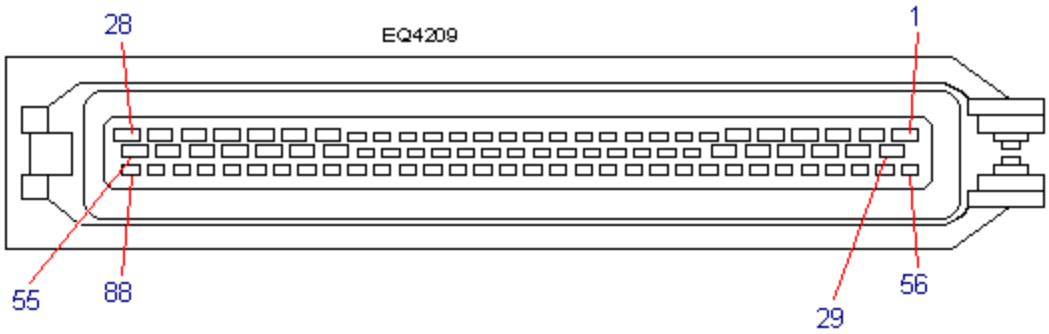
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Number of ECM pins: 88



Pin	Connection	Test condition	Volts/ Duty Cycle etc
1	ignition coil driver (cyl 1) : t1	ignition on	nbv
		engine running:	
		dynamic volt drop	2.0 V (max)
		primary switching	300 V (min)
2	ignition coil driver (cyl 3) : t1	ignition on	nbv
		engine running:	
		dynamic volt drop	2.0 V (max)
		primary switching	300 V (min)
3	ignition coil driver (cyl 5) : t1	ignition on	nbv
		engine running:	
		dynamic volt drop	2.0 V (max)
		primary switching	300 V (min)
4	earth	ignition on/engine running	0.25 V (max)
5	injector driver (cyl 6) : t1	ignition on	nbv
		engine running	4.1 ± 0.5 ms
6	injector driver (cyl 4) : t1	ignition on	nbv
		engine running	4.1 ± 0.5 ms
7	--		
8	P/N switch :	ignition on	
		transmission in neutral	1.25 V (max)
		transmission out of neutral	nbv
9	A/C compressor : t2		data not available
10	A/C pressure switch		data not available
11	--		
12	VSS (instrument panel) : t2	engine running, drive wheels turning (limit speed to 18 mph if the drive wheels are raised from the ground)	0 to 12 V (switching)
13	--		
14	ignition timing intervention : t35 (Electronic transmission control)	on during AT downshifts	1.25 V (max)
15	anti-theft module : t3	alarm armed	10 V (min)
16	--		
17	fuel consumption signal : t21		data not available
18	Engine speed signal output to instrument cluster	engine running	0 to 12 V (switching)
19	--		
20	Throttle position signal to AT	engine running	0 to 12 V (switching)
21	--		
22	injector driver (cyl 3) : t1	ignition on	nbv
		engine running	4.1 ± 0.5 ms
23	injector driver (cyl 1) : t1	ignition on	nbv
		engine running	4.1 ± 0.5 ms
24	A/C compressor relay driver : t85	ignition on	nbv
		engine running	1.25 V (max)
25	camshaft control driver : t1	ignition on	nbv
		engine running	
		non-active	nbv
		active	1.25 V (max)

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26	supply from battery : t30	ignition off/on/engine running	nbv
27	ISCV driver : t1	ignition on	nbv
		engine running	9.2 V (approx)
		duty cycle	30 to 60%
28	earth	ignition on/engine running	0.25 V (max)
29	ignition coil driver (cyl 2) : t1	ignition on	nbv
		engine running:	
		dynamic volt drop	2.0 V (max)
		primary switching	300 V (min)
30	ignition coil driver (cyl 4) : t1	ignition on	nbv
		engine running:	
		dynamic volt drop	2.0 V (max)
		primary switching	300 V (min)
31	ignition coil driver (cyl 6) : t1	ignition on	nbv
		engine running:	
		dynamic volt drop	2.0 V (max)
		primary switching	300 V (min)
32	earth	ignition on/engine running	0.25 V (max)
33	injector driver (cyl 5) : t1	ignition on	nbv
		engine running	4.1 ± 0.5 ms
34	earth	ignition on/engine running	0.25 V (max)
35	shield, CAS	ignition on/engine running	0.25 V (max)
36	shield, camshaft sensor	ignition on/engine running	0.25 V (max)
37	--		
38	--		
39	shield, KS 1	ignition on/engine running	0.25 V (max)
40	shield, KS 2	ignition on/engine running	0.25 V (max)
41	--		
42	shield, OS signal	ignition on/engine running	0.25 V (max)
43	--		
44	--		
45	--		
46	--		
47	--		
48	supply from main relay : t87	ignition on/engine running	nbv
49	supply from ignition switch : t15	ignition on/engine running	nbv
50	injector driver (cyl 2) : t1	ignition on	nbv
		engine running	4.1 ± 0.5 ms
51	CFSV driver : t1	ignition on	nbv
		engine running	
		CFSV inactive	nbv
		CFSV active	1.25 V (max)
		duty cycle	0 to 99%
52	FP relay driver : t85	ignition on	nbv
		cranking/running	1.25 V (max)
53	OS heater driver : t1	ignition on	nbv
		engine running	
		inactive	nbv
		active	1.25 V (max)
		duty cycle	0 to 100%
54	supply from main relay : t87	ignition on/engine running	nbv
55	main relay driver : t85	ignition off	nbv
		ignition on/engine running	1.25 V (max)
56	--		
57	--		
58	--		
59	--		
60	programming voltage, SD connector : t18	only active during programming	nbv
61	--		
62	earth	ignition on/engine running	0.25 V (max)
63	KS2 signal (cyl 4, 5 and 6) : t2	engine running, KS active	1.0 V AC (approx) (peak to peak)
64	KS1 signal (cyl 1, 2 and 3) : t2	engine running, KS active	1.0 V AC (approx) (peak to peak)
65	KS1 return (cyl 1, 2 and 3) : t1	ignition on/engine running	0.25 V (max)

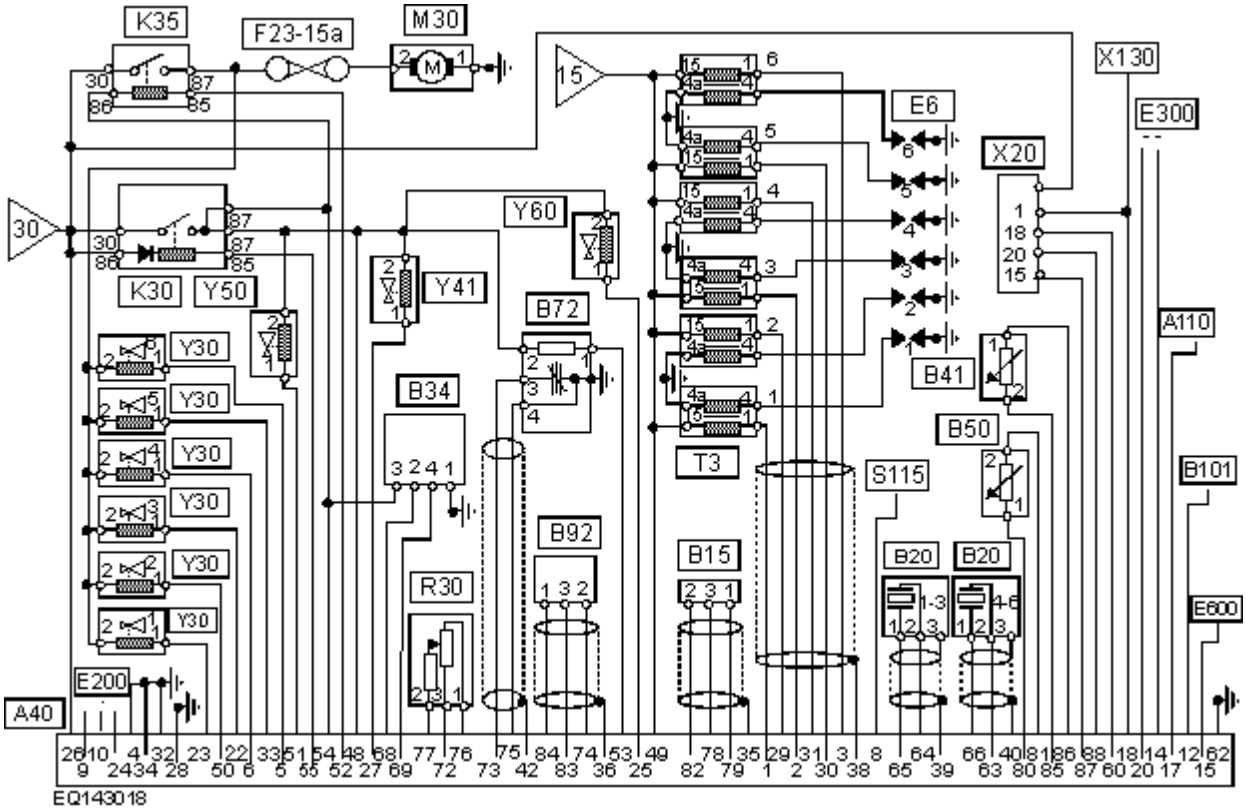
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66	KS2 return cyl 4, 5 and 6) : t1	ignition on/engine running	0.25 V (max)
67	--		
68	AFS signal : t2	idle speed	0.5 to 5.0 V (switching)
		idle output range volume	14 to 22 kg/h
69	AFS earth : t4	ignition on/engine running	0.25 V (max)
70	--		
71	--		
72	TPS supply : t3	ignition on/engine running	5.0 V ± 0.1
73	OS return : t4	ignition on/engine running	0.25 V (max)
74	camshaft sensor oscillator : t2	ignition on/engine running	0 to 5.0 V (switching)
		frequency	110 kHz
75	OS signal : t3	engine running, hot	0.4 to 4.7 V (switching)
76	TPS return : t1	ignition on/engine running	0.25 V (max)
77	TPS signal : t2	ignition on/engine running	
		throttle closed	0.5 ± 0.2 V
		fully open	4.5 ± 0.2 V
78	CAS return : t3	ignition on/engine running	0.25 V (max)
79	CAS signal : t1	engine running	0 to 5 V (switching)
80	CTS return : t1	ignition on/engine running	0.25 V (max)
81	CTS signal : t2	ignition on/engine running	20°C: 3.7 V
			80°C: 1.0 V
82	CAS oscillator : t2	ignition on/engine running	0 to 5.0 V (switching)
		frequency	150 kHz
83	camshaft sensor return : t3	ignition on/engine running	0.25 V (max)
84	camshaft sensor signal : t1	engine running	0 to 5 V (switching)
85	ATS signal : t2	engine running	20°C 3.0
86	ATS return : t1	ignition on/engine running	0.25 V (max)
87	SD connector RxD :	SD connector cover closed	nbv
88	SD connector TxD		data not available

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Component codes

Code	description
15	Ignition switch supply
30	Battery supply
A40	Engine management control unit (ECM)
A110	Trip computer
B15	Crank Angle Sensor (CAS), frequency based
B20	Knock Sensor (KS)
B32	Mass Air Flow (MAF) Sensor
B41	Air Temperature Sensor (ATS)
B50	Coolant Temperature Sensor (CTS)
B72	Heated Oxygen Sensor (OS) (Titanium)
B92	Camshaft Sensor (frequency based)
B101	Vehicle Speed Signal (VSS), instrument panel
E6	Spark plugs
E200	A/C component
E300	AT component
E400	ABS component
E600	Anti-theft
E900	Airbag Component
F1	Fuse (control unit)
F2	Fuse (fuel pump)
F3	Fuse (general)
F4	Fuse (Oxygen sensor)
K30	Main relay
K35	Fuel Pump Relay
M30	Fuel Pump
R30	Throttle Position Sensor (TPS)
S115	P/N Switch
T3	Distributorless ignition coil (single sparkplug)
X1	SD Connector
Y30	Fuel injector (Multi point)
Y41	Idle Speed Control Valve (ISCV) (2-wire)
Y50	Purge Valve (CFSV)
Y60	Camshaft Control Valve

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