

## Montero Sport 1997 3.0L ECM/1999 3.5L A/T PCM Pin-Out Table for Parallel Megasquirt III w/ MS3X

Pin-outs were taken directly from the official Mitsubishi™ factory service manuals and as such may contain errors if the service manual documentation is in error. Not all pin-outs may be listed in the tables below. Note that these pin-outs are untested and use of these tables may result in vehicle component damage. As such, the user of this documentation accepts all liability and may not hold the distributor of this document liable for any damages that may occur. Do not attempt to use these tables without confirming that the pin-outs are correct!

### 1997 M/T ECM FED MD338139/MD349089 (GREEN 76-pin)



### 1999 A/T PCM FED MD357516/MD364531 (BLACK 119-pin)



1999 BLACK	1997 GREEN	AWG <sup>3</sup>	ECM/PCM Pin Description	1997 M/T ECM & 1999 A/T PCM MS III / MS3X	?CM I/O	NOTES <sup>4</sup>	
1	1	16	No. 1 fuel injector (A-75)	1	19	input <a href="#">MS3X; Mitsu A-70-A-75, pin 1 B+, pin 2 ECM GND; PS bank A-75, A-74, A-73; DS bank A-72, A-71, A-70; A-04 pin 8 B+, pin 3 Inj 1, pin 2 Inj 2, pin 1 Inj 3, pin 7 Inj 4, pin 6 Inj 5, pin 5 Inj 6; CEL/OBD P020(1-6), injector coil surge voltage (battery positive voltage + 2 volts) has not been detected for four seconds; insert appropriate resistor 68° F 13-16 Ω</a>	
9	14	16	No. 2 fuel injector (A-72)	16			
24	2	16	No. 3 fuel injector (A-74)	13			
2	15	16	No. 4 fuel injector (A-71)	10			
10	3	16	No. 5 fuel injector (A-73)	7			
25	16	16	No. 6 fuel injector (A-70)	4			
3	34		Heated oxygen sensor heater (front) FED		input		
6	6	18	EGR solenoid FED				
11	10		Ignition power transistor unit A	2	14	output	<a href="#">MS3X</a>
12	23		Ignition power transistor unit B	33	output	<a href="#">MS3X</a>	
13	11		Ignition power transistor unit C	15	output	<a href="#">MS3X</a>	
14	4		Stepper motor coil <A1>	25	input	<a href="#">MS3 v3.57</a>	
28	17		Stepper motor coil <A2>	27			
15	5		Stepper motor coil <B1>	29			
29	18		Stepper motor coil <B2>	31			
34	32	18	Evaporative emission purge solenoid				
18	none		Condenser fan relay				
19	19		Volume air flow sensor reset signal		input		
20	8		Fuel pump relay module				
21	22		A/C compressor clutch relay		input		
22	36		Service engine soon/malfunction indicator lamp		input		
26	42		Heated oxygen sensor heater (rear) FED		input		
35	41	18	Evaporative emission ventilation solenoid				
46	81		Sensor supplied voltage				
45	89		Crankshaft position sensor	24	output	<a href="#">MS3 v3.57, pin 1 GND, pin 2 SHLD GND; Mitsu A-43, pin 1 GND ECM pin 13/26, pin 2 +5v ECM, pin 3 B+</a>	
44	83		Engine coolant temperature sensor	21	output	<a href="#">MS3 v3.57; Mitsu A-65, pin 1 ECM, pin 2 sensor GND</a>	
43	51		Spark check signal (RPM signal?)		output		
41	12	16	Power supply (ignition switch: "ON")	5	28	<a href="#">MS3 v3.57</a>	
47	25	17					
48	13	16	Power supply & ignition switch-IG circuit GND (body GND #3, #10)			Fuel Injectors, MFI Relay, Backup power supply GND	
42	26	16					
56	88		Camshaft position sensor	32	output	<a href="#">MS3X; MS3 3.57 pin 1 GND, pin 3 SHLD GND; Mitsu A-42, pin 1 GND ECM pin 13/26, pin 2 +5v ECM, pin 3 B+</a>	
55	85		Barometric pressure sensor	N/A	input	MapDaddy	
52	37		Power steering pressure switch				

49	38		MFI relay (power supply)				
66	80	16	Backup power supply				
65	90		Volume air flow sensor			output	
64	72		Intake air temperature sensor		20	output	<a href="#">MS3 v3.57</a>
61	none		A/C switch 2				
59	91	16	Ignition switch-ST GND (body GND #3)				
58	71	16	Ignition switch-ST				
71	76		Heated oxygen sensor (front) FED			input	
73	79		Heated oxygen sensor (rear) FED			input	
78	84		Throttle position sensor		22	input	<a href="#">MS3 v3.57, pin 7 sensor GND, pin 26 +5v; Mitsu A-41, pin 1 sensor GND, pin 2 closed throttle pos switch, pin 3 throttle position, pin 4 +5v</a>
79	87		Closed throttle position switch <3.0L Engine>			output	
80	86		Vehicle speed sensor			output	
83	45		A/C switch			input	
85	62		Data link connector circuit (OBD connector pin 7)		N/A		data link connector (1)
84	56		Data link connector circuit (OBD connector pin 1)		N/A		data link connector (1)
57	92		Volume air flow circuit, Baro Pressure Sensor, IAT Sensor, ECT Sensor, TPS Sensor, O2 Sensor (front), O2 Sensor (rear), Evap Emission Control System Pressure Sensor, Closed throttle position switch, MAP Sensor, Fluid temp sensor <A/T>, Input shaft speed sensor <A/T>, Output shaft speed sensor <A/T> GND		7		
91	74		Manifold differential pressure sensor		N/A	input	built into Megasquirt units
92	77		Fuel tank differential pressure sensor				
98	82	16	Ignition switch-IG				
50	N/A		A/T control relay				
75	N/A		Auto-cruise signal line system circuit				
77	N/A	14	Solenoid valve power supply				
89	N/A	16					
76	N/A	16	Body GND (#3)				
88	N/A	16					
97	N/A	16					
101	N/A		Park/Neutral position switch P				
102	N/A		Park/Neutral position switch D				
103	N/A		Input shaft speed sensor				
104	N/A		Output shaft speed sensor				
106	N/A		Second solenoid valve				
107	N/A		Torque converter clutch solenoid valve				
108	N/A		Park/Neutral position switch R				
109	N/A		Park/Neutral position switch 3				
110	N/A		Park/Neutral position switch L				
113	N/A		Data link connector circuit (connector pin 26)		N/A		data link connector (2) C-82 12-pin PCM flash pin 26
114	N/A		Data link connector circuit (connector pin 27)		N/A		data link connector (2) C-82 12-pin INVECS-II pin 27
120	N/A		Under drive solenoid valve				
121	N/A		Park/neutral position switch N / "N" range light system circuit				
122	N/A		Park/neutral position switch 2				

123	N/A	17	Stoplight switch				
124	N/A		Fluid temperature sensor				
125	N/A		Transfer low detection switch				
126	N/A		Pattern select switch				
129	N/A		Low-reverse solenoid valve				
130	N/A		Overdrive solenoid valve				
			Fuel Injection, ignition (Eng GND)		2		MS3X
					3		
					8		
					12		
					17		
			Eng GND		14		MS3 v3.57
					15		
					16		
					17		
					18		
					19		
N/A	N/A		Intake air temperature sensor (IAT)		20		<a href="#">MS3 v3.57; GM Delphi IAT Air Charge Temp Sensor</a>
N/A	N/A		Engine coolant temperature sensor (ECT)		21		<a href="#">MS3 v3.57; GM Delphi ECT Engine Coolant Temp Sensor</a>
N/A	N/A		Heated oxygen sensor (wide band)		23		MS3 v3.57
N/A	N/A		Sensor GND		7		MS3 v3.57; GM/Delphi IAT, GM/Delphi ECT, Wideband O2 sensor GND
N/A	N/A		Detonation sensor		10		MS3 v3.57 DB15 (K1); Mitsu Diamante 3.5 SOHC sensor

1 Firing order 1-2-3-4-5-6

2 Unit A - cyl 1,2; Unit B - cyl 3,4; Unit C - cyl 5,6

3

AWG	mm <sup>2</sup>	
14	2.00	
16	1.25	
17	0.85	
18	0.75	
20	0.50	<i>unless otherwise noted, wire gauge is 20 AWG (0.5 mm<sup>2</sup>)</i>

4 Mitsubishi specific notes apply to 1997 5-speed ECM and wiring harness'

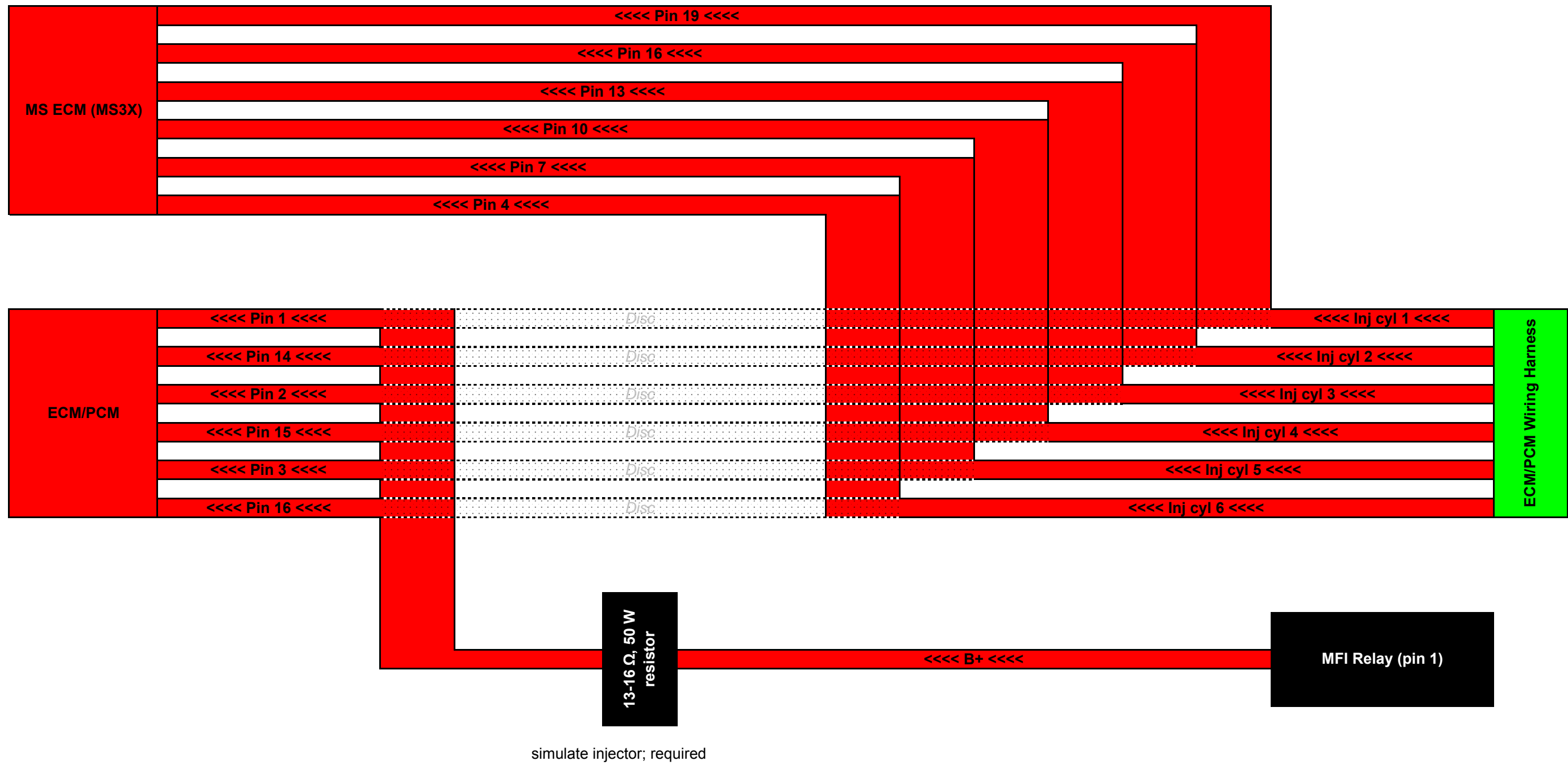
5 B+ power on durring IG ON and ST

6 confirm in manual

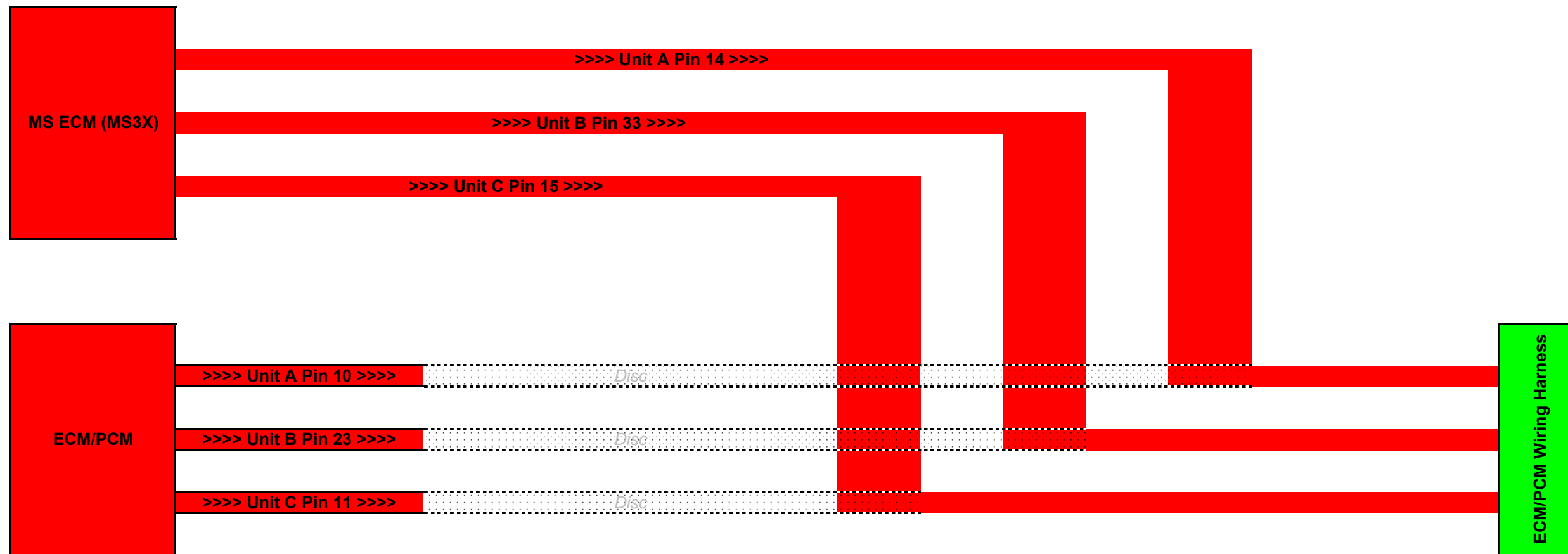
1997 M/T ECM & 2001-2004? A/T PCM

1999 BLACK	1997 GREEN	AWG	Description	MS III / MS3X	?CM I/O	NOTES
7	none		A/T fluid temperature warning light <V4A51> <A/T>			
20	22		A/C compressor clutch relay			
21	8		Fuel pump relay module			
50	none		A/T Control Relay System GND <A/T>			
51	none		Fuel temperature sensor (Fuel temperature sensor circuit)			run wire from fuel level/temperature sensor pin 1 <00-04 fuel temperature signal/sensor>
59	91		Park/neutral position switch <A/T>			
60	none		Fuel gauge unit (Fuel level sensor circuit)			tap from fuel gauge circuit <97-04 fuel level signal/sensor pin 2>
75	none		Auto-cruise signal line system circuit			
76	none		GND			
77	none		A/T Control Relay System (solenoid valve PS) <A/T>			
89	none					
88	none		GND			
97	none					
96	none		Fuel level warning light			intercept fuel level warning light signal/sensor pin 1 <97-99>
103	none		Input shaft speed sensor system <A/T>			
104	none		Output shaft speed sensor system <A/T>			
110	none		Park/Neutral Position Switch System (L) <A/T>			
122	none		Park/Neutral Position Switch System (2) <A/T>			
109	none		Park/Neutral Position Switch System (3) <A/T>			
102	none		Park/Neutral Position Switch System (D) <A/T>			
121	none		Park/Neutral Position Switch System (N) <A/T>			
108	none		Park/Neutral Position Switch System (R) <A/T>			
101	none		Park/Neutral Position Switch System (P) <A/T>			
120	none		Low/Reverse solenoid system valve circuit (underdrive) <A/T>			
106	none		Low/Reverse solenoid system valve circuit (second) <A/T>			
130	none		Low/Reverse solenoid system valve circuit (overdrive) <A/T>			
107	none		Low/Reverse solenoid system valve circuit (torque converter clutch) <A/T>			
129	none		Low/Reverse solenoid system valve circuit (low & reverse) <A/T>			
123	none		Stoplight switch system circuit <A/T>			
124	none		A/T fluid temperature sensor system circuit <A/T>			
112	none		Transfer low detection switch <V4A51> <A/T>			
111	none		Immobilizer/PCM communications line			PCM/immobilizer control module must come from same vehicle/additional parts and wiring required

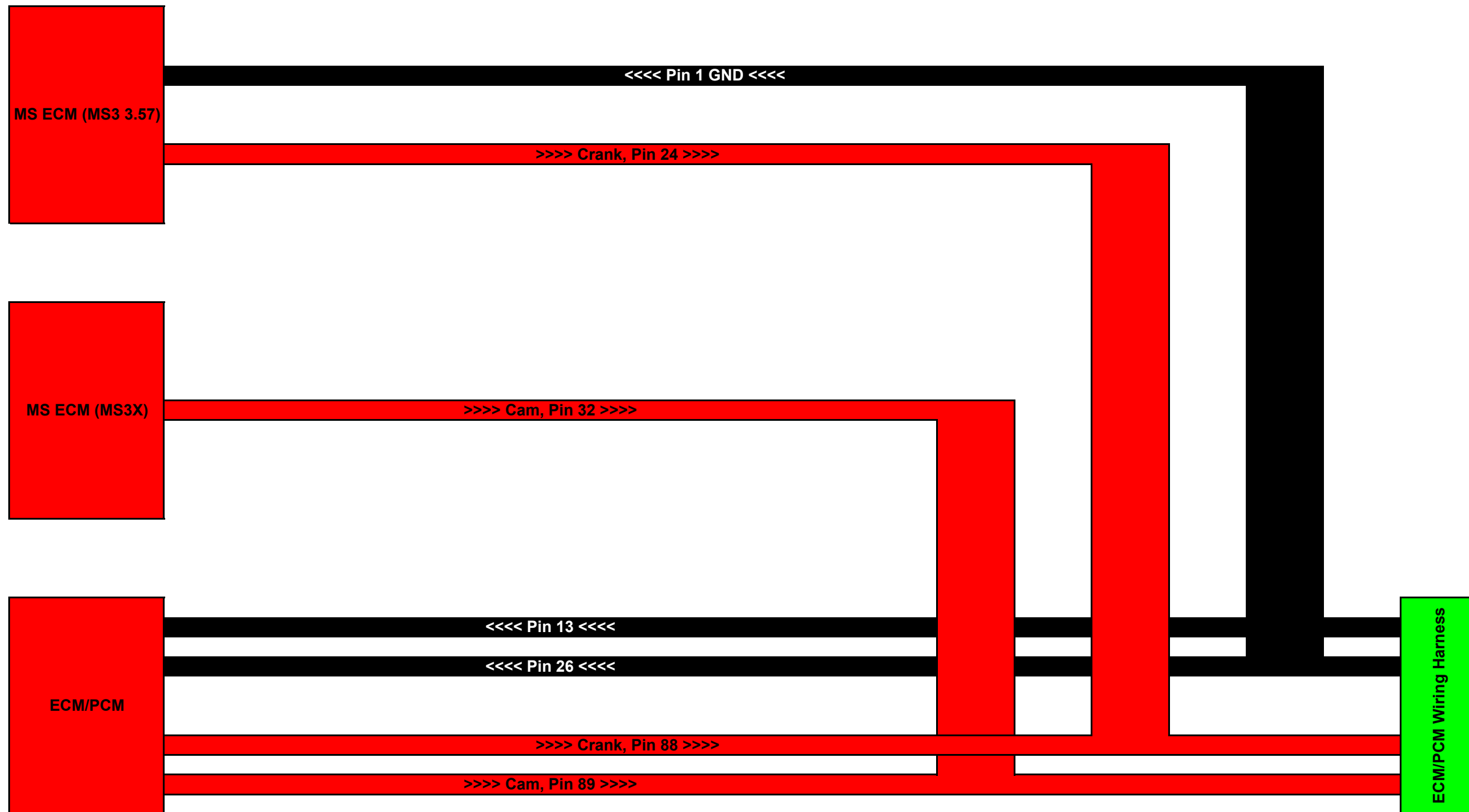
Sequential Fuel Injection



Ignition



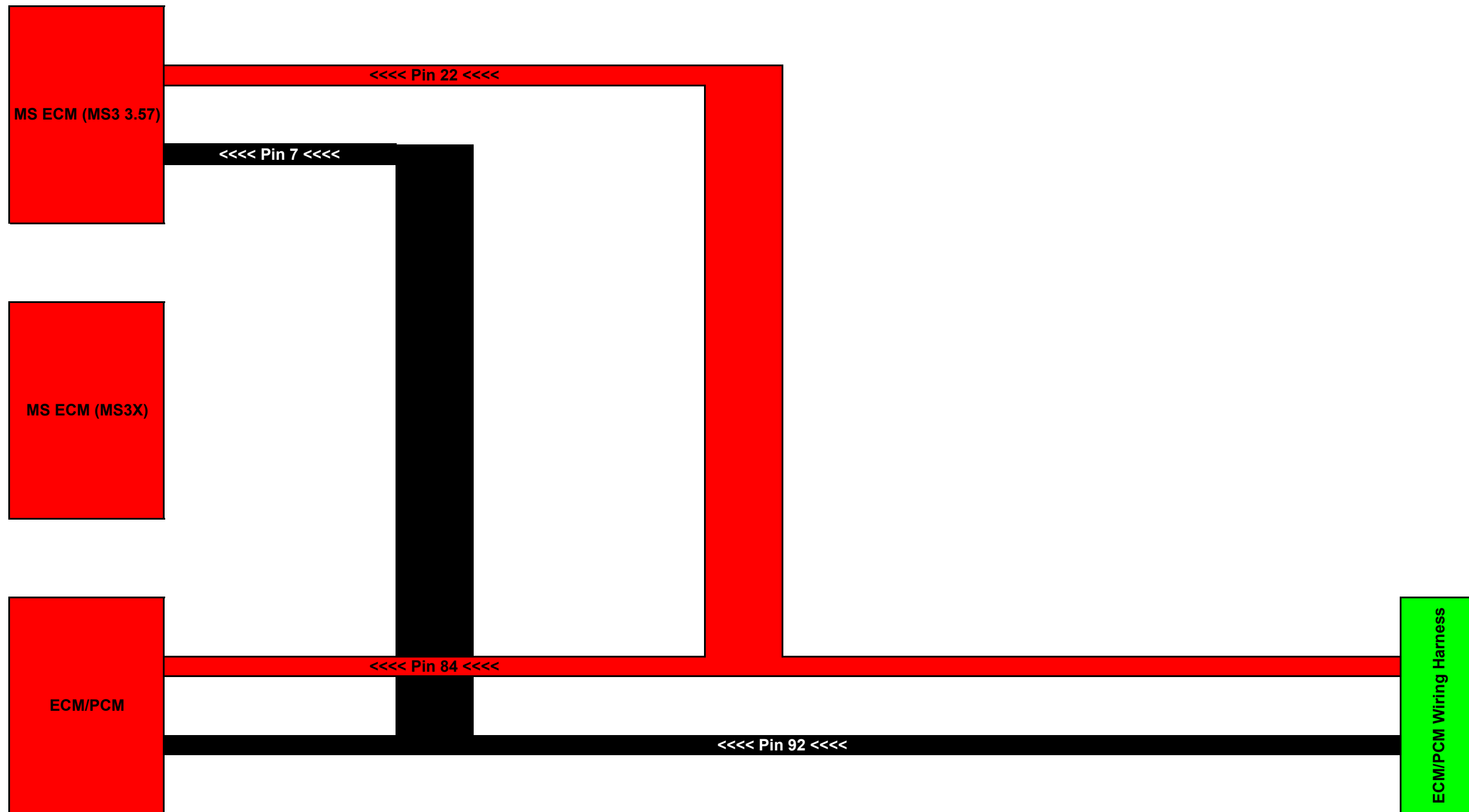
Timing



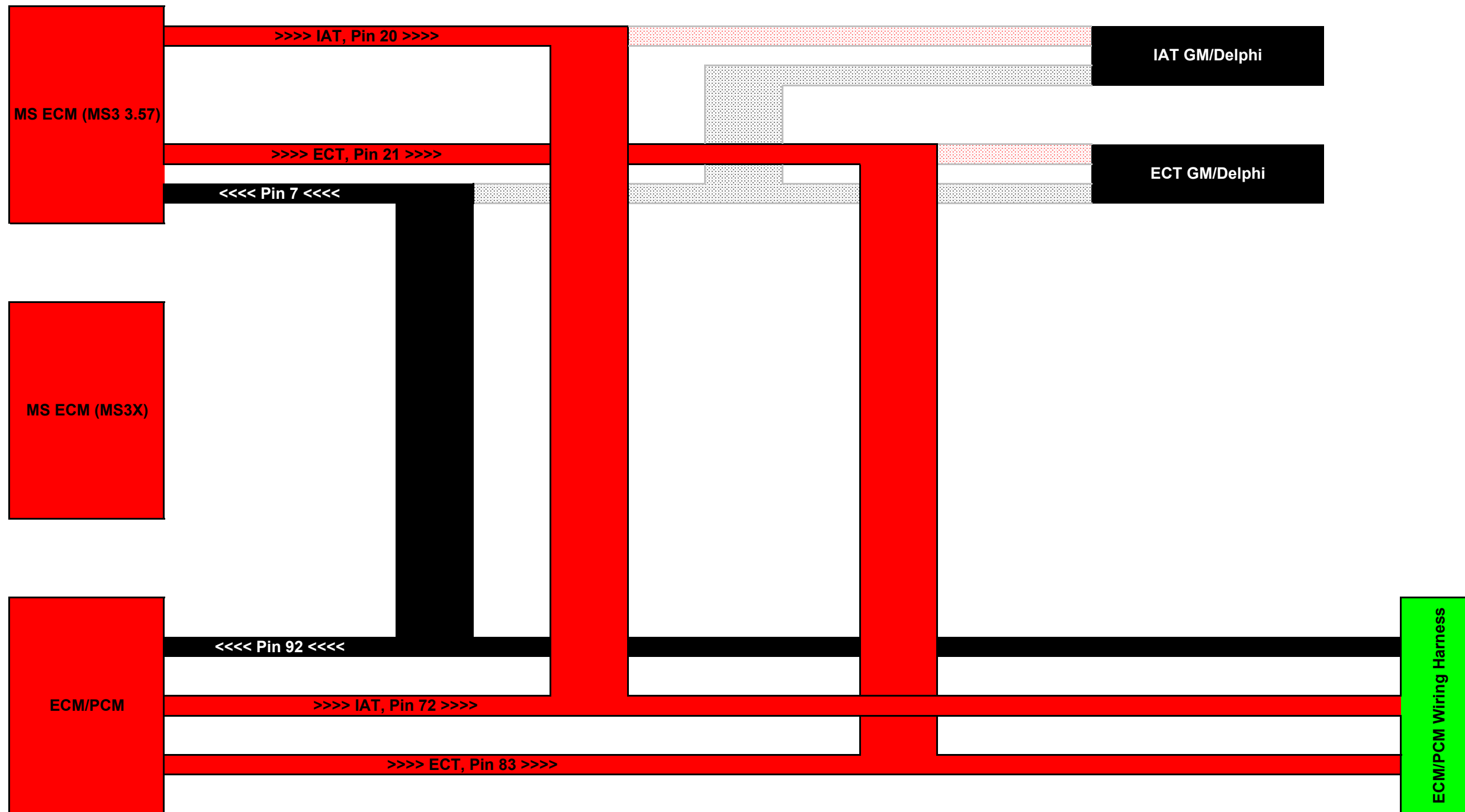
## Idle Air Control (IAC)



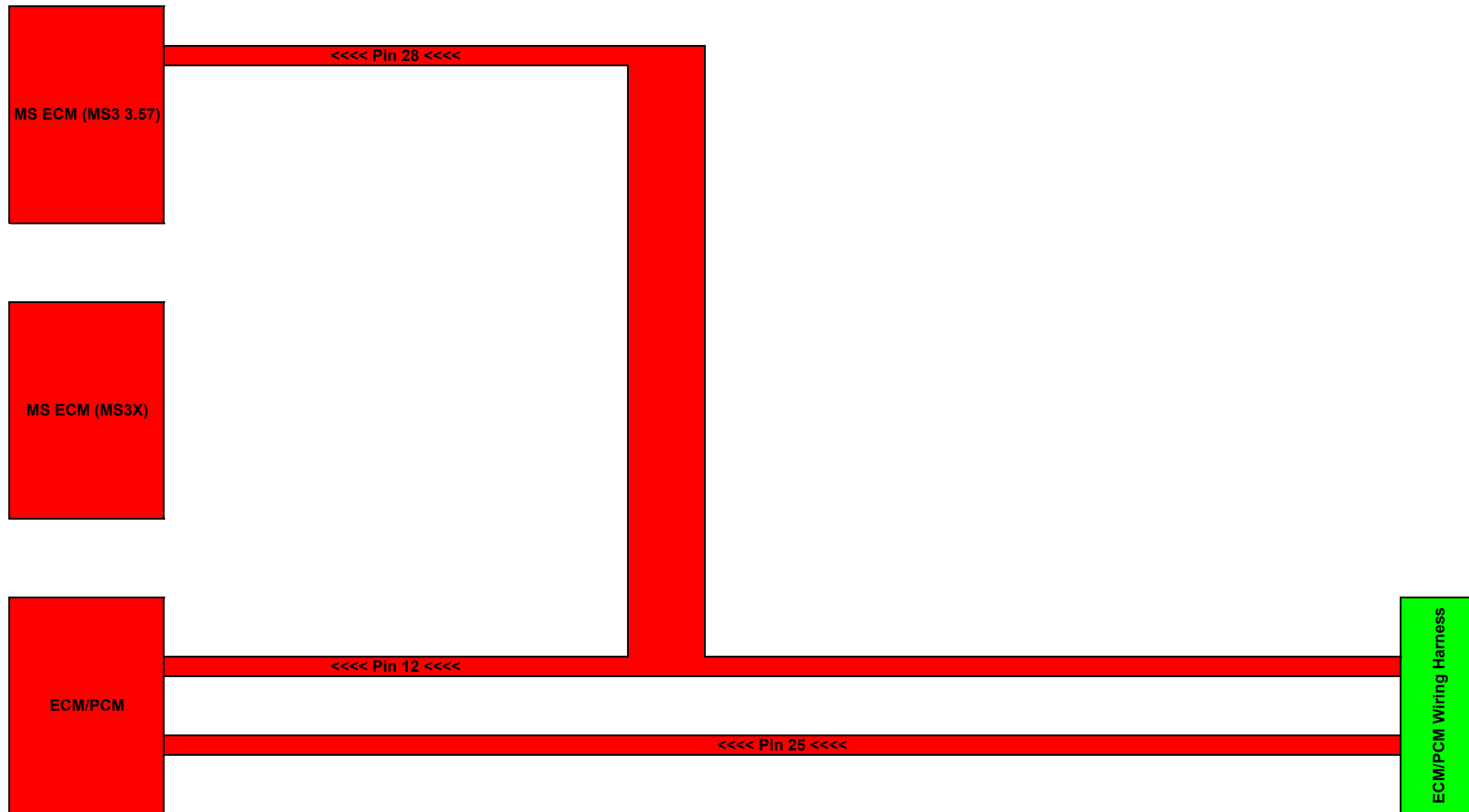
Throttle Position Sensor (TPS)



Engine Coolant & Intake Air Temperature (ECT, IAT)



Power



1997 Mitsubishi Montero Sport 3.0L ECM M/T & A/T



1999 Mitsubishi Montero Sport 3.5L PCM A/T



**Wire Gauge Conversion Table**

No code indicates 0.5 mm2

American Wire Gauge (AWG)	Diameter (in)	Diameter (mm)	Cross Sectional Area (mm2)
0	0.46	11.68	107.16
0	0.4096	10.4	84.97
0	0.3648	9.27	67.4
0	0.3249	8.25	53.46
1	0.2893	7.35	42.39
2	0.2576	6.54	33.61
3	0.2294	5.83	26.65
4	0.2043	5.19	21.14
5	0.1819	4.62	16.76
6	0.162	4.11	13.29
7	0.1443	3.67	10.55
8	0.1285	3.26	8.36
9	0.1144	2.91	6.63
10	0.1019	2.59	5.26
11	0.0907	2.3	4.17
12	0.0808	2.05	3.31
13	0.072	1.83	2.63
14	0.0641	1.63	2.08
15	0.0571	1.45	1.65
16	0.0508	1.29	1.31
17	0.0453	1.15	1.04
18	0.0403	1.02	0.82
19	0.0359	0.91	0.65
20	0.032	0.81	0.52
21	0.0285	0.72	0.41
22	0.0254	0.65	0.33
23	0.0226	0.57	0.26
24	0.0201	0.51	0.2
25	0.0179	0.45	0.16
26	0.0159	0.4	0.13

AWG	mm2	AWG	mm2	AWG	mm2	AWG	mm2
30	0.05	18	0.75	6	16	4/0	120
28	0.08	17	1	4	25	300MCM	150
26	0.14	16	1.5	2	35	350MCM	185
24	0.25	14	2.5	1	50	500MCM	240
22	0.34	12	4	1/0	55	600MCM	300
21	0.38	10	6	2/0	70	750MCM	400
20	0.5	8	10	3/0	95	1000MCM	500