ECU Fault Codes

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Figure 1
ALDL Test Plug connections.

Figure 2
Location of the ALDL plug in the engine bay.

Figure 3
ECU warning lamp on the dash board.
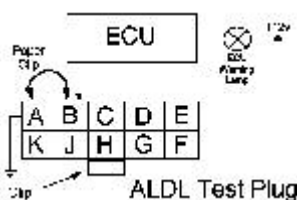
What are 'fault codes'?

Fault codes are recognized problems or faulty sensors to the EMU (Engine Management Unit) which is a ECU (Electronic Control Unit). The ECU relies on the sensors on your car to make it run at it's optimum performance at all times. When a sensors goes wrong or there is a fault with the engine, the ECU sees this problem and logs the fault code within it's memory (NOTE: not ALL problems are logged, depends on what system your car has). Often the ECU warning light on the dash board may light up, indicating to you that there is a problem.

Do all ECU's handle fault codes?

If your engine is fuel injected then it needs a ECU to control the injection timing. All Vauxhall models that have injection need a ECU to do this and hence they will have the facility to log fault codes. If your engine is run on a carburetor, then it has no ECU, hence no fault codes can be logged or read.

How do I read the fault codes?

There are two common ways to do this. The first is to use a TECH1 reader which is an expensive bit of equipment. Some dealerships could charge you £50 just to connect it up to your car. The second option is FREE and YOU can do it....with a paper clip.

The paper clip method flashes the ECU warning lamp on the dash, and you read the amount of flashes and pauses. The chart supplied in this article tells you what the fault code means. The paper clip is used to short out two pins in the ALDL connector (also know as 'diagnostics plug' or 'test connector'). These are commonly coloured blue and is located in the engine bay. Some newer models (i.e. Eco -tec engines) have the test connector inside the cabin.
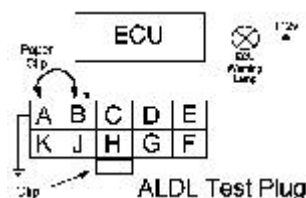
General Notes:

Just before you start, make sure you note the following:

- If you don't have one, buy a Haynes manual for your car and have this is front of you if you find a fault and wish to investigate it.
- You'll need a paper clip and a pencil and paper to jot down the fault codes as they are flashed up.
- You do not need to start the engine but it dosn't hurt. Just switching on the electric's is enough (i.e. dash lights come on).
- If the paper clip is inserted in the wrong 2 pins, don't worry you won't damage nothing. All that will happen is the fault codes will not be displayed.

OK, got all the above? Then follow the steps below (remember to click on the pics for a bigger view):

Open up the bonnet and look inthe engine bay for a 10 -pin blue connector with a blanking plug or plate. Disconnect it from the blanking plug.

With the connector pointing towards you and the retaining clip at the bottom, short the top two pins (A & B) on the left -hand side with the paper clip.

Get in the car and switch on the electric's. The ECU light will begin to flash and pause a number of times, take note of these.

Once the wire link is in place and the electric's are on, the ECU warning lamp will begin to flash out the codes (wait for the initial boot up check that lights up all the warning lamps). Each fault code is repeated 3 times and then it moves onto the next one (if any). Once at the end of the logged fault code list, it will go to the beginning again, giving you plenty of time to note down   the code (on each fault code shown, there will be a pause before it shows the next one). It will carry on like this for ever until you remove the key from the ignition. To clear the codes simply remove the battery leads (for Simtec ECU's fitted to Eco -tec engines, start the ignition 25 times to clear the codes).

For example, lets say there was a ECU warning lamp noted and the owner wanted to read what fault code was logged. The owner has already put the wire link in place and switched on the ignition. A flash is indicated by an astrix (*) and a pause is shown as a dash (-).

*-** (1 flash, a pause and another 2 flashes = code 12)
*-** (12)
*-** (12)

-* (23)
-* (23)
-* (23)

*-** (12)
*-** (12)
*-** (12)

*-** (12)
*-** (12)
*-** (12)

Owner then takes the key out of the ignition.

Lets go through what has happened. After switching on the ignition, the dash board lights up showing the self check, after that all the lights go out and the ECU warning light begins to flash the error code. The first code is 12 (one flash, a pause and then two flashes). This is repeated 3 times.

Code 12 at this moment means initiation of diagnosis. After that came code 23, which means 'Knock control module', i.e. there is most likely a faulty unit or a bad connection at its plug. After code 23 has been repeated 3 times it goes onto the next fault code (if any).

Before it does, it flashes a separator code which is code 12 (NOTE: on later models, ie Simtec, the separator code is 10 and not 12). It flashes this 3 times before going to the next fault code. The next code is code 12 again which means its finished showing the logged fault codes and has started back at the beginning. The owner can switch off the ignition. A healthy car should display a stream of code 12's (note: some ECU systems will also show code 31 (or 0335 for Simtec) because it doesn't see the engine turning over, this is not a fault because you haven't started the car).

Fault Code Chart:

Over the years there have been many different models in the Vauxhall range and hence there are

different ECU systems. With each different system there are (usually) different fault codes. Listed below are the fault codes, search for the model of your car and click on the link to view the fault codes.

This list is by no means complete and still need gaps filling in and some corrections. If you know more about other engine systems or can correct anything below, please e -mail us at **ecu_codes@topbuzz.co.uk**. Thank you.

Vauxhall Astra / Opel Kadett:

Model	Engine Code	Year	System
Astra-F 1.4i	X14NZ	1997	**GM-Multec CFi**
Astra-F 1.4i	X14XE	1996-1997	**GM-Multec CFi**
Astra-F 1.4i cat	C14NZ	1990-1996	**GM-Multec CFi**
Astra-F 1.6 cat	C16NZ	1990-1995	**GM-Multec CFi**
Astra-F 1.8i cat	C18NZ	1991-1994	**GM-Multec CFi**
Astra Van 1.6i cat	C16NZ	1991-1994	**GM-Multec CFi**
Astra-F 1.4i cat	C14SE	1991-1996	**GM-Multec MPi**
Astra-F 1.6i cat	C16SE	1992-1995	**GM-Multec MPi**
Astra-F 1.4i cat	C14SE	1993-1994	**GM-Multec MPi**
Astra-F 1.6i	X16SZ	1993-1996	**GM-Multec CFi**
Astra-F 1.6i cat	C16SE	1993-1994	**GM-Multec MPi**
Astra-F 1.6i	X16SZR	1996-1997	**GM-Multec CFi**
Astra 1.6i cat	C16SE	1991-1992	**Bosch Motronic 1.5**
Astra 1.8i	18SE	1987-1991	**Bosch L3 and EZ61**
Astra GTE 2.0	20NE	1987-1990	**Bosch Motronic ML4.1**
Astra GTE 2.0	20SEH	1987-1990	**Bosch Motronic ML4.1**
Astra 2.0i	20SEH	1990-1993	**Bosch Motronic 1.5**
Astra 2.0i cat	C20NE	1991-1995	**Bosch Motronic 1.5**
Astra 2.0i 16v DOHC	20XEJ	1988-1991	**Bosch Motronic 2.5**
Astra-F 2.0i 16v DOHC	C20XE	1993-1996	**Bosch Motronic 2.5**
Astra-F 2.0i cat SOHC	C20NE	1991-1995	**Bosch Motronic 1.5.2**
Astra-F 1.8i 16v	C18XE/L	1993-1997	**Siemens Simtec 56.0/56.1**
Astra-F 1.8i 16v	X18XE	1996-1998	**Siemens Simtec 56.5**
Astra-F 2.0i 16v	X20XE	1995-1998	**Siemens Simtec 56.5**

Belmont:

Model	Engine Code	Year	System
Belmont 1.4i cat	C14NZ	1990-1993	**GM-Multec CFi**
Belmont 1.6i	C16NZ	1987-1993	**GM-Multec CFi**
Belmont 1.8i cat	C18NZ	1990-1992	**GM-Multec CFi**

Brava:

Model	Engine Code	Year	System
Brava 2.3i cat	4ZD1	1995-1996	**GM-Multec MPi**

Calibra:

Model	Engine Code	Year	System
Calibra 2.0i SOHC & 4x4 cat	C20NE	1990-1996	**Bosch Motronic 1.5.4**
Calibra 2.0i 16v DOHC cat	C20XE	1990-1993	**Bosch Motronic 2.5**
Calibra 2.0i 16v & 4x4 DOHC cat	C20XE	1993-1996	**Bosch Motronic 2.8**

Model	Engine Code	Year	System
Calibra 2.0i 16v Turbo 4x4 DOHC cat	C20LET	1992-1996	**Bosch Motronic 2.7**
Calibra 2.5i 24v V6 cat	C25XE	1993-1996	**Bosch Motronic 2.8**
Calibra 2.5i 24v V6 cat	X25XE	1997-1997	**Bosch Motronic 2.8**
Calibra 2.0i 16v cat	X20XEV	1994-1998	**Siemens Simtec 56.0/56.1**

Carlton:

Model	Engine Code	Year	System
Carlton 2.0i 8v	20SE	1987-1990	**Bosch Motronic ML4.1**
Carlton 2.0i 8v SOHC	C20NE	1986-1987	**Bosch Motronic ML4.1**
Carlton 2.0i 8v SOHC	C20SE	1987-1990	**Bosch Motronic ML4.1**
Carlton 2.0i 8v SOHC	C20NE	1990-1994	**Bosch Motronic 1.5**
Carlton 2.0i 8v SOHC	C20SE	1990-1994	**Bosch Motronic 1.5**
Carlton 2.0i cat SOHC	C20NEJ	1990-1993	**Bosch Motronic 1.5**
Carlton 2.4i cat CIH	C24NE	1988-1990	**Bosch Motronic 1.3**
Carlton 2.4i cat CIH	C24NE	1990-1993	**Bosch Motronic 1.5**
Carlton 2.6i cat CIH	C26NE	1990-1994	**Bosch Motronic 1.5**
Carlton 3.0i 12v cat CIH	C30NE	1990-1994	**Bosch Motronic 1.5**
Carlton 3.0i 24v cat DOHC	C30SE	1989-1994	**Bosch Motronic 1.5**
Carlton 3.0i 24v cat Estate DOHC	C30SEJ	1990-1994	**Bosch Motronic 1.5**

Campo:

Model	Engine Code	Year	System
Campo 2.3 cat	4ZD1	195-1996	**GM-Multec MPi**

Vauxhall Cavalier / Opel Vectra-A:

Model	Engine Code	Year	System
Cavalier/Vectra-A 1.6i cat	C16NZ	1990-1993	**GM-Multec CFi**
Cavalier/Vectra-A 1.6i cat	C16NZ2	1993-1994	**GM-Multec CFi**
Cavalier/Vectra-A 1.6i	C16NZ/NZ2	1993-1996	**GM-Multec CFi**
Cavalier/Vectra-A 1.6i	X16SZ	1993-1995	**GM-Multec CFi**
Cavalier/Vectra-A 1.8i cat	C18NZ	1990-1994	**GM-Multec CFi**
Cavalier/Vectra-A 2.0i	20SEH	1987-1990	**Bosch Motronic ML4.1**
Cavalier/Vectra-A SRi 130	20SEH	1987-1988	**Bosch Motronic ML4.1**
Cavalier/Vectra-A 2.0i cat	C20NE	1991-1992	**Bosch Motronic 1.5**
Cavalier/Vectra-A 2.0 SOHC	20NE	1990-1993	**Bosch Motronic 1.5**
Cavalier/Vectra-A 2.0i & 4x4 SOHC	20SEH	1990-1993	**Bosch Motronic 1.5**
Cavalier/Vectra-A 2.0i SOHC cat	C20NE	1990-1993	**Bosch Motronic 1.5**
Cavalier/Vectra-A GSi 2000 16v DOHC	20XEJ	1989-1991	**Bosch Motronic 2.5**
Cavalier/Vectra-A 2.0i 16v 4x4 DOHC cat	C20XE	1989-1992	**Bosch Motronic 2.5**
Cavalier/Vectra-A 2.0i 16v 4x4 Turbo	C20LET	1993-1995	**Bosch Motronic 2.7**
Cavalier/Vectra-A 2.0	20NE	1987-1990	**Bosch Motronic ML4.1**
Cavalier/Vectra-A 2.0i SOHC	20NE	1990-1993	**Bosch Motronic 1.5**
Cavalier/Vectra-A 2.0i cat SOHC	C20NE	1990-1993	**Bosch Motronic 1.5**
Cavalier/Vectra-A 2.0i 16v	C20XE	1989-1995	**Bosch Motronic 2.5**
Cavalier/Vectra-A 2.0i 16v	X20XEV	1993-1995	**Siemens Simtec 56.0/56.1**

Corsa:

Model	Engine Code	Year	System
Corsa-B & Combo 1.2i	C12NZ	1992-1993	**GM-Multec CFi**

Corsa-B & Combo 1.2i	X12SZ	1993-1997	**GM-Multec CFi**
Corsa-B & Combo 1.4i	X14SZ	1996-1997	**GM-Multec CFi**
Corsa-B 1.4i & Van	C14NZ	1993-1996	**GM-Multec CFi**
Corsa-B 1.4i	C14SE	1992-1994	**GM-Multec MPi**
Corsa-B 1.4i	X14XE	1994-1996	**GM-Multec S**
Corsa-B 1.6i	C16NZ	1990-1991	**GM-Multec MPi**
Corsa-B 1.6i 16v GSi	C16SE	1994-????	**GM-Multec MPi**
Corsa-B 1.6i 16v GSi	C16XE	1993-1994	**GM-Multec S**
Corsa-B 1.6i 16v automatic	X16SZ	1993-????	**GM-Multec MPi**

Frontera:

Model	Engine Code	Year	System
Frontera 2.0i cat SOHC	C20NE	1991-1995	**Bosch Motronic 1.5**
Frontera 2.4i cat CIH	C24NE	1991-1995	**Bosch Motronic 1.5**
Frontera 2.0i	X20XE	1995-1996	**Bosch Motronic 1.5**
Frontera 2.0i 8v	X20SE	1995-1997	**Bosch Motronic 1.5.4**
Frontera 2.2i 16v	X22XE	1995-1996	**Bosch Motronic 1.5.4**

Vauxhall Nova / Opel Corsa-A:

Model	Engine Code	Year	System
Nova/Corsa-A 1.2i 8v cat	X12SZ	1993-1996	**GM-Multec CFi**
Nova/Corsa-A 1.2i 8v cat	C12NZ	1990-1994	**GM-Multec CFi**
Nova/Corsa-A 1.4i 8v cat	C14NZ	1990-1993	**GM-Multec CFi**
Nova/Corsa-A 1.6i 8v GTE	C16NZ	1990-1992	**GM-Multec CFi**
Nova/Corsa-A 1.4i 8v cat	C14SE	1992-1994	**GM-Multec MPi**
Nova/Corsa-A 1.6i 8v cat	C16SE	1992-1993	**GM-Multec MPi**
Nova/Corsa-A 1.6i 8v GSi cat	C16SE	1993-1994	**GM-Multec MPi**
Nova/Corsa-A 1.6i 8v MPi cat	C16SEI	1990-1992	**Bosch Motronic 1.5**

Omega:

Model	Engine Code	Year	System
Omega 2.0i	20SE	1987-1990	**Bosch Motronic ML4.1**
Omega 2.0i SOHC	20SE	1990-1993	**Bosch Motronic 1.5**
Omega 2.0i SOHC cat	C20NE	1990-1993	**Bosch Motronic 1.5**
Omega 2.0i SOHC cat	C20NEJ	1990-1993	**Bosch Motronic 1.5**
Omega-B 2.0i 8v	X20SE	1994-1997	**Bosch Motronic 1.5.4**
Omega 2.4i CIH cat	C24NE	1990-1993	**Bosch Motronic 1.5**
Omega 2.5i	X25XE	1994-1996	**Bosch Motronic 2.8**
Omega-B 2.5i 24v	X25XE	1994-1997	**Bosch Motronic 2.8.1**
Omega 2.6i CIH cat	C26NE	1990-1993	**Bosch Motronic 1.5**
Omega 3.0i	X30XE	1994-1996	**Bosch Motronic 2.8.1**
Omega 3.0i CIH cat	C30NE	1990-1994	**Bosch Motronic 1.5**
Omega 24v DOHC cat	C30SE	1989-1994	**Bosch Motronic 1.5**
Omega 24v DOHC Estate cat	C30SEJ	1990-1994	**Bosch Motronic 1.5**
Omega-B 2.0i 16V	X20XEV	1994-1999	**Siemens Simtec 56.0/56.1**

Senator:

Model	Engine Code	Year	System
Senator 2.6i CIH cat	C26NE	1990-1993	**Bosch Motronic 1.5**

Senator 3.0i	C30LE	19??-19??	**Bosch Motronic 1.5**
Senator 3.0i CIH cat	C30NE	1990-1994	**Bosch Motronic 1.5**
Senator 3.0i 24v DOHC cat	C30SE	1989-1994	**Bosch Motronic 1.5**
Senator 3.0i 24v Estate DOHC cat	C30SEJ	1990-1992	**Bosch Motronic 1.5**

Sintra:

Model	Engine Code	Year	System
Sintra 2.2i	X22XE	1996-1999	**Bosch Motronic 1.5.4**
Sintra 3.0i 24v V6	X30XE	1996-1999	**Bosch Motronic 2.8.3**

Tigra:

Model	Engine Code	Year	System
Tigra 1.4i 16v	X14XE	1994-1996	**GM-Multec MPi**
Tigra 1.6i 16v	X16XE	1994-1997	**GM-Multec MPi**

Vauxhall Vectra / Opel Vectra-B onwards:

Model	Engine Code	Year	System
Vectra-B 1.6i 16v	X16SEJ	1996-1999	**GM-Multec CFi**
Vectra-B 1.6i 16v	X16XEL	1996-1999	**GM-Multec CFi**
Vectra-B 1.6i 16v	X16SZR	1995-1999	**GM-Multec CFi**
Vectra-B 1.8i 16v	X18XE	1995-1999	**Siemens Simtec 56.5**
Vectra-B 2.0i 16v	X20XE	1995-1999	**Siemens Simtec 56.5**
Vectra-B 2.5i V6 24v	X25XE	1995-1999	**Bosch Motronic 2.8.3**

BOSCH Motronic ECU Fault Codes

This fault code chart shows the Bosch Motronic fault codes for the following systsms: - 1.5, 1.7, 1.8, 2.5, 2.7, 2.8, 2.8.1, 2.8.3, 3.1, MP3.1, 3.2, 4.1, 5.1, 5.1.1, First Generation and MPi.

Bosch Motronic Code Chart:

Code:	Item:	Fault:
12	Initiation of diagnosis.	n/a
13	Oxygen sensor	No change in voltage/open circuit.
14	Coolant Temperature Sensor (CTS)	Low voltage
15	Coolant Temperature Sensor (CTS)	High voltage
16	Knock sensor 1	No change in voltage
17	Knock sensor 2	No change in voltage
18	Knock control unit	No signal, Engine Control Unit (ECU) fault
19	RPM signal (crankshaft sensor)	Incorrect signal
21	Throttle position sensor	High voltage
22	Throttle position sensor	Low voltage
23	Knock sensor module	n/a
24	Vehicle speed sensor (VSS)	No signal
25	Injector valve 1	High voltage
26	Injector valve 2	High voltage
27	Injector valve 3	High voltage
28	Injector valve 4	High voltage

28	Fuel pump relay	Low voltage
29	Injector valve 5	High voltage
31	Engine RPM signal (crankshaft sensor)	No signal
32	Injector valve 6	High voltage
32	Fuel pump relay	High voltage
33	Inlet manifold pressure sensor	Voltage too high
34	Exhaust Gas Re-circulation (EGR) valve	Voltage too high
34	Manifold Absolute Pressure (MAP) sensor	Low voltage
35	Idle Speed Control Valve (ISCV)	Poor or no idle speed control
37	Engine self-diagnosis (fault code light)	Low voltage
38	Oxygen sensor	Voltage low (1990 model year on)
39	Oxygen sensor	Voltage high (1990 model year on)
41	Vehicle speed sensor (VSS)	Low voltage
41	1 gear ident switch (C20LET systems)	Low voltage
41	EST Line coil cylinder 2&3 (M2.8/XEV systems)	High voltage
42	Vehicle speed sensor (VSS)	High voltage
42	1 gear ident switch (C20LET systems)	High voltage
42	EST Line coil cylinder 2&3 (M2.8 / XEV systems)	High voltage
43	Linear EGR system (XEV systems)	Faulty
44	Oxygen sensor	Air/fuel mixture too lean (weak)
45	Oxygen sensor	Air/fuel mixture too rich
46	Air pump relay	High voltage
47	Air pump relay	Low voltage
47	Linear EGR Position (XEV systems)	Faulty
48	Battery voltage	Low voltage
49	Battery voltage	High voltage
51	ECU Programmable memory	PROM error, hardware failure
52	Engine check light; final stage (fault code light)	High voltage
53	Fuel pump relay	Low voltage
54	Fuel pump relay	High voltage
55	Engine Control Unit (ECU) fault	Renew Engine Control Unit (ECU)
56	Idle Speed Control Valve (ISCV)	Short to earth
57	Idle Speed Control Valve (ISCV)	Interruption
59	Inlet manifold valve 1	Low voltage
61	Fuel Tank Vent Valve (FTVV)	Low voltage
62	Fuel Tank Vent Valve (FTVV)	High voltage
63	Inlet manifold valve 1	High voltage
63	EST Line coil cylinder 2&3 (M2.8 / XEV systems)	Low voltage
64	EST Line coil cylinder 1&4 (M2.8 / XEV systems)	Low voltage
65	Carbon Monoxide (CO) potentiometer	Low voltage
66	Carbon Monoxide (CO) potentiometer	High voltage
67	Throttle valve switch - idle position switch	Low voltage - switch not opening
68	Throttle Switch (TS) - idle contact	Idle switch not opening
69	Air Temperature Sensor (ATS)	Low voltage
71	Air Temperature Sensor (ATS)	High voltage
72	Throttle Switch (TS) - full load contact	High voltage - Full load switch not running

73	Air Flow Sensor (AFS)	Low voltage
74	Air Flow Sensor (AFS)	High voltage
75	Transmission switch - torque control	Low voltage
76	Automatic Transmission (AT) torque control	Engaged long, ignition retard long
79	Traction control unit	Incorrect ignition/injector cut -off
81	Injector valve 1	Low voltage
82	Injector valve 2	Low voltage
83	Injector valve 3	Low voltage
84	Injector valve 4	Low voltage
85	Injector valve 5	Low voltage
86	Injector valve 6	Low voltage
87	Air Conditioning (AC) cut off relay	Low voltage
88	Air Conditioning (AC) cut off relay	High voltage
89	Oxygen sensor heater	Low voltage
91	Oxygen sensor heater	High voltage
92	Camshaft sensor failure (XEV systems)	Faulty
93	Hall Effect Switch (HES)	Low voltage
94	Hall Effect Switch (HES)	High voltage
95	Hot start valve	Low voltage
96	Hot start valve	High voltage
97	Traction control unit - ignition/injection cut off	Incorrect signal - high voltage
98	Oxygen sensor	Open circuit, wiring break
99	Code unknown	n/a
113	Turbo boost control	Boost presure high, out of range
114	Idle boost valve	Above upper limit
115	Full boost pressure	Below lower limit
116	Boost pressure	Above upper limit
117	Wastegate valve	Low voltage
118	Wastegate valve	High voltage
121	Oxygen sensor 2	Lean exhaust, weak mixture
122	Oxygen sensor 2	Rich mixture/exhaust
123	Inlet manifold valve 1	Blocked
124	Inlet manifold valve 2	Blocked
132	Exhaust Gas Re -circulation (EGR) valve	Incorrect signal
133	Exhaust Gas Re -circulation (EGR) valve 2	High voltage
134	Exhaust Gas Re -circulation (EGR) valve 2	Low voltage
135	'Check engine' lamp (fault code lamp)	Low voltage
136	Engine Control Unit (ECU)	n/a
137	Engine Control Unit (ECU) box	High temperature
141	Secondary air pump	Not enough air
142	Secondary air pump	Air without pump
143	Immobiliser function in ECU	No or incorrect signal
144	No immobiliser signal recived	Faulty unit or break in wiring
145	Incorrect immobiliser signal received	Faulty unit or break in wiring

GM-Multec ECU Fault Codes

This fault code chart shows the GM -Multec fault codes for the following systems: - SPi, MPi, CFi, M and S.

GM-Multec Code Chart:

Code:	Item:	Fault:
12	Initiation of diagnosis.	n/a
13	Oxygen sensor	No change in voltage/open circuit.
14	Coolant Temperature Sensor (CTS)	Low voltage
15	Coolant Temperature Sensor (CTS)	High voltage
16	Knock signal circuit	n/a
18	Knock control processor	n/a
19	Crank Angle Sensor (CAS)	Incorrect RPM signal
21	Throttle Potentiometer Sensor (TPS)	High voltage
22	Throttle Potentiometer Sensor (TPS)	Low voltage
24	Vehicle Speed Sensor (VSS)	No speed signal or low voltage
25	Injector valve	Low voltage
28	Fuel pump relay contacts	Contact problem
29	Fuel pump relay	Low voltage
32	Fuel pump relay	High voltage
33	Manifold Absolute Pressure (MAP) sensor	High voltage
34	Manifold Absolute Pressure (MAP) sensor	Low voltage
35	Idle stepper motor	Poor or no idle speed control
41	Amplifier control signal, cylinders 2 and 3 (Direct Ignition System (DIS))	High voltage
42	Amplifier control signal, cylinders 1 and 4 (Direct Ignition System (DIS))	High voltage
43	Primary ignition (distributor systems)	High voltage
44	Oxygen sensor	Air/Fuel mixture too lean (weak)
45	Oxygen sensor	Air/Fuel mixture too rich
46	Amplifier (Direct Ignition System (DIS)) control signal (A+B)	High voltage
47	Linear exhaust gas re -circulation (EGR) position	n/a
49	Battery supply to Engine Control Unit (ECU)	High voltage (greater than 17 volts)
51	Engine Control Unit (ECU)	Defective ECU (disconnect and reconnect (ECU), then recheck for fault codes). Memory failure
52	Secondary air pump relay	Low voltage
53	Secondary air pump relay	High voltage
54	Idle Carbon Monoxide (CO) potentiometer	n/a
55	Engine Control Unit (ECU) fault	Renew Engine Control Unit (ECU)
56	Air control soleniod	Low voltage
57	Air control soleniod	High voltage
61	Fuel tank vent valve (FTVV)	Low voltage
62	Fuel tank vent valve (FTVV)	High voltage
63	Amplifier control signal, cylinders 2 and	Low voltage

	3 (Direct Ignition System (DIS))	
64	Amplifier control signal, cylinders 1 and 4 (Direct Ignition System (DIS))	Low voltage
65	Primary ignition (distributor systems)	Low voltage
66	Throttle position sensor (TPS)	Hose broken
67	Air Flow Sensor (AFS), hot wire meter (air mass meter)	Signal is outside normal operation parameters (out of range)
68	Air Flow Sensor (AFS), hot wire meter (air mass meter)	Faulty air mass meter signal, incorrect frequency
69	Air Temperature Sensor (ATS) (MPi only)	Low voltage
71	Air Temperature Sensor (ATS) (MPi only)	High voltage
72	Amplifier (Direct Ignition System (DIS)) control signal (A+B)	Lead interruption, open circuit
75	Torque control (Automatic Transmission (AT) only)	Low voltage
76	Torque control (Automatic Transmission (AT) only)	Continuous
81	Injector valve	High voltage
83	Immobiliser	No or wrong code
84	Immobiliser	No signal
85	Immobiliser	Wrong signal
87	Air conditioning cut-off relay	Low voltage
88	Air conditioning cut-off relay	High voltage
92	Camshaft sensor	Faulty hall effect sensor or circuit
93	Quad drive module (in ECU)	n/a

Siemens Simtec 56.0/56.1 ECU Fault Codes

Siemens Simtec 56.0/56.1 Code Chart:

Code:	Item:	Fault:
12	Initiation of diagnosis.	n/a
13	Oxygen sensor	Open circuit
14	Coolant temperature sensor	Voltage low
15	Coolant temperature sensor	Voltage high
16	Knock sensor signal circuit	No change in voltage
19	Incorrect Revs per Minute (RPM) signal (crankshaft sensor)	Incorrect signal, check sensor
21	Throttle position sensor (TPS)	Voltage high
22	Throttle position sensor (TPS)	Voltage low
23	Knock control module signal	Out of range
24	Vehicle speed signal (VSS)	No signal
25	Injector valve 1	Voltage high
26	Injector valve 2	Voltage high
27	Injector valve 3	Voltage high
28	Injector valve 4	Voltage high
37	Check light (fault code lamp)	Voltage low

38	Oxygen sensor circuit	Voltage high
39	Oxygen sensor circuit	Voltage low
44	Oxygen sensor	Lean exhaust (weak mixture)
45	Oxygen sensor	Rich exhaust (rich mixture)
48	Battery	Voltage low
49	Battery	Voltage high
52	Check light (fault code lamp)	Voltage high
53	Fuel pump relay	Voltage low
54	Fuel pump relay	Voltage high
55	Engine Control Unit (ECU) faulty	Check chassis earth and ECU connector.
56	Idle air control	Voltage high
57	Idle air control	Voltage low
61	Fuel tank vent valve	Voltage low
62	Fuel tank vent valve	Voltage high
69	Intake air temperature sensor	Voltage low
71	Intake air temperature sensor	Voltage high
73	Mass air flow temperature	Voltage low
74	Mass air flow temperature	Voltage high
75	Torque control (automatic)	Voltage low
76	Torque control (automatic)	Continuous signal, ignition retard long
81	Injector valve 1	Voltage low. Injector short circuit to ground.
82	Injector valve 2	Voltage low. Injector short circuit to ground.
83	Injector valve 3	Voltage low. Injector short circuit to ground.
84	Injector valve 4	Voltage low. Injector short circuit to ground.
87	Air Conditioning (A/C) cut -off relay	Voltage low
88	Air Conditioning (A/C) cut -off relay	Voltage high
91	Oxygen sensor heater	Voltage high
92	Camshaft sensor	Incorrect signal
98	Oxygen sensor heater	Voltage low, open circuit

Siemens Simtec 56.5 ECU Fault Codes

Siemens Simtec 56.5 Code Chart:

Code:	Item:	Fault:
0100	Mass Air Flow (MAF) sensor	n/a
0105	Intake manifold pressure sensor	n/a
0110	Intake Air Temperature Sesnor (ATS)	n/a
0115	Intake Coolant Temperature Sesnor (CTS)	n/a
0120	Throttle Potentiometer Sensor (TPS)	n/a
0130	Heated Exhaust Gas Oxygen (HEGO) sensor	n/a
0135	Heated Exhaust Gas Oxygen (HEGO) sensor heater	n/a
0150	Heated Exhaust Gas Oxygen (HEGO) sensor	n/a

0173	Heated Exhaust Gas Oxygen (HEGO) sensor	n/a
0201	Injector valve 1	n/a
0202	Injector valve 2	n/a
0203	Injector valve 3	n/a
0204	Injector valve 4	n/a
0205	Injector valve 5	n/a
0206	Injector valve 6	n/a
0230	Fuel pump	n/a
0325	Knock sensor	n/a
0330	Knock sensor 2	n/a
0335	Crank sensor	n/a
0340	Camshaft sensor	n/a
0351	Ignition coil 1 and 4	n/a
0352	Ignition coil 2 and 3	n/a
0400	Exhaust gas circulation valve	n/a
0403	Exhaust Gas Re-circulation (EGR) valve	n/a
0410	Secondary air pump relay	n/a
0412	Secondary solenoid valve	n/a
0433	Tank vent valve	n/a
0500	Idle speed stepper motor/idle air regulator	n/a
0560	Battery	n/a
1110	Switch over valve solenoid	n/a
1112	Switch over valve 1	n/a
1113	Switch over valve 2	n/a
1120	Throttle body malfunction	n/a
1229	Power supply relay	n/a
1231	Fuel pump relay	n/a
1320	Knock control cylinder 1	n/a
1327	Knock control cylinder 2	n/a
1328	Knock control cylinder 3	n/a
1329	Knock control cylinder 4	n/a
1405	Exhaust Gas Re-circulation (EGR) valve	n/a
1410	Secondary air pump relay	n/a
1411	Secondary air pump	n/a
1501	Immobiliser control unit	n/a
1502	Immobiliser control unit	n/a
1503	Immobiliser control unit	n/a
1530	Air flow relay	n/a
1600	Internal control module	n/a
1601	Engine Control Unit (ECU) too hot	n/a
1602	Knock control module	n/a
1604	Knock control unit	n/a
1605	Knock control unit	n/a
1606	Knock control unit	n/a
1640	Knock control unit or quad drive module	n/a
1690	MIL/Engine fail (malfunction indicator lamp)	n/a

1740	Torque control unit	n/a

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