

auto
London
299388 london

Date
19.Apr.2021

Pin assignment

Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting	Wave form
Accelerator pedal position (APP) sensor	33	ECM earth circuit	Ignition ON	0 V		
Accelerator pedal position (APP) sensor	34	Input signal	Ignition ON - accelerator pedal released	0,4 V		
Accelerator pedal position (APP) sensor	34	Input signal	Ignition ON - accelerator pedal depressed	2 V		
Accelerator pedal position (APP) sensor	35	Input signal	Ignition ON - accelerator pedal released	0,7 V		
Accelerator pedal position (APP) sensor	35	Input signal	Ignition ON - accelerator pedal depressed	4,1 V		
Accelerator pedal position (APP) sensor	36	ECM earth circuit	Ignition ON	0 V		
Accelerator pedal position (APP) sensor	72	Output signal	Ignition ON	5 V		
Accelerator pedal position (APP) sensor	73	Output signal	Ignition ON	5 V		
Air conditioning	40					
Air conditioning	41					

Vehicle data:

Registration/licens

Model: **Volkswagen Passat (3BG) [01-05]**

Engine code: **AWT**

Model year:

Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting	Wave form
Air conditioning - some models	61					
Alternator	28	Output signal	Engine idling		5 V/50 ms	
Battery	62	Input signal	Ignition OFF	11-14 V		
Brake pedal position (BPP) switch 1	56	Input signal	Ignition ON - brake pedal released	0 V		
Brake pedal position (BPP) switch 1	56	Input signal	Ignition ON - brake pedal depressed	11-14 V		
Brake pedal position (BPP) switch 2	55	Input signal	Ignition ON - brake pedal released	11-14 V		
Brake pedal position (BPP) switch 2	55	Input signal	Ignition ON - brake pedal depressed	0 V		
Brake servo control module - AT	22					
Camshaft position (CMP) actuator	115	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Camshaft position (CMP) actuator	115	ECM switched earth	Engine idling	11-14 V		
Camshaft position (CMP) sensor	86	Input signal	Ignition ON	0 or 11-14 V		
Camshaft position (CMP) sensor	86	Input signal	Engine idling		5 V/20 ms	
Camshaft position (CMP) sensor	98	Output signal	Ignition ON	5 V		
Camshaft position (CMP) sensor	108	ECM earth circuit	Ignition ON	0 V		
CAN data bus - high	60	Input/output signal				
CAN data bus - low	58	Input/output signal				
Clutch pedal position (CPP) switch	39	Input signal	Ignition ON - clutch pedal released	11-14 V		
Clutch pedal position (CPP) switch	39	Input signal	Ignition ON - clutch pedal depressed	0 V		

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Crankshaft position (CKP) sensor	82	Input signal	Engine idling	3,1 V ac		
Crankshaft position (CKP) sensor	82	Input signal	Engine idling		2 V/2 ms	
Crankshaft position (CKP) sensor	90	Input signal	Engine idling	3,1 V ac		
Crankshaft position (CKP) sensor	90	Input signal	Engine idling		2 V/2 ms	Reverse d
Crankshaft position (CKP) sensor	108	ECM earth circuit	Ignition ON	0 V		
Cruise control master switch	38					
Cruise control master switch	57					
Cruise control selector switch	38					
Cruise control selector switch	75					
Cruise control selector switch	76					
Earth	1		Ignition ON	0 V		
Earth	2		Ignition ON	0 V		
Engine control (EC) relay	21	ECM switched earth	Ignition ON	0-1 V		
Engine control (EC) relay	21	ECM switched earth	Engine idling	0-1 V		
Engine control (EC) relay	121	Input signal	Ignition ON	11-14 V		
Engine coolant temperature (ECT) sensor	93	Input signal	Ignition ON - coolant temp. 20°C	2,2 V		
Engine coolant temperature (ECT) sensor	93	Input signal	Ignition ON - coolant temp. 80°C	0,4 V		
Engine coolant temperature (ECT) sensor	108	ECM earth circuit	Ignition ON	0 V		
Evaporative emission (EVAP) canister purge valve	64	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		

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Evaporative emission (EVAP) canister purge valve	64	ECM switched earth	Engine running - engine hot - valve operating		10 V/5 ms	
Fuel pump (FP) relay	65	ECM switched earth	Ignition ON	0-1 V briefly then 11-14 V		
Fuel pump (FP) relay	65	ECM switched earth	Engine idling	0-1 V		
Heated oxygen sensor (HO2S) 1	51	Input signal	Engine idling	2,5 V		
Heated oxygen sensor (HO2S) 1	51 (70)	Input signal	Engine idling	0,45 V		
Heated oxygen sensor (HO2S) 1	52	Input/output signal	Engine idling	2,34-2,55 V		
Heated oxygen sensor (HO2S) 1	70	Input signal	Engine idling	2,9 V		
Heated oxygen sensor (HO2S) 1	70 (51)	Input signal	Engine idling	0,45 V		
Heated oxygen sensor (HO2S) 1	71	Input/output signal	Engine idling	2,34-2,55 V		
Heated oxygen sensor (HO2S) 1 - heater control	5	ECM switched earth			2 V/0,2 sec.	
Heated oxygen sensor (HO2S) 2	68	ECM switched earth	Ignition ON	0 V		
Heated oxygen sensor (HO2S) 2	69	Input signal	Engine idling - engine hot	0,6 V		
Heated oxygen sensor (HO2S) 2 - heater control	63	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Heated oxygen sensor (HO2S) 2 - heater control	63	ECM switched earth	Engine idling	0-1 V		
Ignition coil 1	102	Output signal	Ignition ON	0 V		
Ignition coil 1	102	Output signal	Engine idling		2 V/20 ms	
Ignition coil 2	95	Output signal	Ignition ON	0 V		
Ignition coil 2	95	Output signal	Engine idling		2 V/20 ms	

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Ignition coil 3	103	Output signal	Ignition ON	0 V		
Ignition coil 3	103	Output signal	Engine idling		2 V/20 ms	
Ignition coil 4	94	Output signal	Ignition ON	0 V		
Ignition coil 4	94	Output signal	Engine idling		2 V/20 ms	
Ignition switch	3	Input signal	Ignition OFF	0 V		
Ignition switch	3	Input signal	Ignition ON	11-14 V		
Injector 1	96	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Injector 1	96	ECM switched earth	Engine idling	2,5 ms	10 V/2 ms	
Injector 2	89	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Injector 2	89	ECM switched earth	Engine idling	2,5 ms	10 V/2 ms	
Injector 3	97	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Injector 3	97	ECM switched earth	Engine idling	2,5 ms	10 V/2 ms	
Injector 4	88	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Injector 4	88	ECM switched earth	Engine idling	2,5 ms	10 V/2 ms	
Instrumentation control module - diagnosis signal	43					
Instrumentation control module - engine RPM signal	37	Output signal	Engine idling	28 Hz		
Instrumentation control module - vehicle speed signal	54	Input signal				

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Intake air temperature (IAT) sensor	85	Input signal	Ignition ON - air temp. 20°C	2,1 V		
Intake air temperature (IAT) sensor	108	ECM earth circuit	Ignition ON	0 V		
Knock sensor (KS) 1	99	ECM earth circuit	Engine idling	0 V		
Knock sensor (KS) 1	106	Input signal	Engine idling - accelerate briefly		50 mV/1 ms	
Knock sensor (KS) 1	108	ECM earth circuit	Ignition ON	0 V		
Knock sensor (KS) 2	99	ECM earth circuit	Engine idling	0 V		
Knock sensor (KS) 2	107	Input signal	Engine idling - accelerate briefly		50 mV/1ms	
Knock sensor (KS) 2	108	ECM earth circuit	Ignition ON	0 V		
Mass air flow (MAF) sensor	27	ECM earth circuit	Ignition ON	0 V		
Mass air flow (MAF) sensor	29	Input signal	Engine idling	1,4 V		
Mass air flow (MAF) sensor	53	Output signal	Ignition ON	5 V		
Power steering pressure (PSP) switch	49	Input signal	Engine idling - steering wheel not turned	11-14 V		
Power steering pressure (PSP) switch	49	Input signal	Engine idling - steering wheel turned	0 V		
Power steering pressure (PSP) switch	50	ECM earth circuit	Ignition ON	0 V		
Secondary air injection (AIR) pump relay	66	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Secondary air injection (AIR) pump relay	66	ECM switched earth	Engine running - pump OFF	11-14 V		
Secondary air injection (AIR) pump relay	66	ECM switched earth	Engine running - pump ON	0-1 V		

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Secondary air injection (AIR) solenoid	9	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Secondary air injection (AIR) solenoid	9	ECM switched earth	Engine running - solenoid OFF	11-14 V		
Secondary air injection (AIR) solenoid	9	ECM switched earth	Engine running - solenoid ON	0-1 V		
Spare cable	30					
Spare cable	47					
Spare cable	48					
Spare cable	67					
Spare cable	81					
Throttle motor	117	Output signal	Ignition ON	11-14 V for 30 seconds then 3 V		
Throttle motor	117	Output signal	Ignition ON - accelerator pedal released		2 V/0,5 ms	
Throttle motor	117	Output signal	Ignition ON - accelerator pedal depressed		2 V/0,5 ms	
Throttle motor	118	Output signal	Ignition ON	11-14 V		
Throttle motor	118	Output signal	Engine idling	11-14 V		
Throttle motor position sensor	83	Output signal	Ignition ON	5 V		
Throttle motor position sensor	84	Input signal	Ignition ON - accelerator pedal released	4,3 V		
Throttle motor position sensor	84	Input signal	Ignition ON - accelerator pedal depressed	0,7 V		
Throttle motor position sensor	91	ECM earth circuit	Ignition ON	0 V		
Throttle motor position sensor	92	Input signal	Ignition ON - accelerator pedal released	0,7 V		
Throttle motor position sensor	92	Input signal	Ignition ON - accelerator pedal depressed	4,3 V		

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Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting	Wave form
Turbocharger (TC) bypass valve	105	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Turbocharger (TC) bypass valve	105	ECM switched earth	Engine idling	11-14 V		
Turbocharger (TC) wastegate pressure sensor	98	Output signal	Ignition ON	5 V		
Turbocharger (TC) wastegate pressure sensor	101	Input signal	Ignition ON	1,9 V		
Turbocharger (TC) wastegate pressure sensor	101	Input signal	Engine idling	1,9 V		
Turbocharger (TC) wastegate pressure sensor	108	ECM earth circuit	Ignition ON	0 V		
Turbocharger (TC) wastegate regulating valve	104	ECM switched earth	Ignition ON	11-14 V briefly then 0-1 V		
Turbocharger (TC) wastegate regulating valve	104	ECM switched earth	Engine idling	11-14 V		

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Wiring harness side

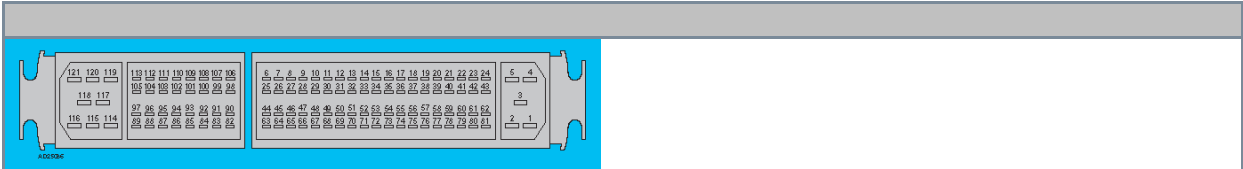


Fig. 1

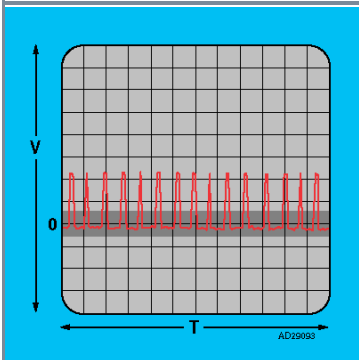


Fig. 2

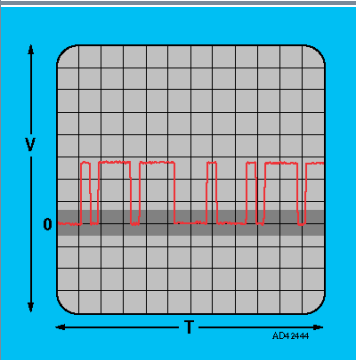


Fig. 3

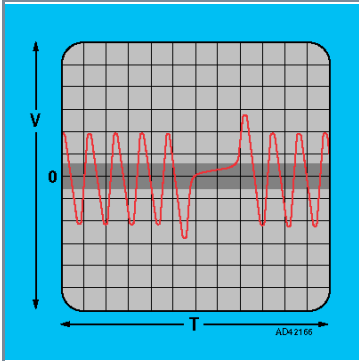


Fig. 4

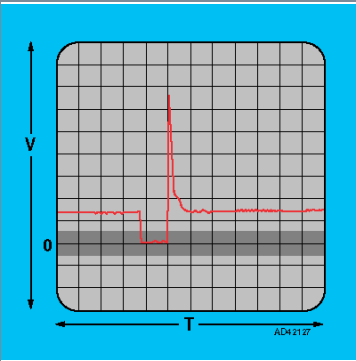


Fig. 5

Fig. 6

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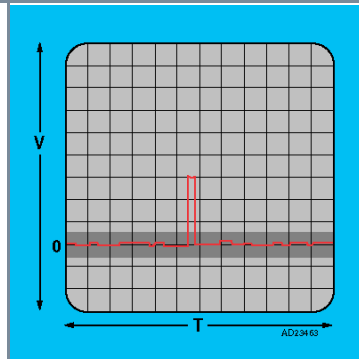
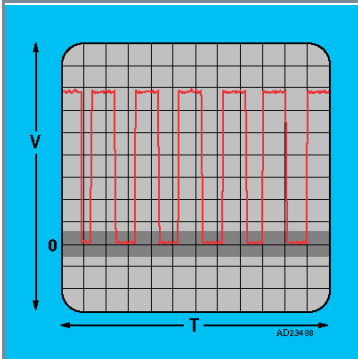


Fig. 7

Fig. 8

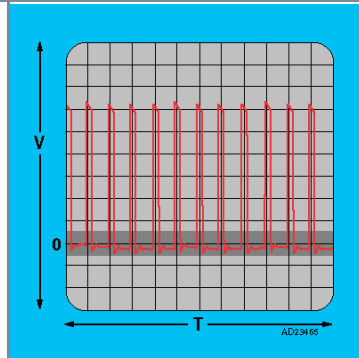
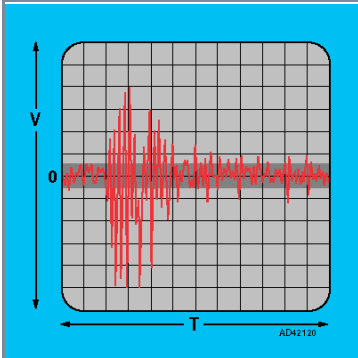
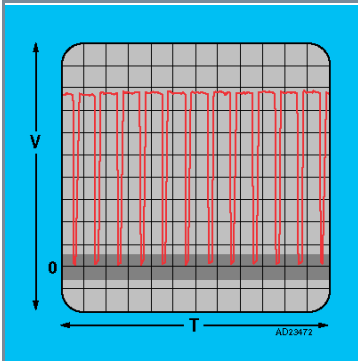


Fig. 9



Vehicle data:

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