# TOYOTA STARLET EP82

## Wiring connections, Connector IDs & Loom Layouts

**Rev 1.2 – Last Updated October 2011**

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This document details a large amount of wiring information which I could ascertain from the two main wiring looms (Cabin & Engine Bay) that was provided with a 1991 (Gen 1) EP82 Toyota Starlet GT (4E-FTE) front cut, however much of the wiring layout and information will be appropriate to later Toyota Starlet models (with eg slightly different connectors or wiring colours).

Please note that there are no specific details of wiring connections and connectors in the doors, nor rear wiring loom of the car - due to those parts of the car not included with the front cut.
The front cut was a Manual Transmission 4E-FTE which was not fitted with TEMS or ABS, so no specific details of those components could be provided.

To advise of any corrections, please contact me on the above email address.

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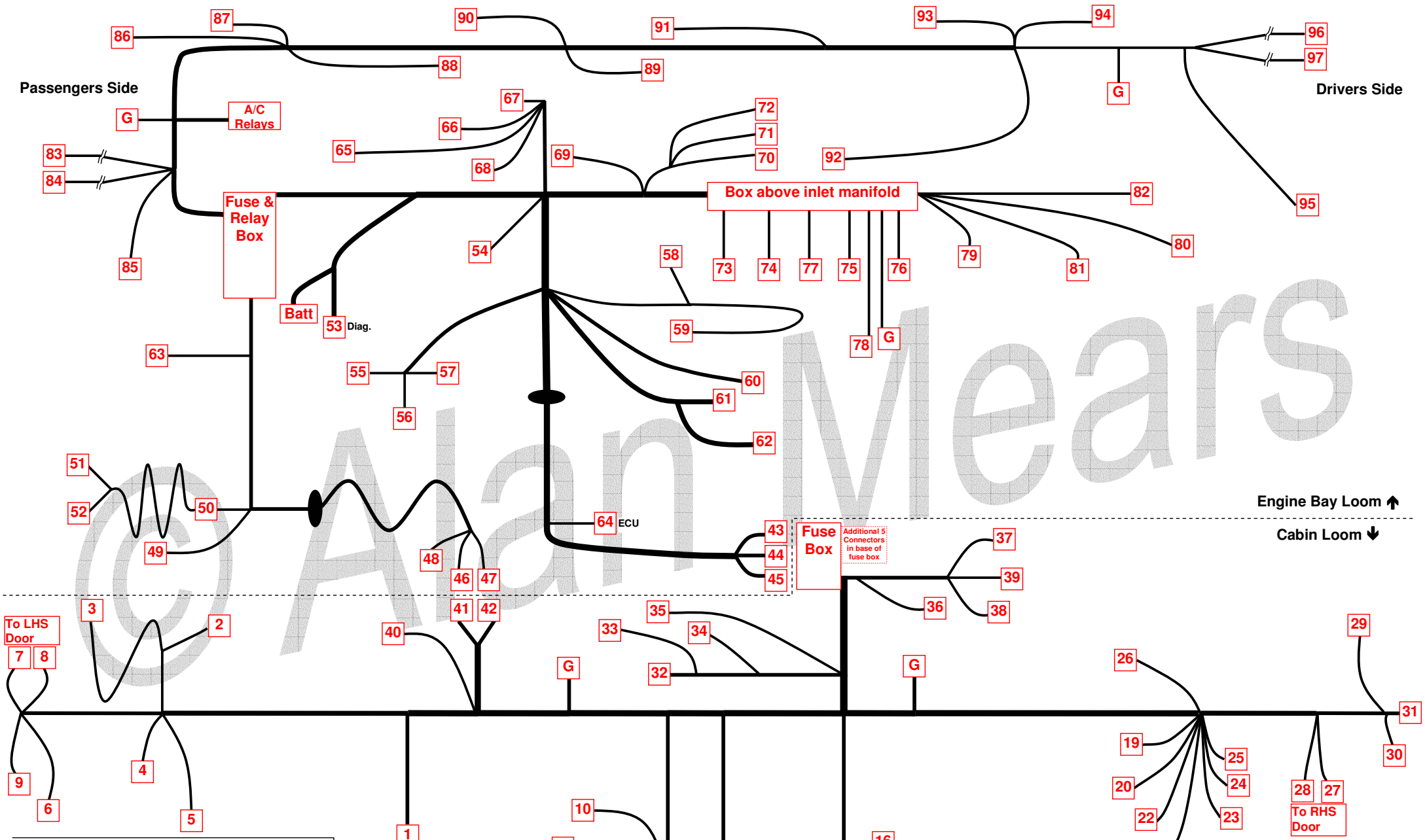


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**Front wiring loom layout**
Scale 1:10 when printed on A4 Sheet
Scale 1:5 when printed on A3 Sheet

Batt Main Battery
G Ground/Earth Mount
Rubber Firewall Grommet

## Connector ID Quick Reference Table

| # | Cabin Loom | # | Engine Bay Loom | # | Engine Bay Loom |
|---|---|---|---|---|---|
| **1** | Circuit Opening Relay | **43** | To Cabin Fuse Box | **85** | A/C Pressure Switch |
| **2** | Fan/Blower | **44** | To Cabin Fuse Box | **86** | Front-Left Main Light |
| **3** | Fan/Heater Assembly | **45** | To Cabin Loom | **87** | Front-Left Park Light |
| **4** | TEMS Computer / Module | **46** | To Cabin Loom (Connector 41) | **88** | Radiator Fan |
| **5** | LHD Speaker (Cabin) | **47** | To Cabin Loom (Connector 42) | **89** | A/C Condenser Fan |
| **6** | Interior Light Door Switch (Left Door) | **48** | HVAC Module | **90** | Ambient Temperature Sensor |
| **7** | To Power Windows (Left Door) | **49** | Windscreen Wiper Motor (Front) | **91** | Horn |
| **8** | To Power Mirrors (Left Door) | **50** | Sub-harness Connector | **92** | A/C Compressor |
| **9** | Roof / Dome / Interior Light | **51** | Vacuum Switch Valve | **93** | Front-Right Main Light |
| **10** | Heater & A/C Dash Controls (Fan, Vent Direction, Recirc/Fresh Air) | **52** | Idle up Valve | **94** | Front-Right Park Light |
| **11** | Air vent Direction Motor | **53** | Diagnostics Port (Hardwired) | **95** | Windscreen Washer Pump |
| **12** | ECU | **54** | Reverse Switch on Gearbox | **96** | Front-Right Indicator |
| **13** | Cigarette Lighter | **55** | Ignitor | **97** | Front-Right Fog Light |
| **14** | Stereo Rear plug | **56** | Coil | | |
| **15** | Clock (Upper Dash) | **57** | Unknown | | |
| **16** | Instrument Cluster (Blue Connector) | **58** | Throttle Position Sensor | | |
| **17** | Instrument Cluster (White Connector) | **59** | Boost Pressure / MAP Sensor | | |
| **18** | Instrument Cluster (Boost Pressure Gauge & Lo/Hi Light) | **60** | Starter Motor Solenoid (Main Voltage) | | |
| **19** | Turn Signal / Indicator Flasher Module | **61** | Starter Motor Solenoid (Trigger) | | |
| **20** | Relay Light Reminder Module | **62** | Alternator | | |
| **21** | Brake Pedal Switch | **63** | Unknown | | |
| **22** | Door Control Module | **64** | ECU | | |
| **23** | RHS Speaker (Cabin) | **65** | Oil Pressure Sender | | |
| **24** | Fog Light On/Off Switch | **66** | Catalytic Converter Overheat Sensor | | |
| **25** | TEMS Switch | **67** | Oxygen / O2 Sensor | | |
| **26** | Relay (hardwired) Power Windows | **68** | Coolant Sensor (To HVAC module) | | |
| **27** | To Power Windows (Right Door) | **69** | Coolant Switch (For Radiator Thermofan) | | |
| **28** | To Power Mirrors (Right Door) | **70** | Coolant Temperature Sensor (For Dash Temp Gauge) | | |
| **29** | Interior Light Door Switch (Right Door) | **71** | Coolant Temperature Sensor (To ECU) | | |
| **30** | To Rear Wiring Loom | **72** | Distributor | | |
| **31** | Power Window Control Buttons | **73** | Injector 4 | | |
| **32** | Hazard Light Button | **74** | Injector 3 | | |
| **33** | Lo/Hi Boost Button | **75** | Injector 2 | | |
| **34** | Rear Window Demister Button | **76** | Injector 1 | | |
| **35** | Power Mirrors Adjustment Buttons | **77** | Inlet Manifold Temperature Sensor | | |
| **36** | Ignition Barrel | **78** | Idle Adjust Valve | | |
| **37** | Steering column combination switch (Rear Wiper) | **79** | Vacuum Solenoid Valve | | |
| **38** | Steering column combination switch (Front Wipers) | **80** | Knock Sensor | | |
| **39** | Steering column combination switch (Lights & Indicators) | **81** | Low Level Brake Fluid Reservoir Switch | | |
| **40** | Foot/Lower Air Direction Motor | **82** | Unknown | | |
| **41** | To Engine Bay Loom (Connector 46) | **83** | Front-Left Indicator | | |
| **42** | To Engine Bay Loom (Connector 47) | **84** | Front-Left Fog Light | | |

**Connectors are referenced in the following pages with a '*C-*' *prefix* eg *C-12 for Connector 12***

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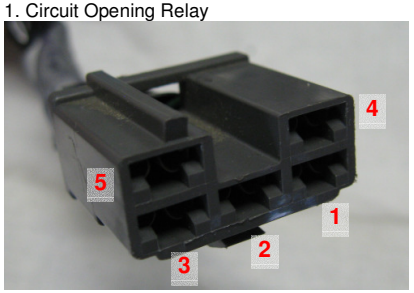
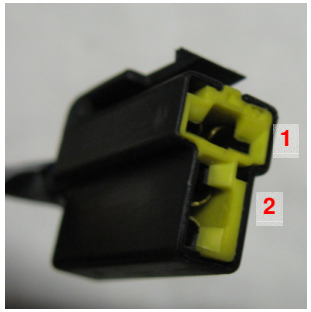
1. Circuit Opening Relay



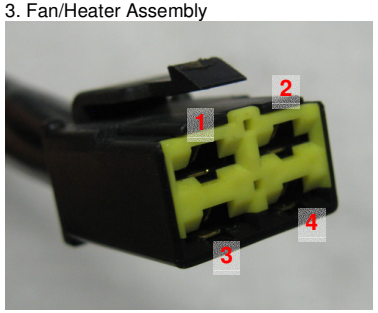

1. Fuel Pump 12V (Blue-White)
2. 12V via EFI Relay & ECU 'BATT' (Black-Red)
3. ECU 'STA'; Connector 36 'ST1' & Starter Motor Solenoid (Black)
4. ECU 'FC' (Green)
5. GND (White-Black)

2. Fan / Blower




1. Dash Fan Switch via *C-10* (Blue-Red)
2. From 'Heater" Fuse (Blue-White)

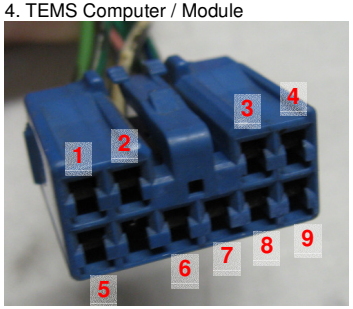
3. Fan/Heater Assembly




1. Blue-Red
2. Blue-Yellow
3. Blue-Black
4. White-Red

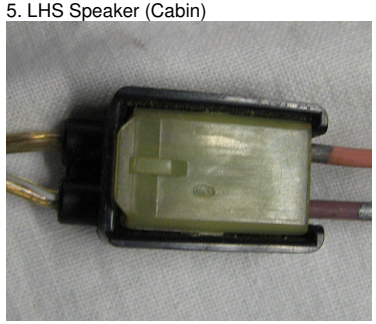
All wires from *C-10* (Dash Buttons)

4. TEMS Computer / Module



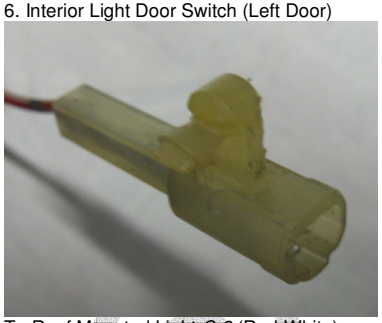

1. ECU CON-2 Pin 12 (Yellow-Black)
2. Green-White
3. Green-Yellow
4. From 'Ignition' Fuse (Blue-Green)
5. Light Green 6. GND (White-Black)
7. To Dash LED *C-17* A5 (Pink-White)
8. Green-Red
9. To Dash LED *C-17* A7 (Pink-Black)

5. LHS Speaker (Cabin)



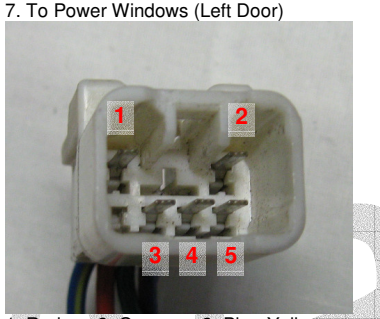
To *C-14*
Pink & Dark Pink

6. Interior Light Door Switch (Left Door)



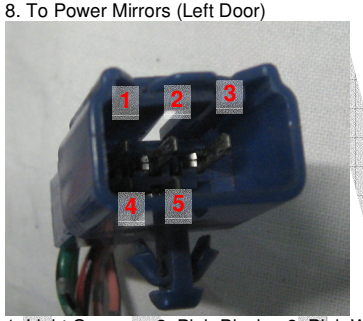
To Roof Mounted Light *C-9* (Red-White)

7. To Power Windows (Left Door)



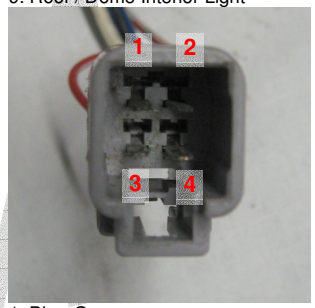

1. Red 2. Green 3. Blue-Yellow
4. Blue-Red 5. Blue-Green
(all thicker gauge wire – to *C-22*)

8. To Power Mirrors (Left Door)



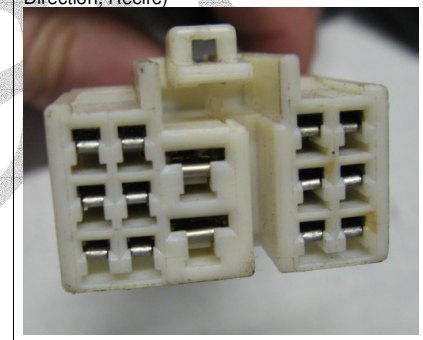

1. Light Green 2. Pink-Black 3. Pink-White
4. Green-Black 5. Red-Black
1,2,3 to *C-35*
4,5, to *C-31*

9. Roof / Dome Interior Light

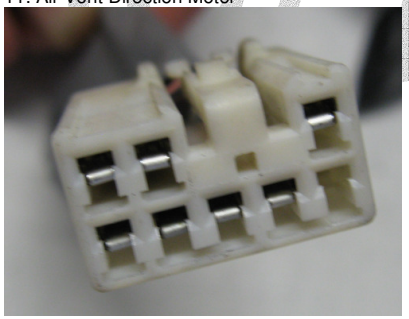



1. Blue-Green
2. White-Black
3. To *C-6* (Blue-Yellow)
4. From 'Dome' Fuse (Red-White)
1 & 2 not connected (for sunroof?)

10. Heater & A/C Dash Controls (Fan, Vent Direction, Recirc)

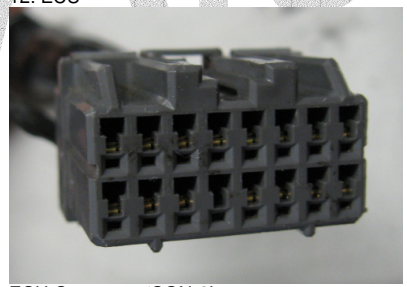


11. Air Vent Direction Motor



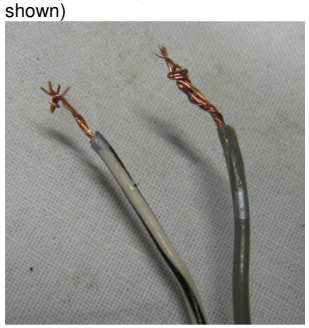
All wires lead to *C-10*

12. ECU



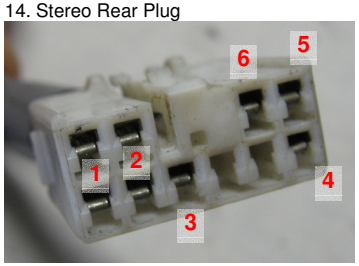
ECU Connector 'CON-2'

13. Cigarette Lighter Wires (no connectors shown)



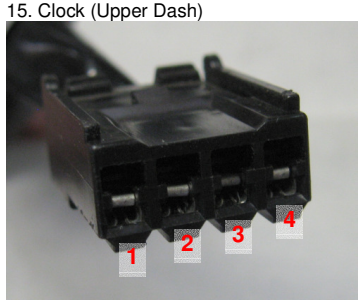
GND (White-Black)
12V Acc (Grey) From 'Radio' Fuse

14. Stereo Rear Plug




1. Left Speakers (Pink & Dark Pink)
2. Right Speakers (Light Green & Blue)
3. GND (Brown)
4. Park lights lighting signal (Green)
5. 12V Constant from 'Dome' Fuse (Blue-Yellow)
6. 12V Acc From 'Radio' Fuse (Grey)

15. Clock (Upper Dash)




1. Park lights lighting signal (Green)
2. 12V Constant from 'Dome' Fuse (Blue-Yellow)
3. GND (White-Black)
4. 12V Acc (Grey) From 'Radio' Fuse

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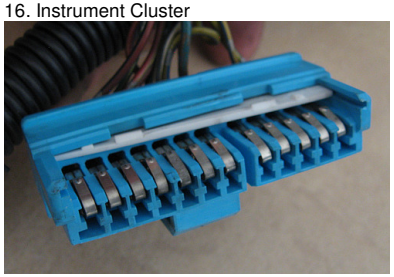
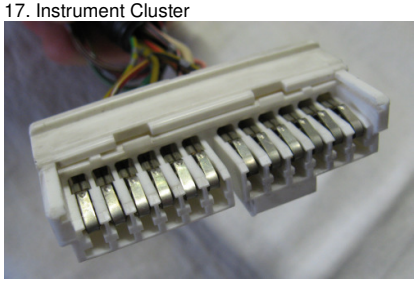
16. Instrument Cluster



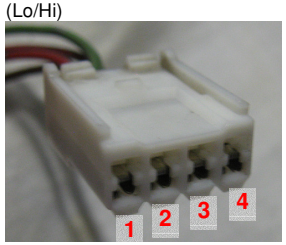
For Connections, See Page 15

17. Instrument Cluster



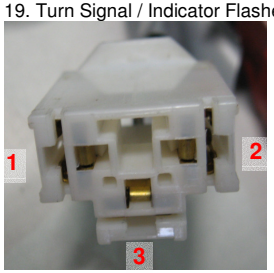
For Connections, See Page 15

18. Instrument Cluster (Boost pressure Gauge (Lo/Hi)



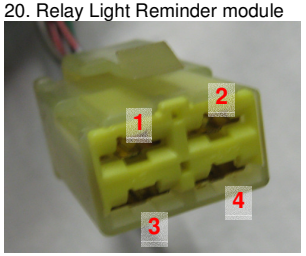

1. From 'Instrument/Dash' Fuse (Red-Blue)
2. Hi/Lo Boost Mode from *C-59* (Light Green)
3. Boost Press Signal *C-33* (Light Green-Red)
4. GND (Brown)

19. Turn Signal / Indicator Flasher module



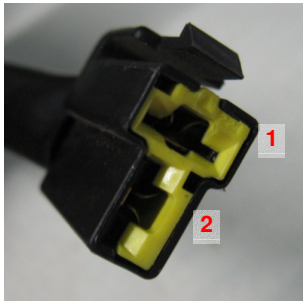

1. GND (White-Black)
2. 'F' *C-32* (Light Green)
3. 'TB' *C-32 & C-39* (Green-Blue)

20. Relay Light Reminder module




1. 12V from 'Dash' Fuse (Red-Blue)
2. 12V Acc from 'Radio' Fuse (Grey)
3. Park lights lighting signal (Green)
4. Door Switch *C-29* (Red-Green)

21. Brake Pedal

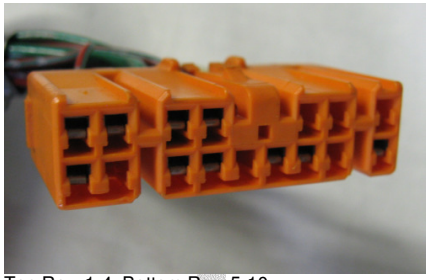



Pedal Switch N/O (Normally Open)

1. 12V from 'Stop Lights' Fuse (Green-Red)
2. To rear of car via *C-30* (Green-White)

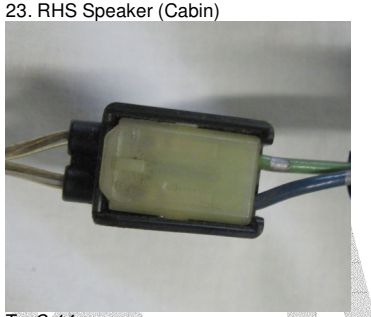
Pedal Switch N/O (Normally Open)

22. Door Control module



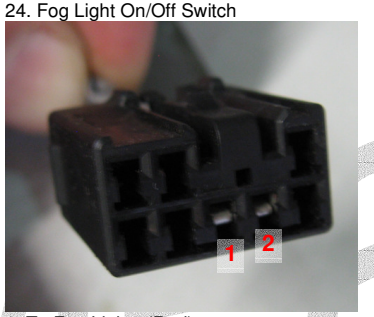
Top Row 1-4 Bottom Row 5-10
1. Red-Blue 2. Red-Green
3. Red (Thicker gauge) 4. Green (Thick gauge)
5. From Power Window Fuse (Blue Thick gauge)
6. Green-Red 7. Red-White
8. Red-Green (From 'Dash' Fuse via Diode)
9. Green (Thick gauge)
10. GND (White-Black Thick gauge)

23. RHS Speaker (Cabin)



To *C-14*
Light Green & Blue

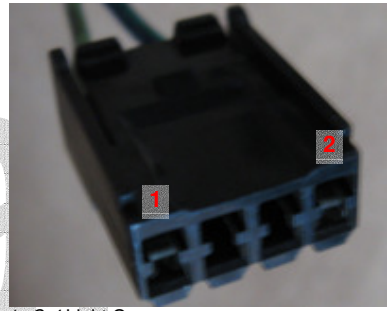
24. Fog Light On/Off Switch




1. To Fog Lights (Red)
2. 'T' *C-39* (Green)

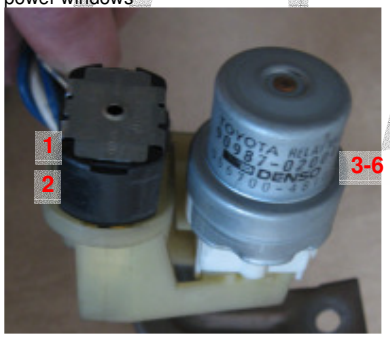
Switch N/O (Normally Open)

25. TEMS Switch




1. *C-4* Light Green
2. From 'Ignition' Fuse (Blue-Green)

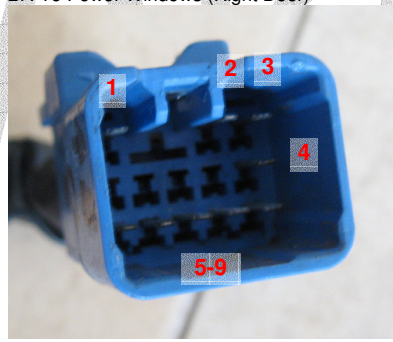
26. Relay (hardwired – no connector) – for power windows




30Amp Fuse :
1. Ignition 'AM1' (White)
2. To *C-22* (Blue – Thicker gauge)

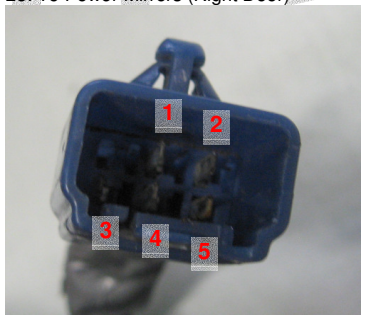
Relay Coil :
3. From *C-22* (Blue-Green)
4. GND (White-Black)
Relay Contact Wires :
5. From *C-22* (Blue – Thick gauge)
6. From C-27 (Blue-Green – Thick gauge)

27. To Power Windows (Right Door)



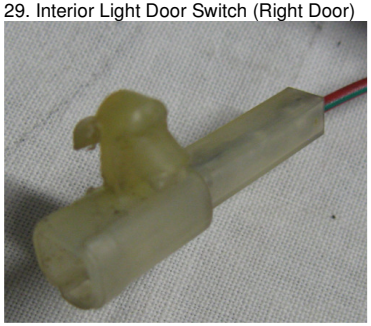

1. Blue-Red (Thicker gauge)
2. White-Black (Thicker gauge)
3. Green (Thicker gauge)
4. Blue-Yellow (Thicker gauge)
5. Green-Red
6. Red-White
7. Red (Thicker gauge)
8. Green (Thicker gauge)
9. Blue-Green (Thicker gauge)
All wires to *C-22*

28. To Power Mirrors (Right Door)



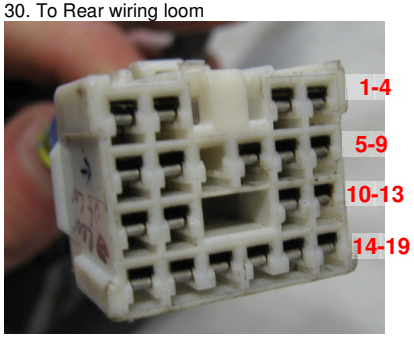

1. Light Green-Black
2. Blue-Black
3. Light Green-Red
4. Light Green-Black
5. Light Green
1,2 to *C-31*
3,4,5 to C-*35*

29. Interior Light Door Switch (Right Door)



Light Reminder Module & Dome Light via Diode
To *C-20*
(Red-Green)

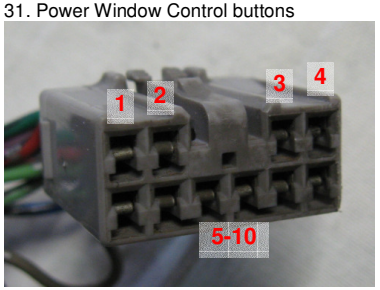
30. To Rear wiring loom




1. Red-Blue 2. Green-Black
3. Green-Yellow 4. Green-Yellow
5. Red-Yellow 6. Yellow-Red
7. Black 8. Green
9. Green-Red 2 Dot 10. Blue-White
11. Green-White 12. Red-Black
13. Blue-Red 14. Yellow-Black
15. Yellow-Blue 16. Blue
17. Blue-Black 18. Blue-Yellow
19. Green-red 1 Dot

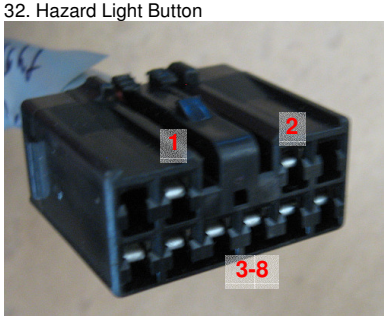
For Connections, See Page 11

31. Power Window Control buttons



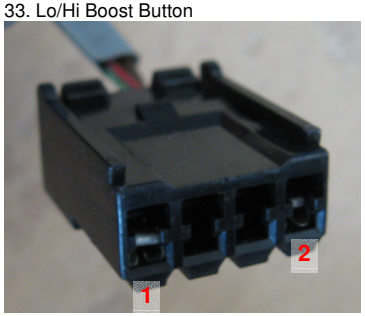

1. Red-Black 2. Light Green
3. Blue 4. Light Green-Black
5. Green-Black 6. Pink
7. Dark Pink 8. From 'Radio' Fuse (Grey)
9. Blue-Yellow 10. Blue-Black

32. Hazard Light Button



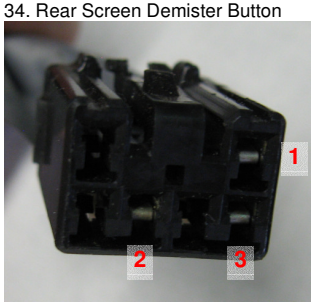

1. Park lights lighting signal (Green)
2. GND (White-Black)
3. 'TL' (Green-Black)
4. 'TR' (Green-Yellow)
5. 'F' (Light Green)
6. 'B2' From 'Haz/Horn' Fuse (Green-White)
7. 'TB' (Green-Blue)
8. 'B1' From 'Turn Signals' Fuse (Red-Blue)

33. Lo/Hi Boost Button



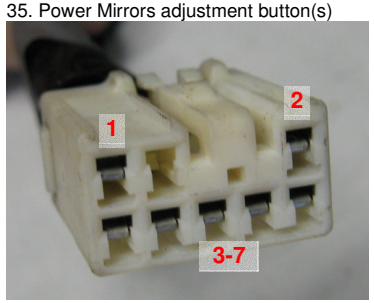

1. GND (Brown)
2. ECU 'BC' (Light Green-Red) & Dash boost indicator via *C-18*

34. Rear Screen Demister Button



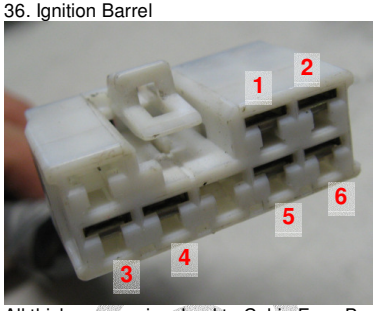

1. GND (White-Black)
2. From 'Rear Demister' Fuse (Light Green)
3. To Demister via *C-30* (Black)

35. Power Mirrors adjustment button(s)




1. RHS Mirror (Light Green-Red)
2. GND (White-Black)
3. From 'Radio' Fuse (Grey)
4. RHS Mirror (Light Green-Black)
5. LHS Mirror (Pink-Black)
6. LHS & RHS Mirror (Light Green)
7. LHS Mirror (Pink-White)

36. Ignition Barrel

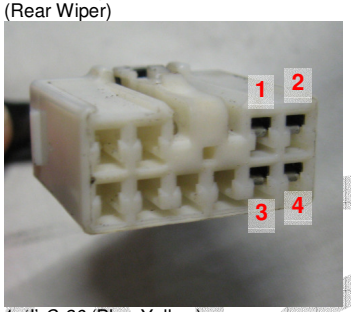



All thick gauge wires lead to Cabin Fuse Box
1. 'AM2' (White-Red) 2. 'IG2' (Black-Red)
3. 'IG1' (Black-Yellow) 4. 'ACC' (Blue-Red)
5. 'AM1' (White)
6. 'ST1' ECU 'NSW' & ECU 'STA' (Black-White)

Missing pin (top left – N/C) is 'ST2'

See Page 11 for Conductions

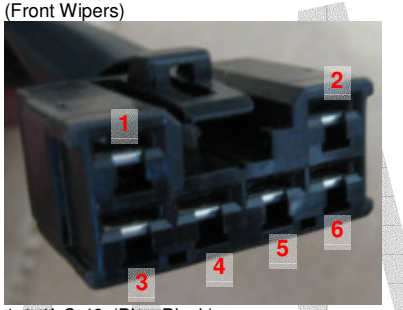
37. Steering column combination switch (Rear Wiper)




1. 'I' *C-30* (Blue-Yellow)
2. 'E' GND (White-Black)
3. '+1' *C-30* (Blue-Black)
4. 'W' *C-95* (Blue-White)

See Page 11 for Conductions

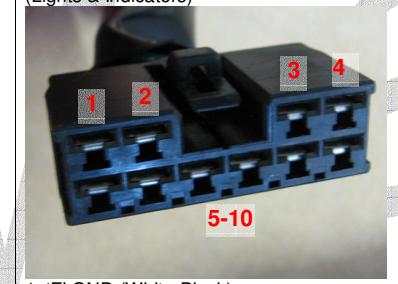
38. Steering column combination switch (Front Wipers)




1. '+1' *C-49* (Blue-Black)
2. '+2' *C-49* (Blue-Orange)
3. 'EW' GND (White-Black)
4. 'W' *C-95* Washer (White-Blue)
5. '+B' *C-49* (Blue) From 'Wipers' Fuse
6. '+S' *C-49* (Blue-Yellow)

See Page 11 for Conductions

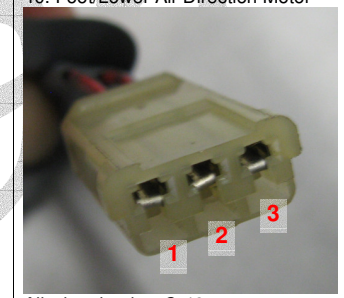
39. Steering column combination switch (Lights & Indicators)




1. 'E' GND (White-Black)
2. 'TL' Turn Signals Left (Green)
3. 'TB' Turn Signals 12V (Green-Blue) from 'Turn Signals' fuse
4. 'TR' Turn Signals Right Green-Yellow (1 Dot)
5. 'HU' Headlights High Beam (Red-Yellow)
6. 'RF' ECU 'ELS' (Red-Green)
7. 'HL' Headlights Low Beam (Red-White)
8. 'TI' To Park Lights (Green)
9. 'BO' From 'Tail Lights' Fuse (Green-White)
10. 'HO' Horn (Green-Yellow 2 Dot) – Horn button shorts this pin to GND

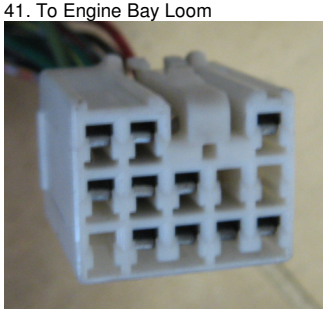
See Page 11 for Conductions

40. Foot/Lower Air Direction Motor

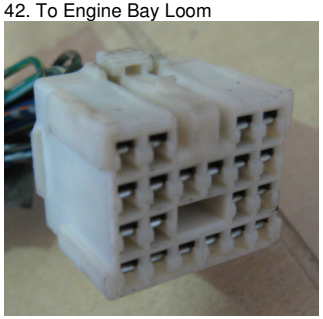



All wires lead to *C-48*
1. Dark Pink-Green
2. Dark Pink-Red
3. Red-Blue

41. To Engine Bay Loom

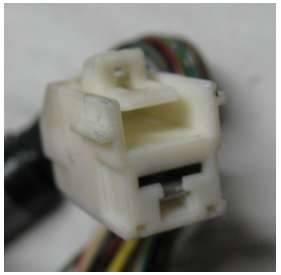


42. To Engine Bay Loom



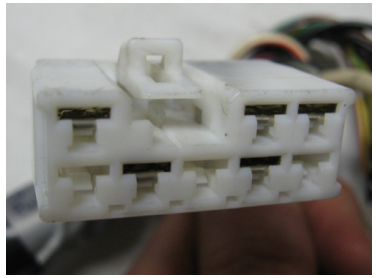
© Alan Mayers

43. To Cabin Fuse Box



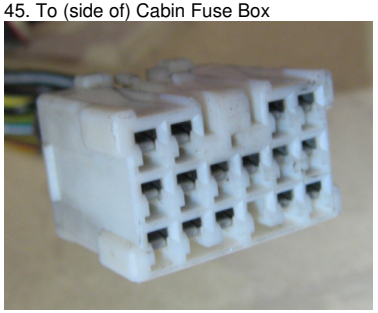
'AM1' Single thick gauge wire – 12V (White)

44. To Cabin Fuse Box



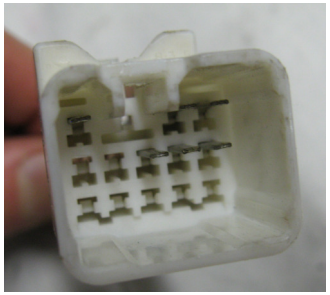
Ignition wiring from Connector 36

45. To (side of) Cabin Fuse Box

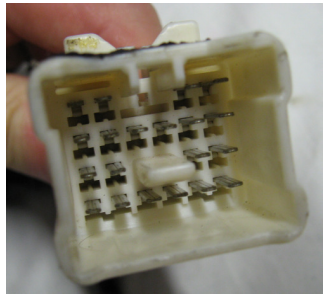


Bypasses fuse box and connects to Cabin loom

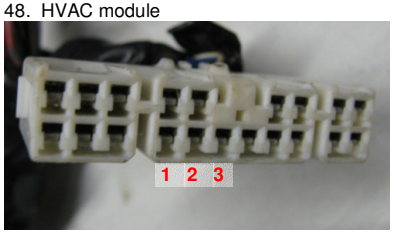
46. To Cabin Loom



47. To Cabin Loom



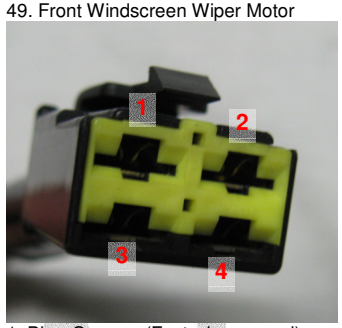
48. HVAC module




1. ECU 'AC2' 2. ECU 'AC1' 3. ECU 'ACT'

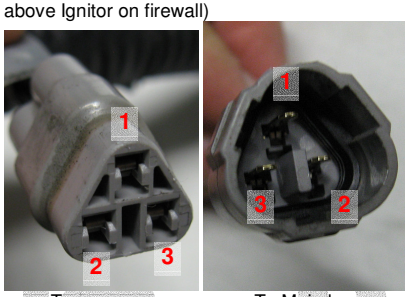
Wires connect to
*C-40* *C-51*
*C-52* *C-68*
*C-85* *C-90*
*C-92*

49. Front Windscreen Wiper Motor




1. Blue-Orange (Fast wiper speed)
2. Blue-Black (Slow wiper speed)
3. Blue-Yellow (Intermittent/Park)
4. Blue (12V Constant - From 'Wipers' Fuse)
All wires to *C-38*. GND on wiper motor case.

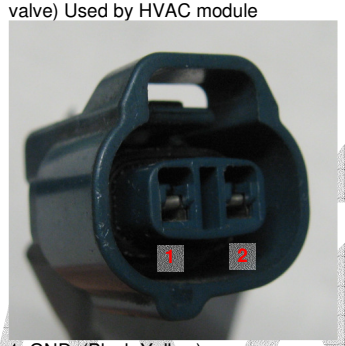
50. Sub-harness connector to sensors (mounted above Ignitor on firewall)




To sensors *C-51 & C52* — To Main loom

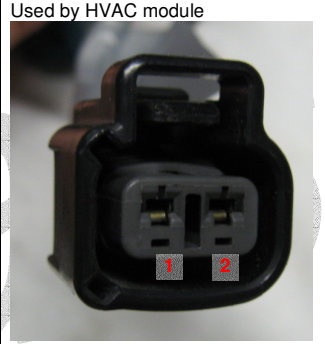
Green -------- 1 --- Green-Blue
Black --------- 2 --- Black-Yellow
Grey ---------- 3 ----- Green-Red

51. RHS Sensor above Ignitor (Vacuum switch valve) Used by HVAC module




1. GND (Black-Yellow)
2. To HVAC Module *C-48* (Green-Blue)

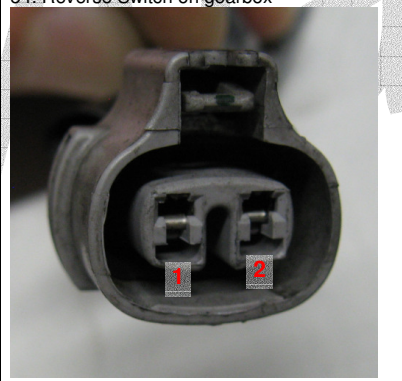
52. LHS Sensor above Ignitor (Idle up Valve) Used by HVAC module




1. GND (Black-Yellow)
2. To HVAC Module *C-48* (Green-Red)

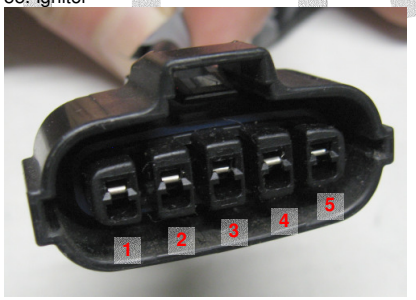
53. Diagnostics Port (hardwired – no connector)
For Connections, See Page 11

54. Reverse Switch on gearbox




1. To Reverse Light (Red-Black)
2. 12V from 'Instrument/Dash Cluster' fuse (Red-Blue)

55. Ignitor




1. ECU 'IGF' (Grey-Black)
2. ECU 'IGT' (Light Green-White)
3. 'IG2' Ignition (Black-Red)
4. Diagnostics Socket 'IG-' (Black)
5. Pin 2 on Coil *C-56* (Black-White)

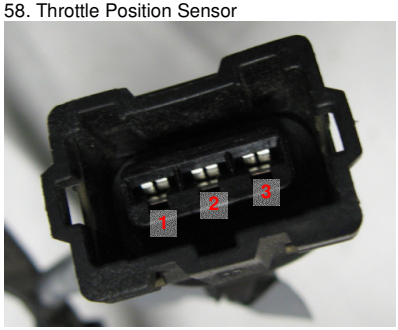
56. Coil (Under Ignitor)

1. 'IG2' Ignition (Black-Red)
2. Pin 5 on Ignitor*C-55* (Black-White)

57. Unknown

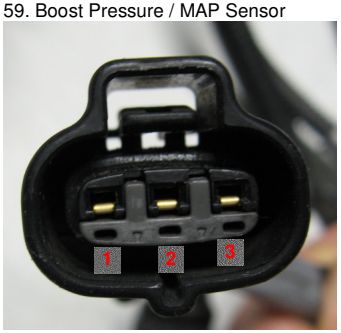
1. 'IG2' Ignition (Black-Red)
2. ECU CON-2 'IPV' (White-Black)
'IPV' is Vacuum Switching Valve on Gen2 EP82 models (unused on Gen 1 EP82)

58. Throttle Position Sensor




1. ECU 'IDL' (Yellow-Red)
2. ECU 'E2" (GND - Brown)
3. ECU 'PSW' (Yellow-Green)

59. Boost Pressure / MAP Sensor

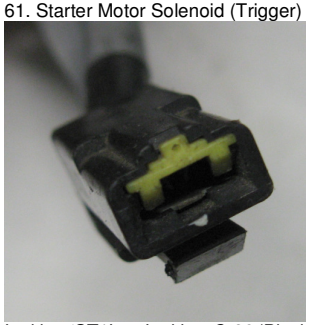



1. ECU 'E2' (Brown)
2. ECU 'PIM' (Green)
3. ECU 'VCC' (Green-Red)

60. Starter Motor Solenoid (Main Voltage)

Single black wire (heavy gauge) – connected directly to Battery

61. Starter Motor Solenoid (Trigger)

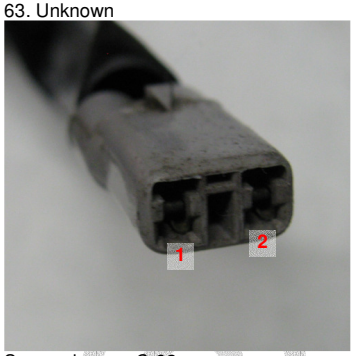


Ignition 'ST1' on Ignition *C-36* (Black-White)

62. Alternator

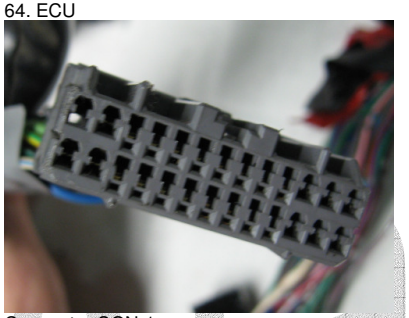
1. From 'Instrument/Dash Cluster' Fuse (Red-Black)
2. Connection to Battery via AM1 fuse (White)
3. To *C-17* A4 Battery Light in instrument cluster (Yellow-Black)
4. Connection to Battery via AM1 fuse (White)

63. Unknown



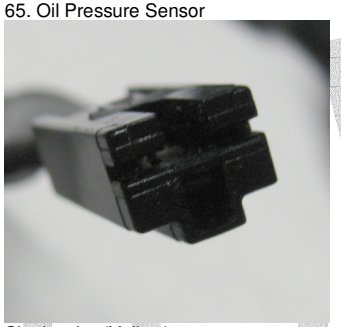

Same wires as *C-82*
1. Green-Red
2. Green-Yellow
(To Rear of Car *C-30*)

64. ECU



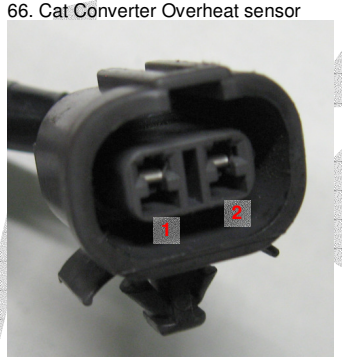
Connector CON-1

65. Oil Pressure Sensor



Single wire (Yellow)
Connects to Instrument cluster *C-17* A8

66. Cat Converter Overheat sensor

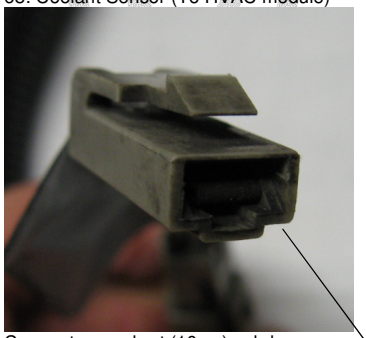



1. ECU CON-2 Pin 3 'CCO? ' (Grey-Green)
2. Ground (Brown)

67. Oxygen Sensor

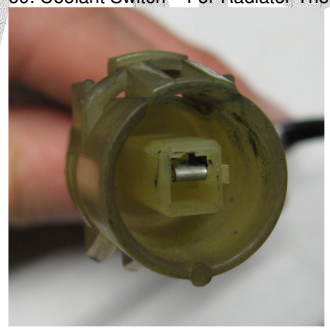
ECU 'OX' (White)

68. Coolant Sensor (To HVAC module)



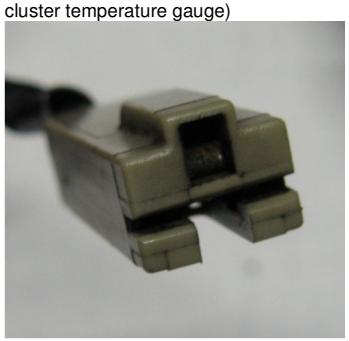
Connector on short (10cm) sub-harness
Wire in White in sub-harness;
Blue-Yellow in main loom
To HVAC module *C-48*

69. Coolant Switch – For Radiator Thermofan



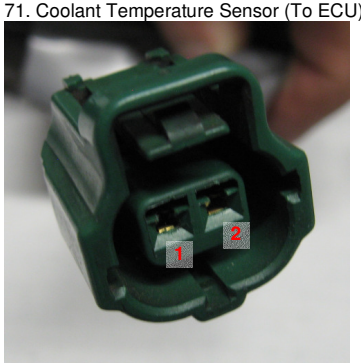
To *C-85* (Light Green)
Temperature Switch Normally Closed (N/C)

70. Coolant Temperature Sensor (To Instrument cluster temperature gauge)



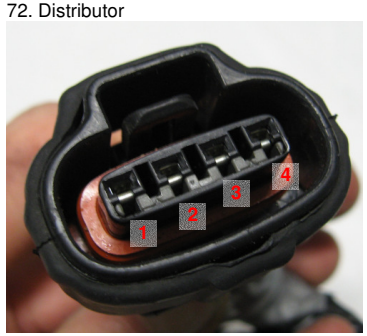
To Instrument cluster *C-17* A12 (Yellow-Green)

71. Coolant Temperature Sensor (To ECU)



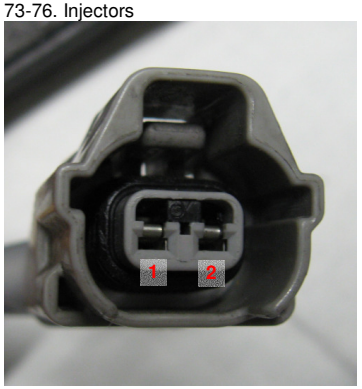

1. GND – ECU 'E2' (Brown)
2. ECU 'THW' (Green-Black)

72. Distributor



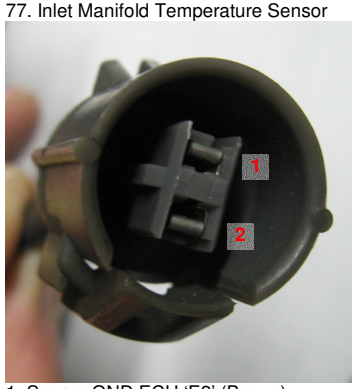

1. ECU 'NE' (White-Blue)
2. ECU 'G1' (Orange-Blue)
3. ECU 'G2' (Blue-Green)
4. ECU 'G-' (Blue-Yellow)

73-76. Injectors



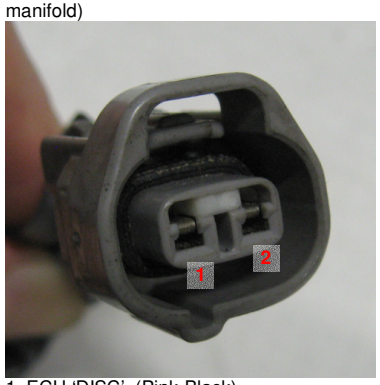

1. Injector 1 & 3 ECU '#10' (Green)
   Injector 2 & 4 ECU '#20' (Yellow)
2. Ignition IG2 (Black-Red)

77. Inlet Manifold Temperature Sensor




1. Sensor GND ECU 'E2' (Brown)
2. ECU 'THA' (Light Green-Black)

78. Idle Adjust Valve (mounted to side on inlet manifold)




1. ECU 'DISC' (Pink-Black)
2. 12V via EFI Relay (Black-Red)

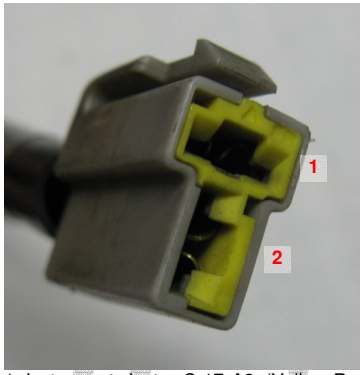
79. Vacuum Solenoid Valve (Controls pressure to wastegate actuator)

1. 12V via EFI Relay (Black-Red)
2. ECU 'VSV1' (Pink-White)

80. Knock Sensor (Rear of block)

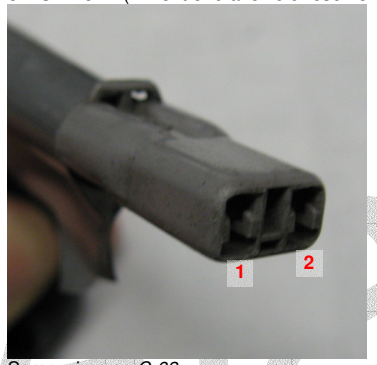
ECU 'KNK' (Black)

81. Low Level Brake Fluid Reservoir Switch



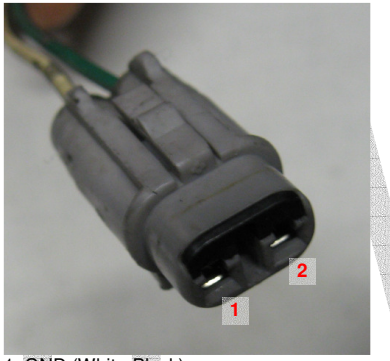

1. Instrument cluster *C-17* A3 (Yellow-Red)
2. GND (White-Black)
N/O circuit. At low fluid level, circuit is shorted.

82. Unknown (in front of brake fluid reservoir)



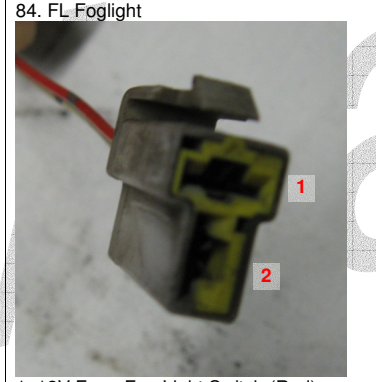

Same wires as *C-63*
1. Green-Yellow
2. Green-Red

83. FL Indicator




1. GND (White-Black)
2. 'TL' (Green-Black)

84. FL Foglight




1. 12V From Fog Light Switch (Red)
2. GND (White-Black)

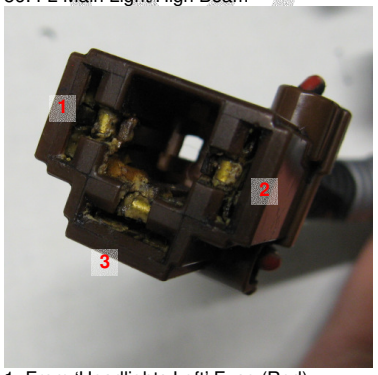
85. A/C Pressure Switch

Mounted in A/C Piping (no connectors shown).

Switch Normally Closed (N/C)

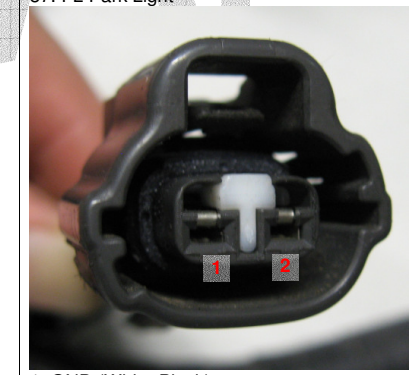
Light Green – *C-69* (Coolant Sensor)
Light Green-Red – to 'Cooling Fan' relay, 'A/C Fan No. 2" relay & HVAC Module *C-48*

86. FL Main Light/High Beam



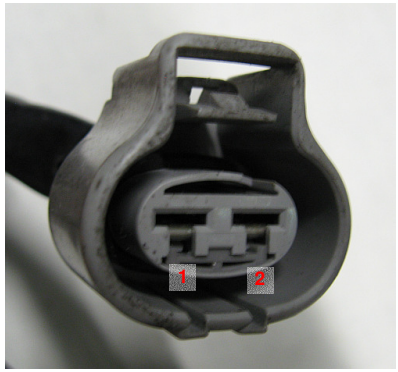

1. From 'Headlights Left' Fuse (Red)
2. 'HU' High Beam (Red-Yellow)
3. 'HL' Low Beam (Red-White)

87. FL Park Light



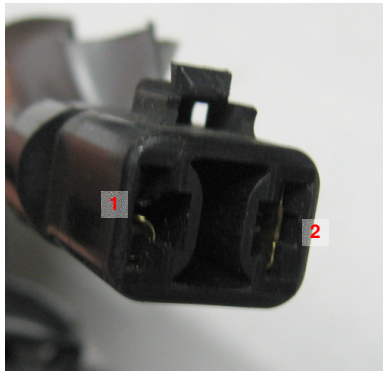

1. GND (White-Black)
2. Lights Signal (Green)

88. Radiator Fan



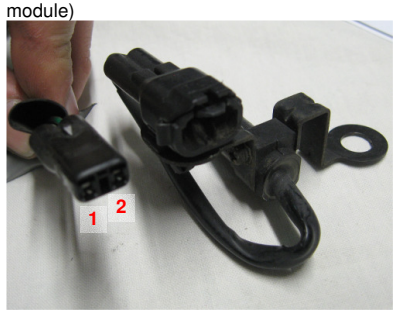

1. GND (White-Black)
2. 12V from 'Cooling Fan' or 'A/C Fan No.2" Relay (Blue-Black)

89. A/C Condenser Fan



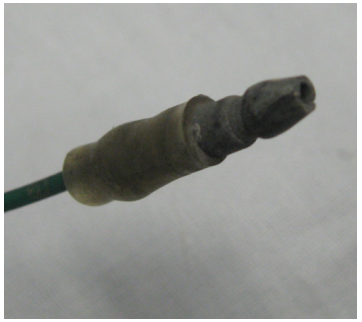

1. To 'A/C Fan No. 2' relay (Blue-White)
2. To 'Cooler Fan' relay (Blue)

90. Ambient Temperature Sensor (To HVAC module)



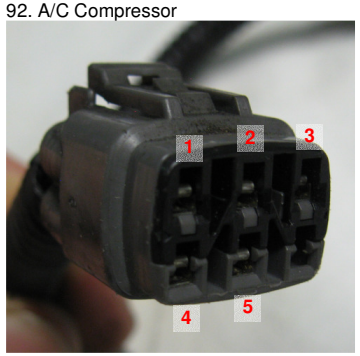

1. White-Green
2. Green-Yellow
To HVAC module *C-48*

91. Horn



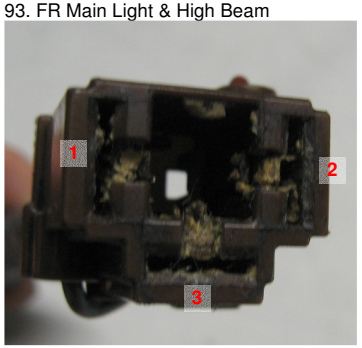
From ‘Horn Relay’ (Green-Red)

92. A/C Compressor




1. Black-Red 2. Blue-Black
3. Green-Red 4. Yellow-red
5. White-Yellow
All wires to HVAC module *C-48*

93. FR Main Light & High Beam

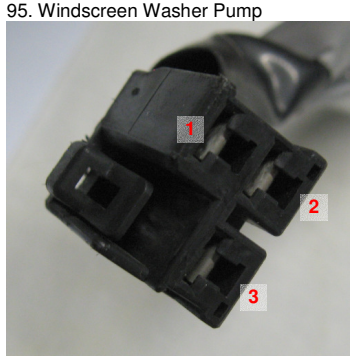



1. From ‘Headlights Right’ Fuse (Red-Green)
2. ‘HU’ High Beam (Red-Yellow)
3. ’ HL’ Low Beam (Red-White)

94. FR Park Light

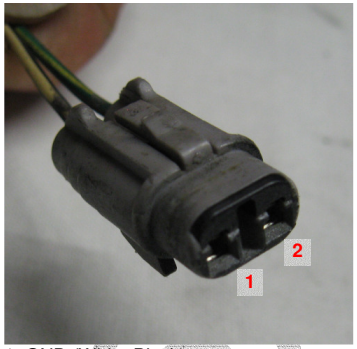
1. GND (White-Black)
2. Lights Signal (Green)

95. Windscreen Washer Pump



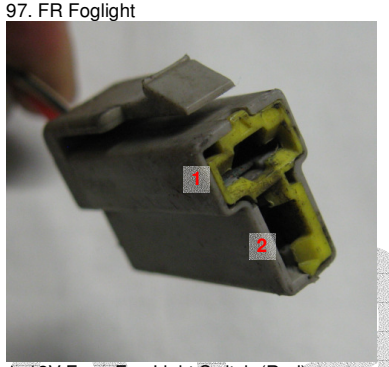

1. Rear Washer To *C-37* (Blue-White)
2. Front Washer To *C-38* (White-Blue)
3. 12V Constant - From ‘Wipers’ Fuse (Blue)

96. FR Indicator



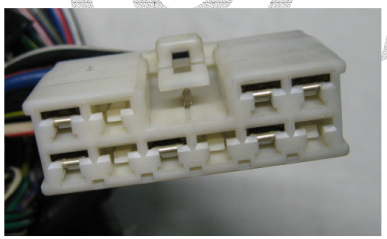

1. GND (White-Black)
2. ‘TR’ (Green-Black)

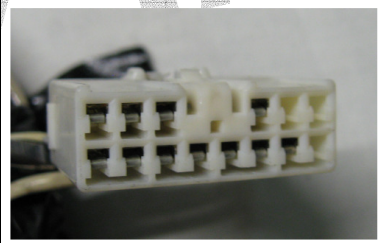
97. FR Foglight

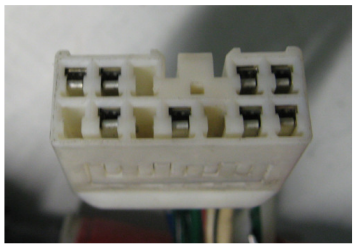


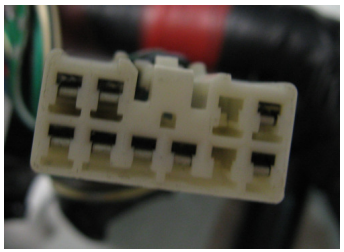

1. 12V From Fog Light Switch (Red)
2. GND (White-Black)

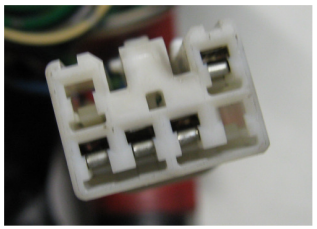
Connectors plugged into the base of Cream-coloured Cabin Fuse Box











(C) Alan Mears

Conduction Code Legend :

| | |
|---|---|
| B1 | Battery Source 1 |
| B2 | Battery Source 2 |
| F | Flasher |
| TB | Turn Signal Battery / Power |
| TL | Turn Left Signals |
| TR | Turn Right Signals |
| B / BI / +B | Battery (12V) |
| E / EW | Earth/Ground |
| HL | Headlight – Low Beam |
| HU | Headlight – Upper/High Beam |
| RF | Signal to ECU ('ELS') |
| TI | Taillights (and front Park lights) |
| +S | Wiper Park/Intermittent |
| +1 | Slow/Low Wiper Speed |
| +2 | Fast/High Wiper Speed |
| W | Washer Pump |

Diagnostics Connector 53 :

| Pin | Wire Colour | Connection / Function |
|---|---|---|
| $F_P$ | Blue-White | 12V to Fuel Pump |
| $CC_O$ | Grey-Green | ECU 'CCO' |
| +B | Black-Red | 12V (via EFI relay) |
| W | N/C | - |
| $T_{E1}$ | Green-Blue | ECU 'T" |
| $T_{E2}$ | N/C | - |
| $V_{F1}$ | Green-Yellow | ECU 'VF' |
| $V_{F2}$ | N/C | - |
| $E_1$ | Brown | ECU 'E1' (Ground) |
| $Ox_1$ | White | ECU 'OX' (Oxygen Sensor) |
| $Ox_2$ | N/C | - |
| IG- | Black | Ignitor Connector 55, Pin 4 |
| AB | N/C | - |
| $CC_2$ | N/C | - |
| $T_S$ | Red-Blue | Not Connected to anything |
| $O_{PT}$ | Red-Yellow | To HVAC module |
| $T_C$ | Red-Black | Not Connected to anything |
| $T_T$ | N/C | - |

Connector 30 :

| Pin | Wire Colour | Function |
|---|---|---|
| 1 | Red-Blue | From 'Instrument/Dash' Fuse |
| 2 | Green-Black | Left Indicator 'TL' |
| 3 | Green-Yellow | Right Indicator 'TR' |
| 4 | Green-Yellow | Unknown – From *C-63* & *C-82* |
| 5 | Red-Yellow | N/C to Engine Bay Loom |
| 6 | Yellow-Red | Handbrake Ground |
| 7 | Black | Demister Power |
| 8 | Green | Rear Park Lights 'T' |
| 9 | Green-Red (2Dot) | Unknown – From *C-63* & *C-82* |
| 10 | Blue-White | Fuel Pump |
| 11 | Green-White | Rear Brake Lights |
| 12 | Red-Black | Reverse Light |
| 13 | Blue-Red | N/C to Engine Bay Loom |
| 14 | Yellow-Black | Low Fuel Warning Signal |
| 15 | Yellow-Blue | Fuel Level Signal |
| 16 | Blue | Rear wiper power |
| 17 | Blue-Black | Rear Wiper – Slow speed |
| 18 | Blue-Yellow | Rear Wiper – Intermittent |
| 19 | Green-Red (1Dot) | N/C to Engine Bay Loom |

O——O : Conduction between pins

Connector 32 : Hazard Switch

| Pin ➔ | 8 | 6 | 5 | 7 | 3 | 4 |
|---|---|---|---|---|---|---|
| Switch Position ↓ | **B1** | **B2** | **F** | **TB** | **TL** | **TR** |
| OFF | O——— | ———— | ———O | | | |
| ON | | O——— | ———O | O——— | ———O——— | ———O |

Connector 36 : Ignition

| Pin ➔ | 5 | 4 | 3 | 6 | 1 | 2 |
|---|---|---|---|---|---|---|
| Key Position ↓ | **AM1** | **ACC** | **IG1** | **ST1** | **AM2** | **IG2** |
| LOCK | | | | | | |
| ACC | O——— | ———O | | | | |
| ON | O——— | ———O | ———O | | O——— | ———O |
| START | O——— | ——— | ———O | ———O | O——— | ———O |

Connector 37 : Rear Wiper

| Pin ➔ | 2 | 1 | 3 | 4 |
|---|---|---|---|---|
| Switch Position ↓ | **E** | **I** | **+1** | **W** |
| OFF | | | | |
| INT | O——— | ———O | | |
| ON | O——— | ——— | ———O | |
| WASH | O——— | ——— | ——— | ———O |

Connector 38 : Front Wipers

| Pin ➔ | 5 | 6 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| Switch Position ↓ | **+B** | **+S** | **+1** | **+2** | **EW** | **W** |
| INT | | O——— | ———O | | | |
| LOW | O——— | ——— | ———O | | | |
| HIGH | O——— | ——— | ——— | ———O | | |
| WASH | | | | | O——— | ———O |

Connector 39 : Lights & Indicators

| Pin ➔ | | 9 | 8 | 6 | 1 | 5 | 7 |
|---|---|---|---|---|---|---|---|
| Switch Position ↓ | | **BI** | **TI** | **RF** | **E** | **HU** | **HL** |
| OFF | | | | | | | |
| | High Beam | | | | | | |
| | Flash/Pass | | | | O——— | ———O | |
| Park Lights | | O——— | ———O | | | | |
| | High Beam | O——— | ———O | | | | |
| | Flash/Pass | O——— | ———O | | O——— | ———O | |
| Main Lights | | O——— | ———O | ———O | O——— | ——— | ———O |
| | High Beam | O——— | ———O | ———O | O——— | ———O | |
| | Flash/Pass | O——— | ———O | ———O | O——— | ———O | |

Connector 39 : Turn Signals

| Pin ➔ | 2 | 3 | 4 |
|---|---|---|---|
| Switch Position ↓ | **TL** | **TB** | **TR** |
| LEFT | O——— | ———O | |
| OFF | | | |
| RIGHT | | O——— | ———O |

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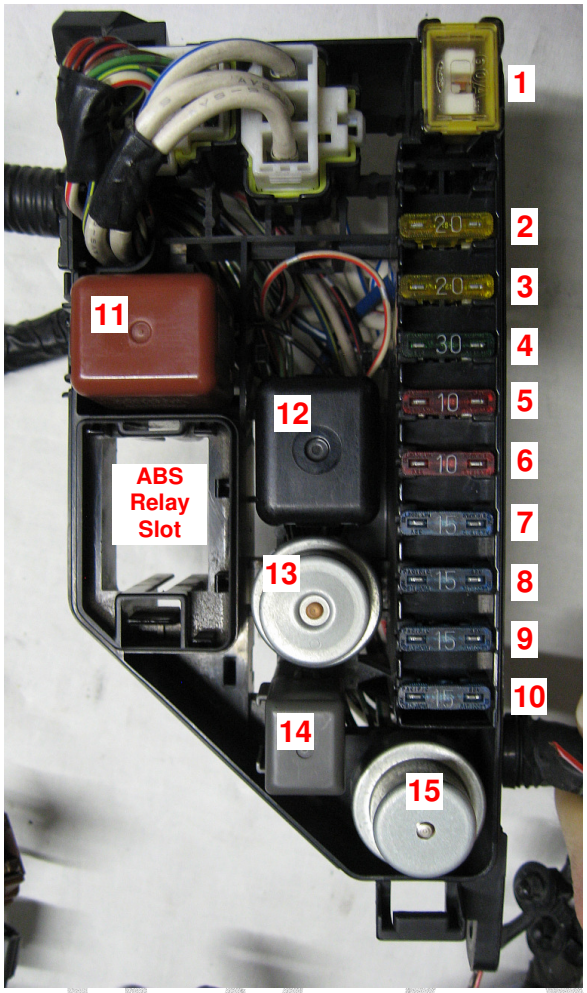
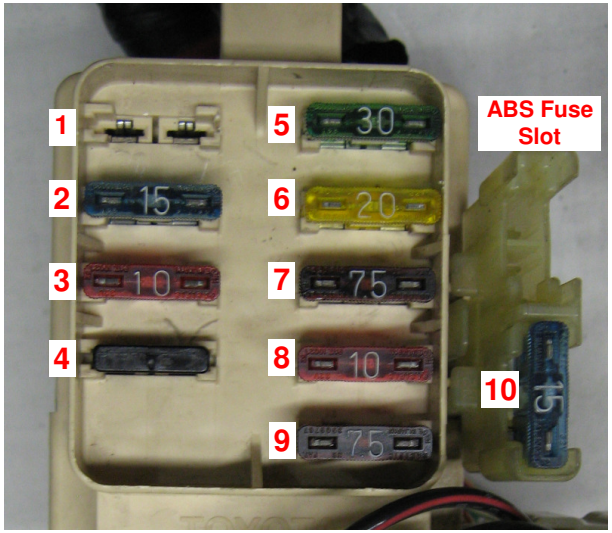


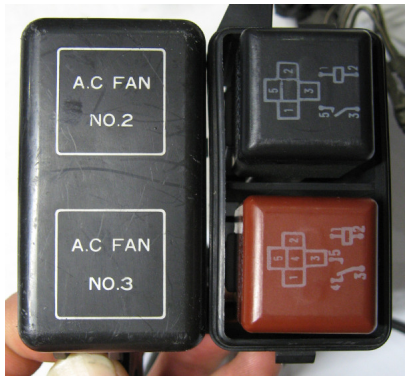

**Engine Bay Fuse Box**

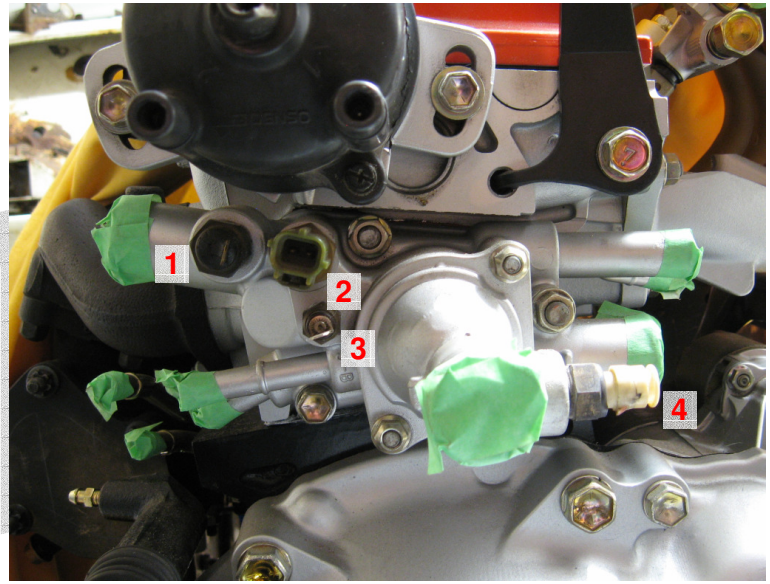
| | | |
|---|---|---|
| 1 | AM1 | 60A |
| 2 | A/C Condenser Fan (CDS) | 20A |
| 3 | Radiator Fan | 20A |
| 4 | Heater | 30A |
| 5 | Headlights (Left) | 10A |
| 6 | Headlights (Right) | 10A |
| 7 | Interior Dome Light | 20A |
| 8 | AM2 | 15A |
| 9 | Hazard/Horn | 15A |
| 10 | EFI | 15A |
| 11 | Main Relay | - |
| 12 | 'Cooler' Relay | - |
| 13 | EFI Relay | - |
| 14 | Horn Relay | - |
| 15 | 'Cooling Fan' Relay | - |




**Cabin Fuse Box**

| | | |
|---|---|---|
| 1 | Radio | 10A |
| 2 | Tail Lights | 15A |
| 3 | Stop Lights | 10A |
| 4 | N/C | - |
| 5 | Rear Demister | 30A |
| 6 | Wipers | 20A |
| 7 | Turn Signals | 7.5A |
| 8 | A/C | 10A |
| 9 | Instrument/Dash Cluster | 7.5A |
| 10 | Ignition | 15A |



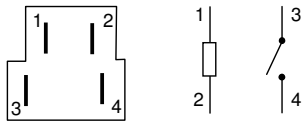




**Sensors/Switches relating to coolant around thermostat housing :**
1 – Connector 68. To HVAC Module
2 – Connector 71. To ECU
3 – Connector 70. To Dash Gauge
4 – Connector 69. Temperature Switch for Radiator Fan

Radiator Fan Switch (4) has internal switch :
Conduction when Coolant < 93°C
No Conduction when Coolant > 93°C

## Relay Connection & Pin Details

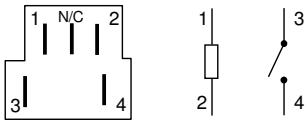
#11
Main Relay
(N/O)




1. Ignition 'IG2' (Black-Red)
2. GND (White-Black)
3. 'AM1' Fuse (White)
4. Radiator Fan Fuse (White-Red)

Part # 90987-02006

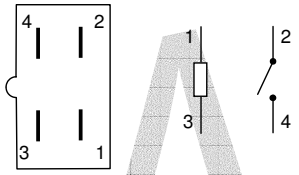
#12
'Cooler' Relay
(N/O)




1. Ignition 'IG2' (Black-Red)
2. GND (White-Black)
3. *C-89* - A/C Fan (Blue)
4. CDS Fan Fuse (Blue-Black)

Part # 90987-04002

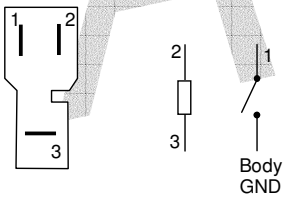
#13
EFI Relay
(N/O)
22 Amp rating




1. EFI Fuse (White-Red)
2. Ignition 'IG2' (Black-Red)
3. *C-1* – Circuit Opening Relay Pin 2 (Black-Red)
4. GND (White-Black)

Part # 90987-02004

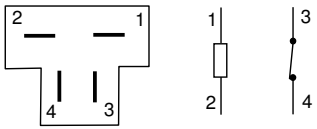
#14
Horn Relay
(N/O)




1. *C-91* – Horn (Green-Red)
2. Horn Fuse (Green-White)
3. *C-39* - Horn button (Green-Yellow)

Part # 86530-20070

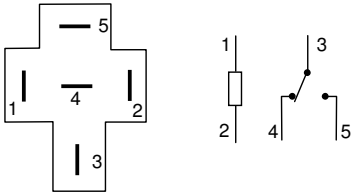
#15
'Cooling Fan' Relay
(N/C)
15 Amp rating




1. A/C Fan No. 2 Relay Pin 1 & *C-85* A/C Pressure Switch (Light Green-Red)
2. Ignition 'IG2' (Black-Red)
3. Radiator Fan Fuse (White-Green)
4. A/C Fan No. 2 Relay Pin 5 & Radiator Fan (Blue-Black)

N/C Relay - *Pins 3 & 4 are shorted when coil is not energized*

A/C Fan
No.2 Relay

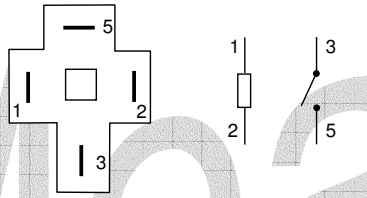



1. 'Cooling Fan' Relay Pin 1 & *C-85* A/C Pressure Switch (Light Green-Red)
2. Ignition 'IG2' (Black-Red)
3. A/C Fan No. 3 Relay Pin 3 (Blue-Red)
4. GND (White-Black)
5. Radiator Fan (Blue-Black)

*Pins 3 & 4 are shorted when coil is not energized*

Part # 90987-02010

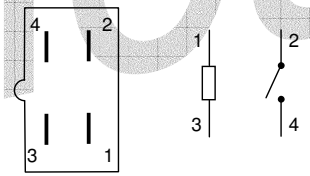
A/C Fan
No.3 Relay
(N/O)




1. GND (White-Black)
2. *C-48* – HVAC (Black-Blue)
3. A/C Fan No. 2 Relay Pin 3 (Blue-Red)
5. A/C Condenser Fan (Blue-White)

Part # 90987-04003

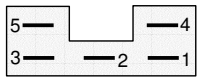
Power Windows
Relay
(N/O)
22 Amp rating

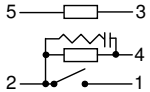



1. From Power Windows Fuse (Blue)
2. *C-22* Door Control Module (Red-Green)
3. To Power Window (Blue-Green)
4. GND (White-Black)

Part # 90987-02004

Circuit Opening
Relay
(N/O)
(Connector 1)




1. To Fuel Pump (Blue-White)
2. 12V from 'EFI' Relay & ECU 'BATT' (Black-Red)
3. From Ignition 'ST1' & To Starter Motor solenoid & ECU 'STA'
4. To ECU 'FC' (Fuel Cut)
5. GND (White-Black)

Part # 85910-10010

N.B. Diagrams are of relay plugs as viewed from above fuse box, not underside of actual relays

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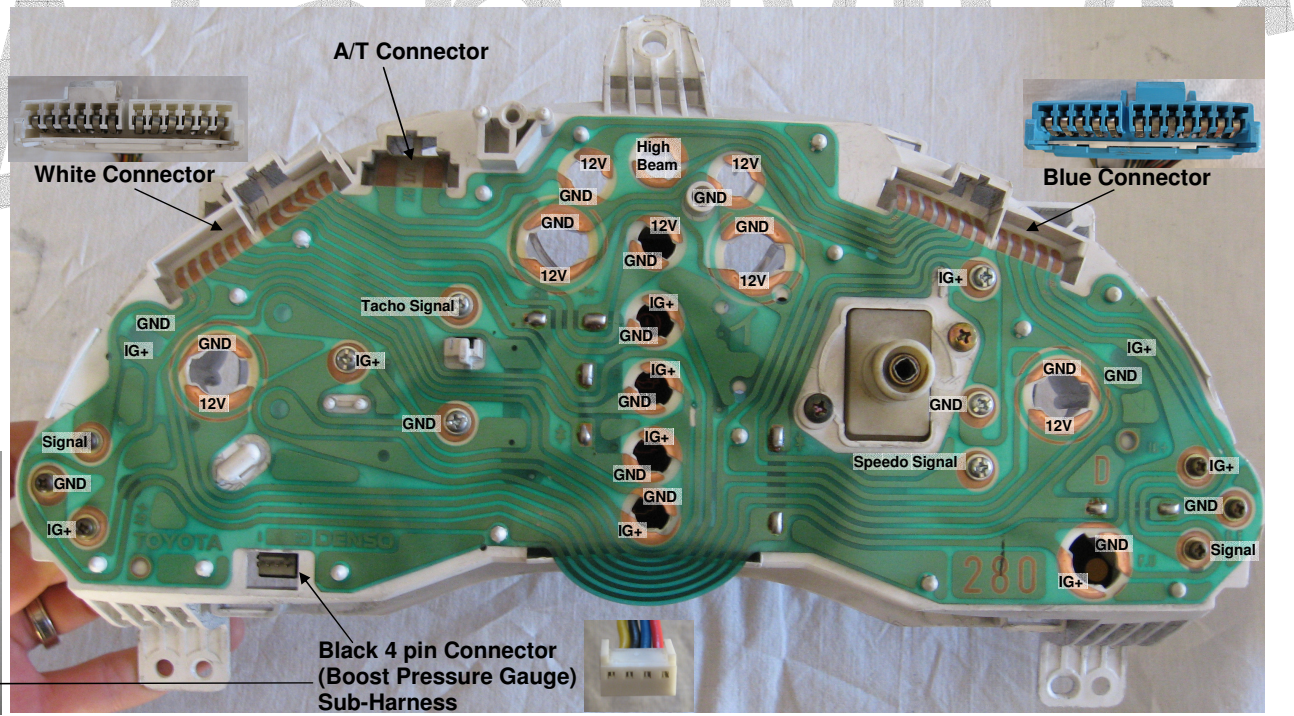
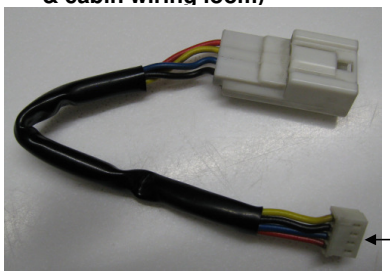
Note : photos are from 1991 (Gen 1) M/T 4E-FTE with no ABS or TEMS

ABS, TEMS & A/T Overdrive LED/light locations have been indicated




Boost Pressure Gauge Sub-Harness (connects between instrument cluster & cabin wiring loom)



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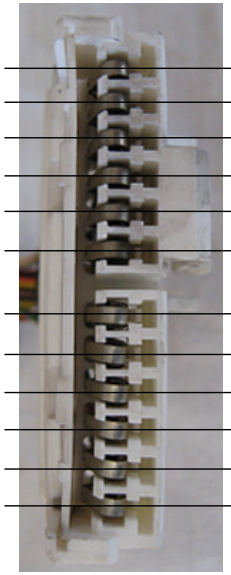
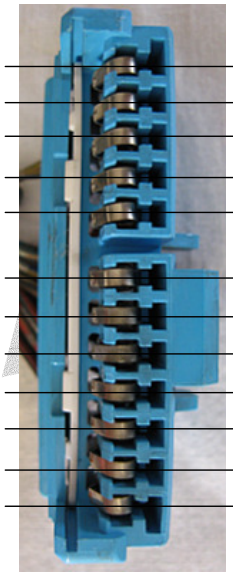
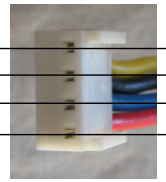
## Instrument/Gauge cluster wiring



| | | |
|---|---|---|
| Lights (Positive) | A1 | Green 'T' |
| Battery Charge (Positive) | A2 | Black-Red 'IG2' |
| Handbrake Light (Ground) | A3 | Yellow-Red |
| Battery Light (Ground) from Alternator | A4 | Mustard-Black (1 Silver dot on wire) |
| TEMS 'N' (Power) | A5 | Pink-White |
| Tacho Signal (IG-) | A6 | White |
| TEMS S' (Power) | A7 | Pink-Black |
| Oil Pressure Light (Ground) | A8 | Mustard |
| Cat Converter Overheat (Ground) | A9 | Grey-Black (ECU Pin 'EGW') |
| Engine Check Light (Ground) | A10 | Green-White (ECU Pin 'W') |
| O/D OFF (Ground) | A11 | Red-Yellow |
| Temperature Gauge Signal | A12 | Yellow-Green |

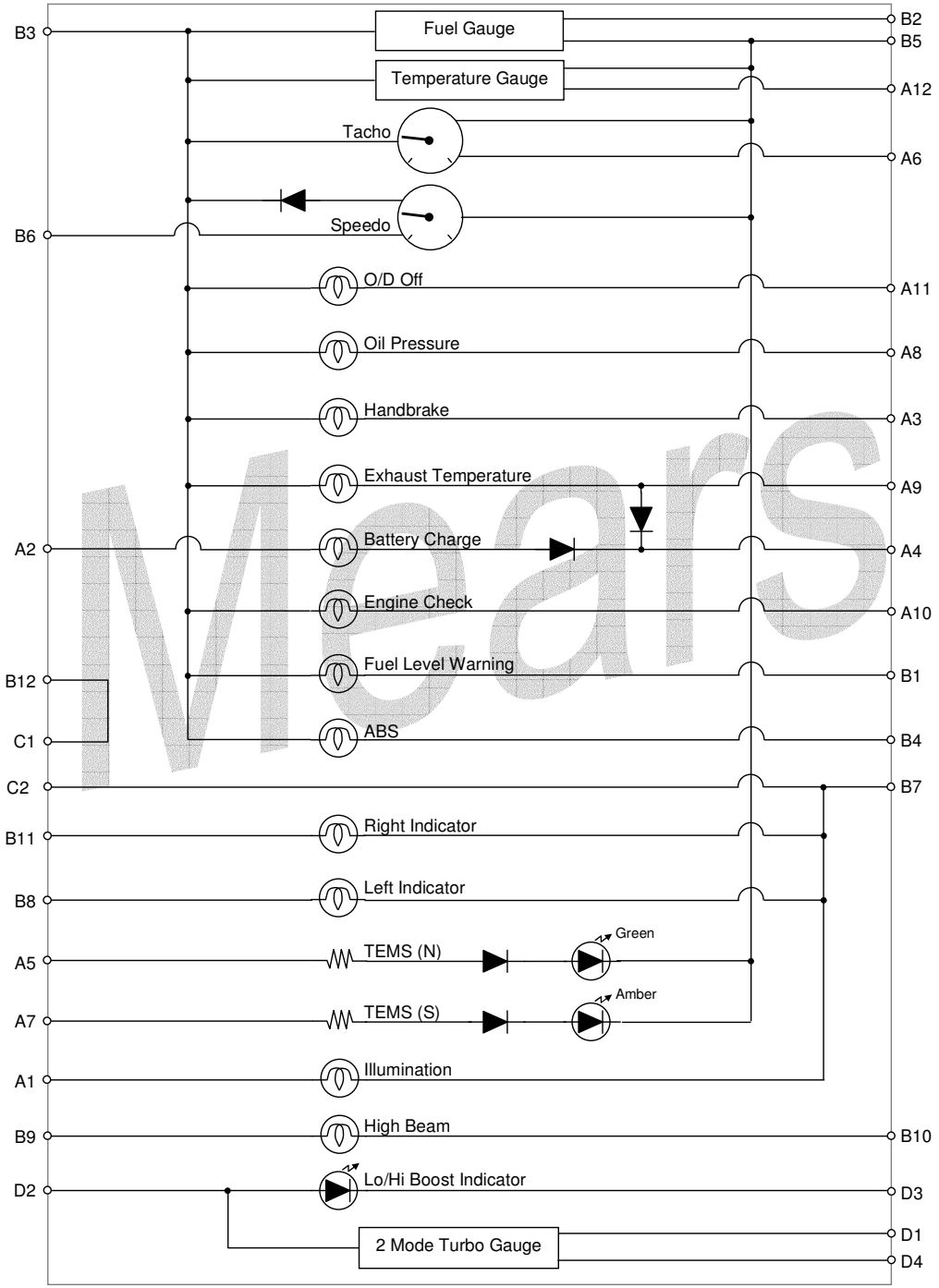


| | | |
|---|---|---|
| Fuel Level Warning Light (Ground) | B1 | Mustard-Black (2 Silver dots on wire) |
| Fuel Level Gauge Signal | B2 | Mustard-Blue |
| Ignition (From 'Dash' Fuse) | B3 | Red-Blue |
| ABS (Ground) | B4 | Red-Yellow (2 Silver dots on wire) |
| Ground (Gauges only) | B5 | Brown |
| Speedo Signal | B6 | Yellow-Blue (ECU Pin 'SPD') |
| Ground (Indicators & Lights) | B7 | White-Black |
| LHS Indicator (Power) | B8 | Green-Black |
| High Beam 12V (From 'H/Lights Right' Fuse) | B9 | Red-Green |
| High Beam (Ground) | B10 | Red-Yellow (1 Silver dot on wire) 'HU' |
| RHS Indicator (Power) | B11 | Green-Yellow |
| A/T Reverse | B12 | Red-Black |



| | | |
|---|---|---|
| 2 Mode (Lo/Hi Boost) | D1 | Yellow |
| Ground | D2 | Black |
| Signal | D3 | Blue |
| Ignition (IG+) | D4 | Red |

Automatic Transmission Connector – C1 & C2

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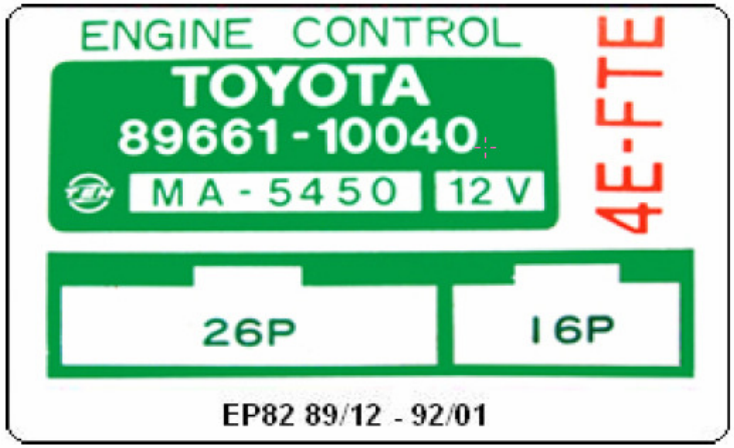
**NOTE :** The details on this page have been sourced from publicly accessible PDF detailing all EP82 & EP91 ECU's and pinouts http://street-legal-starlet.nl/Sagittarius/ecu's.pdf. The details are copyrighted to StreetLegalStarlet forums http://www.street-legal-starlet.nl/forum/, documented by Sagittarius®. These details are taken as a screenshot of the single PDF page relating to the Gen1 (Dec 1989 – Jan 1992) EP82 Toyota Starlet GT. ECU details for later models can be obtained from the PDF.




Green Sticker
P/N: 89661-10040
MA - 5450

EP82 AT + MT (both same ecu)
(89/12 - 92/01)

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| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E01 | #10 | STA | OX | G- | G1 | IGF | IGT | THA | PIM | THW | NSW | |
| E02 | #20 | E1 | KNK | E21 | NE | G2 | IDL | VC | PSW | E2 | VSV1 | DISC |

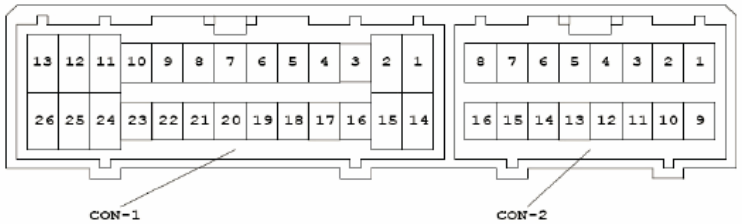
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| T | BC | AC2 | ELS | FC | CCO | BATT | +B1 |
| VF | AC1 | ACT | SPD | | EGW | W | +B |

**Connector 1**

| pin | name | function |
|---|---|---|
| 1 | --- | --- |
| 2 | NSW | Neutral Starter Switch |
| 3 | THW | Water temp signal |
| 4 | PIM | Pressure Intake Manifold (boost or vacuum) |
| 5 | THA | Intake Air temp |
| 6 | IGT | Ignition Timing |
| 7 | IGF | Ignition Feedback |
| 8 | G1 | Distributor |
| 9 | G- | Distributor Crank Angle |
| 10 | OX | Oxygen sensor (lambda) |
| 11 | STA | Engine Cranking Signal (starter switch) |
| 12 | #10 | Injector signal 1+3 |
| 13 | E01 | Computer Ground |
| 14 | DISC | Aux. Control Valve or Idle-Up System Vacuum Switching Valve |
| 15 | VSV1 | Air Control Vacuum Switching Valve (hi-lo boost solenoid) |
| 16 | E2 | Sensor Ground |
| 17 | PSW | Throttle Position Sensor (VTA = PSW) |
| 18 | VC | Throttle Position Sensor (pin 1) (also known as VCC) |
| 19 | IDL | Throttle Position Sensor (Signals ECU throttle position is at idle) |
| 20 | G2 | Distributor |
| 21 | NE | Part of the IIA (Intergrated Ignition Assembly) (RPM) |
| 22 | E21 | Sensor Ground |
| 23 | KNK | Knock Sensor |
| 24 | E1 | Computer Ground |
| 25 | #20 | Injector signal 2+4 |
| 26 | E02 | Computer Ground |

**Connector 2**

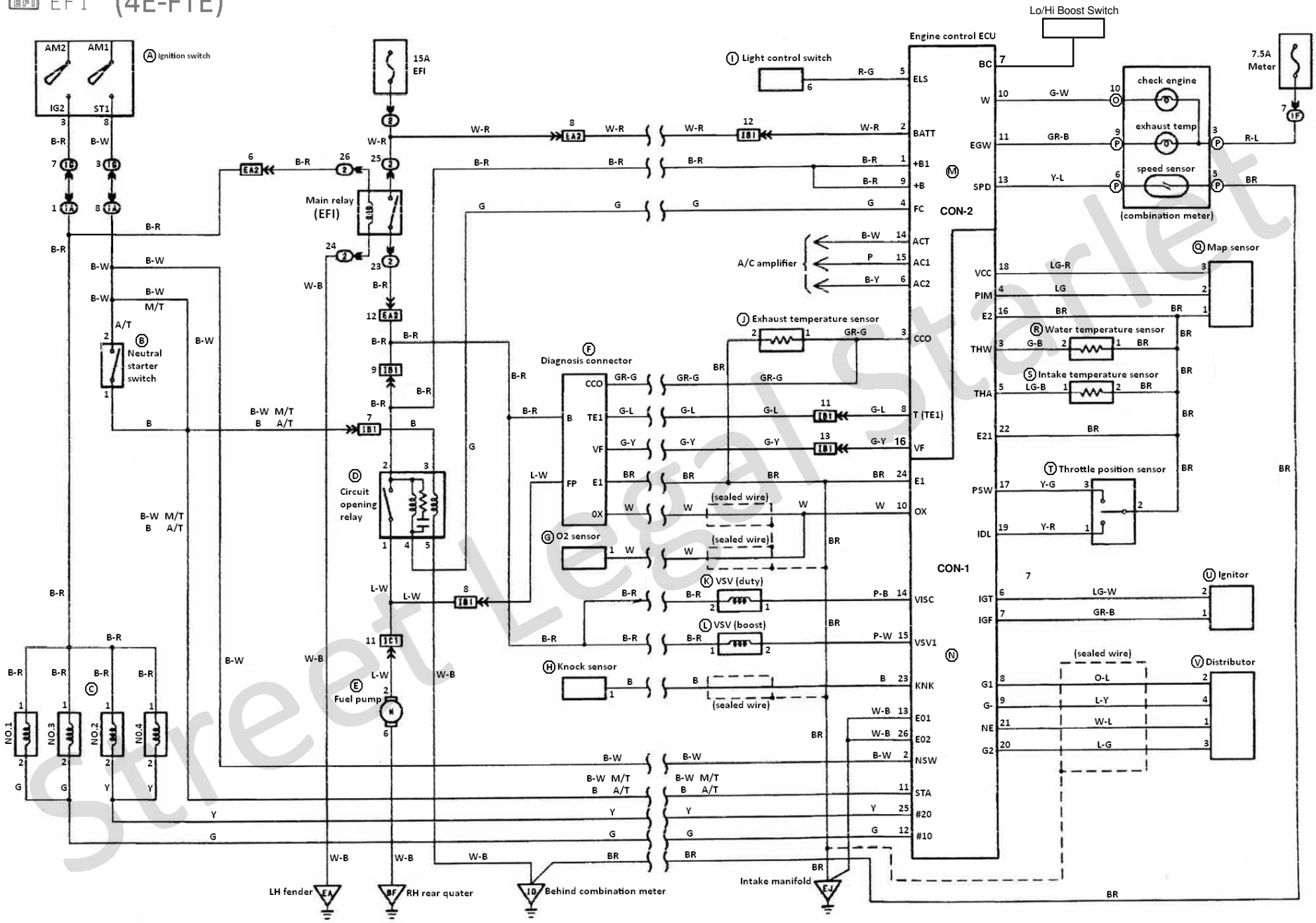
| pin | name | function |
|---|---|---|
| 1 | +B1 | Switched Battery Power (12V) |
| 2 | BATT | Switched Battery Power (+12V) (EFI Main Relay) |
| 3 | CCO | Check Connector Outputs |
| 4 | FC | Circuit Opening Relay (Fuel Cut) |
| 5 | ELS | Electrical Load Signal System Taillight Relay |
| 6 | AC2 | 12V To Aircon Computer |
| 7 | BC | Boost Control |
| 8 | T | Check Connector (Same as TE1) |
| 9 | +B | Switched Battery Power (12V) |
| 10 | W | Warning Light |
| 11 | EGW | Catalytic Converter Temparature Warning Light (Combination Meter) |
| 12 | --- | --- |
| 13 | SPD | Speed Signal |
| 14 | ACT | A/C Cut Control System |
| 15 | AC1 | A/C Switch Signal System (12V to Aircon Computer) |
| 16 | VF | Check Connector Outputs |



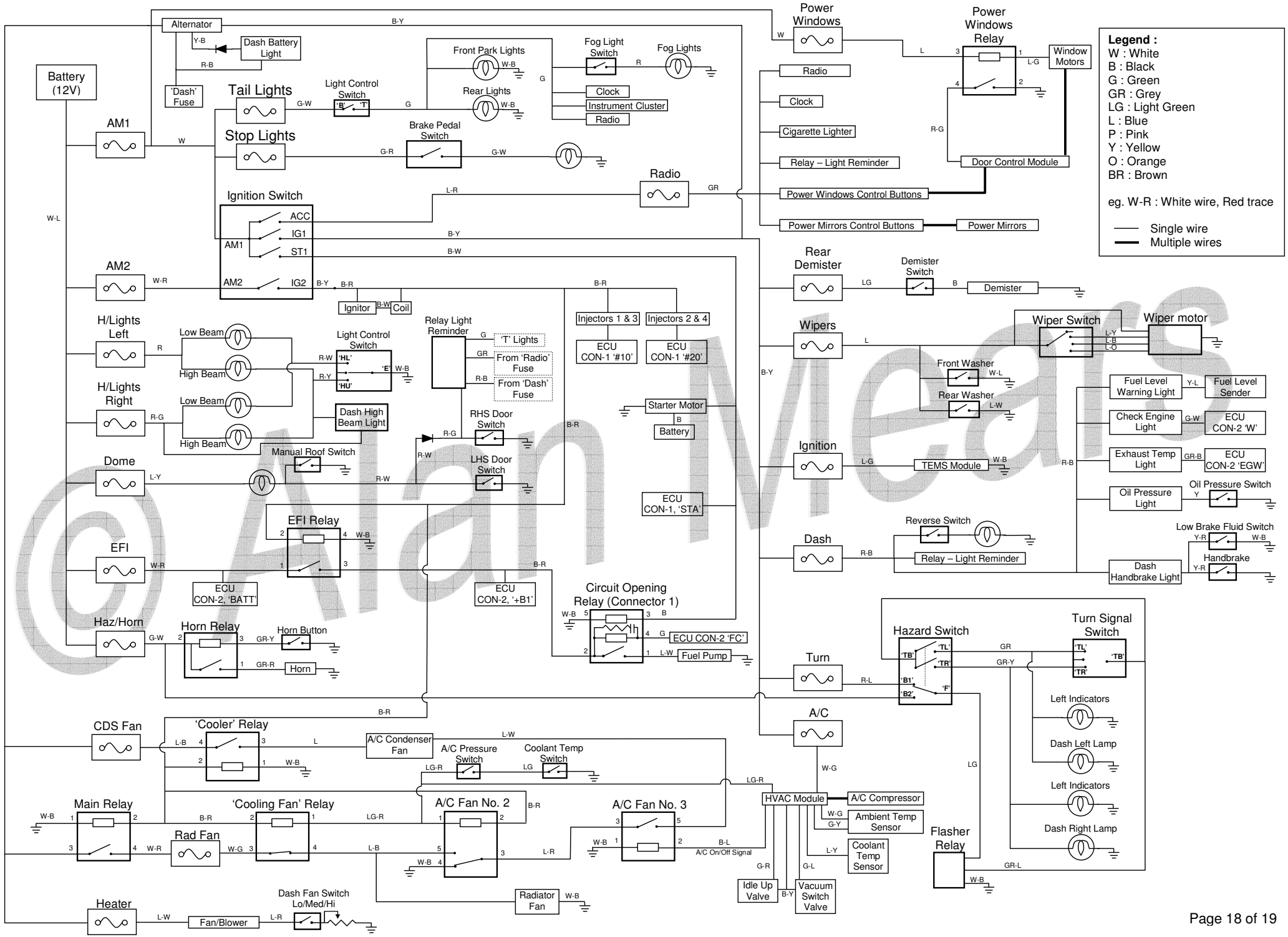

Street Legal St

**NOTE :** The details on this page have been sourced from publicly accessible JPG detailing the EP82 (Zenki) ECU wiring diagram. The original JPG is copyrighted to StreetLegalStarlet forums http://street-legal-starlet.nl/Sagittarius/Wiring/SLS%20-%20EP82%20Wiring%20diagram%20%28zenki%29.jpg. Corrections made to the original JPG : 'VF' Pin number corrected from CON-1 Pin 15 to 16; CON-2 Pin 7 'BC' added; Coil input for Main EFI relay moved from 'ST1' to 'IG2' line

EFI (4E-FTE)




Street Legal Starlet


Legend :
W : White
B : Black
G : Green
GR : Grey
LG : Light Green
L : Blue
P : Pink
Y : Yellow
O : Orange
BR : Brown
eg. W-R : White wire, Red trace
Single wire
Multiple wires
Battery (12V)
Alternator
Dash Battery Light
'Dash' Fuse
Tail Lights
Light Control Switch
Front Park Lights
Rear Lights
Fog Light Switch
Fog Lights
Clock
Instrument Cluster
Radio
Stop Lights
Brake Pedal Switch
Ignition Switch
ACC
IG1
ST1
IG2
AM1
AM2
Ignitor
Coil
Power Windows
Power Windows Relay
Window Motors
Door Control Module
Power Windows Control Buttons
Power Mirrors Control Buttons
Power Mirrors
Cigarette Lighter
Relay – Light Reminder
Rear Demister
Demister Switch
Demister
Wipers
Wiper Switch
Wiper motor
Front Washer
Rear Washer
H/Lights Left
H/Lights Right
Low Beam
High Beam
Dash High Beam Light
Relay Light Reminder
'T' Lights
From 'Radio' Fuse
From 'Dash' Fuse
Injectors 1 & 3
Injectors 2 & 4
ECU CON-1 '#10'
ECU CON-1 '#20'
Starter Motor
Battery
RHS Door Switch
LHS Door Switch
Manual Roof Switch
Dome
Ignition
TEMS Module
Fuel Level Warning Light
Fuel Level Sender
Check Engine Light
ECU CON-2 'W'
Exhaust Temp Light
ECU CON-2 'EGW'
Oil Pressure Light
Oil Pressure Switch
ECU CON-1, 'STA'
EFI Relay
EFI
ECU CON-2, 'BATT'
ECU CON-2, '+B1'
Circuit Opening Relay (Connector 1)
ECU CON-2 'FC'
Fuel Pump
Reverse Switch
Dash
Low Brake Fluid Switch
Handbrake
Dash Handbrake Light
Haz/Horn
Horn Relay
Horn Button
Horn
Hazard Switch
Turn Signal Switch
Turn
Left Indicators
Dash Left Lamp
Dash Right Lamp
A/C
CDS Fan
'Cooler' Relay
A/C Condenser Fan
A/C Pressure Switch
Coolant Temp Switch
Main Relay
'Cooling Fan' Relay
A/C Fan No. 2
A/C Fan No. 3
Rad Fan
HVAC Module
A/C Compressor
Ambient Temp Sensor
Coolant Temp Sensor
A/C On/Off Signal
Flasher Relay
Idle Up Valve
Vacuum Switch Valve
Radiator Fan
Heater
Fan/Blower
Dash Fan Switch Lo/Med/Hi

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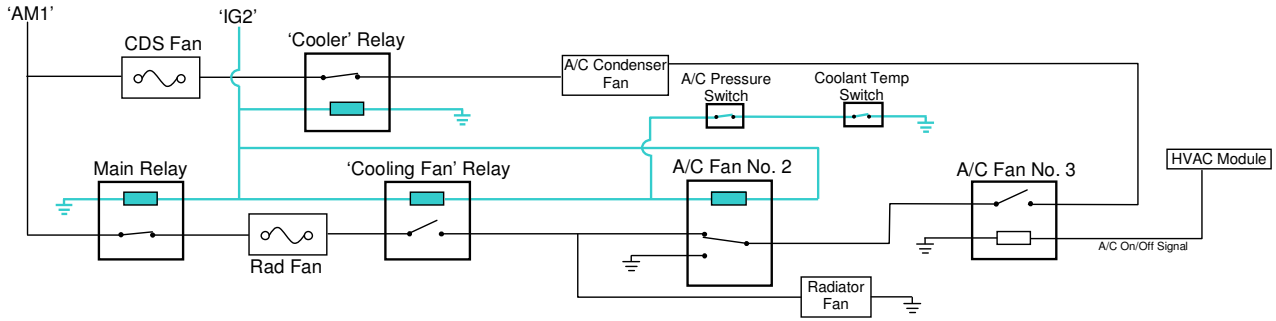
## A/C Condenser Fan & Radiator Fan Relay Configurations

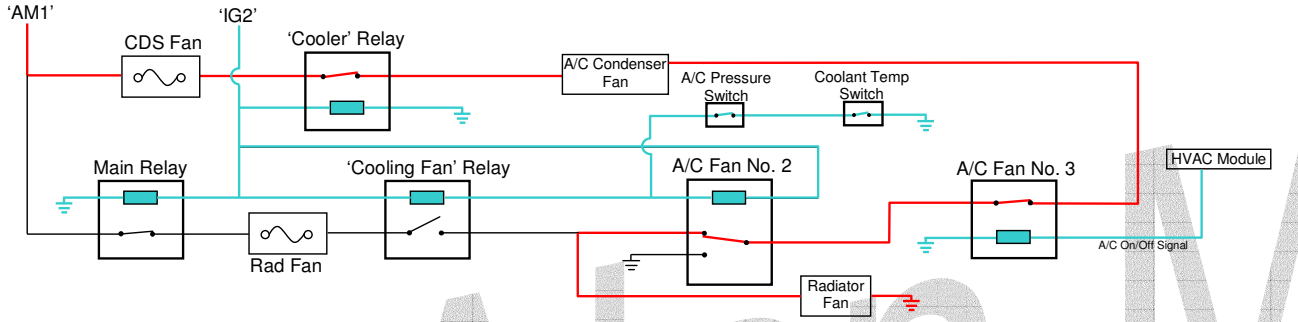
This page details the current flow through the relay coils and switches in various configurations

Legend :
- Coil Energised
- Current Flow through relay coils
- Current Flow through relay contacts



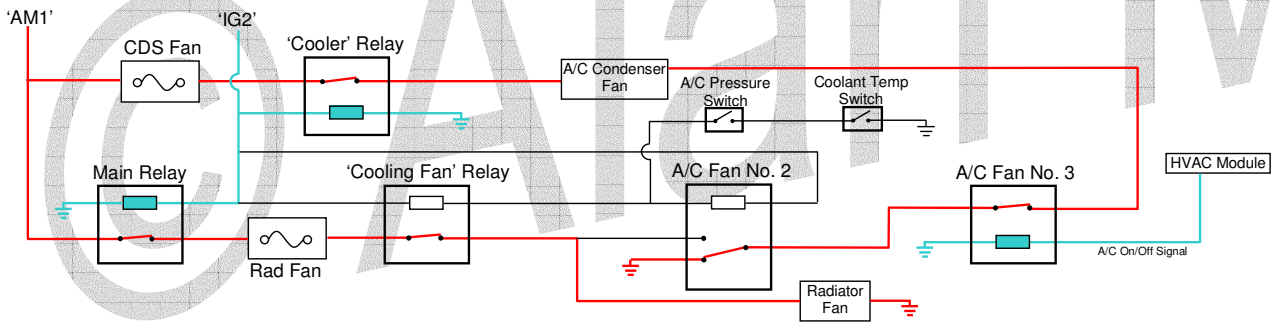

- Ignition On
- A/C Off
- Normal Coolant Temperature
- Normal A/C Pressure

No fans running



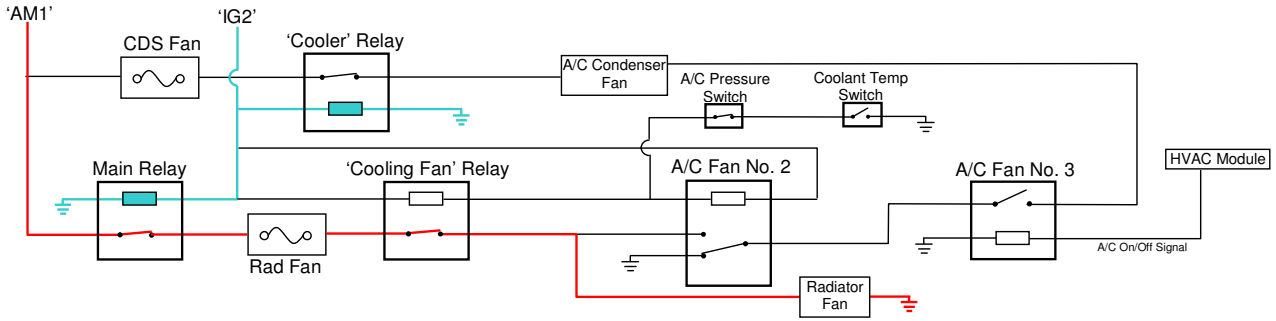

- Ignition On
- A/C On
- Normal Coolant Temperature
- Normal A/C Pressure

Both fans powered in series and both run at low speed




- Ignition On
- A/C On
- High Coolant Temperature or High A/C Pressure

Fans powered in parallel through separate fuses and run at high (full) speed




- Ignition On
- A/C Off
- High Coolant Temperature
- Normal A/C Pressure

A/C Condenser fan not running. Radiator Fan runs as high (full) speed

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