MG4 EV

Guided Fault Finding

Live Data

Contents

Contents

Shifter Control Unit (SCU)

Real-time Display Parameter List

Basic working condition: The Start switch is placed in ON position, the vehicle is in P gear or N gear, and the vehicle is not started.				
Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Positive Battery (KL30) Circuit Voltage	The parameter collects the voltage signal from KL30 terminal, and it indicates the circuit state of KL30.	9 ~ 16	13 - Vehicle Starting	V
Shift Lever Gear Position	The electronic shift lever assembly has two position sensors, and this parameter is calculated based on the signals collected by two sensors.	- Park (P) - Reverse (R) - Neutral (N) - Drive (D)	- Park (P) - Engage P Gear - Reverse (R) - Engage R Gear - Neutral (N) - Engage N Gear - Drive (D) - Engage D Gear	
Shift Lever Sensor 1/2 Operation Position	The knob position sensor collects two fault tolerance signals, which are used for error-proof check of sensor.	- Up Gear 2 - Up Gear 1 - Centring - Down Gear 1 - Down Gear 2	Centring	
Park (P) Button Signal 1/2	Knob Park (P) Button Signal Failure Detection State	- Normal - Abnormal - Short to Battery - Short to Ground	Normal	

Electric Parking Motor Control Unit (EPMCU)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Value Range	Numeric value	Unit
EPMCU Voltage	This parameter indicates the power supply voltage of EPMCU module	9-16V	14.1	V
EPMCU Motor Torque	This parameter indicates the current torque of EPMCU motor	-33~33	0	N.m
EPMCU Motor Speed	This parameter indicates the current speed of EPMCU motor	-32767~32767	0	RPM
EPMCU Motor Position	This parameter indicates the current position of EPMCU motor	-32767~32767	34	°
EPMCU Faults	This parameter indicates the cause of EPMCU failure	—System ok —Driver Chip Over Current —FET Short To Ground —Driver Chip Gate Voltage Error —Driver Chip Suppy Voltage Error —Driver Chip Temperature Warning —Power Chip VCC Short To Ground —Power Chip VCC Voltage Error —Power Chip VS Voltage Error —EPMCU ADC Error —EPMCU Register Error —EPMCU Memory Error —EPMCU LV8968 Init Error —EPMCU Program Error —EPMCU Sensor MotParkPos —EPMCU Actual Motor ParkPos —EPMCU Unexpted entry Park —EPMCU Unexpted return Park	System OK	
EPMCU Parking Status	This parameter indicates the current state of EPMCU parking system	—Unknow —Park brake appllied —Park brake release —Park brake appllication in progress	Parking Brake Applied	

Intelligent Motor Control Unit (IMCU)

Real-time Display Parameter List

Basic working conditions: the Start switch is placed in "ON" position, the shift lever is in P gear or N gear, and the vehicle is not started.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Coolant Fan PWM Request	This parameter is derived from the IMCU hardwire terminal (cooling water fan pulse width modulation (PWM) control) signal, which represents a control command for a cooling water fan	0 - 100	10	Percentage
ESS Coolant Pump PWM Request	This parameter is derived from the IMCU hardwire terminal (battery pack ESS cooling water pump (PWM) control) signal, which represents a control command for a HV battery pack ESS cooling water pump	0 - 100	0	Percentage
ESS Coolant Pump Feedback Status	This parameter is derived from the IMCU hardwire terminal (cooling water fan pulse width modulation (PWM) control) signal, and the actual water pump working condition can be obtained via the feedback signal analysis.	- Closed - Open	Closed	
PEB Coolant Pump PWM Request	This parameter is derived from the IMCU hardwire terminal (motor PEB cooling water pump (PWM) control) signal, which represents a control command for a HV battery pack ESS cooling water pump	0 - 100	68	Percentage
PEB Coolant Pump Feedback Status	This parameter is derived from the IMCU hardwire terminal (motor PEB cooling water pump (PWM) control) signal, and the actual water pump working condition can be obtained via the feedback signal analysis.	- Closed - Open	Open	
Traction Motor Inverter Coolant Temperature	The temperature is an estimated value and is calculated from the U/V/W phase temperature values.	-30 - 60	30	Degrees Celsius
EDU Coolant Temperature	This parameter is derived from the IMCU hardwire terminal (EDU oil temperature sensor signal) signal, and the analysis is derived from the temperature sensor signal value.	-30 - 60	27	Degrees Celsius

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
EDU Coolant Temperature	This parameter is derived from the IMCU hardwire terminal (EDU cooling water temperature sensor signal) signal, and the analysis is derived from the temperature sensor signal value.	-30 - 60	27	Degrees Celsius
DCDC Converter LV Side Current	This parameter is derived from the CAN network signal, which represents the actual current of DC transformer on LV side.	0 - 40	32	Amper-e(s)
DCDC Converter Actual Mode	This parameter is derived from the CAN network signal, which represents the current operating mode of DC transformer.	- Standby - Boost - Buck - Discharge - Fail	Buck	
DCDC Converter Rquest Mode	This parameter is derived from the CAN network signal, which represents the request operating mode of DC transformer.	- Standby - Boost - Buck - Discharge - Fail	Buck	
DCDC Converter LV Side Voltage	This parameter is derived from the CAN network signal, which represents the actual voltage of DC transformer on LV side.	12 - 16	14.1	Volts
Accelerate Pedal Position	This parameter is calculated both from the accelerator pedal position 1 and 2, which represents the actual position of the accelerator pedal.	0 - 100	0	Percen-tage
Brake Light Swtich Active	This parameter is derived from the IMCU hardwire terminal (brake lamp switch) signal, which is a one-way high-level drive signal. The signals on both circuits of brake pedal can check each other.	- Release (low level) - Press (high level)	Release (low level)	
Brake Travel Swtich Active	This parameter is derived from the IMCU hardwire terminal (brake travel switch) signal, which is a one-way low-level drive signal. The signals on both circuits of brake pedal can check each other.	- Release (high level) - Press (low level)	Release (high level)	

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Accelerate Pedal 1/2 Voltage	This parameter is derived from the IMCU hardwire terminal (accelerator pedal position sensor 1/2), which represents the voltage of accelerator pedal position 1/2 sensor (the position 1 voltage and the position 2 voltage check each other, the former is twice the latter)	0 - 5	0.7	Volts
HV Battery Current	This parameter is derived from the CAN network signal and sampled by the BMS, which represents the output current of high-voltage battery pack.	-400 - 800	1.3	Amper-e(s)
HV Battery Isolation Resistance	This parameter is derived from the CAN network signal, and obtained by the BMS measurement. If the insulation value is too low, the system will automatically disconnect the high voltage to prevent danger.	7000 - 9000	8191	K Ohms
HV Battery SOC	This parameter is derived from the CAN network signal and high-voltage battery pack residual capacity obtained by the BMS calculation.	0 - 100	32.1	Percen-tage
BMS Running Status	This parameter is derived from the CAN network signal, which represents the current operation state of BMS.	- In driving - Drive ready - In charging - Charge ready	In driving	
HV Battery Voltage	This parameter is derived from the CAN network signal and sampled by the BMS, which represents the output voltage of high-voltage battery pack.	300 - 450	392.5	Volts
BMS Main Relay Status	This parameter is derived from the CAN network signal and sampled by the BMS, which represents the state of main relay in the high-voltage battery pack, and is used to control high voltage output or not.	- Open - Close - Fail	Close	
HV Battery Emergency Shut off Request	This parameter is derived from the CAN network signal, which indicates whether the BMS receives the emergency power-off request.	- No - Yes	No	
Powertrain Ready State	This parameter indicates whether the electric vehicle power system is ready or not, which is calculated by IMCU according to the collected signals.	- No - Yes	No	

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Regeneration Level	This parameter indicates that the energy regeneration function of the current brake system is at the regeneration level.	- Light - Medium - Strong	Moderate	
Vehicle Immobilization Status	This parameter represents the vehicle immobiliser matching state. If the IMCU is not available in the immobiliser matching, it is always in the state of Not Learned by default.	- Learned - Not Learned	Not Learned	
Vehicle Start Switch Status	This parameter is derived from the IMCU hardwire terminal (Start switch ON/RUN (KL15)) signal, which represents the current vehicle power state.	- Closed - RUN	RUN	
Battery Voltage	This parameter is derived from the IMCU hardwire terminal (module power KL30) signal, which represents the LV battery voltage.	9 - 16	13.8	Volts
Vehicle Critical Fault State	This parameter indicates whether the current vehicle has a severe failure, which is calculated by IMCU according to the collected signals.	- No - Yes	No	
Traction Motor HVIL State	This parameter is derived from the IMCU hardwire terminal (high voltage interlock signal) signal, which indicates whether the HV harness connectors of the drive motor and the vehicle are connected properly.	- Power-off trigger - Loop close	Loop close	
Traction Motor Stator Temperature	This parameter is derived from the IMCU hardwire terminal (motor stator temperature sensor) signal, and the temperature sensor is a thermistor with negative temperature coefficient (NTC), which is used for monitoring the stator temperature to prevent melting and short circuit due to high temperature.	-30 - 60	27	Degrees Celsius
Traction Motor Stator Current Effective Value	This represents the effective value of drive motor stator current (root-mean-square value), which is calculated by three-phase current.	0 - 340	0	Amper-e(s)
Traction Motor Stator Current Frequency	This represents the AC frequency of drive motor stator, which is calculated by three-phase current.	-10000 - 20000	0	Hertz

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Traction Motor Rotor Offset Angle	This parameter represents the drive motor rotor offset angle (motor rotor offset angle is a necessary parameter for motor control, learn and store the motor rotor offset angle value by running a specific calibration routine)	0 - 655	243.7	Degrees
Traction Motor Rotor Offset Angle State	This parameter represents the reliability of offset parameter value of drive motor rotor.	- Correct - Incorrect - Unknown - Estimated	Correct	
Traction Motor Phase U/V/W Current	This parameter represents the three-phase current of drive motor, which is obtained by monitoring the three-phase HV circuits.	-340 - 340	14	Amper-e(s)
Traction Motor Inverter Phase U/V/W Temperature	This parameter represents the temperature value of each of three phases in the inverter, which is obtained via the DBC (Direct Bond Copper) technology.	-30 - 60	30	Degrees Celsius
Traction Motor Target Speed	This parameter represents the operating speed of drive motor as expected by the system.	-15000 - 15000	0	Revol-utions/ Minute
Traction Motor Actual Speed	This parameter represents the actual operating speed of the current drive motor.	-15000 - 15000	0	Revol-utions/ Minute
Traction Motor Actual Mode	This parameter represents the actual operating mode of the drive motor	- Initialised - Precharge - Standby - Motor offset angle self-learning - External speed control - Rotor speed control - Torque control - DC current control - DC voltage control - Power-off process - Precharge failure - Fail - Discharge - Power-on testing	Standby	

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Traction Motor Mode Request	This parameter represents the drive motor mode request from IMCU	- Precharge - Standby - Motor offset angle self-learning - External speed control - Rotor speed control - Torque control - DC current control - DC voltage control - Power-off process - Precharge failure - Fail - Discharge	Standby	
Traction Motor Inhibit HV state	This parameter indicates if the IMCU sends the High Voltage Forbidden command to the drive motor according to the current conditions.	- No - Yes	No	
Traction Motor Emergency Shut off Request	This parameter indicates if the IMCU sends the Stop command to the drive motor according to the emergency conditions.	- No - Yes	No	
Traction Motor Command Torque	This parameter represents the drive motor torque request from IMCU	-450 - 450	0	N.m
Traction Motor Actual Torque	This parameter represents the actual operating torque of the current drive motor	-450 - 450	0	N.m
Traction Motor Power Reduction Flag	This parameter indicates whether the drive motor is in the torque limited state	- No - Yes	No	
Traction Motor Power Reduction Reason	This parameter represents the specific causes of the current drive motor torque limited	- Unlimited torque - High stator temperature - High inverter temperature - Current high - Voltage high - Rotor overspeed	No limited torque	

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Vehicle Speed	This parameter is calculated by the speed output by the electric drive unit EDU, which represents the vehicle speed vector. The positive value represents Drive, and the negative value represents Reverse.	-200 - 450	0	Kilom-etres/ Hour
Input Shaft Speed	This parameter represents the input shaft speed of electric drive unit EDU, which is directly related to the drive motor speed.	-30000 - 30000	0	Revol-utions/ Minute
Traction Motor Inverter Temperature	This parameter represents the drive motor (TM) inverter temperature.	-30 - 60	25	Degrees Celsius

Secondary Axle Motor Controller (SAC)

Real-time Display Parameter List

Basic Condition: Starting Button at "ON", Shift to P/N , Vehicle Stop.

Parameter Name	Definition	Value Range	Specific Condition Value	Unit
PEB Coolant Pump PWM Request	This parameter comes from IMCU hard wire terminal (PEB Coolant Pump PWM Control) signal, indicating the control command of ESS coolant pump of high voltage battery pack	0 - 100	68.0	%
PEB Coolant Pump Feedback Status	This parameter comes from IMCU hard wire terminal (PEB Coolant Pump PWM Control) signal, and the actual working state of the water pump is obtained through feedback signal analysis.	-Off -On	On	
Traction Motor Inverter Coolant Temperature	This temperature value is an estimated value, which is comprehensively calculated from the temperature value of U / V / W phase.	-30 - 60	30.0	℃
EDU Coolant Temperature	This parameter comes from IMCU hard wire terminal (Edu Coolant Temperature Sensor Signal), and analyzes the signal value from the temperature sensor.	-30 - 60	27.0	℃
DCDC Converter LV Side Current	This parameter comes from the can network signal, which indicates the actual current measured at the low voltage of the DCDC transformer.	0 - 40	32.0	A
DCDC Converter Actual Mode	This parameter comes from can network signal and indicates the current working mode of DCDC transformer.	-Standby -Boost -Buck -Discharge -Error	Buck	
DCDC Converter Rquest Mode	This parameter comes from the can network signal and indicates the working mode requested by the DCDC transformer.	-Standby -Boost -Buck -Discharge -Error	Buck	
DCDC Converter LV Side Voltage	This parameter comes from the can network signal and represents the actual voltage measured at the low voltage of the DCDC transformer.	12 - 16	14.1	V
HV Battery Current	This parameter comes from the can network signal, which is collected by the BMS and represents the output current of the high-voltage battery pack.	-400 - 800	1.3	A

Parameter Name	Definition	Value Range	Specific Condition Value	Unit
HV Battery SOC	This parameter comes from the can network signal, and the BMS calculates the remaining power of the high-voltage battery pack.	0 - 100	32.1	%
BMS Running Status	This parameter comes from the can network signal and indicates the current running state of BMS.	-Power Up -Drive Ready -Drive Pre-charging -Driving -Charge Ready -Charging -Charge Done -Precharge -Crashed -Balancing -Error	Driving	
HV Battery Voltage	This parameter comes from the can network signal, which is collected by the BMS and represents the output voltage of the high-voltage battery pack	300 - 450	392.5	V
BMS Main Relay Status	This parameter comes from the can network signal and is collected by BMS. It indicates the status of the main relay in the high-voltage electromagnetic package and controls whether high-voltage power is output	-Relay Open -Relay Close -Indeterminate -Error	Relay Close	
Vehicle Immobilization Status	This parameter indicates the vehicle anti-theft matching status. If IMCU does not participate in anti-theft matching, the default status is always not learned.	-Unknown -Learned -Virgin	Virgin	
Vehicle Start Switch Status	This parameter comes from IMCU hard wire terminal (start switch on / run (kl15)) signal, indicating the current vehicle power status.	-Off -Running	Running	
Battery Voltage	This parameter comes from IMCU hard wire terminal (module power supply kl30) signal, indicating low-voltage battery voltage.	9 - 16	13.8	V
Traction Motor HVIL State	This parameter comes from IMCU hard wire terminal (HVIL signal), which indicates whether the high voltage harness connector between the traction motor and the vehicle is well connected.	-Shut Off Tripped -Circuit Cloesd	Circuit Cloesd	

Parameter Name	Definition	Value Range	Specific Condition Value	Unit
Traction Motor Stator Temperature	This parameter comes from IMCU hard wire terminal (Motor Stator Temperature Sensor). The temperature sensor is a thermistor with NTC negative temperature coefficient, which is used to monitor the stator temperature and prevent excessive temperature melting and short circuit.	-30 - 60	27.0	℃
Traction Motor Stator Current Effective Value	This parameter indicates the effective value of the stator current of the traction motor, which is comprehensively calculated according to the three-phase current.	0 - 340	0.0	A
Traction Motor Stator Current Frequency	This parameter represents the AC frequency of the stator of the traction motor, which is comprehensively calculated according to the three-phase current.	-10000 - 20000	0	Hz
Traction Motor Rotor Offset Angle	This parameter indicates the traction motor rotor offset angle. The motor rotor offset angle is a necessary parameter for motor control. Learn and store the motor rotor offset angle by running a specific calibration routine.	0 - 655	243.7	°
Traction Motor Rotor Offset Angle State	This parameter indicates the reliability of the parameter value of the rotor offset angle of the traction motor.	-Accurate -Inaccurate -Unknown -Estimated	Accurate	
Traction Motor Phase U/V/W Current	This parameter represents the three-phase current value of the traction motor, which is obtained by monitoring the three-phase high-voltage circuit.	-340 - 340	14.0	A
Traction Motor Inverter Phase U/V/W Temperature	This parameter represents the temperature value of each phase in the three phases of the inverter, which is measured by DBC (direct bond copper) technology.	-30 - 60	30.0	℃
Traction Motor Target Speed	This parameter indicates the desired operating speed of the system for the traction motor.	-15000 - 15000	0	rpm
Traction Motor Actual Speed	This parameter indicates the actual running speed of the current traction motor.	-15000 - 15000	0	rpm

Parameter Name	Definition	Value Range	Specific Condition Value	Unit
Traction Motor Actual Mode	This parameter indicates the current actual working mode of the traction motor	-Initial -Precharge -Standby -Motor Offset Angle Calibration -External Speed Control -Rotate Speed Control -Torque Control -DC Current Control -DC Voltage Control -Afterrun -Precharge Fault -Failure -Discharge -Power On Check	Standby	
Traction Motor Mode Request	This parameter indicates the traction motor mode request sent by IMCU	-Precharge -Standby -Motor Offset Angle Calibration -External Speed Control -Rotate Speed Control -Torque Control -DC Current Control -DC Voltage Control -Afterrun -Discharge	Standby	
Traction Motor Command Torque	This parameter represents the traction motor torque demand sent by IMCU	-450 - 450	0	Nm
Traction Motor Actual Torque	This parameter indicates the actual working torque of the current traction motor	-450 - 450	0	Nm
Traction Motor Inverter Temperature	This parameter represents the inverter temperature value, which is comprehensively measured by the temperature of each phase.	-30 - 60	30.0	℃
Traction Motor Generator Torque Derating Reason	This parameter indicates the specific reason why the current traction motor torque is limited	-Inactive -Motor Element Limited -Generator Element Limited -Stator Over Temperature -Rotor Over Temperature -Inverter Over Temp Error -DC Current Over Max Limit -DC Current Below Min Limit -DC Voltage too High -DC Voltage too Low -Rotate OverSpeed -Over Max -Below Min	Inactive	
Traction Motor Motor Torque	This parameter indicates the specific reason why the current	-Inactive -Motor Element Limited	Inactive	

Parameter Name	Definition	Value Range	Specific Condition Value	Unit
Derating Reason	traction motor torque is limited	-Generator Element Limited -Stator Over Temperature -Rotor Over Temperature -Inverter Over Temp Error -DC Current Over Max Limit -DC Current Below Min Limit -DC Voltage too High -DC Voltage too Low -Rotate OverSpeed -Over Max -Below Min		

Gateway Module (GW)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Gateway Power Mode	This parameter indicates the power mode of the GW, which adopts different power management strategies in different modes.	- Normal mode - Manufacturing Mode - Transportation Mode - Showroom mode - Storage mode - Programming mode - Maintenance mode	Normal Mode	
Battery ID	This parameter indicates the battery ID value of GW written, and different ID has different calculation methods for residual capacity.	00 - FF	3F	
Battery Voltage	This parameter indicates the Battery Voltage.		14.1	V
EBS SOC	This parameter indicates the EBS SOC.		100	%
EBS SOC Deviation	This parameter indicates the EBS SOC Deviation.	- >15% - <15% - <10% - Invalid	<15%	

Front Left Seat Control Module (FLSM)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the start switch is placed in "ON" position, the shift lever is in P gear or N gear, and the vehicle is not started.

Parameter Name	Definition	Parameter Value Range	Test Conditions	Test Value	Unit
Driver Seat Forward/Rearward Position Counts	Position Count Marking of Power Seat Motor	0-20000		8000	
Driver Seat Back Forward/Rearward Position Counts				8000	
Driver Seat Cushion Rear Upward/Downward Position Counts				8000	

A/C Control Module (HVAC)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on with high-voltage electricity, and AC is on.

Parameter Name	Definition	Parameter Value Range	Parameter Reference Value		
			Test Conditions	Test Value	Unit
Set Temperature	Temperature value adjusted and set by A/C panel or big screen	15.0 ~ 31.0	Temperature adjusted to the lowest	15.0	℃
			Temperature adjusted to the highest	31.0	℃
Front Right Temperature Damper Actuator Voltage - Initial Position	Self-learning value of the actuator will not change after learning, and there are differences between different vehicles	0 ~ 5.0		0.8	V
Front Right Temperature Damper Actuator Voltage - End Position	Self-learning value of the actuator will not change after learning, and there are differences between different vehicles	0 ~ 5.0		4.1	V
Front Right Temperature Damper Actuator Voltage - Current Position	Voltage value when the actuator is in current position; the range is from the calibrated initial position to the end position	0 ~ 5.0	Temperature adjusted to the lowest	4.1	V
			Temperature adjusted to the highest	0.8	V
Mode Damper Actuator Voltage - Initial Position	Self-learning value of the actuator will not change after learning, and there are differences between different vehicles	0 ~ 5.0		0.7	V
Mode Damper Actuator Voltage - End Position	Self-learning value of the actuator will not change after learning, and there are differences between different vehicles	0 ~ 5.0		4.2	V
Mode Damper Actuator Voltage - Current Position	Voltage value when the actuator is in current position; it varies with the position; the range is from the calibrated initial position to the end position	0 ~ 5.0	Face	0.7	V
			Face and Footwell	1.3	V
			Footwell	4.2	V
			Footwell and Defog	3.6	V
			Defog	3.0	V

Fresh/Recirculated Damper Actuator Voltage - Initial Position	Self-learning value of the actuator will not change after learning, and there are differences between different vehicles	0 ~ 5.0		4.4	V
Fresh/Recirculated Damper Actuator Voltage - End Position	Self-learning value of the actuator will not change after learning, and there are differences between different vehicles	0 ~ 5.0		0.5	V
Fresh/Recirculated Damper Actuator Voltage - Current Position	Voltage value when the actuator is in current position; it varies with the position; the range is from the calibrated initial position to the end position	0 ~ 5.0	Circulation mode adjusted to internal circulation mode	0.5	V
			Circulation mode adjusted to external circulation mode	4.4	V
Ambient Temperature Sensor Voltage	Ambient temperature sensor voltage, the higher the temperature, the lower the voltage	0 ~ 5.0		\	V
Evaporator Temperature Sensor Voltage	Evaporator temperature sensor voltage, the higher the temperature, the lower the voltage	0 ~ 5.0		\	V
Front Left Face Air Outlet Temperature Sensor Voltage	Front left face air outlet temperature sensor voltage, the higher the temperature, the lower the voltage	0 ~ 5.0		\	V
Front Left Footwell Air Outlet Temperature Sensor Voltage	Front left footwell air outlet temperature sensor voltage, the higher the temperature, the lower the voltage	0 ~ 5.0		\	V
5V Supply Voltage	The voltage supplied by the A/C control module to the actuator is fixed at 5V	0 ~ 5.0		5.0	V

Fresh/Recirculated Damper Actuator	Percentage of Current Rotating Position of Fresh/Recirculated Air Damper Actuator	0 ~ 100	Circulation mode adjusted to internal circulation mode	100 - Internal Circulation	%
			Circulation mode adjusted to external circulation mode	0 - External Circulation	%
Mode Damper Actuator	Percentage of current rotating position of mode damper actuator, varies with air distribution mode	0 ~ 100	Face	0	%
			Face/footwell Air Outlet	17	%
			Footwell	100	%
			Footwell and Defog	82	%
			Defog	66	%
Front Right Temperature Damper Actuator	Percentage of current rotating position of front right temperature damper actuator, varies with adjusted temperature	0 ~ 100	Temperature adjusted to the highest	100 - All Hot	%
			Temperature adjusted to the lowest	0 - All Cold	%
Interior Temperature	Temperature measured by interior temperature sensor	-40 ~ 80		Current Interior Temperature	℃
Evaporator Temperature Sensor Temperature	Surface Temperature of Evaporator	-40 ~ 85	With the A/C off, it is approximately ambient temperature	\	℃
Front Left Face Air Outlet Temperature Sensor Temperature	Front Left Face Air Outlet Temperature of A/C Box	-30 ~ 100	With the A/C off, it is approximately interior temperature	\	℃
Front Left Footwell Air Outlet Temperature Sensor Temperature	Front Left Footwell Air Outlet Temperature of A/C Box	-30 ~ 100	With the A/C off, it is approximately interior temperature	\	℃
Pressure of A/C Pressure Sensor	A/C refrigerant pressure from ECM or HVAC, increases after the A/C is on	0 ~ 3570	Turn on AC	588	Kpa
Ambient Temperature Sensor Temperature	Outside Ambient Temperature	-40 ~ 90		Current Ambient Temperature	℃
Vehicle Speed	Speed from IBS	Refer to the vehicle owners manual for the maximum speed		Current Speed	Km/h

Electric Compressor Target Speed	Target speed controlled by electric compressor, related to set temperature and air distribution mode, etc.	0 ~ 9000	Turn on A/C	800 RPM/min	R/min
Electric Compressor Drive Request	Electric Compressor On/Off Request	- Compressor OFF - Compressor ON	Turn on A/C	Compressor ON	
			Turn off A/C	Compressor OFF	
Passenger Compartment Expansion Valve State	Passenger compartment expansion valve switch state, normally on, is used for passenger compartment cooling	- ON - OFF		ON	
High-voltage Electric Heater Left Side Temperature Sensor Temperature	High-voltage Electric Heater Left Side Temperature Sensor Temperature	-30.0 ~ 100.0		17.1	℃
High-voltage Electric Heater Right Side Temperature Sensor Temperature	High-voltage Electric Heater Right Side Temperature Sensor Temperature	-30 ~ 100		\	℃
Internal Heat Exchanger Outlet Temperature	Internal Heat Exchanger Outlet Temperature	-30 ~ 100		\	℃
Eternal Heat Exchanger Outlet Temperature	Eternal Heat Exchanger Outlet Temperature	-30 ~ 100		\	℃
Internal Heat Exchanger Outlet Pressure	Internal Heat Exchanger Outlet Pressure	0 ~ 3570		\	Kpa
Compressor Inlet Pressure	Compressor Inlet Pressure	0 ~ 3570		\	Kpa
Internal Heat Exchanger Inlet Temperature	Internal Heat Exchanger Inlet Temperature	-30 ~ 100		\	℃
Compressor Inlet Temperature	Compressor Inlet Temperature	-30 ~ 100		\	℃
Electric Heater (PTC) Temperature	Electric Heater (PTC) Temperature	-30 ~ 100		\	℃
High-voltage Electric Heater - Left	High-voltage Electric Heater - Left PWM Control Percentage	0 ~ 100		0	%
High-voltage Electric Heater - Right	High-voltage Electric Heater - Right PWM Control Percentage	0 ~ 100		0	%

Front Detection Radar (FDR)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
System Operational Mode	This parameter indicates the System Operational Mode	- Normal Mode - Factory Mode	Normal Mode	/
Current Radar Horizontal Deviation Angle	This parameter indicates the Current Radar Horizontal Deviation Angle	-2.5 ~ 2.5	0.0	°
Current Radar Vertical Deviation Angle	This parameter indicates the Current Radar Vertical Deviation Angle	-3.0 ~ 3.0	0.0	°

Front View Camera Module (FVCM)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Calibration Status	This parameter indicates the Calibration Status	- Not Calibrated - Initial Online Calibration OK - Initial Online Calibration Not OK - Static Calibration OK - Static Calibration Not OK	Static Calibration OK	/

Left Hand Rear Drive Assist Module (LHRDA)

Real-time Display Parameter List

Test condition: The start switch is in "ON" position.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
System Operational Mode	This parameter displays the System Operational Mode	- Normal Mode - Factory Mode	Normal Mode	/
System Status	This parameter indicates the System Status	- Reserved - System Temporary Unavailability - Sensor Blockage - Disabled - Enabled - System Error	Enabled	/

Right Hand Rear Drive Assist Module (RHRDA)

Real-time Display Parameter List

Test condition: The start switch is in "ON" position.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
System Operational Mode	This parameter displays the System Operational Mode	- Normal Mode - Factory Mode	Normal Mode	/
System Status	This parameter indicates the System Status	- Reserved - System Temporary Unavailability - Sensor Blockage - Disabled - Enabled - System Error	Enabled	/

Driver Monitor System (DMS)

Real-time Display Parameter List

Test condition: The start switch is in "ON" position.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Camera Control Unit State	This parameter displays the state of camera control unit.	- Unknown - Uninitialized - Initializing - Initialized - Streaming - Error	Streaming	/

Electric Power Steering Control Module (EPS)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on with high-voltage electricity.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Electric Power Steering (EPS) System Status	Electric power steering (EPS) boost state, providing power assist after starting the vehicle	- Waiting for Wakeup - Pre-drive - No Power Assist - Power Assist Provided - Saving Data - OFF - Fail	Power Assist Provided	
Driving Torque	Driver hand torque, positive when counterclockwise	-12.7 ~ 12.7	0.0	N.m
Motor Position	Current position of EPS motor, without specific value	0 ~ 360	66	°
Speed of Motor	Current speed of EPS motor, related to torque	-3500 ~ 3500	0	R/min
Steering Angle	Steering Wheel Angle	-496 ~ 497	0	°
ECU Temperature	ECU Module Temperature	-70 ~ 185	16	℃
Electric Power Steering (EPS) Power Assist Torque Output Factor	EPS Power Assist Torque Output Coefficient, it is 100% when normal	0 ~ 100	100	%
State of Steering Gear Right End Protection Learning	State of steering gear right end protection learning, when the scan tool completes the routine, it displays "Final Learning".	- Not Learned - Final Learning	- Final Learning	
State of Steering Gear Left End Protection Learning	State of steering gear left end protection learning, when the scan tool completes the routine, it displays "Final Learning".	- Not Learned - Final Learning	- Final Learning	
Vehicle Speed	Speed from IBS	Refer to the vehicle owners manual for the maximum speed	0	Km/h

Electronic Steering Column Lock (ESCL)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Locked Switch State of Electronic Steering Column Lock Electronic Control Unit (ESCL ECU)	This parameter indicates the locked switch state of the electronic steering column lock electronic control unit (ESCL ECU)	- Unlocked - Locked		
Unlocked Switch State of Electronic Steering Column Lock Electronic Control Unit (ESCL ECU)	This parameter indicates the unlocked switch state of the electronic steering column lock electronic control unit (ESCL ECU)	- Locked - Unlocked		
Lock Times for Mistyped PIN	This parameter indicates the locking times for mistyped PIN	0 ~ 15	0	
Remaining Time to Unlock PIN Lock Error	This parameter indicates the remaining time to unlock the PIN lock error	0 ~ 960	0	Min
Immobiliser Learning Result	This parameter indicates the results of immobiliser learning	- Default - Supplier offline state Learning successful		

Integrated Brake System (IBS)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the start switch is placed in "ON" position, and the vehicle is stationary.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Electronic Parking Brake (EPB) Switch State	This parameter is used to indicate the operation state of the electronic parking brake (EPB) switch, and the switch signal is obtained by monitoring the switch circuit.	- No Action - Applied - Released - Failure	/	
Brake Fluid Level Low Switch State	This parameter is used to indicate the brake fluid level is too low, and it can check whether the brake fluid is lost by monitoring the brake fluid level switch.	- OFF - ON	/	
Brake Lamp Switch State	The parameter is used to indicate if the brake pedal is pressed, and monitor the brake signal through brake lamp switch. The brake lamp switch is directly connected to IBS via a hard wire, or first connected to other controllers (such as ECM), and then CAN signal is sent to IBS.	- OFF - ON	/	
Dynamic Braking Function (DBF) Failure	/	- No - Yes	/	
IBS Failure	/	- No - Yes	/	
Torque Increase Request (MSR) Failure	/	- No - Yes	/	
Electronic Traction Control System (ETCS) Failure	/	- No - Yes	/	
Brake Traction Control System (BTCS) Failure	/	- No - Yes	/	
Anti-lock Brake System (ABS) Failure	/	- No - Yes	/	
Electronic Brake Force Distribution System (EBD) Failure	/	- No - Yes	/	
Front Left Wheel Speed	/	Refer to the maximum speed in vehicle owners manual for the maximum value	0	Km/h
Front Right Wheel Speed	/	Refer to the maximum speed in vehicle owners manual for the maximum value	0	Km/h

Rear Right Wheel Speed	/	Refer to the maximum speed in vehicle owners manual for the maximum value	0	Km/h
Rear Left Wheel Speed	/	Refer to the maximum speed in vehicle owners manual for the maximum value	0	Km/h
Lateral Acceleration	/	-12.7 ~ 12.7	0.0	m/s^2
Longitudinal Acceleration	/	-12.7 ~ 12.7	0.0	m/s^2
Yaw Rate	/	-90 ~ 90	0	°/s
Master Cylinder Pressure	The parameter is used to indicate the brake pressure in the brake circuit, and monitored by the pressure sensor integrated in the brake master cylinder.	0.0 ~ 250.0	It is generally 0.0 when the brake pedal is not depressed	Bar
State of Left Parking Brake	/	- Parking Brake Already Applied - Parking Brake Temporarily Applied - Parking Brake already Released - Parking Brake Being Applied - Parking Brake Being Released - Parking Brake Fully Released - Parking Brake State Unknown	/	
State of Right Parking Brake	/	- Parking Brake Already Applied - Parking Brake Temporarily Applied - Parking Brake already Released - Parking Brake Being Applied - Parking Brake Being Released - Parking Brake Fully Released - Parking Brake State Unknown	/	
Clamping Force Applied by Left Actuator	/	0.00 ~ 17.50	With the vehicle on a level ground, it is about 13.00 when EPB function is enabled	kN
Clamping Force Applied by Right Actuator	/	0.00 ~ 17.50	With the vehicle on a level ground, it is about 13.00 when EPB function is enabled	kN

Vacuum Degree	This parameter is used to indicate the pressure difference between the inner vacuum cavity of brake vacuum booster and the barometric pressure, and this parameter is monitored through vacuum sensor.	-120.0 ~ 10.0	This value is calculated according to the actual situation. In general, the larger the absolute value of vacuum, the more effort it saves when depressing the brake pedal.	Kpa
Vehicle Speed		Refer to the vehicle owners manual for the maximum speed	/	Km/h
Left Rear Brake Disc Temperature			/	℃
Right Rear Brake Disc Temperature			/	℃
Number of Left Actuator Operation		Add 1 for release times after being applied	/	
Number of Right Actuator Operation		Add 1 for release times after being applied	/	

Body Control Module (BCM)

Real-time Display Parameter List

Unless otherwise specified, the specific conditionfor the following parameters is defaulted to: thestart switch is placed in "ON" position, the shiftlever is in P gear or N gear, and the vehicle isnot started, it is stationary and powered on.

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
Key Serial Number Detected Currently	Current Serial Number of Remote Key Recognised by Antenna or Coil	0 ~ 4	Key Is Placedin Back-up Coil Position(One-touch Start Vehicle)	2	/
Number of Keys Learned Successfully	Number of Keys Added Successfully	0 ~ 4	/	2	/
Key Chip/ Transmitter Status: Key transmitter ID detected last time	Serial Number of Remote Key Recognised by Antenna or Coil Last Time	0 ~ 4	Key Is Placedin Back-upCoil Position(One-touch Start Vehicle)	0	/
Radio Frequency Signal FrameChecksum Error	This parameter indicates the radio frequency signal frame checksum error	—No —Yes	/	No	/
Radio Frequency Signal FrameFormat Error	This parameter indicates the radio frequencysignalframeformaterror	—No —Yes	/	No	/
Key Chip/ Transmitter State: Last Press Type	Last Press Type of Remote Key	—No signalreceived —Short press —Long press —Double press	Short Press Key Lock/Unlock Button	Short press	/
			Long Press Key Lock/Unlock Button	Long press	/
Key Chip/ Transmitter State: Remote Control Button Last Pressed	This parameter indicates the key chip/transmitter state: remote controlbuttonlastpressed	—Nopress —Lockbutton —Unlockbutton —Trunk unlock button —Alarmbutton —Remote starting button	Press the key lock button	—Lockbutton	/
			Press the key unlock button	—Unlockbutton	/
			Press the key trunk button	—Trunk unlock button	/
ImmobiliserActivated	This parameter indicates the immobiliserisactivated	—OFF —Part Alarm without Volumetrics —Full Alarm without Volumetrics —Part Alarm with Volumetrics —Full Alarm with Volumetrics	/	OFF	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
Invalid PIN Exist	Whether Written PIN Code Is Valid	—No —Yes	/	No	/
Lock Times for Mistyped PIN	It is required to enter PIN code when performing immobiliser related Routine,if PIN codeis entered incorrectly for3 times, BCM will be locked;after the PIN code is entered incorrectly forthe 3rd time, the count becomes1, and thenadd 1 each timeit is entered incorrectly	0 ~ 15	0	0	/
Remaining Time to Unlock PIN LockError		0 ~ 65535	0	0	Minute
Last Event Triggering Alarm	The last event source whichtriggers theanti-theft alarm	—Bonnet switch —Inertia Switch —Driver door open switch —Front passenger door open switch —Rear left door open switch —Rear right door open switch —Not ignitionstart within 15 safter driver doorkey unlocking —Ultrasonic sensor —Open by illegal key (KL.15) —Central control locking switch —Central control unlocking switch —Trunk open switch —No event	The vehicle is powered off, thekey locks the vehicle out side,and opens thefront passenger door inside,which triggers the alarm	Front Right Door Open Switch	/
			The vehicle is powered off, the key locks the vehicle out side,and opens the driver door inside, which triggers the alarm	Front Left Door Open Switch	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
Starter MotorDisabled -Steering ColumnLocked	Reason for StarterMotor Disabled	—No —YES	/	No	/
Starter MotorDisabled - InertiaSwitch ON		—No —YES	/	No	/
Starter MotorDisabled - InvalidKey		—No —YES	/	No	/
Starter MotorDisabled - P/N Gear Signal NotI nput		—No —YES	/	No	/
			The shift lever isin D gear, depress the brake pedal,and the start switch maintainsin the Start gear	No	/
Starter Motor Disabled - Engine Speed in a Certain Range		—No —YES	/	No	/
Starter Motor Disabled - Timeout		—No —YES	/	No	/
Starter Motor Disabled - ECM Uncertified		—No —YES	/	No	/
Starter Motor Disabled -Clutch/ Neutral Position Switch ON		—No —YES	/	No	/
PIN Programmed	Whether PIN Code Is Written Correctly	—No —YES	/	YES	/
Key Programmed	Whether Key Is Matched Correctly	—No —YES	/	YES	/
VIN Programmed	Whether VINCode Is Written Correctly	—No —YES	/	YES	/
BCM Locking State	Lock BCM after Completing Anti-theftMatching	—Unlocked —Locked	/	Locked	/
Key 4 Learned	Serial Numberof Key Added Successfully	—No —YES	/	NO	/
Key 3 Learned		—No —YES	/	YES	/
Key 2 Learned		—No —YES	/	YES	/
Key 1 Learned		—No —YES	/	YES	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
High Beam Flash Switch State	/	—OFF —ON	High Beam Flash Switch OFF	OFF	/
			High Beam Flash Switch ON	OPEN	/
Trunk Lid/Tail Gate Open	/	—OFF —ON	Close the tail gate	Closed	/
			Open the tail gate	OPEN	/
Bonnet Open State	/	—OFF —ON	Closing the Bonnet	Colosed	/
			Opening the Bonnet	OPEN	/
Rear Right DoorOpen State	/	—OFF —ON	Close the rear right door	Closed	/
			Open the rear right door	OPEN	/
Rear Left DoorOpen State	/	—OFF —ON	Close the rear left door	Closed	/
			Open the rear left door	OPEN	/
Front Passenger Door Open State	/	—OFF —ON	Close the front passenger door	Closed	/
			Open the front passenger door	OPEN	/
Driver Door Opening State	/	—OFF —ON	Close the driver door	Closed	/
			Open the driver door	OPEN	/
Front Wiper Motor Reset Switch State	/	—OFF —ON	Front Wiper Not Operated to the Dead Centre	Closed	/
			Front Wiper Operated to the Dead Centre	OPEN	/
Windscreen Washer Switch	/	—OFF —ON	Turn off Windscreen Washer Switch	Closed	/
			Turn on Windscreen Washer Switch	OPEN	/
Front Wiper 2nd Level Selection Switch	/	—OFF —ON	Turn off Front Wiper 2nd Level Selection Switch	Closed	/
			Turn on Front Wiper 2nd Level Selection Switch	OPEN	/
Front Wiper 1st Level Selection Switch	/	—OFF —ON	Turn off Front Wiper 1st Level Selection Switch	Closed	/
			Turn on Fron tWiper 1st Level Selection Switch	OPEN	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
Rear Wiper Motor Reset Switch State	/	—OFF —ON	Rear Wiper Not Operated to the Dead Centre	Closed	/
			Rear Wiper Operated to the Dead Centre	OPEN	/
Rear Windscreen Washer Switch	/	—OFF	Turn off Rear Windscreen Washer Switch	Closed	/
		—ON	Turn off Rear Windscreen Washer Switch	OPEN	/
Rear wiper selection switch request	/	—OFF —ON	Turn off the rear wiper selector switch	Closed	/
			Turn on the rear wiper selector switch	OPEN	/
Brack Pedal SwitchState - Hardwire Signal	/	—Not depressed —Depressed	Brake Pedal Released	Not depressed	/
			Brake pedal depressed	Depressed	/
Wiper Delay Potentiometer Switch Voltage	Turn the switch to adjust theautomatic wiping speed	0 ~ 5	Wiper Delay Switch Level 1	0.9	V
			Wiper Delay Switch Level 2	1.3	
			Wiper Delay Switch Level 3	1.6	
			Wiper Delay Switch Level 4	1.8	
High Beam Switch Voltage	/	0 ~ 5	High Beam Switch Not Activated	3.3	V
			High Beam Switch Activated	1.6	
Bonnet Switch Voltage	/	0 ~ 5	Closing the Bonnet	2.2	V
			Opening the Bonnet	1.1	
Rain/Light Sensor Sensitivity	The rain sensor detects the constantly varying rain amount, the higher the sensitivity, the shorter the wiping interval time	—Level 1 —Level 2 —Level 3 —Level 4	Rain Sensor Sensitivity Switch Level 1	Level 1	/
			Rain Sensor Sensitivity Switch Level 2	Level 2	/
			Rain Sensor Sensitivity Switch Level 3	Level 3	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
			Rain Sensor Sensitivity Switch Level 4	Level 4	/
Direction Indicator Lamp Switch State	/	—OFF —Left Direction Indicator Lamp ON —Right Direction Indicator Lamp ON	Direction Indicator Lamp OFF	OFF	/
			Direction Indicator Lamp ON	Left Direction Indicator Lamp ON	/
			Right Direction Indicator Lamp ON	Right Direction Indicator Lamp ON	/
Key 1 Serial Number Learned	Serial Number of Added Key	/	/	97350EE9	/
Key 2 Serial Number Learned			/	8E37D0EA	/
Key 3 Serial Number Learned			/	FFFFFFFF	/
Key 4 Serial Number Learned			/	FFFFFFFF	/
Front Left Tyre Pressure	The parameter is used to indicate the front left tyre pressure value, which is measured throughthe tyre sensor.However, with the vehicle instationary state,the tyre sensoris inoperative,there fore the value is a default value.	0-508	It is actual tyre pressure value when the tyre sensor operates normally	/	Kpa
Front Left Tyre Pressure Validity	/	—YES —NO	/	YES	/
Front Right Tyre Pressure	The parameter is used to indicate the front left tyre pressure value, which is measured throughthe tyre sensor.However, with the vehicle instationary state,the tyre sensoris inoperative,there fore the value is a default value.	0-508	/	It is actualtyre pressure value when the tyre sensor operates normally	Kpa
Front Right Tyre Pressure Validity	/	—YES —NO	/	YES	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
Rear Left Tyre Pressure	The parameter is used to indicate the front left tyre pressure value, which is measured throughthe tyre sensor.However, withthe vehicle instationary state,the tyre sensoris inoperative,there fore the value is a default value.	0-508	/	It is actualtyre pressure value when thetyre sensor operates normally	Kpa
Rear Left Tyre Pressure Validity	/	—YES —NO	/	YES	/
Rear Right Tyre Pressure	The parameter is used to indicate the front left tyre pressure value, which is measured throughthe tyre sensor.However, withthe vehicle instationary state,the tyre sensoris inoperative,there fore the value is a default value.	0-508	/	It is actual tyre pressure value when the tyre sensoro perates normally	Kpa
Rear Right Tyre Pressure Validity	/	—Yes —NO	/	YES	/
Front Left Tyre Temperature	The parameter is used to indicate the front left tyre pressure value, which is measured through the tyre sensor.However, withthe vehicle instationary state,the tyre sensoris inoperative,there fore the value is a default value.	-60-194	/	It is actual tyre temperature value when thet yre sensoro perates normally	℃
Front Left Tyre Temperature Validity	/	—Yes —NO	/	YES	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
Front Right Tyre Temperature	The parameter is used to indicate the front left tyre pressure value, which ismeasured through the tyre sensor.However, withthe vehicle instationary state,the tyre sensoris inoperative,there fore thevalue is a default value.	-60-194	/	It is actual tyretemperature value when thetyre sensor operates normally	℃
Front Right Tyre Temperature Validity	/	—Yes —NO	/	YES	/
Rear Left Tyre Temperature	The parameter is used to indicate the front left tyre pressure value, which ismeasured through the tyre sensor.However, withthe vehicle instationary state,the tyre sensoris inoperative,there fore the value is a default value.	-60-194	/	It is actual tyre temperature value when the tyre sensor operates normally	℃
Rear Left Tyre Temperature Validity	/	—Yes —NO	/	YES	/
Rear Right Tyre Temperature	The parameter is used to indicate the front left tyre pressur evalue, which ismeasured through the tyre sensor.However, withthe vehicle instationary state,the tyre sensoris inoperative,there fore the value is a default value.	-60-194	/	It is actual tyre temperature value when the tyre sensoro perates normally	℃
Rear Right Tyre Temperature Validity	/	—Yes —NO	/	YES	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
Front Left Tyre Condition	/	—Normal —Unknown —Low Pressure —Rapid Leakage —High Pressure —High Temperature —Axle Tyre Pressure —Low Sensor Voltage	/	Normal	/
Front Right Tyre Condition	/	—Normal —Unknown —Low Pressure —Rapid Leakage —High Pressure —High Temperature —Axle Tyre Pressure —Low Sensor Voltage	/	Normal	/
Rear Left Tyre Condition	/	—Normal —Unknown —Low Pressure —Rapid Leakage —High Pressure —High Temperature —Axle Tyre Pressure —Low Sensor Voltage	/	Normal	/
Rear Right Tyre Condition	/	—Normal —Unknown —Low Pressure —Rapid Leakage —High Pressure —High Temperature —Axle Tyre Pressure —Low Sensor Voltage	/	Normal	/
Front Left Tyre Sensor ID	/	/	/	49DB2C56	/
Front Right Tyre Sensor ID	/	/	/	4A1D5C7B	/

Parameter Name	Definition	Parameter ValueRange	Parameter Reference Value	ParameterValues	Unit
Rear Left Tyre Sensor ID	/	/	/	49D3FDCA	/
Rear Right Tyre Sensor ID	/	/	/	4A1D5CA9	/
Whether BCM Integrates TPMS	/	—Yes —No	/	/	/
BCM power mode	/	—normal —abnormal	/	normal	/
Current mileage	/	0-16777215	/	0	Km

Sensing and Diagnostic Module (SDM)

Real-time Display Parameter List

Unless otherwise specified, the specific conditionfor the following parameters is defaulted to: thevehicle is stationary and powered on.

Parameter Name	Definition	Parameter ValueRange	Specific ConditionValue	Unit
Operating Mode of Airbag Control Module	To prevent the airbag modulefrom collision during the transportation, the module is not activated (without deployment capacity) in thefactory and will be activatedafter being fitted on thevehicle.	- Factory mode (SDM unlocked) - Normal mode	Factory mode (SDM unlocked)	
State of Passenger Seat Belt Buckle	Determine if the seat belt is fastened	- Unfastened(Un-Buckled)/ Occupied&Unbuckled - Occupied&Unbuckled - Fail - Not Configured	- Unfastened(Un-Buckled)/ Occupied&Unbuckled	
Passenger airbag disable switch status	This parameter displays the status of the passenger airbag disable switch	-passenger airbag disable switch is in the enabled position -The passenger airbag disable switch is in the disable position -Not detected - Fail - Not Configured	- Not Configured	
State of Driver Seat Belt Buckle	Determine if the seat belt is fastened	- Fastened - Not fastened - Fail - Not Configured	Seat belt not fastened/someone not fastened	
Airbag Warning Lamp State	The airbag module detects and determines the state of the airbag warning lamp	- OFF - ON - Blink	Blink	
VIN Lock State	If the vehicle's VIN is written	VIN Unlocked - VIN Locked	VIN Locked	
Activated State of the Airbag Control Module	Determine if the airbag module is activated, and if it can be normally used after being activated	- Not activated - Activated	Not activated	
Does the collisionoccur?	Determine if the airbag module is collided after being activated,if it is collided, it's requiredto replace the airbag module	- Not occurred - Occurred	Not Occurred	
Output State of Driver Seat Belt Reminder	Determine if the airbag modul ecorrectly outputs the seat belt state	- OFF - ON - Blink - Signal Invalid	ON	

Parameter Name	Definition	Parameter ValueRange	Specific ConditionValue	Unit
Output State of Passenger Seat Belt Reminder	Determine if the airbag modul ecorrectly outputs the seat belt state	- OFF - ON - Blink - Signal Invalid	OFF	
Service Time of Airbag Control Module	Accumulated time since the airbag control module is fitted on the vehicle	0 ~ 1159641	Display according to actual vehicle conditions	hour
Operation time of airbag control module after the start switch is turned on	Accumulated time after a single startup of airbag control module	0 ~ 65535	Display according to actual vehicle conditions	second
Ignition Circuit Resistance Value of Driver Airbag(DAB)	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	1.2 ~ 6.51	2.7	Ω
Ignition Circuit Resistance Value of PassengerAirbag (PAB)	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	0.9 ~ 5.8	2.1	Ω
Ignition Circuit Resistance Value of Left Side Curtain Airbag	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	0.9 ~ 5.8	2.2	Ω
Ignition Circuit Resistance Value of Right SideCurtain Airbag	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	0.9 ~ 5.8	2.2	Ω
Ignition Circuit Resistance Value of Driver Seat Belt Pre-tensioner	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	1.0 ~ 5.8	2.1	Ω
Ignition Circuit Resistance Value of PassengerPre-tensioningSeat Belt	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	1.0 ~ 5.8	2.3	Ω
Ignition Circuit Resistance Value of Right SideAirbag	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	0.9 ~ 5.8	2.3	Ω
Ignition Circuit Resistance Value of Left Side Airbag	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	0.9 ~ 5.8	2.3	Ω
Ignition Circuit Resistance Value of 2nd RowRight Seat Belt Pre-tensioner	The airbag control module internally detects the airbag circuit resistance to determine When to deploy the airbag	0.9 ~ 5.8	2.2	Ω
Ignition Circuit Resistance Value of 2nd RowLeft Seat Belt Pre-tensioner	The airbag control module internally detects the airbag circuit resistance to determine when to deploy the airbag	0.9 ~ 5.8	2.2	Ω

High-voltage Battery Pack (BMS)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
AFE01 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.590	V
AFE01 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.594	V
AFE01 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.0	℃
AFE01 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.0	℃
AFE01 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	27.5	℃
AFE02 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.589	V

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
AFE02 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.593	V
AFE02 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	18.0	℃
AFE02 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	18.0	℃
AFE02 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	30.0	℃
AFE03 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.589	V
AFE03 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.592	V

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
AFE03 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.5	℃
AFE03 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.5	℃
AFE03 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	32.5	℃
AFE04 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.589	V
AFE04 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.592	V
AFE04 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	20.0	℃
AFE04 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.5	℃

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
AFE04 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	32.0	℃
AFE05 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.589	V
AFE05 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.592	V
AFE05 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	18.5	℃
AFE05 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	18.5	℃
AFE05 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	30.0	℃

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
AFE06 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.589	V
AFE06 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.593	V
AFE06 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	20.0	℃
AFE06 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	20.0	℃
AFE06 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	30.5	℃
High-voltage Bus Voltage	The signal is derived from the high-voltage battery pack high voltage main line positive-pole voltage sampling points; the signal is 0 when the main relay opens; the voltage is equal to the voltage value of the high-voltage battery when the main relay closes; two sampling points are respectively at the front and rear ends of main positive relay high voltage output, and the bus voltage sampling point is at the rear end, connected with the positive pole of vehicle main high voltage harness; together with high-voltage battery voltage, the signal is used to monitor the total voltage of high-voltage battery and to determine whether the main relay is working normally.	0 ~ 1023.25	441.8	V

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
High-voltage Battery Voltage	The signal is derived from the high-voltage battery pack high voltage main line positive-pole voltage sampling points; the voltage is the total voltage of high-voltage battery; two sampling points are respectively at the front and rear ends of main positive relay high voltage output, and the voltage sampling point is at the front end; together with high-voltage battery pack bus voltage, the signal is used to monitor the total voltage of high-voltage battery and to determine whether the main relay is working normally.	0 ~ 1023.25	387.5	V
High-voltage Battery Current	This parameter indicates the current of the high-voltage battery pack.	-1000 ~ 638.325	0.0	A
High Voltage System Insulation Resistance	The signal is derived from the insulation value of the entire high voltage system collected by the BMS; if the insulation value is insufficient, the system will automatically disconnect the high voltage to prevent danger.	- Maximum value - Initializing		KΩ
High-voltage Battery SOC	The parameter indicates the battery level; the SOC is obtained by a complicated algorithm, and will increase or decrease accordingly during charging and discharging; the SOC signal is used for operation input for multiple modules such as instrument and VCU, calculating Range to Empty, input/output capacity, etc.	0 ~ 100	22.1	%
High-voltage Battery Management System [BMS] Failure State	This parameter indicates the failure state of the high-voltage battery management system [BMS].	- None - Warning - Alarm by step - Forced alarm - Emergency power-off by step - Forced emergency power-off		
BMS Operation State	The parameter indicates the current BMS working state.	- Power-on - Ready to travel - Precharge for traveling - Drive mode - Civil charging ready - Rapid charging ready - Civil charging mode - Rapid charging mode - Rapid charging completed - Civil charging completed - Civil precharge - Collision mode - In equilibrium - Failure		

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
		- Precharge for rapid charging - Wireless charging ready - Wireless charging mode - Wireless charge completed - Wireless precharge		
HVIL Circuit State between BMS and Vehicle	This parameter indicates that only the BMS's own interlock status is detected.	- High Voltage Interlock Connected - High Voltage Interlock Disconnected - High Voltage Interlock Connected		
Maximum Cell Temperature of High-voltage Battery Pack	The parameter indicates the maximum cell temperature obtained by combining the sample data of each CMU.	-40 ~ 86.5	20.0	℃
Minimum Cell Temperature of High-voltage Battery Pack	The parameter indicates the minimum cell temperature obtained by combining the sample data of each CMU.	-40 ~ 86.5	17.5	℃
Maximum Cell Voltage of High-voltage Battery Pack	The parameter indicates the maximum voltage of a single cell obtained by combining the sampling data of each CMU.	0 ~ 8.189	3.592	V
Minimum Cell Voltage of High-voltage Battery Pack	The parameter indicates the minimum cell voltage obtained by combining the sample data of each CMU.	0 ~ 8.189	3.586	V
High-voltage Battery Pack State of Health [SOH]	The parameter is derived from the BMS internal calculated information; it indicates the state of health (SOH) of the battery pack. As the battery decays (open-circuit resistance, etc.), the high-voltage battery pack SOH decreases gradually.	0 ~ 100	100	%
Date/Time Information (YY-MM-DD)	The parameter indicates the Date/Time Information (YY-MM-DD).			
Date/Time Information (HH: MM: SS)	The parameter indicates the Date/Time Information (HH: MM: SS).			
AFE07 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.589	V

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
AFE07 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.592	V
AFE07 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.5	℃
AFE07 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.0	℃
AFE07 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	29.5	℃
AFE08 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.587	V
AFE08 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.592	V

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
AFE08 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	17.5	℃
AFE08 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	17.5	℃
AFE08 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	35.0	℃
BMS Coolant Temperature	The parameter indicates the BMS coolant temperature.	-40 ~ 86.5	15.5	℃
AFE09 Monitoring Minimum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.588	V
AFE09 Monitoring Maximum Battery Cell Voltage	The signal is derived from the voltage sampling circuit of the cell monitoring unit (CMU) inside the power battery; the cell voltage varies with the charging and discharging of power battery in a certain range; the cell voltage sampling signal line is directly welded to each cell terminal and the signal is input to the CMU after converted by A/D; the signal is used to monitor the minimum and maximum voltage signal of each cell module for determining the equilibrium state of the cell. In case of a large or severe deviation, inform the user of equalizing charge or service.	1 ~ 5.095	3.591	V
AFE09 Monitoring Battery Temperature Signal 2	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.0	℃

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
AFE09 Monitoring Battery Temperature Signal 1	The signal is derived from the temperature sampling signal of the cell monitoring unit (CMU) inside the power battery; the monitored temperature signal varies with the cell working environment; each module contains two temperature sampling points and the collected signal is input to the CMU after converted by A/D; the signal is used to monitor the temperature of the cell or the module.	-40 ~ 87.5	19.0	℃
AFE09 Monitoring Circuit Board Temperature	The signal is derived from the temperature sampling circuit on the cell monitoring unit (CMU) circuit board inside the power battery; the circuit board temperature value varies with the operation of the CMU; the temperature sampling circuit is on the CMU circuit board; the signal is used to monitor the temperature of the CMU circuit board.	-40 ~ 87.5	34.5	℃
Maximum Temperature of Copper Bar	This parameter indicates the maximum temperature of copper bar.	-40 ~ 86.5	24.0	℃
High-voltage Hold Request	This parameter indicates a high-voltage hold request.	- No request - Slow charging - Wireless charging		
AFE Lost Communication Data	This parameter indicates a loss of communication with AFE	- AFE1 Lost Communication - AFE2 Lost Communication - AFE3 Lost Communication - AFE4 Lost Communication - AFE5 Lost Communication - AFE6 Lost Communication - AFE7 Lost Communication - AFE8 Lost Communication - AFE9 Lost Communication		

Combined Charging Unit (CCU)

Real-time Display Parameter List

Unless otherwise specified, the specific default condition for the following parameters is: the vehicle is in Ready and the shift lever is placed in P position.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Onboard Charger Output Voltage	This parameter indicates the Onboard Charger Output Voltage	0 ~ 655.32	11	V
Onboard Charger Output Current	This parameter indicates the Onboard Charger Output Current	-204.8 ~ 204.7	0	A
Onboard Charger Alternator Current Input Voltage L1	This parameter indicates the Onboard Charger Alternator Current Input Voltage L1	0 ~ 508	0	V
Onboard Charger Alternator Current Input Current L1	This parameter indicates the Onboard Charger Alternator Current Input Current L1	0 ~ 51	0	A
Onboard charger hardwire wake-up signal status	This parameter indicates the Onboard charger hardwire wake-up signal status	—Yes —No		
CCU network wakes up other controllers	This parameter indicates the CCU network wakes up other controllers	—Yes —No		
Last on-board charger hardwire wake-up signal status	This parameter indicates the last on-board charger hardwire wake-up signal status	—Yes —No		
Onboard Charger Socket Positive Sensor Temperature	This parameter indicates the Onboard Charger Socket Positive Sensor Temperature	-40 ~ 214	25	℃
Onboard Charger Socket Negtive Sensor Temperature	This parameter indicates the Onboard Charger Socket Negtive Sensor Temperature	-40 ~ 214	22	℃
PFC1 MOS tube temperature	This parameter indicates the PFC1 MOS tube temperature	-40 ~ 214	26	℃
LLC1 MOS tube temperature	This parameter indicates the LLC1 MOS tube temperature	-40 ~ 214	26	℃
LLC2 MOS tube temperature	This parameter indicates the LLC2 MOS tube temperature	-40 ~ 214	26	℃
CCU Ambient Temperature	This parameter indicates the CCU Ambient Temperature	-40 ~ 214	0	℃
BMS charging command	This parameter indicates the BMS charging command	—Default —Charging enable —Off —Restart —Wait —Charging request —Discharge request —Heating request —Discharge enable		
Fault status	This parameter indicates the fault status			

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Onboard Charger Status	This parameter indicates the Onboard Charger Status	—No action —Power on —Ready —Heating —Charging —Warning —Fault —Stop —Power down		
BMS Main Relay Status	This parameter indicates the BMS Main Relay Status	—Fully open —Fully closed		
Voltage value of high voltage battery pack	This parameter indicates the voltage value of high voltage battery pack	0 ~ 1023.75	388	V
DCDC Set Point of Output Voltage	This parameter indicates the DCDC Set Point of Output Voltage	8.5 ~ 16.46	16.46	V
DCDC Mode Request	This parameter indicates the DCDC Mode Request	—Stand by —Advance —Work —High voltage terminal discharge		
DC/DC Status	This parameter indicates the DC/DC Status	—Stand by —Work —High voltage terminal discharge —Invalid		
DCDC Derating Status	This parameter indicates the DCDC Derating Status	—Yes —No		
DCDC discharge timeout	This parameter indicates the DCDC discharge timeout	—Yes —No		
DCDC low voltage terminal voltage is too low	This parameter indicates the DCDC low voltage terminal voltage is too low	—Yes —No		
DCDC high voltage terminal voltage is too low	This parameter indicates the DCDC high voltage terminal voltage is too low	—Yes —No		
DCDC low voltage terminal voltage is too high	This parameter indicates the DCDC low voltage terminal voltage is too high	—Yes —No		
DCDC high voltage terminal voltage is too high	This parameter indicates the DCDC high voltage terminal voltage is too high	—Yes —No		
DCDC temperature too high	This parameter indicates the DCDC temperature too high	—Yes —No		
DCDC low voltage terminal current is too large	This parameter indicates the DCDC low voltage terminal current is too large	—Yes —No		
DCDC internal fault	This parameter indicates the DCDC internal fault	—Yes —No		

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
DCDC HV Voltage	This parameter indicates the DCDC HV Voltage	0 ~ 1023	11	V
DCDC Low Side Voltage	This parameter indicates the DCDC Low Side Voltage	0 ~ 31.875	12.4	V
DCDC LV Current	This parameter indicates the DCDC LV Current	0 ~ 255	0	A
DCDC Output Power	This parameter indicates the DCDC Output Power	0 ~ 4095	0	W
DCDC Power Load Ratio	This parameter indicates the DCDC Power Load Ratio	0 ~ 127.75	0	
DCDC Coolant Temperature	This parameter indicates the DCDC Coolant Temperature	-40 ~ 213	24	℃
CCU DC to BMS Interlock Fault	This parameter indicates the CCU DC to BMS Interlock Fault	—Normal —Fault		
WLC HVIL Fault Status	This parameter indicates the WLC HVIL Fault Status	—Normal —Fault		
CCU AC terminal HV interlock fault status	This parameter indicates the CCU AC terminal HV interlock fault status	—Normal —Fault		
Air conditioning compressor high pressure interlock fault status	This parameter indicates the air conditioning compressor high pressure interlock fault status	—Normal —Fault		
PDU high voltage interlock fault status	This parameter indicates the PDU high voltage interlock fault status	—Normal —Fault		
ESSPTC HV interlock fault status	This parameter indicates the ESSPTC HV interlock fault status	—Normal —Fault		
PFC2 temperature	This parameter indicates the PFC2 temperature	-40 ~ 214	26	℃
PFC3 temperature	This parameter indicates the PFC3 temperature	-40 ~ 214	26	℃
LLC3 temperature	This parameter indicates the LLC3 temperature	-40 ~ 214	27	℃
CCU AC side L2 voltage	This parameter indicates the CCU AC side L2 voltage	0 ~ 508	0	V
CCU AC side L2 current	This parameter indicates the CCU AC side L2 current	0 ~ 51	0	A
CCU AC side L3 voltage	This parameter indicates the CCU AC side L3 voltage	0 ~ 508	0	V
CCU AC side L3 current	This parameter indicates the CCU AC side L3 current	0 ~ 51	0	A
CP PWM status	This parameter indicates the CP PWM status	—CP 9V —CP 0V —CP 9V PWM —CP 6V —CP 6V PWM —CP 12V —CP 12V PWM —CP out of range		

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
CP duty cycle	This parameter indicates the CP duty cycle	0 ~ 100	0	%
Charging gun status	This parameter indicates the charging gun status	—No connection — Connected, charging gun 63A — Connected, charging gun 32A — Connected, charging gun 16A — Connected, charging gun 10A —Half connection — Abnormal connection —V2l connection —V2G connection — Unknown connection		
CP output status	This parameter indicates the CP output status	—Not available —CP high level output —PWM output		
Fast charging port negative temperature	This parameter indicates the fast charging port negative temperature	-40 ~ 214	25	℃
Slow charge electronic lock status	This parameter indicates the slow charge electronic lock status	—Not locked —Lock —Electronic lock control line error —Electronic lock feedback error		
Fast charge electronic lock status	This parameter indicates the fast charge electronic lock status	—Not locked —Lock —Electronic lock control line error —Electronic lock feedback error		
S2 status	This parameter indicates the S2 status	—Open —Close		
Fast charge relay status	This parameter indicates the fast charge relay status	—Open —Close —Invalid		
Quick charging pile connection status.	This parameter indicates the quick charging pile connection status.	—No connection —Connected		
Fast charging pile wake-up status	This parameter indicates the fast charging pile wake-up status	—Not awakened —Wake up		

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Wake up source status	This parameter indicates the wake up source status	—Default —CP wakeup —CP voltage wake-up —CAN wakeup —CC wakeup —Quick charge wake-up		
Charging port indicator communication failure	This parameter indicates the charging port indicator communication failure	—Normal —Fault		
Charging port indicator hardware failure	This parameter indicates the charging port indicator hardware failure	—Normal —Fault		
Charging port indicator voltage feedback	This parameter indicates the charging port indicator voltage feedback	—Normal —Battery voltage too high —Battery voltage too l		

Front Infotainment Control Module (FICM)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Battery Voltage	-	9 ~ 16	11.3	V
Microphone Voltage	-	0 ~ 6	2.9	V
Radio Antenna Voltage	-	0 ~ 12	10.7	V
Steering Wheel Left Control Circuit Voltage	-	0 ~ 4	2.8	V
Steering Wheel Right Control Circuit Voltage	-	0 ~ 4	2.7	V

Communication Module (TBOX)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
Key Interaction State	-	- Not Started - Waiting or In Process - Fail: No Network - Fail: Communication Fail - TSP Connection Fail - New Key Invalid - TBOX ID Null - Succeed		
Immobiliser Learning State	-	- Not Stored - Stored and Locked		

Instrument Pack (IPK)

Real-time Display Parameter List

Test condition: The start switch is in "ON" position.

Parameter Name	Definition	Rational Value Range	Test Value	Unit
Actual Mileage	It displays the current mileage of the vehicle	0 ~ 16777215	Display according to actual vehicle conditions	Km
Backup Mileage in BCM	The total mileage traveled by the vehicle in kilometers which is backed up in BCM, when the IPK is replaced, the reading will be retrieved and stored back in IPK	0 ~ 16777215	Display according to actual vehicle conditions	Km

Electric Vehicle Communication Controller (EVCC)

Real-time Display Parameter List

Unless otherwise specified, the specific condition for the following parameters is defaulted to: the vehicle is stationary and powered on.

Parameter Name	Definition	Parameter Value Range	Specific Condition Value	Unit
CP (Charging Ready - Input) Signal Voltage	Slow charging port sent to EVCC, charging ready	0.0 ~ 30.0	0.8	V
CP (Charging Ready - Input) Signal Duty Ratio	Slow charging port sent to EVCC, charging ready	0 ~ 100	0	%
CP (Charging Ready - Input) Signal Frequency	Slow charging port sent to EVCC, charging ready	0 ~ 10000	0	Hz
PP (European Standard Charging Gun Connection - Input) Signal Voltage	Fast/slow charging port sent to EVCC, connection confirmed	0.0 ~ 12.0	0.0	V
PP (European Standard Charging Gun Connection - Input) Signal Resistance	Fast/slow charging port sent to EVCC, connection confirmed	0 ~ 45000	0	Ω
CC (Slow Charging Gun Connection - Output) Signal Voltage	EVCC sent to CCU, slow charging port connection confirmed	0.0 ~ 12.0	0.0	V
CC (Slow Charging Gun Connection - Output) Signal Resistance	EVCC sent to CCU, slow charging port connection confirmed	0 ~ 45000	0	Ω
CP1 (Charging Ready - Output) Signal Voltage	EVCC sent to CCU	0.0 ~ 30.0	0.0	V
CP1 (Charging Ready - Output) Signal Duty Ratio	EVCC sent to CCU	0 ~ 100	0	%
CP1 (Charging Ready - Output) Signal Frequency	EVCC sent to CCU	0 ~ 10000	0	Hz
CC2 (Slow Charging Gun Connection - Output) Signal Voltage	EVCC sent to BMS, fast charging port connection confirmed	0.0 ~ 12.0	0.4	V
CC2 (fast charging connector connection - output) state	EVCC sent to BMS, fast charging port connection confirmed	- OFF - ON		
Fast Charging Wakeup Voltage	Fast charging wakeup signal sent from EVCC to BMS	0.0 ~ 30.0	0.4	V
Charging Type	This parameter indicates the charging type	- Not charged - AC charging - DC Charging - Vehicle to vehicle charging & vehicle to load charging - AC charging & DC charging		