

Fail-safe

FAIL-SAFE CONTROL BY DTC

IPDM E/R performs fail-safe control when any DTC are detected.

DTC No.	M.U.T.-III SE display		Fail-safe
B121A-11	FR FOG LIGHT LH PWR SPLY CIRC	[CIRCUIT SHORT TO GROUND]	Shuts off the power supply to the front fog light LH power supply circuit until the front fog light ON conditions are no longer satisfied.
B1256-11	FR FOG LIGHT RH PWR SPLY CIRC	[CIRCUIT SHORT TO GROUND]	Shuts off the power supply to the front fog light RH power supply circuit until the front fog light ON conditions are no longer satisfied.
B12A4-81	Battery current sensor	[INVALID SERIAL DATA RECEIVED]	Fix the power generation command value to 14.3 V.
B12A4-92	Battery current sensor	[PFM/INCORRECT OPERATN]	
B20A2-87	Headlight (RH) LIN communication	[MISSING MESSAGE]	<ul style="list-style-type: none"> Transmits the headlight warning signal (CAN communication) to the combination meter. (When the ignition switch turns ON, the headlight warning is displayed on the information display of the combination meter.) Transmits the request signal (via LIN communication) to the both side LED headlight control module, and turns ON the headlight (LO) and parking light.
B20A4-87	Headlight (LH) LIN communication	[MISSING MESSAGE]	
B20C7-11	A/C clutch	[CIRCUIT SHORT TO GROUND]	Inhibit A/C compressor (magnetic clutch) operation.
B20C7-15	A/C clutch	[CIRC SHORT TO BATT OR OPEN]	
B20C8-14	Compressor (ECV)	[CIRC SHORT TO GRND OR OPEN]	Inhibit A/C compressor (electrical control valve) operation.
B20D4-11	TAIL LIGHT LH PWR SPLY CIRC	[CIRCUIT SHORT TO GROUND]	Shuts off the power supply to the following power supply circuits until the license plate light, side marker light and tail light ON conditions are no longer satisfied. <ul style="list-style-type: none"> Tail light License plate light

DTC No.	M.U.T.-III SE display		Fail-safe
			<ul style="list-style-type: none"> Side marker light
B20E2-96	LED HEADLIGHT RH	[CMPNENT INTERNAL MLFNCTN]	<ul style="list-style-type: none"> Transmits the headlight warning signal (CAN communication) to the combination meter. (When the ignition switch turns ON, the headlight warning is displayed on the information display of the combination meter.) Transmits the request signal (via LIN communication) to the both side LED headlight control module, and turns ON the headlight (LO) and parking light.
B20E3-96	LED HEADLIGHT LH	[CMPNENT INTERNAL MLFNCTN]	
U0073-00	Control module comm Bus A Off	[NO SUBTYPE INFO]	Refer to CAN COMMUNICATION CONTROL of following.
U2140-87	CAN comm err (ECM)	[MISSING MESSAGE]	
U214F-87	CAN comm err (BCM)	[MISSING MESSAGE]	

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	<ul style="list-style-type: none"> The cooling fan is operated at HI operation when the ignition switch is turned ON. Turn OFF the cooling fan operation when the ignition switch is turned OFF.
A/C compressor	A/C compressor OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlight	<ul style="list-style-type: none"> Turns ON the headlight (LO) when the ignition switch is turned ON.

Control part	Fail-safe operation
	<ul style="list-style-type: none"> Turns OFF the headlight (LO) when the ignition switch is turned OFF. Headlight (HI): OFF
<ul style="list-style-type: none"> Parking light License plate light Tail light Side marker light Illumination 	<ul style="list-style-type: none"> Turns ON the tail light, parking light, license plate light, side marker light and each illumination when the ignition switch is turned ON. Turns OFF the tail light, parking light, license plate light, side marker light and each illumination when the ignition switch is turned OFF.
Front wiper	<ul style="list-style-type: none"> The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Daytime running light	Daytime running light: OFF
Front fog light	Front fog light: OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter relay: OFF

IGNITION RELAY CONTROL

- IPDM E/R monitors the voltage at the contact circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit.

Voltage judgement		IPDM E/R judgement	Operation
Ignition relay contact side	Ignition relay control condition		
ON	ON	Ignition relay ON normal	—
OFF	OFF	Ignition relay OFF normal	—
ON	OFF	Ignition relay ON stuck	Detects DTC [B20DD-73: IGN RELAY ON CIRC]
OFF	ON	Ignition relay OFF stuck	Detects DTC [B20DE-72: IGN RELAY OFF CIRC]

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by front wiper stop position signal.

When front wiper stop position signal is in the condition listed below while the front wiper is operating, IPDM E/R activates the fail-safe.

Ignition switch	Front wiper switch	Front wiper stop position signal	Fail-safe
ON	OFF	The signal does not change from the battery voltage for 10 seconds.	Stops front wiper power supply for 20 seconds
	Except OFF	The signal does not change for 10 seconds.	