13.6 Anti-theft Alarm (ATA)

Model 170

Diagnosis
Function Test ........................................... 11/1
Diagnostic Trouble Code (DTC) Memory ............ 12/1
Actual Values/Activations .............................. 13/1

Electrical Test Program
Component Locations ..................................... 20/1
Preparation for Test ..................................... 22/1
Test ......................................................... 23/1

Additional possibilities using HHT
Programming ............................................... 31/1

Central locking (CL) and Anti-Theft Alarm (ATA) can be used via the IR transmitter key as well as the mechanical key (only USA).

Activation of the PSE
The Radio frequency DAS control module (N54/3) is connected to the combination control module (N10-3) via a control wire. From the combination control module (N10-3), the necessary control signals are sent via two CAN data lines to the PSE.

- ATA functions have been integrated into the PSE control module (A37).
- The DTC fault memory for the PSE control module (A37) has been integrated into the combination control module (N10-3).
- Spare parts combination control modules (N10-3) must be reprogrammed as noted in 31
- A quick function test can be accomplished using the Hand-Held Tester (HHT) for the activation of components and to read out actual values.
- Delayed headlamp shut-off (illumination time after ignition shut-off) can be programmed via the HHT (only USA).
### Diagnosis – Function Test

**Preparation for Test:**
1. Review C/1, 11, 20, 22,
2. After performing the Function Test, erase any stored DTC’s (see section 0).

<table>
<thead>
<tr>
<th>Test step/Test scope</th>
<th>Test condition</th>
<th>Nominal value</th>
<th>Possible cause/Remedy ¹)</th>
</tr>
</thead>
</table>
| ⇒ 1.0 ATA status indicator LED | • Lock vehicle.  
• Wait approx. 15 secs. | ATA status indicator LED blinks. | 23 ⇒ 14.0 |
| ⇒ 2.0 Trigger ATA via left front door. | • Open driver's window.  
• Lock vehicle.  
• After approximately 15 seconds open door from inside. | Alarm horn sounds (turn off alarm). | 23 ⇒ 2.0 |
| ⇒ 3.0 Trigger ATA via right front door. | • Open passenger window.  
• Lock vehicle.  
• After approximately 15 seconds open door from inside. | Alarm horn sounds (turn off alarm). | 23 ⇒ 3.0 |
| ⇒ 4.0 Trigger ATA via engine hood. | • Open driver's window.  
• Lock vehicle.  
• Wait approximately 15 seconds.  
• Release engine hood through open driver's window.  
• Open engine hood. | Alarm horn sounds (turn off alarm). | 23 ⇒ 5.0 |

¹) Observe Preparation for Test, see 22.
## Diagnosis – Function Test

<table>
<thead>
<tr>
<th>Test step/Test scope</th>
<th>Test condition</th>
<th>Nominal value</th>
<th>Possible cause/Remedy ¹)</th>
</tr>
</thead>
</table>
| ⇒ 5.0 Trigger ATA via trunk lid. | • Open trunk lid.  
• Lock vehicle.  
• Turn off trunk lamp (rotary tumbler switch open).  
• Wait approximately 15 seconds.  
• Turn on trunk lamp (rotary tumbler switch closed). | Alarm horn sounds (turn off alarm). | 23 ⇒ 4.0 |
| ⇒ 6.0 Trigger ATA via anti-tow protection. | • Lock vehicle.  
• Wait approximately 15 seconds.  
• Lift vehicle at lift point using vehicle jack, until wheel is off of ground. | Alarm horn sounds (turn off alarm). | 23 ⇒ 15.0 |
| ⇒ 7.0 Deactivate anti-tow protection. | • Ignition: OFF  
• Press ATA status/towing protection switch (S85/3).  
• Lock vehicle.  
• Lift vehicle at lift point using vehicle jack, until wheel is off of ground.  
• Repeat step 8.0 | ATA status indicator LED blinks for 2 seconds.  
Alarm horn does not sound.  
Alarm horn sounds (turn off alarm). | 23 ⇒ 13.0 |
| ⇒ 8.0 Trigger ATA via glove box. | • Lock vehicle.  
• Open glove box after 15 seconds. | Alarm horn sounds (turn off alarm). | 23 ⇒ 6.0. |
| ⇒ 9.0 | Not applicable to U.S.A. vehicles | |
| ⇒ 10.0 | Not applicable to U.S.A. vehicles | |
## Diagnosis – Function Test

<table>
<thead>
<tr>
<th>Test step/Test scope</th>
<th>Test condition</th>
<th>Nominal value</th>
<th>Possible cause/Remedy ¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>¹11.0</td>
<td>Not applicable to U.S.A. vehicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>¹12.0</td>
<td>Not applicable to U.S.A. vehicles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹) Observe Preparation for Test, see 22.
Diagnosis – Diagnostic Trouble Code (DTC) Memory

Preparation for Test:
1. Review C/1, 11, 20, 22
2. Check fuses, OK.
3. Battery voltage 11 – 14 V
4. Ignition: ON
5. Connect Hand-Held Tester (HHT) according to connection diagram shown in section 0.

Information:
Readout of the DTC fault codes begins with the most recent stored fault codes and ends with the fault code of the oldest date (logic: “last in”, “first out”).

Special Tools

- Hand-Held-Tester: 965 589 00 01 00
- Test cable: 965 589 00 40 00
## 13.6 Anti-Theft Alarm (ATA)

### Diagnosis – Diagnostic Trouble Code (DTC) Memory

<table>
<thead>
<tr>
<th>DTC</th>
<th>Possible cause</th>
<th>Test step/Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1000</td>
<td>Combination control module (N10-3)</td>
<td>Replace N10-3</td>
</tr>
<tr>
<td>B1010</td>
<td>Low battery voltage</td>
<td></td>
</tr>
<tr>
<td>B1011</td>
<td>High battery voltage</td>
<td></td>
</tr>
<tr>
<td>B1021</td>
<td>CAN data lines have no communication with PSE</td>
<td>D.M., Body and Accessories, Volume 1, 3.5, 23</td>
</tr>
<tr>
<td>B1024</td>
<td>CAN data lines Low or Combination control module (N10)</td>
<td>D.M., Body and Accessories, Volume 1, 3.5, 23</td>
</tr>
<tr>
<td></td>
<td>CAN: Data line Low</td>
<td></td>
</tr>
<tr>
<td>B1025</td>
<td>CAN data lines High or Combination control module (N10)</td>
<td>D.M., Body and Accessories, Volume 1, 3.5, 23</td>
</tr>
<tr>
<td></td>
<td>CAN: Data line High</td>
<td></td>
</tr>
<tr>
<td>B1101</td>
<td>Control line for Lock nut 2/Panic alarm from RCL control module (N54) to N10</td>
<td>D.M., Body and Accessories, Volume 2, 4.10, 23</td>
</tr>
<tr>
<td>B1132</td>
<td>Alarm (ATA) triggered via glove box (as of M.Y.1999)</td>
<td>23 ⇒ 6.0</td>
</tr>
<tr>
<td>B1435</td>
<td>Short circuit in ATA tow sensor (B33) (as of M.Y. 1999)</td>
<td>23 ⇒ 15.0</td>
</tr>
<tr>
<td>B1436</td>
<td>CL safety time exceeded, Pneumatic demand too high</td>
<td>D.M., Body and Accessories, Volume 2, 4.10</td>
</tr>
<tr>
<td>B1438</td>
<td><em>Non-USA vehicles only, continue to next test step.</em></td>
<td></td>
</tr>
</tbody>
</table>

1) Observe Preparation for Test, see 22.
## 13.6 Anti-Theft Alarm (ATA)

### Diagnosis – Diagnostic Trouble Code (DTC) Memory

<table>
<thead>
<tr>
<th>DTC</th>
<th>Possible cause</th>
<th>Test step/Remedy ¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI709</td>
<td>Alarm siren with auxiliary battery (H3/1), not installed, coded incorrectly, defective (as of 06/98)</td>
<td>Version coding see 31, see AD80.50-P-2000-03B, 23 ⇒ 15.0</td>
</tr>
<tr>
<td>BI710</td>
<td>Alarm (ATA) triggered via trunk lamp switch (S17/8)</td>
<td>23 ⇒ 4.0</td>
</tr>
<tr>
<td>BI711</td>
<td>Alarm (ATA) triggered via engine hood switch (S62)</td>
<td>23 ⇒ 5.0</td>
</tr>
<tr>
<td>BI712</td>
<td>Alarm (ATA) triggered via left front door switch (S17/3)</td>
<td>23 ⇒ 3.0</td>
</tr>
<tr>
<td>BI713</td>
<td>Alarm (ATA) triggered via right front door switch (S17/4)</td>
<td>23 ⇒ 3.0</td>
</tr>
<tr>
<td>BI719</td>
<td>Alarm (ATA) triggered via telephone</td>
<td>Currently not used.</td>
</tr>
<tr>
<td>BI720</td>
<td>Alarm (ATA) triggered via FAX equipment</td>
<td>Currently not used.</td>
</tr>
<tr>
<td>BI721</td>
<td>Alarm (ATA) triggered via ignition system</td>
<td>D.M., Body and Accessories, Volume 1, 2.1, 23</td>
</tr>
<tr>
<td>BI722</td>
<td>Alarm (ATA) triggered via stop lamp switch (S9/1)</td>
<td>23 ⇒ 7.0</td>
</tr>
<tr>
<td>BI725</td>
<td>Alarm (ATA) triggered via anti-tow protection</td>
<td>23 ⇒ 15.0</td>
</tr>
<tr>
<td>BI726</td>
<td>Circuit 30 interrupted while in armed state</td>
<td>23 ⇒ 1.0</td>
</tr>
<tr>
<td>BI729</td>
<td>PSE (A37)</td>
<td>Replace PSE (A37)</td>
</tr>
</tbody>
</table>

¹) Observe Preparation for Test, see 22.
Diagnosis – Actual Values/Activations

The following actual values and activations are possible via the Hand-Held Tester (HHT):

**Preparation for Test:**
1. Review 11, 20, 22

**Actual values** (functional condition)
- Various door lock switches including engine hood, trunk lid and glove box.
- Ignition system
- Service brake
- ATA anti-tow protection button
- ATA status indication

*Menu driven via HHT*

Four displays are possible:
\[\sqrt{\text{ON}}, \text{OFF}\].

Contrary to DTC memory, actual values are updated continuously, even during diagnosis. This allows intermittent faults to be recognized by moving/shaking components, connectors or wiring harnesses.

**Activation**

The following components can be activated:
- Alarm horn (H3) or Alarm siren with auxiliary battery (H3/1)
- Headlamps or hazard flasher
- ATA status indication

*Menu driven via HHT*
13.6 Anti–Theft Alarm (ATA) Model 170

Diagnosis – Actual Values/Activations

Preparation for Test:
1. Fuses ok,
2. Battery voltage 11 – 14 V.
3. Ignition: ON
4. Connect the Hand-Held Tester (HHT) to X11/4, according to diagram, see section 0.

Special Tools

Hand-Held-Tester
965 589 00 01 00

Test cable
965 589 00 40 00
Figure 1

A37   PSE control module, combined functions
B33   ATA tow sensor
H3    Alarm horn
N7-1  Illumination control module
N10-3 Combination control module
N54/3 Radio frequency DAS control module
S9/1  Stop lamp switch (4-pole)
S17/3 Left front door switch
S17/4 Right rear door switch
S62   Engine hood switch (ATA)
S62/7 Glove box switch (ATA)
S69/12 Rotary latch selector switch, trunk lock/trunk illumination
S85/3 ATA status/towing protection switch
S86/1 Left front door lock switch (CF) (only USA)
S87/1 Right front door lock switch (CF) (only USA)
S88/2 Trunk lid lock switch (CF) (only USA)
13.6 Anti-Theft Alarm (ATA)

Electrical Test Program – Component Locations (ATA)

Vehicles as of 06/98

Figure 2

A37  PSE control module, combined functions
B33  ATA tow sensor
H3/1  Alarm siren with auxiliary battery
N7-1  Illumination control module
N10-3  Combination control module
N54/3  Radio frequency DAS control module
S9/1  Stop lamp switch (4-pole)
S17/3  Left front door switch
S17/4  Right rear door switch
S62  Engine hood switch (ATA)
S62/7  Glove box switch (ATA)
S69/12  Rotary latch selector switch, trunk lock/trunk illumination
S85/3  ATA status/towing protection switch
S86/1  Left front door lock switch (CF) (only USA)
S87/1  Right front door lock switch (CF) (only USA)
S88/2  Trunk lid lock switch (CF) (only USA)
Figure 3

The ATA tow sensor is located to the right of the PSE control module, combined functions (A37), underneath the trim covering for the trunk.
13.6 Anti-Theft Alarm (ATA)  

Model 170

Electrical Test Program - Preparation for Test

Preparation for Test:
1. Review 11, 20, 22
2. Fuses and central locking (CL) system ok
3. Battery voltage 11 – 14 V
4. Provide access to PSE control module (A37)

Electrical Wiring Diagrams:
See Electric Troubleshooting Manual, Model 170, Volume 2, group 82

Special Tools

- 126-pin socket box  
  129 589 00 21 00

- Test cable (82-pin)  
  202 589 16 63 00

- Electrical connecting set  
  201 589 00 99 00

- Fused cable  
  124 589 37 63 00

- Adapter cable  
  140 589 22 63 00
13.6 Anti-Theft Alarm (ATA)  

Electrical Test Program - Preparation for Test

Test equipment; See MBUSA Standard Service Equipment Program

<table>
<thead>
<tr>
<th>Description</th>
<th>Brand, model, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital multimeter</td>
<td>Fluke models 23, 77 III, 83, 85, 87</td>
</tr>
</tbody>
</table>
13.6 Anti-Theft Alarm (ATA) Model 170

Electrical Test Program - Preparation for Test

Connection Diagram - Socket Box

Figure 1

A37 PSE control module
001 PSE control module connector
002 Test cable
003 Multimeter
004/050 Socket box (35-pole)
A ATA test cable
C Central locking test cable
### Electrical Test Program – Test

<table>
<thead>
<tr>
<th>Test scope</th>
<th>Test connection</th>
<th>Test condition</th>
<th>Nominal value</th>
<th>Possible cause/remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE control module (A37) Voltage supply</td>
<td>A37</td>
<td>3 (2)</td>
<td>11 – 14 V</td>
<td>Wiring.</td>
</tr>
<tr>
<td>Left front door switch (S17/3) Alarm circuit</td>
<td>A37</td>
<td>60 (1.14)</td>
<td>closed/open</td>
<td>11 – 14 V</td>
</tr>
<tr>
<td>Right front door switch (S17/4) Alarm circuit</td>
<td>A37</td>
<td>62 (1.16)</td>
<td>closed/open</td>
<td>11 – 14 V</td>
</tr>
<tr>
<td>Trunk lock/trunk illumination rotary latch selector switch (S69/12) Alarm circuit</td>
<td>A37</td>
<td>59 (1.13)</td>
<td>closed/open</td>
<td>11 – 14 V</td>
</tr>
</tbody>
</table>
### Electrical Test Program – Test

<table>
<thead>
<tr>
<th>Test scope</th>
<th>Test connection</th>
<th>Test condition</th>
<th>Nominal value</th>
<th>Possible cause/remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.0</strong></td>
<td>Engine hood (S62) Alarm circuit</td>
<td>A37 (2)</td>
<td>Engine hood: closed open</td>
<td>&lt; 1 V 11 – 14 V</td>
</tr>
<tr>
<td><strong>5.0</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6.0</strong></td>
<td>Glove box switch (ATA) (S62/7) Alarm circuit</td>
<td>A37 (2)</td>
<td>Glove box: closed open</td>
<td>&lt; 1 V 11 – 14 V</td>
</tr>
<tr>
<td><strong>7.0</strong></td>
<td>Stop lamp switch (S9/1) Alarm circuit</td>
<td>A37 (2)</td>
<td>Ignition: ON Apply service brake:</td>
<td>&lt; 1 V 11 – 14 V</td>
</tr>
<tr>
<td><strong>8.0</strong></td>
<td>Alarm horn (H3) (only USA) As of 06/97: all vehicles until 06/98</td>
<td>A37 (4)</td>
<td>Insert bridge. Use bridges with 124 589 37 63 00 safety cables only.</td>
<td>Alarm sounds.</td>
</tr>
</tbody>
</table>
## Electrical Test Program – Test

<table>
<thead>
<tr>
<th>Test scope</th>
<th>Test connection</th>
<th>Test condition</th>
<th>Nominal value</th>
<th>Possible cause/remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.0</td>
<td>Alarm siren with auxiliary battery (H3/1) Function (as of 06/98)</td>
<td>HHT activation: Alarm siren test.</td>
<td>Siren emits short acoustic signal for .2 sec seconds.</td>
<td>⇒ 9.1</td>
</tr>
<tr>
<td>9.1</td>
<td>Voltage supply</td>
<td>Disconnect connector at H3/1</td>
<td>11 – 14 V Wiring.</td>
<td></td>
</tr>
<tr>
<td>9.2</td>
<td>Trigger alarm</td>
<td>Activate ATA. Wait 15 seconds. Disconnect connector at H3/1 To interrupt alarm, reconnect H3/1 connector and deactivate ATA.</td>
<td>Acoustical and Optical alarm function. H3/1 Wiring, A37</td>
<td></td>
</tr>
<tr>
<td>10.0</td>
<td>Not applicable for U.S.A. vehicles</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Electrical Test Program – Test

<table>
<thead>
<tr>
<th>Test scope</th>
<th>Test connection</th>
<th>Test condition</th>
<th>Nominal value</th>
<th>Possible cause/remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11.0</strong> Headlamp Alarm circuit</td>
<td>A37 1&lt;sup&gt;(2)&lt;/sup&gt; A37 4&lt;sup&gt;(4)&lt;/sup&gt;</td>
<td>Insert bridge. Use bridges with 124 589 37 63 00 safety cables only.</td>
<td>Headlamps are illuminated continuously.</td>
<td>Wiring, Illumination control module (N7-1)</td>
</tr>
<tr>
<td><strong>12.0</strong> Taillamp Alarm circuit</td>
<td>A37 1&lt;sup&gt;(2)&lt;/sup&gt; A37 4&lt;sup&gt;(4)&lt;/sup&gt;</td>
<td>Insert bridge. Use bridges with 124 589 37 63 00 safety cables only.</td>
<td>Left/right taillamps are illuminated continuously.</td>
<td>Wiring, Illumination control module (N7-1)</td>
</tr>
<tr>
<td><strong>13.0</strong> ATA status/towing protection switch (S85/3) Deactivate anti-tow protection</td>
<td>A37 6&lt;sup&gt;(3)&lt;/sup&gt; A37 3&lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>Press top part of S85/3 switch.</td>
<td>&lt; 1 Ω</td>
<td>Wiring, S85/3</td>
</tr>
</tbody>
</table>
### Electrical Test Program – Test

<table>
<thead>
<tr>
<th>Test scope</th>
<th>Test connection</th>
<th>Test condition</th>
<th>Nominal value</th>
<th>Possible cause/remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.0</td>
<td>ATA status indication via: Interior switch (S6/1s1) or ATA status/towing protection switch (S85/3)</td>
<td>A37 11 → 4 (3) → 4 (2)</td>
<td>LED in switch illuminates.</td>
<td>Wiring, S85/3 or S6/1s2</td>
</tr>
<tr>
<td>15.0</td>
<td>ATA tow sensor (B33) Voltage supply (only with anti-tow protection)</td>
<td>B33 5 → 2</td>
<td>Activate ATA.</td>
<td>11 – 14 V</td>
</tr>
<tr>
<td>15.1</td>
<td>Trigger alarm (simulation)</td>
<td>B33 1 → 5</td>
<td>Disconnect connector at B33. Insert bridge.</td>
<td>Alarm is triggered.</td>
</tr>
</tbody>
</table>

### Notes
- Use bridges with 124 589 37 63 00 safety cables only.
Electrical Test Program – Test – Connector Layouts

Connector Layout - Pneumatic control module (A37)

1. Connector 1 (PSE control lines)
2. Connector 2 (PSE voltage supply)
3. Connector 3 (ATA control lines)
4. Connector 4 (ATA electrical consumer connections)

Connector Layout - ATA tow sensor (B33)

1. Data
2. Voltage supply (+)
3. Ground
Electrical Test Program – Test – Connector Layouts

Connector Layout - Alarm siren with auxiliary battery (H3/1)

1 Voltage supply +
2 Ground
3 Data
Programming

- After replacing the PSE control modules (A37), the following coding must be performed, the menu item 5 appears on the HHT's display. Only after programming is the ATA function activated in the PSE control module (A37). The programm is menu-driven. Access to version coding is via: Body and Accessories - ATA - Version Coding

Proper version coding is required for the proper indication in the Actual Values and Activation menus', as well as in DTC memory.

<table>
<thead>
<tr>
<th>Coding possibilities</th>
<th>Selections</th>
<th>Hints</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATA country version</td>
<td>![USA] Delayed headlamp shutoff duration, 0 - 120 secs.</td>
<td>Country vers. ![CH] only available until 05/98</td>
</tr>
<tr>
<td></td>
<td>![CH] Up to 05/97</td>
<td></td>
</tr>
<tr>
<td></td>
<td>![B] Rest of the world</td>
<td></td>
</tr>
<tr>
<td></td>
<td>![B] (self activated)</td>
<td></td>
</tr>
<tr>
<td>Anti-tow protection</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Alarm siren (signal) (up to 05/98)</td>
<td>![B] Yes</td>
<td>See sub-menu in HHT for add. countries</td>
</tr>
<tr>
<td></td>
<td>![NL] No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>![GB]</td>
<td></td>
</tr>
</tbody>
</table>