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2010 NISSAN Navara / Frontier King Cab OEM Service and Repair Workshop Manual

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SIEMD-7196724

Fail-safe pattern:

- Pattern A: Restart is prohibited
- Pattern B: Traction motor output is limited
- Pattern C: Quick charge is prohibited
- Pattern D: Normal charge is prohibited
- Pattern E: Traction motor output is cut
- Pattern F: High-voltage system is normally stopped
- Pattern G: High-voltage system is suddenly stopped
- Pattern H: A/C control is stopped

FAIL-SAFE LIST

x: applicable

DTC code	Type	Pattern								Others
		A	B	C	D	E	F	G	H	
P0000	00			×	×			×		
P0530	16								×	
P0560	61		×	×	×	×	×	×	×	
P0641	16,17		×			×				
P0651	16,17		×			×				
P0697	16,17		×	×	×	×	×	×	×	
P0AA6	23	×								
P0AE1	73			×						
P0AE2	72			×						
P0AE2	73	×		×	×					
P0B33	63						×			
P0CA6	19			×						
P0D0A	11,12,13				×					
P0D11	11,12,13				×					
P1001	78								×(vehicle stopped)	
P102C	01			×						
P1033	11								×	
P1035	49		×	×	×	×	×	×	×	
P104B	16,17			×						
P104C	16,17			×						
P12A8	08									Cruse control (ProPILOT Assist/ProPILOT Assist 2.0) operation prohibited

DTC code	Type	Pattern								Others
		A	B	C	D	E	F	G	H	
P1596	96			×(vehicle stopped)	×(vehicle stopped)					
P1597	F1						×(vehicle stopped)			
P159D	23						×			
P15A6	13			×	×					
P15A7	31			×	×					
P15A9	24			×	×					
P15A9	2F				×					
P15AA	73			×	×					
P15BA	72			×	×					
P15BE	96						×(vehicle stopped)			
P15BF	96			×(vehicle stopped)	×(vehicle stopped)					
P15C5	78						×(vehicle stopped)			
P15D3	78								×(vehicle stopped)	
P15FA	11,12,13			×	×					
P15FB	01			×	×					
P15FE	16,17			×						
P15FE	64			×	×					
P1604	72,73			×	×					
P1605	63			×	×					
P160C	04			×	×			×		
P1613	49		×			×				
P161C	49		×	×	×	×	×	×	×	
P161C	F1		×	×	×	×	×	×	×	
P161E	96						×(vehicle stopped)			
P161F	96						×(vehicle stopped)			
P163F	94			×	×					
P164B	64									P range is held or N range is indicated
P1666	72				×					
P168A	11		×							
P168B	73	×					×			
P168C	72						×			
P168D	11	×								
P168D	12,13						×			
P168D	72						×			

DTC code	Type	Pattern								Others
		A	B	C	D	E	F	G	H	
P168E	11	×								
P168E	12,13						×			
P168E	73						×			
P1692	19						×			
P1693	49,87			×	×	×				
P1694	49,87			×	×	×				
P1695	96					×				
P1728	19						×			
P1729	98						×			
P3101	61,62					×				
P3194	00,87									Cruse control (ProPILOT Assist/ProPILOT Assist 2.0) operation prohibited
U2370	94,96			×						

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Warning lamp/Indicator lamp

item	design	Reference
12V battery charge warning lamp		For layout, Refer to Design. For function, Refer to 12V Battery Charge Warning Lamp.
Ready to drive indicator lamp		For layout, Refer to Design. For function, Refer to Ready To Drive Indicator Lamp
Power limitation indicator lamp		For layout, Refer to Design. For function, Refer to Power Limitation Indicator Lamp
EV system warning lamp		For layout, Refer to Design. For function, Refer to EV System Warning Lamp

Warning chime

item	Reference
Shift P warning buzzer	Refer to Shift P Warning Buzzer.

Warning / Indicator (vehicle information display)

item	Reference
Power limitation warning	Refer to System Description.
EV system warning	Refer to System Description.
Shift P warning display	Refer to System Description.
AWD torque display	Refer to System Description.

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CONTROL OUTLINE

- Li-ion battery charge is controlled by VCM
- VCM activates the EV system by connecting the charging connector and performing remote control, and starts charging to the Li-ion battery. The following charge modes are available.

Methods of charging		Description
Li-ion battery charge control		Refer to System Description.
Normal charge	Immediate charge	Refer to System Description.
	Timer charge	
	Remote charge	
Quick charge		Refer to System Description.
Regeneration charge		Refer to System Description.

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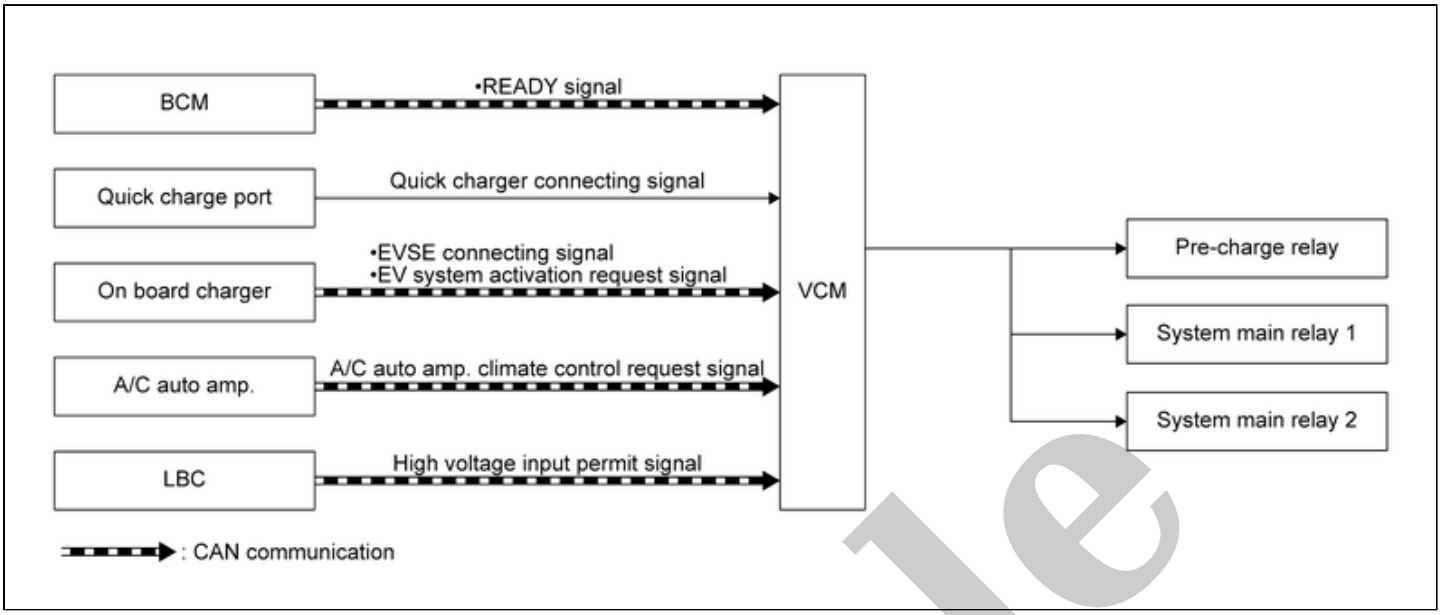
SYSTEM DIAGRAM



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Component parts	Function
BCM	BCM transmits the following signals to VCM.
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
A/C auto amp.	A/C auto amp. transmits the cooling request signal to VCM.
LBC	LBC transmits high voltage input permit signal to VCM.
VCM	Refer to Component Description.
Pre-charge relay	Refer to Component Description.
System main relay 1	Refer to Component Description.
System main relay 2	Refer to Component Description.

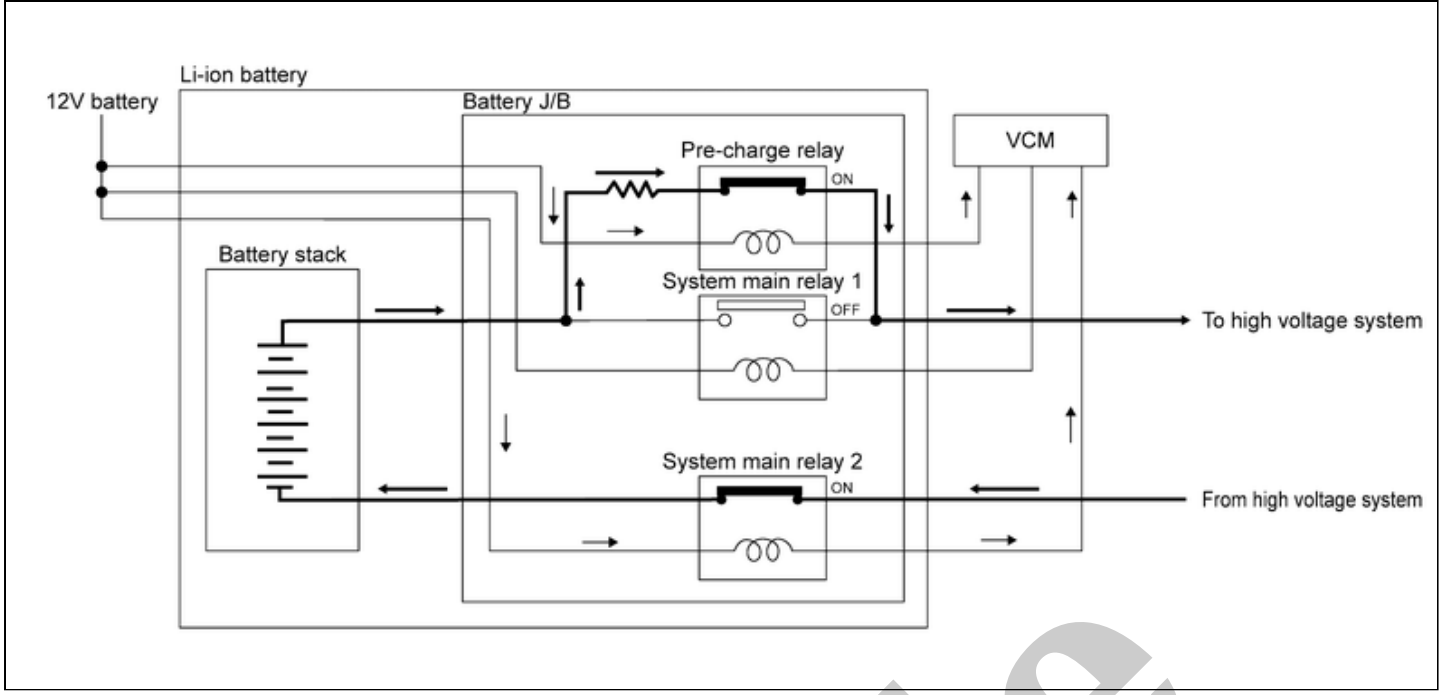
DESCRIPTION

When the driver performs the READY operation or connects the charge cable to a charging port, or when VCM starts according to the timer control and judges the necessity of connecting the high voltage circuit to Li-ion battery, VCM activates system main relay 1, system main relay 2, and the pre-charge relay located inside the Li-ion battery junction box and connects high voltage circuit to Li-ion battery.

Moreover, the high voltage circuit of the EV system has a pre-charge circuit to protect the high voltage circuit from sudden application of high voltage current.

CONTROL FLOW

To connect the high voltage circuit, VCM first activates the pre-charge relay and system main relay 2.



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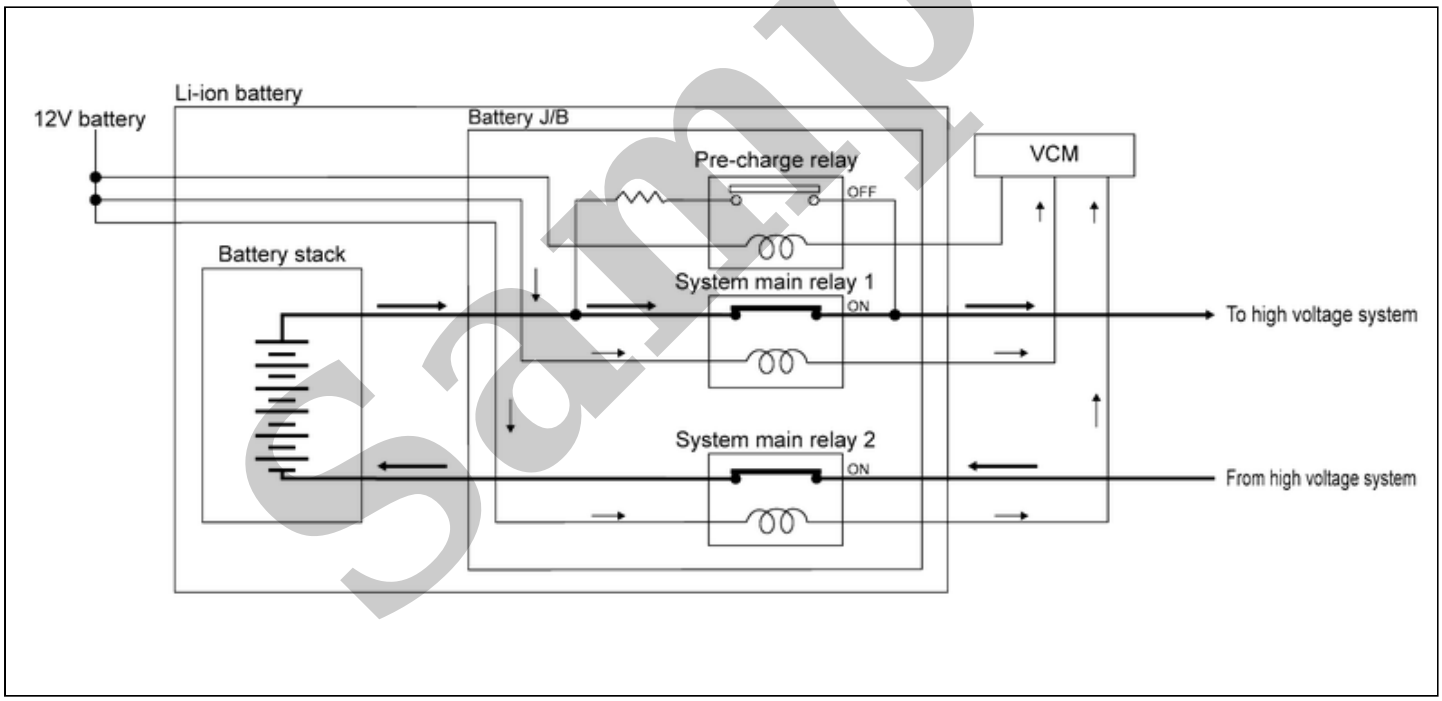
As a result, the high voltage power is supplied to the respective systems via the pre-charge resistor in the pre-charge circuit.

VCM activates the system main relay 1 and deactivates the pre-charge relay. Then, normal power is supplied to the respective systems.



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FUNCTIONS WITHIN THE SYSTEM

VCM (Vehicle control module) judges the vehicle status according to signals from various sensors and ECUs, and controls EV system in a comprehensive manner.

INDIVIDUAL FUNCTION WITHIN THE SYSTEM

- The VCM consists of the microcomputer and input/output connectors for signal.
- When even the ignition switch is turned OFF, power is supplied continuously from the battery for maintaining the DTC and memory functions.
- The VCM includes a self-diagnosis function for simplifying trouble diagnosis.
- VCM has a gateway function for EV system CAN communication and CAN communication.

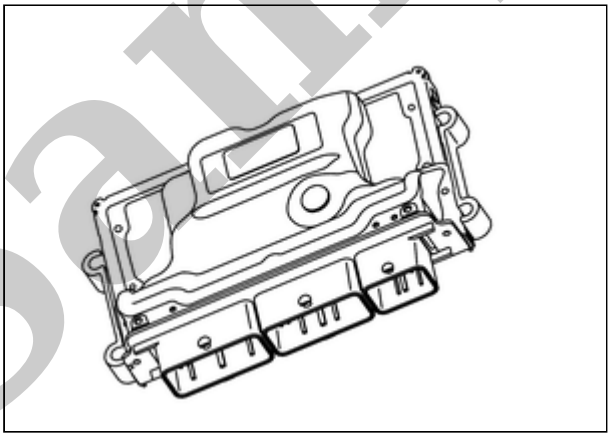
  It enables communication between an ECU performing CAN communication and an ECU performing EV system CAN communication.

INDIVIDUAL OPERATION

The VCM controls a variety of EV systems. Refer to System Description.

COMPONENT PARTS LOCATION

VCM is installed beside the foot of co-driver of the Interior Compartment.



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FUNCTIONS WITHIN THE SYSTEM

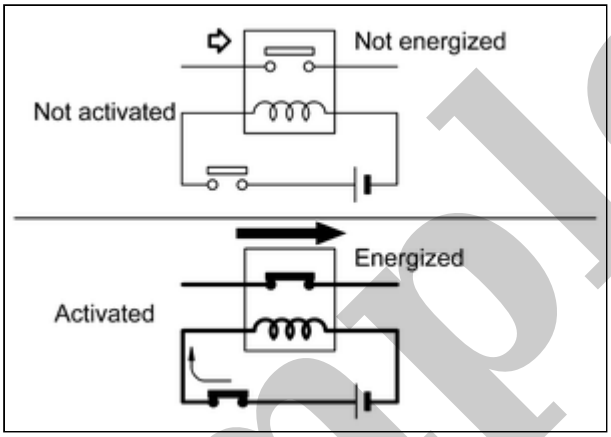
12V main relay supplies 12V power to VCM and Li-ion battery. When the EV system needs to be started up, VCM turns on the 12V main relay and supplies 12V power to VCM and Li-ion battery.

INDIVIDUAL FUNCTION WITHIN THE SYSTEM

12V main relay connects and disconnects the power supply circuit by ON / OFF of the relay switch.

INDIVIDUAL OPERATION

12V main relay adopts normal open type.



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COMPONENT PARTS LOCATION

12V main relay is installed in the relay box of front right side of the vehicle.