

V-MAC III Fault Assignments

ELECTRICAL FAULTS

Stp	Circuit	Failure	Blink Sequence		Serial Line Information		
			#1	#2	PID/SID	FMI	MID
4	Engine Oil Pressure	Low Voltage / Open	1	1	P 100	4	128/143
4	Engine Oil Pressure	High Voltage	1	1	P 100	3	128/143
9	Barometric Pressure	Low Voltage / Open	1	2	P 108	4	128
9	Barometric Pressure	High Voltage	1	2	P 108	3	128
4	Fuel Temperature	Low Voltage	1	3	P 174	4	128/143
4	Fuel Temperature	High Voltage	1	3	P 174	3	128/143
4	Fuel Temperature	Current Low/Open	1	3	P 174	5	128/143
5	Ambient Temperature	Low Voltage	1	4	P 171	4	128
5	Ambient Temperature	High Voltage	1	4	P 171	3	128
5	Ambient Temperature	Current Low / Open	1	4	P 171	5	128
+	Cab Interior Temperature	Low Voltage	1	5	P 170	4	142
+	Cab Interior Temperature	High Voltage / Open	1	5	P 170	3	142
4	Starter Input	High Voltage	1	6	S 237	3	142
4	Coolant Level	High Voltage / Open	1	7	P 111	3	128/143
9	Coolant Level	“Add” Sensor High Voltage / Open	1	7	P 111	5	128
8!	Est. % Fan Speed	Above Normal Op. Range	1	8	P 26	0	128
8!	Est. % Fan Speed	Below Normal Op. Range	1	8	P 26	1	128
9	Heated Oxygen Sensor - UEGO		1	9	S 65		128
9	Aux. Cooling Relay Output		1	10			128
4	Engine Coolant Temp.	Low Voltage	2	1	P 110	4	128/143
4	Engine Coolant Temp.	High Voltage	2	1	P 110	3	128/143
4	Engine Coolant Temp.	Current Low / Open	2	1	P 110	5	128/143
7	Engine Coolant Temp.	Abnormal Rate of Change	2	1	P 110	10	128
*	Inlet Air Pressure	Low Voltage / Open	2	2	P 106	4	128/143
4	Boost Pressure	Low Voltage / Open	2	2	P 102	4	128/143
*	Inlet Air Pressure	High Voltage	2	2	P 106	3	128/143
4	Boost Pressure	High Voltage	2	2	P 102	3	128/143
9	Boost Pressure - Extended	Low Voltage / Open	2	2	P 439	4	128
9	Boost Pressure - Extended	High Voltage	2	2	P 439	3	128
4	Intake Manifold Temp.	Low Voltage	2	3	P 105	4	128/143
4	Intake Manifold Temp.	High Voltage	2	3	P 105	3	128/143
4	Intake Manifold Temp.	Current Low / Open	2	3	P 105	5	128/143
5	Transmission Oil Temp.	Low Voltage	2	4	P 177	4	142
5	Transmission Oil Temp.	High Voltage / Open	2	4	P 177	3	142
5	F.R. Axle Oil Temperature	Low Voltage	2	5	P 77	4	142
5	F.R. Axle Oil Temperature	High Voltage / Open	2	5	P 77	3	142
5	R.R. Axle Oil Temperature	Low Voltage	2	6	P 78	4	142
5	R.R. Axle Oil Temperature	High Voltage / Open	2	6	P 78	3	142
5	Engine Oil Temperature	Low Voltage	2	7	P 175	4	128
5	Engine Oil Temperature	High Voltage	2	7	P 175	3	128
5	Engine Oil Temperature	Open	2	7	P 175	5	128
9	Combustion Air Temperature	Low Voltage	2	8	P 172	4	128
9	Combustion Air Temperature	High Voltage	2	8	P 172	3	128
9	Combustion Air Temperature	Current Low/Open	2	8	P 172	5	128
9	Combustion Air Humidity	TBD	2	9	TBD		128
9	Inlet Air Pre-cleaner Output	TBD	2	10	TBD		128
5	Exhaust Temperature	Low Voltage	3	1	P 173	4	142
5	Exhaust Temperature	High Voltage	3	1	P 173	3	142
Stp	Circuit	Failure	Blink Sequence		Serial Line Information		

			#1	#2	PID/SID	FMI	MID
4	Engine Timing Sensor	Data Erratic/Incorrect	3	2	S 22	2	128/143
4	Engine Timing Sensor	Abnormal Freq.,PW or T	3	2	S 22	8	128/143
5	Redundant Engine Speed Mon	Engine Timing and position do not agree	3	3	P 190	2	128
4	Engine Position Sensor	Data Erratic/Incorrect	3	4	S 21	2	128/143
4	Engine Position Sensor	Abnormal Freq.,PW or T	3	4	S 21	8	128/143
8	Engine Brake Output #1	High Voltage / Open	3	5	S 79	5	128
8	Engine Brake Output #1	Low Voltage	3	5	S 79	4	128
8	Engine Brake Output #2	High Voltage / Open	3	6	S 80	5	128
8	Engine Brake Output #2	Low Voltage	3	6	S 80	4	128
*	Exhaust Brake Output	Low Voltage	3	7	S 81	4	128
*	Exhaust Brake Output	Low Voltage	3	7	S 30	4	143
*	Exhaust Brake Output	High Voltage	3	7	S 81	3	128
*	Exhaust Brake Output	High Voltage	3	7	S 30	3	143
6	Transmission Splitter Position	Mech. System Not Resp.	3	8	S 152	7	142
6	Transmission Splitter Position	Abnormal Freq.,PW or T	3	8	S 152	8	142
9	Oil Condition Sensor		3	9			128
4	Vehicle Speed	Low Voltage	4	1	P 84	4	142
4	Vehicle Speed	High Voltage	4	1	P 84	3	142
4	Vehicle Speed	Abnormal Freq.,PW or T	4	1	P 84	8	142
4	Vehicle Speed	Open	4	1	P 84	5	142
6	Vehicle Speed	Data Invalid	4	1	P 84	2	142
7	Vehicle Speed	Mode Not Identifiable	4	1	P 84	11	142
7	Vehicle Speed	Below Normal	4	1	P 84	1	142
4	Fan Clutch Output	Data Erratic	4	2	S 33	2	128/143
4	Fan Clutch Output	Low Voltage	4	2	S 27	4	128/143
5	Fan Clutch Output	Open	4	2	S 33	5	128
4	Fan Clutch Output	High Voltage	4	2	S 27	3	128/143
6	Aux. Output #1	Low Voltage	4	3	S 10	4	142
6	Aux. Output #1	High Voltage	4	3	S 10	3	142
6	Aux. Output #2	Low Voltage	4	4	S 11	4	142
6	Aux. Output #2	High Voltage	4	4	S 11	3	142
*	Aux. Output Device Driver	Low Voltage	4	5	S 26	4	128/143
*	Aux. Output Device Driver	High Voltage	4	5	S 26	3	128/143
8	Wastegate Output	Mech. System Not Resp.	4	5	S 32	7	128
8	Wastegate Output	Open	4	5	S 32	5	128
8	Wastegate Output	Data Erratic	4	5	S 32	2	128
9	VGT Position Sensor	Mech. System Not Resp.	4	5	S 147	7	128
4	Tachometer Output	Low Voltage	4	6	S 6	4	142
4	Tachometer Output	High Voltage	4	6	S 6	3	142
4	Speedometer Output	Low Voltage	4	7	S 7	4	142
4	Speedometer Output	High Voltage	4	7	S 7	3	142
6	CDS (Cust Def Stat) Fault	Above Normal	4	8	S 151	0	142
6	CDS (Cust Def Stat) Fault	Below Normal	4	8	S 151	1	142
6	CDS (Cust Def Stat) Fault	Abnormal Freq.,PW or T	4	8	S 151	8	142
9	EGR Valve #1		4	9	P 27		128
4	Accel. Pedal Position	Low Voltage / Open	5	1	P 91	4	142
4	Accel. Pedal Position	High Voltage	5	1	P 91	3	142
6 ¹	Cummins Accel Pedal Position	Accel Pedal Invalid	5	1	P 91	2	142
6	Cummins Idle Validation Switch Invalid	Switch position says idle, Pedal says not Idle.	5	1	P 91	7	142
6	Cummins Idle Validation Switch Invalid	Switch position says not idle, Pedal says Idle.	5	1	P 91	14	142

¹ Cummins faults are added for ISC engine to the step 6 build and remain in subsequent builds.

Stp	Circuit	Failure	Blink Sequence		Serial Line Information		
			#1	#2	PID/SID	FMI	MID
5	Vref Out of Range	Low Voltage	5	2	S 232	4	142
5	Vref Out of Range	High Voltage	5	2	S 232	3	142
4	Shutdown Lamp	Low Voltage	5	3	S 238	4	142
4	Shutdown Lamp	High Voltage	5	3	S 238	3	142
*	Driver Alarm	Low Voltage	5	4	S 224	4	142
*	Driver Alarm	High Voltage	5	4	S 224	3	142
4	Fault Lamp	Low Voltage	5	5	S 239	4	142
4	Fault Lamp	High Voltage	5	5	S 239	3	142
7	Spare Relay 3	Low Voltage	5	6	S 12	4	142
7	Spare Relay 3	High Voltage	5	6	S 12	3	142
5	Engine Oil Level	Low Voltage	5	7	P 98	4	128/143
5	Engine Oil Level	High Voltage	5	7	P 98	3	128/143
9	EGR Temperature		5	8	P 412		128
9	EGR Delta Pressure		5	9	P 411		128
5	Fuel Level	Low Voltage	6	1	P 96	4	142
5	Fuel Level	High Voltage / Open	6	1	P 96	3	142
9	Turbocharger Speed	Abnormal Freq.,PW or T	6	2	P 103	8	128
4	J1708/J1587 Link	Abnormal Freq.,PW or T	6	3	S 250	8	142
4	J1708/J1587 Link	Abnormal Freq.,PW or T	6	3	S 250	8	128/143
4	J1939 Link	Abnormal Freq.,PW or T	6	4	S 231	8	142
4	J1939 Link	Abnormal Freq.,PW or T	6	4	S 231	8	128/143
4	All VECU Communications Lost - engine shutdown	Failed Device	6	5	S 254	8	128
4	Fuel Control Module	Failed Device	6	6	S 233	12	128/143
4	Power Relay	Data Erratic/Incorrect	6	7	S 236	2	128/143
6	J1939 Link	Lost Contact with Tranny	6	8	S 231	14	142
7	Possible J1939 Link	Other ECU failure Affecting Operation	6	9	S 216	12	142
4	Service Brake	Low Voltage	7	1	S 246	4	142
4	Parking Brake	High Voltage	7	2	S 235	3	142
4	Spd Cntl 'Set' Switch	High Voltage	7	3	S 243	3	142
4	Spd Cntl 'Resume' Switch	High Voltage	7	4	S 242	3	142
5	Alternator Voltage	Low Voltage	7	5	P 167	1	142
5	Alternator Voltage	High Voltage	7	5	P 167	0	142
4	Battery Voltage	Low Voltage	7	5	P 168	1	142
4	Switched Voltage	Low Voltage	7	6	P 158	4	128/143
5	Exhaust Temp Reference	Failed Device	7	7	S 254	12	142
9	CAC Bypass Output		7	8	S 26		128
9	VGT Actuator		7	9	S 27		128
4	Injector #1	Low Voltage	8	1	S 1	4	128/143
4	Injector #1	High Voltage	8	1	S 1	3	128/143
4	Injector #1	Abnormal Freq.,PW or T	8	1	S 1	8	128/143
4	Injector #1	Data Erratic	8	1	S 1	2	128/143
4	Injector #2	Low Voltage	8	2	S 2	4	128/143
4	Injector #2	High Voltage	8	2	S 2	3	128/143
4	Injector #2	Abnormal Freq.,PW or T	8	2	S 2	8	128/143
4	Injector #2	Data Erratic	8	2	S 2	2	128/143
4	Injector #3	Low Voltage	8	3	S 3	4	128/143
4	Injector #3	High Voltage	8	3	S 3	3	128/143
4	Injector #3	Abnormal Freq.,PW or T	8	3	S 3	8	128/143
4	Injector #3	Data Erratic	8	3	S 3	2	128/143

Stp	Circuit	Failure	Blink Sequence		Serial Line Information		
			#1	#2	PID/SID	FMI	MID
4	Injector #4	Low Voltage	8	4	S 4	4	128/143
4	Injector #4	High Voltage	8	4	S 4	3	128/143
4	Injector #4	Abnormal Freq.,PW or T	8	4	S 4	8	128/143
4	Injector #4	Data Erratic	8	4	S 4	2	128/143
4	Injector #5	Low Voltage	8	5	S 5	4	128/143
4	Injector #5	High Voltage	8	5	S 5	3	128/143
4	Injector #5	Abnormal Freq.,PW or T	8	5	S 5	8	128/143
4	Injector #5	Data Erratic	8	5	S 5	2	128/143
4	Injector #6	Low Voltage	8	6	S 6	4	128/143
4	Injector #6	High Voltage	8	6	S 6	3	128/143
4	Injector #6	Abnormal Freq.,PW or T	8	6	S 6	8	128/143
4	Injector #6	Data Erratic	8	6	S 6	2	128/143
*	Injector #7	TBD	8	7	S 7	TBD	128/143
*	Injector #8	TBD	8	8	S 8	TBD	128/143
5	System Diagnostic - Solenoid Boost Voltage	High Voltage	8	9	S 151	3	128
5	System Diagnostic - Solenoid Boost Voltage	Low Voltage	8	9	S 151	4	128
7	Transport Protocol	Table programming failure	9	1	S254	14	142
7	Power reset without key switch	Low Voltage	9	2	S254	4	142
8	Power reset without key switch	Low Voltage	9	2	S254	4	128
9	Aftercooler Outlet Temperature	Low Voltage	9	3		4	128
9	Aftercooler Outlet Temperature	High Voltage	9	3		3	128
9	Aftercooler Outlet Temperature	Current Low / Open	9	3		5	128
9	Aftercooler Outlet Pressure	Low Voltage / Open	9	4		4	128
9	Aftercooler Outlet Pressure	High Voltage	9	4		3	128
9	Compressor Discharge Temperature	Low Voltage	9	5		4	128
9	Compressor Discharge Temperature	High Voltage	9	5		3	128
9	Compressor Discharge Temperature	Current Low / Open	9	5		5	128

* Diagnostic not yet available on production vehicles

+ Diagnostic code reserved but not implemented

! Diagnostic is for an RenaultVI Step 8 function used in US for Step 9

4 - available beginning in Step 4 (1MS312A/38P2)

5 - available beginning in Step 5 (1MS316/317)

6 - available beginning in Step 6 (1MS320)

7 - available beginning in Step 7 (1MS328/326A)

8 - available beginning in Step 8 (1MS322/327)

9 – available in Step 9 with EDC7

OUT OF OPERATIONAL RANGE FAULTS--no codes

Stp	Circuit	Failure	Blink Sequence		Serial Line Information		
			#1	#2	PID/SID	FMI	MID
4	Engine Speed	Engine Speed High	--	--	P 190	0	142
4	Engine Speed	Data Erratic	--	--	P 190	2	128
4	Engine Oil Pressure	Engine Oil Press. Low	--	--	P 100	1	142
4	Engine Coolant Temp.	Engine Coolant Temp. Hi	--	--	P 110	0	142
4	Vehicle Speed	Vehicle Speed High	--	--	P 84	0	142
5	Exhaust Temperature	Exhaust Temperature High	--	--	P 173	0	142
+	Engine Oil Level	Engine Oil Level Low	--	--	P 98	1	TBD
5	Transmission Oil Temperature	Oil Temperature High	--	--	P 177	0	142

* Diagnostic not yet available on production vehicles + Diagnostic code reserved but not implemented

4 - available beginning in Step 4 (1MS312A/38P2) 5 - available beginning in Step 5 (1MS316/317)

6 - available beginning in Step 6 (1MS320) 7 - available beginning in Step 7

NOTES ON DIAGNOSTIC CODES

CODE

COMMENTS

1-3, 2-2, 4-3, 4-4, 5-7,7-3, 7-4

These diagnostics are enabled either by the customer or the OEM and are not enabled on most chassis.

3-3

The EECU will broadcast this fault on the J1587 line if engine speed from one or more sensors exceeds 2500 RPM. This is a plausibility check.

3-8

In Step 6 the SID was accidentally set to SID 32. It should be SID 152 which was fixed in Step 7.

6-5

The EECU will log this fault if both J1587 and J1939 communications with the VECU have been lost. Under these circumstances the engine will shutdown.

6-6

The EECU logs this fault if it has detected an internal problem.

6-7

The EECU will log this fault if it has been instructed by the VECU to perform its post-run diagnostics and stop operation, and the EECU finds that the electrical power has not been shut off by the VECU.

7-5

Code 7-5 is sent by the VECU based on battery/alternator voltage.

7-6

If the EECU determines that its own internal voltage is below a plausible limit but the EECU continues to run then this fault is logged (ex. If the voltage is 4 volts the microprocessor could not run. If the processor is running then there must be an internal problem). The EECU uses this voltage value for solenoid control. If the voltage measurement is incorrect poor engine performance can result. If this code is accompanied by a 7-5 code then there is an external voltage problem.

MID 128, PID 190, FMI 2

For older software levels the EECU will log this fault but not broadcast it on the J1587 line if engine speed from one or more sensors exceeds 2500 rpm. This is a plausibility check without a blink code. New software versions will broadcast this fault with a corresponding blink code.

MID 128, SID 151

The EECU is having a problem controlling certain portions of the solenoid current but a more exact diagnosis can not be made by the EECU. Contact Service Engineering.