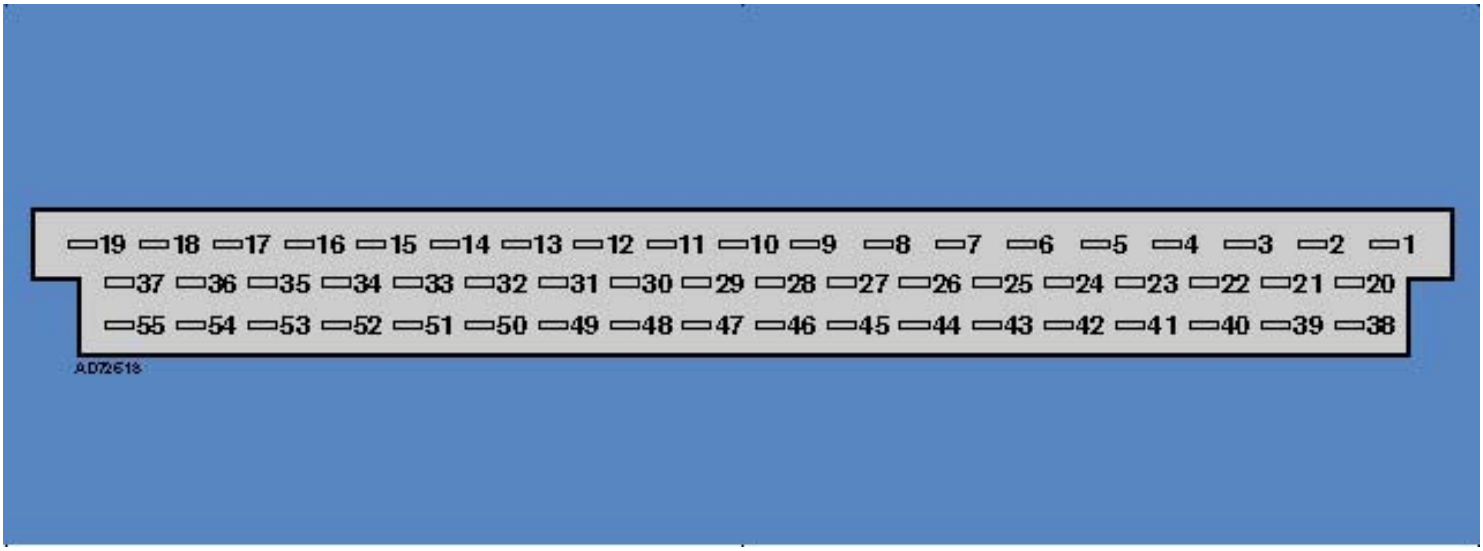
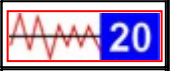
Telephone: www.306oc.co.uk
Fax: www.306oc.co.uk

Terminal side



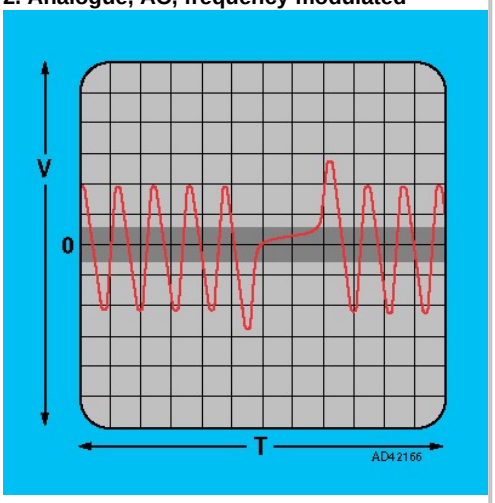
Wire side

Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting (Suggested settings - Voltage/time per division)	Wave form
AC compressor cut-off relay - RFY	23	⇉	Engine running - AC compressor ON	11-14 V		
AC refrigerant triple pressure switch	32	⇐	Engine running - AC ON	11-14 V		
Battery	18	⇐	Ignition OFF	11-14 V		
Crankshaft position (CKP) sensor	11	⇐	Engine idling	2,2 V ac	2 V/1 ms	
Crankshaft position (CKP) sensor	11	⇐	3000 rpm	3,5 V ac	2 V/1 ms	
Crankshaft position (CKP) sensor	30	⇐	Engine idling	2,2 V ac	2 V/1 ms	Reversed 
Crankshaft position (CKP) sensor	30	⇐	3000 rpm	3,5 V ac	2 V/1 ms	Reversed 
Data link connector (DLC)	6			Connected pin - no test data available or random digital signal		
Data link connector (DLC)	13	⇨	Engine idling	11-14 V		
Data link connector (DLC)	16		Ignition ON	11-14 V		

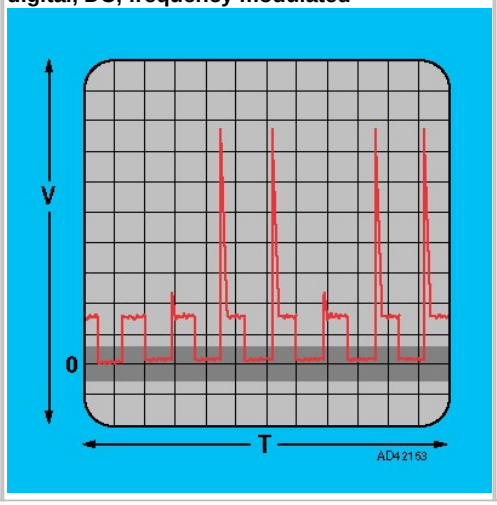
Earth	2		Ignition ON	0 V		
Earth	14		Ignition ON	0 V		
Earth	19		Ignition ON	0 V		
Engine coolant blower control module - RFY	23		Engine running - AC compressor ON	11-14 V		
Engine coolant blower control module	32		Engine running - AC ON	11-14 V		
Engine coolant temperature (ECT) sensor	25		Ignition ON - coolant temp. 20°C	3,5 V		
Engine coolant temperature (ECT) sensor	25		Ignition ON - coolant temp. 80°C	1 V		
Engine coolant temperature (ECT) sensor	26		Ignition ON	0 V		
Evaporative emission (EVAP) canister purge valve	5		Ignition OFF	11-14 V		
Evaporative emission (EVAP) canister purge valve	5		Engine running	1-99%	10 V/50 ms	
Heated oxygen sensor (HO2S)	10		Ignition ON	0 V		
Heated oxygen sensor (HO2S)	28		Engine idling - accelerate briefly	0-1 V fluctuating	0,2 V/1 sec.	
Idle air control (IAC) valve - NFZ	15		Ignition ON	9 V		
Idle air control (IAC) valve	15		Engine idling	40%	5 V/5 ms	
Idle air control (IAC) valve	33		Ignition ON	4 V		
Idle air control (IAC) valve	33		Engine idling	57%	5 V/5 ms	
Idle air control (IAC) valve - RFY	15 (33)		Engine idling		5 V/0,5 sec.	
Idle air control (IAC) valve	24 (21)		Engine idling		5 V/0,5 sec.	
Idle air control (IAC) valve	33 (15)		Engine idling		5 V/0,5 sec.	
Idle air control (IAC) valve	21 (24)		Engine idling		5 V/0,5 sec.	
Ignition coil - cylinders 1 & 4	1		Engine idling		5 V/2 ms	
Ignition coil - cylinders 2 & 3	20		Engine idling		5 V/2 ms	
Ignition switch - through relay module - RFY	34		Ignition ON	11-14 V		
Immobilizer control module	22			Connected pin - no test data available or random digital signal		
Immobilizer control module	35		Ignition ON	11-14 V		
Injectors	17		Ignition ON	11-14 V		
Injectors	17		Engine idling	2,4 ms	10 V/2 ms	
Intake air temperature (IAT) sensor	26		Ignition ON	0 V		
Intake air temperature (IAT) sensor	27		Ignition ON - air temp. 20°C	3,5 V		
Knock sensor (KS) - RFY	8 (26)		Engine idling - accelerate briefly		50 mV/1 ms	
Malfunction indicator lamp (MIL)	22		Ignition ON - MIL ON	0-1 V		
Malfunction indicator lamp (MIL)	22		Engine idling - MIL OFF	11-14 V		

Manifold absolute pressure (MAP) sensor	7	⬅	Ignition ON	4,5 V		
Manifold absolute pressure (MAP) sensor	7	⬅	Engine idling	1,2 V		
Manifold absolute pressure (MAP) sensor	7	⬅	Accelerate briefly	4,4 V briefly		
Manifold absolute pressure (MAP) sensor	12	⇨	Ignition ON	5 V		
Manifold absolute pressure (MAP) sensor	26	⊣	Ignition ON	0 V		
Relay module	3	⊣▷	Ignition ON	0-1 V briefly then 11-14 V		
Relay module	3	⊣▷	Engine cranking	0-1 V		
Relay module	37	⬅	Ignition ON	11-14 V		
Relay module - RFY	36	⊣▷	Ignition OFF	11-14 V		
Relay module	36	⊣▷	Ignition ON	0-1 V		
Tachometer	6	⇨	Engine idling	30 Hz		
Tachometer	6	⇨	3000 rpm	100 Hz		
Throttle position (TP) sensor	12	⇨	Ignition ON	5 V		
Throttle position (TP) sensor	26	⊣	Ignition ON	0 V		
Throttle position (TP) sensor	29	⬅	Ignition ON - throttle closed	0,6 V		
Throttle position (TP) sensor	29	⬅	Ignition ON - throttle fully open	4,6 V		
Transmission control module (TCM)	31	⬅	Ignition ON - AT in P or N	11-14 V		
Transmission control module (TCM)	31	⬅	Ignition ON - AT not in P or N	0 V		
Vehicle speed sensor (VSS)	9	⬅	Ignition ON - vehicle moving	0 V or 11-14 V - fluctuating		

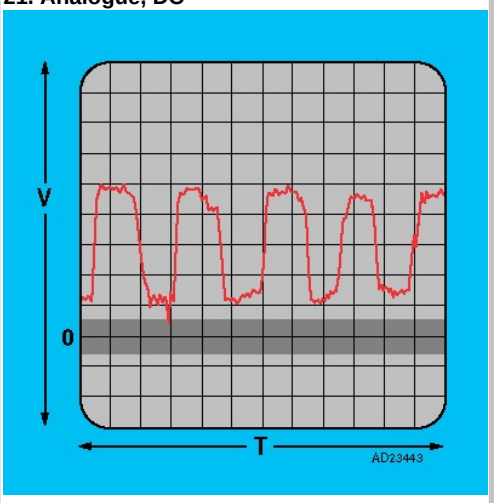
2. Analogue, AC, frequency modulated



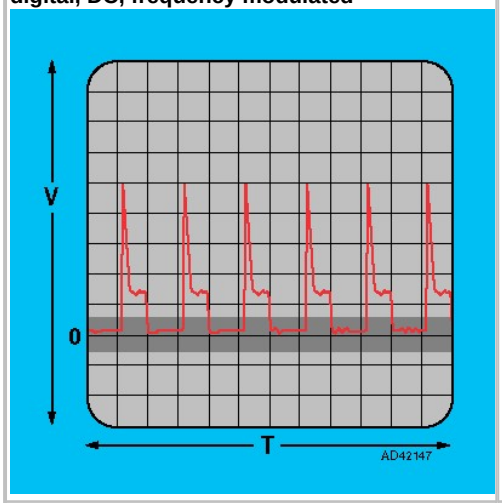
20. Digital, DC, pulse width modulated or digital, DC, frequency modulated



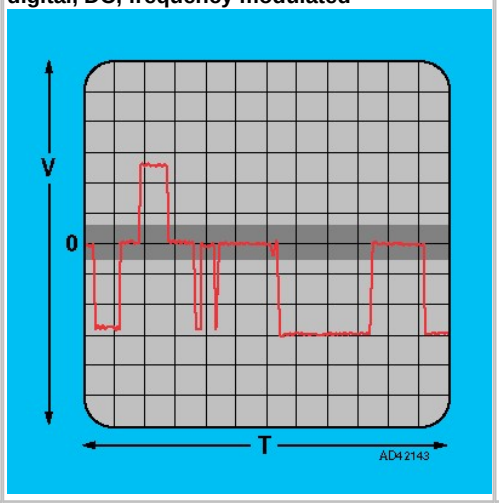
21. Analogue, DC



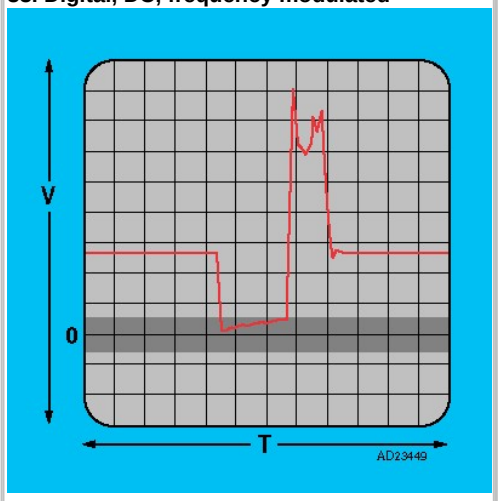
25. Digital, DC, pulse width modulated or digital, DC, frequency modulated



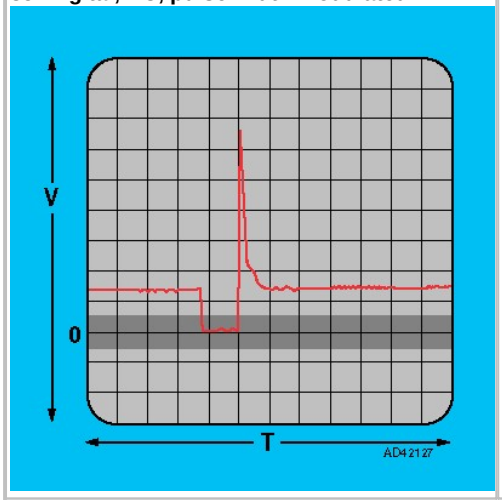
26. Digital, DC, pulse width modulated or digital, DC, frequency modulated



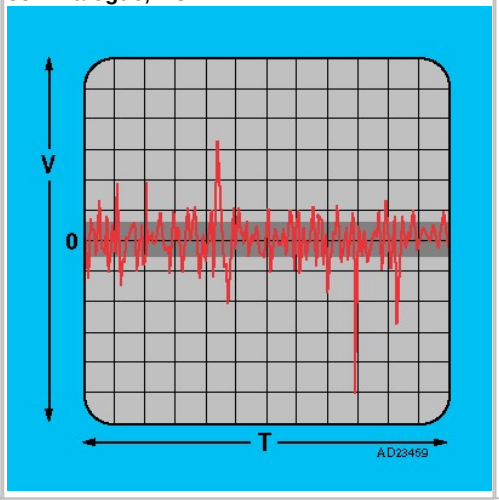
33. Digital, DC, frequency modulated



35. Digital, DC, pulse width modulated



58. Analogue, AC



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