

# Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

## 2012 NISSAN X-Trail (T31) OEM Service and Repair Workshop Manual

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## 1. CHECK IMMEDIATE CHARGING SWITCH POWER SUPPLY

1. Power switch OFF.
2. Disconnect immediate charging switch harness connector.
3. Check voltage between the immediate charging switch harness connector and ground.

+		-	Voltage
Immediate charging switch			
Connector	Terminal		
M140	1	Ground	12 V battery voltage

Is the inspection result normal?

YES>>

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NO>>

[GO TO 2.](#)

## 2. CHECK IMMEDIATE CHARGING SWITCH SIGNAL CIRCUIT

1. Disconnect VCM harness connector.
2. Check for continuation between the immediate charging switch harness connector and the VCM harness connector.

+		-		Continuity
Immediate charging switch		VCM		
Connector	Terminal	Connector	Terminal	
M140	1	E46	10	Existing

3. Also check harness for short to power supply and ground.

Is the inspection result normal?

YES>>

Perform trouble cause simulation test. Refer to [Intermittent Incident](#).

NO>>

Repair or replace error-detected parts.

## 3. CHECK IMMEDIATE CHARGING SWITCH GROUND CIRCUIT

Check for continuation between the immediate charging switch harness connector and ground.

+		-	Continuity
Immediate charging switch			
Connector	Terminal		
M140	2	Ground	Existing

Is the inspection result normal?

YES>>

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NO>>

Repair or replace error-detected parts.

#### **4. CHECK IMMEDIATE CHARGING SWITCH**

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Check immediate charging switch. Refer to [Component Inspection](#).

Is the inspection result normal?

YES>>

INSPECTION END

NO>>

Replace immediate charging switch. Refer to [IMMEDIATE CHARGING SWITCH : Removal & Installation](#).

Sample

## 1. CHECK IMMEDIATE CHARGING SWITCH

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1. Power switch OFF.
2. Remove immediate charging switch.
3. Check for continuity between the immediate charging switch terminals under the conditions below.

Terminal	Condition	Continuity	
1 – 2	Immediate charging switch	Not pressed	Non-existing
		Pressed	Existing

Is the inspection result normal?

YES>>

INSPECTION END

NO>>

Replace immediate charging switch. Refer to [IMMEDIATE CHARGING SWITCH : Removal & Installation](#).

Sample

## 1. CHECK SYSTEM MAIN RELAY GROUND CIRCUIT

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1. Power switch OFF.
2. Disconnect Li-ion battery harness connector.
3. Disconnect VCM harness connector.
4. Check for continuation between the Li-ion battery harness connector and the VCM harness connector.

### SYSTEM MAIN RELAY-1

Li-ion battery		VCM		Continuity
Connector	Terminal	Connector	Terminal	
E9	1	E47	90	Existing

### SYSTEM MAIN RELAY-2

Li-ion battery		VCM		Continuity
Connector	Terminal	Connector	Terminal	
E9	7	E47	89	Existing

Is the inspection result normal?

YES>>

INSPECTION END

NO>>

Repair or replace error-detected parts.

**WARNING:**



Hybrid vehicles and electric vehicles equipped with high voltage batteries may cause an electric shock or a short circuit if handled in an inappropriate way. When you inspect and service a vehicle, follow the work procedure and perform the correct tasks.

**WARNING:**

- When you inspect and service the high voltage wiring harnesses and components, make sure to remove the service plug in order to shut off the high voltage circuit.
- When you have removed the service plug, be sure to carry it in your pocket, or store it in the tool box in order to keep someone from accidentally connecting it during work.
- When performing high voltage system operation, be sure to wear insulating protective equipment.
- During tasks involving high voltage systems, clarify a person in charge of the tasks and do not let others touch the vehicle. When the vehicle is not being serviced, use protective items such as an electric-proof cover sheet for covering the high voltage components so as to keep someone from accidentally touching the vehicle.
- Refer to [HIGH VOLTAGE PRECAUTIONS : Precautions](#).

**CAUTION:**

Setting the vehicle to the READY state with the service plug removed may cause malfunctioning. Avoid setting the vehicle to the READY state unless otherwise specified in the service manual.

## 1. CHECK QUICK CHARGE RELAY GROUND CIRCUIT

1. Power switch OFF.
2. Disconnect Li-ion battery harness connector.
3. Disconnect VCM harness connector.
4. Check for continuation between the Li-ion battery harness connector and the VCM harness connector.

**QUICK CHARGE RELAY-1**

Li-ion battery		VCM		Continuity
Connector	Terminal	Connector	Terminal	
E9	2	E47	91	Existing

**QUICK CHARGE RELAY-2**

Li-ion battery		VCM		Continuity
Connector	Terminal	Connector	Terminal	
E9	8	E47	92	Existing

Is the inspection result normal?

YES>>

[GO TO 2.](#)

NO>>

Repair or replace error-detected parts.

## 2. CHECK QUICK CHARGE RELAY STATE SIGNAL CIRCUIT

Check for continuation between the Li-ion battery harness connector and the VCM harness connector.

Li-ion battery		VCM		Continuity
Connector	Terminal	Connector	Terminal	
E9	25	E48	122	Existing

Is the inspection result normal?

YES>>

[GO TO 3.](#)

NO>>

Repair or replace error-detected parts.

### 3. PRECONDITIONING

**WARNING:**

**Make sure to perform the procedure below before starting the work.**

1. Disconnect the high voltage circuit. Refer to [HOW TO DISCONNECT HIGH VOLTAGE : Precautions.](#)
2. Check the voltage in the high voltage circuit. Refer to [CHECK VOLTAGE IN HIGH VOLTAGE CIRCUIT : Precautions.](#)
3. Remove the Li-ion battery from the vehicle. Refer to [Removal & Installation](#)(66kWh LI-ION BATTERY 2WD models), [Removal & Installation](#)(66kWh LI-ION BATTERY AWD models), [Removal & Installation](#)(91kWh LI-ION BATTERY 2WD models), [Removal & Installation](#)(91kWh LI-ION BATTERY AWD models).
4. Remove battery pack upper case. Refer to [Removal & Installation](#)(66kWh LI-ION BATTERY), [Removal & Installation](#)(91kWh LI-ION BATTERY).

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### 4. CHECK CONNECTOR CONNECTION CONDITION

Check the LBC and each of the junction box harness connectors connection conditions.



**NOTE:**

**Check the connector connection condition by pushing after pulling. If the connector is pushed first there is a possibility that the connector engages and the malfunctioning part becomes unclear.**

Is the inspection result normal?

YES>>

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NO>>

Restore the connection condition.

### 5. CHECK FOR CONTINUATION BETWEEN THE HIGH VOLTAGE JUNCTION BOX AND THE VEHICLE COMMUNICATION CONNECTOR

1. Disconnect high voltage junction box harness connector.

2. Check for continuation between the high voltage junction box harness connector and the vehicle communication harness connector. Refer to [Circuit Diagram\(66kWh LI-ION BATTERY\)](#), [Circuit Diagram\(91kWh LI-ION BATTERY\)](#).

High voltage junction box		Vehicle communication connector		Continuity
Connector	Terminal	Connector	Terminal	
LB11	S6	LB2	2	Existing
	S8		8	

3. Also check harness for short to ground and short between harnesses.

Is the inspection result normal?

YES>>

INSPECTION END

NO>>

Repair or replace the Li-ion battery vehicle communication harness.

Sample



## 1. CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY-1

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1. Power switch OFF.
2. Disconnect refrigerant pressure sensor harness connector.
3. Power switch ON.
4. Check voltage between the refrigerant pressure sensor harness connector terminals.

Refrigerant pressure sensor			Voltage (Approx.)
Connector	+	-	
	Terminal		
B184	3	1	5 V

Is the inspection result normal?

YES>>

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NO>>

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## 2. CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY-2

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Check voltage between the refrigerant pressure harness connector and ground.

Refrigerant pressure sensor		-	Voltage (Approx.)
+			
Connector	Terminal		
B184	3	Ground	5 V

Is the inspection result normal?

YES>>

[GO TO 4.](#)

NO>>

[GO TO 3.](#)

## 3. CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY CIRCUIT

---

1. Power switch OFF.
2. Disconnect VCM harness connector.
3. Check for continuation between the refrigerant pressure sensor harness connector and the VCM harness connector.

+		-		Continuity
Refrigerant pressure sensor		VCM		
Connector	Terminal	Connector	Terminal	
B184	3	E48	145	Existing

4. Also check harness for short to power supply and ground.

Is the inspection result normal?

YES>>

Perform VCM power supply and ground inspection. Refer to [Diagnosis Procedure](#).

NO>>

Repair or replace error-detected parts.

#### 4. CHECK REFRIGERANT PRESSURE SENSOR GROUND CIRCUIT

1. Power switch OFF.
2. Disconnect VCM harness connector.
3. Check for continuation between the refrigerant pressure sensor harness connector and the VCM harness connector.

+		-		Continuity
Refrigerant pressure sensor		VCM		
Connector	Terminal	Connector	Terminal	
B184	1	E48	134	Existing

4. Also check harness for short to power supply and ground.

Is the inspection result normal?

YES>>

[GO TO 5.](#)

NO>>

Repair or replace error-detected parts.

#### 5. CHECK VCM GROUND CIRCUIT

Check for continuation between the VCM harness connector and ground.

+		-	Continuity
VCM			
Connector	Terminal		
E46	28	Ground	Existing
	29		
	32		

Is the inspection result normal?

YES>>

INSPECTION END