

Reading measured value block Display group overview

Display group no.	Indicated on display	Designation		
001	Read measured value block 1 1 2 3 4	1	=	Engine speed
		2	=	Intake manifold pressure
		3	=	Ignition timing
		4	=	Position of idling stabilisation valve
002	Read measured value block 2 1 2 3 4	1	=	Throttle valve angle
		2	=	Intake manifold pressure
		3	=	Coolant temperature
		4	=	Intake air temperature
003	Read measured value block 3 1 2 3 4	1	=	Lambda learned value, (bank 1)
		2	=	Lambda learned value, (bank 2)
		3	=	Lambda control (bank 1)
		4	=	Lambda control (bank 2)

Display group no.	Indicated on display	Designation		
004	Read measured value block 4	1	=	Condition of lambda control
		2	=	Fuel tank breather system learned value
		3	=	Lambda control (bank 1)
		4	=	Lambda control (bank 2)
005	Read measured value block 5	1	=	Engine speed
		2	=	Knock control level

		3	=	Ignition timing
		4	=	Coolant temperature
006	Read measured value block 6	1	=	Position of idling stabilisation valve
	1 2 3 4	2	=	Learned value for idling stabilisation
		3	=	Disturbance effect of idling stabilisation valve
		4	=	Control of idling stabilisation valve
007	Read measured value block 7	1	=	Position of idling stabilisation valve
	1 2 3 4	2	=	Coolant temperature
		3	=	Lambda learned value, (bank 1)
		4	=	Lambda learned value, (bank 2)

Display group no.	Indicated on display	Designation		
008	Read measured value block 8	1	=	Position of idling stabilisation valve
	1 2 3 4	2	=	Coolant temperature
		3	=	Lambda learned value, (bank 1)
		4	=	Lambda learned value, (bank 2)
009	Read measured value block 9	1	=	Coolant temperature
	1 2 3 4	2	=	Idling switch
		3	=	Ignition timing
		4	=	Engine speed
010	Read measured value block 10	1	=	Coolant temperature

	1 2 3 4	2	=	Idling switch
		3	=	Lambda learned value, (bank 1)
		4	=	Fuel tank breather system learned value
099	Read measured value block 99	1	=	Engine speed
	1 2 3 4	2	=	Engine load
		3	=	Coolant temperature
		4	=	Lambda control OFF/ON

Display group 001

Reading measured value block 1	⇒	<input type="checkbox"/> Indicated on display
... rpm	... %	... obefore TDC
		Position of idling stabilisation valve ▪ 18 ... 75 OK
		Ignition timing - ignore
		Intake manifold pressure (engine load) ▪ 29 ... 59% OK (100% = 1022 hPa, 32% = 327 hPa)
		Engine speed (idling speed) ▪ 680 ... 820 rpm OK

Test table, Display group 001

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
1	greater than 820 rpm	- Idling switch -F60 incorrectly set or defective	- Check and adjust idling speed switch - F60 => Page 24-91 or => Display group 009, Display zone 2
		- Air intake system drawing in large quantities - Unmetered air	- Check air intake system for leaks
		- Idling stabilisation valve -N71 is sticking or stiff	- Check idling stabilisation valve -N71 => Page 24-48 .
	Less than 680 rpm	- Idling stabilisation valve -N71 is sticking or stiff	- Check idling stabilisation valve -N71 => Page 24-48 .
		- Idling switch -F60 incorrectly set or	- Check and adjust idling speed switch -

		defective	F60 => Page 24-91 or => Display group 009, Display zone 2
		- Loads switched on, e.g. air conditioner is on; steering wheel is at end stop; selector lever of automatic gearbox not set to position "P" or "N"	- Switch off all electrical loads Centre steering wheel Move selector lever to "P" or "N"

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
2	Outside the tolerance range	- Poor idling (not running on all cylinders)	- Injector or spark plugs defective
		- Idling stabilisation valve -N71 defective	- Interrogate fault memory =>Page 01-8
		- Loads switched on, e.g. air conditioner is on; steering wheel is at end stop; selector lever of automatic gearbox not set to position "P" or "N"	- Switch off all electrical loads Centre steering wheel Move selector lever to "P" or "N"
3	...	ignore	
4	Outside the tolerance range	- Idling stabilisation valve -N71 is sticking or stiff	- Check idling stabilisation valve -N71 => Page 24-48 .

Display group 002

Reading measured value ⇒				☐ Indicated on display
block 2	
... %	... %	... oC	... oC	
				Intake air temperature ▪ No specified value; governed by ambient temperature
				Coolant temperature ▪ 81 ... 111 oC
				Intake manifold pressure => Display group 001, display zone 2
				Throttle valve angle: ▪ Idling speed: 0% OK ▪ Full throttle: 95% OK

Test table, Display group 002

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
1	Greater than 0% at idling speed	- -G69 throttle valve potentiometer defective	- Interrogate fault memory =>Page 01-8
		- Throttle cable setting	- Adjust throttle cable
		- Throttle valve sticking	- Eliminate cause

	Less than 95% at full throttle	- -G69 throttle valve potentiometer defective	- Interrogate fault memory =>Page 01-8
		- Throttle cable setting	- Adjust throttle cable
		- Throttle valve potentiometer -G69 incorrectly set	- Check throttle valve potentiometer - G69 => Page 24-86

Note on display zone 1:

For checking at full throttle, switch engine off and ignition on.

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
3	Less than 81 oC 1)	- Engine too cold	- Perform test drive if necessary
		- Coolant temperature sender or wiring to engine control unit	- Interrogate fault memory =>Page 28-33
	Greater than 111 oC 1)	- Radiator dirty	- Clean radiator
		- Radiator fan not working	- Check function
		- Thermostat defective	- Check coolant thermostat
	- Coolant temperature sender or wiring to engine control unit	- Interrogate fault memory =>Page 28-33	
4	Different from ambient temperature	- Checking intake air temperature sender -G42	- Interrogate fault memory =>Page 28-27

1) Vehicle at operating temperature.

Note on display zone 3:

The coolant temperature sender is a temperature-sensitive resistor. If the sender signal is biased, for example due to moisture in a connector (effect similar to parallel resistor), this biasing may be in a range which the fault memory is still not able to detect.

Display group 003

Reading measured value block 3	⇒	<input type="checkbox"/> Indicated on display
...
		Lambda control (bank 2) ▪ 0.75 ... 1.25 OK
		Lambda control (bank 1) ▪ 0.75... 1.25 OK
		Lambda learned value, (bank 2) ▪ 0.75 ... 1.25 OK
		Lambda learned value, (bank 1) ▪ 0.75 ... 1.25 OK

Test table, Display group 003

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
1 / 2	Lower	- Fuel pressure too high	- Check fuel pressure =>Page 24-21 .
		- Injector leaking	- Check injection valves => Page 24-27
	Lambda learned values	- Solenoid valve 1 for activated charcoal filter -N80 is constantly open	- Check -N80 => Page 24-80
		- Lambda probe heating defective or lambda probe dirty	- Check Lambda probe => Page 24-58
	High lambda learned values	- Injector clogged	- Test injection quantity =>Page 24-38 .
		- Fuel pressure too low	- Check fuel pressure =>Page 24-21 .
		- Unmetered air at exhaust manifold gasket	- Eliminate cause
		- Lambda probe heating defective or lambda probe dirty	- Check Lambda probe => Page 24-58

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
3 / 4	Outside tolerance range	Low value - engine too rich Effect: Lambda control leans mixture	- Wait 30 seconds for the display to stabilise
		High value - engine too lean Effect: Lambda control enriches mixture - Unmetered air	- Eliminate air leak
		- Injector defective	- Check injection quantity =>Page 24-38 .
		- Not successfully learned	- => Display zones 1 and 2
		- Lambda learned value at stop	- Check Lambda learning function => Display group 004

Display group 004

Reading measured value block 4	⇒	<input type="checkbox"/> Indicated on display
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...	Lambda control (bank 2) => Display group 003, display zone 4
				Lambda control (bank 1) => Display group 003, display zone 3
				Fuel tank breather system learned value ▪ 0.75 ... 1.25 OK
				Status of lambda control: ▪ 0: Lambda control learning function active (ACF-valve not actuated) ▪ 16: Lambda control learning function not active (ACF-valve actuated)

Note on display zone 1:

After starting, value 0 (ACF-valve not active) must be displayed in zone 1 for 1 minute, then value 16 (ACF-valve active) for 7 minutes and finally value 0 again for 1 minute. In the event of a fault in the system, a value between 1 and 12 is displayed => Test table, Page [01-69](#).

Test table, Display group 004

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
1	1	- Coolant temperature too low	- Coolant temperature of 85 oC not yet reached Interrogate fault memory =>Page 28-33
	4	- Idling speed too low	- Switch off all electrical loads Interrogate fault memory =>Page 24-17
	5	- Idling speed too high	- Interrogate fault memory =>Page 24-17
	6	- Lambda probe not ready	- Interrogate fault memory =>Page 24-75
Continued ▼			

Display zone	Display	Cause of fault	Fault remedy
1	7	- Lambda control disabled	- Coolant temperature of 85 oC not yet reached Interrogate fault memory =>Page 24-86
	10	- Learned value not yet reached	- Coolant temperature of 85 oC not yet reached Interrogate fault memory =>Page 01-8
	11	- Insufficient ignition operation per evaluation interval	- Interrogate fault memory =>Page 01-8 Loose contact in Lambda probe wire
	12	- Too many ignition operations per evaluation interval	- Interrogate fault memory =>Page 01-8 Ageing of Lambda probe
2	Less than 0.75	- Activated charcoal filter system solenoid valve sticking	- Test ACF solenoid valve =>Page 24-80
	Higher than 1.25	- ACF-system open	- Checking ACF system tubing

Display group 005

Reading measured value ⇒			□ Indicated on display
block 5	⇒	□ Indicated on display	
...rpm	...0 after TDC	...0 before TDC	... °C
			Coolant temperature => Display group 002, display zone 3
			Mean value of all ignition angles
			Knock control level ▪ Basic value: 60° after TDC (if ignition timing is retarded by knock control, retardation is subtracted from 60° after TDC)
			Engine speed (idling speed) => Display group 001, display zone 1

Test table, Display group 005

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
2	Less than 60°	- Abnormal engine running noise (ancillaries loose) - Poor quality fuel (less than RON 91) - Intake air temperature too high	- Eliminate cause

Display group 006

Reading measured value ⇒			□ Indicated on display
block 6	⇒	□ Indicated on display	
...
			Idling stabilisation control - ignore
			Disturbance effect on idling stabilisation ▪ 0 = No disturbance
			Idling stabilisation valve learned value ▪ 18 ... 75 OK (differences between pilot control and basic value in line with engine and operating conditions)
			Position of idling stabilisation valve ▪ 10 ... 60 OK

Test table, Display group 006

Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
1	Less than 10	- Unmetered air being drawn in by air intake system	- Check air intake system for leaks
	Higher than 60	- Idling stabilisation valve -N71 defective	- Interrogate fault memory =>Page 24-48 .
3	Higher than 5	- Selector lever of automatic gearbox not set to position "P" or "N"	- Move selector lever to "P" or "N"
	Higher than 10	- Air conditioner switched on	- Switch off the air conditioner

Display groups 007 and 008:

Reading measured value	
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block 7/8				⇒	<input type="checkbox"/> Indicated on display
...	... oC		
				Lambda control (bank 2) => Display group 003, display zone 4	
				Lambda control (bank 1) => Display group 003, display zone 3	
				Coolant temperature => Display group 002, display zone 3	
				Position of idling stabilisation valve => Display group 006, display zone 1	

Display Group 009:

Reading measured value block 9				⇒	<input type="checkbox"/> Indicated on display
... oCobefore TDC	...rpm		
				Engine speed (idling speed) => Display group 001, display zone 1	
				Ignition timing - ignore	
				Idling switch ▪ 0 = open ▪ 1 = closed	
				Coolant temperature => Display group 002, display zone 3	

Test table, Display group 009

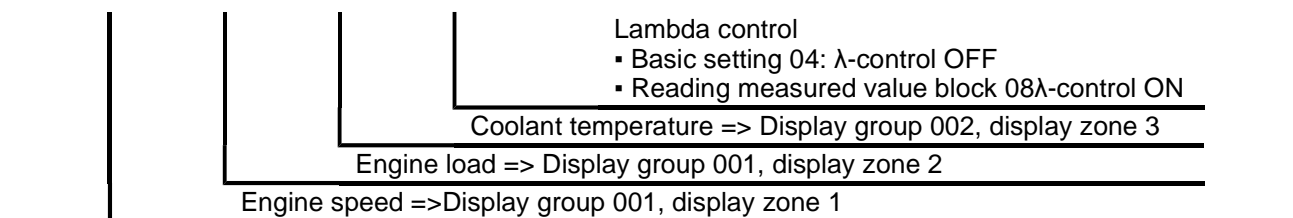
Display zone	Readout on V.A.G 1551	Cause of fault	Fault remedy
2	0 or 1	- -F60 idling switch defective - Throttle valve potentiometer -G69 defective or incorrectly set	- Interrogate fault memory =>Page 24-91
		- Throttle valve sticking - Floor mat pressing down on accelerator pedal	- Eliminate cause
		- Moisture in connector of throttle valve potentiometer -G69	- Check connector
		- Throttle cable setting	- Adjust throttle cable

Display Group 010:

Reading measured value block 10				⇒	<input type="checkbox"/> Indicated on display
... oCrpm		
				Fuel tank breather system learned value => Display group 004, display zone 2	
				Lambda control (bank 1) => Display group 003, display zone 3	
				Idling switch => Display group 009, display zone 2	
				Coolant temperature => Display group 002, display zone 3	

Display group 099, Lambda control:

Reading measured value block 99				⇒	<input type="checkbox"/> Indicated on display
...rpm	...%	... oC	λ-control ...		

**Notes on display zone 4:**

- ◆ For defined fault finding, the lambda control is switched off when display group 099 in function 04 "Basic setting" is selected and is switched on when this group is selected in function 08 "Reading measured value block".
- ◆ Lambda control is automatically re-activated on exit from function 04 "Basic setting".