

## Measured value blocks

### Evaluating measured value blocks

**Display group 007 with ignition switched on  
(engine cold and not running)**

Read measured value block 7  
15.4 5C 15.9 5C 16.7 5C

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Fuel temperature	Approx. ambient temperature1)	OK	---
	-5.4 °C	Short circuit or fuel temperature sender -G81 defective	<a href="#">- Check G81 =&gt; Page 23-61</a> In case of fault, the measured value block indicates a fuel temperature of -5.4 °C

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
2 = No display	---	---	---
3 = Intake manifold temperature	Approx. ambient temperature1)	OK	---
	136.96 °C	Intake manifold temperature sender	<a href="#">- Check G72 =&gt; Page 23-57</a>
4 = Coolant temperature	Approx. ambient temperature1)	OK	---
	Large deviation from ambient temperature	Short circuit or coolant temperature sender -G62 defective	<a href="#">- Check G62 =&gt; Page 23-52</a>  If faulty, the fuel temperature will be displayed as an alternative  If the fuel temperature display is also defective, - 5.45 °C will be displayed

1) When the engine cold, details of temperature specifications are not possible, the fuel, intake manifold and coolant

## Display group 000 at idling speed (engine warm, coolant temperature not below 80 °C)

Read measured value block 0 "  
40 50 0 20 90 201 62 97 127 83

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed	36...39	OK	---
2 = Commencement of injection	30...85	OK	---
	Above 85		<a href="#">- Continue with check in display group 004 =&gt;</a>
3 = Accelerator pedal position	0	OK	---
	Above 0		<a href="#">- Continue with check in display group 002, display</a>

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
4 = Quantity injected	11...44	OK	---
	Below 11 or above 44		<a href="#">- Continue with check in display group 001, =&gt;</a>
5 = Intake manifold pressure	No specification	---	---
6 = Atmospheric pressure	No specification	---	---
7 = Coolant temperature	37...80	OK	---
	Above 80	Engine too cold	- Run engine at increased speed to warm up and repeat check.  <a href="#">Continue with check in display group 007, display zone 4 =&gt; Page 01-54</a>

Display zone	Display on V.A.G 1551/1552	Possible cause(s) if fault	Fault elimination
8 = Intake manifold temperature	53-182	OK	---
	Outside specified range		<a href="#">- Continue with check in display group 007, display</a>
9 = Fuel temperature	88...198	OK	---
	Outside specified range		<a href="#">- Continue with check in display group 007, display</a>
10 = Mass of air drawn in1)	No specification	---	---

1) [The mass of air drawn in is dependent on the temperature of the intake air and fuel. A check is only possible in Basic](#)

## Display group 001 at idling speed (engine warm, coolant temperature not below 80 °C)

Read measured value block 1 "  
840 rpm 6.5 mg/H 1.480 V 87.3 5C

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed	740...800 rpm	OK	---
2 = Quantity injected	2.2...9 mg/H	OK	---
	Below 2.2 mg/H	Injection pump too rich	- <a href="#">Renew injection pump</a> => <a href="#">Page 23-21</a>
	Above 9 mg/H	Engine too cold	- Run engine at increased speed to warm up and
Injection pump too lean		- <a href="#">Renew injection pump</a> => <a href="#">Page 23-21</a>	

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
3 = Voltage from modulating piston movement sender	1.25...2.0 V	OK	---
	Below 1.25 V	Injection pump too rich	- <a href="#">Renew injection pump</a> => <a href="#">Page 23-21</a>
	Above 2.0 V	Engine too cold	- Run engine at increased speed to warm up and
Injection pump too lean		- <a href="#">Renew injection pump</a> => <a href="#">Page 23-21</a>	
4 = Coolant temperature	80...110 °C	OK	---
	Below 80 °C	Engine too cold	- Run engine at increased speed to warm up and

## Display group 002 at idling speed (engine warm, coolant temperature not below 80 °C)

Read measured value block 2 "  
840 rpm 0.0% 0 1 0 88.4 5C

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed1)	740...800 rpm	OK	---
2 = Accelerator position	0%	Accelerator pedal not operated: OK	---
	1...100 %	Accelerator pedal position sender - Wiring open circuit to G79	- Check G-79 => Page 23- 96
3 = Operating condition	010	OK	---
	11	Air conditioning switched on	- Air conditioning switched off
4 = Coolant temperature	80...110 °C	OK	---

## Display group 003 at idling speed (engine warm, coolant temperature not below 80 °C)

Read measured value block 3 "  
840 rpm 290 mg/H 308 mg/H 54 %

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed1)	740...800 rpm	OK	---
2 = Mass of air drawn in (specified)	No specification	---	---
3 = Mass of air drawn in (actual)1)	No specification	---	- Check exhaust gas recirculation =>Page 23-81
4 = Duty cycle of exhaust gas recirculation valve	No specification	---	---

1) [The mass of air drawn in is dependent on the temperature of the intake air and fuel. A check is only possible in Basic](#)

## Display group 004 at idling speed (engine warm, coolant temperature not below 80 °C)

Read measured value block 4 "  
840 rpm 0.95 BTDC 0.95 BTDC 3 %

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed	740...800 rpm	OK	---
2 = Commencement of injection (specified)	3.8° BTDC...0.5° ATDC	OK	---
	Above 3.8° BTDC	Engine too cold	- Run engine at increased speed to warm up and

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
3 = Commencement of injection (actual)	3.8° BTDC...0.5° ATDC	OK	---
	Earlier than 3.8° BTDC	Engine too cold	- Run engine at increased speed to warm up and
		Injection pump too far "advanced"	- <a href="#">Check and adjust commencement of</a>
	Later than 0.5° ATDC	Commencement of injection valve -	- <a href="#">Check -N 108 =&gt; Page 01-45, final control</a>
Injection pump positioned		- <a href="#">Check and adjust commencement of</a>	
Injection timing blocked			
	Commencement of injection valve -	- <a href="#">Check -N108 =&gt; Page 01-45, final control</a>	

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
4 = Duty cycle of commencement of injection valve	15...95 %	OK	---
	Above 95 %	Injection pump positioned	- <a href="#">Check and adjust commencement of</a>

## Display group 006 at idling speed (engine warm, coolant temperature not below 80 °C)

Read measured value block 6 0 km/h 0 0 0 000000 0
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Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Speed	0 km/h	---	---
2 = Brake pedal monitoring	0 0 01)	OK	---

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
3 = Cruise control system	0	---	<a href="#">- Evaluation: Checking cruise control system</a>
4 = Cruise control system	0	---	<a href="#">- Evaluation: Checking cruise control system</a>

*Significance of figures in 3-digit number block  
for brake pedal monitor:*

1) 0 1 1 = Brake light switch -F- closed  
(Brake pedal operated)

0 1 1 = Brake pedal switch -F47- open (Brake  
pedal operated)

1 0 0 = Clutch pedal switch open (Clutch pedal  
operated)

## Display group 013 at idling speed (engine warm, coolant temperature not below 80 °C)

◀ Indicated on display		
◀ Display zones	Specification	Evaluation
Quantity injected in Cyl. deviates from average	- 2.0...+ 2.0 mg/H	<a href="#">=&gt; Page 01-69</a>
	- 2.0...+ 2.0 mg/H	<a href="#">=&gt; Page 01-69</a>
	- 2.0...+ 2.0 mg/H	<a href="#">=&gt; Page 01-69</a>
	- 2.0...+ 2.0 mg/H	<a href="#">=&gt; Page 01-69</a>

### Evaluation: Idling speed smooth running control display

*The injection system is equipped with an idling speed smooth running control. There may be power differences between the individual cylinders (component tolerances, injector delivery, compressions etc.) which are recognised and equalized via selective injected quantities.*

*Recognition at idling speed occurs via the signal from the engine speed sender which delivers five signals per crankshaft revolution to the control unit. If the signals are delivered at the same rhythm, then all cylinders work the same. If one cylinder is weaker then the crankshaft takes longer for the next half revolution. Conversely a more powerful cylinder accelerates the crankshaft so less time is taken.*

*If the control unit recognises a difference, then the relevant cylinder is given more or less fuel, until the engine runs evenly again.*

*The measured value blocks 013 and 014 display deviations in injection amounts of the individual cylinders. Display group 013 displays cylinders 1 through 4. The display for cylinder 5 appears in display group 014.*

*+... mg/H: The relevant cylinder is more powerful and is therefore supplied with less fuel.*

*-... mg/H: The relevant cylinder is less powerful and is therefore supplied with more fuel.*

## Display group 019 with ignition switched on

Read measured value block 19 "

0.760 V	4.580 V
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Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Voltage supplied from modulating piston movement sender (stop limit)	0.540 V...0.880 V	OK.	---
	Outside specified range	Quantity setting mechanism of	<a href="#">- Renew injection pump =&gt; Page 23-21</a>
2 = Voltage supplied from modulating piston movement sender (start limit)	4.100 V...4.800 V	OK.	---
	Outside specified range	Quantity setting mechanism of	<a href="#">- Renew injection pump =&gt; Page 23-21</a>

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
3 = No display	---	---	---
4 = No display	---	---	---

## Display group 125 -Communication -data bus messages-

Read measured value block 125

Text 1	Text 2	Text 3	Text 4
Gearbox status	ABS status	Combi status	Airbag status

### Note on display group 125:

Specification = 1 means that a connection to data bus control unit exists.

Specification = 0 means that there is no connection to data bus control unit.

### Evaluation: Data bus message display

V.A.G 1551 display	Possible fault cause	Fault elimination
Display is 0 instead of 1	<ul style="list-style-type: none"> <li>- Data bus connection defective</li> <li>- No data bus control unit installed</li> <li>- Data bus control unit defective</li> </ul>	<a href="#">- Perform automatic test sequence for interrogating all fault memories=&gt;Page 01-9</a>

**Display group 000 at full throttle (test drive in 3rd gear, coolant temperature not below 80 °C)**

**Notes:**

- ◆ When testing, accelerate vehicle at full throttle.
- ◆ The measured values must be printed out or read (2nd person required) when the revolutions reach 3,000 rpm.

Read measured value block 0 "  
186 225 255 171 186 201 62 177 175 233

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed	142...152	OK	---
	above 152	Revs too high	--
2 = Commencement of injec.	150...200	OK	---
	Below 150		<a href="#">- Continue with check in display group 04, =&gt; Page</a>
3 = Accelerator pedal position	255	OK	---
	Below 255	Not at full throttle	- Repeat check at full throttle. <a href="#">Continue with check in display group 010, display zone 4 =&gt; Page 01-80</a>

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
4 = Quantity injected	ACV, AUF, AYC: 150...180 AHY, AXG: 200...220 AJT: 150...175 AXL: 170...196	OK	---
	Below 150 or 200		<a href="#">- Continue with check in display group 008, =&gt;</a>
	125	Quantity injected for emergency running,	- Read fault memory
5 = Intake manifold pressure	ACV, AUF, AXL, AYC: 167...192 AHY, AXG: 170...204 AJT: 150...177	OK	
	Outside specified range		<a href="#">- Continue with check in display group 011, =&gt;</a>
6 = Atmospheric pressure	No specification	---	---

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
7 = Coolant temperature	37...80	OK	---
	Above 80	Engine too cold	<a href="#">- Continue with check in display group 007, display</a>
8 = Intake manifold temperature	53...182	OK	---
	Outside specified range		<a href="#">- Continue with check in display group 007, display</a>
9 = Fuel temperature	88...198	OK	---
	Outside specified range		<a href="#">- Continue with check in display group 007, display</a>
10 = Mass of air drawn in	ACV, AUF, AYC: 185...230 AHY, AXG: 255 AJT: 170...230 AXL: 195...255	OK	---
	Outside specified range		<a href="#">- Continue with check in display group 010, display</a>

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**Display group 004 at full throttle (test drive in 3rd gear, coolant temperature not below 80 °C)**

**Notes:**

- ◆ When testing, accelerate vehicle at full throttle.
- ◆ The measured values must be printed out or read (2nd person required) when the revolutions reach 3,000 rpm.

Read measured value block 4 "
3100 rpm 105 BTDC 105 BTDC 80 %

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed	2900...3100 rpm	OK	---
2 = Commencement of injection (specified)	9...14 ° CA BTDC	OK	---

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
3 = Commencement of injection (actual)	Approx. commencement of injection (specified)	OK	---
	For large differences between specified and actual (approx. 5 ° crank angle)	Commencement of injection valve - N108 defective Injection pump positioned incorrectly Air in fuel system	<a href="#">- Check -N108 =&gt; Page 23-31</a>  Check fuel supply system
4 = Duty cycle of commencement of injection valve	15...95 %	OK	---
	Below 15 % or above 95 %	Commencement of injection valve - N108 defective	<a href="#">- Check -N108 =&gt; Page 23-31</a>  Check fuel supply system

**Display group 008 at full throttle (test drive in 3rd gear, coolant temperature not below 80 °C)**

**Notes:**

- ◆ When testing, accelerate vehicle at full throttle.
- ◆ The measured values must be printed out or read (2nd person required) when the revolutions reach 3,000 rpm.

Read measured value block 8 "
3290 rpm 38.4 mg/H 35.2 mg/H 35.7 mg/H

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed	2900...3100 rpm	OK	---
2 = Quantity injected (driver's requirement)	ACV, AUF, AYC: 40...45 mg/H AHY, AXG: 50...55 mg/H AJT, AXL: 37...42 mg/H	OK	---
	Below minimum value	Not at full throttle Accelerator pedal position sender -	- Repeat check at full throttle. - Check G-79 <a href="#">=&gt; Page 23-96</a>

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
3 = Quantity injected limitation (torque map)	ACV, AUF, AYC: 30...36 mg/H AHY, AXG: 40...44 mg/H AJT: 30...35 mg/H AXL: 34...39 mg/H	OK	---
	Below minimum value	Speed too high or too low	---
4 = Quantity injected limitation (opacity map)	ACV, AUF, AYC: 35...41 mg/H AHY, AXG: 42...48 mg/H AJT: 30...35 mg/H AXL: 37...41 mg/H	OK	---
	Below minimum value	Mass of air drawn in insufficient  Excessive exhaust gas recirculation	- Check air mass meter <a href="#">=&gt; Page 23-87</a> - Check exhaust gas recirculation <a href="#">=&gt; Page 23-81</a>

**Display group 010 at full throttle (test drive in 3rd gear, coolant temperature not below 80 °C)**

**Notes:**

- ◆ When testing, accelerate vehicle at full throttle.
- ◆ The measured values must be printed out or read (2nd person required) when the revolutions reach 3,000 rpm.

Read measured value block 10 "
830 mg/H 1030 mbar 1850 mbar 100 %

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Mass of air drawn in (actual)	ACV, AUF, AYC: 800...950 mg/H AHY, AXG: 820...1000 mg/H AJT: 700...850 mg/H AXL: 800...880 mg/H	OK	---
	Below minimum value	Speed too low or too high	- Read off specification at 3000 rpm.
		Charge pressure too low	- Check charge pressure control <a href="#">=&gt; Page 23-75</a>
	Air mass meter - G70 defective	- Check air mass meter <a href="#">=&gt; Page 23-87</a> In case of fault, the measured value block shows a constant air mass value of approx. 550 mg/H over complete rpm and throttle range.	

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
2 = Atmospheric pressure (air pressure)	No specification	---	---
3 = Intake manifold pressure (charge pressure)	ACV, AUF, AXL, AYC: 1700...1950 mbar AHY, AXG: 1750... 2080 mbar AJT: 1500... 1800 mbar	OK	---
	Below minimum value	Charge pressure control defective	- Check charge pressure control <a href="#">=&gt; Page 23-75</a>
		Turbocharger defective	
		Charge pressure limitation solenoid valve -N75 sticking	- Check charge pressure control <a href="#">=&gt; Page 23-75</a>
	Approx. ambient pressure	Charge pressure hose not connected	- Connect charge pressure hose
	Above maximum value	Charge pressure control pressure hose disconnected Charge pressure limitation solenoid	- Check charge pressure control <a href="#">=&gt; Page 23-75</a>

Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
4 = Accelerator pedal position	100%	OK	---
	Below 100 %	Not full throttle	- Repeat check at full throttle.
		Accelerator pedal position sender -	- Check G-79 => <a href="#">Page 23-96</a>

**Display group 011 at full throttle (test drive in 3rd gear, coolant temperature not below 80 °C)**

**Notes:**

- ◆ When testing, accelerate vehicle at full throttle.
- ◆ The measured values must be printed out or read (2nd person required) when the revolutions reach 3,000 rpm.

Read measured value block 11 " 3340 rpm 1830 mbar 1850 mbar 68 %
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Display zone	Display on V.A.G 1551/1552	Possible cause(s) of fault	Fault remedy
1 = Engine speed	2900...3100 rpm	OK	---
2 = Charge pressure (specified)	ACV, AUF, AXL, AYC: 1700...1950 mbar AHY, AXG: 1750... 2080 mbar AJT: 1500... 1800 mbar	OK	---
3 = Charge pressure (actual)	ACV, AUF, AXL, AYC: 1700...1950 mbar AHY, AXG: 1750... 2080 mbar AJT: 1500... 1800 mbar	OK	---
	Below minimum value	Charge pressure control defective	- Check charge pressure control => <a href="#">Page 23-75</a>
		Turbocharger defective	
	Above maximum value	Charge pressure hose not connected	- Connect charge pressure hose
ACV, AJT: Charge pressure control pressure hose Turbocharger defective		- Check charge pressure control => <a href="#">Page 23-75</a>	
4 = Duty cycle from charge pressure control valve	5...90 %	Charge pressure limitation solenoid valve -N75 sticking	- Check charge pressure control => <a href="#">Page 23-75</a>
		OK	---