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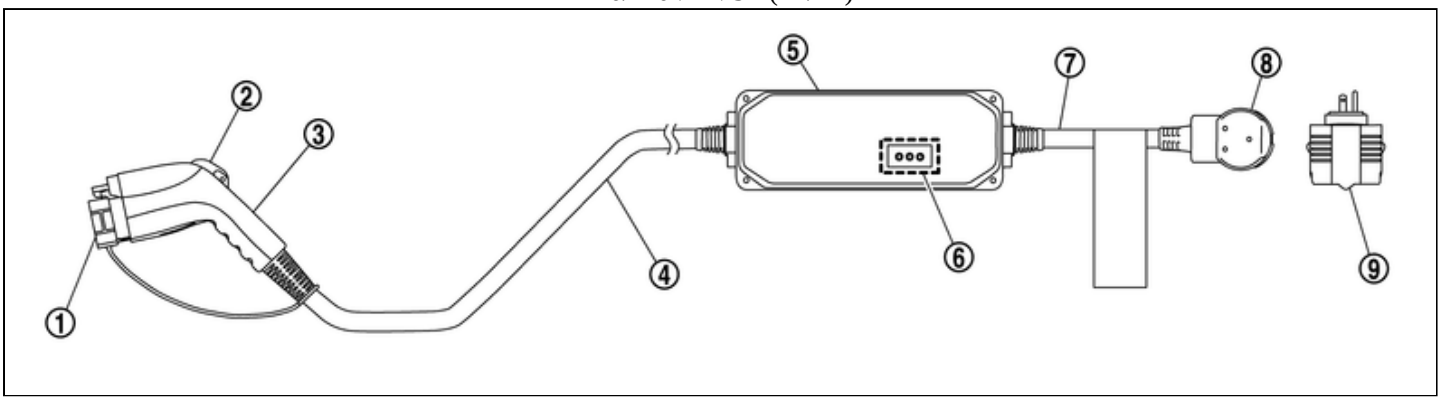
2014 NISSAN Altima (Thailand) OEM Service and Repair Workshop Manual

Go to manual page

OUTLINE

120/240V EVSE (L1/L2)



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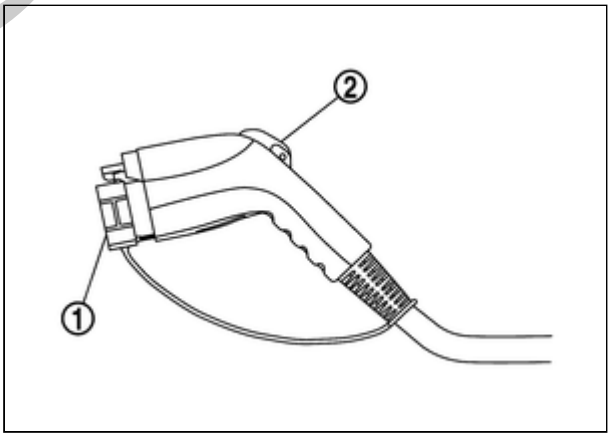
①	Protective cap	②	Release switch	③	Normal charge connector
④	Cable	⑤	Control box	⑥	LED lamps • READY (Green) • POWER (Orange) • FAULT (Red)
⑦	Cord	⑧	Plug	⑨	Genuine NISSAN Adapter (For 120 V outlet only)

The EVSE (Electric Vehicle Supply Equipment) is manufactured based on the specifications prescribed in SAE-J1772, and is for charging by connecting a commercial power source to the vehicle. The EVSE consists of adapter, plug, cable, control box, and a normal charge connector and supplies power to the vehicle using commercial power. By conducting PWM communication with the PDM (Power Delivery Module), the EVSE performs safe and suitable charging for the vehicle.

NORMAL CHARGE CONNECTOR

The normal charge connector ① is equipped with a release switch ② to maintain the connection between the normal charge port and the charge connector.



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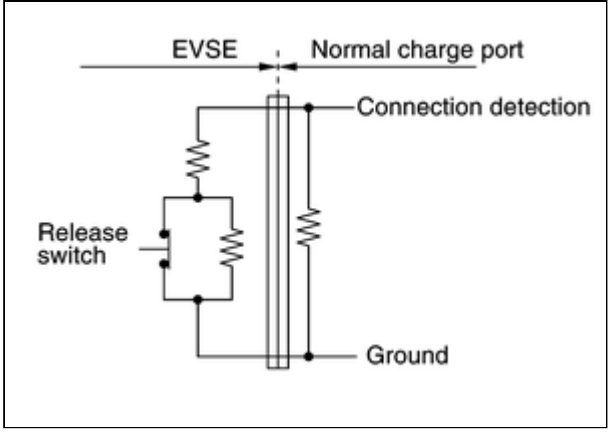
The charging connector is equipped with a release switch to maintain the connection between the normal charging port and the charging connector. In addition, a circuit for detecting the hold status is incorporated into the release switch, which stops the charging temporarily if the release switch is pressed during charging.



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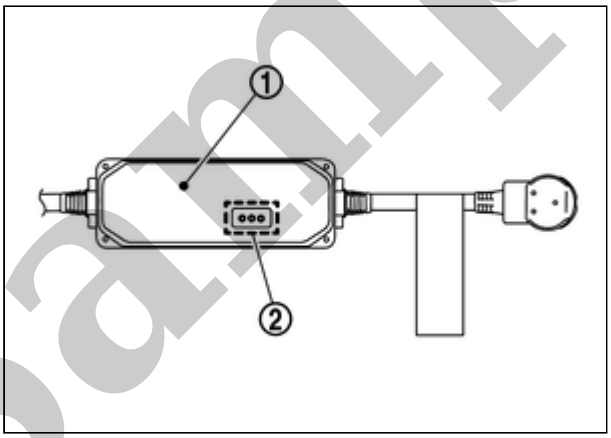
NOTE:

- **When the release switch is pressed, the contacts turn OFF.**
- **The release switch cannot be pressed while the charge connector is locked.**

CONTROL BOX

The control box ① is equipped with an indicator ② that can be used to check the charging status and malfunction detection status. The indicator operates in the following cases when a commercial power supply is connected to the EVSE.



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<List of Operations>

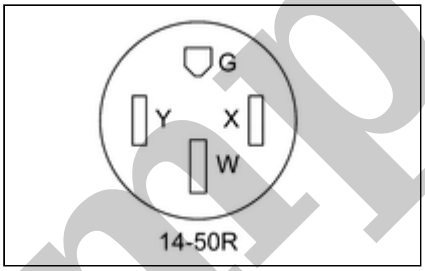
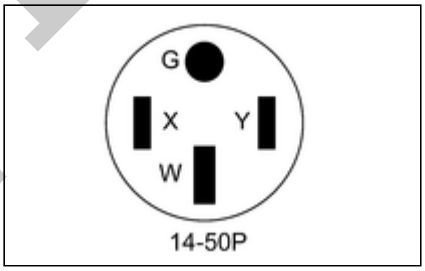
Condition	Illumination status		
	READY	POWER	FAULT
When AC power source is connected	ON (Approx.0.5 s)	ON (Approx.0.5 s)	ON (Approx.0.5 s)
When there is AC power supply input and the EVSE is able to communicate with the vehicle charger (when not charging)	ON	OFF	OFF
Charging	ON	ON	OFF
When there is no AC power supply input When the EVSE is not operating	OFF	OFF	OFF
When ground is not connected	Blink	OFF	OFF
When the EVSE detects a malfunction of the temperature detection circuit in the plug. (Charge current reduced)	Blink	Blink	ON

Condition	Illumination status		
	READY	POWER	FAULT
When the EVSE detects a malfunction of the temperature detection circuit in the plug. (Charge stopped)	Blink	OFF	ON
When the plug is high temperature. (Charge current reduced)	Blink	Blink	Blink
When the plug is high temperature. (Charge stopped)	Blink	OFF	Blink
When the EVSE detects a malfunction in itself or is connected to an incorrectly wired and / or incorrectly installed AC power supply	ON	Blink	ON
	ON	OFF	ON
When the EVSE detects electric leakage or error in communication signal	ON	OFF	Blink

PLUGS AND RECEPTACLES

For 120/240V EVSE (L1/L2), 240V outlet plug type is NEMA 14-50.

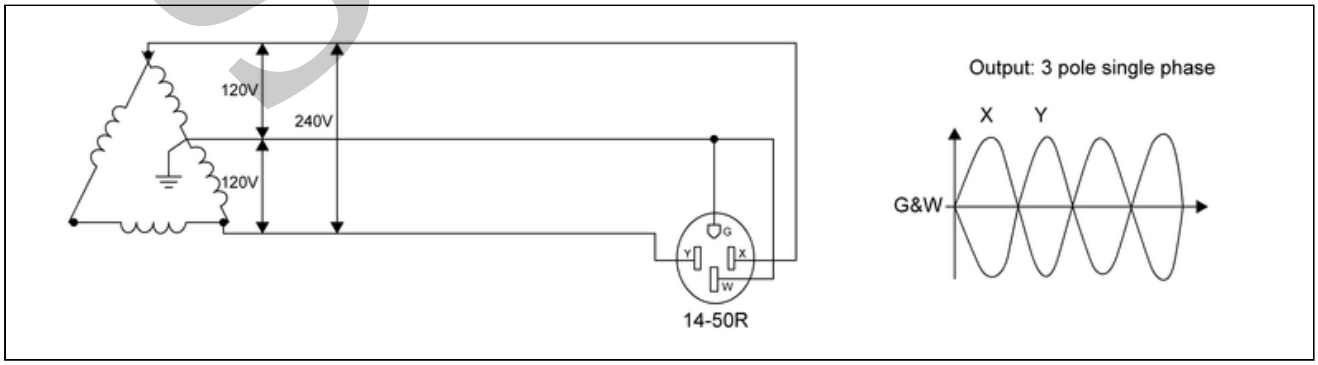
NEMA CONFIGTATIONS FOR NON-LOCKNG PLUGS AND RECEPTACLES

Description	NEMA No.	Amperes	Receptacle	Plug
3-POLE 4-WIRE GROUNDING	14	50 A	 SIEMD-7322549-08-000180417	 SIEMD-7322549-09-000180418

CAUTION:

- **240 V outlet must be connected to a single phase power supply obtained from delta connection. If connected to other type power supply, EVSE does not work normally.**

Delta connection



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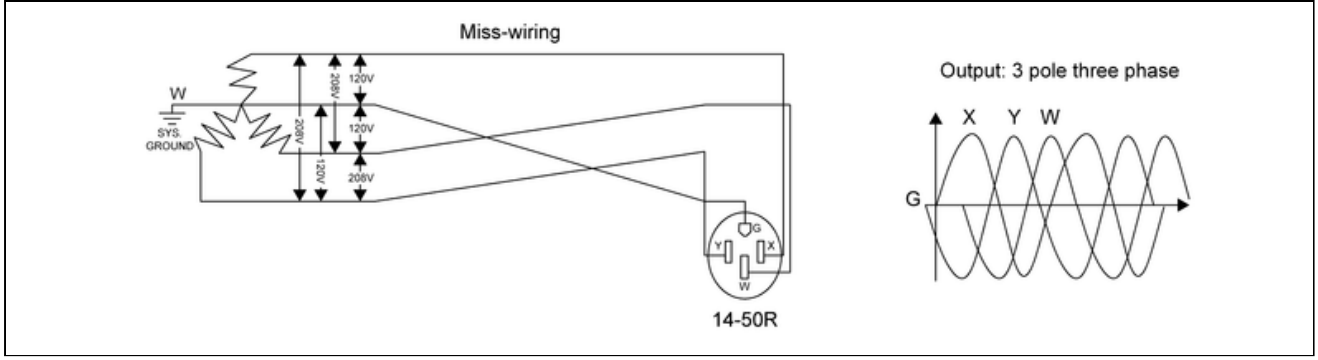
- **Never use 240 V outlet that is connected to star connection.**

Star connection



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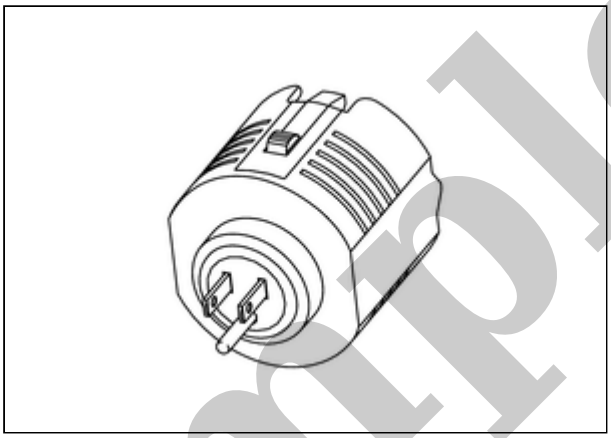
GENUINE NISSAN ADAPTER

The genuine NISSAN adapter is used when 120/240V EVSE (L1/L2) is used with 120V outlet.



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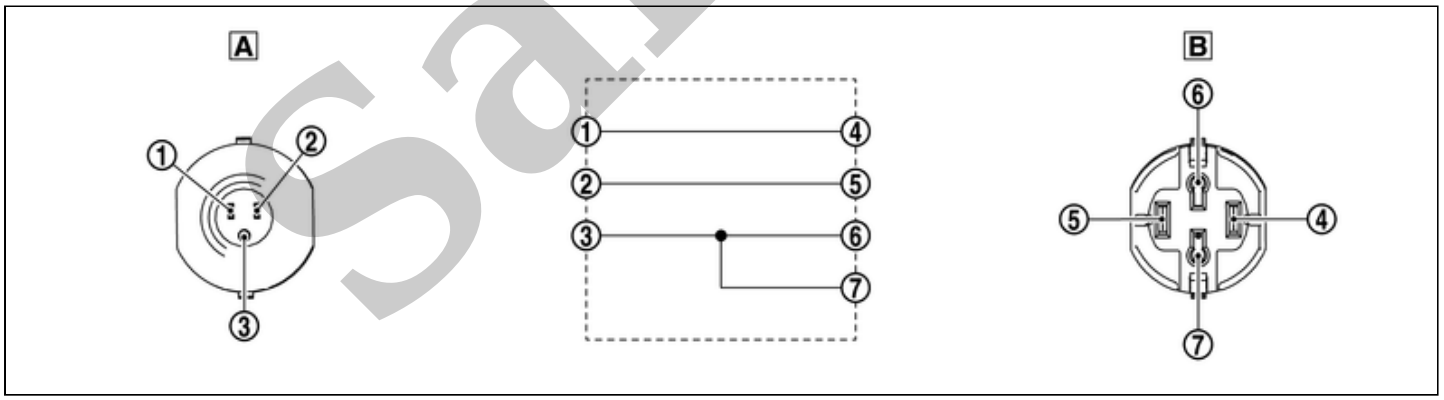
Circuit



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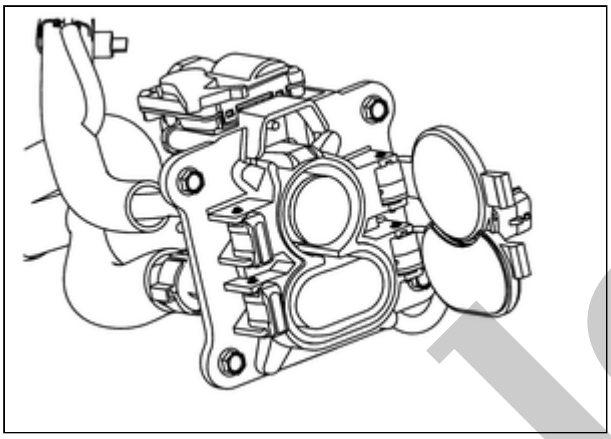
A	Power outlet side (Male terminal)	B	Plug side (Female terminal)		

FUNCTIONS WITHIN THE SYSTEM

The quick charge port is installed to the side of vehicle. At normal charge, it connects EVSE (charge cable) or mode 3 cable charge connector to send high voltage current to the on-board charger. At quick charge, it connects the connector of the quick charger and send high voltage current to the high voltage battery.



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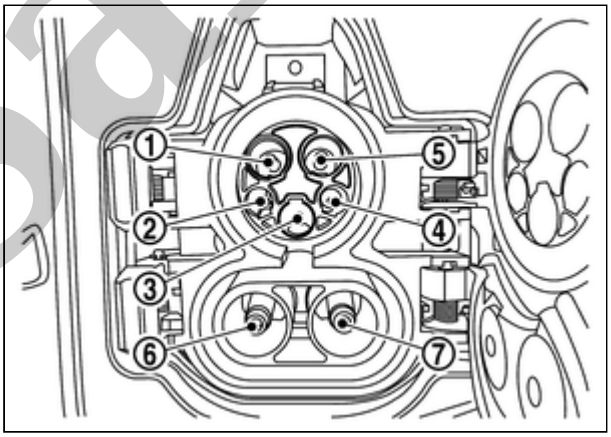
INDIVIDUAL OPERATION

The charge port is installed to the side of vehicle. At normal charge, it connects EVSE (charge cable) or mode 3 cable charge connector to send high voltage current to the on-board charger. At quick charge, it connects the connector of the quick charger and send high voltage current to the high voltage battery.

Operation



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①	High voltage
②	EVSE communication
③	Ground
④	EVSE connection signal
⑤	High voltage
⑥	High voltage (Quick Charge)
⑦	High voltage (Quick Charge)

Connection detection circuit is provided to detect connection (half lock) status with charge connector

PARTS LOCATION

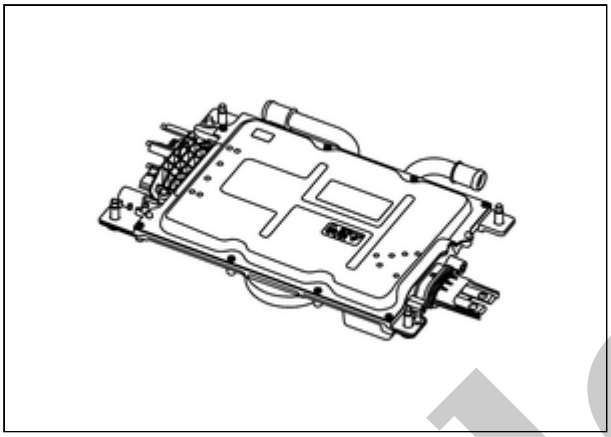
Charge port is installed into charge port lid of side of vehicle.

Refer to Specifications.

SIEMD-7198922

FUNCTIONS WITHIN THE SYSTEM

- High DC voltage from Li-ion battery is stepped down to DC 14 V approximately to charge 12V battery.
- Output voltage is changed by the signal from VCM to supply the optimum voltage for vehicle condition.



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INDIVIDUAL OPERATION

DC/DC converter steps down power from Li-ion battery to optimum voltage to supply power to vehicle.

Operation

High DC voltage of Li-ion battery is stteped down to DC 14 V approximately

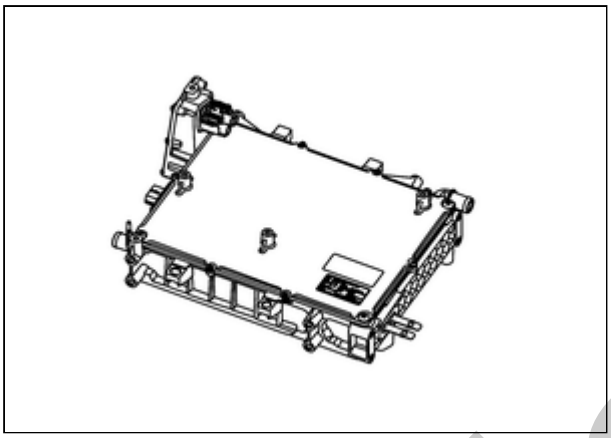
PARTS LOCATION

DC/DC converter is installed under high voltage supply unit in motor room.

SIEMD-7198928

FUNCTIONS WITHIN THE SYSTEM

On-board charger converts external AC power supply to DC power supply (300 V- 430 V) and charges Li-ion battery.



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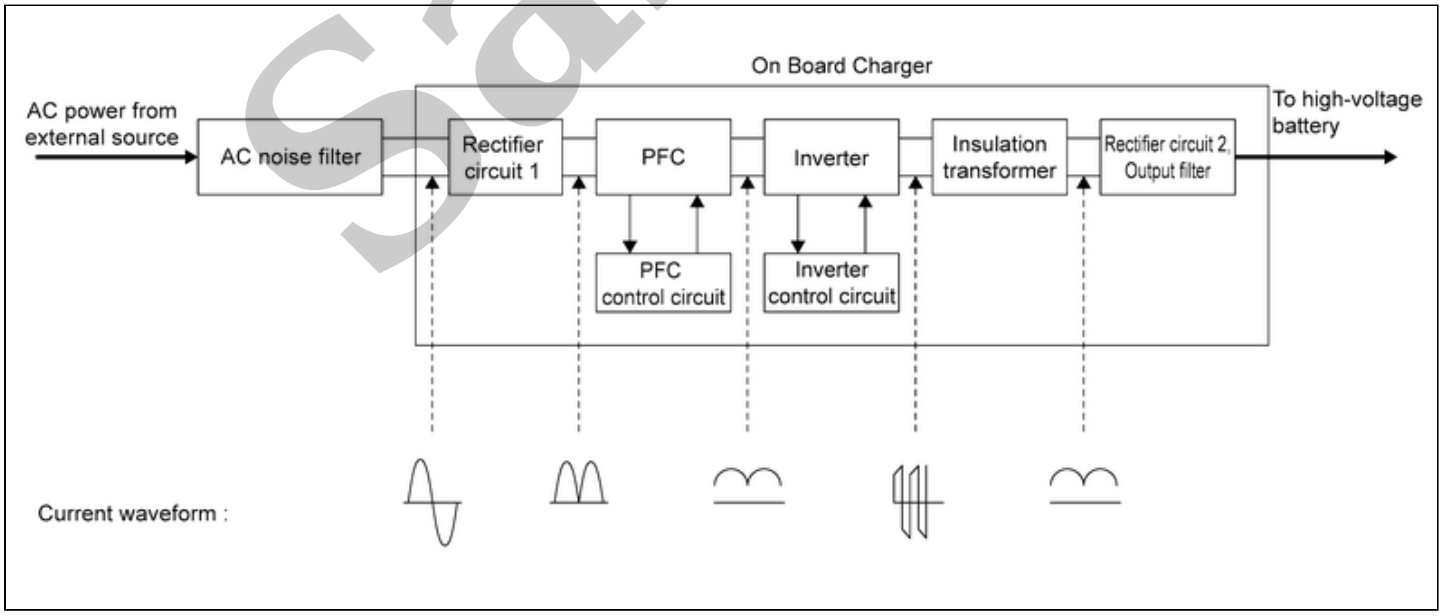
INDIVIDUAL OPERATION

PFC circuit is adopted for on-board charger to improve charge efficiency and amount of charge, and to extend life of Li-ion battery.

NOTE:
PFC (Power Factor Correction) circuit is power factor improvement circuit, which is a device that efficiently converts AC power input from an external power supply to DC power supply.

Operation



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1. AC power input from external power supply is rectified to DC power supply by rectifier circuit 1.
2. Rectified DC power supply is boosted at the same time as the power factor is improved by PFC circuit.
3. Boosted DC power supply is converted to AC power supply again by inverter.
4. AC power supply from inverter is converted voltage by insulated transformer and rectified to high voltage DC power by rectifier circuit 2.

5. Rectified high voltage DC power is output from output circuit.

PARTS LOCATION

On-board charger is installed above the traction motor in the motor room as high voltage supply unit assembly.

Refer to Specifications.