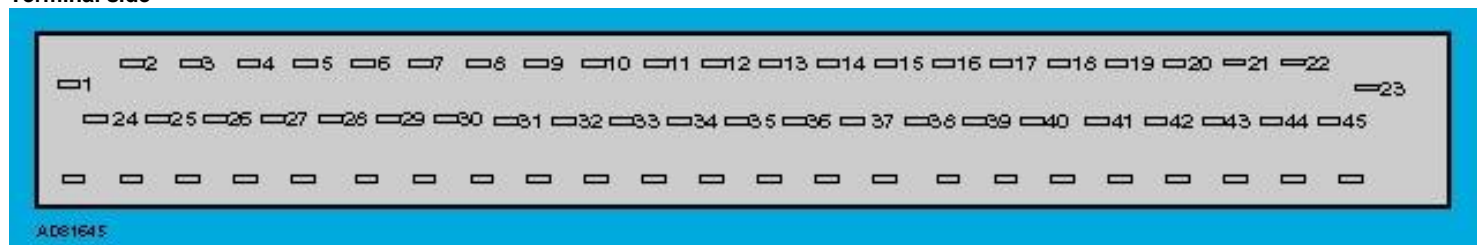
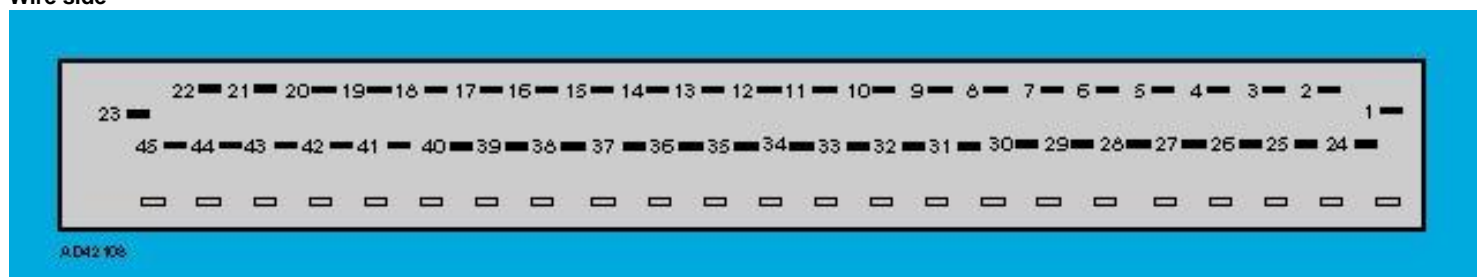



Telephone:  
Fax:  
VAT Registration No.:








#### Terminal side











#### Wire side

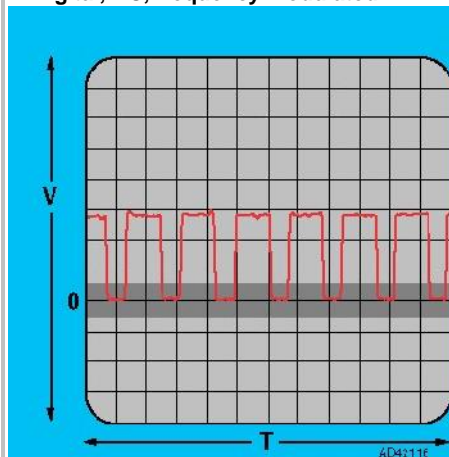


Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting (Suggested settings - Voltage/time per division)	Wave form
Air conditioning	33			Connected pin - no test data available or random digital signal		
Air conditioning	35			Connected pin - no test data available or random digital signal		
Automatic transmission	34			Connected pin - no test data available or random digital signal		
Automatic transmission - some models	12			Connected pin - no test data available or random digital signal		
Battery	21	←	Ignition OFF	11-14 V		
<u>Closed throttle position (CTP) switch</u>	10	←	Ignition ON - throttle closed	0 V		
<u>Closed throttle position (CTP) switch</u>	10	←	Ignition ON - throttle open	11-14 V		
<u>Crankshaft position (CKP) sensor</u>	8	⇒	Ignition OFF	0 V		
<u>Crankshaft position (CKP) sensor</u>	8	⇒	Ignition ON	10 V min.		
<u>Crankshaft position (CKP) sensor</u>	13	←	Ignition ON - engine turned	0 V or 10-14 V switching		
<u>Crankshaft position (CKP) sensor</u>	13	←	Engine idling	30 Hz	5 V/20 ms	
<u>Crankshaft position (CKP) sensor</u>	13	←	3000 rpm	100 Hz		
Data link connector (DLC) - 1992-94	29	↔	Ignition ON	11-14 V		

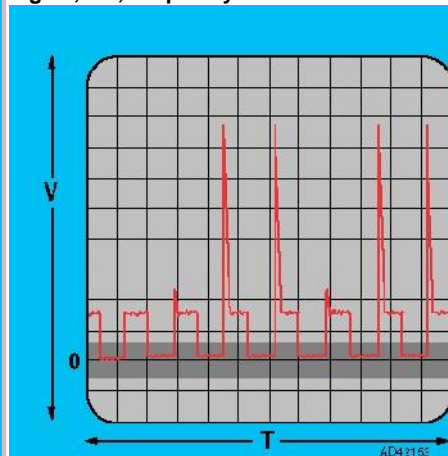
Data link connector (DLC) - some models	11	←	Ignition ON	8 V		
Earth	1		Ignition ON	0 V		
Earth	20		Ignition ON	0 V		
Earth - 1992-94	15		Ignition ON	0 V		
Earth - some models	12		Ignition ON	0 V		
<u>Engine coolant temperature (ECT) sensor</u>	17	↗	Ignition ON	0 V		
<u>Engine coolant temperature (ECT) sensor</u>	42	←	Ignition ON - coolant temp. 20°C	2 V		
<u>Engine coolant temperature (ECT) sensor</u>	42	←	Ignition ON - coolant temp. 80°C	0,2 V		
<u>Evaporative emission (EVAP) canister purge valve</u>	3	↗	Ignition OFF	11-14 V		
<u>Evaporative emission (EVAP) canister purge valve</u>	3	↗	Engine hot - valve operating		10 V/20 ms	 20
<u>Fuel pump relay</u>	25	↗	Ignition ON	0-1 V briefly then 11-14 V		
<u>Fuel pump relay</u>	25	↗	Engine cranking	0-1 V		
<u>Heated oxygen sensor (HO2S)</u>	38	←	Engine idling - engine hot	0,1-1 V fluctuating	0,2 V/1 sec.	 21
<u>Heated oxygen sensor (HO2S)</u> 1994-96	15	↗	Engine idling	0 V		
<u>Idle speed control (ISC) actuator</u>	2 (26)	⇒	Engine idling		5 V/2 ms	Intermittent  27
<u>Idle speed control (ISC) actuator</u>	26 (2)	⇒	Engine idling		5 V/2 ms	Intermittent  27
<u>Idle speed control (ISC) actuator position sensor</u> AAM/ADZ 1994-96	16	←	Engine idling - engine hot	3 V or 11-14 V - intermittent	10 V/50 ms	Intermittent  31
<u>Ignition amplifier</u>	24	⇒	Engine idling	30 Hz	1 V/10 ms	 32
<u>Ignition amplifier</u>	24	⇒	3000 rpm	100 Hz		
Ignition switch	23	←	Ignition OFF	0 V		
Ignition switch	23	←	Ignition ON	11-14 V		
Ignition switch - AT	40	←	Ignition ON	11-14 V		
Immobilizer control module - 1994-96	29		Ignition ON	11-14 V		
<u>Injector</u>	7	↗	Ignition ON	11-14 V briefly then 0 V		
<u>Injector</u>	7	↗	Engine idling - engine hot	2 ms	10 V/2 ms	 35
Instrument panel	9	⇒		Connected pin - no test data available or random digital signal		
Instrument panel	36	←		Connected pin - no test data available or random digital signal		
Instrument panel - some models	27			Connected pin - no test data available or random digital signal		
<u>Intake air temperature (IAT) sensor</u>	17	↗	Ignition ON	0 V		
<u>Intake air temperature (IAT) sensor</u>	43	←	Ignition ON - air temp. 20°C	2,3 V		

Intake manifold heater relay	28		Ignition ON - engine cold	0-1 V		
Intake manifold heater relay	28		Ignition ON - engine hot	11-14 V		
<u>Throttle position (TP) sensor</u>	14		Ignition ON	5 V		
<u>Throttle position (TP) sensor</u>	17		Ignition ON	0 V		
<u>Throttle position (TP) sensor</u>	18		Ignition ON - throttle closed	0,1 V		
<u>Throttle position (TP) sensor</u>	18		Ignition ON - throttle fully open	4,5 V		
<u>Throttle position (TP) sensor</u>	41		Ignition ON - throttle closed	1,9 V		
<u>Throttle position (TP) sensor</u>	41		Ignition ON - throttle fully open	4,9 V		

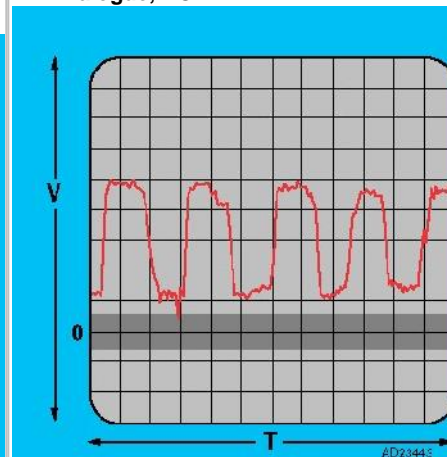
4. Digital, DC, frequency modulated



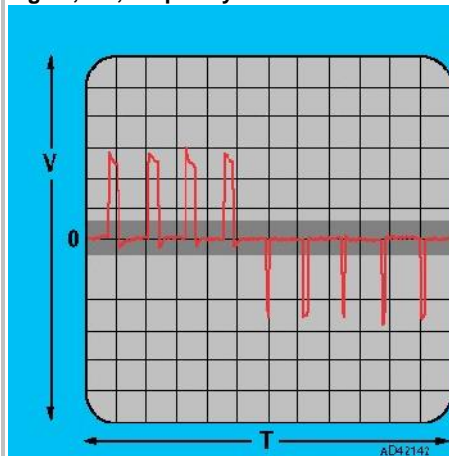
20. Digital, DC, pulse width modulated or digital, DC, frequency modulated



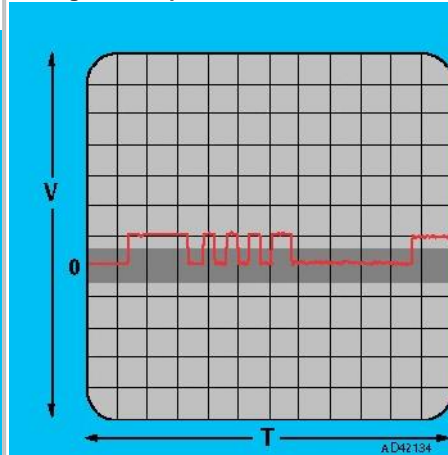
21. Analogue, DC



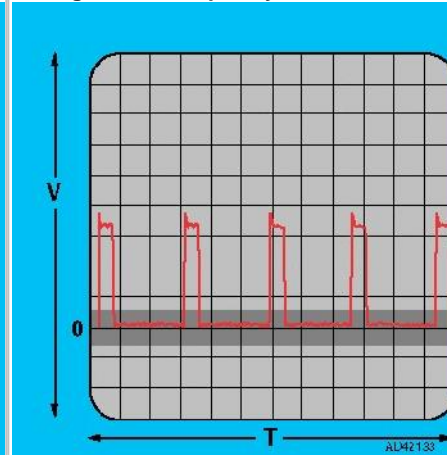
27. Digital, DC, pulse width modulated or digital, DC, frequency modulated



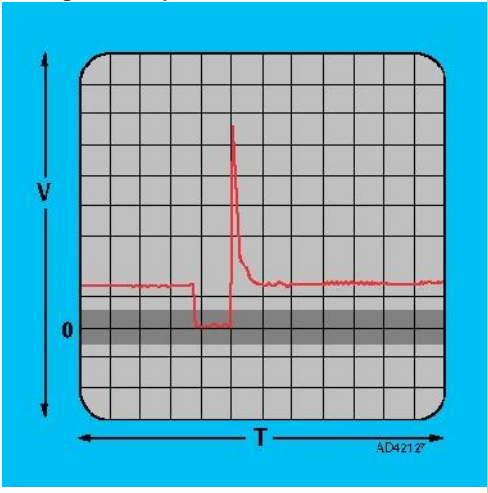
31. Digital, DC, pulse width modulated








32. Digital, DC, frequency modulated



35. Digital, DC, pulse width modulated



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