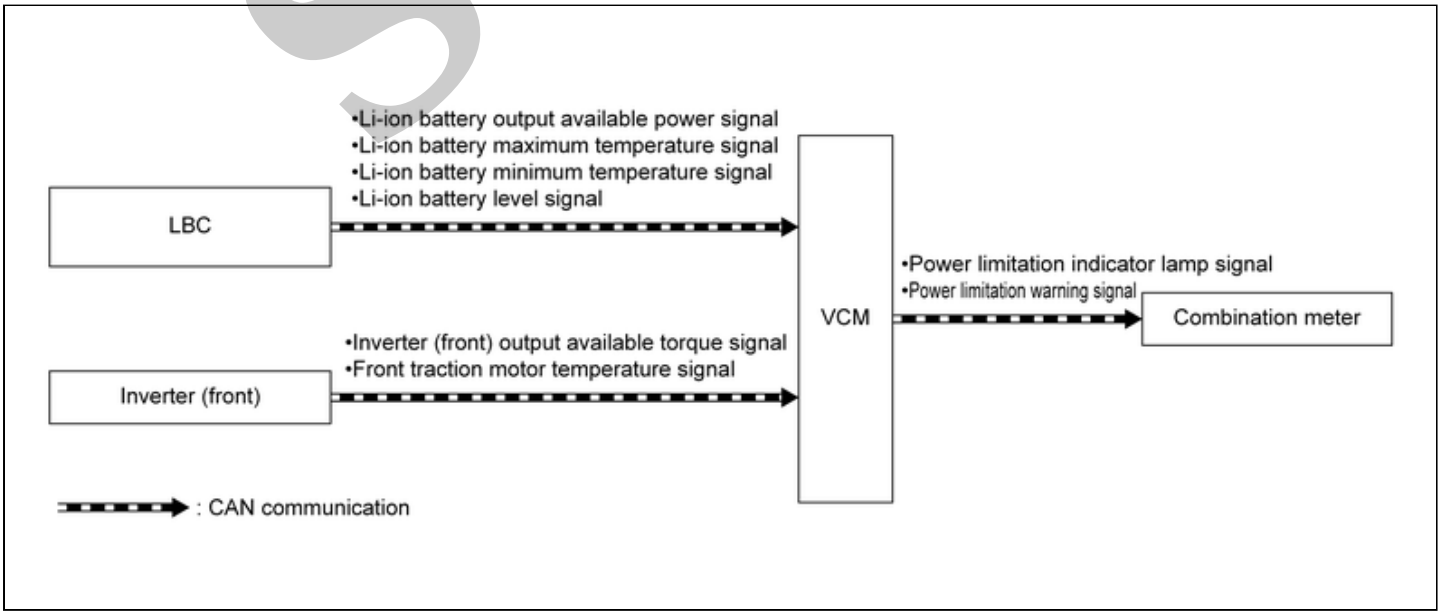
Symbol	Message	Description
	EV system hot Power reduced Drive slowly	Operating Condition : Power limitation indicator lamp turns ON Vehicle Condition : EV system temperature high
	EV system cold Power reduced	Operating Condition : Power limitation indicator lamp turns ON Vehicle Condition : EV system temperature low
	Battery charge is low Power reduced Charge now	Operating Condition : Power limitation indicator lamp turns ON Vehicle Condition : Li-ion battery remained energy low
	Power reduced	Operating Condition : Power limitation indicator lamp turns ON Vehicle Condition : Other

SYNCHRONIZATION WITH MASTER WARNING LAMP

Synchronization is applied.

For master warning lamp, Refer to Master Warning Lamp.

SYSTEM DIAGRAM



SIEMD-7196742-02-000391594

SIGNAL PATH

- If the front drive motor needs to be protected, the inverter (front) limits the motor torque and transmits a signal to VCM.

- When Li-ion battery cannot output the power normally, LBC limits the output and transmits signals to VCM.
- The inverter (front) transmits the front traction motor temperature. The LBC transmits the remaining Li-ion battery charge level, the maximum Li-ion battery temperature, and the minimum Li-ion battery temperature. Using these signals, when the value falls below the threshold value, VCM transmits an output limit indicator light signal and a separate lighting reason signal (output limit warning display signal) to the combination meter.
- The combination meter turns on the output limit indicator lamp by the signal input, and displays the output limit indicator lights up reason is in the vehicle information displays.

INDICATOR OPERATING CONDITION

When output limit indicator lamp is turned ON. Refer to System Description.

INDICATOR OPERATION CANCEL CONDITION

The front traction motor or Li-ion battery recovers from the output limit condition.

AWD models

Design/Purpose

Power limitation warning shows that front traction motor and rear traction motor output is limited below the threshold value.

Symbol	Message	Description
-	EV system cooling Temporary Power Reduction*	Operating Condition : Power limitation indicator lamp turns OFF Vehicle Condition : EV system temperature high
	EV system hot Power reduced Drive slowly	Operating Condition : Power limitation indicator lamp turns ON Vehicle Condition : EV system temperature high
	EV system cold Power reduced	Operating Condition : Power limitation indicator lamp turns ON Vehicle Condition : EV system temperature low
	Battery charge is low Power reduced Charge now	Operating Condition : Power limitation indicator lamp turns ON Vehicle Condition : Li-ion battery remained energy low
	Power reduced	Operating Condition : Power limitation indicator lamp turns ON Vehicle Condition : Other

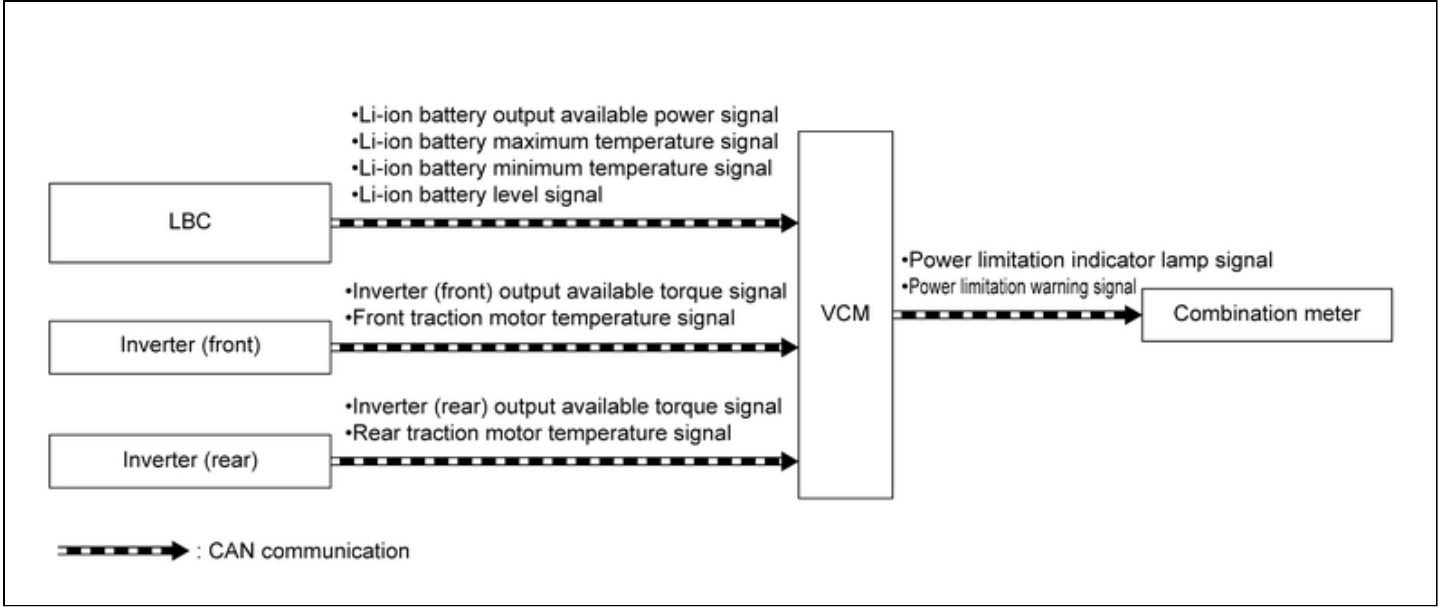
*: May not indicate depend on the vehicle spec.

SYNCHRONIZATION WITH MASTER WARNING LAMP

Synchronization is applied.

For master warning lamp, Refer to Master Warning Lamp.

SYSTEM DIAGRAM



SIEMD-7196742-01-000415271

SIGNAL PATH

- If the front traction motor and rear traction motor needs to be protected, the inverter (front) and inverter (rear) limits the motor torque and transmits a signal to VCM.
- When Li-ion battery cannot output the power normally, LBC limits the output and transmits signals to VCM.
- The inverter (front) and inverter (rear) transmits the front traction motor and rear traction motor temperature. The LBC transmits the remaining Li-ion battery charge level, the maximum Li-ion battery temperature, and the minimum Li-ion battery temperature. Using these signals, when the value falls below the threshold value, VCM transmits an output limit indicator light signal and a separate lighting reason signal (output limit warning display signal) to the combination meter.
- The combination meter turns on the output limit indicator lamp by the signal input, and displays the output limit indicator lights up reason is in the vehicle information displays.

INDICATOR OPERATING CONDITION

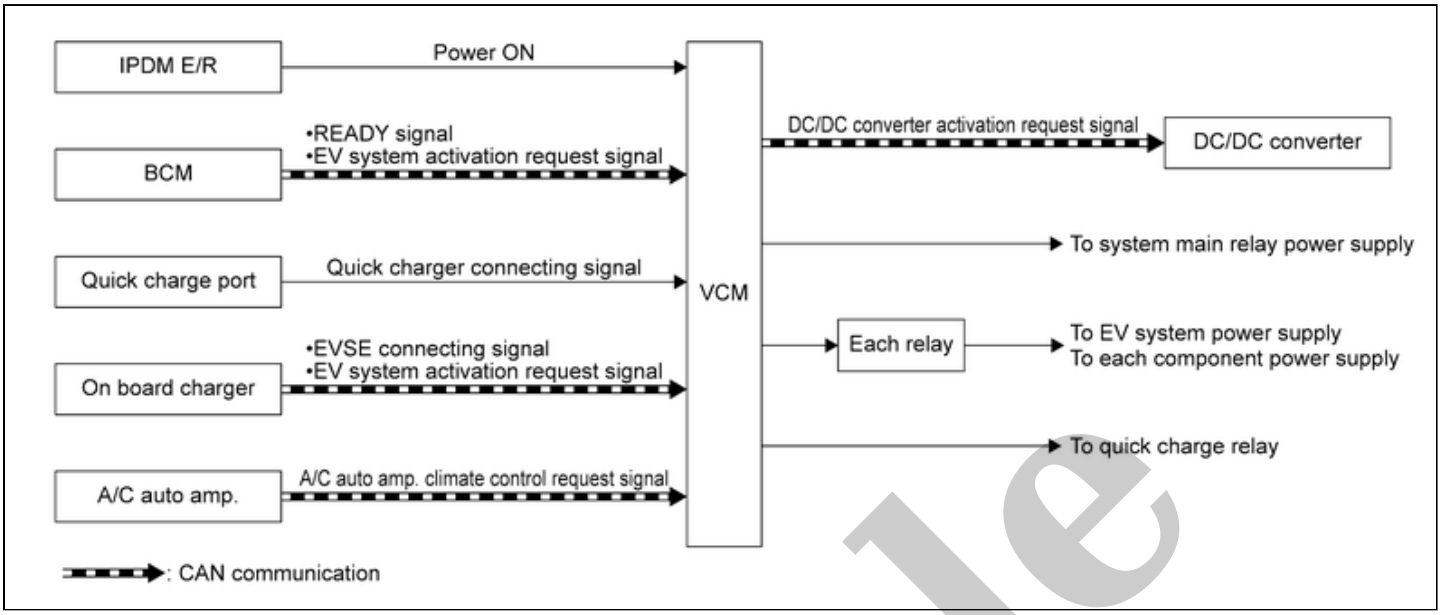
When output limit indicator lamp is turned ON. Refer to System Description.

INDICATOR OPERATION CANCEL CONDITION

The front traction motor and rear traction motor or Li-ion battery recovers from the output limit condition.

SIEMD-7196733

SYSTEM DIAGRAM



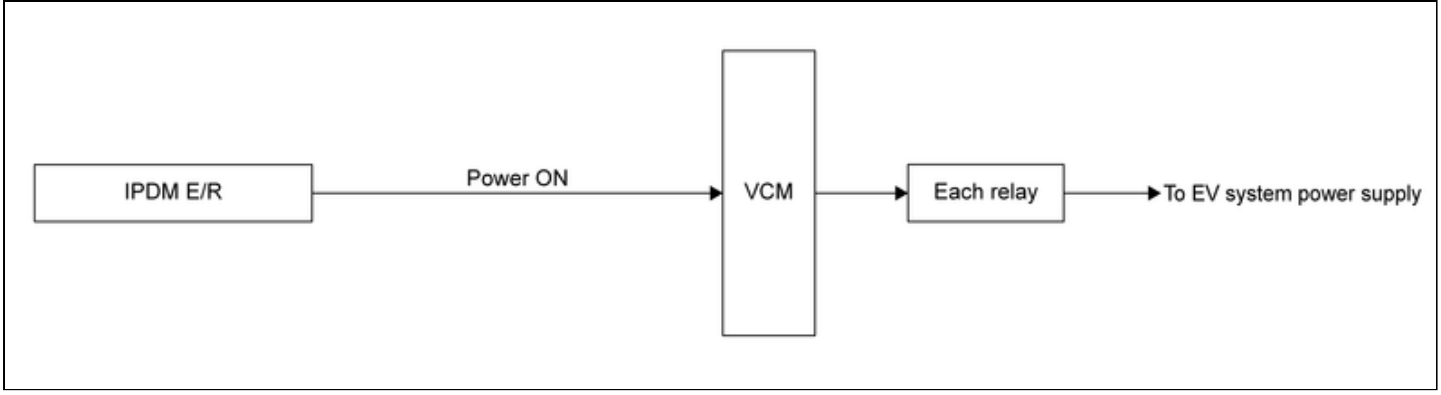
SIEMD-7196733-05-000384979

Component parts	Function
IPDM E/R	IPDM E/R transmits the power ON signal to VCM.
BCM	BCM transmits the following signals to VCM • READY signal • EV system start-up request signal
Charge port (quick charge)	Quick charge port transmits the quick charger connecting signal to VCM.
On-board charger	In-vehicle charger transmits the following signals to VCM • EVSE connection signal • EV system start-up request signal
VCM	Refer to Component Description.
A/C auto amp.	A/C auto amp. transmits the cooling request signal to VCM.
DC/DC converter	DC/DC receives converter transmits the start up request signal from VCM
Each relay	—

CONTROL DESCRIPTION

VCM judges the operation mode from signals sent by various sensors, switches, and ECUs, and controls the start/stop of the EV system by activating the relays accordingly.

Power Switch ON



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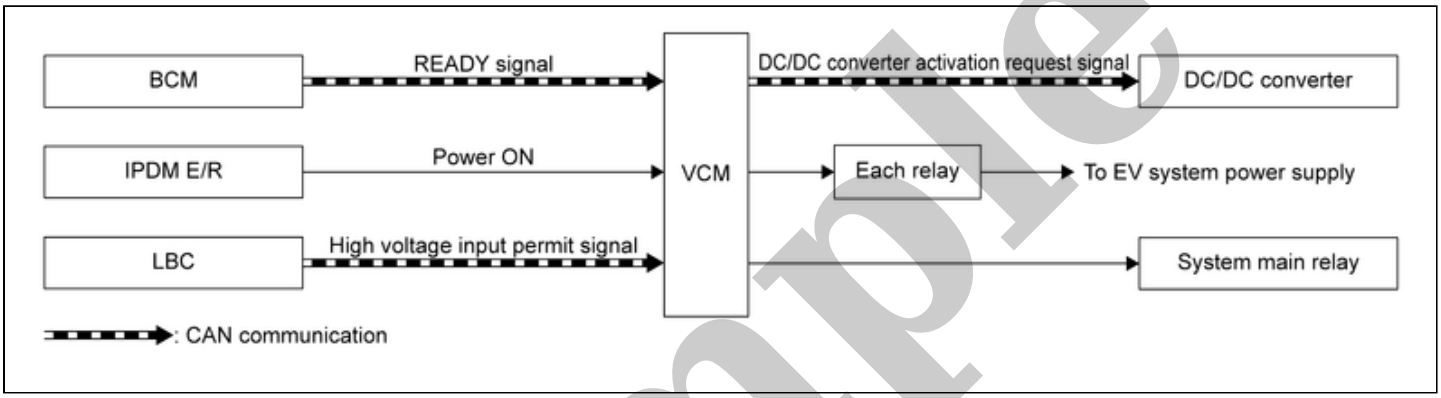
When the power supply for power ON is input from the IPDM E/R enters VCM, VCM turns ON each relay to supply power to each ECU and parts of EV system.

READY



SIEMD-7196733-02-000384981

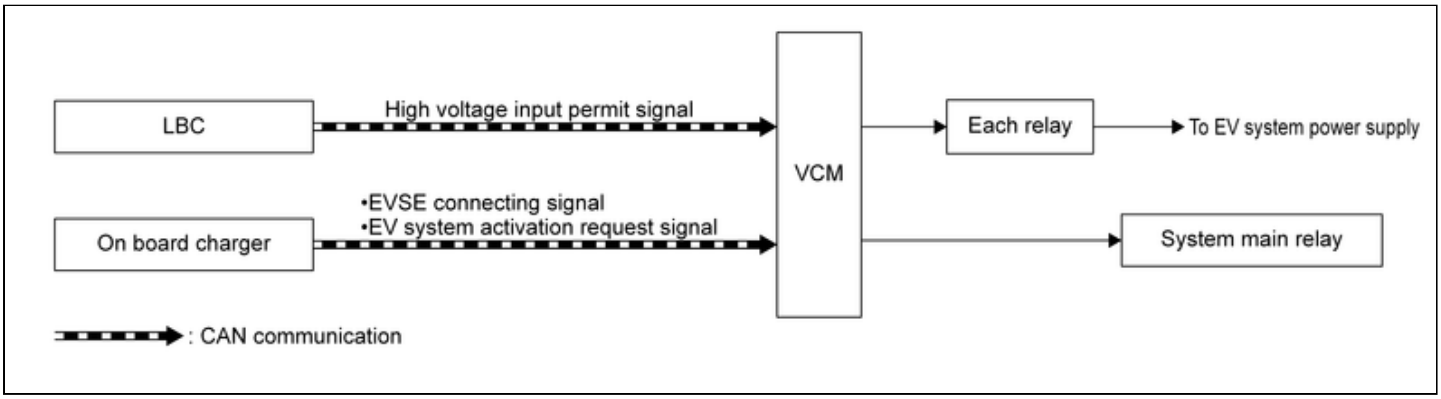
When the driver operates the POWER switch while depressing the brake pedal, VCM turns ON each relay to supply power to each ECU and parts of EV system. Furthermore, VCM supplies power to the system main relay.

NOTE:

VCM inhibits the vehicle is set to READY in following conditions:

- **Charge connector is connected.**
- **Li-ion battery remaining energy is too low.**
- **Li-ion battery temperature is too low. [-30°C approx. or less]**

In Normal Charging

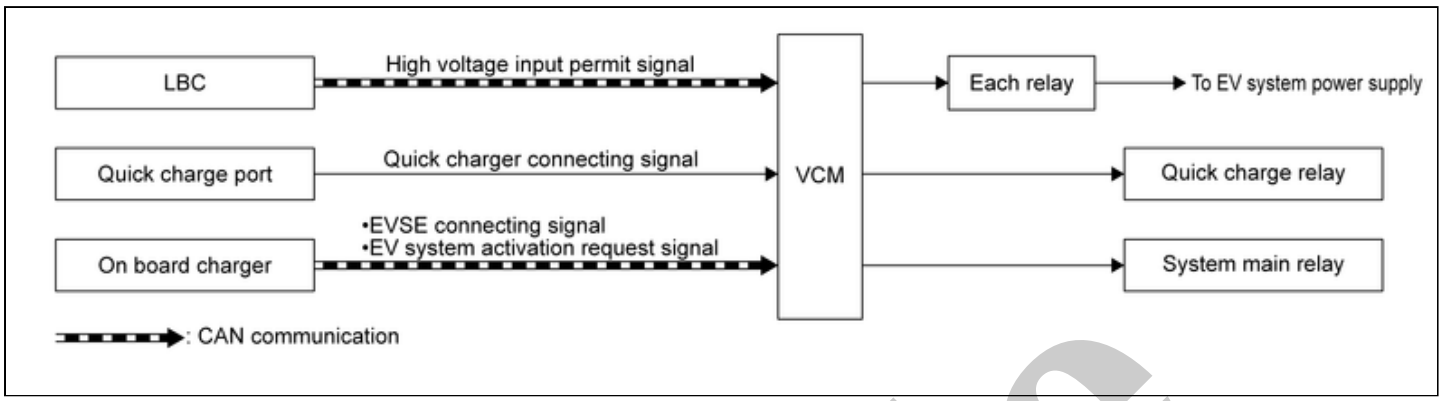


SIEMD-7196733-03-000384982

If VCM judges that the system is in normal charge mode, VCM turns ON each relay to supply power to each ECU of the EV system. Furthermore, VCM supplies power to the system main relay.

NOTE:
Normal charging does not start with the power switch ON.

In Quick Charging



SIEMD-7196733-04-000384983

When VCM judges that the system is in quick charge mode, VCM turns ON each relay to supply power to each ECU of the EV system. Furthermore, Furthermore, VCM supplies power to the quick charge relay and the system main relay.

When Air Conditioner Is Operating (Power OFF)

When air conditioner and its timer, etc., are activated before getting into the vehicle, VCM turns ON each relay to start the EV system. VCM also supplies power of the system main relay and starts A/C system.

In 12V Battery Automatic Charging

When VCM judges that the 12V battery requires automatic charging, VCM turns ON each relay to start the EV system. Furthermore, VCM supplies power the system main relay.