07_GRP11_BAS ESCM.doc

SENSED PARAMETER	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA AND THRESHOLD VALUE(S)	SECONDARY PARAMETERS AND ENABLE CONDITIONS	TIME LENGTH AND FREQUENCY	MIL ILLUMINATION TYPE
Lost CAN _ ECM	U1886	This DTC indicates that ECM communication signal has been lost.	Lose ECM signal	State → RUN or SERVICE	1 test failures in 1 test samples Frequency: 1 sample / 100 ms	
Pack Voltage Low	P0ABC	This DTC indicates that the Pack Voltage is low.	Pack Voltage Raw A/D < 0.5 V	State → RUN or SERVICE or POWERDOWN	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Pack Voltage High	P0ABD	This DTC indicates that the Pack Voltage is high.	Pack Voltage Raw A/D > 4.5 V	State → RUN or SERVICE or POWERDOWN	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Link Voltage Low	P1A0E	This DTC indicates that the Link Voltage is low.	Link Voltage Raw A/D < 0.5 V	State → RUN or SERVICE or POWERDOWN Contactor State = CLOSED Contactor Status != OPEN_SERVICE_DISCONNECT	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Link Voltage High	P1A0F	This DTC indicates that the Link Voltage is high.	Link Voltage Raw A/D > 4.5 V	State → RUN or SERVICE or POWERDOWN Contactor State = CLOSED Contactor Status != OPEN_SERVICE_DISCONNECT	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Link Voltage Performance	P1A47	This DTC indicates the Link Voltage Performance.	Absolute Value (Link Voltage – Sum of all Module voltages) > 5V	State → RUN or SERVICE or POWERDOWN Contactor State = CLOSED All Module Voltage DTCs = PASSED Link Voltage DTCs = PASSED All Module Voltages = VALID Link Voltage = VALID	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Module 1 Voltage Low	P1A22	This DTC indicates that Module 1 Voltage is low.	Module 1 Voltage Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	

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Module 1 Voltage High	P1A23	This DTC indicates that Module 1 Voltage is high.	Module 1 Voltage Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Module 2 Voltage Low	P1A29	This DTC indicates that Module 2 Voltage is low.	Module 2 Voltage Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Module 2 Voltage High	P1A2A	This DTC indicates that Module 2 Voltage is high.	Module 2 Voltage Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Module 3 Voltage Low	P1A30	This DTC indicates that Module 3 Voltage is low.	Module 3 Voltage Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Module 3 Voltage High	P1A31	This DTC indicates that Module 3 Voltage is high	Module 3 Voltage Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 1A Low	P0A9D	This DTC indicates that Temperature Sensor 1A is low.	Temp Sensor 1A Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 1A High	P0A9E	This DTC indicates that Temperature Sensor 1A is high.	Temp Sensor 1A Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	

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Temperature Sensor 1B Low	P0AC7	This DTC indicates that Temperature Sensor 1B is low.	Temp Sensor 1B Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 1B High	P0AC8	This DTC indicates that Temperature Sensor 1B is high.	Temp Sensor 1B Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 2A Low	P0ACC	This DTC indicates that Temperature Sensor 2A is low.	Temp Sensor 2A Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 2A High	P0ACD	This DTC indicates that Temperature Sensor 2A is high.	Temp Sensor 2A Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 2B Low	P0AEA	This DTC indicates that Temperature Sensor 2B is low.	Temp Sensor 2B Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 2B High	P0AEB	This DTC indicates that Temperature Sensor 2B is high.	Temp Sensor 2B Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 3A Low	P1A1A	This DTC indicates that Temperature Sensor 3A is low.	Temp Sensor 3A Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	

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Temperature Sensor 3A High	P1A1B	This DTC indicates that Temperature Sensor 3A is high.	Temp Sensor 3A Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 3B Low	P1A1D	This DTC indicates that Temperature Sensor 3B is low.	Temp Sensor 3B Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Temperature Sensor 3B High	P1A1E	This DTC indicates that Temperature Sensor 3B is high.	Temp Sensor 3B Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Current Sensor 1 (-30 to 30 A) Low	P0AC1	This DTC indicates that Current Sensor 1 is low.	Current Sensor 1 Raw A/D < 0.2 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Current Sensor 1(-30 to 30 A) High	P0AC2	This DTC indicates that Current Sensor 1 is high.	Current Sensor 1Raw A/D > 4.8 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Current Sensor 2 Low	P1A48	This DTC indicates that Current Sensor 2 is low.	Current Sensor 2 Raw A/D < 0.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Current Sensor 2 High	P1A49	This DTC indicates that Current Sensor 2 is high.	Current Sensor 2 Raw A/D > 4.5 V	State → RUN or SERVICE	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	

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Fan Control Low	P0A84	This DTC indicates that the Fan speed is low.	Fan Control Feedback < 5 %	State → RUN or SERVICE Fan State = ON 11V < System 12v < 18V	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Fan Control High	P0A85	This DTC indicates that the fan control speed is high.	Fan Control Feedback > 95 %	State → RUN or SERVICE Fan State = ON Fan Command < 80 % 11V < System 12v < 18V	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Fan Enable	P0A81	This DTC indicates that the Fan is enabled.	Enable Flag = ENABLED	State → RUN or SERVICE Fan State = OFF 11V < System 12v < 18V	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Fan Stuck Off	P0A82	This DTC indicates that the Fan is stuck off.	Fan Speed Feedback < 5%	State → RUN or SERVICE Fan State = ON 11V < System 12v < 18V	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Fan Stuck On	P0A83	This DTC indicates that the Fan is stuck on.	Fan Speed Feedback > 5 %	State → RUN or SERVICE Fan State = OFF 11V < System 12v < 18V	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Controller Stack Over Run	P1A08	This DTC indicates that the Controller has encountered a stack over run.	# of Over Runs > 0	State → RUN or SERVICE or POWERDOWN or POWERUP	1 test failure in 1 test sample Frequency: 1 sample / 20 ms	
Controller RAM error	P1A05	This DTC indicates that the Controller has encountered a RAM error	Error during write to a location in RAM	State → RUN or SERVICE or POWERDOWN or POWERUP	1 test failure in 1 test sample Frequency: 1 sample / 20 ms	

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Controller ROM error	P1A06	This DTC indicates that the Controller has encountered a ROM error	Checksum does not match	State → RUN or SERVICE or POWERDOWN or POWERUP	1 test failure in 1 test sample Frequency: 1 sample / 20 ms	
Controller EEPROM error	P1A04	This DTC indicates that the Controller has encountered an EEPROM error	Checksum does not match	State → POWERUP	1 test failure in 1 test sample Frequency: 1 sample / 100 ms	
Contactor Shorted Low	P0ADB	This DTC indicates that the Contactor is shorted low.	Contactor Control Feedback > 98%	State → RUN or SERVICE or POWERDOWN Contactor State = CLOSED Contactor Status != OPEN_SERVICE_DISCONNECT	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Contactor Shorted High	P0ADC	This DTC indicates that the Contactor is shorted high.	Contactor Control Feedback < 5%	State → RUN or SERVICE or POWERDOWN Contactor State = CLOSED Contactor Status != OPEN_SERVICE_DISCONNECT	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	
Contactor Stuck Closed	P0AA1	This DTC indicates that the Contactor is stuck closed.	Absolute Value (Pack Voltage – Link Voltage) < 1 V	State → RUN or SERVICE or POWERDOWN Pack Current < -0.1 Amps Contactor State = OPEN Contactor Status != OPEN_SERVICE_DISCONNECT Current Sensor DTCs = PASSED Pack Voltage Reading = VALID Pack Voltage DTCs= PASSED	10 test failures in 10 test samples Frequency: 1 sample / 20 ms	
Current Performance Golden Range Check	P0AC0	This DTC ensures the zero point for both current sensors is set within a good range.	Low Range Zero Point Raw A/D is outside of 2.5 V +/- 0.7 % High Range Zero Point Raw A/D is outside of 3.3 V +/- 1 %	State → RUN or SERVICE Current Sensor DTCs = PASSED Contactor Command = transition to CLOSED	1 test failure in 1 test sample Frequency: 1 sample / 20 ms	
Current Performance Correlation Check	P0AC0	This DTC ensures that the difference between the two sensors is not too large.	Absolute Value (Current Sensor 1– Current Sensor 2) > 5 A	State → RUN or SERVICE Current Sensor DTCs = PASSED Current Sensor 1 & 2 = VALID -30 A < Current Sensor 1 < 30 A -350 A < Current Sensor 2 < 150 A	188 test failures in 250 test samples Frequency: 1 sample / 20 ms	

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Current Performance Polarity Check	P0AC0	This DTC ensures that the Pack voltage and pack current are tracking each other	In Charge → Pack Voltage Final < Pack Voltage Initial – 1V after 1 second In Discharge → Pack Voltage Final > Pack Voltage Initial + 1V after 1 second	State → RUN or SERVICE Pack Current = VALID Pack & Module Voltages = VALID Current Sensor DTCs = PASSED Pack & Module DTCs = PASSED Pack Current > 50 A or Pack Current < -50 A	20 failures per drive cycle Frequency: 1 sample / 20 ms	