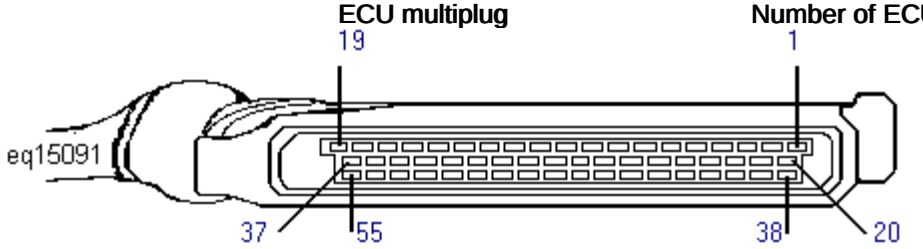
ECU multiplug **Number of ECU pins: 55**



Pin	Item	Conditions	Volts/ frequency/ Duty cycle	
1	coil negative: t1	ignition on	nbv	
		cranking/ running	200 min	
		dynamic volt drop	2.0 max	
2	earth	ignition on/ running	0.25 max	
3	relay earth: t85b	ignition on	nbv	
		cranking/ running	1.25 max	
4	ISCV: t1	ignition on	nbv	
		engine running (variable)		**Duty cycle**
		Cold:	6.0 to 6.5	56 to 58%
		Hot:	7.0 to 9.0	40 to 44%
ISCV integrator (internal function)		engine at idle speed and operating temperature, AT vehicles in P/N	96 to 160 steps	
ISCV block learn (internal function)		engine at idle speed and operating temperature	75 to 175 steps	
		without VSS	128 steps	
5	FTVV: t1 *	ignition on	nbv	
		snap accelerate	1 to 99% (approx 15 hZ)	
6	4 WD unit: t2/AT control unit			
7	AFS signal: t2	Ignition on	0.20 to 0.30	
		Idle	0.50 to 1.50	
		2000 rpm	1.75 to 2.25	
		3000 rpm	2.00 to 2.50	
		Snap accelerate	3.00 to 4.50	
		Fully open (off load)	4.50+	
8	--			
9	VSS			
10	OS return *	engine running	0.25 max	
11	--			
12	AFS supply: t3, throttle pot supply: t2	ignition on/ running	5.0 ± 0.1	
13	diagnostic socket: tB	open circuit	10.0 volts approx.	
		A & B connected in SD plug	0.25 max	
14	earth	ignition on/ running	0.25 max	
15	--			
16	injector pulse, bank number 1	ignition on	nbv	
		cranking/ running cold	11.0 to 12.0 ms	
		cranking/ running hot	4.0 to 4.5+ ms	
		snap acceleration	6.0+ ms	
17	injector pulse, bank number 2	ignition on	nbv	
		cranking/ running cold	11.0 to 12.0 ms	
		cranking/ running hot	4.0 to 4.5+ ms	
		snap acceleration	6.0+ ms	
18	battery positive: t30	ignition off/ on/ running	nbv	
19	earth (main ECU)	ignition on/ running	0.25 max	
20	coding earth (non-cat)	ignition on/ running	0.25 max	
	(cat)	ignition on/ running	5.0 ± 0.1	
21	coding earth (AT)	ignition on/ running	0.25 max	
	(MT)	ignition on/ running	5.0 ± 0.1	
22	SD warning lamp	ignition on/ running		
		lamp off, no fault :	nbv	
		lamp on, fault present:	0.25 max	
23	--			
24	earth	ignition on/ running	0.25 max	
25	--			
26	sensor return: AFS, ATS, CO, CTS, OA, TPS	ignition on/ running	0.25 max	
27	ignition switch: t15	ignition on/ running	nbv	

28	OS signal : t3 *	ignition Key On	0.4 to 0.5
		engine running	200 to 1000 mv
		throttle fully-open	1.0 v constant
		fuel cut-off	0 v constant
		switching frequency	1 sec intervals (approx)
	OS closed loop (internal function)	engine at idle speed and operating temperature	closed
	OS integrator (internal function)	engine at idle speed and operating temperature	108 to 148 steps
29	--		
30	--		
31	--		
32	on board computer: t24	engine running	switching waveform, 0 to 10v
33	--		
34	engine load signal	engine running	MT 1.6 to 2.4 ms AT1.8 to 2.5 ms
35	--		
36	relay driver: t85	ignition off	nbv
		ignition on/ running	1.25 max.
37	nbv supply from relay: t87	ignition on/ running	nbv
38	--		
39	--		
40	A/C cut-off switch	ignition on	inactive : 0.25 max.
		engine at idle speed and operating temperature	inactive : 0.25 max.
		vehicle interior warm, actuate A/C switch, switch thermostat to cold and then briefly accelerate the engine	active : nbv
41	A/C pressure switch		
42	earth connection (MT)	MT	0.25 max
42	or P/N switch (AT)	AT in P/N	0.25 max
		AT engaged (R,D,2,1)	nbv
43	CO - non-Cat (AFS: t1)	ignition on/ running	2.5 ± 0.5
44	ATS (AFS: t5)	ignition on/ running	20°C 3.50 to 3.75 80°C 1.25 to 1.50
45	CTS supply/signal: t2	ignition on/ running	20°C 3.00 to 3.75 80°C 1.00 to 1.30
46	octane adjuster: tA	ignition on/ running	
		95 octane (brown)	0.9
		98 octane (brown)	1.6
47	earth (4x4 only)	ignition on/ running	0.25 max
48	CAS return: t2	engine running	0.25 max
49	CAS output: t1	idle speed	8.0 volts AC, peak to peak
50	--		
51	AT control unit: t13 (torque control)		
		MT	inactive
		AT at idle	inactive
		AT driving & automatically shifting	active
52	--		
53	throttle pot signal: t3	ignition on/ running	
	Closed	0.35 to 0.87 (range 0.12 to 1.22)	
		Fully open	4.25 + (range 3.90 - 4.95)
54	oil temperature switch (transmission)	ignition on/ running	inactive nbv
		idle speed	inactive nbv
		4 x 4 vehicles	active 0.25 max
55	diagnostic socket: tG		

* Catalyst vehicles only

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