

**QUICK REFERENCE GUIDE**

**VAD Pro-901**

**Measuring Value Blocks - Engine**



Block 000 (1 Bank)	Label 1	Label 2	Label 3	Label 4	Label 5
	CTS	Load	RPM	Voltage	Throttle Valve
	Label 6	Label 7	Label 8	Label 9	Label 10
IAC	IAC Learning value	Lambda control	Lambda control learning value idle	Lambda control learning value partial load	

Block 000 (2 Bank)	Label 1	Label 2	Label 3	Label 4	Label 5
	CTS	Load	RPM	Throttle Valve Angle	Idle Air Control
	Label 6	Label 7	Label 8	Label 9	Label 10
Idle Air Control Valve learning value	Lambda control Bank 1	Lambda control Bank 2	Lambda adaptation (add) Bank 1	Lambda adaptation (add) Bank 2	

Block	Variables	Label 1	Label 2	Label 3	Label 4
001	2 Bank	RPM	Engine coolant temperature	Lambda control value Bank 1	Lambda control value Bank 2
		[1/min]	[°C]	[%]	[%]
001	1 Bank	RPM	Engine coolant temperature	Lambda control value	Adjustment requirements for basic setting - Pos1:No DTC, pos2:Cat temp OK, pos3:A/C comp, Pos4:Idle sw, Pos5:Lambda control Ok, Pos6:Throttle CL, Pos7:RPM<2000, pos8:CTS>80°C
		[1/min]	[°C]	(Injection adjustment) %	
002	MAF	RPM	Load	Mean injection time	Air mass
		[1/min]	[%]	[ms]	[g/s]
002	MAP	RPM	Load	Mean injection time	Intake manifold pressure
		[1/min]	[%]	[ms]	[mbar]
003	MAF	RPM	Air mass	Throttle valve angle (Potentiometer)	Ignition angle (actual)
		[1/min]	[g/s]	[%]	[°KW]
003	MAP	RPM	Intake manifold pressure	Throttle valve angle (Potentiometer)	Ignition angle (actual)
		[1/min]	[mbar]	[%]	[°KW]
004		RPM	Voltage	Cooling temperature	Intake air temperature
		[1/min]	[V]	[°C]	[°C]
005		RPM	Load	Speed	Operating condition
		[1/min]	[%]	[km/h]	(Idle, partial load, full load, SA, BA)[1]
006		RPM	Load	Intake air temperature	Altitude correction[2]
		[1/min]	[%]	[°C]	[%]

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<b>007</b>		RPM	Load	Intake manifold pressure	Pressure bake booster
		[1/min]	[%]	[mbar]	[mbar]
<b>008</b>		Condition brake	Supply voltage	Condition vacuum pump for brake	Pressure bake booster
		activated / not activated	[V]	Pump ON / Pump OFF	[mbar]
<b>010</b>		RPM	Load	Throttle valve angle (Potentiometer)	Ignition angle (actual)
		[1/min]	[%]	[%]	[°KW]
<b>011</b>		RPM	Coolant temperature	Intake air temperature	Ignition angle (actual)
		[1/min]	[°C]	[°C]	[°KW]
<b>012</b>		RPM	Load	No. of crankshaft tooth at camshaft flank low->high	No. of crankshaft tooth at camshaft flank low->high
		[1/min]	[%]	[xx]	[xx]
<b>014</b>		RPM	Last	Misfire counter	Misfire recognition
		[1/min]	[%]	[n]	activated / locked
<b>015</b>		Counter Cyl.. 1	Counter Cyl. 2	Counter Cyl. 3	Misfire recognition
		[n]	[n]	[n]	activated / locked
<b>016</b>		Counter Cyl.. 4	Counter Cyl. 5	Counter Cyl. 6	Misfire recognition
		[n]	[n]	[n]	activated / locked
<b>017</b>		Counter Cyl.. 7	Counter Cyl. 8	Counter Cyl. 9	Misfire recognition
		[n]	[n]	[n]	activated / locked
<b>018</b>		Lower RPM limit	Upper RPM limit	Lower RPM limit	Upper RPM limit
		[n]	[n]	[%]	[%]
<b>019</b>		Counter Cyl. 10	Counter Cyl. 11	Counter Cyl. 12	Misfire recognition
		[n]	[n]	[n]	activated / locked
<b>020</b>		Ignition angle retard Cyl. 1	Ignition angle retard Cyl. 2	Ignition angle retard Cyl. 3	Ignition angle retard Cyl.4
		[°KW]	[°KW]	[°KW]	[°KW]
<b>021</b>		Ignition angle retard Cyl. 5	Ignition angle retard Cyl. 6	Ignition angle retard Cyl. 7	Ignition angle retard Cyl. 8
		[°KW]	[°KW]	[°KW]	[°KW]
<b>022</b>		RPM	Load	Ignition angle retard Cyl. 1	Ignition angle retard Cyl. 2
		[1/min]	%	[°KW]	[°KW]
<b>023</b>		RPM	Last	Retard Cyl. 3	Retard Cyl. 4
		[1/min]	[%]	[°KW]	[°KW]
<b>024</b>		RPM	Last	Retard Cyl. 5	Retard Cyl. 6
		[1/min]	[%]	[°KW]	[°KW]
<b>025</b>		RPM	Last	Retard Cyl. 7	Retard Cyl. 8
		[1/min]	[%]	[°KW]	[°KW]
<b>026</b>		Cyl.. 1	Cyl.. 2	Cyl.. 3	Cyl.. 4
		[V]	[V]	[V]	[V]

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027		Cyl.. 5	Cyl.. 6	Cyl.. 7	Cyl.. 8
		[V]	[V]	[V]	[V]
<b>028</b>		RPM	Load	Coolant temperature	Result
		[1/min]	[%]	[°C]	Test ON /Test OFF/ Sys. OK / Sys. not OK
<b>030</b>	2 Bank	Oxygen sensor, status B1S1	Bank 1, sensor 2	2-bank systems , B2S1	Bank 2, sensor 2
		(    ) - Pos1: Heat on, Pos2:SSR ready, Pos3:Control active, Pos4	(    ) - Pos1: Heat on, Pos2:SSR ready, Pos3:Control active, Pos4	(    ) - Pos1: Heat on, Pos2:SSR ready, Pos3:Control active, Pos4	(    ) - Pos1: Heat on, Pos2:SSR ready, Pos3:Control active, Pos4
<b>030</b>	1 Bank	Oxygen sensor, status B1S1	Bank 1, sensor 2		
		(    ) - Pos1: Heat on, Pos2:SSR ready, Pos3:Control active, Pos4	(    ) - Pos1: Heat on, Pos2:SSR ready, Pos3:Control active, Pos4		
<b>031</b>	2 Bank	Bank 1, sensor 1	Bank 1, sensor 2	Bank 2, sensor 1	Bank 2, sensor 2
		[V]	[V]	[V]	[V]
<b>031</b>	1 Bank	Bank 1, sensor 1	Bank 1, sensor 2		
		[V]	[V]		
<b>031</b>	2 Bank	Lambda actual value	Lambda specified value Bank 1	Lambda actual value	Lambda specified value
				Bank 2	
<b>031</b>	1 Bank	Lambda actual value	Lambda specified value Bank 1		
<b>032</b>	2 Bank	Bank 1, sensor 1, idle	Bank 1, sensor 1, partial load	Bank 2, sensor 1, idle	Bank 2, sensor 1, partial load
		[%]	[%]	[%]	[%]
<b>032</b>	1 Bank	Bank 1, sensor 1, idle	Bank 1, sensor 1, partial load		
		[%]	[%]		
<b>033</b>	2 Bank	Bank 1, control value	Bank 1, Oxygen sensor voltage	Bank 2, control value	Bank 2, knock sensor voltage
		[%]	[V]	[%]	[V]
<b>033</b>	1 Bank	Bank 1, control value	Bank 1, Oxygen sensor voltage		
		[%]	[V]		
<b>033</b>	2 Bank	Bank 1, control value	Bank 1, sensor voltage before cat. converter of a broad band sensor	Bank 2, control value	Bank 2, sensor voltage before cat. converter of a broad band sensor
		[%]	[V]	[%]	[V]
<b>034</b>		RPM	Exhaust gas / cat. converter temperature	Dynamic factor	(Test ON/Test OFF/ B1- S1 OK/B1-S1 not OK) or (b3-s1 ok/b3-s1 not OK)
		[1/min]	[°C]	[ ]	

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<b>035</b>	2 Bank	RPM	Exhaust gas / cat. converter temperature	Length of period	Test ON/Test OFF/ B2-S1 OK/B2-S1 not OK b4-s1 OK/b4-s1 not OK)
		[1/min]	[°C]	[s]	
<b>035</b>	2 Bank	RPM	Exhaust gas / cat. converter temperature	Dynamic factor	(B2-S1 OK /B2-S1 not OK) or ( b4-s1 ok/b4-s1 not OK)
		[1/min]	[°C]	[ ]	
<b>035</b>	1 Bank				
<b>036</b>	2 Bank	Bank 1, sensor 2	B1-S2 OK/B1-S2 not OK	Bank 2, sensor 2	Test ON/Test OFF/ B2-S2 OK/B2-S2 not OK
		Sensor voltage	B3-S2 OK/B3-S2 not OK	Sensor voltage	B4-S2 OK/B4-S2 not OK
<b>036</b>	1 Bank	Bank 1, sensor 2	Test ON/Test OFF/ B1-S2 OK./B1-S2 not OK.		
		Sensor voltage	Text:		
<b>037</b>		Last	Bank 1: Oxygen sensor voltage after cat. converter	Bank 1: TV shift	Result
		[%]	[V]	[ms]	Test ON/Test OFF/ Sys. OK/Sys. not OK
<b>037</b>		Last	Bank 1: Oxygen sensor voltage after cat. converter	Bank 1: D Lambda	Test ON/Test OFF/
		[%]	[V]	[ ]	Sys. OK/Sys. not OK
<b>038</b>	2 Bank	Last	Bank 2: Oxygen sensor voltage after cat. converter	Bank 2: TV shift	Test ON/Test OFF/ Sys OK/Sys. not OK
		[%]	[V]	[ms]	
<b>038</b>	2 Bank	Last	Bank 2: Oxygen sensor voltage after cat. converter	Bank 2: D Lambda	Text: Test ON/Test OFF/ Sys OK/Sys. not OK
		[%]	[V]	[ ]	
<b>038</b>	1 Bank				
<b>039</b>		Air mass	Bank 1: sensor voltage	Bank 2 sensor voltage	Result
		[g/s]	[V]	[V]	Text: Test ON/Test OFF/ Sys OK/Sys. not OK
<b>040</b>	2 Bank	Heater resistor	Condition	Heater resistors	Condition
		Banks 1+2, sensor 1	Heater before cat. ON/ Heater before cat. OFF	Banks 1+2, sensor 2	Heater before cat. ON/ Heater before cat. OFF
<b>040</b>	1 Bank				

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041	1 Bank	Resistor [Ω]	Condition or duty cycle	Resistor [Ω]	Condition
		Bank 1, sensor 1	Heater before cat. ON/ Heater before cat. OFF. Or sensor 1 %	Bank 1, Sensor 2	Heater after cat. ON/ Heater after cat. OFF
042		Resistor [Ω]	Condition or duty cycle	Resistor [Ω]	Condition
		Bank 2, Sensor 1	Heater before cat. ON/ Heater before cat. OFF. Or sensor 1 %	Bank 2, Sensor 2	Heater after cat. ON/ Heater after cat. OFF
043		RPM	Exhaust gas / cat. converter temperature	Oxygen sensor voltage	Test ON/Test OFF/ B1- S2 OK/B1-S2 not OK
		[U/min]	[°C]	[V]	B3-S2 OK/B3-S2 not OK
044		RPM	Exhaust gas / cat. converter temperature	Oxygen sensor voltage	B2-S2 OK /B2-S2 not OK
		[U/min]	[°C]	[V]	B4-S2 OK/B4-S2 not OK
045	2 Bank NOX	Factor memory entry NOx	Test ON/Test OFF/ Sys. OK/Sys. not OK	Factor memory entry NOx	Test ON/Test OFF/ Sys. OK/Sys. not OK
				Measuring value cat. Converter conversion	
046		RPM	Cat. converter temperature		Cat B1 OK/not OK
		[1/min]	[°C]		Cat B3 OK/not OK
047	2 Bank	RPM	Cat. converter temperature	Measuring value cat. Converter conversion	Cat B2 OK/not OK
		[1/min]	[°C]		Cat B4 OK/not OK
047	1 Bank				
048		Operating system BDE	Number of test steps	Exothermal temperature increase	Result
		[-]	[-]	[K]	Test ON/Test OFF/ Sys. OK/Sys. not OK
049		Operating system BDE	Number of test steps	Exothermal temperature increase	Test ON/Test OFF/ Sys. OK/Sys. not OK
		[-]	[-]	[K]	
050	No sep for heat screen	RPM actual value	RPM specified value	Rear window defroster/ Request for A/C ON/OFF	A/C compressor ON/ OFF/ decrease
		[1/min]	[1/min]		
050	Sep for heat screen	RPM actual value	RPM specified value	Request for A/C	A/C compressor ON/ OFF/ decrease
		[1/min]	[1/min]	ON/ OFF	

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<b>051</b>		RPM actual value	RPM specified value	Driving range (only for automatic transmission)	Supply voltage
		[1/min]	[1/min]	(Idle, driving ranges 1-6)	[V]
<b>052</b>	No sep for heat screen				
<b>052</b>	Sep for heat screen	RPM (actual value)	RPM (specified value)	A/C readiness	Rear window defroster
		[1/min]	[1/min]	ON/OFF	ON/OFF
<b>053</b>		RPM (actual value)	RPM (specified value)	Voltage	Generator load
		[1/min]	[1/min]	[V]	[%]
<b>054</b>		RPM	Operating conditions	Throttle valve angle (Potentiometer)	Throttle valve angle (Potentiometer)
		[1/min]	(LL, TL, VL, SA, BA)	[%]	[%]
<b>054</b>		RPM	Operating conditions	Sensor 1 for accelerator pedal position	Throttle valve angle (Potentiometer)
		[1/min]	(LL, TL, VL, SA, BA)	[%]	[%]
<b>055</b>	No sep for heat screen	RPM	Idle air control	Current learning value for idle air control	(    ) - Position1:Steering to stop, Position2:Always 0, Position3:A/C Readiness, Position4:Drive range selected, Position5:A/C Compressor ON
<b>055</b>	No sep for heat screen	RPM	Idle air control	Learning value for idle air control	(    ) - Position1:Steering to stop, Position2:Always 0, Position3:A/C Readiness, Position4:Drive range selected, Position5:A/C Compressor ON
		[1/min]	[[5]]	[[6]]	
<b>056</b>	Systems with sep for heat rear screen	RPM (actual value)	RPM (specified value)	Idle air control valve	(    ) - Position1:Steering to stop, Position2:Always 0, Position3:A/C Readiness, Position4:Drive range selected, Position5:A/C Compressor ON
		[1/min]	[1/min]	[[7]]	

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<b>057</b>		RPM (actual value)	RPM (specified value)	A/C compressor	Duty cycle pressure receiver
		[1/min]	[1/min]	ON/OFF/decreasing	[%]
<b>058</b>		RPM	Load	Engine bearing 1 right	Engine bearing 2 left
		[1/min]	[%]	ON/OFF	ON/OFF
<b>060</b>	Vehicles with ESB	Throttle valve angle (potentiometer)	Throttle valve angle (potentiometer)	Operating condition	Adaption condition
		[%]	[%]	(Idle, partial load, full load, deceleration enrichment, acceleration enrichment)	(ADP runs/ADP OK/
<b>060</b>	Vehicles with E-Gas	Throttle valve angle (potentiometer 1)	Throttle valve angle (potentiometer 2)	Electrically controlled throttle valve adaption status	Operating condition
		[%]	[%]	[n]	ADP runs/ADP OK/
<b>061</b>	Systems without sep for heat rear screen	RPM	Supply voltage Ubat	Triggering throttle valve control	(     ) - Position1:Steering to stop, Position2:Always 0, Position3:A/C Readiness, Position4:Drive range selected, Position5:A/C Compressor ON
		[1/min]	[V]	[%]	
<b>061</b>	Systems with sep for heat rear screen	RPM	Supply voltage Ubat	Actuating throttle valve control	(     ) - Position1:Steering to stop, Position2:Always 0, Position3:A/C Readiness, Position4:Drive range selected, Position5:A/C Compressor ON
		[1/min]	[V]	[%]	
<b>062</b>		Angle sensor 1 for throttle valve drive	Angle sensor 2 for throttle valve drive	Sensor 1 accelerator pedal position	Sensor 2 accelerator pedal position
		(0->100%)	(0->100%)	(0->100%)	(0->100%)
<b>063</b>		Sensor 1 accelerator pedal position	Sensor 1 learned	Switch	
		(0->100%)	Kick-down point (0->100%)	Kick-down point (0->100%)	(0->100%)
<b>064</b>		Potentiometer 1 lower adaption	Potentiometer 2 1 lower adaption	Emergency air gap potentiometer 1	
		[V]	[V]	[V]	

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<b>066</b>		Vehicle speed actual	Switch positions (       ). Pos1/2/3 not used, Pos4:ADR func, pos5:CC Func, Pos6:Clutch Sw, Pos7:Brake ped Sw, Pos8:Brake Light sw	Vehicle speed specified	4 Position operating lever - (       ).Pos1/2/3 not used. Pos4:Tip up/accel, Pos5:Tip down/decel, Pos6:CC off, Pos7:Mem set, Pos8:CC on/off
		[km/h]		[km/h]	
<b>066</b>		Vehicle speed actual	Switch positions - Pos1/2/3: not used, Pos4:ADR, Pos5:CC function, Pos6:Clutch SW, Pos7:Brake Ped Sw, Pos8:Brake light	Vehicle speed specified	6 position operating lever - (       ). Pos1:CC on/off, Pos2:Resume, Pos3:SET, Pos4:Tip up/accel, Pos5:Tip down, Pos6:Mem set, Pos7:CAN, Pos8:CC engaged
		[km/h]		[km/h]	
<b>070</b>		Opening degree fuel tank ventilation[1]	Lambda regular/	Idle air control valve / diagnostic value with active diagnose	Test ON/ Test OFF/
		[%]	diagnostic value with active diagnose %		Fuel tank ventilation OK/ Fuel tank ventilation not OK.
<b>071</b>		Condition reed contact	DTC	System test/measurement/	Test ON/ Test OFF/
		Reed Open / Reed Closed	Small leak/large leak	measurement end	Syst. OK/ Syst. Not OK
<b>072</b>					
<b>073</b>					
<b>074</b>	Systems with Temp.-sensor	Null-Position	Max. stop	Current potentiometer value	Text
		[V]	[V]	[V]	Leak detection pump runs/ LDP OK/ ERROR
<b>075</b>		Engine RPM	EGR-Temp. Sensor	EGR temperature difference	Test ON/ Test OFF/
		[1/min]	[°C]	[°C]	Syst. OK/ Syst. Not OK
<b>075</b>	MAP	Engine RPM	Intake manifold pressure	Intake manifold pressure difference	Test ON/ Test OFF/
		[1/min]	[mbar]	[mbar]	Syst. OK/ Syst. Not OK
<b>075</b>	MAP	Pressure difference diagnostics EGR phase 1 and 2	Pressure difference diagnostics EGR phase 2 and 3	Pressure difference diagnostics EGR phase 1 and 3	Test ON/ Test OFF/
		[hPa]	[hPa]	[hPa]	Syst. OK/ Syst. Not OK
<b>076</b>		Engine RPM	Intake manifold pressure	Opening degree (U/Uref)	Duty cycle EGR valve
		[1/min]	[mbar]	EGR potentiometer %	%



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<b>076</b>		Engine RPM	Last	Opening degree (U/Uref)	Duty cycle EGR valve
		[1/min]	[%]	EGR potentiometer	%
<b>076</b>		Actual EGR value – potentiometer without offset	Correction factor in the upper opening range	Correction factor in the lower opening range	Status
		[V]	[%]	[%]	Test OFF / Leak detection pump runs/ LDP OK/ ERROR
<b>077</b>		RPM	Engine air mass	Air mass secondary air injection system	Test ON/ Test OFF/ Abort
		[1/min]	[g/sec]	[g/sec]	Syst. OK/ Syst. Not OK
<b>077</b>	Systems with linear oxygen sensor	RPM	Engine air mass	relative Air mass	Test ON/ Test OFF/ Abort
		[1/min]	[g/sec]	[ ]	Syst. OK/ Syst. Not OK
<b>078</b>	Systems with conventional oxygen sensor	RPM	Engine air mass	Air mass secondary air injection system	Test ON/ Test OFF/ Abort
		[1/min]	[g/sec]	[g/sec]	Syst. OK/ Syst. Not OK
<b>078</b>	Systems with linear oxygen sensor	RPM	Engine air mass	Relative air mass	Test ON/ Test OFF/ Abort
		[1/min]	[g/sec]	[ ]	Syst. OK/ Syst. Not OK
<b>080</b>		Manufacturer's code and marking	Manufacturing date		Manufacture's change status
		hhh-kkk	dd.mm.yy		12345678
<b>081</b>				Limit No or serial number	
<b>082</b>		Flash tool code	Flash date		Hardware
<b>083</b>					
<b>084</b>					
<b>085</b>					
<b>090</b>		RPM	Adjustment	Adjustment Bank 1	Adjustment Bank 2
		[1/min]	ON/OFF	[°KW]	[°KW]
<b>090</b>		RPM	Adjustment	Adjustment Bank 1	Adjustment Bank 2
		[1/min]	ON/OFF	[°KW]	[°KW]
<b>090</b>		RPM	Duty cycle	Adjustment specified	Adjustment actual
		[1/min]	[%]	[°KW]	[°KW]
<b>091</b>		RPM	Last	Adjustment	Adjustment
		[1/min]	[%]	ON/OFF	[°KW]
<b>091</b>		RPM	Duty cycle	Adjustment specified	Adjustment actual
		[1/min]	[%]	[°KW]	[°KW]
<b>092</b>		RPM	Last	Adjustment	Adjustment
		[1/min]	[%]	ON/OFF	[°KW]

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092		RPM	Duty cycle	Adjustment specified	Adjustment actual
		[1/min]	[%]	[°KW]	[°KW]
093	2 Bank	RPM	Last	Phase position [1] Bank 1[2]	Phase position Bank 2
		[1/min]	[%]	[°KW]	[°KW]
093		Phase position intake	Phase position intake	Phase position exhaust Bank 1	Phase position exhaust Bank 2
		Bank 1	Bank 2	[°KW]	[°KW]
094		RPM	Camshaft adjustment	Test result Bank 1	Test result Bank 2
		[1/min]	Text: Camshaft position ON / Camshaft position	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK
094		RPM	Phase position intake	Test result Bank 1	Test result Bank 2
		[1/min]	[°KW]	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK
095	Single step change-over	Engine RPM	Last	Coolant temperature	Status
		[1/min]	[%]	[°C]	Text:
095	Multi-step c/o	Engine RPM	Last	Coolant temperature	Status
		[1/min]	[%]	[°C]	Off /step 1/step 2
096		RPM	Camshaft adjustment	Test result Bank 1	Test result Bank 2
		[1/min]	Text: Camshaft position ON / Camshaft position	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK
096		RPM	Phase position exhaust	Test result Bank 1	Test result Bank 2
		[1/min]	[°KW]	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK
097		RPM	Last	Temperature / Pressure	Intake air change-over
		[1/min]	[%]	[°C]/[mbar]	ON/ OFF
098		RPM	Duty cycle	Adjustment specified	Adjustment actual
		[1/min]	[%]	[°KW]	[°KW]
099		RPM	Coolant temperature	Lambda regulation	Lambda regulation
		[1/min]	[°C]	[%]	ON/OFF
100		Ready bits -(     ). Pos1:EGR, Pos2:O2 heating, Pos3:O2 ssr, Pos4:A/C, Pos5:SL system, Pos6:AKF system, pos7:Heat CAT, Pos8:CAT	Coolant temperature	Time since engine start	OBD Status - Pos1:MIL on, Pos2:Drive cycle complete, Pos3:Trip complete, Pos4:At least one DTC, Pos5:Not used, Pos6:Cycle ended, Pos7:Warm up, Pos8:No warm up
			[°C]		

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<b>101</b>	MAF	RPM	Last	Mean injection time	Air mass
		[1/min]	[%]	[ms]	[g/s]
<b>101</b>	MAP	RPM	Last	Mean injection time	Intake manifold pressure
		[1/min]	[%]	[ms]	[mbar]
<b>102</b>		RPM	Coolant temperature	Intake air temperature	Mean injection time
		[1/min]	[°C]	[°C]	[ms]
<b>103</b>		RPM	Air mass idle air control	LFR-Offset adaptation	Test ON/Test OFF/ I injector OK /I injector not OK
		[1/min]	[g/s]	[n]	
<b>104</b>		Start engine temperature	Temperature adaptation factor 1	Temperature adaptation factor 2	Temperature adaptation factor 3
		[°C]	[%]	[%]	[%]
<b>105</b>		RPM (actual)	Last	Coolant temperature	Shut-off
		[U/min]	[%]	[°C]	ON/OFF[1]
<b>106</b>					
<b>107</b>		RPM	Lambda regulation Bank 1	Lambda regulation Bank 2	Test ON/ Test OFF/ Syst. OK/ Syst. Not OK
		[1/min]	(average value) %	(average value) %	
<b>110</b>		RPM	Coolant temperature	Average injection time	Throttle valve angle (potentiometer)
		[1/min]	[°C]	[ms]	[%]
<b>111</b>		Adaption value boost pressure control RPM range 1	Adaption value boost pressure control RPM range 2	Adaption value boost pressure control RPM range 3	Adaption value boost pressure control RPM range 4
		[%]	[%]	[%]	[%]
<b>112</b>		Exhaust gas temperature Bank 1	Enrichment factor	Exhaust gas temperature Bank 2	Enrichment factor
		[°C]	sensor Bank 1 %	[°C]	sensor Bank 2 %
<b>113</b>		RPM	Last	Throttle valve angle (potentiometer)	Air pressure
		[1/min]	[%]	[%]	[mbar]
<b>114</b>		Specified load without correction	Specified load after correction	Actual load	Duty cycle
		[%]	[%]	[%]	Boost pressure valve %
<b>115</b>		RPM	Last	Boost pressure specified value	Boost pressure actual value
		[1/min]	[%]	[mbar]	[mbar]
<b>116</b>		RPM	Correction factor fuel	Correction factor coolant temperature	Correction factor intake air temperature
		[1/min]	[%]	[%]	[%]
<b>117</b>		RPM	Gas pedal position	Throttle valve angle	Boost pressure specified
		[1/min]	[%]	[%]	[mbar]

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<b>118</b>		RPM	Intake air temperature	Duty cycle boost pressure control valve	Boost pressure before throttle valve
		[1/min]	[°C]	[%]	[mbar]
<b>119</b>		RPM	Actual adaption value boost pressure control valve	Duty cycle boost pressure control valve	Boost pressure before throttle valve
		[1/min]	[%]	[%]	[mbar]
<b>120</b>		Engine RPM	Specified moment ASR/FDR	Engine moment	Status
		[1/min]	[Nm]	[Nm]	(ASR active/ASR not active)
<b>122</b>		Engine RPM	Specified moment Transmission	Engine moment	Status
		[1/min]	[Nm]	[Nm]	(Engine intervention /no intervention)
<b>123</b>					
<b>124</b>					
<b>125</b>					
<b>126</b>					
<b>127</b>					
<b>128</b>					
<b>129</b>					
<b>130</b>		Engine outlet	Radiator outlet	Duty cycle	Test ON/ Test OFF/
		[°C]	[°C]	Thermostat %	Syst. OK/ Syst. Not OK
<b>131</b>		Engine outlet	Engine outlet (specified)	Radiator outlet	Duty cycle
		[°C]	[°C]	[°C]	Thermostat %
<b>132</b>		Temperature	Temperature difference	Heater pre-run potentiometer	Status cooling - Pos1/2: not used, Pos3: Fan1, Pos4: Fan2, Pos5: =less than specified temp, Pos6: Tig active, Pos7: Therostat Activation, Pos8: Error in system
		Radiator outlet (specified) [°C]	Engine and radiator outlet [°C]	[%]	
<b>134</b>		Oil temperature	Ambient temperature	Intake air temperature	Engine outlet temperature
		[°C]	[°C]	[°C]	[°C]
<b>135</b>		Temperature	Duty cycle	Duty cycle	Test ON/ Test OFF/
		Radiator outlet (specified) C	Coolant fan actuation 1 %	Coolant fan actuation 2 %	Syst. OK/ Syst. Not OK
<b>136</b>		Relay 1	Relay 2	Relay 3	Relay 4
		ON / OFF	ON / OFF	ON / OFF	ON / OFF
<b>137</b>		AC-inlet	Compressor	High pressure switch or press of AC	Fan request from A/C system
		ON / OFF	ON / OFF	ON/OFF or (bar)	

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<b>140</b>	General - BDE	Duty cycle DSV	Rail pressure specified	Rail pressure actual	Test ON/ Test OFF/
		[%]	[bar]	[bar]	Syst. OK/ Syst. Not OK
<b>141</b>	General - BDE	Rail pressure regulator	Regulator rail pressure system	Regulator rail pressure system	Status rail pressure system
		[bar]	[-]	[-]	[-]
<b>145</b>	General - BDE	Exhaust gas temperature from model Bank 1	Exhaust gas temperature sensor measured Bank 1	Exhaust gas temperature sensor measured Bank 2	Result
		[°C]	[°C]	[°C]	Test ON/ Test OFF/
<b>147</b>	General - BDE	Charge movement flap	Charge movement flap	Offset value of potentiometer voltage LBK	ADP runs/ ADP OK/ Error
		Actual position %	Specified position %	[V]	(in emergency running mode)
<b>160</b>		Normal Lambda control starting point cylinder 1	Normal Lambda control starting point cylinder 2	Normal Lambda control starting point cylinder 3	Normal Lambda control starting point cylinder 4
<b>161</b>		Normal Lambda control starting point cylinder 5	Normal Lambda control starting point cylinder 6	Normal Lambda control starting point cylinder 7	Normal Lambda control starting point cylinder 8