

ISTA system version	<b>4.10.20.15602</b>	Data version	<b>R4.10.20</b>	Programming data	-
VIN	<b>XXXXXXX</b>	Vehicle	<b>5/E60/SEDAN/535d/M57/AUTO/ECE/RL/2008/06</b>		
Int.lev.works	-	Int.lev.(cur.)	-	Int.lev.(tar.)	-
Mileage	-				

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The glowplug system consists of the following components:

- DDE control unit
- electronic glowplug control unit
- quick-start glowplugs
- Bit serial data interface (BSD) and electrical leads

No glow-duration relay is fitted.

The quick-start glowplugs are designed for a voltage of between 5.3 and 7.8 Volts. In the initial heating stage, system voltage may also be applied for a short time.

The essential differences from the glowplug systems on previous models are as follows:

- control of the glowplugs is by pulse width modulation
- the glowplug relay has been dispensed with and its function taken over by electronic output stages on the glowplug control unit
- an emergency glowplug function has been introduced
- quick-start glowplugs have been introduced
- each of the four glowplug circuits can be diagnosed individually

To check the glow system, there are two adapter leads:

- 1-pin, order number 13 6 470
- 12-pin, order number 13 6 460  
In conjunction with measurement box 26-pin, order number 61 1 459

## Function

The glowplug control unit communicates with the DDE control unit via the bit serial data interface.

The required heating output is determined by the DDE control unit on the basis of the following operational parameters:

- Coolant temperature
- Vehicle voltage

Two other operational parameters determine the point at which glowplug function is activated and deactivated:

- Engine speed
- Fuel injection rate

The DDE control unit transmits the heating request to the glowplug control unit via the bit serial data interface. The glowplug control unit puts the request into effect by activating the glowplugs by means of a pulse-width modulated signal. In addition, the glowplug control unit sends diagnostic and status information back to the DDE control unit.

## Preheating

At coolant temperatures below 25 °C, there is a preheating period of 0.5 seconds. The preheating period increases as the temperature falls, reaching a maximum of 2.7 seconds at a coolant temperature of less than -25 °C.

Activation of the glowplug system on the instrument cluster only occurs at coolant temperatures below 0 °C.

## After-heating

At coolant temperatures below 30 °C, there is a temperature-dependent after-heating period to improve idling and exhaust emission characteristics.

## Start preheating

Start preheating takes place for approx. 10 seconds if after the preheating time has elapsed the engine is not started and the ignition remain on.

## Troubleshooting

The DDE control unit monitors communication with the glowplug control unit. In the event of a fault on the bit serial data interface, the DDE control unit stores the following fault code:

- 4203, Glowplug control unit, no communication via bit serial data interface

The glowplug control unit monitors activation of the individual glowplugs and is able to detect the following faults and store them for each glowplug:

- Short circuit to earth
- Break
- Excess temperature output stage

If the glowplug control unit detects a fault, it reports it to the DDE control unit which stores the fault in its fault memory.