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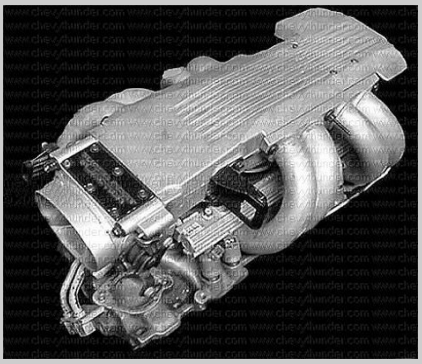


ECM PINOUTS

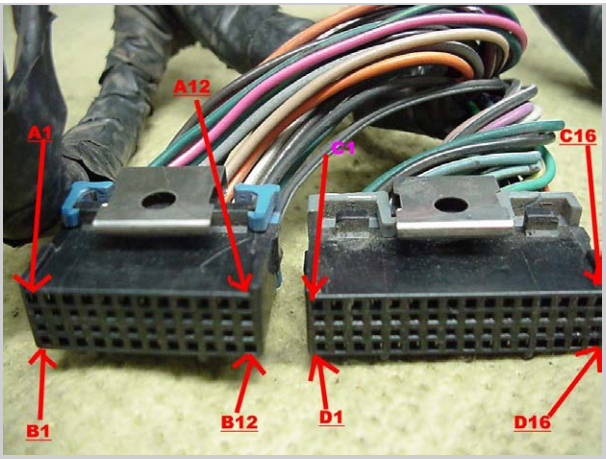
This page contains the ecm connector identification and the terminal pin id's.

Below is the pinouts for the ecm #'s 1226870 (1985 only) and 1227165 (1986-89) Make note that the 1985 ecm/harness is NOT interchangeable with the 1986-89 ecm/harness.

NOTE: The charts below need to be used with a digital voltmeter to help save time in troubleshooting. Voltages listed may be different due to battery condition and alternator charging rates.

The following must be met to insure accurate readings: (A) Engine at operating temperature (B) Engine in "closed loop" operation (C) ALDL pins "A" and "B" not jumpered (diagnostic test mode) or Scanner connector not plugged into ALDL terminal.

Bookmarks:



1985 pinouts (ecm #1226870)

Circuit	Pin	Wire Color*	V. "Key On"	V. "Eng. On"
Fuel Pump Relay	A1	Dk Grn/Wht	0	13.9
Air Switch	A2	Brn	12	13.9
Canister purge	A3	Dk Grn/Yel	12	0
EGR control	A4	Gray	12	0
SES control	A5	Brn/Wht	0	13.9
IGN-ECM	A6	Pnk/Blk	12	13.9
TCC control	A7	Tan/Blk	12	13.9
Serial data	A8	Org	2-5	2-5
Diagnostic term	A9	Wht/Blk	5	5
Speed sensor	A10	Brn	(a)	(a)
MAT	A11	Tan	(b)	(b)
Grd.	A12	Blk/Wht	0	0
Battery 12V	B1	Org	12	13.9
Fuel pump sig.	B2	Red	0 (c)	13.9
EST ref. low	B3	Blk/Rd	0	0
EST control	B4	Wht	0	1.3
EST ref. in	B5	Ppl/Wht	0	1.3
Not Used	B6	----------	----------	----------
EST signal	B7	Blk	9.2	9.3
A/C signal	B8	Grn/Wht	0	0
Not Used	B9	----------	----------	----------
P/N sw. signal	B10	Org/Blk	12	13.9
MAF signal	B11	Dk. Grn	0	.5-1.0
Not Used	B12	----------	----------	----------
Not Used	C1	----------	----------	----------
Air Control	C2	Blk/Pnk	12	0
IAC "B" low	C3	Lt. Grn/Blk	not useable	not useable

IAC "B" high	C4	Lt. Grn/Wht	" "	" "
IAC "A" high	C5	Lt. Blu/Wht	" "	" "
IAC "A" low	C6	Lt. Blu/Blk	" "	" "
Overdrive req.	C7	Blk/Blu	0	0
A/T 4th gear or M/T 1st gear	C8	Blu	0	0
Fan request	C9	Dk. Grn	--	--
CST signal	C10	Yel	1.6 (d)	1.6 (d)
Not Used	C11	----------	----------	----------
TPS back up mode signal	C12	Dk. Blu	.54V +/-.05V	.54V +/-.05V
TPS signal	C13	Dk. Blu	.54V +/-.05V	.54V +/-.05V
TPS 5V ref	C14	Gry	5	5
Inj.2-4-6-8 "B"	C15	Lt. Grn	12	13.9
Battery 12V	C16	Org	12	13.9
Grd	D1	Blk/Wht	0	0
Cooling fan cntrl	D2	Grn/Wht	12	13.9
Cyl. sel. (8 cyl. grd'd)	D3	Blk/Wht	0	0
Not Used	D4	----------	----------	----------
EST bypass	D5	Tan/Blk	0	4.6
Grn'd O2	D6	Tan	0	0
O2 sensor sig.	D7	Ppl	(e)	(e)
EGR temp. sw.	D8	Grn	12	13.9
Not Used	D9	----------	----------	----------
MAF grd.	D10	Blk/Wht	0	0
Not Used	D11	----------	----------	----------
TPS 5V grd	D12	Blk	0	0
CST, MAF, MAT grd.	D13	Blk	0	0
Inj.2-4-6-8 "B"	D14	Lt. Grn	12	13.9
Inj.1-3-5-7 "A"	D15	Lt. Blu	12	13.9
Inj.1-3-5-7 "A"	D16	Lt. Blu	12	13.9

Notes: (a) voltage varies from .60V to battery voltage depending on position of drive wheels. (b) varies with temperature (c) 12V first 2 seconds with ign. switch in "on" position (d) At normal operating temperature (e) varies, average of 0.45V.

1986-89 pinouts (ecm #1227165)

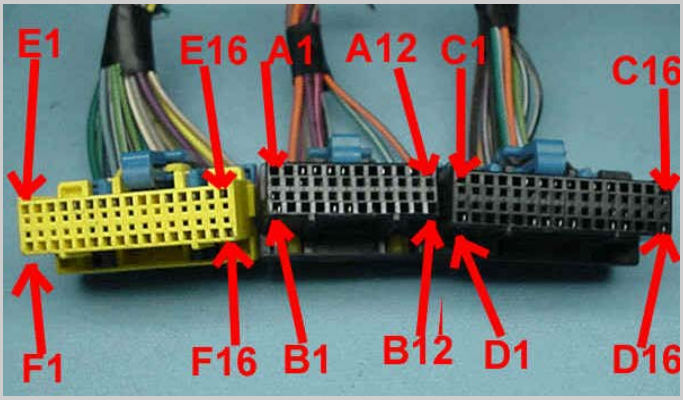
Circuit	Pin	Wire Color*	V. Key "on"	V. Engine run
Fuel pump rly	A1	Grn/wht	0 (a)	13.9
Port air switch	A2	Brn	12	13.9
Canister purge	A3	Grn/Yel	12	0

EGR control	A4	Gry	12	0
SES control	A5	Brn/Wht	0	13.9
IGN, power	A6	Pnk/blk	12	13.9
M/T od, or A/T TCC	A7	Tan/Blk	12	13.9
Serial data	A8	Org	2-5V (varies)	2-5V (varies)
Diagnostic term	A9	Wht/Blk	5	5
Speed sensor	A10	Brn	(b)	(b)
MAF analog grd return	A11	Blk/Pnk	0	0
System ground	A12	Blk/Wht	0	0
Battery 12V	B1	Org	12	13.9
Fuel pump sig	B2	Red	0	13.9
EST ref. low	B3	Blk/Rd	0	0
Not Used	B4	----------	----------	----------
Distributor ref.	B5	Ppl/Wht	0	1.5
VATS signal	B6	Wht	2.5	2.5
ESC signal	B7	Blk	9.2	9.3
A/C signal	B8	Grn/Yel	0V off 12V on	0V off 12V on
Not Used	B9	----------	----------	----------
P/N switch	B10	Org/Blk	0V P/N 12V D	0V P/N 12V D
Not Used	B11	----------	----------	----------
MAF sensor in	B12	Dk. Grn	2.5	.4-1.0 (c)
Fan rly cntrl	C1	Dk. Grn/Wht	12	13.9
Converter air cntrl	C2	Blk/Pnk	12	0
IAC "B" low	C3	Lt. Grn/Blk	not useable	not useable
IAC "B" high	C4	Lt. Grn/Wht	" "	" "
IAC "A" high	C5	Lt. Blu/Wht	" "	" "
IAC "A" low	C6	Lt. Blu/Blk	" "	" "
A/T OD switch	C7	Blk/Blu	12	13.9
M/T OD req.	C8	Blk/Blu	0	0
Not Used	C9	----------	----------	----------
Coolant temp signal	C10	Yel	1.6(d)	1.6 (d)
Not used	C11	----------	----------	----------
MAT signal	C12	Dk. Grn	(e)	(e)
TPS signal	C13	Dk. Blu	.54V+-.05V	.54V+-.05V
TPS 5V ref	C14	Gry	5	5
EGR temp sw.	C15	Drk. Grn	12	13.9
Battery	C16	Org	12	13.9
System grd	D1	Blk/Wht	0	0
CTS, MAT, TPS 5V	D2	Blk	0	0

return				
System grd	D3	Blk/Wht	0	0
EST control	D4	Wht	0	1.3
EST Bypass	D5	Tan/Wht	0	4.75
Grn'd	D6	Tan	0	0
O2 sensor sig.	D7	Ppl	(f)	(f)
Not Used	D8	----------	----------	----------
Not Used	D9	----------	----------	----------
System Grd	D10	Blk/Wht	0	0
A/C Press. Fan switch	D11	Drk. Grn	0	0
MAF burn off relay	D12	Blk	12	13.9
Not Used	D13	----------	----------	----------
Not Used	D14	----------	----------	----------
Inj.1-3-5-7	D15	Lt. Blu	12	13.9
Inj. 2-4-6-8	D16	Lt. Grn	12	13.9

Notes: (a) 12V first 2 seconds with ign. in "on" position. (b) Varies between .60V and 12V depending on position of drive wheels. (c) varies with air flow into MAF sensor (d) At normal operating temperature. (e) varies with temperature (f) varies, averages 0.45V.

1990-92 speed density f-body (ecm#1227730) (Camaro/Firebird):



Circuit	Pin	Wire Color*	V. Key "on"	V. Eng. "run"
MAP 5V ref.	A4	Gry	5	5
TPS 5V ref.	A5	Gry	5	5
Ign. Pwr feed	A6	Pnk/Blk	12	13.9
Serial data	A8	Org	4.8 (a)	4.8 (a)
Fuel pump rly	A11	Dk. Grn/Wht	0 (b)	13.9
ecm ground	A12	Blk/Wht	0	0

ecm pins A1,2,3,7,9,10 not used. Notes: (a) varies (b) 12V for 2 seconds with ign. key in "on" position.

Circuit	Pin	Wire Color*	V. Key "on"	V. Eng. running
Battery	B1	Org	12	13.9
TPS, MAT sensor ground	B5	Blk	0	0
CTS, MAP sensor ground	B6	Blk	0	0
VSS low	B9	Ppl	(a)	(a)
VSS high	B10	Yel	(a)	(a)
VSS to lp, 4K Pulse per mile (ppm)	B11	Brn	12	13.9

ecm pins not used: ,B2,3,4,7,8,12 Notes: (a) varies from .60V to 13.9V depending on position of drive wheels.

Circuit	Pin	Wire color*	V. Key "on"	V. eng. running
Cruise control 2K ppm	C1	Red	(a)	(a)
EST bypass	C7	Tan/Blk	0	5
EST	C8	Wht	0	1.3
A/C on request	C9	Dk. Grn	0-13.9V	0-13.9V
Inj. 1-3-5-7	C11	Blk/Pnk	12	13.9
Inj. 2-4-6-8	C12	Blk/Grn	12	13.9
Battery 12V	C16	Org	12	13.9

ecm pins not used: C1,2,3,4,5,6,10,13,14,15 not used. notes: (a) varies from .60V to 13.9V depending on position of drive wheels.

Circuit	Pin	Wire color*	V. key "on"	V. eng. running
ECM grd	D1	Blk/wht	0	0
ecm ground	D6	Blk/wht	0	0
ecm ground	D7	Blk/wht	0	0
EST reference	D8	Ppl/wht	0	2.3
EST ref. low	D9	Blk/red	0	0
A/C press. fan switch, second fan	D12	Gry	---	---
TCC 4th gear switch	D14	Lt. Blu	0	0
P/N switch	D16	Org/Blk	0	0

ecm pins not used: D2,3,4,5,10,11,13,15.

Circuit	Pin	Wire color*	V. Key "on"	V. Eng. running
IAC "A" high	E3	Lt. Blu/wht	Not useable	Not useable
IAC "A" low	E4	Lt. Blu/blk	" "	" "
IAC "B" high	E5	Lt. Grn/wht	" "	" "

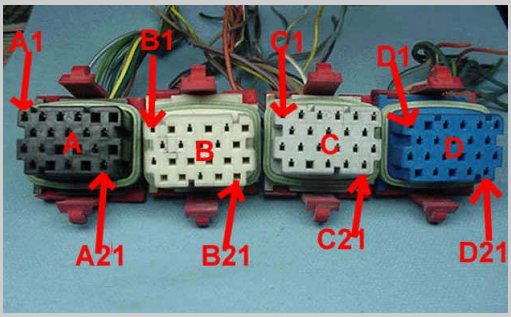
IAC "B" low	E6	Lt. Grn/blk	" "	" "
SES light	E7	Brn/wht	0	13.9
fan relay command input	E8	Dk. Grn/wht	0/12	0/13.9
EGR sol. cntrl	E9	Gray	12	0
Diagnostic term	E12	Blk/wht	2-5V	2-5V
Fuel pump signal	E13	Gray	0 (a)	13.9
O2 signal	E14	Ppl	(b)	(b)
O2 ground	E15	Tan	0	0
CST signal	E16	Yel	1.6 (c)	1.6 (c)

ecm pins not used: E2,3,10,11. Notes: (a) 12V first 2 seconds with ign. key "on" (b) varies, average 0.45V (c) varies with temperature.

Circuit	Pin	Wire color*	V. key "on"	V. eng. running
M/t shift lamp control	F1	Tan/blk	12	13.9
Port sw. sol.	F2	Brn	0	0
Diverter sol.	F4	Blk/pnk	0	0
TCC cntrl A/T	F6	Tan/blk	12	13.9
Canister purge	F7	Dk. Grn/yel	12	0
ESC signal	F9	Dk. Blu		
VATS module	F10	Dk. Blu	2.5	2.5
TPS signal	F13	Dk. Blu	.54V +/-.075V	.54V +/-.075V
MAP signal	F15	Lt Grn.	1.6V (a)	1.6V (a)
MAT signal	F16	Tan	1.6V (b)	1.6V (b)

ecm pins not used: F3,5,8,11,12,14. Notes: (a) varies with manifold pressure (b) varies with temperature.

1990-91 speed density (Corvette ecm #1227727)



Note: The last terminal #'s should be 22 not 21, read each row from left to right.

Circuit	Pin ID	Wire Color*
IAC coil "A" HI	A1	Drk. Blue/Wht
IAC coil "B" LO	A2	Lt.. Grn/Blk
Secondary Cooling fan	A3	Drk. Blue/Wht

EGR sol. Cntrl.	A4	Gry
IAC coil "A" LO	A7	Lt. Blue/Blk
IAC coil "B" HI	A8	Lt. Grn/Wht
Primary Fan	A9	Lt. Blue/Blk
Canister Purge	A10	Drk Grn/Yel
Knock sensor	A11	Drk. Blue
Upshift Light	A12	Lt Grn/Blk/Tan-Blk
AC clutch cntrl	A13	Red/Wht
O2 sensor input	A16	Ppl.
PPM-CCM Radio	A17	Drk. Grn/Wht
EAS Solenoid	A18	Brn
EAC Solenoid	A19	Blk/Pink
Fuel Pump signal	A20	Red
O2 sensor ground	A22	Tan

ecm pins not used: A5,6, 14,15, 21. Connector A is yellow or grey or black.**

Circuit	Pin ID	Wire Color*
Check engine lmp.	B1	Brn/Wht
Diagnostic Term ALDL	B3	Wht/Blk
Serial Data	B5	Tan
VATS signal	B6	Drk. Blue
AT TCC /MT 1-4 upshift	B7	Tan/Blk or Drk Grn
PPM-CCM radio	B8	Drk Grn/Wht
Ign. on power +12V	B10	Pnk/Blk
Serial Data	B11	Tan
AC request signal	B15	Gry/Red

ecm pins not used: B2,9, 12-14, 16-22. Connector B is red or white.**

Circuit	Pin ID	Wire Color*
Battery Feed	C1	Org.
VSS input	C2	Yel.
Distr. Reference	C3	Tan/Blk
MAT sensor signal	C4	Tan
MAP/MAT grnd.	C5	Blk/Pnk
ECM grnd	C6	Blk/Wht
TPS 5V reference	C7	Gry
VSS ground	C8	Ppl

EST distributor	C9	Wht
CTS,TPS, EOT grnd	C10	Blk
MAP 5V reference	C12	Gry
1-4 upshift light	C13	Yel/Blk
EOT sensor signal	C14	Drk Grn/Org
TPS signal input	C15	Drk Blue
CTS signal input	C16	Yel
AC request signal	C17	Drk. Blue
MAP signal input	C22	Lt. Grn

ecm pins not used: C11, 18-21. Connector C is green or grey.**

Circuit	Pin ID	Wire Color*
Injectors 2,4,6,8	D3	Blk/Lt. Grn
Injector ground	D4	Blk.
Fuel Pump relay driver	D7	Drk. Grn/Wht
Injectors 1,3,5,7	D9	Blk/Pnk
Injector ground	D10	Blk
Park/Neutral Sw.	D11	Org/Blk
ECM ground	D12	Blk/Wht
EST bypass	D13	Ppl/Wht
BAT feed 12V	D17	Org
EST reference grd	D19	Blk/Red
Fan request signal	D21	Drk Grn/Wht
AT 4th gear switch	D22	Lt. Blue

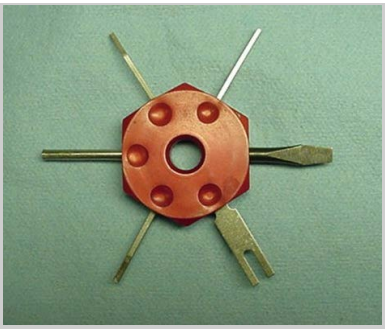
ecm pins not used: D1,2,5,6,14-16,18,20. Connector D is brown or blue.**

NOTES: (*) Wire colors may vary, always go by wire terminal identification. (**) Connector colors may vary, they will only fit into its specific slot.

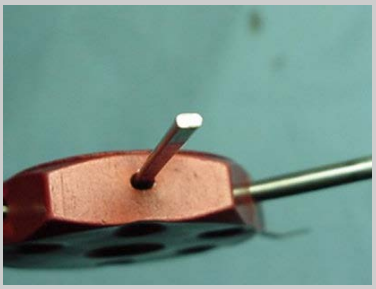
Swapping pins on the early ecm connectors.

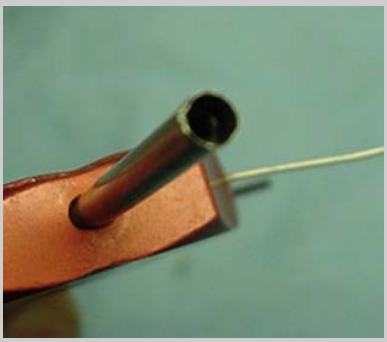
This will show you how to replace broken pins on the ecms except for the 1227727 ecm.

If you have access to a pin removal tool this will make it easier to swap the pins. This is a practiced art to depress the holding tab to remove the pin, so practice on a junk connector before you attempt to remove the pins on your harness.

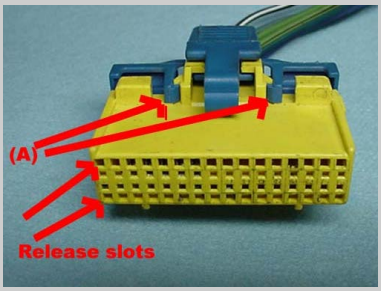


The tool shown above is manufactured by Lisle. The part number is 14900. Retails for around $15.00. This tool is specially made to remove the terminals easily without damage. Also has a diagnostic ALDL test, small straight-slot screwdriver.

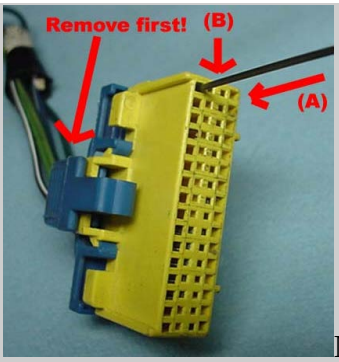
 This end is used for removing the terminals on the ecms

 This rounded end is perfect for removing the terminal pins on the TCC, TPS, old round style VSS and many others. It will fit the male and female sides.

How to *carefully* remove the pins with out the Lisle tool.



1) Remove the terminal pin locking latch (A) from the back of the ecm connector. The terminal pin release slots are the outer slots. Do not use a removal tool in the inner slots, the terminal pin locking tab is not located here!

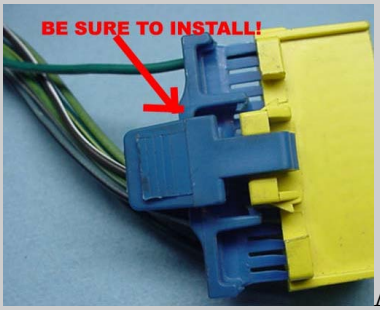


Note: Release slots need to be on the left-hand side so release tool will be in proper orientation.

After removing the locking latch, insert a very small 1/8" allen wrench or stiff wire (A) , while pushing slightly down and in until the tool contacts the terminal locking tab and releases. Tug on wire in back to see if it comes out, if not, repeat process until tab is released.

This picture illustrates what is happening inside the connector.

After removal and before installing into new or existing slot, bend the locking tab on the terminal slightly upward so it will lock into place



After installation, be sure to reinstall pin locking latch

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