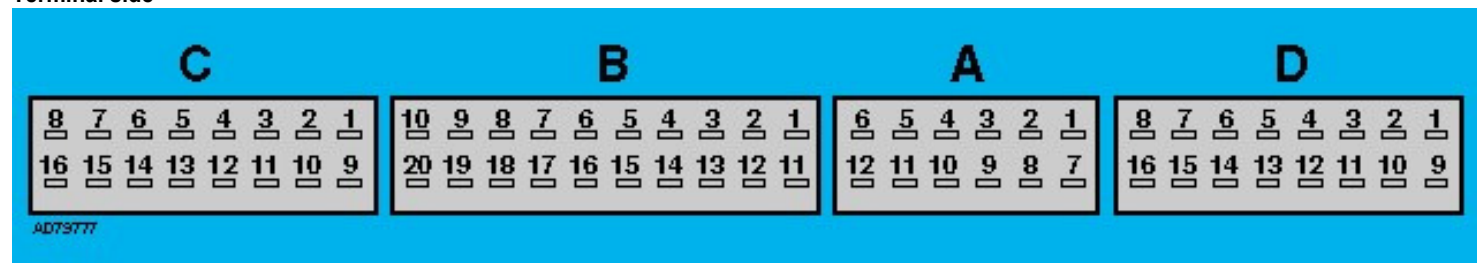
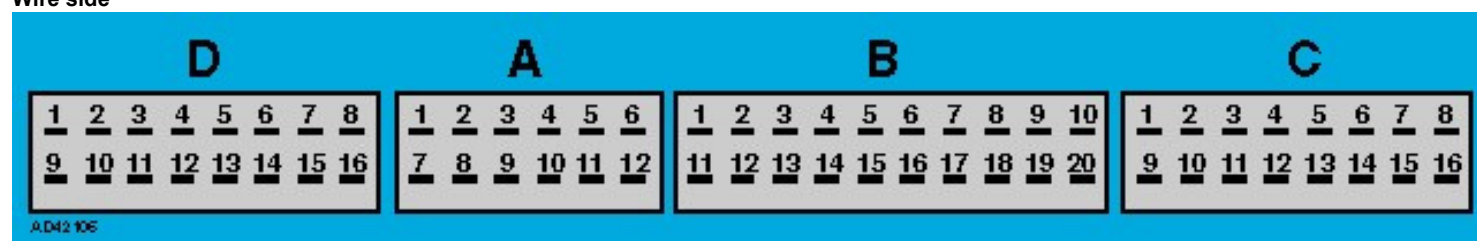


Telephone:
Fax:
VAT Registration No.:





Terminal side

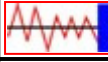

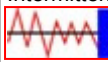

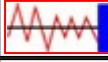

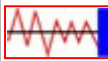









Wire side



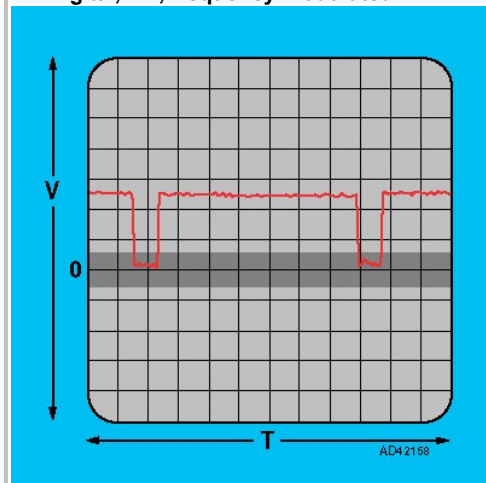
Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting (Suggested settings - Voltage/time per division)	Wave form
ABS control module - with traction control 100/A6 1994- 97/A4	B12	←		Connected pin - no test data available or random digital signal		
ABS control module	B13	←		Connected pin - no test data available or random digital signal		
Air conditioning	B1			Connected pin - no test data available or random digital signal		
Air conditioning - except A4	B11			Connected pin - no test data available or random digital signal		
Automatic transmission	B2			Connected pin - no test data available or random digital signal		
Automatic transmission	B3			Connected pin - no test data available or random digital signal		
Automatic transmission	B7			Connected pin - no test data available or random digital signal		
Automatic transmission - A4	B5			Connected pin - no test data available or random digital signal		
Automatic transmission - A4/A6/100	B8			Connected pin - no test data available or random digital signal		
Battery	D5	←	Ignition OFF	11-14 V		
<u>Camshaft position (CMP) sensor</u>	A4	⇒	Ignition ON	10-14 V		

<u>Camshaft position (CMP) sensor</u>	A5	←	Ignition ON - engine turned	0 V or 10-14 V switching		
<u>Camshaft position (CMP) sensor</u>	A5	←	Engine idling		5 V/20 ms	 12
<u>Camshaft position (CMP) sensor</u>	A10	↗	Engine idling	0 V		
<u>Closed throttle position (CTP) switch</u>	B4	←	Ignition ON - throttle closed	0 V		
<u>Closed throttle position (CTP) switch</u>	B4	←	Ignition ON - throttle open	7-9 V		
<u>Crankshaft position (CKP) sensor</u>	B15	↗	Engine idling	0 V		
<u>Crankshaft position (CKP) sensor</u>	B19	←	Engine idling		10 V/10 ms	 10
<u>Crankshaft position (CKP) sensor</u> - shield wire	B14	↗	Engine idling	0 V		
Data link connector (DLC) - 1992-94	B6	↔	Engine idling	11-14 V		
Data link connector (DLC) - except A4	B5	←	Engine idling	11-14 V		
Digital multifunction display - A4/A6/100	B8			Connected pin - no test data available or random digital signal		
Earth	A11		Ignition ON	0 V		
Earth	D1		Ignition ON	0 V		
Earth	D9		Ignition ON	0 V		
<u>Engine coolant temperature (ECT) sensor</u>	A6	←	Ignition ON - coolant temp. 10°C	3,3 V		
<u>Engine coolant temperature (ECT) sensor</u>	A6	←	Ignition ON - coolant temp. 80°C	0,6 V		
<u>Engine coolant temperature (ECT) sensor</u>	A12	↗	Ignition ON	0 V		
<u>Engine speed (RPM) sensor</u>	B17	↗	Engine idling	0 V		
<u>Engine speed (RPM) sensor</u>	B18	←	Engine idling		2 V/0,5 ms	 17
<u>Engine speed (RPM) sensor</u> - shield wire	B16	↗	Engine idling	0 V		
<u>Evaporative emission (EVAP) canister purge valve</u> - if fitted	D12	↗↘	Ignition ON	11-14 V briefly then 0 V		
<u>Evaporative emission (EVAP) canister purge valve</u>	D12	↗↘	Engine hot - valve operating		10 V/20 ms	 20
<u>Fuel pump relay</u>	A7	↗↘	Ignition ON	0-1 V briefly then 11-14 V		
<u>Fuel pump relay</u>	A7	↗↘	Engine cranking	0-1 V		
<u>Heated oxygen sensor (HO2S) 1, bank 1</u>	C2	←	Engine idling - engine hot	0,1-1 V fluctuating	0,2 V/1 sec.	 21
<u>Heated oxygen sensor (HO2S) 1, bank 1</u> - shield wire	C10	↗	Engine idling	0 V		
<u>Heated oxygen sensor (HO2S) 1, bank 2</u>	C3	←	Engine idling - engine hot	0,1-1 V fluctuating	0,2 V/1 sec.	 21
<u>Heated oxygen sensor (HO2S) 1, bank 2</u> - shield wire	C11	↗	Engine idling	0 V		
Heated rear window switch - A4 without AC	B11	←		Connected pin - no test data available or random digital signal		
<u>Idle air control (IAC) valve</u>	D2 (D3)	⇒	Engine idling		5 V/0,5 sec.	Intermittent  26

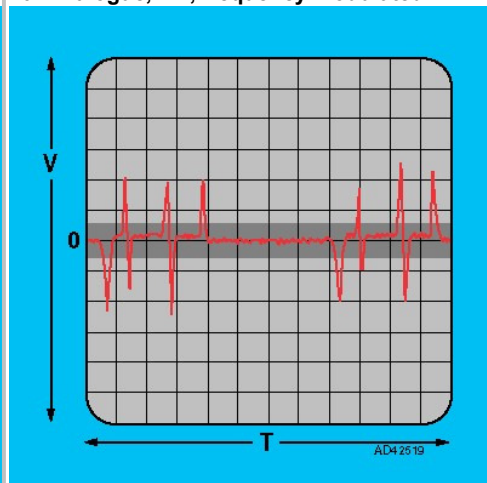
Idle air control (IAC) valve	D3 (D2)	⇒	Engine idling		5 V/0,5 sec.	Intermittent  26
Idle air control (IAC) valve	D10 (D11)	⇒	Engine idling		5 V/0,5 sec.	Intermittent  26
Idle air control (IAC) valve	D11 (D10)	⇒	Engine idling		5 V/0,5 sec.	Intermittent  26
Ignition amplifier	A1	⇒	Engine idling	40 Hz	1 V/10 ms	 32
Ignition amplifier	A1	⇒	3000 rpm	50 Hz		
Ignition amplifier	A2	⇒	Engine idling	40 Hz	1 V/10 ms	 32
Ignition amplifier	A2	⇒	3000 rpm	50 Hz		
Ignition amplifier	A3	⇒	Engine idling	40 Hz	1 V/10 ms	 32
Ignition amplifier	A3	⇒	3000 rpm	50 Hz		
Ignition switch	D4	←	Ignition OFF	0 V		
Ignition switch	D4	←	Ignition ON	11-14 V		
Immobilizer control module - 1994-97	B6	↔		Connected pin - no test data available or random digital signal		
Injector 1	D6	⇋	Ignition ON	11-14 V briefly then 0 V		
Injector 1	D6	⇋	Engine idling - engine hot	4 ms	10 V/2 ms	 35
Injector 2	D7	⇋	Ignition ON	11-14 V briefly then 0 V		
Injector 2	D7	⇋	Engine idling - engine hot	4 ms	10 V/2 ms	 35
Injector 3	D8	⇋	Ignition ON	11-14 V briefly then 0 V		
Injector 3	D8	⇋	Engine idling - engine hot	4 ms	10 V/2 ms	 35
Injector 4	D13	⇋	Ignition ON	11-14 V briefly then 0 V		
Injector 4	D13	⇋	Engine idling - engine hot	4 ms	10 V/2 ms	 35
Injector 5	D14	⇋	Ignition ON	11-14 V briefly then 0 V		
Injector 5	D14	⇋	Engine idling - engine hot	4 ms	10 V/2 ms	 35
Injector 6	D15	⇋	Ignition ON	11-14 V briefly then 0 V		
Injector 6	D15	⇋	Engine idling - engine hot	4 ms	10 V/2 ms	 35
Instrumentation control module - A4	B9	←	Vehicle moving - 10 mph	17 Hz - increases with vehicle speed		
Instrumentation control module	B10	⇒	Engine idling	40 Hz		
Intake air temperature (IAT) sensor	C1	←	Ignition ON - air temp. 10°C	3,3 V		
Intake air temperature (IAT) sensor	C9	⇋	Ignition ON	0 V		
Knock sensor (KS) 1	C7	←	Engine idling - accelerate briefly		50 mV/1 ms	 38
Knock sensor (KS) 1	C14	⇋	Engine idling	0 V		
Knock sensor (KS) 1 - shield wire	C13	⇋	Engine idling	0 V		

Knock sensor (KS) 2	C8	←	Engine idling - accelerate briefly		50 mV/1 ms	 38
Knock sensor (KS) 2	C16	↔	Engine idling	0 V		
Knock sensor (KS) 2 - shield wire	C15	↔	Engine idling	0 V		
Oxygen sensor heater relay - except A4 1996-99	A8	↔→	Ignition ON	11-14 V briefly then 0-1 V		
Speedometer - except A4	B9	←	Vehicle moving - 10 mph	17 Hz - increases with vehicle speed		
Tachometer - except A4	B10	↔→	Engine idling	40 Hz		
Throttle position (TP) sensor	C4	↔→	Ignition ON	5 V		
Throttle position (TP) sensor	C5	←	Ignition ON - throttle closed	0,4 V		
Throttle position (TP) sensor	C5	←	Ignition ON - throttle fully open	4,3 V		
Throttle position (TP) sensor	C12	↔	Ignition ON	0 V		

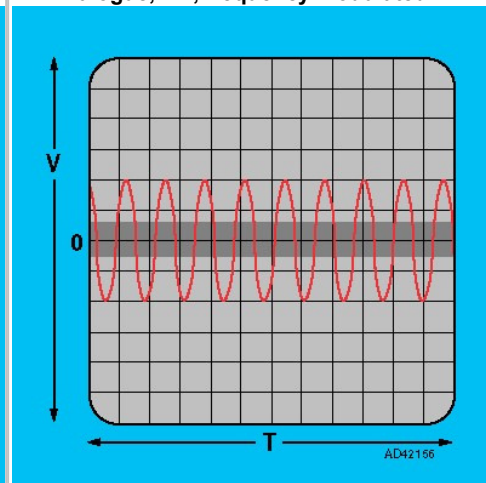
12. Digital, DC, frequency modulated



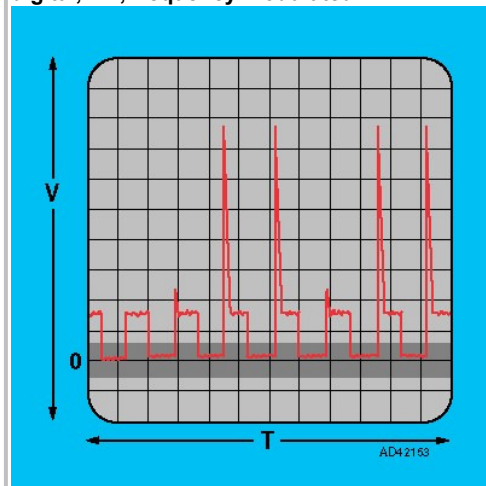
10. Analogue, AC, frequency modulated



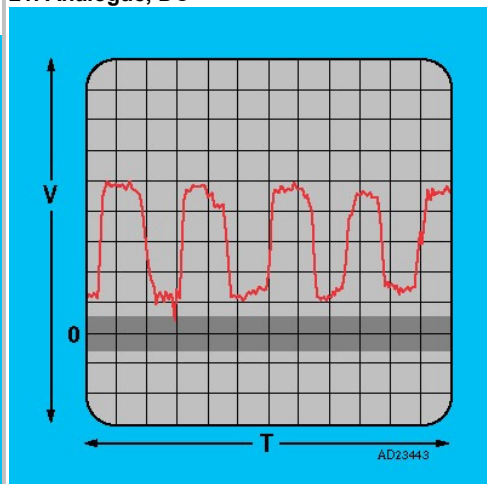
17. Analogue, AC, frequency modulated



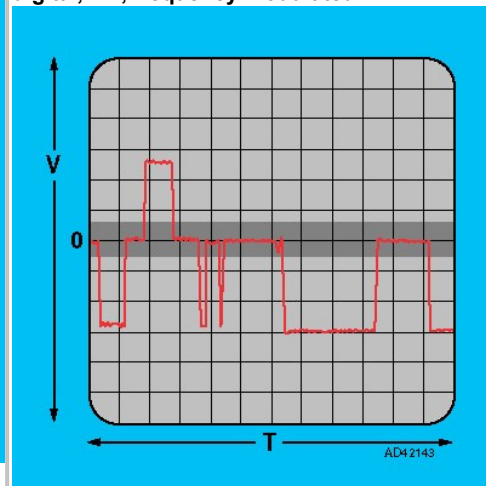
20. Digital, DC, pulse width modulated or
digital, DC, frequency modulated



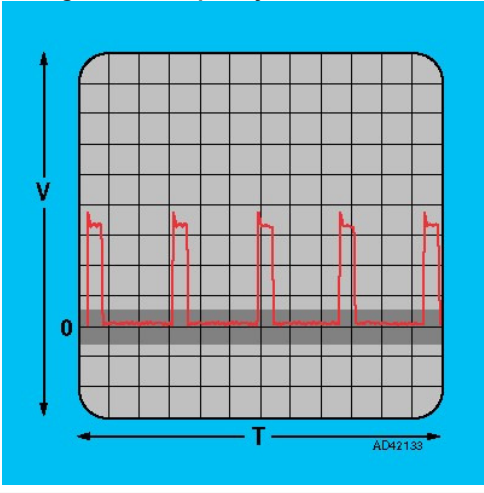
21. Analogue, DC



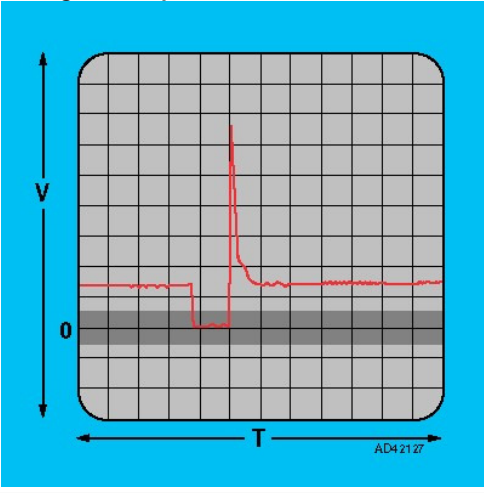
26. Digital, DC, pulse width modulated or
digital, DC, frequency modulated



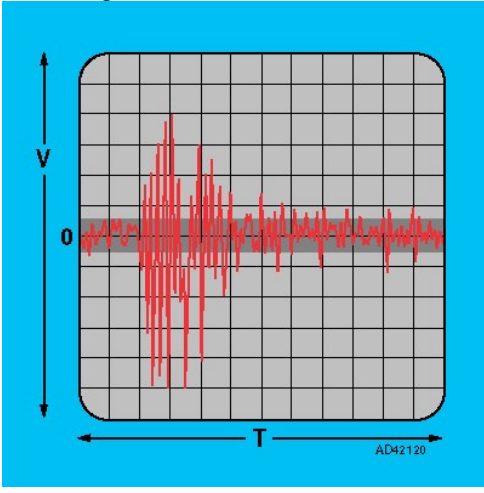
32. Digital, DC, frequency modulated








35. Digital, DC, pulse width modulated



38. Analogue, AC



	input/output signal
	input signal
	output signal
	ECM switched earth
	ECM earth circuit