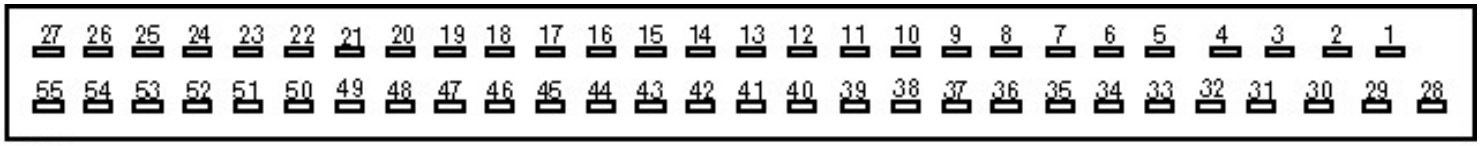
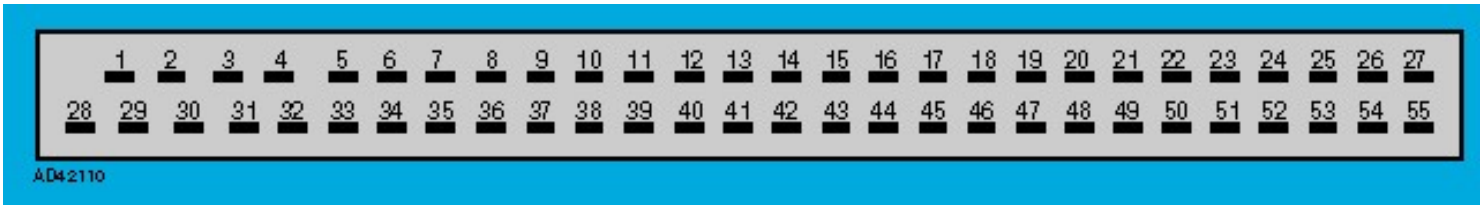
Terminal side

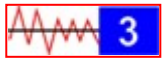


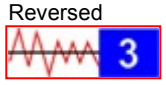
A D8 1647

Wire side

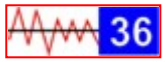
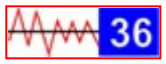


AD4 2110

Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting (Suggested settings - Voltage/time per division)	Wave form
Air conditioning	5			Connected pin - no test data available or random digital signal		
Air conditioning	51			Connected pin - no test data available or random digital signal		
Air conditioning - D7F 710/720	48		Engine idling	0 V		
AC control module - D7F 710/720	10		Ignition ON - coolant blower motor OFF	11-14 V		
AC control module	10		Engine running - coolant blower motor OFF	11-14 V		
AC control module	10		Engine running - coolant blower motor ON	0 V		
Automatic transmission - K7M 702/703	41			Connected pin - no test data available or random digital signal		
Automatic transmission - K7M 702/703, some models	7			Connected pin - no test data available or random digital signal		
Battery - K7M 702/703	32		Ignition OFF	11-14 V		
Crankshaft position (CKP) sensor	33 (34)		Engine cranking	0,2 V ac		
Crankshaft position (CKP) sensor	33 (34)		Engine idling	2 V ac	5 V/1 ms	
Crankshaft position (CKP) sensor	33 (34)		3000 rpm	7 V ac		

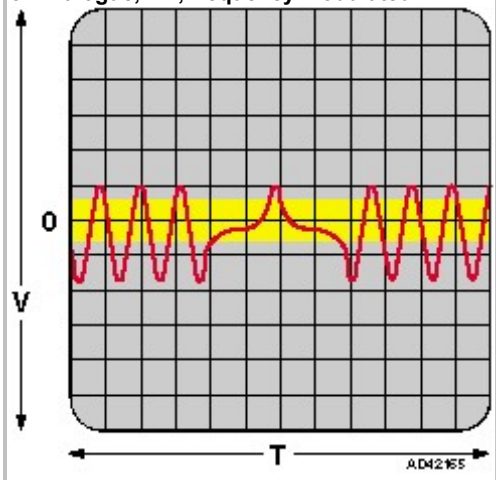
Crankshaft position (CKP) sensor	34 (33)	←	Engine cranking	0,2 V ac		
Crankshaft position (CKP) sensor	34 (33)	←	Engine idling	2 V ac	5 V/1 ms	Reversed 
Crankshaft position (CKP) sensor	34 (33)	←	3000 rpm	7 V ac		
Data link connector (DLC)	11		Ignition ON	11 V		
Data link connector (DLC)	38			Connected pin - no test data available or random digital signal		
Earth	2		Ignition ON	0 V		
Earth	3		Ignition ON	0 V		
Earth	18		Ignition ON	0 V		
Engine control relay - D7F 710/720	1	←	Ignition OFF	0 V		
Engine control relay	1	←	Ignition ON	11-14 V		
Engine control relay	40	→	Ignition OFF	11-14 V		
Engine control relay	40	→	Ignition ON	0 V		
Engine coolant blower motor relay - D7F 710/720	10	—	Ignition ON - coolant blower motor OFF	11-14 V		
Engine coolant blower motor relay	10	—	Engine running - coolant blower motor OFF	11-14 V		
Engine coolant blower motor relay	10	—	Engine running - coolant blower motor ON	0 V		
Engine coolant temperature (ECT) sensor	15	←	Ignition ON - engine cold	3,1 V		
Engine coolant temperature (ECT) sensor	15	←	Engine idling - engine hot	0,38 V		
Engine coolant temperature (ECT) sensor	44	—	Ignition ON	0 V		
Evaporative emission (EVAP) canister purge valve	42	→	Ignition ON	11-14 V briefly then 0 V		
Evaporative emission (EVAP) canister purge valve	42	→	Engine idling	11-14 V		
Exhaust gas recirculation (EGR) solenoid - some models - K7M 702/703	10	→	Ignition ON	11-14 V briefly then 0 V		
Fuel pump relay	48	→	Ignition ON	0 V briefly then 11-14 V		
Fuel pump relay	48	→	Engine running	0 V		
Fuel pump relay - K7M 702/703	52	←	Ignition ON	11-14 V briefly then 0 V		
Fuel pump relay	52	←	Engine idling	11-14 V		
Heated oxygen sensor (HO2S)	17	←	Engine idling	0-1 V fluctuating	0,2 V/1 sec.	

Heated rear window switch - K7M 702/703	6	⬅	Ignition ON - heated rear window OFF	11-14 V		
Heated rear window switch	6	⬅	Ignition ON - heated rear window ON	0 V		
Idle air control (IAC) valve - K7M 702/703	9 (36)	⇨	Ignition ON	0,2 V		
Idle air control (IAC) valve	9 (36)	⇨	Engine idling		5 V/0,5 sec.	Intermittent
Idle air control (IAC) valve	35 (40)	⇨	Ignition ON	0,2 V		
Idle air control (IAC) valve	35 (40)	⇨	Engine idling		5 V/0,5 sec.	Intermittent
Idle air control (IAC) valve	40 (35)	⇨	Ignition ON	0,2 V		
Idle air control (IAC) valve	40 (35)	⇨	Engine idling		5 V/0,5 sec.	Intermittent
Idle air control (IAC) valve	36 (9)	⇨	Ignition ON	11 V		
Idle air control (IAC) valve	36 (9)	⇨	Engine idling		5 V/0,5 sec.	Intermittent
Idle air control (IAC) valve - D7F 710/720	9 (35)	⇨	Ignition ON	0,2 V		
Idle air control (IAC) valve	9 (35)	⇨	Engine idling		5 V/0,5 sec.	Intermittent
Idle air control (IAC) valve	35 (9)	⇨	Ignition ON	0,2 V		
Idle air control (IAC) valve	35 (9)	⇨	Engine idling		5 V/0,5 sec.	Intermittent
Idle air control (IAC) valve	8 (30)	⇨	Ignition ON	0,2 V		
Idle air control (IAC) valve	8 (30)	⇨	Engine idling		5 V/0,5 sec.	Intermittent
Idle air control (IAC) valve	30 (8)	⇨	Ignition ON	11 V		
Idle air control (IAC) valve	30 (8)	⇨	Engine idling		5 V/0,5 sec.	Intermittent
Ignition coil - cylinders 1 & 4	28	⇉	Ignition ON	11-14 V		
Ignition coil	28	⇉	Engine idling		5 V/1 ms	
Ignition coil - cylinders 2 & 3	29	⇉	Ignition ON	11-14 V		
Ignition coil	29	⇉	Engine idling		5 V/1 ms	
Ignition switch - K7M 702/703	24	⬅	Ignition OFF	0 V		

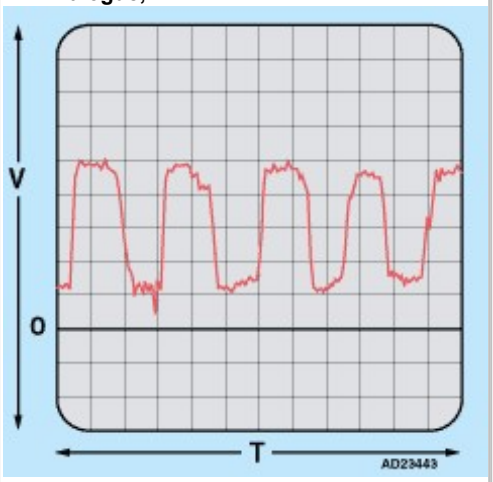
Ignition switch	24	⬅	Ignition ON	11-14 V		
Immobilizer control module	37	⬅	Ignition ON	1-4 V fluctuating		
Injectors 1 & 4	30	⊣▷	Ignition ON	11-14 V briefly then 0 V		
Injectors 1 & 4	30	⊣▷	Engine idling	2,5 ms	10 V/0,5 ms	
Injectors 2 & 3	4	⊣▷	Ignition ON	11-14 V briefly then 0 V		
Injectors 2 & 3	4	⊣▷	Engine idling	2,5 ms	10 V/0,5 ms	
Instruments - D7F 710/720	48	⊣▷	Engine idling	0 V		
Intake air temperature (IAT) sensor	20	⬅	Ignition ON - air temp. 10°C	3,3 V		
Intake air temperature (IAT) sensor	46	⊣	Ignition ON	0 V		
Knock sensor (KS)	44	⊣	Ignition ON	0 V		
Knock sensor (KS) - K7M 702/703	8	⬅	Engine idling - full throttle briefly		50 mV/1 ms	
Knock sensor (KS) - D7F 710/720	54	⬅	Engine idling - full throttle briefly		50 mV/1 ms	
Knock sensor (KS) - shield wire	31	⊣	Ignition ON	0 V		
Malfunction indicator lamp (MIL)	43	⊣▷	Ignition ON - MIL ON	0-1 V		
Malfunction indicator lamp (MIL)	43	⊣▷	Engine idling - MIL OFF	11-14 V		
Manifold absolute pressure (MAP) sensor	16	⬅	Engine idling	1 V		
Manifold absolute pressure (MAP) sensor	16	⬅	Engine under load	4,7 V		
Manifold absolute pressure (MAP) sensor	44	⊣	Ignition ON	0 V		
Manifold absolute pressure (MAP) sensor	45	⇨	Ignition ON	5 V		
Power steering pressure (PSP) switch	13	⬅	Engine idling - steering wheel not turned	5 V		
Power steering pressure (PSP) switch	13	⬅	Engine idling - steering wheel turned	0 V		
Throttle position (TP) sensor	19	⬅	Ignition ON - throttle closed	0,78 V		
Throttle position (TP) sensor	19	⬅	Ignition ON - throttle fully open	4,3 V		
Throttle position (TP) sensor	45	⇨	Ignition ON	5 V		
Throttle position (TP) sensor	46	⊣	Ignition ON	0 V		
Trip computer - some models	50	⇨	Ignition ON	11,4 V briefly then 0 V		

Vehicle speed sensor (VSS)	12	⬅	Ignition ON - vehicle pushed	0 V or 11 V switching		

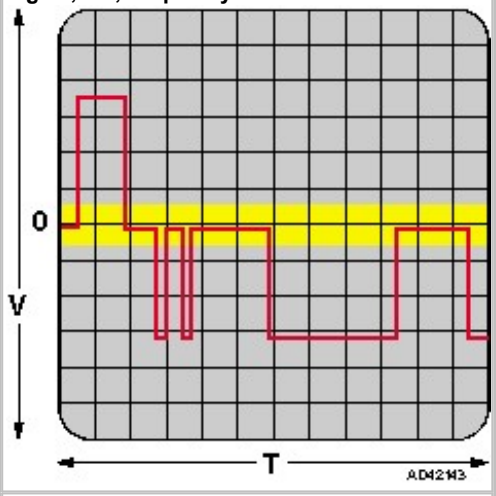
3. Analogue, AC, frequency modulated



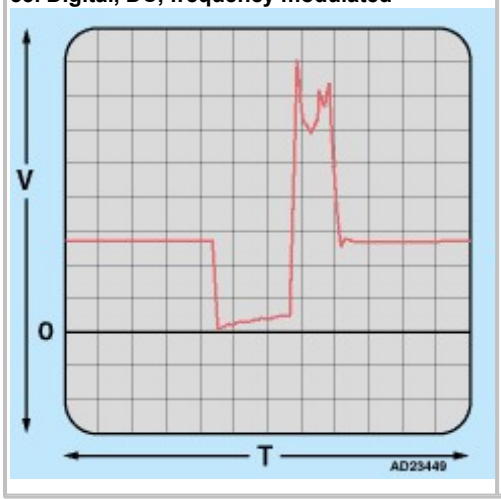
21. Analogue, DC



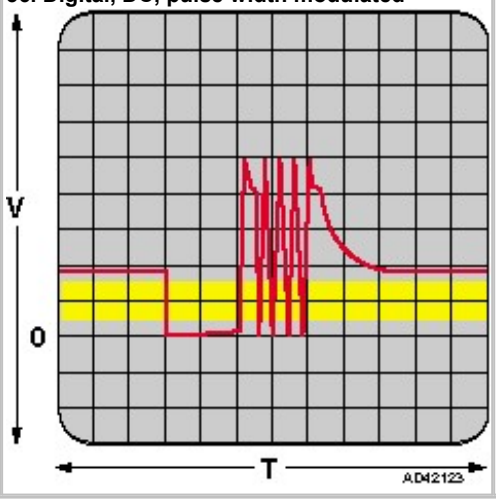
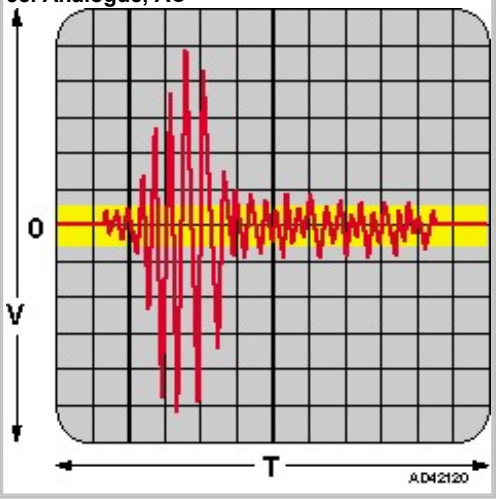
26. Digital, DC, pulse width modulated or digital, DC, frequency modulated



33. Digital, DC, frequency modulated



36. Digital, DC, pulse width modulated



38. Analogue, AC