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2017 FORD Mondeo Sedan OEM Service and Repair Workshop Manual

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Item	Description
1	HVB (High Voltage Battery) wiring harness

High Voltage Battery Bus Bar Configuration- Standard Range High Voltage Battery (1 of 2)

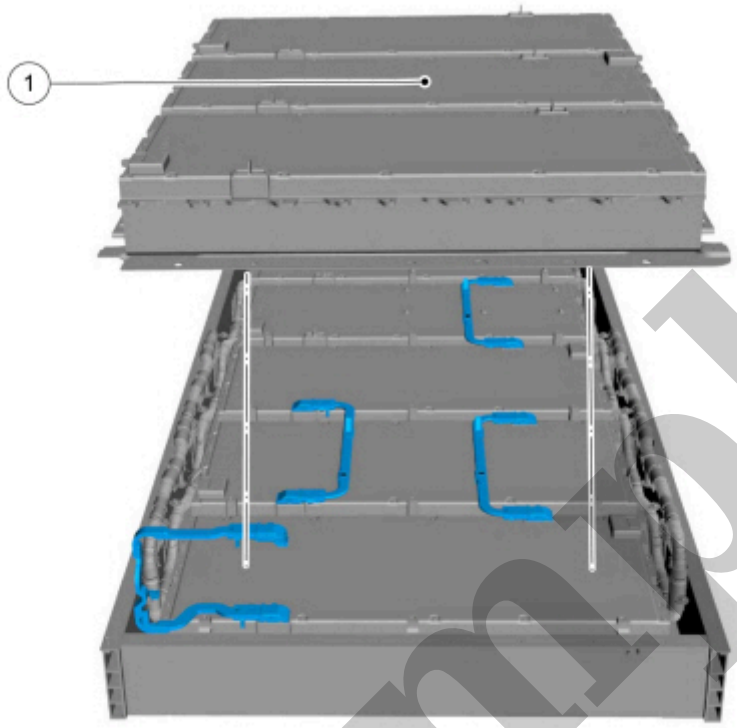
E384384

Item	Description
1	HVB (High Voltage Battery) tray

High Voltage Battery Bus Bar Configuration- Standard Range High Voltage Battery (2 of 2)

Item	Description
1	HVB (High Voltage Battery) tray

High Voltage Battery Bus Bar Configuration- Extended Range High Voltage Battery (2 of 2)

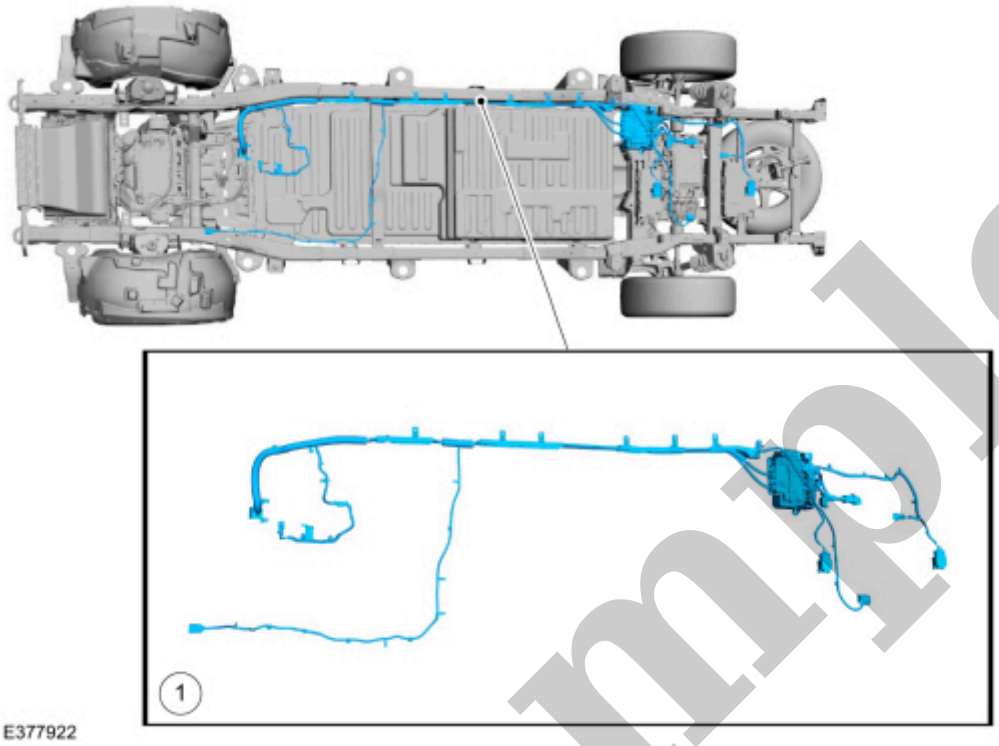


E384387

Item	Description
1	Upper HVB (High Voltage Battery) modules

High Voltage Battery Module Identification

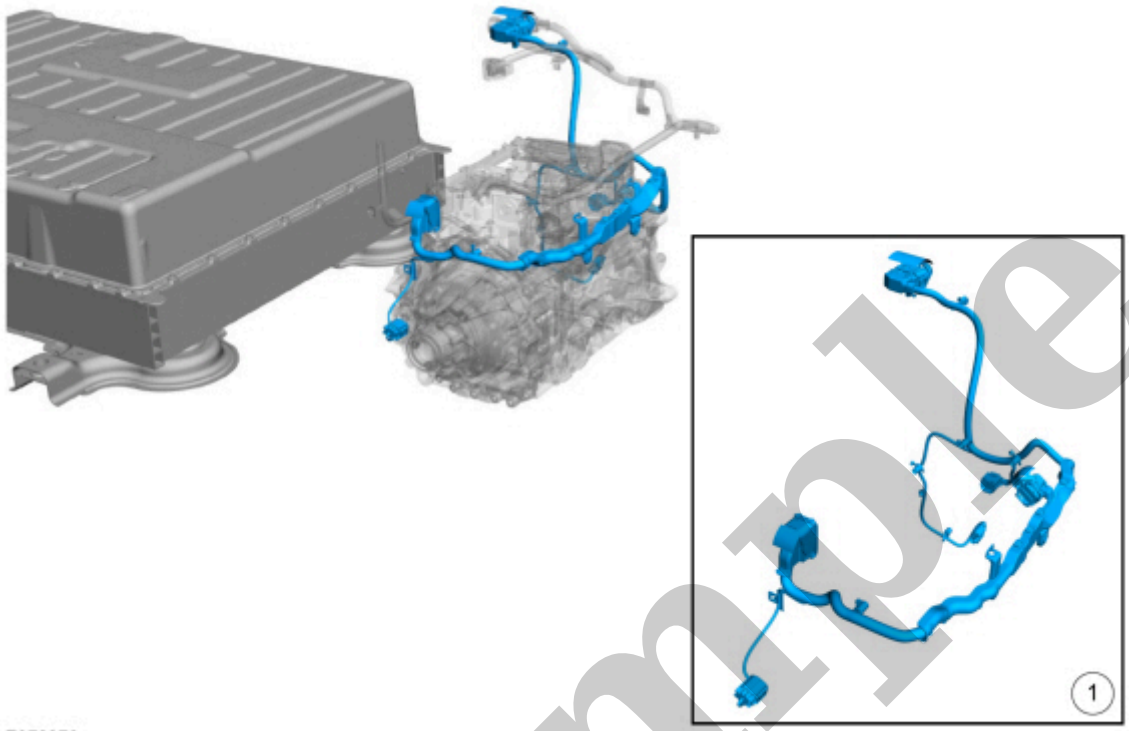
Item	Description
1	HVB (High Voltage Battery) to DCDC (direct current/direct current converter control module) , SOBDM (secondary on-board diagnostic control module A) , cabin coolant heater and ACCM (air conditioning control module) cable



E377922

Item	Description
1	HVB (High Voltage Battery) to Refrigerant Compressor, (ISC) Inverter System Controller/ SOBDMC (secondary on-board diagnostic control module C) , Secondary BCCM (Battery Charger Control Module) and DC/AC (Direct Current/Alternating Current) inverter(s) cable

Item	Description
1	Low voltage (ISC) Inverter System Controller/ SOBDMB (Secondary On-Board Diagnostic Control Module B (SOBDMB)) wiring harness



E376973

Item	Description
1	Low voltage (ISC) Inverter System Controller/ SOBDMC (secondary on-board diagnostic control module C) wiring harness

High Voltage Battery Coolant Temperature Sensor

High Voltage Battery, Mounting and Cables - Electric - Overview

414-03A High Voltage Battery, Mounting and Cables	***2022 F-150***
Description and Operation	***Procedure revision date: 04/22/2022***

High Voltage Battery, Mounting and Cables - Electric - Overview

Authoring Template

OVERVIEW

WARNING

To prevent the risk of high-voltage shock, always follow precisely all warnings and service instructions, including instructions to depower the system. The high-voltage system utilizes approximately 450 volts DC, provided through high-voltage cables to its components and modules. The high-voltage cables and wiring are identified by orange harness tape or orange wire covering. All high-voltage components are marked with high-voltage warning labels with a high-voltage symbol. Failure to follow these instructions may result in serious personal injury or death.

NOTICE

The high voltage battery in a BEV (battery electric vehicle) can be affected and damaged by excessively high temperatures. The temperature in some body shop paint booths can exceed 60°C (140°F). Therefore, during refinishing operations, the paint booth temperature must be set at or below 60°C (140°F) with a bake time of 45 minutes or less. Temperatures exceeding 60°C (140°F) or bake durations longer than 45 minutes require the high voltage battery be removed from the vehicle prior to placing in the paint booth.

This vehicle is driven exclusively by front and rear electric motors. The lithium-ion high voltage battery pack supplies the energy required to power the motors. An electric motor is mounted to the rear and front axles. For additional information,

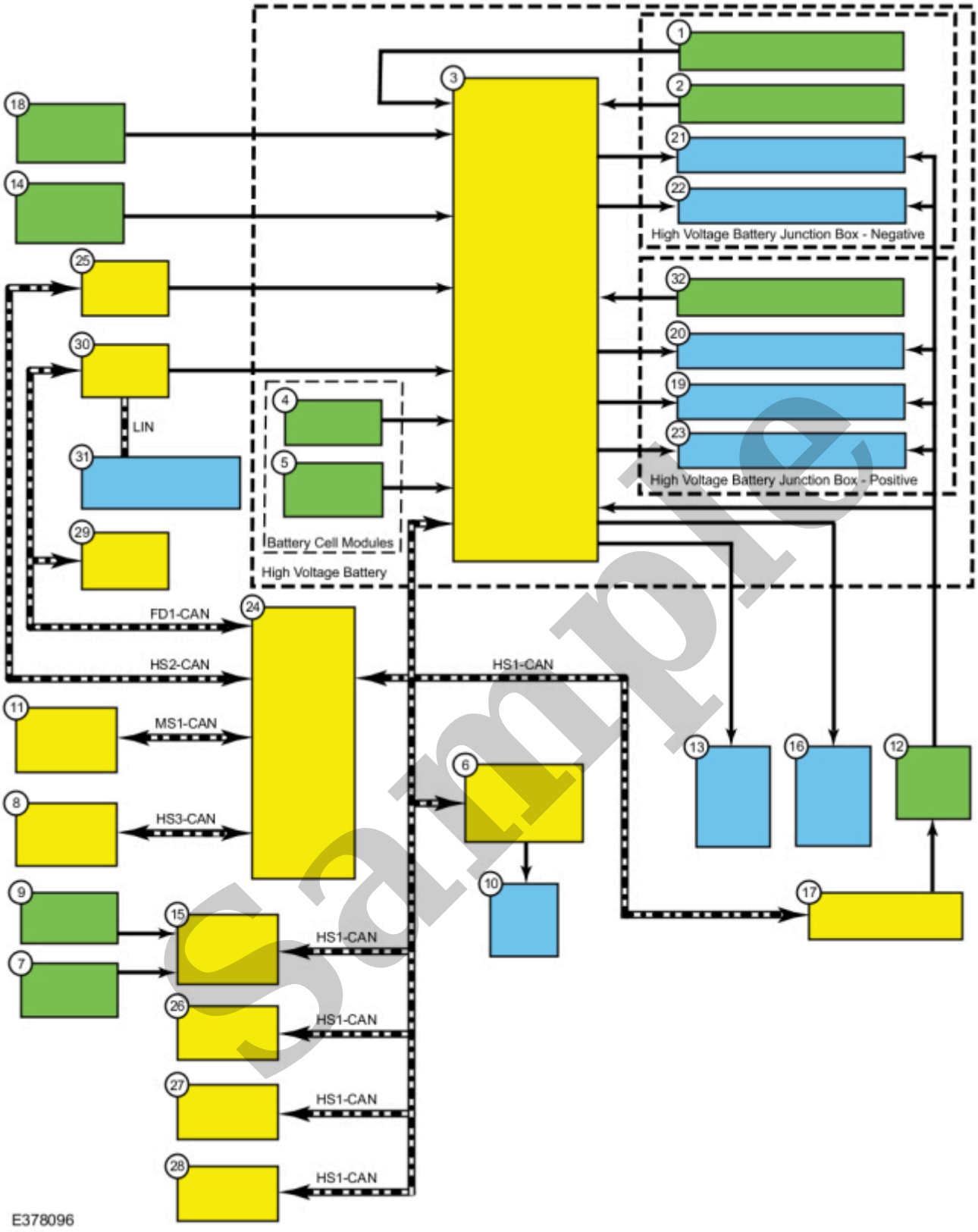
Regenerative braking is utilized which transforms the energy that is normally wasted during stop and go operation (when coasting and braking) into electricity. The generated electricity is stored in the high voltage battery until it is needed by the electric motors to propel the vehicle and high voltage components to support climate control, high voltage battery cooling, 12-volt low voltage system, and AC (alternating current) power outlets.

The vehicle requires to be plugged into an external source of electricity. The vehicle is equipped with an on board charger known as the Battery Charger Control Module (BCCM) that supports AC (alternating current) level 1 (110V) and level 2 (220V) high voltage battery charging. Some vehicles are equipped with Secondary Battery Charger Control Module (BCCM) that increases level 2 (220V) charging capacity when the vehicle is connected to a high output 40-80 amp EVSE. During AC (alternating current) level 1 or level 2 charging the Battery Charger Control Module (BCCM) and Secondary Battery Charger Control Module (BCCM) (if equipped) converts AC (alternating current) to DC (direct current) to charge the high voltage battery. The vehicle can also be connected to a DC (direct current) charging station for level 3 DC (direct current) / DC (direct current) fast charging. During DC (direct current) level 3 charging DC (direct current) is supplied directly to the high voltage battery from the charging station.

The high voltage battery pack consists of the following serviceable components:

- BECM (battery energy control module)
- High voltage battery cover fasteners
- High voltage battery upper cover
- High voltage battery upper cover seal
- High voltage battery modules
- High voltage battery cold plates
- High voltage battery coolant tubes
- High voltage battery junction box - negative
- High voltage battery junction box - positive
- High voltage low current fuse 50A (mounted in the top of high voltage battery junction box - negative and supplies voltage to the DCDC (direct current/direct current converter control module) and BCCM (Battery Charger Control Module also known as the SOBDM (secondary on-board diagnostic control module A)
- High voltage low current fuse 60A (mounted inside the lower cover of the high voltage battery junction box - negative and supplies voltage to the cabin coolant heater and ACCM (air conditioning control module)
- Wiring harness (BECM (battery energy control module) to vehicle low voltage connector)

- A/C (air conditioning) compressor - ACCM (air conditioning control module)
- A/C (air conditioning) compressor - ACCMB (Air Conditioining Compressor Control Module B) (max trailer tow only)
- High-voltage battery pack



Item	Description
1	Current Sensor

23	DC Fast Charge Postive Contactor Coil
24	GWM (gateway module A)
25	RCM (restraints control module)
26	SOBDMB (Secondary On-Board Diagnostic Control Module B (SOBDMB))
27	SOBDM (secondary on-board diagnostic control module A)
28	OBCC (Off-Board Charger Controller)
29	PCM (powertrain control module)
30	SOBDMC (secondary on-board diagnostic control module C)
31	High Voltage Battery Coolant Diverter Valve
32	Positive Contactor Sense Leads

System Operation

Network Message Chart - Battery Energy Control Module (BECM)

Broadcast Message	Originating Module	Message Purpose
12V battery voltage	BCM (body control module)	12V battery voltage measured by the battery monitoring sensor.
Accelerator pedal position (gateway)	PCM (powertrain control module)	Accelerator pedal position used for OBDII freeze frame data.
Global clock time	BCM (body control module)	Global time data.
Battery charger system fault status messages	SOBDM (secondary on-board diagnostic control module A)	Fault status messages of the charger.
Battery charger system status change event	SOBDM (secondary on-board diagnostic control	Used to communicate when the charger state change is active between not ready,