

DDEC IV EGR DESCRIPTIONS

To read codes, use the Detroit Diesel Diagnostic Link (DDDL). The DDDL will display active and inactive fault codes which are listed in Table 4-1.

- Yellow** = Sensor
- Red** = Protection
- Blue** = Logic

DDC Code # (Flashed)	PID	SID	FMI	Description
11	187	-	4	Variable Speed Governor Sensor Voltage Low
12	187	-	3	Variable Speed Governor Sensor Voltage High
13	111	-	4	Coolant Level Sensor Input Voltage Low
14	110	-	3	Coolant Temperature Sensor Input Voltage High
14	175	-	3	Oil Temperature Sensor Input Voltage High
15	110	-	4	Coolant Temperature Sensor Input Voltage Low
15	175	-	4	Oil Temperature Sensor Input Voltage Low
16	111	-	3	Coolant Level Sensor Input Voltage High
17	354	-	3	Relative Humidity Sensor Circuit Failed High
18	354	-	4	Relative Humidity Sensor Circuit Failed Low
21	91	-	3	Throttle Position Sensor Input Voltage High
22	91	-	4	Throttle Position Sensor Input Voltage Low
23	174	-	3	Fuel Temperature Sensor Input Voltage High
24	174	-	4	Fuel Temperature Sensor Input Voltage Low
25	-	-	-	Reserved for "No Codes"
26	-	25	11	Aux. Shutdown #1 Active
26	-	61	11	Aux. Shutdown #2 Active
27	105	-	3	Intake Manifold Temperature Sensor Input Voltage High
27	171	-	3	Ambient Air Temperature Sensor Input Voltage High
28	105	-	4	Intake Manifold Temperature Sensor Input Voltage Low
28	171	-	4	Ambient Air Temperature Sensor Input Voltage Low
29	351	-	4	TCI Temperature Circuit Failed Low
29	404	-	4	TCO Out Sensor Input Voltage Low
31	-	51	3	Aux. Output #3 Open Circuit (High Side) - S3
31	-	51	4	Aux. Output #3 Short To Ground (High Side) - S3
31	-	51	7	Aux. Output #3 Mechanical System Fail - S3
31	-	52	3	Aux. Output #4 Open Circuit (High Side) - T3
31	-	52	4	Aux. Output #4 Short to Ground (High Side) - T3
31	-	52	7	Aux. Output #4 Mechanical System Failure - T3
32	-	238	3	SEL Short to Battery (+)
32	-	238	4	SEL Open Circuit

DDC Code # (Flashed)	PID	SID	FMI	Description
32	-	239	3	CEL Short to Battery (+)
32	-	239	4	CEL Open Circuit
33	102	-	3	Turbo Boost Pressure Sensor Input Voltage High
34	102	-	4	Turbo Boost Pressure Sensor Input Voltage Low
35	100	-	3	Oil Pressure Sensor Input Voltage Low
36	100	-	4	Oil Pressure Sensor Input Voltage Low
37	94	-	3	Fuel Pressure Sensor Input Voltage High
38	94	-	4	Fuel Pressure Sensor Input Voltage Low
39	-	146	2	EGR Leak - Boost Power
39	-	146	12	EGR Leak - Boost Jake
39	-	146	7	EGR Valve Not Responding
39	-	147	2	VNT Vanes Not Responding - Boost Power
39	-	147	11	VNT Vanes at Max - Jake
39	-	147	12	VNT Vanes Not Responding - Boost Jake
39	-	147	14	EGR Flow too Low
39	-	147	7	VNT Vanes Not Responding - EGR
41	-	21	0	Too Many SRS (missing TRS)
42	-	21	1	Too few SRS (missing SRS)
43	111	-	1	Coolant Level Low
44	105	-	0	Intake Manifold Temperature High
44	110	-	0	Coolant Temperature High
44	172	-	0	Air Inlet Temperature High
44	175	-	0	Oil Temperature High
-	105	-	14	Inlet Manifold Temperature Derate
-	110	-	14	Coolant Temperature Derate
45	100	-	1	Oil Pressure Low
46	168	-	1	ECM Battery Voltage Low
46	-	214	1	RTC Backup Battery Voltage Low
46	-	232	1	Sensor Supply Voltage Low
47	102	-	0	Turbo Boost Pressure High
47	106	-	0	Air Inlet Pressure High
48	106	-	1	Air Inlet Pressure Low
48	411	-	1	EGR OPD Low
48	412	-	1	EGR Temperature Low
49	404	-	0	Turbo Compressor Out Temperature High
-	404	-	14	TCO Temperature Derate
51	404	-	3	Turbo Compressor Out Temperature Sensor Input Voltage High
52	-	254	12	A/D Conversion Fail
53	-	253	2	Nonvolatile Checksum Incorrect
53	-	253	12	EEPROM Write Error
53	-	253	13	Out of Calibration

DDC Code # (Flashed)	PID	SID	FMI	Description
54	84	-	12	Vehicle Speed Sensor Fault
55	-	216	14	Other ECM Fault
55	-	231	12	J1939 Data Link Fault
56	-	250	12	J1587 Data Link Fault
57	-	249	12	J1922 Data Link Fault
58	92	-	0	Torque Overload
61	-	xxx	0	Injector xxx Response Time Long
62	-	26	3	Aux. Output #1 Short to Battery (+) - F3
62	-	26	4	Aux. Output #1 Open Circuit - F3
62	-	26	7	Aux. Output #1 Mechanical System Not Responding Properly - F3
62	-	40	3	Aux. Output #2 Short to Battery (+) - A2
62	-	40	4	Aux. Output #2 Open Circuit - A2
62	-	40	7	Aux. Output #2 Mechanical System Not Responding Properly - A2
62	-	53	3	Aux. Output #5 Short to Battery (+) - W3
62	-	53	4	Aux. Output #5 Open Circuit - W3
62	-	53	7	Aux. Output #5 Mechanical System Not Responding Properly - W3
62	-	54	3	Aux. Output #6 Short to Battery (+) - X3
62	-	54	4	Aux. Output #6 Open Circuit - X3
62	-	54	7	Aux. Output #6 Mechanical System Not Responding Properly - X3
62	-	55	3	Aux. Output #7 Short to Battery (+) - Y3
62	-	55	4	Aux. Output #7 Open Circuit - Y3
62	-	55	7	Aux. Output #7 Mechanical System Not Responding Properly - Y3
62	-	56	3	Aux. Output #8 Short to Battery (+) - A1
62	-	56	4	Aux. Output #8 Open Circuit - A1
62	-	56	7	Aux. Output #8 Mechanical System Not Responding Properly - A1
63	-	57	0	PWM #1 Above Normal Range
63	-	57	1	PWM #1 Below Normal Range
63	-	57	3	PWM #1 Short to Battery (+)
63	-	57	4	PWM #1 Open Circuit
63	-	58	0	PWM #2 Above Normal Range
63	-	58	1	PWM #2 Below Normal Range
63	-	58	3	PWM #2 Short to Battery (+)
63	-	58	4	PWM #2 Open Circuit
63	-	59	0	PWM #3 Above Normal Range
63	-	59	1	PWM #3 Below Normal Range
63	-	59	3	PWM #3 Short to Battery (+)
63	-	59	4	PWM #3 Open Circuit
63	-	60	0	PWM #4 Above Normal Range

DDC Code # (Flashed)	PID	SID	FMI	Description
63	-	60	1	PWM #4 Below Normal Range
63	-	60	3	PWM #4 Short to Battery (+)
63	-	60	4	PWM #4 Open Circuit
64	103	-	0	Turbo Overspeed
64	103	-	8	Turbo Speed Sensor Input Failure - Abnormal Period
67	106	-	3	Air Inlet Pressure Sensor Input Voltage High
67	106	-	4	Air Inlet Pressure Sensor Input Voltage Low
68	-	230	5	TPS Idle Validation Circuit Fault (open circuit)
68	-	230	6	TPS Idle Validation Circuit Fault (short to ground)
71	-	xxx	1	Injector xxx Response Time Short
72	84	-	0	Vehicle Overspeed
72	84	-	11	Vehicle Overspeed (Absolute)
73	-	151	14	ESS Transmission Stuck in Gear
73	-	226	11	Transmission Neutral Switch Failure (ESS Transmission)
73	-	227	2	Aux Analog Input Data Erratic, Intermittent, or Incorrect (ESS Transmission)
73	-	227	3	Aux Analog Input #1 Voltage High (ESS Transmission)
73	-	227	4	Aux Analog Input #1 Voltage Low (ESS Transmission)
74	70	-	4	Optimized Idle Safety Loop Short to Ground
74	99	-	0	Oil Filter Restriction High
75	168	-	0	ECM Battery Voltage High
75	-	214	0	RTC Backup Battery Voltage High
75	-	232	0	Sensor Supply Voltage High
76	121	-	0	Engine Overspeed With Engine Brake
77	100	-	0	Engine Oil Pressure High
77	102	-	1	Turbo Boost Pressure Low
77	108	-	0	Barometric Pressure High
77	108	-	1	Barometric Pressure Low
77	174	-	0	Fuel Temperature High
77	354	-	0	Relative Humidity Above Range
77	354	-	1	Relative Humidity Below Range
78	86	-	14	Cruise Control/Adaptive Cruise Control Fault
81	411	—	3	EGR Delta pressure circuit failed high
81	412	—	3	EGR temperature circuit failed high
81	412	—	9	EGR temperature smart sensor not responding
82	-	412	9	EGR Temperature Smart Sensor not Responding
82	-	412	12	EGR Temperature Smart Sensor Failed
82	411	—	4	EGR Delta pressure circuit failed low
82	412	—	4	EGR Temperature circuit failed low

DDC Code # (Flashed)	PID	SID	FMI	Description
83	73	-	0	Pump Pressure High
83	411	-	0	EGR Delta Pressure High
83	412	-	0	EGR Temperature High
85	190	-	0	Engine Overspeed
85	190	-	14	Engine Overspeed Signal
86	73	-	3	Pump Pressure Sensor Input Voltage High
86	108	-	3	Barometric Pressure Sensor Input Voltage High
87	73	-	4	Pump Pressure Sensor Input Voltage Low
87	108	-	4	Barometric Pressure Sensor Input Voltage Low

Table 4-1 Flash Codes, SAE Codes, Descriptions

LOGIC CODES (MECHANICAL FAILURES)

Logic codes indicate the detection of mechanical failures by the DDEC system. The response will be a Flash Code.

Diagnosing Flash Code 39

Failure Mode: **SID 146, FMI 7 — EGR Valve Not Responding**

Indicates: **EGR flow requested by DDEC and no EGR flow detected.**

SID 146, FMI 7 will be set by the ECM if, the signal from the Delta P sensor and EGR temperature sensor indicate EGR flow is below a minimum allowable flow when the ECM is in “EGR Mode” for a period greater than 50 seconds.

Response: The CEL will be illuminated and the system will be forced into “Boost Mode” (EGR is Disabled) for the remainder of the ignition cycle.

Possible Causes:

- EGR valve mechanical failure (closed)
- Plugged EGR cooler
- Defective Delta P sensor
- Plugged Delta P ports
- VNT vanes stuck in an open position
- Exhaust leaking at the S Pipe
- Exhaust leaking at the EGR valve
- Leaking air lines from the VPOD to the actuators (insufficient air supply)
- Leaking or low vehicle air supply to the VPODs
- VPOD mechanical failure