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AUXILIARY CLIMATE CONTROL

ELECTRIC BOOSTER HEATER (G2342527)

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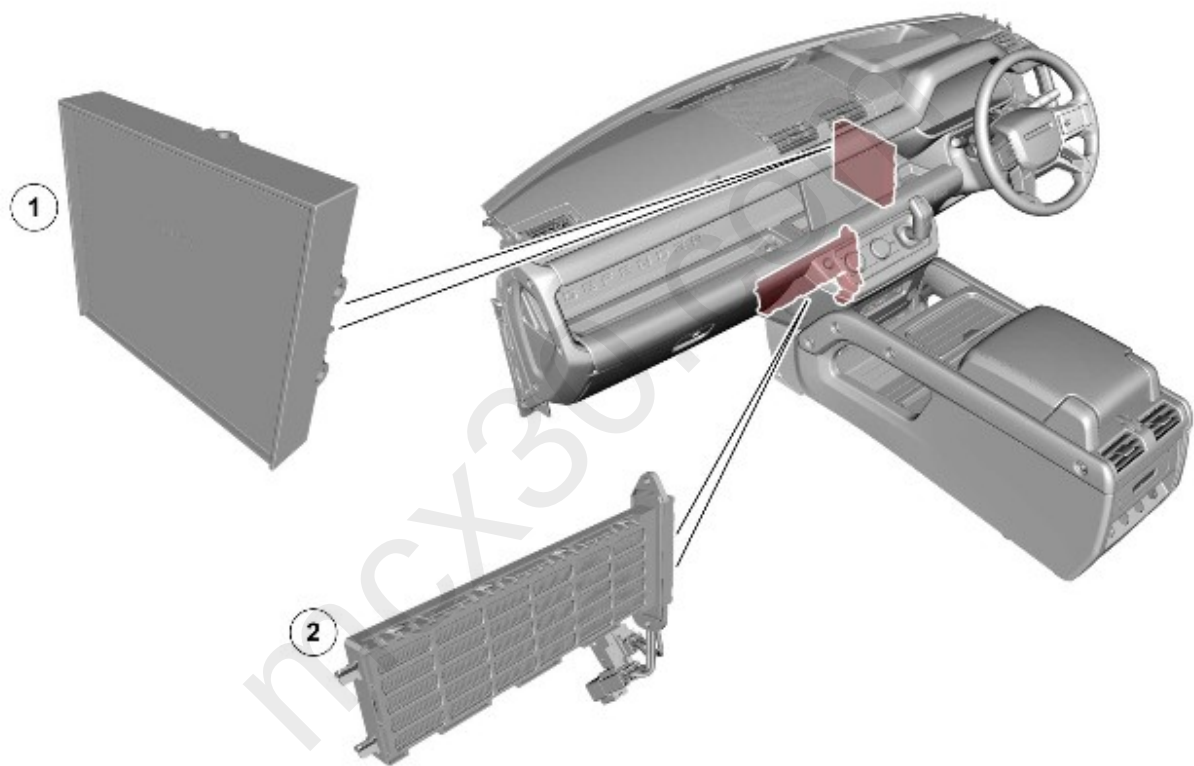
DESCRIPTION AND OPERATION

COMPONENT LOCATION

COMPONENT LOCATION - 1 OF 1

NOTE:

Right Hand Drive (RHD) vehicle is shown, Left Hand Drive (LHD) vehicle is similar.



E248084

ITEM	DESCRIPTION
1	Heating, ventilation, and air conditioning (HVAC) control module
2	Electric booster heater

OVERVIEW

Due to the slower warm up time of the engine coolant, the vehicle is equipped with an electric booster heater to heat the air. The heated air lets the climate control assembly increase the heater performance faster than when it used the

engine coolant only. The electric booster heater comprises ceramic coated heater elements. The request to operate the electric boost heater originates in the HVAC control module. To operate the electric booster heater, the HVAC control module energizes relays in the Passenger Junction Box (PJB). The relays send voltage to the 2 sections of the electric booster heater, related to the demand for heat.

The amount of heating requested by the HVAC control module is based on:

- Ambient Air Temperature (AAT)
- Engine coolant temperature
- Heating request.

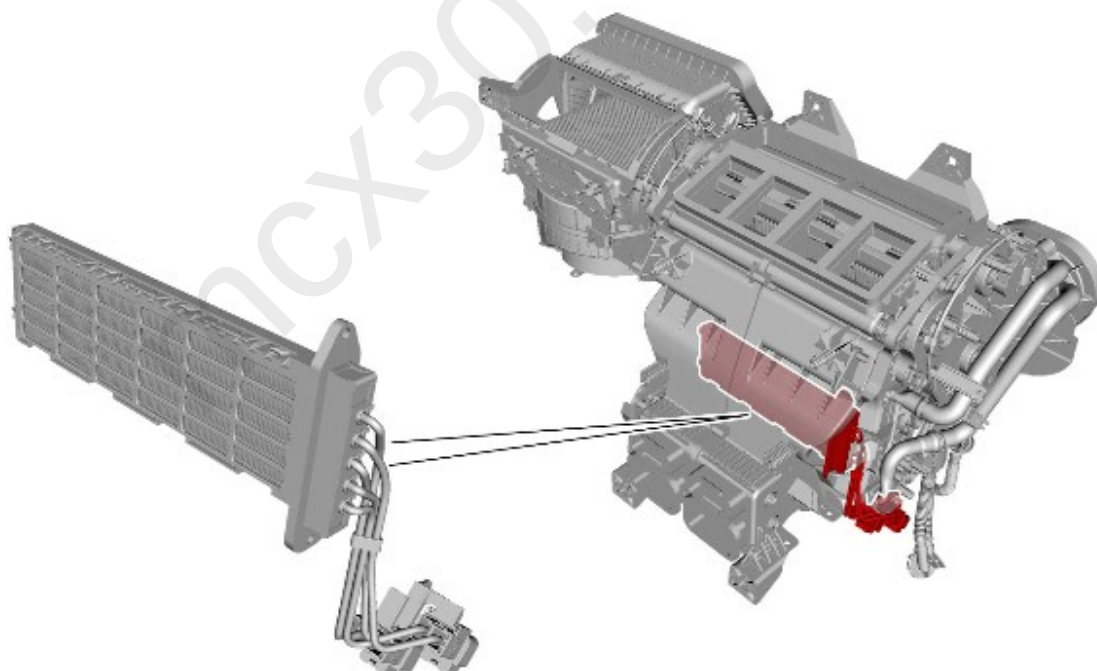
DESCRIPTION

ELECTRIC BOOSTER HEATER



NOTE:

RHD vehicle is shown, LHD vehicle is similar.



E248085

The electric booster heater is installed in the climate control assembly, on the downstream of the heater core. The electric booster heater consists of ceramic coated Positive Temperature Coefficient (PTC) elements, rated at 600W. Electrical power for the electric booster heater is supplied through 2 40A fuses in the PJB. Operation of the electric booster heater is controlled by the HVAC control module.

The HVAC control module uses the following inputs, to control operation of the electric booster heater:

- The climate control system selections from the Integrated Control Panel (FCIM) to the HVAC control module through the private Controller Area Network (CAN) bus.
- The Powertrain Control Module (PCM) receives the AAT and engine coolant temperature signals. The PCM transmits these signals to the Body Control Module (BCM)/ Gateway Control Module (GWM) through the FlexRay. Then the BCM/ GWM transmits to the HVAC control module through the High Speed (HS) CAN Human Machine Interface (HMI) systems bus.
- The startup battery State of Charge from the BCM/ GWM to the HVAC control module through the HS CAN power mode zero systems bus.

The HVAC control module requests operation of the electric booster heater in these circumstances:

- The vehicle is not in transit mode.
- There are no generator faults recorded.
- In Power Mode 7 (engine running).
- The blower is switched ON (any speed).
- Heating is requested on the FCIM and the desired vent temperature is not being achieved.
- The AAT is below 10°C (50°F).
- The engine coolant temperature is below 90°C (194°F).
- The startup battery receives charge at more than 10A.

The electric booster heater elements are activated by the HVAC control module which is proportional to the amount of heating required. The electric booster heater is limited to 600W. When the electrical load management is in force, the electric booster heater performance is reduced.

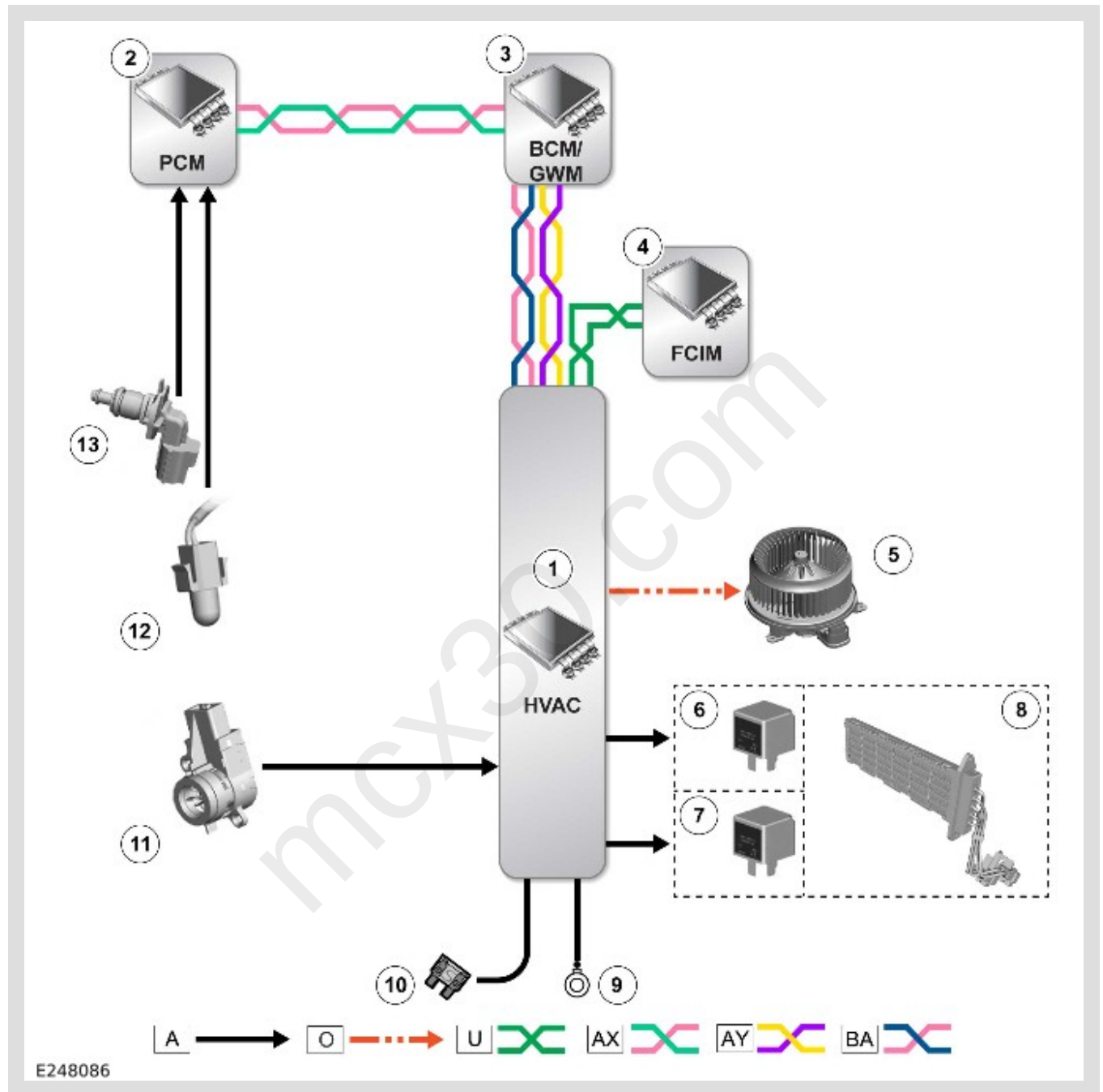
DIAGNOSTICS

The HVAC control module records any Diagnostic Trouble Code(s) (DTC)s and related data. Read the DTCs and related data with the Jaguar Land Rover (JLR) approved diagnostic equipment.

The JLR approved diagnostic equipment can read live data and activate certain components.

CONTROL DIAGRAM

CONTROL DIAGRAM - 1 OF 1



A = HARDWIRED: O = LIN: U = PRIVATE CAN BUS: AX = FLEXRAY: AY = HS CAN POWER MODE ZERO SYSTEMS BUS: BA = HS CAN HMI SYSTEMS BUS.

ITEM	DESCRIPTION
1	HVAC control module
2	PCM

ITEM	DESCRIPTION
3	BCM/ GWM
4	FCIM
5	Blower
6	Relay 1 - Electric booster heater in the PJB
7	Relay 2 - Electric booster heater in the PJB
8	Electric booster heater
9	Ground
10	Power supply
11	In-vehicle temperature sensor
12	AAT sensor
13	Engine coolant temperature sensor