

Heavy Commercial Vehicles

Bulletin to be circulated to:	Service Manager	Warranty Manager	Parts Manager	Master Technician	Service Consultant	BMIS
	✓	✓	✓	✓	✓	✓

Subject	Battery Replacement Based on Voltage Value and Midtronics Measurement
Variant	In F-MAX & F-Line vehicles,
Abstract	In F-MAX & F-Line vehicles, the decision to replace the battery is made according to the voltage level and Midtronics test results.

Labour

Labour Code	Labour Name	Time
F3V19 10655	Battery Replacement	0.5

Required Parts

Part Number	Part Description	Quantity
MC46 10655 AC	Battery (240AH)	2
LC46 10655 AB	Battery (210AH)	2

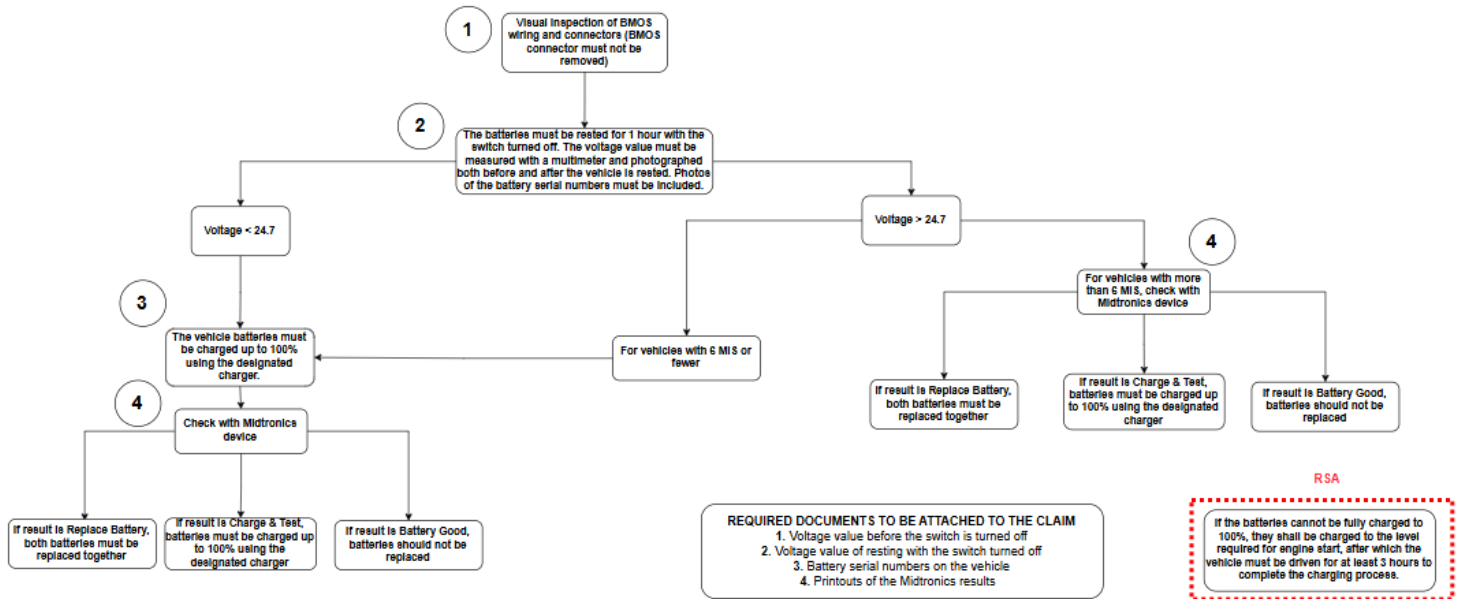
General info;

The procedures below shall be performed on F-MAX & F-Line vehicles that are brought to the service **with battery concerns only**. Based on customer complaints, the specified **voltage level and Midtronics** guidance will determine the actions taken.

Battery Value Measurement Processes;

An image of the serial numbers of the batteries on the vehicle must be provided. The voltage value must be measured with a multimeter and photographed both before and after the vehicle is rested. The outputs of the Midtronics and multimeter results must be uploaded to SYS.

FLOW CHART – 1

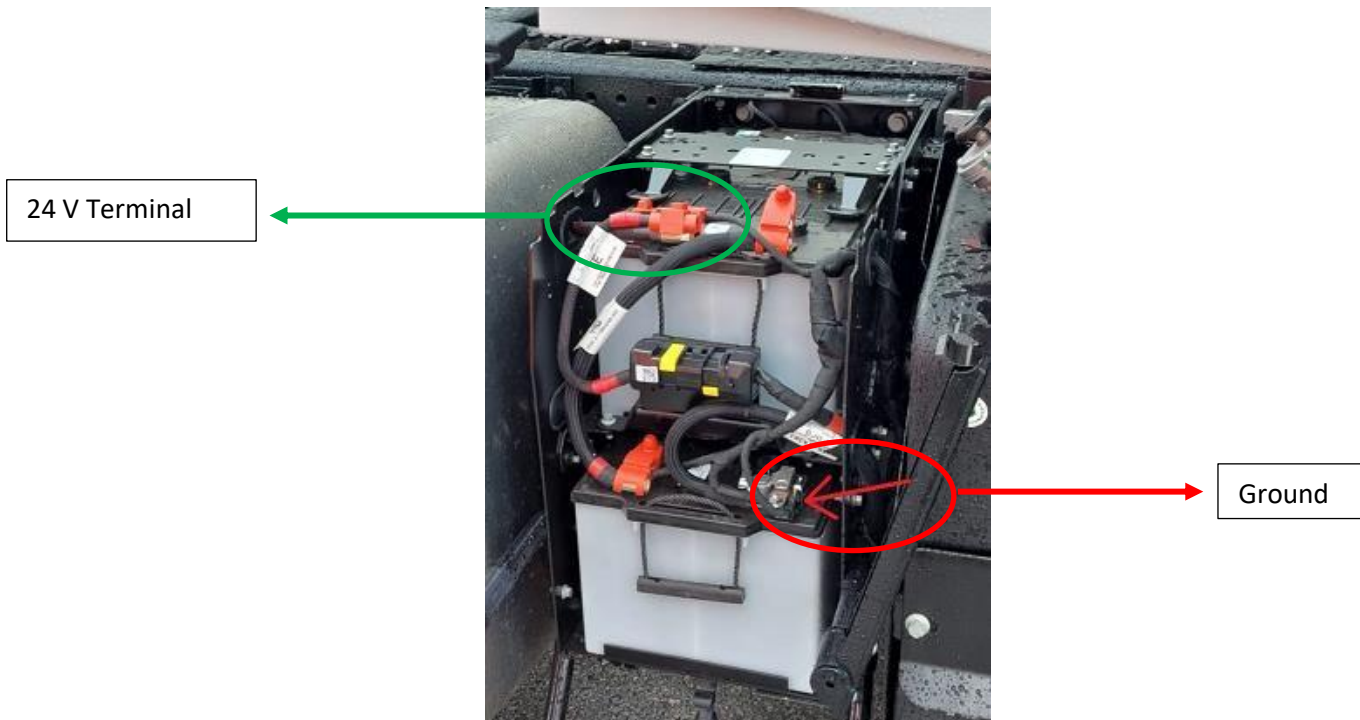
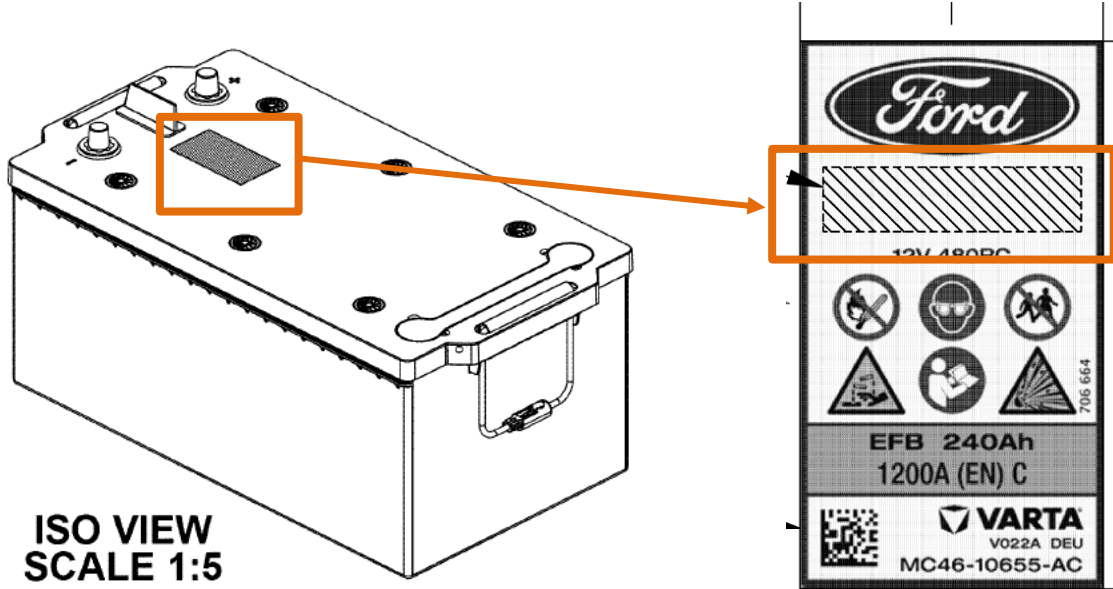


Before operating the battery switch (on/off), the battery terminals must not be disconnected, the sensor must not be removed, and the on/off operation of the battery switch must only be performed via the switch itself. The location of the BMOS on the vehicle is shown in the image below.



Figure 1 BMOS Location

- 1- The time information when the batteries are put to rest and when the measurement is taken must be photographed and uploaded to the SYS system.
- 2- The batteries must be rested for 1 hour with the switch turned off. The voltage value must be measured with a multimeter and photographed both before and after the batteries are rested. The battery terminals for measurement with the multimeter are indicated in the Figure 3.
- 3- The serial numbers of the batteries on the vehicle must be shared. An example image of the serial number label on the battery is shown below.



For vehicles for which less than 180 days have passed since the date of sale, if the battery voltage is below or above 24.7 V, the batteries must be charged to 100% using a charger before performing any measurements with the Midtronics device. After charging, the decision regarding battery replacement shall be made based on the Midtronics test result. For vehicles with a battery voltage above 24.7 V and for which more than 180 days have passed since the date of sale, the decision regarding battery replacement shall be made directly according to the Midtronics test result. Even if the Midtronics test result indicates that one battery is in good condition and one battery requires replacement, both batteries must be replaced. All Midtronics test results must be uploaded to the SYS system.

Charger and Conditions

You can use a charger with smart charging capability that can adjust the current to provide the output voltage below.

Table 1

Input voltage	Output voltage		Output current	
	Pb	Li	nom.	max.
100-240VAC	28,8VDC	-	40A	45A*

After the above procedures, select the appropriate 240Ah or 210Ah option via the BCU module under “Service Configuration Writing.”

The screenshot displays the 'Service Configuration Writing' interface for the BCU module. It features several dropdown menus for configuring battery-related parameters. The settings are as follows:

- Enable** (dropdown menu)
- Adaptive Cruise Control**: Disable (dropdown menu)
- Battery U0 Min**: 240Ah Varta Battery (dropdown menu)
- Battery U0 Max**: 240Ah Varta Battery (dropdown menu)
- Battery CCA Nominal**: 210Ah Varta AGM-240Ah Varta Battery (dropdown menu)
- Battery Technology**: 225Ah Tubor, 240Ah Varta Battery (dropdown menu)
- Battery C Nominal**: 240Ah Varta Battery (dropdown menu)
- BMS Availability**: Enable (dropdown menu)

At the bottom of the interface, the text 'FORD OTOSAN • 3. F-LINE • F-LINE • NM0LKTP67XSA95156' is visible.

Figure 4

Battery Terminal Cleaning Procedures

1. For vehicles brought to the service due to battery complaints where oxidation is observed on the battery terminals, the battery terminal eyelets shown in the Figure 5 below (4 battery terminals) should be removed and cleaned with a clean cloth moistened with hot water. After the cleaning process, the terminals should be dried with a dry cloth. Once the cleaning is completed, grease should be applied on the battery terminals as shown in Figure 6.



Figure 5

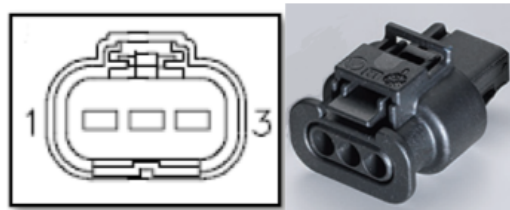


Figure 6

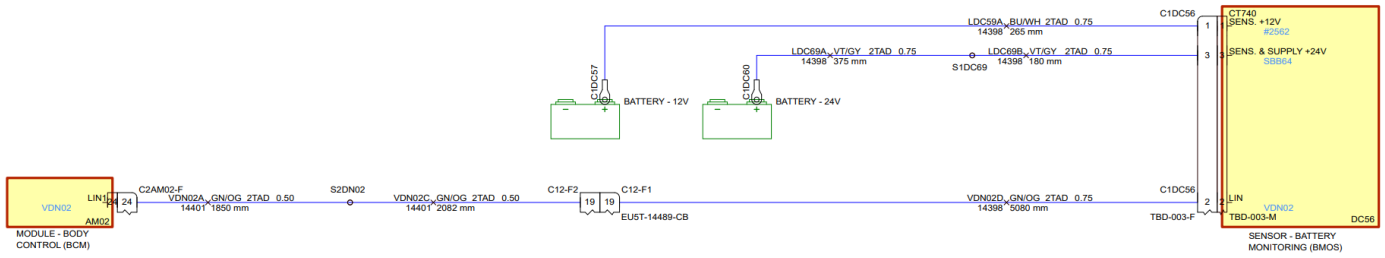
14398 – BCU Wiring

For F-MAX Vehicle;

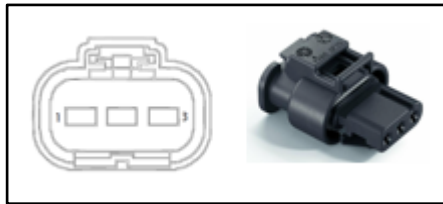
Connector of Battery Monitoring Sensor: C1DC56



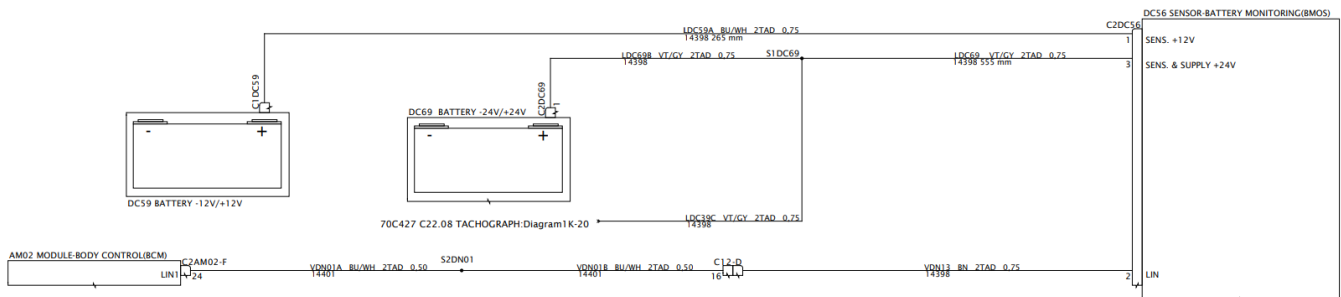
No	Cable	Section	Color	Target	Pin Layout	Function
1	LDC59A	0,75 mm ²	BU/WH	BATT. 12V	C1DC57	12V
2	VDN02D	0,75 mm ²	GN/OG	BCM	C2AM02-F/24	LIN
3	LDC69A	0,75 mm ²	VT/GY	BATT. 24V	C1DC60	24V



For F-Line Vehicle;
Connector of Battery Monitoring Sensor: C2DC56



Pin Layout	Wire Name	Wire Thickness	Wire Colour	Function
1	LDC59A	0,75	BU/WH	Power Supply +12V
2	VDN13	0,75	BN	LIN
3	LDC69	0,75	VT/GY	Power Supply +24V



Regards,
 Ford Trucks Service Engineering