

# CAROLINA THOMAS CHEAT SHEET

## BH164

## Bulkhead Module

PID/SID	FMI		
0	7	backlighting/dimmer	switch not responding
1	7	clutch switch	switch not responding
3	7	head light switch	disagreement between park and on, both closed
4	2	stalk switch	high beam input switch failure
5	7	ignition switch	switch not responding
6	7	marker switch	switch not responding
7	2	wiper switch	disagreement between high and low; both on
8	2	wiper switch	disagreement between wiper off and high/low on
9	7	wiper switch	park function not responding
10	2	ICU3	hazard switch CAN error
11	2	stalk switch	left turn input failure
12	2	stalk switch	right turn input failure
13	2	stalk switch	washer switch input failure
14	2	stalk switch	wiper switch on/off input failure
15	2	stalk switch	wiper switch low input failure
16	2	stalk switch	wiper switch high input failure
17	2	J1939	wheel speed error message
18	7	wake-up	modules are kept awake
19	7	wake-up	modules are kept awake
20	7	smart switch	extra smart switch
21	7	smart switch	duplicate smart switch
22	7	smart switch	missing smart switch
25	7	CHM	unexpected air pressure feedback
26	7	CHM	no air pressure feedback
31	7	CHM	suspension proportioning valve feedback
32	7	CHM	no feedback from suspension proportioning valve
33	7	cigar lighter	output failure to lighter
34	7	ignition switch	mismatch between ICU and BHM on key position
35	2	hazard switch	mismatch between ICU & BHM on hazard switch position
36	2	wiper switch	mismatch between ICU & BHM on wiper switch position
37	9	J1939	missing J1939 from Transmission
38	9	J1939	missing J1939 from chassis hub module
39	7	remote switch	remote switch stuck
42	7	PTO	PTO not responding
43	7	PTO	PTO not responding
50	3	BHM B1.A	voltage above normal or shorted to high
50	4	BHM B1.A	voltage below normal or shorted low
51	5	BHM B1.F, B1.P, B2.K, B2.L, B6.A8	current below normal or open circuit
51	6	BHM B1.F, B1.P, B2.K, B2.L, B6.A8	current above normal or shorted to ground
52	3	BHM B1.J	voltage above normal or shorted to high
52	4	BHM B1.J	voltage below normal or shorted low
53	5	BHM B1.K, B5.C	current below normal or open circuit
53	6	BHM B1.K, B5.C	current above normal or shorted to ground
54	5	BHM B1.L	current below normal or open circuit
54	6	BHM B1.L	current above normal or shorted to ground
55	3	BHM B1.N	voltage above normal or shorted to high
55	4	BHM B1.N	voltage below normal or shorted low
56	5	BHM B1.R	current below normal or open circuit
56	6	BHM B1.R	current above normal or shorted to ground

# CAROLINA THOMAS CHEAT SHEET

## BH164

## Bulkhead Module

PID/SID	FMI		
57	5	BHM B2.M	current below normal or open circuit
57	6	BHM B2.M	current above normal or shorted to ground
58	3	BHM B3.D	voltage above normal or shorted to high
58	4	BHM B3.D	voltage below normal or shorted low
59	3	BHM B3.E	voltage above normal or shorted to high
59	4	BHM B3.E	voltage below normal or shorted low
59	5	BHM B3.E	current below normal or open circuit
59	6	BHM B3.E	current above normal or shorted to ground
60	5	BHM B3.F	current below normal or open circuit
60	6	BHM B3.F	current above normal or shorted to ground
61	5	BHM B3.G	current below normal or open circuit
61	6	BHM B3.G	current above normal or shorted to ground
62	5	BHM B3.H	current below normal or open circuit
62	6	BHM B3.H	current above normal or shorted to ground
63	5	BHM B4.B	current below normal or open circuit
63	6	BHM B4.B	current above normal or shorted to ground
64	3	BHM B4.E, B4.F	voltage above normal or shorted to high
64	4	BHM B4.E, B4.F	voltage below normal or shorted low
64	5	BHM B4.E, B4.F	current below normal or open circuit
64	6	BHM B4.E, B4.F	current above normal or shorted to ground
65	3	BHM B4.G	voltage above normal or shorted to high
65	4	BHM B4.G	voltage below normal or shorted low
66	3	BHM B4.K	voltage above normal or shorted to high
66	4	BHM B4.K	voltage below normal or shorted low
67	3	BHM B4.M, B5.E	voltage above normal or shorted to high
67	4	BHM B4.M, B5.E	voltage below normal or shorted low
67	5	BHM B4.M, B5.E	current below normal or open circuit
67	6	BHM B4.M, B5.E	current above normal or shorted to ground
68	5	BHM B5.A, B7.A12	current below normal or open circuit
68	6	BHM B5.A, B7.A12	current above normal or shorted to ground
69	5	BHM B6.A9, B6.A10	current below normal or open circuit
69	6	BHM B6.A9, B6.A10	current above normal or shorted to ground
70	5	BHM B5.B	current below normal or open circuit
70	6	BHM B5.B	current above normal or shorted to ground
71	5	BHM B5.D	current below normal or open circuit
71	6	BHM B5.D	current above normal or shorted to ground
72	5	BHM B5.F	current below normal or open circuit
72	6	BHM B5.F	current above normal or shorted to ground
72	3	BHM B5.F	voltage above normal or shorted to high
72	4	BHM B5.F	voltage below normal or shorted low
73	3	BHM B5.G	voltage above normal or shorted to high
73	4	BHM B5.G	voltage below normal or shorted low
73	5	BHM B5.G	current below normal or open circuit
73	6	BHM B5.G	current above normal or shorted to ground
74	3	BHM B5.H, B7.A1	voltage above normal or shorted to high
74	4	BHM B5.H, B7.A1	voltage below normal or shorted low
74	5	BHM B5.H, B7.A1	current below normal or open circuit
74	6	BHM B5.H, B7.A1	current above normal or shorted to ground
75	5	CHM C1.A, C1.H, C1.J	current below normal or open circuit

# CAROLINA THOMAS CHEAT SHEET

## BH164

## Bulkhead Module

PID/SID	FMI		
75	6	CHM C1.A, C1.H, C1.J	current above normal or shorted to ground
76	5	CHM C1.G, C2.H, C3.N	current below normal or open circuit
76	6	CHM C1.G, C2.H, C3.N	current above normal or shorted to ground
77	5	CHM C1.L	current below normal or open circuit
77	6	CHM C1.L	current above normal or shorted to ground
78	5	CHM C1.N	current below normal or open circuit
78	6	CHM C1.N	current above normal or shorted to ground
79	5	CHM C1.P, C2.E, C3.R	current below normal or open circuit
79	6	CHM C1.P, C2.E, C3.R	current above normal or shorted to ground
80	3	CHM C2.A	voltage above normal or shorted to high
80	4	CHM C2.A	voltage below normal or shorted low
81	3	CHM C2.F, C4.C, C4.D, C4.L, C4.M	voltage above normal or shorted to high
81	4	CHM C2.F, C4.C, C4.D, C4.L, C4.M	voltage below normal or shorted low
81	5	CHM C2.F, C4.C, C4.D, C4.L, C4.M	current below normal or open circuit
81	6	CHM C2.F, C4.C, C4.D, C4.L, C4.M	current above normal or shorted to ground
82	3	CHM C3.A	voltage above normal or shorted to high
82	4	CHM C3.A	voltage below normal or shorted low
82	5	CHM C3.A	current below normal or open circuit
82	6	CHM C3.A	current above normal or shorted to ground
83	5	CHM C3.C, C3.D	current below normal or open circuit
83	6	CHM C3.C, C3.D	current above normal or shorted to ground
84	3	CHM C3.E	voltage above normal or shorted to high
84	4	CHM C3.E	voltage below normal or shorted low
85	3	CHM C3.F	voltage above normal or shorted to high
85	4	CHM C3.F	voltage below normal or shorted low
86	3	CHM C3.J	voltage above normal or shorted to high
86	4	CHM C3.J	voltage below normal or shorted low
87	5	CHM C3.K	current below normal or open circuit
87	6	CHM C3.K	current above normal or shorted to ground
88	5	CHM C3.L	current below normal or open circuit
88	6	CHM C3.L	current above normal or shorted to ground
89	5	CHM C4.F	current below normal or open circuit
89	6	CHM C4.F	current above normal or shorted to ground
90	3	CHM C4.J	voltage above normal or shorted to high
90	4	CHM C4.J	voltage below normal or shorted low
91	5	CHM C4.K	current below normal or open circuit
91	6	CHM C4.K	current above normal or shorted to ground
92	3	CHM C4.P	voltage above normal or shorted to high
92	4	CHM C4.P	voltage below normal or shorted low
93	3	CHM C5.A	voltage above normal or shorted to high
93	4	CHM C5.A	voltage below normal or shorted low
94	3	CHM C5.B	voltage above normal or shorted to high
94	4	CHM C5.B	voltage below normal or shorted low
95	3	CHM C5.F	voltage above normal or shorted to high
95	4	CHM C5.F	voltage below normal or shorted low
96	3	CHM C5.G	voltage above normal or shorted to high
96	4	CHM C5.G	voltage below normal or shorted low
97	3	CHM C5.H	voltage above normal or shorted to high
97	4	CHM C5.H	voltage below normal or shorted low

# CAROLINA THOMAS CHEAT SHEET

## BH164

## Bulkhead Module

PID/SID	FMI		
98	3	CHM C5.J	voltage above normal or shorted to high
98	4	CHM C5.J	voltage below normal or shorted low
99	3	CHM C5.L	voltage above normal or shorted to high
99	4	CHM C5.L	voltage below normal or shorted low
100	3	CHM C5.M	voltage above normal or shorted to high
100	4	CHM C5.M	voltage below normal or shorted low
101	5	EXM1 C1.A, C1.H, C1.C, C1.N, C1.L, C1.G, C1.P	current below normal or open circuit
101	6	EXM1 C1.A, C1.H, C1.C, C1.N, C1.L, C1.G, C1.P	current above normal or shorted to ground
101	5	EXM1 C2.F, C2.E, C2.H	current below normal or open circuit
101	6	EXM1 C2.F, C2.E, C2.H	current above normal or shorted to ground
101	3	EXM1 C2.A, C2.F	voltage above normal or shorted to high
101	4	EXM1 C2.A, C2.F	voltage below normal or shorted low
101	5	EXM1 C3.A, C3.C, C3.D,C3.K, C3.L, C3.R, C3.N	current below normal or open circuit
101	6	EXM1 C3.A, C3.C, C3.D,C3.K, C3.L, C3.R, C3.N	current above normal or shorted to ground
101	3	EXM1 C3.A, C3.C, C3.E, C3.F	voltage above normal or shorted to high
101	4	EXM1 C3.A, C3.C, C3.E, C3.F	voltage below normal or shorted low
101	3	EXM1 C4.C, C4.D, C4.L, C4.M, C4.P	voltage above normal or shorted to high
101	4	EXM1 C4.C, C4.D, C4.L, C4.M, C4.P	voltage below normal or shorted low
101	5	EXM1 C4.C, C4.D, C4.F, C4.K, C4.L, C4.M	current below normal or open circuit
101	6	EXM1 C4.C, C4.D, C4.F, C4.K, C4.L, C4.M	current above normal or shorted to ground
101	3	EXM1 C5.A, C5.B,C5.C, C5.F, C5.G, C5.H, C5.L, C5.M	voltage above normal or shorted to high
101	4	EXM1 C5.A, C5.B,C5.C, C5.F, C5.G, C5.H, C5.L, C5.M	voltage below normal or shorted low
101	5	EXM2 C1.A, C1.H, C1.C, C1.N, C1.L, C1.G, C1.P	current below normal or open circuit
102	6	EXM2 C1.A, C1.H, C1.C, C1.N, C1.L, C1.G, C1.P	current above normal or shorted to ground
102	5	EXM2 C2.F, C2.E, C2.H	current below normal or open circuit
102	6	EXM2 C2.F, C2.E, C2.H	current above normal or shorted to ground
102	3	EXM2 C2.A, C2.F	voltage above normal or shorted to high
102	4	EXM2 C2.A, C2.F	voltage below normal or shorted low
102	5	EXM2 C3.A, C3.C, C3.D,C3.K, C3.L, C3.R, C3.N	current below normal or open circuit
102	6	EXM2 C3.A, C3.C, C3.D,C3.K, C3.L, C3.R, C3.N	current above normal or shorted to ground
102	3	EXM2 C3.A, C3.C, C3.E, C3.F	voltage above normal or shorted to high
102	4	EXM2 C3.A, C3.C, C3.E, C3.F	voltage below normal or shorted low
102	3	EXM2 C4.C, C4.D, C4.L, C4.M, C4.P	voltage above normal or shorted to high
102	4	EXM2 C4.C, C4.D, C4.L, C4.M, C4.P	voltage below normal or shorted low
102	5	EXM2 C4.C, C4.D, C4.F, C4.K, C4.L, C4.M	current below normal or open circuit
102	6	EXM2 C4.C, C4.D, C4.F, C4.K, C4.L, C4.M	current above normal or shorted to ground
102	3	EXM2 C5.A, C5.B,C5.C, C5.F, C5.G, C5.H, C5.L, C5.M	voltage above normal or shorted to high
102	4	EXM2 C5.A, C5.B,C5.C, C5.F, C5.G, C5.H, C5.L, C5.M	voltage below normal or shorted low
107	6	SHM J1.A, J1.E	current above normal or shorted to ground
108	6	SHM J3.G	current above normal or shorted to ground
109	6	SHM J3.M	current above normal or shorted to ground
110	5	SHM J3.F	current below normal or open circuit
110	6	SHM J3.F	current above normal or shorted to ground
111	5	SHM J3.K	current below normal or open circuit
111	6	SHM J3.K	current above normal or shorted to ground

# CAROLINA THOMAS CHEAT SHEET

## ABS136

## WABCO

PID/SID	FMI		
0	1	LF wheel sensor	air gap exceeding normal limits, wheel bearing
1	2	LF tone ring	missing or incorrect number of teeth
1	3	LF wheel sensor	dc voltage detected, voltage shorted to battery
1	4	LF wheel sensor	circuit shorted to ground
1	5	LF wheel sensor	circuit open
1	6	LF wheel sensor	sensor wires shorted together
1	7	LF tone ring	missing or incorrect number of teeth
1	8	LF slip	16 sec slip detected, check air gap and modulators
1	9	LF harness	mismatch of harness or sensor pars
1	10	LF wheel sensor	loss of wheel sensor signal
1	11	LF abnormal speed	check tone ring, air gap and sensor wiring
1	12	LF frequency too high	incorrect frequency to ecm from sensor
2	1	RF wheel sensor	air gap exceeding normal limits, wheel bearing
2	2	RF tone ring	missing or incorrect number of teeth
2	3	RF wheel sensor	dc voltage detected, voltage shorted to battery
2	4	RF wheel sensor	circuit shorted to ground
2	5	RF wheel sensor	circuit open
2	6	RF wheel sensor	sensor wires shorted together
2	7	RF tone ring	missing or incorrect number of teeth
2	8	RF slip	16 sec slip detected, check air gap and modulators
2	9	RF harness	mismatch of harness or sensor pars
2	10	RF wheel sensor	loss of wheel sensor signal
2	11	RF abnormal speed	check tone ring, air gap and sensor wiring
2	12	RF frequency too high	incorrect frequency to ecm from sensor
3	1	LR wheel sensor	air gap exceeding normal limits, wheel bearing
3	2	LR tone ring	missing or incorrect number of teeth
3	3	LR wheel sensor	dc voltage detected, voltage shorted to battery
3	4	LR wheel sensor	circuit shorted to ground
3	5	LR wheel sensor	circuit open
3	6	LR wheel sensor	sensor wires shorted together
3	7	LR tone ring	missing or incorrect number of teeth
3	8	LR slip	16 sec slip detected, check air gap and modulators
3	9	LR harness	mismatch of harness or sensor pars
3	10	LR wheel sensor	loss of wheel sensor signal
3	11	LR abnormal speed	check tone ring, air gap and sensor wiring
3	12	LR frequency too high	incorrect frequency to ecm from sensor
4	1	RR wheel sensor	air gap exceeding normal limits, wheel bearing
4	2	RR tone ring	missing or incorrect number of teeth
4	3	RR wheel sensor	dc voltage detected, voltage shorted to battery
4	4	RR wheel sensor	circuit shorted to ground
4	5	RR wheel sensor	circuit open
4	6	RR wheel sensor	sensor wires shorted together
4	7	RR tone ring	missing or incorrect number of teeth
4	8	RR slip	16 sec slip detected, check air gap and modulators
4	9	RR harness	mismatch of harness or sensor pars
4	10	RR wheel sensor	loss of wheel sensor signal
4	11	RR abnormal speed	check tone ring, air gap and sensor wiring
4	12	RR frequency too high	incorrect frequency to ecm from sensor



# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
SID	1	5	Injector Cylinder 1; Nozzle Control Valve or Spill Control Valve; Jammed Closed
SID	1	6	Injector Cylinder #1 Needle Control Valve; Valve Shorted Circuit
SID	1	7	Injector Cylinder 1; Nozzle Control Valve or Spill Control Valve; Jammed Open or Leakage
SID	1	10	Injector Cylinder #1 Needle Control Valve Abnormal Rate of Change
SID	1	14	Injector Cylinder #1 Needle Control Valve Abnormal Operation
SID	1	31	Engine Smoothness Control / Cylinder #1 Value Out of Range
SID	1	31	Cylinder 1 Misfire detected
SID	2	5	Injector Cylinder 2; Nozzle Control Valve or Spill Control Valve; Jammed Closed
SID	2	6	Injector Cylinder #2 Needle Control Valve; Valve Shorted Circuit
SID	2	7	Injector Cylinder 2; Nozzle Control Valve or Spill Control Valve; Jammed Open or Leakage
SID	2	10	Injector Cylinder #2 Needle Control Valve Abnormal Rate of Change
SID	2	14	Injector Cylinder #2 Needle Control Valve Abnormal Operation
SID	2	31	Engine Smoothness Control / Cylinder #2 Value Out of Range
SID	2	31	Cylinder 2 Misfire detected
SID	3	5	Injector Cylinder 3; Nozzle Control Valve or Spill Control Valve; Jammed Closed
SID	3	6	Injector Cylinder #3 Needle Control Valve; Valve Shorted Circuit
SID	3	7	Injector Cylinder 3; Nozzle Control Valve or Spill Control Valve; Jammed Open or Leakage
SID	3	10	Injector Cylinder #3 Needle Control Valve Abnormal Rate of Change
SID	3	14	Injector Cylinder #3 Needle Control Valve Abnormal Operation
SID	3	31	Engine Smoothness Control / Cylinder #3 Value Out of Range
SID	3	31	Cylinder 3 Misfire detected
SID	4	5	Injector Cylinder 4; Nozzle Control Valve or Spill Control Valve; Jammed Closed
SID	4	6	Injector Cylinder #4 Needle Control Valve; Valve Shorted Circuit
SID	4	7	Injector Cylinder 4; Nozzle Control Valve or Spill Control Valve; Jammed Open or Leakage
SID	4	10	Injector Cylinder #4 Needle Control Valve Abnormal Rate of Change
SID	4	14	Injector Cylinder #4 Needle Control Valve Abnormal Operation
SID	4	31	Engine Smoothness Control / Cylinder #4 Value Out of Range
SID	4	31	Cylinder 4 Misfire detected
SID	5	5	Injector Cylinder 5; Nozzle Control Valve or Spill Control Valve; Jammed Closed
SID	5	6	Injector Cylinder #5 Needle Control Valve; Valve Shorted Circuit
SID	5	7	Injector Cylinder 5; Nozzle Control Valve or Spill Control Valve; Jammed Open or Leakage
SID	5	10	Injector Cylinder #5 Needle Control Valve Abnormal Rate of Change
SID	5	14	Injector Cylinder #5 Needle Control Valve Abnormal Operation
SID	5	31	Engine Smoothness Control / Cylinder #5 Value Out of Range
SID	5	31	Cylinder 5 Misfire detected
SID	6	5	Injector Cylinder 6; Nozzle Control Valve or Spill Control Valve; Jammed Closed
SID	6	6	Injector Cylinder #6 Needle Control Valve; Valve Shorted Circuit
SID	6	7	Injector Cylinder 6; Nozzle Control Valve or Spill Control Valve; Jammed Open or Leakage
SID	6	10	Injector Cylinder #6 Needle Control Valve Abnormal Rate of Change
SID	6	14	Injector Cylinder #6 Needle Control Valve Abnormal Operation
SID	6	31	Engine Smoothness Control / Cylinder #6 Value Out of Range
SID	7	6	Injector Cylinder #7 Needle Control Valve; Valve Shorted Circuit
SID	7	10	Injector Cylinder #7 Needle Control Valve Abnormal Rate of Change
SID	7	14	Injector Cylinder #7 Needle Control Valve Abnormal Operation
SID	7	31	Engine Smoothness Control / Cylinder #7 Value Out of Range
SID	8	6	Injector Cylinder #8 Needle Control Valve; Valve Shorted Circuit
SID	8	10	Injector Cylinder #8 Needle Control Valve Abnormal Rate of Change
SID	8	14	Injector Cylinder #8 Needle Control Valve Abnormal Operation
SID	8	31	Engine Smoothness Control / Cylinder #8 Value Out of Range
SID	21	1	Crankshaft Position Sensor Signal Voltage Too Low
SID	21	2	No Match of Camshaft and Crankshaft Signals
SID	21	3	Crankshaft Position Sensor Open Circuit
SID	21	4	Crankshaft Position Sensor Short to Ground
SID	21	8	Crankshaft Position Sensor Time Out
SID	21	14	Crankshaft Position Sensor Pins Swapped

# CAROLINA THOMAS CHEAT SHEET

## ECU128 Mercedes

PID/SID	J1587	FMI	
SID	26	3	Digital Output 4 09 Circuit Failed High
SID	26	4	Digital Output 4 09 Circuit Failed Low
PID	27	3	EGR Valve Position Circuit Failed High
SID	27	3	Turbo Control Circuit Failed High
PID	27	4	EGR Valve Position Circuit Failed Low
SID	27	4	Turbo Control Circuit Failed Low
SID	27	5	Turbo Control Circuit Open
PID	27	7	EGR Valve Stuck Open
SID	32	3	Waste Gate Circuit Failed High
SID	32	4	Waste Gate Circuit Failed Low
SID	32	5	Waste Gate Circuit Failed Open
SID	32	7	Smart Remote Actuator 1 (Wastegate); Failsafe Mode; Motor On
SID	32	8	Smart Remote Actuator 1 (Wastegate); Internal Test Running
SID	32	9	Smart Remote Actuator 1 (Wastegate); Failsafe Mode; Motor Off
SID	32	11	Smart Remote Actuator 1 (Wastegate); Restricted Operability
SID	32	14	Smart Remote Actuator 1 (Wastegate); No Failsafe Mode; Motor Off
SID	32	15	Smart Remote Actuator 1 (Wastegate); Temperature Warning
SID	32	16	Smart Remote Actuator 1 (Wastegate); Temperature Fault
SID	32	31	Smart Remote Actuator 1 (Wastegate); Unknown Error Code
SID	33	3	Fan Stage 1 Circuit Failed High
SID	33	4	Fan Stage 1 Circuit Failed Low
SID	33	5	Fan Stage 1 Circuit Failed Open
SID	39	2	Starter Switch Inconsistent
SID	39	3	Engine Starter Relay Shorted to High Source
SID	39	4	Engine Starter Relay Open Load Failure
SID	39	5	Engine Starter Relay Open Circuit
SID	39	7	Engine Starter Relay - Starter Does Not Engage
SID	39	7	Engine Starter Relay Jammed
SID	39	14	Starter Electronic Fault / ECU internal (Main)
SID	39	14	Starter Jammed (Tooth to Tooth Jam)
SID	39	31	Starter Electronic Fault / ECU internal (Res)
SID	40	3	Constant Throttle Valve Circuit Failed High
SID	40	4	Constant Throttle Valve Circuit Failed Low
SID	40	5	Constant Throttle Valve Circuit Failed Open
SID	40	3	Digital Output 3 17 Circuit Failed High
SID	40	4	Digital Output 3 17 Circuit Failed Low
PID	43	2	Ignition Switch Not Plausible
PID	45	0	Grid Heater Permanently On
PID	45	3	Grid Heater Circuit Failed High
PID	45	4	Grid Heater Circuit Failed Low
PID	45	7	Grid Heater Defect
PID	45	14	Grid Heater Special Instructions
PID	51	0	Intake Air Throttle Position Low
PID	51	1	Intake Air Throttle Position High
PID	51	2	Intake Throttle Position Deviation Error
PID	51	2	Intake Throttle Valve; Spring Response Time Not Plausible
SID	51	3	Intake Air Throttle Circuit Failed High
SID	51	3	Water Pump 1 Circuit Failed High
SID	51	4	Intake Air Throttle Circuit Failed Low
SID	51	4	Water Pump 1 Circuit Failed Low
SID	51	5	Water Pump 1 Circuit Failed Open
PID	51	7	Intake Throttle Auto Calibration Error



# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
PID	51	7	Intake Throttle Valve; Stuck
PID	51	8	Intake Throttle Valve; Current Deviation Too High
PID	51	14	Intake Throttle Valve; Integrated Absolute Error Plausibility
SID	51	3	Digital Output 3 09 Circuit Failed High
SID	51	4	Digital Output 3 09 Circuit Failed Low
SID	52	3	Digital Output 4 07 Circuit Failed High
SID	52	4	Digital Output 4 07 Circuit Failed Low
SID	53	3	Electrostatic Oil Separator Circuit Failed High
SID	53	4	Electrostatic Oil Separator Circuit Failed Low
SID	53	5	Electrostatic Oil Separator Circuit Failed Open
SID	53	3	Digital Output 1 13 Circuit Failed High
SID	53	4	Digital Output 1 13 Circuit Failed Low
SID	54	3	Digital Output 3 10 Circuit Failed High
SID	54	4	Digital Output 3 10 Circuit Failed Low
SID	55	3	Turbo Compound Valve Circuit Failed High
SID	55	4	Turbo Compound Valve Circuit Failed Low
SID	55	5	Turbo Compound Valve Circuit Failed Open
SID	55	3	Digital Output 2 10 Circuit Failed High (CEL / AWL Lamp)
SID	55	4	Digital Output 2 10 Circuit Failed Low (CEL / AWL Lamp)
SID	56	3	Digital Output 3 12 Circuit Failed High
SID	56	4	Digital Output 3 12 Circuit Failed Low
SID	57	3	Actuator Turbo Compound Bypass Circuit Failed High
SID	57	4	Actuator Turbo Compound Bypass Circuit Failed Low
SID	57	5	Actuator Turbo Compound Bypass Circuit Failed Open
SID	59	3	Intake Throttle Valve Circuit Failed High
SID	59	4	Intake Throttle Valve Circuit Failed Low
SID	59	5	Intake Throttle Valve Circuit Failed Open
SID	59	14	Intake Air Throttle Control Electrical Fault
SID	60	3	Fan Stage 2 Circuit Failed High
SID	60	4	Fan Stage 2 Circuit Failed Low
SID	60	5	Fan Stage 2 Circuit Failed Open
SID	64	1	Camshaft Position Sensor Signal Voltage Too Low
SID	64	3	Camshaft Position Sensor Open Circuit
SID	64	4	Camshaft Position Sensor Short to Ground
SID	64	8	Camshaft Position Sensor Time Out
SID	64	14	Camshaft Position Sensor Pins Swapped
SID	70	3	Gridheater Circuit Failed High
SID	70	4	Gridheater Circuit Failed Low
SID	70	5	Gridheater Circuit Failed Open
PID	70	2	Park Brake Status Not Plausible (Vehicle Moving)
SID	79	3	Jake Brake Stage 1 Circuit Failed High
SID	79	4	Jake Brake Stage 1 Circuit Failed Low
SID	79	5	Jake Brake Stage 1 Circuit Failed Open
SID	80	3	Jake Brake Stage 2 Circuit Failed High
SID	80	4	Jake Brake Stage 2 Circuit Failed Low
SID	80	5	Jake Brake Stage 2 Circuit Failed Open
SID	81	3	Exhaust Brake Circuit Failed High
SID	81	4	Exhaust Brake Circuit Failed Low
SID	81	5	Exhaust Brake Circuit Failed Open
PID	84	0	Vehicle Speed Above Programmable Threshold1 While Driving
PID	84	2	VSS Anti Tamper Detection via Virtual Gear Ratio
PID	84	3	Vehicle Speed Sensor Circuit Failed High
PID	84	4	Vehicle Speed Sensor Circuit Failed Low
PID	84	6	VSS Anti-Tamper Detection via ABS Vehicle Speed Comparison
PID	84	8	VSS Anti Tamper Detection via Fixed Frequency Device
PID	84	11	Vehicle Speed Above Programmable Threshold2 While Driving

# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
PID	84	13	J1939 Wheel-Based Vehicle Speed Signal from Source#1 is missing
PID	84	13	J1939 Wheel-Based Vehicle Speed Signal from Source#2 is missing
PID	84	13	J1939 Wheel-Based Vehicle Speed Signal from Source#3 is missing
PID	84	19	J1939 Wheel-Based Vehicle Speed Signal from Source#1 is erratic
SID	84	19	J1939 Wheel-Based Vehicle Speed Signal from Source#2 is erratic
PID	84	19	J1939 Wheel-Based Vehicle Speed Signal from Source#3 is erratic
PID	84	20	Vehicle Speed Sensor Drifted High Error (VSS signal not plausible)
PID	84	21	Vehicle Speed Failure
PID	91	3	Accelerator Pedal Circuit Failed High
PID	91	3	Accelerator Pedal Signal Circuit Failed High
PID	91	4	Accelerator Pedal Circuit Failed Low
PID	91	7	Pwm Accelerator Pedal Idle Not Recognized
PID	91	8	Pwm Accelerator Pedal Signal 1 Frequency Out Of Range
PID	91	13	Accelerator Pedal Learn Error
PID	91	14	Pwm Accelerator Pedal Not Learned
PID	91	31	Pwm Accelerator Pedal Learned Range to Large
PID	91	8	Pwm Accelerator Pedal Signal 2 Frequency Out Of Range
PID	91	14	Pwm Accelerator Pedal GAS1 and GAS2 Signal Missing
PID	94	3	Fuel Compensation Pressure Sensor Circuit Failed High
PID	94	4	Fuel Compensation Pressure Sensor Circuit Failed Low
PID	94	31	Fuel Cut Off Valve Pressure Not Plausible
PID	97	3	Water in Fuel Circuit Failed High
PID	97	4	Water in Fuel Circuit Failed Low
PID	98	3	Oil Level Circuit Failed High
PID	98	4	Oil Level Circuit Failed Low
PID	98	13	Oil Level Measurement; Configuration Error
PID	98	14	Oil Level Measurement; Oil Level Too Low or Too High
PID	98	0	Oil Level High
PID	98	1	Oil Level Very Low
PID	98	18	Oil Level Low
PID	100	1	Engine Oil Pressure Low
PID	100	2	Oil Pressure Plausibility - Engine Running
PID	100	3	Engine Oil Pressure Circuit Failed High
PID	100	4	Engine Oil Pressure Circuit Failed Low
PID	100	20	Oil Pressure Plausibility - Stop
PID	100	1	Oil Pressure Very Low
PID	100	18	Oil Pressure Low
PID	103	0	Turbo Charger Speed Above Threshold (Low Box)
PID	103	1	Turbo Charger Speed Below Threshold (High Box)
PID	103	2	Turbocharger Speed Not Plausible
PID	103	3	Turbo Charger Speed Sensor Circuit Failed High
PID	103	4	Turbo Charger Speed Sensor Circuit Failed Low
PID	105	2	Intake Manifold Temperature Plausibility Error
PID	105	3	Intake Manifold Temperature Circuit Failed High
PID	105	4	Intake Manifold Temperature Circuit Failed Low
PID	105	14	Difference Intake Manifold Temperature and EGR Temp. Less Than Threshold (Low Box)
PID	105	14	Difference Intake Manifold and I Cooler Temperature Out Less Than Threshold (Low Box)
PID	105	20	Intake Manifold Temperature Drift (Low Box)
PID	105	21	Intake Manifold Temperature Drift (High Box)
PID	105	31	Difference Intake Manifold and I Cooler Temperature Out Less Than Threshold (High Box)
PID	106	0	Inlet Manifold Pressure Failed High
PID	106	1	Inlet Manifold Pressure Failed Low
PID	106	3	Intake Manifold Pressure Circuit Failed High
PID	106	3	Inlet Manifold Pressure Sampling Range Failed
PID	106	4	Intake Manifold Pressure Circuit Failed Low
PID	106	20	Ambient and Inlet Manifold Pressure Difference (Low Box)

# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
PID	106	20	Intake Manifold Pressure Plausibility (Low Box)
PID	106	21	Ambient and Inlet Manifold Pressure Difference (High Box)
PID	106	21	Intake Manifold Pressure Plausibility Error; Pressure Too Low (High Box)
PID	107	0	Air Filter Restriction High
PID	107	9	J1939 PROP11 message is missing
PID	108	2	Ambient Pressure Plausibility Fault (High Box) 1
PID	108	3	Barometric Pressure Circuit Failed High
PID	108	4	Barometric Pressure Circuit Failed Low
PID	108	20	Ambient Pressure Plausibility Fault (High Box) 2
PID	110	0	Coolant Temperature High
PID	110	2	Engine Coolant Sensor (OUT); General Temp. Plausibility Error
PID	110	3	Engine Coolant Outlet Temperature Circuit Failed High
PID	110	3	Engine Coolant Inlet Temperature Circuit Failed High
PID	110	4	Engine Coolant Outlet Temperature Circuit Failed Low
PID	110	4	Engine Coolant Inlet Temperature Circuit Failed Low
PID	110	14	Coolant Temperature / Engine Oil Temperature Plausibility Fault
PID	110	0	Coolant Temperature Very High
PID	110	16	Coolant Temperature High
PID	111	1	Coolant Level Very Low
PID	111	3	Coolant Level Circuit Failed High
PID	111	4	Coolant Level Circuit Failed Low
PID	111	18	Coolant Level Low
SID	123	3	Digital Output 4 10 Circuit Failed Open
SID	123	4	Digital Output 4 10 Circuit Failed Low
SID	123	7	Optimized Idle Safety Loop Faulted
PID	132	1	Air Mass Flow Too Low
PID	132	7	Intake Air Throttle Valve Closure Detection- Positive Torque
PID	132	14	Intake Air Throttle Valve Closure Detection -Braking Condition
SID	146	0	EGR Valve Position Feedback Failed (High Box)
SID	146	1	EGR Valve Position Feedback Failed (Low Box)
SID	146	2	EGR Valve Position Feedback Failed
PID	146	3	EGR Valve Circuit Failed High
PID	146	4	EGR Valve Circuit Failed Low
PID	146	5	EGR Valve Circuit Failed Open
SID	146	7	EGR Valve Position Incorrect
SID	146	7	Smart Remote Actuator 3 (EGR); Failsafe Mode; Motor On
SID	146	8	Smart Remote Actuator 3 (EGR); Internal Test Running
SID	146	9	Smart Remote Actuator 3 (EGR); Failsafe Mode; Motor Off
SID	146	11	Smart Remote Actuator 3 (EGR); Restricted Operability
SID	146	14	EGR Valve Position Positive Torque Error
SID	146	14	Smart Remote Actuator 3 (EGR); No Failsafe Mode; Motor Off
SID	146	15	Smart Remote Actuator 3 (EGR); Temperature Warning
SID	146	16	Smart Remote Actuator 3 (EGR); Temperature Fault
SID	146	31	Smart Remote Actuator 3 (EGR); Unknown Error Code
SID	147	7	Turbo Actuator; Failsafe Mode; Motor On
SID	147	8	Turbo Actuator; Internal Test Running
SID	147	9	Turbo Actuator; Failsafe Mode; Motor Off
SID	147	11	Turbo Actuator; Restricted Operability
SID	147	14	Turbo Actuator; No Failsafe Mode; Motor Off
SID	147	15	Turbo Actuator; Temperature Warning
SID	147	16	Turbo Actuator; Temperature Fault
SID	147	31	Turbo Actuator; Unknown Error Code
SID	155	0	Engine Air Flow Out of Range Low
SID	155	0	Soot Level Very High
SID	155	0	Turbocharger Compressor Inlet Differential Pressure Too High (Low Box)
SID	155	1	EDV Failed Self Test

# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
SID	155	1	Turbocharger Compressor Inlet Differential Pressure Too Low (High Box)
SID	155	2	Engine Coolant Sensor (IN); General Temp. Plausibility Error
SID	155	3	Service Push Button Circuit Failed High
SID	155	3	Compressor Differential Pressure Outlet Failed High
SID	155	3	Flap In Front of EGR Cooler Circuit Failed High
SID	155	3	Water Pump 2 Circuit Failed High
SID	155	3	Switchable Air Compressor Circuit Failed High
SID	155	3	EGR Pressure Failed High
SID	155	3	Proportional Valve Bank 1 Circuit Failed High
SID	155	3	Proportional Valve Bank 2 Circuit Failed High
SID	155	3	Compressor Differential Pressure Inlet Failed High
SID	155	3	Oil Separator Circuit Failed High
SID	155	4	Compressor Differential Pressure Outlet Failed Low
SID	155	4	Flap In Front of EGR Cooler Circuit Failed Low
SID	155	4	Water Pump 2 Circuit Failed Low
SID	155	4	Switchable Air Compressor Circuit Failed Low
SID	155	4	EGR Pressure Failed Low
SID	155	4	Proportional Valve Bank 2 Circuit Failed Low
SID	155	4	Compressor Differential Pressure Inlet Failed Low
SID	155	4	Oil Separator Circuit Failed Low
SID	155	5	Flap In Front of EGR Cooler Circuit Failed Open
SID	155	5	Switchable Air Compressor Circuit Failed Open
SID	155	5	Turbocharger Compressor Inlet Differential Pressure Sampling Range Failure
SID	155	6	Rail Pressure Governor Error; Current Too High
SID	155	6	Current Flow on HS1 IM1 Too High
SID	155	7	Smart Remote Actuator 2; Failsafe Mode; Motor On
SID	155	7	FCV Failed Self Test
SID	155	7	Oil Separator; Max. Duration Time Reached
SID	155	8	Smart Remote Actuator 2; Internal Test Running
SID	155	9	Smart Remote Actuator 2; Failsafe Mode; Motor Off
SID	155	11	Smart Remote Actuator 2; Restricted Operability
SID	155	13	Turbocharger Compressor Outlet Differential Pressure Sensor Out Of Calibration 1
SID	155	13	Turbocharger Compressor Outlet Differential Pressure Sensor Out Of Calibration 2
SID	155	13	Turbocharger Compressor Inlet Differential Pressure Sensor Out Of Calibration 1
SID	155	13	Turbocharger Compressor Inlet Differential Pressure Sensor Out Of Calibration 2
SID	155	14	Fuel Pressure Too High/Too Low
SID	155	14	Smart Remote Actuator 2; No Failsafe Mode; Motor Off
SID	155	14	Rail Pressure Governor; Valve Stays Open
SID	155	14	Rail Pressure Governor; Leakage in High Pressure Too High
SID	155	14	Rail Pressure Governor Sensor; Signal Drift
SID	155	14	Rail Pressure Governor Sensor; Sensor Supply Line Broken
SID	155	14	High Pressure Pump; Leakage or TDC Position Wrong
SID	155	15	Smart Remote Actuator 2; Temperature Warning
SID	155	15	DPF Zone 3 Condition
SID	155	15	DPF Ash Clean Request
SID	155	16	Smart Remote Actuator 2; Temperature Fault
SID	155	16	Soot Level High
SID	155	16	DPF Ash Derate Request
SID	155	31	Smart Remote Actuator 2; Unknown Error Code
SID	155	31	Cylinder 6 Misfire Detected
SID	155	31	Cylinder 7 Misfire Detected
SID	155	31	Cylinder 8 Misfire Detected
SID	155	31	DPF Zone 2 Condition
SID	155	13	20ms ECU OS Task Locked in an Endless Loop
SID	155	13	20ms ECU OS Task Timed out Prior to Completion
SID	155	13	1000ms ECU OS Task Locked in an Endless Loop

# CAROLINA THOMAS CHEAT SHEET

## ECU128 Mercedes

PID/SID	J1587	FMI	
SID	155	13	1000ms ECU OS Task Timed out Prior to Completion
SID	155	14	MCM Fault Codes Unavailable via J1939 and J1587
SID	155	14	MCM Fault Code Table Inconsistent - Upgrade MCM Software
SID	155	14	Insufficient Static Fault Code Storage Memory - Upgrade CPC Software
SID	155	14	MCM Fault Code Table Inconsistent - Upgrade MCM Software
SID	155	19	Adaptive Cruise Control Message Not Received
SID	155	9	DPF Regen Inhibit MUX Switch Message Stopped Arriving
SID	155	13	DPF Regen Inhibit MUX Switch Message Contains SNV Indicator
SID	155	14	DPF Regen Inhibit MUX Switch Message Not Received this Ign Cycle
SID	155	19	DPF Regen Inhibit MUX Switch Message Contains Data Error Indicator
SID	155	9	DPF Regen Force MUX Switch Message Stopped Arriving
SID	155	13	DPF Regen Force MUX Switch Message Contains SNV Indicator
SID	155	14	DPF Regen Force MUX Switch Message Not Received this Ign Cycle
SID	155	19	DPF Regen Force MUX Switch Message Contains Data Error Indicator
SID	156	4	Ether Start; Shorted to Ground
SID	156	5	Water Pump 2 Circuit Failed Open
SID	156	14	Misfire Detected
SID	157	3	Ether Start; Shorted to Battery
SID	157	4	RCP Test Function 1 Circuit Failed Low
SID	158	3	RCP Test Function 1 Circuit Failed High
SID	158	5	Ether Start; Open Load
SID	159	5	RCP Test Function 1 Circuit Failed Open
SID	160	4	RCP Test Function 2 Circuit Failed Low
SID	161	3	RCP Test Function 2 Circuit Failed High
SID	162	5	RCP Test Function 2 Circuit Failed Open
SID	163	4	Volute Control Valve; Shorted to Ground
PID	163	13	J1939 Transmission Current Gear Signal is missing
PID	163	19	J1939 Transmission Current Gear Signal is erratic
PID	164	3	Rail Pressure Governor Sensor Circuit Failed High
PID	164	3	Rail Pressure Governor (High Side) Error
SID	164	3	Volute Control Valve; Shorted to Battery
PID	164	4	Rail Pressure Governor Sensor Circuit Failed Low
PID	164	4	Rail Pressure Governor (Low Side) Error
PID	164	5	Rail Pressure Governor Error; Current Governor; Current Too Low
PID	164	7	Rail Pressure Governor Error; Pressure Governor; Pressure Not Plausible
PID	164	14	Rail Pressure Governor Error; Open Loop Error
SID	165	5	Volute Control Valve; Open Load
SID	166	4	Volute Shut Off Valve; Shorted to Ground
SID	167	3	Volute Shut Off Valve; Shorted to Battery
PID	168	0	Battery Voltage High
PID	168	1	Battery Voltage Low
SID	168	5	Volute Shut Off Valve; Open Load
PID	168	0	Battery Voltage Very Low
PID	168	0	Battery Voltage High
PID	168	14	Opt Idle Detected Charging System or Battery Failure
PID	168	14	ECU powerdown not completed (Main Battery Terminal Possibly Floating)
PID	168	18	Battery Voltage Low
SID	169	4	Function 30 Circuit Failed Low
SID	170	3	Function 30 Circuit Failed High
PID	171	3	Ambient Temperature Circuit Failed High
PID	171	4	Ambient Temperature Circuit Failed Low
SID	171	5	Function 30 Circuit Failed Open
PID	171	2	Ambient Temperature Sensor Data Erratic
PID	171	9	J1587 Ambient Air Temp Sensor Data Message Stopped Arriving
PID	171	14	J1587 Ambient Air Temp Sensor Data Not Received This Ign Cycle
SID	172	4	Function 31 Circuit Failed Low

# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
SID	173	3	Function 31 Circuit Failed High
PID	174	0	Fuel Temperature Too High
PID	174	2	Fuel Temperature Sensor, General Temp. Plausibility
PID	174	3	Fuel Temperature Circuit Failed High
PID	174	4	Fuel Temperature Circuit Failed Low
SID	174	5	Function 31 Circuit Failed Open
PID	175	2	Engine Oil Temperature Sensor, General Temp. Plausibility
PID	175	3	Engine Oil Temperature Circuit Failed High
PID	175	4	Engine Oil Temperature Circuit Failed Low
PID	175	14	Engine Oil Temperature Sensor Plausibility Fault
PID	187	3	Idle Volume Sensor Shorted to Battery
PID	187	4	Idle Volume Sensor Shorted to Ground
PID	190	0	Engine Speed High
SID	203	2	Throttle inhibit switch signal not plausible due to excess vehicle speed
SID	211	3	Multiplexer 2 Channel 1; Shorted High
SID	211	3	Multiplexer 2 Channel 2; Shorted High
SID	211	3	3V Sensor Supply Bank 1 Circuit Failed High
SID	211	3	Multiplexer 3 Channel 1; Shorted High
SID	211	3	Multiplexer 3 Channel 2; Shorted High
SID	211	3	3V Sensor Supply Bank 2 Circuit Failed High
SID	211	4	3V Sensor Supply Bank 1 Circuit Failed Low
SID	211	4	3V Sensor Supply Bank 2 Circuit Failed Low
SID	211	3	Accelerator Pedal Supply Voltage Circuit Failed High
SID	211	3	Accelerator Pedal Supply Voltage Circuit Failed High
SID	211	4	Accelerator Pedal Supply Voltage Circuit Failed Low
SID	211	4	Pwm Accelerator Pedal Supply Voltage Missing
SID	212	3	5V Sensor Supply Bank 1 Circuit Failed High
SID	212	3	Multiplexer 1 Channel 1; Shorted High
SID	212	3	Multiplexer 1 Channel 2; Shorted High
SID	212	3	5V Sensor Supply Bank 2 Circuit Failed High
SID	212	4	5V Sensor Supply Bank 1 Circuit Failed Low
SID	212	4	5V Sensor Supply Bank 2 Circuit Failed Low
SID	230	2	Idle Validation Switch Inputs Reversed
SID	230	3	Idle Validation Switch 1 Circuit Failed High
SID	230	4	Idle Validation Switch 1 Circuit Failed Low
SID	230	5	Idle Validation Switch 2 Circuit Failed Low
SID	230	6	Idle Validation Switch 2 Circuit Failed High
SID	231	9	J1939 Retarder Fluid Message is missing
SID	231	9	J1939 EEC2 Message is missing
SID	231	9	J1939 ETC1 Message is missing
SID	231	13	J1939 Transmission Output Shaft Speed Signal is missing
SID	231	19	J1939 Transmission Output Shaft Speed Signal is erratic
SID	231	9	J1939 ETC2 Message is missing
SID	231	9	J1939 CCVS Message from Source #1 is missing
SID	231	9	J1939 CCVS Message from Source #2 is missing
SID	231	9	J1939 CCVS Message from Source #3 is missing
SID	231	14	J1939 Data Link Failure
SID	231	9	J1939 EBC2 Message from ABS is missing
SID	231	13	J1939 Front Axle Speed Signal is missing
SID	231	19	J1939 Front Axle Speed Signal is erratic
SID	231	9	J1939 EBC1 Message is missing
SID	231	13	J1939 Engine Retarder Selection Signal Missing
SID	231	19	J1939 Engine Retarder Selection Signal Erratic
SID	231	9	J1939 PTO Message Not Received This Ignition Cycle
SID	231	9	J1939 CM1 Message is missing
SID	231	9	Adaptive Cruise Control Device Reporting Error

# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
SID	231	9	J1939 TCO1 Message is missing
SID	231	13	J1939 Tachograph Vehicle Speed Signal is missing
SID	231	19	J1939 Tachograph Vehicle Speed Signal is erratic
SID	231	9	J1939 ERC1 Message is missing
SID	231	9	J1939 TCFG2 Message is missing
SID	231	9	J1939 ETC7 Message is missing
SID	231	9	J1939 ESS Message is missing
SID	233	12	CPC2 Hardware Failure
SID	234	13	J1939 Park Brake Switch Signal from Source #1 is missing
SID	234	13	J1939 Park Brake Switch Signal from Source #2 is missing
SID	234	13	J1939 Park Brake Switch Signal from Source #3 is missing
SID	234	19	J1939 Park Brake Switch Signal from Source #1 is erratic
SID	234	19	J1939 Park Brake Switch Signal from Source #2 is erratic
SID	234	19	J1939 Park Brake Switch Signal from Source #3 is erratic
SID	242	13	J1939 Cruise Control Accelerate Switch Signal from Source #1 is missing
SID	242	13	J1939 Cruise Control Accelerate Switch Signal from Source #2 is missing
SID	242	13	J1939 Cruise Control Accelerate Switch Signal from Source #3 is missing
SID	242	19	J1939 Cruise Control Accelerate Switch Signal from Source #1 is erratic
SID	242	19	J1939 Cruise Control Accelerate Switch Signal from Source #2 is erratic
SID	242	19	J1939 Cruise Control Accelerate Switch Signal from Source #3 is erratic
SID	243	4	Cruise Control SET and RESUME Circuits Failed Low
SID	243	13	J1939 Cruise Control Coast Switch Signal from Source #1 is missing
SID	243	13	J1939 Cruise Control Coast Switch Signal from Source #2 is missing
SID	243	13	J1939 Cruise Control Coast Switch Signal from Source #3 is missing
SID	243	19	J1939 Cruise Control Coast Switch Signal from Source #1 is erratic
SID	243	19	J1939 Cruise Control Coast Switch Signal from Source #2 is erratic
SID	243	19	J1939 Cruise Control Coast Switch Signal from Source #3 is erratic
SID	244	13	J1939 Cruise Control Enable Switch Signal from Source #1 is missing
SID	244	13	J1939 Cruise Control Enable Switch Signal from Source #2 is missing
SID	244	13	J1939 Cruise Control Enable Switch Signal from Source #3 is missing
SID	244	19	J1939 Cruise Control Enable Switch Signal from Source #1 is erratic
SID	244	19	J1939 Cruise Control Enable Switch Signal from Source #2 is erratic
SID	244	19	J1939 Cruise Control Enable Switch Signal from Source #3 is erratic
SID	246	2	Service Brake Status Not Plausible
SID	246	13	J1939 Service Brake Switch Signal from Source #1 is missing
SID	246	13	J1939 Service Brake Switch Signal from Source #2 is missing
SID	246	13	J1939 Service Brake Switch Signal from Source #3 is missing
SID	246	19	J1939 Service Brake Switch Signal from Source #1 is erratic
SID	246	19	J1939 Service Brake Switch Signal from Source #2 is erratic
SID	246	19	J1939 Service Brake Switch Signal from Source #3 is erratic
PID	247	0	MCM Engine Hours Data higher than expected
PID	247	1	MCM Engine Hours Data lower than expected
PID	247	9	MCM Engine Hours Data not received or stopped arriving
PID	247	10	MCM Engine Hours Data increasing at an implausible rate
PID	247	14	MCM Reported Ash Mileage is Lower then the CPC Stored Value
SID	248	2	Invalid-Data on Engine CAN Link
SID	248	9	No Data Received from Engine CAN Link
SID	248	9	Engine-CAN Low Wire Defect - (wire 1)
SID	248	9	Engine CAN High Wire Defect - (wire 2)
SID	248	2	ECAN ID_1629 Diagnostic Message Reporting Data Not Available
SID	248	4	ECAN Link Circuit Failure
SID	248	9	ECAN ID_1629 Diagnostic Message No Longer Being Received
SID	248	9	Incorrect MCM System ID Received
SID	248	9	MCM System ID Not Received or Stopped Arriving
SID	248	10	ECAN ID_1629 Reporting Inconsistent Number of Frames
SID	248	13	ECAN ID_1629 Diagnostic Message Not Received This Ignition Cycle

# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
SID	248	14	ECAN ID_1629 Diagnostic Message Reporting an Unknown MUID
SID	250	14	J1708 Data Link Failure
SID	251	4	Proportional Valve Bank 1 Circuit Failed Low
SID	253	12	EEPROM Read / Write Operation Failed
SID	253	13	Calibration Data Not Plausible
SID	253	13	Calibration Data Not Plausible (CPLD)
SID	253	2	EEPROM Checksum Failure
SID	253	2	EEPROM Checksum Failure for the SCR Block
SID	253	13	SCR Number Out of Range
SID	254	14	XFLASH Static Fault Code Memory Page Read Write Failure
SID	254	2	CPC Hardware/Software Mismatch
SID	254	12	DDEC Data Xflash Write Error. Replace CPC2.
SID	257	3	MIL Lamp Circuit Failed High
SID	257	4	MIL Lamp Circuit Failed Low
SID	257	5	MIL Lamp Circuit Failed Open
SID	257	3	Digital Output 3 16 Circuit Failed High
SID	257	4	Digital Output 3 16 Circuit Failed Low
SID	258	3	Digital Output 4 06 Circuit Failed High
SID	258	4	Digital Output 4 06 Circuit Failed Low
SID	259	3	Turbo Brake Sleeve Circuit Failed High
SID	259	4	Turbo Brake Sleeve Circuit Failed Low
SID	259	5	Turbo Brake Sleeve Circuit Failed Open
SID	259	3	Digital Output 1 05 Circuit Failed High
SID	259	4	Digital Output 1 05 Circuit Failed Low
SID	260	3	Digital Output 1 04 Circuit Failed High
SID	260	4	Digital Output 1 04 Circuit Failed Low
SID	261	3	Function 20 Circuit Failed High
SID	261	4	Function 20 Circuit Failed Low
SID	261	5	Function 20 Circuit Failed Open
SID	261	3	Digital Output 3 07 Circuit Failed High
SID	261	4	Digital Output 3 07 Circuit Failed Low
SID	261	5	Digital Output 3 07 Open Circuit
SID	261	7	TOP2 Shift Failure
SID	262	3	EGR Water Cooling Regulator Circuit Failed High
SID	262	4	EGR Water Cooling Regulator Circuit Failed Low
SID	262	5	EGR Water Cooling Regulator Circuit Failed Open
SID	262	3	Digital Output 3 08 Circuit Failed High
SID	262	4	Digital Output 3 08 Circuit Failed Low
SID	262	5	Digital Output 3 08 Open Circuit
SID	263	3	High Side Digital Output # 1 Circuit Failed High
SID	263	3	High Side Digital Output # 2 Circuit Failed Open
SID	263	4	High Side Digital Output # 1 Circuit Failed Low
SID	263	3	Digital Output 4 10 Circuit Failed High
SID	264	4	High Side Digital Output # 2 Circuit Failed Low
SID	269	0	VNT Valve Position Feedback; Position Too Low (High Box)
SID	269	1	VNT Valve Position Feedback; Position Too High (Low-Box)
SID	269	2	VNT Valve Position Feedback Failed
SID	269	3	Position Waste Gate (VNT) Failed High
SID	269	4	Position Waste Gate (VNT) Failed Low
SID	269	9	Turbo Actuator (CAN3) Communication Error
SID	272	2	Charge Air Cooler Outlet Temperature Sensor Plausibility Error
SID	272	3	Charge Air Cooler Outlet Temperature Circuit Failed High
SID	272	4	Charge Air Cooler Outlet Temperature Circuit Failed Low
SID	272	20	Charge Air Outlet Temperature Drift (Low box)-
SID	272	21	Charge Air Outlet Temperature Drift (High box)



# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
SID	273	2	Turbocharger/Supercharger Boost System Performance
SID	273	3	Turbocharger Compressor Outlet Pressure Circuit Failed High
SID	273	3	Charge Air Cooler Outlet Pressure Circuit Failed High
SID	273	4	Turbocharger Compressor Outlet Pressure Circuit Failed Low
SID	273	4	Charge Air Cooler Outlet Pressure Circuit Failed Low
SID	277	0	EGR Flow Target Error Diagnostic - High Flow
SID	277	1	EGR Flow Target Error Diagnostic - Low Flow
PID	314	2	Compressor Pressure Plausibility Fault (High Box)
SID	314	3	Turbocharger Compressor Inlet Pressure Circuit Failed High
SID	314	4	Turbocharger Compressor Inlet Pressure Circuit Failed Low
PID	314	5	Compressor Inlet Pressure Plausibility Fault (Delta)
SID	314	20	Compressor Inlet Pressure Plausibility Error; Pressure Too High (High Box)
SID	317	3	Injector Needle Control Valve Cylinder 1;2;3 Shorted to Battery
SID	317	3	Injector Needle Control Valve Cylinder 4;5;6 Shorted to Battery
SID	317	3	Switching Power Supply Voltage Failed High
SID	317	3	Injector Needle Control Valve Bank 3; Shorted to Battery
SID	317	3	Injector Spill Control Valve Cylinder 1;2;3 Shorted to Battery
SID	317	3	Injector Spill Control Valve Cylinder 4;5;6 Shorted to Battery
SID	317	3	Injector Spill Control Valve ("Amplifier") Bank 6; Shorted to Battery
SID	317	4	Injector Needle Control Valve Cylinder 1; 2; 3 Shorted to Ground
SID	317	4	Injector Needle Control Valve Cylinder 4; 5; 6 Shorted to Ground
SID	317	4	Switching Power Supply Voltage Failed Low
SID	317	4	Injector Needle Control Valve Bank 3; Shorted to Ground
SID	317	4	Injector Spill Control Valve Cylinder 1; 2; 3 Shorted to Ground
SID	317	4	Injector Spill Control Valve Cylinder 4; 5; 6 Shorted to Ground
SID	317	4	Injector Spill Control Valve ("Amplifier") Bank 6; Shorted to Ground
SID	318	2	DOC Inlet Temperature Sensor - Plausibility Error
PID	318	3	DOC Inlet Temperature Circuit Failed High
PID	318	4	DOC Inlet Temperature Circuit Failed Low
SID	318	10	DOC Inlet Temperature Sensor Stuck
SID	320	0	DPF Outlet Temperature High
SID	320	2	DPF Outlet Temperature Sensor - Plausibility Error
SID	320	3	DPF Outlet Temperature Circuit Failed High
SID	320	4	DPF Outlet Temperature Circuit Failed Low
SID	320	10	DPF Outlet Temperature Sensor Stuck
SID	320	14	Abnormal DPF Temperature Rise 2
SID	322	0	DOC Outlet Temperature Too High
SID	322	2	DOC Outlet Temperature Sensor - Plausibility Error
PID	322	3	DOC Outlet Temperature Circuit Failed High
PID	322	4	DOC Outlet Temperature Circuit Failed Low
SID	322	10	DOC Outlet Temperature Sensor Stuck
PID	322	14	Abnormal DOC Temperature Rise 2
SID	322	31	Abnormal DOC Temperature Rise 1
SID	323	31	Abnormal DPF Temperature Rise 1
SID	324	0	DPF Pressure Out of Range High
SID	324	1	Active Regen Temp Out of Range-Low
SID	324	1	DPF Pressure Out of Range Low
SID	324	9	Abnormal Soot Rate
SID	324	16	DPF Pressure - Out of Range High
SID	332	1	Doser Fuel Supply Pressure Abnormal
SID	332	2	Doser Fuel Line Pressure Abnormal
SID	332	2	HC-Doser Fuel Pressure Not Plausible
SID	332	3	Doser Fuel Line Pressure Sensor Circuit Failed High
SID	332	4	Doser Fuel Line Pressure Sensor Circuit Failed Low
SID	332	14	Doser FLP Sensors Failed Self Test
SID	332	14	Doser Fuel Line Pressure Failed Self Test

# CAROLINA THOMAS CHEAT SHEET

ECU128

Mercedes

PID/SID	J1587	FMI	
SID	333	3	HC Doser Circuit Failed High
SID	333	4	HC Doser Circuit Failed Low
SID	333	5	HC Doser Circuit Failed Open
SID	333	14	Doser Metering and Safety Unit Valve Seals Check
SID	334	3	Fuel Cut Off Valve Circuit Failed High
SID	334	4	Fuel Cut Off Valve Circuit Failed Low
SID	334	5	Fuel Cut Off Valve Circuit Failed Open
PID	351	2	Coolant Temp/Compressor Inlet Temp Plausibility Error
PID	351	2	Turbocharger Compressor Inlet Temp. Sensor, General Temp. Plausibility Error
PID	351	3	Turbocharger Compressor Inlet Temperature Circuit Failed High
PID	351	4	Turbocharger Compressor Inlet Temperature Circuit Failed Low
PID	354	3	Relative Humidity Circuit Failed High
PID	354	4	Relative Humidity Circuit Failed Low
SID	362	6	Injector Cylinder #1 Spill Control Valve ("Amplifier"); Valve Shorted Circuit
SID	362	10	Injector Cylinder #1 Spill Control Valve ("Amplifier") Abnormal Rate of Change
SID	362	14	Injector Cylinder #1 Spill Control Valve Abnormal Operation
SID	363	6	Injector Cylinder #2 Spill Control Valve ("Amplifier"); Valve Shorted Circuit
SID	363	10	Injector Cylinder #2 Spill Control Valve ("Amplifier") Abnormal Rate of Change
SID	363	14	Injector Cylinder #2 Spill Control Valve Abnormal Operation
SID	364	6	Injector Cylinder #3 Spill Control Valve ("Amplifier"); Valve Shorted Circuit
SID	364	10	Injector Cylinder #3 Spill Control Valve ("Amplifier") Abnormal Rate of Change
SID	364	14	Injector Cylinder #3 Spill Control Valve Abnormal Operation
SID	365	6	Injector Cylinder #4 Spill Control Valve ("Amplifier"); Valve Shorted Circuit
SID	365	10	Injector Cylinder #4 Spill Control Valve ("Amplifier") Abnormal Rate of Change
SID	365	14	Injector Cylinder #4 Spill Control Valve Abnormal Operation
SID	366	6	Injector Cylinder #5 Spill Control Valve ("Amplifier"); Valve Shorted Circuit
SID	366	10	Injector Cylinder #5 Spill Control Valve ("Amplifier") Abnormal Rate of Change
SID	366	14	Injector Cylinder #5 Spill Control Valve Abnormal Operation
SID	367	6	Injector Cylinder #6 Spill Control Valve ("Amplifier"); Valve Shorted Circuit
SID	367	10	Injector Cylinder #6 Spill Control Valve ("Amplifier") Abnormal Rate of Change
SID	367	14	Injector Cylinder #6 Spill Control Valve Abnormal Operation
SID	370	2	DPF Inlet Pressure Sensor Drifted High In Range Fault (High Box)
PID	370	3	DPF Inlet Pressure Circuit Failed High
PID	370	4	DPF Inlet Pressure Circuit Failed Low
SID	370	10	DPF Inlet Pressure Sensor Stuck
SID	370	20	DPF Inlet Pressure Sensor Drifted High In Range Fault (Low Box)
SID	370	21	DPF Inlet Pressure Sensor Drifted Low In Range Fault (Low Box)
SID	370	21	DPF Inlet Pressure Sensor Drifted Low In Range Fault (High Box)
SID	371	0	DPF System Back Pressure Too High
SID	371	2	DPF Outlet Pressure Sensor Plausibility Error
SID	371	2	DPF Outlet Pressure Sensor Drifted Low In Range Fault (High Box)
SID	371	3	DPF Outlet Pressure Circuit Failed High
SID	371	4	DPF Outlet Pressure Circuit Failed Low
SID	371	10	DPF Outlet Pressure Sensor Stuck
SID	371	14	DPF Outlet Pressure Sensor Drifted High In Range Fault (High Box)
SID	371	20	DPF Outlet Pressure Sensor Drifted High In Range Fault (Low Box)
SID	371	21	DPF Outlet Pressure Sensor Drifted Low In Range Fault (Low Box)
PID	372	2	Remote Accelerator Pedal Supply Voltage Out of Range
PID	372	3	Remote Accelerator Pedal Circuit Failed High
PID	372	4	Remote Accelerator Pedal Circuit Failed Low
SID	382	0	Regen Temperature - Out of Range High
SID	382	1	Regen Temperature - Out of Range Low
PID	404	2	Turbocharger Compressor Outlet Temp. Sensor, General Temp. Plausibility Error
PID	404	3	Turbocharger Compressor Outlet Temperature Circuit Failed High
PID	404	4	Turbocharger Compressor Outlet Temperature Circuit Failed Low

# CAROLINA THOMAS CHEAT SHEET

## ECU128 Mercedes

PID/SID	J1587	FMI	
PID	404	20	Turbocharger Out Temperature; Temperature Too High (Low Box)
PID	404	21	Turbocharger Out Temperature; Temperature Too Low (High Box)
PID	411	0	EGR Differential Pressure Failed (High Box)
PID	411	1	EGR Differential Pressure Failed (Low Box)
PID	411	3	EGR Delta Pressure Sensor Circuit High
PID	411	4	EGR Delta Pressure Sensor Circuit Low
PID	411	5	EGR Sampling Range Failed
PID	411	13	EGR Delta Pressure Sensor Out Of Calibration 1
PID	411	13	EGR Delta Pressure Sensor Out Of Calibration 2
PID	412	0	EGR Temperature Very High
PID	412	2	EGR Temperature Sensor; General Temp. Plausibility Error
PID	412	3	EGR Temperature Sensor Circuit Failed High
PID	412	4	EGR Temperature Sensor Circuit Failed Low
PID	412	16	EGR Temperature Sensor / Temperature Too High
PID	412	20	EGR Temperature Drift (High Box)
PID	412	21	EGR Temperature Drift (Low Box)

# CAROLINA THOMAS CHEAT SHEET

ECU128		Cummins
PID/SID	FMI	
1	5	injector solenoid cyl#1
2	5	injector solenoid cyl#2
3	5	injector solenoid cyl#3
4	5	injector solenoid cyl#4
5	5	injector solenoid cyl#5
6	5	injector solenoid cyl#6
18	11	fuel injection control
21	3	ECM failure
21	4	ECM failure
27	0	VGT actuator
27	11	VGT actuator
27	4	EGR
27	7	VGT actuator
27	13	VGT actuator
27	12	VGT actuator
27	11	VGT actuator
27	9	VGT actuator
33	4	fan control circuit
33	3	fan control circuit
39	3	starter relay
39	4	starter relay
51	11	auxiliary sensor
51	14	auxiliary sensor
64	7	speed sensor
64	2	speed sensor
64	2	camshaft speed/position
70	3	intake heater
70	4	intake heater
79	3	engine brake
79	4	engine brake
80	4	engine brake
80	3	engine brake
81	0	particulate trap inlet
84	2	wheel speed sensor
84	10	wheel speed sensor
91	3	throttle position
91	4	throttle position
91	2	accelerator pedal
91	2	accelerator pedal
97		water in fuel
97	3	water in fuel
97	4	water in fuel
98	2	engine oil level
98	1	engine oil level
98	1	engine oil level
98	4	engine oil level
98	0	engine oil level
100	3	oil pressure sensor
100	4	oil pressure sensor
100	1	oil pressure sensor
100	1	oil pressure sensor
100	2	oil pressure sensor
101	0	crankcase pressure
101	0	crankcase pressure
101	3	crankcase pressure

# CAROLINA THOMAS CHEAT SHEET

## ECU128

## Cummins

PID/SID	FMI	ECU128	Cummins
101	4	crankcase pressure	voltage below normal or shorted low
101	2	crankcase pressure	erratic data signal
101	0	crankcase pressure	change crankcase breather
102	3	intake mfid pres sensor	voltage above normal or shorted high
102	4	intake mfid pres sensor	voltage below normal or open circuit
102	2	intake mfid pres sensor	data does not match current conditions
103	2	turbo speed	erratic/incorrect data signal
103	1	turbo speed	speed below normal range
103	0	turbo 1	turbo1 speed above normal range
103	10	turbo 1	turbo 1 speed abnormal rate of change
105	3	intake mfid tem sensor	voltage above normal or shorted high
105	4	intake mfid tem sensor	voltage below normal or open circuit
105	0	intake mfid tem sensor	temperature above protection limit
108	3	barometric pres sensor	voltage above normal or shorted high
108	4	barometric pres sensor	voltage below normal or shorted low
108	2	barometric pres sensor	erratic/incorrect data signal
110	3	coolant temp sensor	voltage above normal or shorted high
110	4	coolant temp sensor	voltage below normal or open circuit
110	0	coolant temp sensor	temperature above normal range
110	0	coolant temp sensor	temperature above protection limit
110	11	coolant temp sensor	EGR closed to reduce coolant temperature
111	3	coolant level sensor	voltage above normal or shorted high
111	.4	coolant level sensor	voltage below normal or open circuit
111	1	coolant level sensor	level below normal range
111	1	coolant level sensor	level below normal range
115	11	oil change interval	change interval condition
126	4	fuel pump pressure	voltage below normal or shorted low
126	3	fuel pump pressure	voltage above normal or shorted high
126	7	fuel pump pressure	pumping imbalance or out of adjustment
126	3	electric lift pump	supply voltage high
126	4	electric lift pump	supply voltage low
131	3	Exhaust Gas Pressure	voltage above normal or shorted high
131	4	Exhaust Gas Pressure	voltage below normal or shorted low
131	2	Exhaust Gas Pressure	erratic data signal
145	2	cruise	erratic data signal
146	5	EGR	EGR control current below normal
146	4	EGR	EGR control current below normal
146	7	EGR	EGR control not responding, valve stuck
157	3	injector rail pressure	voltage above normal or shorted high
157	4	injector rail pressure	voltage below normal or shorted low
157	0	injector rail pressure	pressure above normal range
157	0	injector rail pressure	pressure above normal range
157	2	injector rail pressure	erratic/incorrect data signal
157	1	injector rail pressure	pressure below normal range
157	0	injector rail pressure	pressure above normal range
167	0	charging voltage	voltage above normal
167	1	charging voltage	voltage below normal
167	1	charging voltage	voltage below normal
168	1	ECM failure	supply voltage low
168	0	ECM failure	supply voltage high
171	3	ambient air tem sensor	voltage below normal or shorted low
171	4	ambient air tem sensor	voltage below normal or shorted low
190	2	position/speed signals	position/speed signals are incorrect/intermittent
190	0	crankshaft speed	engine speed above protection limits
190	2	crankshaft speed/position	loss of data signal
190	2	crankshaft speed	erratic data signal



# CAROLINA THOMAS CHEAT SHEET

## ECU128

## Caterpillar

PID/SID	FMI	ECU128	Caterpillar
1	11	injector solenoid cyl#1	current below normal or open
2	11	injector solenoid cyl#2	current below normal or open
3	11	injector solenoid cyl#3	current below normal or open
4	11	injector solenoid cyl#4	current below normal or open
5	11	injector solenoid cyl#5	current below normal or open
6	11	injector solenoid cyl#6	current below normal or open
22	13	ECU	speed signal calibration not performed
30	8	PTO	PTO throttle signal invalid
30	13	PTO	PTO throttle signal out of calibration
32	5	turbo wastegate solenoid	current below normal
32	6	turbo wastegate solenoid	current above normal or shorted to ground
32	11	turbo wastegate solenoid	current mismatch
41	3	8 volt supply	voltage above normal or shorted high
41	4	8 volt supply	voltage below normal or shorted low
42	11	Injection Actuation Pump	output failure
43	2	ECU	key switch
64	2	speed sensor	loss of signal
64	11	speed sensor	erratic data signal
70	5	intake heater	current below normal
70	6	intake heater	current above normal or shorted to ground
71	1	idle	idle shutdown
71	14	PTO	PTO shutdown
84	0	vehicle speed sensor	over speed warning
84	1	vehicle speed sensor	loss of signal
84	2	vehicle speed sensor	erratic/incorrect data signal
84	8	vehicle speed sensor	signal out of normal range
84	10	vehicle speed sensor	abnormal rate of change
84	14	vehicle speed sensor	quick stop occurrence
91	8	throttle position	invalid signal
91	13	throttle position	out of calibration
94	1	fuel pressure	low fuel pressure
94	3	fuel pressure	voltage above normal
94	4	fuel pressure	voltage below normal
94	11	fuel pressure	low cranking fuel pressure
96	3	fuel level	voltage above normal
96	4	fuel level	voltage below normal
100	1	oil pressure sensor	low pressure warning
100	3	oil pressure sensor	voltage above normal
100	4	oil pressure sensor	voltage below normal
100	11	oil pressure sensor	very low oil pressure
102	1	intake mflid pres sensor	low boost pressure
102	3	intake mflid pres sensor	voltage above normal or shorted high
102	4	intake mflid pres sensor	voltage below normal or open circuit
102	2	intake mflid pres sensor	data does not match current conditions
102	7	intake mflid pres sensor	not responding
105	3	intake mflid tem sensor	voltage above normal or shorted high
105	4	intake mflid tem sensor	voltage below normal or open circuit
105	0	intake mflid tem sensor	temperature above protection limit
105	11	intake mflid tem sensor	very high intake air temperature

# CAROLINA THOMAS CHEAT SHEET

## ECU128

## Caterpillar

PID/SID	FMI		
108	3	barometric pres sensor	voltage above normal or shorted high
108	4	barometric pres sensor	voltage below normal or shorted low
108	2	barometric pres sensor	erratic/incorrect data signal
110	3	coolant temp sensor	voltage above normal or shorted high
110	4	coolant temp sensor	voltage below normal or open circuit
110	0	coolant temp sensor	temperature above normal range
110	11	coolant temp sensor	very high coolant temperature
111	2	coolant level sensor	invalid signal
111	3	coolant level sensor	voltage above normal or shorted high
111	4	coolant level sensor	voltage below normal or open circuit
111	1	coolant level sensor	level below normal range
111	11	coolant level sensor	very low coolant level
128	3	sec fuel level	voltage below normal or shorted low
128	4	sec fuel level	voltage above normal or shorted high
164	2	injection actuation pressure	erratic signal
164	3	injection actuation pressure	voltage above normal
164	4	injection actuation pressure	voltage below normal
164	0	injection actuation pressure	excessive pressure
164	11	injection actuation pressure	system failure
168	2	ECM failure	supply voltage intermittent
168	1	ECM failure	supply voltage low
168	0	ECM failure	supply voltage high
173	0	exhaust temperature	derate for high exhaust temperature
173	11	exhaust temperature	derate for very high exhaust temperature
186	4	PTO	PTO shutdown switch v oltage low
186	14	PTO	PTO shutdown switch occurance
190	0	engine speed	overspeed warning
190	2	engine speed	loos of data signal
190	11	engine speed	erratic signal
224	11	theft deterent	active signal
224	14	theft deterent	active signal when cranking
231	2	J1939 data	incorrect data fron J1939
231	11	J1939 data	J1939 configuration
231	12	J1939 data	loss of data signal
231	14	J1939 data	transmission data link derate
232	3	5 volt supply	voltage above normal
232	4	5 volt supply	voltage below normal
232	3	sensor supply	voltage above normal or shorted high
232	4	sensor supply	voltage below normal or shorted low
246	11	brake pedal switch1	switch not responding
247	11	brake pedal switch2	switch not responding
251	12	injector power supply	low voltage for injector power supply
251	2	ECM failure	igniton power lost to ecn
252	11	ECU	incorrect engine software
253	2	ECU	customer or system parameters
253	14	ECU	OEM parameter not programmed
311	14	ATD	active regeneration inhibited due to low exhaust temperature
314	3	clean gas induction	CGI pressure sensor voltage above normal
314	4	clean gas induction	CGI pressure sensor voltage below normal



# CAROLINA THOMAS CHEAT SHEET

## ECU128

## Caterpillar

PID/SID	FMI	ECU128	Caterpillar
315	2	clean gas induction	CGI temp high
315	3	clean gas induction	CGI temp sensor voltage above normal
315	4	clean gas induction	CGI temp sensor voltage below normal
316	0	clean gas induction	CGI flow rate high
316	3	clean gas induction	CGI temp sensor voltage above normal
316	4	clean gas induction	CGI temp sensor voltage below normal
316	11	clean gas induction	CGI flow rate high
316	14	clean gas induction	CGI flow rate low
317	5	clean gas induction	CGI actuator shaft current below normal
317	6	clean gas induction	CGI actuator shaft current above normal
324	0	ATD	ATD differential pressure above limits
320	0	ATD	ATD filter temperature high
320	1	ATD	ATD filter temperature high
320	11	ATD	ATD filter temperature very high
320	3	ATD	ATD filter temperature sensor voltage above normal
320	4	ATD	ATD filter temperature sensor voltage below normal
324	11	ATD	ATD differential pressure, high filter restriction
324	3	ATD	ATD differential pressure voltage above normal
324	4	ATD	ATD differential pressure voltage below normal
324	2	ATD	ATD differential pressure signal erratic
324	1	ATD	ATD differential pressure, filter restricted
324	0	ATD	ATD differential pressure above limits
327	2	ATD	ATD exhaust gas temperature 2 data drifted high
327	3	ATD	ATD exhaust gas temperature 2 voltage above normal
327	4	ATD	ATD exhaust gas temperature 2 voltage below normal
332	3	aftertreatment fuel pressure control	aftertreatment fuel pressure sensor voltage above normal
332	4	aftertreatment fuel pressure control	aftertreatment fuel pressure sensor voltage below normal
332	11	aftertreatment fuel pressure control	aftertreatment fuel pressure high
333	5	aftertreatment fuel pressure control	ARD solenoid current above normal
333	6	aftertreatment fuel pressure control	ARD solenoid current below normal
334	5	aftertreatment fuel actuator	ARD solenoid current below normal
334	6	aftertreatment fuel actuator	ARD solenoid current above normal
335	5	aftertreatment ignition	ARD ignition current below normal
335	6	aftertreatment ignition	ARD ignition current above normal
336	3	aftertreatment 2 fuel pressure	sensor voltage above normal
336	4	aftertreatment 2 fuel pressure	sensor voltage below normal
336	11	aftertreatment 2 fuel pressure	fuel pressure high
341	5	aftertreatment purge air actuator	ARD purge air current below normal
341	6	aftertreatment purge air actuator	ARD purge air current above normal
349	1	aftertreatment purge air actuator	ARD purge air pressure low
349	7	aftertreatment purge air actuator	ARD purge pressure not responding
350	5	aftertreatment air pressure control	ARD solenoid current below normal
350	6	aftertreatment air pressure control	ARD solenoid current above normal
350	7	aftertreatment air pressure control	ARD solenoid not responding
356	11	ATD	ARD failed to ignite
357	11	ATD	ARD loss of ignition
360	11	aftertreatment	parked regen manually disabled
373	3	ATD secondary differential pressure	sensor voltage above normal
373	4	ATD secondary differential pressure	sensor voltage below normal