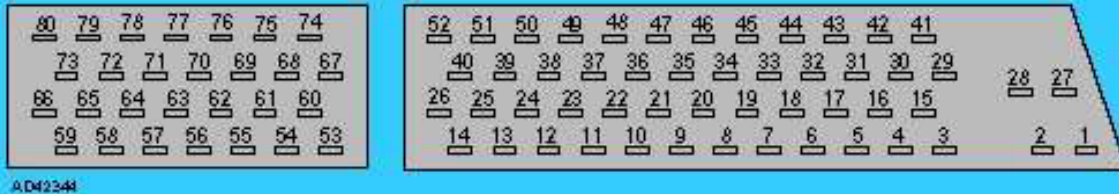


Telephone:

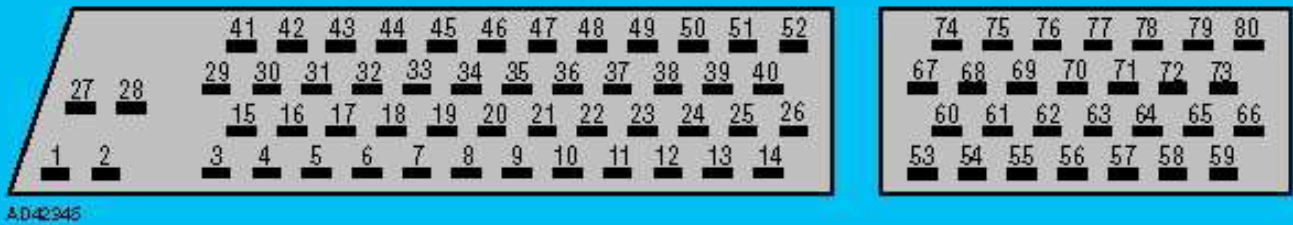
Fax:

PVN Nr.:

Terminal side



Wire side



All models

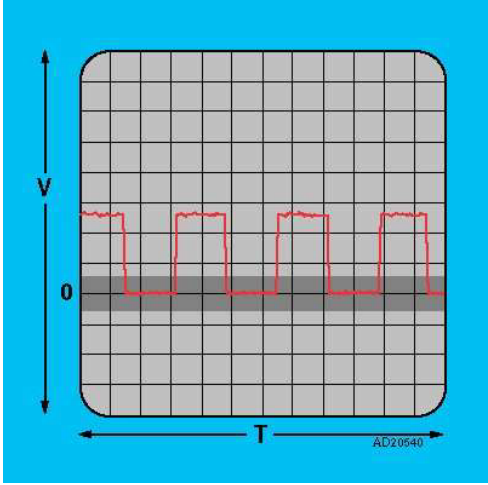
Component/circuit description	ECM pin	Signal	Condition	Typical value
AC compressor control module - MTC	16			Connected pin - no test data available
AC control module - ATC - AT	48	←		Connected pin - no test data available
AC control module	16			Connected pin - no test data available
AC control module - tachometer signal	6	⇒	Engine idling	30 Hz
AC control module	6	⇒	Engine idling	5 V/10 ms per division 
AC diode - MTC - AT	48	←		Connected pin - no test data available
<u>Accelerator pedal position (APP) sensor</u>	11	⇒	Ignition ON	5 V
<u>Accelerator pedal position (APP) sensor</u>	23	⚡	Ignition ON	0 V
<u>Accelerator pedal position (APP) sensor</u>	24	←	Ignition ON - accelerator pedal released	0,4 V
<u>Accelerator pedal position (APP) sensor</u>	24	←	Ignition ON - accelerator pedal fully depressed	3,5 V
<u>Accelerator pedal position (APP) switch</u>	12	←	Ignition ON - accelerator pedal released	0,1 V
<u>Accelerator pedal position (APP) switch</u>	12	←	Ignition ON - accelerator pedal depressed	2,8 V

Accelerator pedal position (APP) switch - 05/99-	25		Ignition ON	0 V
Alternator - MT	22		Engine idling	0 V
Brake pedal position (BPP) switch I	20		Ignition OFF - brake pedal released	0 V
Brake pedal position (BPP) switch I	20		Ignition OFF - brake pedal depressed	11-14 V
Brake pedal position (BPP) switch II	9		Ignition ON - brake pedal released	11-14 V
Brake pedal position (BPP) switch II	9		Ignition ON - brake pedal depressed	0 V
CAN data bus - 05/99-	68			Connected pin - no test data available
CAN data bus	75			Connected pin - no test data available
Clutch pedal position (CPP) switch	46		Ignition ON - clutch pedal released	11-14 V
Clutch pedal position (CPP) switch	46		Ignition ON - clutch pedal depressed	0 V
Crankshaft position (CKP) sensor	67		Engine idling	3,8 V ac
Crankshaft position (CKP) sensor	67		Engine idling	5 V/5 ms per division 
Crankshaft position (CKP) sensor	69		Engine idling	0 V
Cruise control master switch	10			Connected pin - no test data available
Cruise control master switch	19			Connected pin - no test data available
Cruise control selector switch	19			Connected pin - no test data available
Cruise control selector switch	21			Connected pin - no test data available
Cruise control selector switch	35			Connected pin - no test data available
Earth	1		Ignition ON	0 V
Earth	27		Ignition ON	0 V
Earth - AT	22		Ignition ON	0 V
Earth --04/99	25		Ignition ON	0 V
Engine control relay	2		Ignition OFF	0 V
Engine control relay	2		Ignition ON	11-14 V
Engine control relay	28		Ignition OFF	0 V
Engine control relay	28		Ignition ON	11-14 V
Engine control relay	33		Ignition OFF	11-14 V
Engine control relay	33		Ignition ON	0-1 V
Engine coolant blower motor run-on relay - AFN/AVG	31			Connected pin - no test data available
Engine coolant heater relay I - MT	17		Engine idling - relay contacts open	11-14 V
Engine coolant heater relay I	17		Engine idling - relay contacts closed	0-1 V
Engine coolant heater relay II - MT	34		Engine idling - relay contacts open	11-14 V
Engine coolant heater relay II	34		Engine idling - relay contacts closed	0-1 V
Engine coolant temperature (ECT) sensor	54		Ignition ON - coolant temp. 20°C	3,5 V
Engine coolant temperature (ECT) sensor	54		Ignition ON - coolant temp. 80°C	1,4 V
Engine coolant temperature (ECT) sensor	70		Ignition ON	0 V

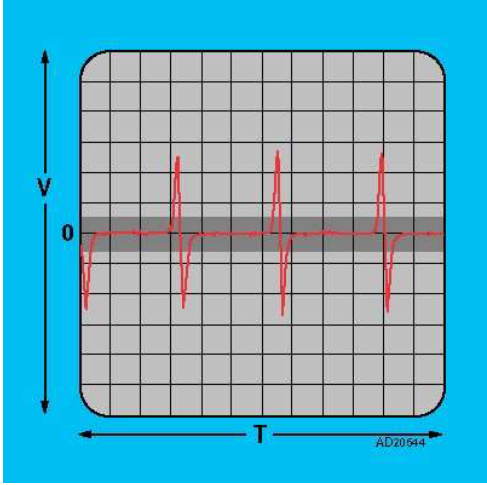
Exhaust gas recirculation (EGR) solenoid	29		Ignition ON	11-14 V
Exhaust gas recirculation (EGR) solenoid	29		Engine idling	5 V/5 ms per division  4
Fuel injection timing solenoid	79		Engine idling	2 V/10 ms per division  10
Fuel injection timing solenoid	79		Ignition ON	11-14 V
Fuel quantity adjuster	59		Engine idling	11,3 V
Fuel quantity adjuster	59		Engine idling	2 V/2 ms per division  5
Fuel quantity adjuster	66		Engine idling	11,3 V
Fuel quantity adjuster	66		Engine idling	2 V/2 ms per division  5
Fuel quantity adjuster	80		Engine idling	11,3 V
Fuel quantity adjuster	80		Engine idling	2 V/2 ms per division  5
Fuel quantity adjuster position sensor	56		Ignition ON	2,5 V
Fuel quantity adjuster position sensor	56		Engine idling	0,5 V/0,1 ms per division  8
Fuel quantity adjuster position sensor	57		Ignition ON	2,5 V
Fuel quantity adjuster position sensor	64		Ignition ON	2,5 V
Fuel quantity adjuster position sensor	64		Engine idling	0,5 V/0,1 ms per division  8
Fuel shut-off solenoid	77		Ignition OFF	0 V
Fuel shut-off solenoid	77		Ignition ON	11-14 V
Fuel temperature sensor	53		Ignition ON - fuel temp. 20°C	3,5 V
Fuel temperature sensor	76		Ignition ON	0 V
Glow plug relay	42		Ignition ON - glow plugs ON	0-1 V
Glow plug relay	42		Ignition ON - glow plugs OFF	11-14 V
Glow plug warning lamp	41		Ignition ON - lamp ON	0 V
Glow plug warning lamp	41		Ignition ON - lamp OFF	10,5 V
Heated rear window switch - AT - 05/98-	48			Connected pin - no test data available
Ignition switch	47		Ignition OFF	0 V
Ignition switch	47		Ignition ON	11-14 V
Injector needle lift sensor	55		Engine idling	0 V
Injector needle lift sensor	62		Engine idling	0,02 V ac
Injector needle lift sensor	62		Engine idling	0,2 V/1 ms per division  7
Instrument panel - immobilization/diagnosis signal	45		Ignition ON	11-14 V
Instrument panel	45		Engine idling	11-14 V

Instrumentation control module - fuel consumption signal --04/99	18	⇒		Connected pin - no test data available
Instrumentation control module - tachometer signal --04/99	6	⇒	Engine idling	30 Hz
Instrumentation control module	6	⇒	Engine idling	5 V/10 ms per division 
Instrumentation control module - vehicle speed signal	51	←	Ignition ON - vehicle pushed	0 V or 11-14 V (switching)
<u>Intake air temperature (IAT) sensor</u>	13	←	Ignition ON - air temp. 20°C	3,7 V
<u>Intake air temperature (IAT) sensor</u> - 05/99-	25	⚡	Ignition ON	0 V
<u>Manifold absolute pressure (MAP) sensor</u>	39	⇒	Ignition ON	5 V
<u>Manifold absolute pressure (MAP) sensor</u>	40	←	Ignition ON	1,9 V
<u>Manifold absolute pressure (MAP) sensor</u>	40	←	Engine idling	1,85 V
<u>Manifold absolute pressure (MAP) sensor</u>	40	←	Engine running - accelerator pedal briefly fully depressed	3,65 V (briefly)
<u>Manifold absolute pressure (MAP) sensor</u> - 05/99-	25	⚡	Ignition ON	0 V
<u>Mass air flow (MAF) sensor</u>	4	⚡	Engine idling	0 V
<u>Mass air flow (MAF) sensor</u>	50	⇒	Ignition ON	5 V
<u>Mass air flow (MAF) sensor</u>	52	←	Engine idling	1 V
<u>Mass air flow (MAF) sensor</u>	52	←	Engine running - accelerator pedal briefly fully depressed	4,35 V (briefly)
<u>Mass air flow (MAF) sensor</u>	52	←	Ignition ON	0,28 V
Spare cable, engine compartment rear - AT 05/99-	18			
Spare cable, engine compartment rear	44			
Spare cable, engine compartment rear - 05/99-	7			
Spare cable, engine compartment rear	36			
Transmission control module (TCM) --04/99	7			Connected pin - no test data available
Transmission control module (TCM) --04/99	36			Connected pin - no test data available
Transmission control module (TCM) --04/99	44			Connected pin - no test data available
Transmission kick-down switch	8	←		Connected pin - no test data available
Transmission kick-down switch - 05/99-	25	⚡	Ignition ON	0 V
<u>Turbocharger (TC) wastegate regulating valve</u>	15	⚡⇒	Ignition ON	11-14 V
<u>Turbocharger (TC) wastegate regulating valve</u>	15	⚡⇒	Engine running - valve not operating	11-14 V
<u>Turbocharger (TC) wastegate regulating valve</u>	15	⚡⇒	Engine running - valve operating	0-1 V

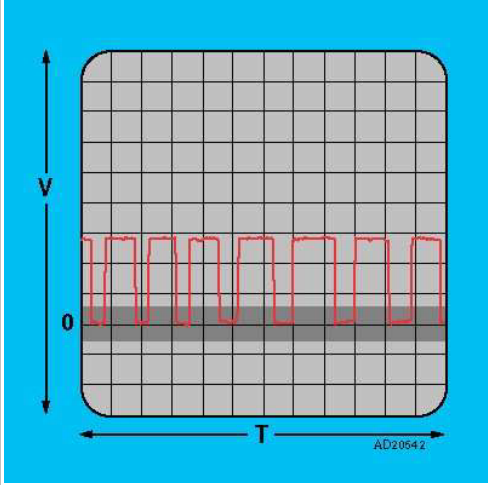
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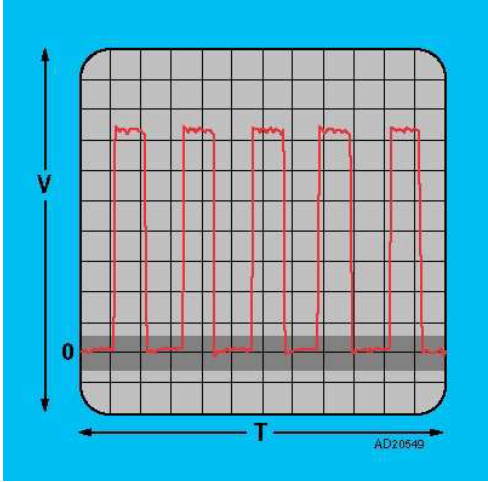
6. Analogue, AC



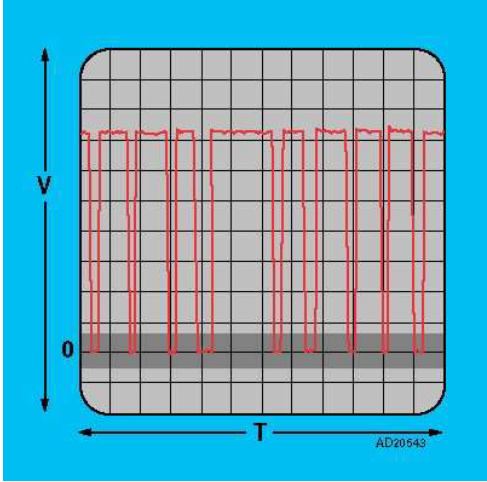
4. Digital, DC



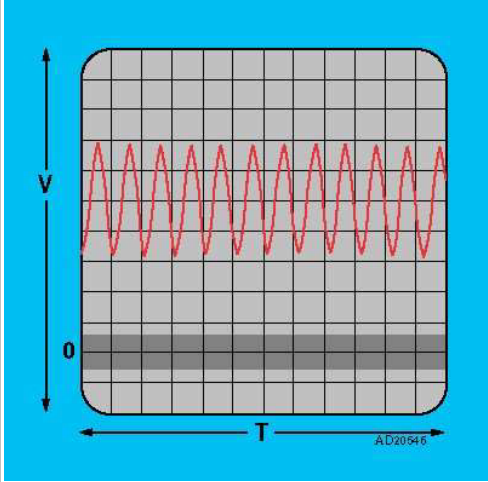
10. Digital, DC



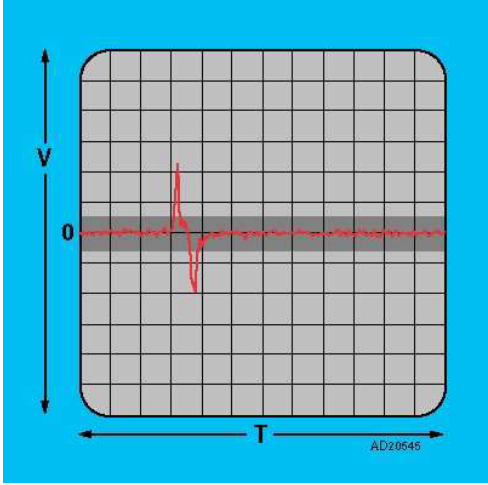
5. Digital, DC



8. Analogue, DC



7. Analogue, AC



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