Operating Instructions
Control Unit
GENIUS+ with Touch-Screen

We reserve the right to change the contents due to product innovation or technical improvement.

Please state type of equipment and serial number when contacting us.

Please read these instructions and keep the manual safe!

Please observe and follow the safety notes!

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Represented by:
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1 General information

1.1 Introduction
The texts and illustrations in this instruction manual are for the exclusive purpose of explaining how to operate and handle the control unit. The manufacturer accepts no responsibility for damage resulting from the use or misuse of this equipment. All appropriate safety rules and regulations for the use of this equipment must be adhered to. If you have any questions with regard to the installation and operation of this equipment please do not hesitate to contact us.
This instruction manual may not be copied, saved on computer or otherwise reproduced without the prior permission of the manufacturer. Nor may any extract of this instruction manual be similarly reproduced.

1.2 Field of application
The GENIUS+ control unit is used in combination with S+S metal detectors and separators in the plastics, wood, food, chemical, and in a special version also in the pharmaceutical industry. Depending on the respective version, these systems inspect packed, unpacked, or piece products, and bulk materials for magnetic and non-magnetic metal contaminations.
Of course they also are suitable for similar applications in other branches of industry.

1.3 Application reasons
- Product liability
- ISO 9000
- TQM (Total Quality Management)
- Protection of machines and quality assurance

1.4 System identification
The information in this instruction manual only applies to the GENIUS+ control unit. A label with the respective data is attached at every system.

1.5 Symbols used

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Signal word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="%E2%9A%A0%EF%B8%8F" alt="Danger" /></td>
<td>Danger</td>
<td>Warning: Possibility of severe or even fatal personal injuries.</td>
</tr>
<tr>
<td><img src="%E2%9A%A0%EF%B8%8F" alt="Danger" /></td>
<td>Danger</td>
<td>The lightning symbol is an explicit warning that there is danger from electric current.</td>
</tr>
<tr>
<td><img src="%E2%9A%A0%EF%B8%8F" alt="Warning" /></td>
<td>Warning</td>
<td>Warning: Possibility of minor personal injuries or property damage.</td>
</tr>
<tr>
<td><img src="%E2%9A%A0%EF%B8%8F" alt="Caution" /></td>
<td>Caution</td>
<td>Warning: Possibility of defects or destruction of the equipment.</td>
</tr>
<tr>
<td><img src="%E2%9A%A0%EF%B8%8F" alt="Important information" /></td>
<td>Important information</td>
<td>Indicates an important information for the function.</td>
</tr>
<tr>
<td><img src="%E2%9A%A0%EF%B8%8F" alt="Important hint" /></td>
<td>Important hint</td>
<td>Indicates an important hint for the function.</td>
</tr>
</tbody>
</table>

1.6 EC DECLARATION OF CONFORMITY
(see annex – EC DECLARATION OF CONFORMITY)
1. General information

1.7 Overview with functional elements

GENIUS+ Control Unit
2. Design and method of operation

2.1 Functional principle

The metal detector works with the so-called „balanced coil“ principle: The transmitter winding in the search coil creates a high-frequency electromagnetic field, which is received by symmetrical placed receiver windings. The windings are connected against each other; when undisturbed, the system is in balance.

An electrically conductible object within the detection area disrupts this balance and the electronic creates a switch signal. A “teach in process” allows to suppress the conductivity of the product itself. Deviations from the taught-in product are usually caused by metal contaminants, which are detected by the device with high precision.

The metal detector is equipped with comprehensive test and analysis software to ensure fault-free operation and retracing of product errors.

Interfaces allow simple operation as well as connection to a data management system.

⚠️ For reasons of the employed technology it is not possible to guarantee 100% metal detection.
2.2 Functional and control elements

2.2.1 GENIUS+ – Complete

Basic elements:
1. Housing
2. Operating module (LCD graphic display or touch-screen (option))
3. Cable glands
4. Control electronics board - STE-M
5. Evaluation electronics board - AWE-M

Additional options (not shown):
6. Multi-frequency technology for sensitivity optimization
   (a) Duo (for few different products)
   (b) Quattro (for many different products)
7. Serial interface RS232 with plug (IP65, 4-pole)
8. Serial interface RS485 with plug (IP65, 4-pole)
9. Ethernet interface (TCP/IP 100 Mbit/s, IP 65, RJ45)
10. WLAN interface (802.11 b/g) with integrated aerial
11. USB interface (only in combination with touch-screen)
12. Profinet (in preparation)
2. Design and method of operation

2.2.2 Operating module with touch-screen

LEDs for
- Operation (green)
- Fault (red)
- Metal (yellow)

LED "Operation" (green)
Illuminated when device is ready.
Requires:
- Power supply
- Outlets activated in "Outlet (Options)" menu
- Bypass function not activated
- Running conveyor (only in operation mode "conveyor with controller")

The operation indicator LED is turned off during the teach-in process!

The green LED flashes
- As a warning (e.g. when the battery is too low)
- When requesting an audit (audit check)

LED "Fault" (red)
In case of a fault / error, the red LED flashes

LED "Metal" (yellow)
The LED is not activated straight after detection, but parallel to the activation of solenoid valve MV1 after a delay for the rejection time.
The LED is illuminated during manual ejection on the devices Rapid, GF or LIQUISCAN.
2. Design and method of operation

2.2.3  GENIUS+ – Controller board STE

2.2.3.1 STE version, article number 44006482
(used as from August 2010)

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Position</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP101</td>
<td>Unpopulated</td>
<td>HW-Reset</td>
</tr>
<tr>
<td>JP400</td>
<td>1-2</td>
<td>MV 24V intern (default)</td>
</tr>
<tr>
<td></td>
<td>2-3</td>
<td>MV 24V via ST15 (plug 9)</td>
</tr>
<tr>
<td>JP203</td>
<td>Default</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-3</td>
<td>UART2 = RS485</td>
</tr>
<tr>
<td>JP201 / JP202</td>
<td>Plugged</td>
<td>Exclusion RS485 (default)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fuse</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Mains supply</td>
<td>1,6A slow-blowing 1500A @ 250VAC 5x20mm</td>
</tr>
<tr>
<td>F2</td>
<td>Mains supply IC1</td>
<td>1,6A slow-blowing 35A @ 250VAC TR5</td>
</tr>
<tr>
<td>F3</td>
<td>Mains supply IC2</td>
<td>1,6A slow-blowing 35A @ 250VAC TR5</td>
</tr>
<tr>
<td>F4</td>
<td>Mains supply IC3</td>
<td>1,6A slow-blowing 35A @ 250VAC TR5</td>
</tr>
</tbody>
</table>
2. Design and method of operation

### Connectors:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Mains&quot;: Mains supply</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Fault&quot;: Potential-free change-over contact</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Metal 2&quot;: Potential-free change-over contact</td>
</tr>
<tr>
<td>4</td>
<td>&quot;Metal 1&quot;: Potential-free change-over contact</td>
</tr>
<tr>
<td>5</td>
<td>&quot;24V Output 1-2&quot;: 24V switching output</td>
</tr>
<tr>
<td>6</td>
<td>a) 24 Inputs and outputs.</td>
</tr>
<tr>
<td></td>
<td>b) Connection detection coil/sensor electronic</td>
</tr>
<tr>
<td>7</td>
<td>a) 24 Inputs</td>
</tr>
<tr>
<td></td>
<td>b) Serial interface RS485/RS232</td>
</tr>
<tr>
<td>8</td>
<td>&quot;Mains Out&quot;: Mains connection for additional ACDC module 2 pole (L/N)</td>
</tr>
<tr>
<td>9</td>
<td>&quot;24V External&quot;: Input for external 24V supply</td>
</tr>
<tr>
<td>10</td>
<td>&quot;24V output 3-4&quot;: 24V Switch outputs</td>
</tr>
<tr>
<td>11</td>
<td>Serial interface / Frequency converter / GAD</td>
</tr>
<tr>
<td>12</td>
<td>&quot;DC-Output&quot;: Output voltages 24V, 5V and Vx</td>
</tr>
<tr>
<td>13</td>
<td>Ribbon cable connector for control panel</td>
</tr>
<tr>
<td>14</td>
<td>Ribbon cable connector for programming plug</td>
</tr>
</tbody>
</table>

### Elements connected to mains voltage:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Mains&quot; connector</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Mains Out&quot; connector</td>
</tr>
<tr>
<td>3</td>
<td>Mains fuse total</td>
</tr>
<tr>
<td>4</td>
<td>Mains fuse single</td>
</tr>
</tbody>
</table>

### Elements connected to external voltage:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>&quot;Fault&quot; connector</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Metal 2&quot; connector</td>
</tr>
<tr>
<td>4</td>
<td>&quot;Metal 1&quot; connector</td>
</tr>
</tbody>
</table>

### Memory devices:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Device and product data memory</td>
</tr>
<tr>
<td>18</td>
<td>Data battery for Logbook</td>
</tr>
</tbody>
</table>
2. Design and method of operation

2.2.4 GENIUS+ – Evaluation electronics board AWE

2.2.4.1 AWE version, article number 44006480
(used as from August 2010)

Connectors:

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) STE RS485</td>
<td>Interface RS485 to the controller board</td>
</tr>
<tr>
<td>(2) Power Supply</td>
<td>Power supply from the controller board</td>
</tr>
<tr>
<td>(3) Transmitter</td>
<td>Output signal to the detector coil</td>
</tr>
<tr>
<td>(4) Relay output</td>
<td>Control signal to the detector coil (multi-/quattro)</td>
</tr>
<tr>
<td>(5) Receiver</td>
<td>Input signal from the receiver</td>
</tr>
<tr>
<td>(6) UART1</td>
<td>Connection flasher</td>
</tr>
<tr>
<td>(7) Ribbon cable connection for programming plug</td>
<td></td>
</tr>
</tbody>
</table>

Test points:

<table>
<thead>
<tr>
<th>Test point</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GND</td>
<td>Common ground for all signals</td>
</tr>
<tr>
<td>(8) Transmitter</td>
<td>Sine wave signal (45..50Vss) feeding the transmitter coil</td>
</tr>
<tr>
<td>(9) Receiver</td>
<td>Signal from the receiver coils</td>
</tr>
<tr>
<td>(10) Metal signal</td>
<td>branch S</td>
</tr>
<tr>
<td>(11) Metal signal</td>
<td>branch A</td>
</tr>
</tbody>
</table>
3. Dimensions and technical data

3.1 Technical data sheet, see annex

3.2 Supply connections, see technical data sheet in the annex

3.3 Environmental conditions for operation, storage, and transport

The environment of the control unit should be free of any chemical vapours such as softeners, chlorine, or similar substances. The control unit must not be exposed to direct sunlight or to other environmental influences (rain, snow, storm). For ambient temperature conditions for operation, storage, and transport please refer to the technical data sheet in the annex.

3.4 Noise levels

Sound pressure level measurements (in acc. with DIN 45 635)

Peak value of sound pressure level at a distance of 1m from the machine surface and 1.60m above the floor, LpA, 1m, max.

Result:
Idling: < 70 dB(A)
Activated: < 90 dB(A)

We reserve the right to change the contents due to product innovation or technical improvement.
4. Safety

Our equipment conforms to all official technical safety regulations. However, as a manufacturer we believe it is our duty to make you aware of the following information.

The following safety and danger notes are intended for your protection, for the protection of third parties, and for the protection of the equipment. The safety notes therefore should always be observed!

### 4.1 Intended use

The control unit is intended for use in the following fields of application and only in combination with a corresponding detection coil of series GLS, RZ, DLS, ELS, and LIGNUM HX: Suction/pressure conveyor applications, free-fall applications, and applications at a conveyor belt. The equipment can be used in the plastics, food, animal feed, recycling, and chemical industry. Basically it is possible to also use the system in other applications than the intended use stated herein, but such applications always require the prior consultation and approval of S+S Separation and Sorting Technology GmbH.

### 4.2 Safety signs

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Signal word</th>
<th>Location</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Symbol]</td>
<td>Mains voltage</td>
<td>Cover of the electronics housing</td>
<td>This symbol indicates that mains voltage is used in the electronics housing, and that any connected external circuits (e.g. at the metal relay) also may be energised. There is danger of electric shocks due to the presence of mains voltage. Connection symbols: &quot;Mains&quot; (1) &quot;Metal ½&quot; (3/4) and &quot;Fault&quot; (2)</td>
</tr>
</tbody>
</table>

### 4.3 Dangers arising from non-compliance with safety notes

Any non-observance of safety notes constitutes a danger for life and health.

### 4.4 Safety information for operators

The control unit GENIUS+ may only be operated in the intended purpose and in a perfect functioning condition, especially the cover of the electronic housing has to be closed during operation. Entered moisture has to be removed! All fixed warning signs on the equipment may not be removed and have to be in a well recognizable condition. The operating instructions always have to be in a legible condition and complete available. Prior to commissioning always make sure that the applicable accident prevention regulations are observed. If the control unit is not mounted at the detection coil, it must be properly and firmly fastened by means of the four screws. The operator must make sure that the equipment is mounted at an ergonomic height for operation. The operator may only appoint qualified personnel for operation, maintenance and repair work. People with cardiac pacemaker should not permanently stay in the area of the detection coil. If potentially explosive materials are examined, the pertinent regulations must be observed.

### 4.5 Safety information for operation, maintenance and cleaning

Because of energised components in the electronics housing there is a risk of injuries due to electric shock or burns. During operation the cover of the electronics housing must be kept closed. Only qualified personnel may operate and clean the equipment.
4. Safety

If the electronics housing must be opened for maintenance or cleaning purposes, remove any dirt and moisture from the electronics housing, so that no larger amounts may get into the interior. Always disconnect the power supply and any connected external circuits before opening the cover. Any moisture that has penetrated into the interior must be removed from the electronics housing.

If any maintenance work must be performed in energised condition, e.g. battery replacement, such work may only be performed by a qualified electrician under strict observation of the attached warning labels and with due regard to standard approved rules of electrical engineering.

4.6 Safety information for commissioning

To avoid any injuries due to energised parts in the electronics housing, the information in 5.1 and 5.2 must always be observed.

4.7 Safety information for storage and transport

Always observe the information in paragraph 14 to avoid any transport damage and personal injuries.

4.8 Notes on residual risks

Electrical circuits may still be live even after having been isolated from the mains. Switch off immediately if a fault occurs.

4.9 Notes on stable standing requirements

To avoid any loss of stable standing, the information for transport, commissioning and operation must always be observed. Always make sure that the fastening screws of the control unit are tight during operation. When storing or transporting the control unit, place it on the closed rear panel of the housing.

4.10 Consequences of unauthorised modification

Unauthorised modification or repair will invalidate all manufacturer declarations and guarantees.

4.11 Improper use

For other applications as enumerated in 4.1 the control unit GENIUS+ intended for – that is regarded as inadmissible operation. Improper use also includes operating the equipment with excessive mechanical, static or dynamic loads (e.g. heavy machine parts or strong vibration). It is furthermore not permitted to inspect any aggressive materials on the conveyor, such as materials containing lyes, acids, and solvents, or materials that react to electromagnetic fields, or living persons or animals, and to operate the system in an Ex protection area.
5 Commissioning

5.1 Mechanical mounting

- Ensure stable and non-vibrating installation! In house mounting and operation. Do not install the system in an explosion proof zone.
- Do not install the detection coil and the electronic unit in the vicinity of interference fields (large electric motors and frequency converters!) The distance depends on the power consumption of the motor or of the frequency converter (value for orientation: 5 m).
- Mount the control cabinet by using the provided bores, i.e. at a wall or frame (dimensions are shown in the outline drawings). Pay attention to good stability, as the weight of the control unit is approx. 6 kg.
- Never install the electronic unit in other switchgear cabinets, because this may lead to interference effects (e.g. from contactor controls).
- Cable lengths may only be modified after consultation with "S+S". Use only original cables. Lay the connecting cable in fixed installation apart from other cables (e.g. fix it with nailing clips or lay it in a cable duct).
- If several metal detector systems are used, the distance of the detection coils must not be less than 2m, if these coils stand side by side. If the coils are arranged opposite to each other, the distance must not be less than 10 m. These values apply to large systems; for smaller systems the distances may be reduced to 50 cm. If, for reasons of space, these distances cannot be observed, please contact S+S service!
- Do not install the equipment in such a way that operation of the mains cut-off switch is hindered in any way!

5.2 Connection of the equipment

In order to meet CE conformity all cable outside of the housing have to be shielded. The shields must be grounded immediately after the cable gland.

The terminals "Mains" and "Evaluation Unit" are already factory reconnected. According to the delivered option several connectors may be used.

5.2.1 Connector assignments on the controller board
## 5.2.2 Electrical connection

<table>
<thead>
<tr>
<th>Signal</th>
<th>Connection</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Mains Out&quot;</td>
<td>Output mains voltage</td>
<td>Supply for external ACDC module</td>
</tr>
</tbody>
</table>
| "Fault"              | Potential-free relay contact | Normal operation: Contact 21 and 24 closed  
In case of a fault: Contact 21 and 22 closed |
| "Metal 1"            | Potential-free relay contact | Normal operation: Contact 31 and 32 closed  
In case of metal detection: Contact 31 and 34 closed |
| "Metal 2"            | Potential-free relay contact | Normal operation: Contact 11 and 12 closed  
In case of metal detection: Contact 11 and 14 closed |
| "24V External"       | Connection input 24V | 24V input for external solenoid valve supply                            |
| "24V Output"         | 24V DC switching output | Low-active = yes: Normal operation: 0V DC to  
In case of metal detection: 24V DC to  
Low-active = no: Normal operation: 24V DC to  
In case of metal detection: 0V DC to  |
| "⊥"                  | Ground (GND)        | Power supply for proximity switches and light barriers  
Ground reference for the inputs IN1, IN2, LS and RST |
| "Outputs"            | 24VDC switching outputs wired to +24VDC | LM: Metal lamp lights on metal detection  
LB: Operation lamp Activated for operation and audit request (flashing)  
LF: Fault lamp lights in case of errors |
| "24V"                | 24VDC Power supply  | Power supply for light barriers and proximity switches  
Signal reference for outputs LF, LB and LM  
Signal reference for inputs IN0 .. IN9 |
| "Inputs"             | 24VDC switching inputs to ⊥ | IN1 1. Proximity switch input for distance measurement / diverter flap (NPN)  
IN2 2. Proximity switch input for distance measurement / diverter flap (NPN)  
LS Start Autotest  
RST External Reset input |
| "FU"                 | Connection frequency converter | Left Direction select frequency converter left  
Right Direction select frequency converter right |
| "GAD"                | Connection Speed specification | 0-10V Analogue signal for frequency converter |
5. Commissioning

5.2.3 Electrical performance

| Potential-free relay contacts | 250VAC/ 3A  
|                             | 120VDC/ 3A  |
| 24VDC outputs               | Entire max. current load: 500mA |
| Inputs: INI1 / INI2 / LS / RST | Connection of make contacts against \⊥, resp. NPN outputs |
| Inputs: IN0 .. IN9          | Connection of make contacts against+24 V, resp. PNP outputs |

5.2.4 Electrical connection of the equipment

Maximum cable length for external components, switches and sensors is 15 m. Only shielded cables should be used. The shields must be attached directly to the electronics housing.

5.2.4.1 Mains supply via safety socket

1. Connect the cable with mains plug to an existing socket.
2. After approximately 5 seconds the machine is ready for operation.

5.2.4.2 Mains supply via connection box

The following procedures should only be undertaken by qualified personnel. Before removing cover plates etc make sure the equipment is isolated from mains or external voltage.

Do not remove either the mains cable or the protective gland as these are essential parts of the EMC configuration. The main cable is a special EMC protected cable and should not be replaced by any other cable.

If the mains plug is removed, a terminal box and a suitable mains disconnector switch with corresponding labelling/marking must be installed! This disconnector switch must be easily accessible and must disconnect all poles from the mains.

1. Remove mains plug.
2. Strip 5 cm length of insulation from cable and 1 cm from leads and attach cable cores.

Mains cable:

1. Shield
2. Conductor
3. PVC insulation
4. Isolation
5. PVC covering
5. Commissioning

3. Feed cable into connection box according to diagram below.

- Make sure that the mains supply is switched off.
- Use a suitable shutdown unit i.e. emergency switch.

![Diagram of connection box with labels: 1 Terminal box, 2 3 pin terminal, 3 Control unit mains cable, 4 Main supply, 5 Conductor L (brown) To terminal L, 6 Conductor N (blue) To terminal N, 7 Conductor PE (yellow/green) To terminal PE, 8 Shield To terminal PE.]

- IMPORTANT! Connect the shield to PE

4. Close the terminal box

5. The unit is ready for operation approximately 5 seconds after switching it on.

Note:
The mains cable has a wire cross-section of 0.75 mm². The main supply fuse protection should be set accordingly.
On the controller board STE are alternating mains fuses welded.
6 Operating the touch display

6.1 Control elements

There are several control elements that are activated when being touched.

Non-active or disabled buttons (see user rights) are displayed in grey.

### Note:
If an element is touched it is then selected and activated (numerical and description fields, icons or check boxes)

#### 6.1.1 Icons

**Menu-Icons:**

- **Delete**
  - Menu icons are used to open menus or submenus. When an icon is touched it appears as being impressed and the associated menu is opened.

**Function icons:**

Function icons are used to carry out an action. When touched the icon appears as pressed in.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close</td>
<td>Is used in every menu (except main menu and setup) and is located right side up. Closes the running menu.</td>
</tr>
<tr>
<td>Back</td>
<td>It is located right side bottom. The running window is closed and returns to the previous menu.</td>
</tr>
<tr>
<td>Next</td>
<td>Is used to open the next page within a menu.</td>
</tr>
<tr>
<td>Enter</td>
<td>Appears in enter mode. The inputs are entered and the window will be closed.</td>
</tr>
<tr>
<td>Cancel</td>
<td>Appears in enter mode. The inputs are cancelled and the window will be closed.</td>
</tr>
<tr>
<td>Skip up</td>
<td>Used in „Product change“ and „Logbook“ menu. Skips to the first line of the list.</td>
</tr>
<tr>
<td>Skip down</td>
<td>Used in „Product change“ and „Logbook“ menu. Skips to the last line in the list.</td>
</tr>
</tbody>
</table>
6. Operating the touch display

6.1.2 Text field / Number field

Text- and number fields are black boxed. By touching the text or number input window is opened.

6.1.2.1 Text input window

The input is similar to a computer keyboard:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1 | Text field
|   | Original text or text to be input. The cursor can be placed by touching the place within the text. |
| 2 | Input keys
|   | Alphanumeric inputs including punctuation symbols can be entered. |
| 3 | Shift-key
|   | Capital and small letter selection. |
| 4 | ESC
|   | Closes the text input window but ignores changings. |
| 5 | Delete
|   | Deletes inputs of characters left side of the cursor. |
| 6 | C
|   | Deletes the entire content of the text field (1). |
| 7 | Enter
|   | The input is stored and the text input window will be closed. |
6. Operating the touch display

6.1.2.2 Numerical input window

Input is configured similar to a pocket calculator:

![Numerical Input Diagram]

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Numeric field</strong>&lt;br&gt;Original or new number to be input. The cursor can be placed by touching the place within the number.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Input keys</strong>&lt;br&gt;Used to input numbers.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Minimum value</strong>&lt;br&gt;Defines the lowest minimum value. Input of a lower value is ignored and the minimum defined value is used.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Maximum value</strong>&lt;br&gt;Defines the maximum value. Input of a higher value is ignored and the maximum defined value is used.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Ok</strong>&lt;br&gt;Enters and closes the input.</td>
</tr>
<tr>
<td>6</td>
<td><strong>ESC</strong>&lt;br&gt;Closes the numerical input field but ignores changes.</td>
</tr>
<tr>
<td>7</td>
<td><strong>Point</strong>&lt;br&gt;Allows entering decimals after the decimal point.</td>
</tr>
<tr>
<td>8</td>
<td><strong>C</strong>&lt;br&gt;Clears the content of the numerical field.</td>
</tr>
</tbody>
</table>

**Note:**
Key button (7) is masked out if no input after the decimal point is allowed.
6. Operating the touch display

6.1.3 Checkbox

Checkboxes show if parameters or functions are activated (ticked) or deactivated. Touching the checkbox changes the setting.

6.1.4 Drop down box

Drop down boxes are used if parameters or functions allow different setting. Touching the box the scope is displayed and a parameter or function can be selected accordingly.

6.1.5 Radio button

Radio buttons are used if more than one parameter or function is available but only one can be selected.
7 Menu

7.1 Main menu

Starting with the main menu that shows all essential parameters of the current product, the function buttons get to the frequently used functions and sub menus.

(1) User registration
Touching this bar get to the user registration.
For a registered user the name and user ID is displayed and --dependent of the user access rights- the colour will change: red for administrators and yellow for all others.

(2) Product name
Displays the current product name.

(3) Batch
Displays the current batch number (if entered).

(4) Clock

(5) Product picture
Shows a picture of the product if existing.

(6) Sensitivity
Displays the sensitivity setting of the current product in percent (0 – 100%).

(7) Product angle
Displays the set product angle for the current product in degrees (0 – 180°).

(8) Metal bar with threshold value
Metal signal indication.
Green: Metal signal below the threshold.
Yellow: Metal signal just below the threshold
Red: Metal signal above threshold; metal is detected.

(9) Signal:

(10) Metal Counter:

(11) (12) Product X
Batch 4

Sensitivity: 97 %
Product Angle: 72.9°

(13)

(14)

(15)
### 7. Menu

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| (9) | **Current metal signal**  
Shows the current value of the metal signal. |
| (10) | **Metal counter**  
Number of metals that have been detected. |
| (11) | **Change main menu display**  
Different main menu displays can be selected. |
| (12) | **Change product**  
Opens the menu „Change product“. |
| (13) | **Setup**  
Opens the menu „Setup“. |
| (14) | **Logbook**  
Opens the logbook. |
| (15) | **Quickteach**  
Opens the menu „Quickteach“. |

#### 7.1.1 Different displays of the main menu

Icon (11) changes between the different main menu configurations:

![Different displays of the main menu](image)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Product X" /></td>
<td></td>
</tr>
</tbody>
</table>
**Product X**  
**Sensitivity:** 97 %  
**Product Angle:** 72.9°  
**Signal:** 9  
**Metal Counter:** 0 |
| ![Product X](image) |  
**Product X**  
**Audit Check in**  
36:00 min  
**Metal Counter:** 0  
**Error Counter:** 0 |
7. Menu

7.1.2 Metal- and error alarm

While displaying the main menu and a metal is detected or an error occurs an alarm message is displayed accordingly. The alarm can be reset with the reset button.

Note:
The metal or error alarm appears only in the main menu mode.
7.2 User log in

This menu allows a user to log in or to log off.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td><strong>User</strong>&lt;br&gt;A user can be selected with the aid of a drop down box.</td>
</tr>
<tr>
<td>(2)</td>
<td><strong>ID</strong>&lt;br&gt;The current user ID is displayed</td>
</tr>
<tr>
<td>(3)</td>
<td><strong>Group</strong>&lt;br&gt;Shows the User group of the current user.</td>
</tr>
<tr>
<td>(4)</td>
<td><strong>Password</strong>&lt;br&gt;Input text field for the password.</td>
</tr>
<tr>
<td>(5)</td>
<td><strong>Show password while typing</strong>&lt;br&gt;If selected the password is shown in plain text while typed.</td>
</tr>
<tr>
<td>(6)</td>
<td><strong>Enter</strong>&lt;br&gt;Confirms the user registration and closes the menu.</td>
</tr>
<tr>
<td>(7)</td>
<td><strong>Cancel</strong>&lt;br&gt; Cancels the registration and closes the menu.</td>
</tr>
</tbody>
</table>

**Note:**
To log off a user just touch the enter (6) without selecting a user in the drop down box (1).

**Note:**
If a user logs in with administration rights the registration field will turn red otherwise it will be yellow.
7.3 Change product

The menu “Change product” allows to change the current product or a batch change.

Please note:
This menu can only be opened by the user groups „Administrator“, „Operator level 1“ and „Operator level 2“.

(1) Product list
A double-click onto a product carries out a change to the selected product and closes the window.
A Batch change can be carried out by a change to the current product.

(2) Back
Skips back to the main menu.

(3) Skip up
Skips to the top line.

(4) Skip down
Skips to the bottom line.

Note:
Product A and product B (in systems with multi-frequency technology A1 to A4 and B1 to B4) are factory-preset and only serve for system test purposes. Products A1 to B4 have no significance for operation with real products.

7.3.1 Input of a batch number

In case of a batch change or if the system parameter „Batch number“ has been set (see 7.4.5.7) the Batch number must be entered additionally.
7. Menu

(1) **Batch number**
Enter the batch number into the number box.

(2) **Enter**
Confirms the input in the number box.

### 7.3.2 Change of a product picture

A double-click in the column „Picture“ gets to the menu “Choose image”, which allows to select or to change a product picture.

**Note:**
This menu allows only access to members of the access group „Administrator“.

1. **Select window**
This window shows a list of pictures that can be selected.

2. **Picture preview**
The marked picture is shown in the window (1).

3. **Enter**
Touching the icon allocates the marked picture to the selected product. and skips back to menu “Product change”.

4. **Cancel**
Gets back to the menu „Product change“ without allocating a picture.

**Note:**
The „Data manager“ (see 7.4.5.1) allows to add or delete pictures.
7.4 Setup

In the Setup menu adjustments and parameters can be changed.

**Note:**
The display of the “Setup menu” depends on the access rights of the user and of the kind of use of the unit.

By touching the display within a red framed area the related menu will be opened.

<table>
<thead>
<tr>
<th></th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Only displayed for user groups „Administrator“ and „Operator level 1“.</td>
</tr>
<tr>
<td></td>
<td>Sub menus:</td>
</tr>
<tr>
<td></td>
<td>- „Options“</td>
</tr>
<tr>
<td></td>
<td>- „Output settings“</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2)</td>
<td>Only displayed for user group „Administrator“.</td>
</tr>
<tr>
<td></td>
<td>Sub menu:</td>
</tr>
<tr>
<td></td>
<td>- „Frequency deviation“</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3)</td>
<td>Sub menus</td>
</tr>
<tr>
<td></td>
<td>- „Teach in new product“</td>
</tr>
<tr>
<td></td>
<td>- „Teach in selected product“</td>
</tr>
<tr>
<td></td>
<td>- „AuditCheck Data“</td>
</tr>
<tr>
<td></td>
<td>- „AuditCheck Trigger“</td>
</tr>
<tr>
<td></td>
<td>- „Product data“</td>
</tr>
<tr>
<td></td>
<td>- „Product options“</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4)</td>
<td>Only visible for user groups „Administrator“ and „Operator level 1“.</td>
</tr>
<tr>
<td></td>
<td>Sub menus:</td>
</tr>
<tr>
<td></td>
<td>- „Light barrier“</td>
</tr>
<tr>
<td></td>
<td>- „Air pressure monitoring“</td>
</tr>
<tr>
<td></td>
<td>- „Eject monitoring“</td>
</tr>
<tr>
<td></td>
<td>- „Flap monitoring“</td>
</tr>
</tbody>
</table>
7. Menu

(5) **System**
Only displayed for user group „Administrator“.
Sub menus:
- „File manager“
- „Change time and date“
- „User management“
- „System counter“
- „Delete Logbook“
- „AuditCheck main setup“
- „Setup Options“
- „Change language“
- „Change device or line name“
- „Save / restore product data“
- „Revision“
- „Display calibration“

(6) **Back**
Skips back to the main menu.

7.4.1 Outputs

![Outputs menu](image)

**Note:**
This menu and the related sub menus can only be opened by the user groups „Administrator“ and „Operator level 1“.

| (1) | **Options** | General options of the outputs. |
| (2) | **Output settings** | Manual settings for delay time, duration and level adjustment for magnetic valves and metal relays. |
| (3) | **Back** | Skips back to the main menu. |
7. Menu

7.4.1.1 Options

Display of page 1:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reset mode: <strong>automatic</strong></td>
</tr>
<tr>
<td>2</td>
<td>Outputs independent</td>
</tr>
<tr>
<td>3</td>
<td>Outputs enabled</td>
</tr>
<tr>
<td>4</td>
<td>Flip-Flop</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td><strong>Reset mode</strong>&lt;br&gt;Determines whether the outputs are reset automatically or manually.</td>
</tr>
<tr>
<td>(2)</td>
<td><strong>Outputs independent</strong>&lt;br&gt;When activated all outputs can be set independently from each other.</td>
</tr>
<tr>
<td>(3)</td>
<td><strong>Outputs enabled</strong>&lt;br&gt;Activating or deactivating of the metal relay outputs. When activated a metal detection sets the relay outputs and is recorded in the logbook. When deactivated only the LED on the front panel is lit, no metal relay is set and no logbook record is registered. This function is used if the metal detector function is disabled (i.e. if metalized film packed items, aluminum clips or aluminum packed items are run).</td>
</tr>
<tr>
<td>(4)</td>
<td><strong>Flip-Flop (only for belt conveyor application)</strong>&lt;br&gt;Determines to operate the 24 VDC outputs alternately. Used for a pusher that pushes contaminated products alternately from one side to the other.</td>
</tr>
<tr>
<td>(5)</td>
<td><strong>Metal in case of fault</strong>&lt;br&gt;Determines if the metal outputs are set in case of device failure (self monitoring system).</td>
</tr>
<tr>
<td>(6)</td>
<td><strong>Stop on metal detected</strong>&lt;br&gt;When activated the conveyor is stopped after detection.</td>
</tr>
<tr>
<td>(7)</td>
<td><strong>Next resp. enter</strong>&lt;br&gt;Reset type „automatic“: When touching the next page appears and the previous settings are cached. Reset type „manual“: Touching the icon all settings are stored and the window closed.</td>
</tr>
<tr>
<td>(8)</td>
<td><strong>Cancel</strong>&lt;br&gt;All changing are cancelled and skips back to the menu „Output.“</td>
</tr>
</tbody>
</table>
7. Menu

Display of page 2:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Note</strong>: This page appears only if reset type „automatic“ has been set.</td>
<td></td>
</tr>
</tbody>
</table>
| 1 | Lock lamp metal  
Determines if the metal indicator lamp can only be reset manually even if the automatic reset has been selected for all other outputs. |
| 2 | Lock magnetic valve 1 and metal relay 1  
Determines if the magnetic valve 1 and the metal relay 1 can only be reset manually even if the automatic reset has been selected for all other outputs  
**This check box is only shown if “Flip-Flop” is deactivated!** |
| 3 | Lock magnetic valve 2  
Determines if the magnetic valve 2 can only be reset manually even if the automatic reset has been selected for all other outputs  
**This check box is only shown if “Flip-Flop” is deactivated and “Outputs independent” is activated!** |
| 4 | Lock metal relay 2  
Determines if the metal relay 2 can only be reset manually even if the automatic reset has been selected for all other outputs  
**This check box is only shown if “Outputs independent” is activated!** |
| 5 | Enter  
Touching the icon stores the setting of page 1 and 2 and closes the window. |
| 6 | Cancel  
Touching this icon the changed setting of page 1 and 2 are cancelled and the window closed. |
7.4.1.2 Output settings

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. **Delay**
   - Delay time between metal detection and switching of the outputs.

2. **Duration**
   - Duration of the output signal.
   - Only visible if in menu „Output setting“ (see 7.4.1.1) the reset type „automatic“ has been selected.

3. **Level**
   - Determines if the output in case of metal detection is
     - High active: 24 V
     - Low active: 0 V
     - Disabled

4. **Enter**
   - Stores the setting and closes the window.

5. **Cancel**
   - Changings are cancelled and the window closed.

**Note:**
- The column „Duration“ is only visible if in menu „Output setting“ (see 7.4.1.1) the reset type „automatic“ has been set.

**Note:**
- If a conveyor belt with variable speed is used, the delay is given in metres.
7.4.2 Coil

**Note:**
This menu can only be opened by user group „Administrator“.

**Note:**
Changes of pre-installed values should only be made after consulting S+S!

---

1. Index frequency deviation
   This dropdown box allows to set the frequency deviation. The frequency deviation is required to avoid interferences if 2 or more detector heads are positioned very close to each other.

2. Enter
   By touching this icon the setting are stored and the window closed.

3. Cancel
   Changings are cancelled and the window close.
### 7.4.3 Product

#### Note:
Members of the user groups „Operator level 2“ and „Operator level 3“ only have access to „AuditCheck data“ and „AuditCheck trigger“

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **1** | **Teach in new product**  
Add or learn new product |
| **2** | **Teach in chosen product**  
Select a stored product and re-learn it. |
| **3** | **Product data**  
Changing/setting of product name, sensitivity, product angle, conveying speed, frequency, threshold and amplification. |
| **4** | **Product options**  
Activation of Tracking, Quicklearn and Stop & Go mode |
| **5** | **AuditCheck data**  
Change or setting of AuditCheck Data |
| **6** | **AuditCheck trigger**  
Manual triggering of an AuditCheck.  
Can only carried out if in menu „AuditCheck Data” the alarm mode has been set. |
| **7** | **Back**  
Skips back to the setup menu. |
7. Menu

7.4.3.1 Teach in new product

Note: This menu can only be used by the user groups „Administrator“ and „Operator level 1“

![Teach in - New Product](image)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1 | **Text field product name**  
By touching the text field the text input window opens to change the product name. |
| 2 | **Number field conveying speed**  
By touching the number field the number input field window opens to change the conveying speed. |
| 3 | **Drop down box frequency**  
Only visible in case of a multi frequency detector head. The operating frequency can be selected |
| 4 | **Next**  
By touching this icon the set numbers are stored and teach-in procedure starts. |
| 5 | **Cancel**  
By touching the teach-in procedure is canceled and the window closed. |

Note: For more details see „8. Product teach in“.

Note: The dropdown box „Frequency“ is only visible if the detector operates with more than one frequency (multi frequency head).
7.4.3.2 Teach in chosen product

**Note:**
This menu can only be used by member groups „Administrator“ and „Operator level 1“.

![Teach in - Choose Product](image)

1. **Drop down box product**
   This drop down box allows to select a product to re-learn it.

2. **Text field product name**
   By touching the text field the text input window opens to change the product name.

3. **Text field conveying speed**
   By touching the text field the text input window opens to change the conveying speed.

4. **Drop down box frequency**
   Only visible in case of a multi frequency detector head. The operating frequency can be selected.

5. **Next**
   By touching this icon all the setting are stored and the teach-in procedure is started.

6. **Cancel**
   This icon Cancels the teach-in procedure and closes the window.

**Note:**
For details see „8. Product teach-in“.

**Note:**
The drop down box „Frequency“ is only visible if the detector provides more than one operating frequency.
7. Menu

7.4.3.3 Product data

Display of page 1:

![Note:
This menu can only be used of member groups „Administrator“ and „Operator level 1“](image)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Product:</td>
<td>PRODUCT Y</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Product Number:</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sensitivity:</td>
<td>100</td>
<td>%</td>
</tr>
<tr>
<td>4</td>
<td>Product angle:</td>
<td>124.4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Next</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Cancel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) **Text field product name**
This text field allows to change the product name.

(2) **Product number**
shows the Product number. It cannot be changed.

(3) **Text field sensitivity**
By touching the text field the text input window opens and the sensitivity can be changed.

(4) **Text field product angle**
By touching the text field the text input window opens and the product angle can be changed.

(5) **Next**
By touching this icon the setting are stored and the next page is opens up.

(6) **Cancel**
This icon cancels the changings and closes the window.
7. Menu

Display of page 2:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

(1) **Text field conveying speed**
This text field is used to change the conveying speed.

(2) **Drop down box frequency**
Selection of the operation frequency. The drop down box is only visible with a multi-frequency detector head.

(3) **Text field threshold**
Opens the text input window to change the threshold.

(4) **Drop down box gain**
Allows to change the gain factor of the signal amplification. The drop down box is only visible for an Administrator.

(5) **Enter**
By touching this icon the setting are stored and the window closed.

(6) **Cancel**
This icon cancels the changings and closes the window.

---

**Note:**
The drop down box „Frequency“ (2) is only visible if more than one frequency is set.

**Note:**
The drop down box „Gain“ (4) is only visible for the user group „Administrator“.
7. Menu

7.4.3.4 Product options

| Note: | This menu can only be opened by members of user groups "Administrator" and "Operator Level 1". |

![Product Options](image)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check box tracking</td>
<td>Selecting this check box enables the system to automatically re-adjust the product compensation by following slow environmental or product variations.</td>
</tr>
<tr>
<td>2</td>
<td>Check box Quicklearn</td>
<td>This checkbox automatically adjusts erratic product changes.</td>
</tr>
<tr>
<td>3</td>
<td>Check box Stop &amp; Go Mode</td>
<td>Used for intermittent conveying (Stop and Go).</td>
</tr>
<tr>
<td>4</td>
<td>Enter</td>
<td>By touching this icon the setting are stored and the window closed.</td>
</tr>
<tr>
<td>5</td>
<td>Cancel</td>
<td>This icon cancels the changings and closes the window.</td>
</tr>
</tbody>
</table>
7. Menu

7.4.3.5 AuditCheck data

Note: To carry out an “AuditCheck” see chapter 9.

Display page 1:

(1) Drop down box alarm mode
An alarm mode can be selected.

(2) Next resp. enter
If an alarm mode has been set:
The data are buffered and the 2nd page appears.
No alarm mode set:
The data are stored and the window closed.

(3) Cancel
This icon cancels the changings and closes the window.

- Alarm mode „hourly“:

Alarm Mode: hourly

If alarm mode „hourly“ has been selected an AuditCheck is made every hour.

- Alarm mode „daily“:

Alarm Mode: daily
Alarm Time: 0 h 0 min

If alarm mode „daily“ is set the AuditCheck is made one time every day.
By using the number fields “Alarm time” the clock time can be adjusted at which the AuditCheck should start.
7. Menu

- Alarm mode „weekly“:

  Setting the alarm mode „weekly“ an AuditCheck once a week is carried out. The drop down box „Alarm day“ allows to set the day of the week. With the number fields „Alarm time“ the clock time to start the AuditCheck can be set.

- Alarm mode „external“:

  An external trigger signal starts the AuditCheck (i.e. using icon (6) in chapter 7.4.3)

- Alarm mode „Interval“:

  The alarm mode „Interval“ can be used if the AuditCheck should be carried out within the hour, i.e. at the bottom of the hour every hour: enter start time 0:30, or a longer interval is required, setting from 1 to 12 hours.

  Example:
  Enter start time 1:15, enter interval: 3 hours
  The AuditCheck will be carried out at 1:15, 4:15, 7:15, 10:15 ....

- Alarm mode „Product change“:

  At alarm mode „Product change“ an AuditCheck will be carried out after a product change. “Delay” allows setting the delay time to carry out an AuditCheck after changing the product. “Interval“ sets the time interval between the subsequent test.
7. Menu

Display of page 2:

Up to three (3) different test pieces can be selected.

1. Drop down box test piece
   The drop down boxes allow selecting the test pieces for the AuditCheck (Ferrous, Stainless steel, Brass or user defined).

2. Drop down box test piece size
   Allows selecting the sphere diameter of the test pieces (in mm).

3. Next
   By touching this icon the setting are stored and the next page will be opened.

4. Cancel
   This icon cancels the changings and closes the window.
7. Menu

Display of page 3:

On the 3rd page the maximum signal levels generated by the test pieces can be programmed. Range of values is between 1 and 2000). “0” means all levels are allowed.

<table>
<thead>
<tr>
<th>(1)</th>
<th>Number field max. signal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The number fields allows to input the maximum signal level for each test piece</td>
</tr>
<tr>
<td></td>
<td>Input of „0“ all signal levels are allowed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(2)</th>
<th>Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>By touching this icon the setting are stored and the window closed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(3)</th>
<th>Cancel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This icon cancels the changings and closes the window.</td>
</tr>
</tbody>
</table>

7.4.3.6 AuditCheck trigger

Note:
This Icon is only visible if an alarm mode (7.4.3.5) has been selected.

By touching the AuditCheck trigger an AuditCheck can be started of a set alarm mode independently.
7.4.4 Sensors

**Note:**
This menu can only be opened by the user groups „Administrator“ and „Operator level 1“

**Note:**
The display of the icons are depends on the operation mode.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Eject monitoring</td>
<td>Light barrier</td>
<td>Air pressure monitoring</td>
<td>Flap monitoring</td>
<td>Back</td>
</tr>
<tr>
<td></td>
<td>The eject monitoring mode can be selected or changed.</td>
<td>Adjustment of the photo eye.</td>
<td>Adjustment of the air pressure monitoring.</td>
<td>Adjustment of the flap monitoring</td>
<td>Gets back to the setup menu.</td>
</tr>
</tbody>
</table>
7. Menu

7.4.4.1 Eject monitoring

The eject monitoring mode can be set here:

- **Inactive**: Monitoring is disabled
- **Eject**: Monitors if the contaminated product has been ejected.
- **Level**: Monitors the level of the reject bin
- **Eject & Level**: Monitoring of both, eject and bin

(1) **Drop down box eject monitoring**

By touching this icon the setting are stored and the window closed.

(2) **Enter**

This icon cancels the changing and closes the window.

7.4.4.2 Light barrier

Lightbarrier:

- **Sync.**
- **None**
- **Sync.**
- **Inverse**

(1) **Lightbarrier**

By touching this icon the sync. setting are stored and the window closed.

(2) **Enter**

This icon cancels the changing and closes the window.
7. Menu

<table>
<thead>
<tr>
<th>(1)</th>
<th><strong>Drop down box light barrier</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The use and function of the additional light barrier can be set.</td>
</tr>
<tr>
<td></td>
<td>• No use</td>
</tr>
<tr>
<td></td>
<td>• sync.: the light barrier is used for synchronization</td>
</tr>
<tr>
<td></td>
<td>• inverse: used for metal detection inverse mode</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(2)</th>
<th><strong>Enter</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>By touching this icon the settings are stored and the window closed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(3)</th>
<th><strong>Cancel</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This icon cancels the changing and closes the window.</td>
</tr>
</tbody>
</table>

7.4.4.3 Air pressure monitoring

<table>
<thead>
<tr>
<th>(1)</th>
<th><strong>Number field air pressure recovery time</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Setting of the allowed time requirement to build up the air pressure. If exceeded an alarm is generated.</td>
</tr>
<tr>
<td></td>
<td>Input of „0“ deactivates the alarm.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(2)</th>
<th><strong>Enter</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>By touching this icon the setting are stored and the window closed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(3)</th>
<th><strong>Cancel</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This icon cancels the changing and closes the window.</td>
</tr>
</tbody>
</table>
7. Menu

7.4.4.4 Flap monitoring

Number field time window normal- to- reject position
Setting of the maximum allowed switching time window. If the flap transition time from normal position to reject position exceeds the set time limit a fault signal is generated. An input of “0” disables the monitor.

Number field time window reject – to- normal position
Setting of the maximum allowed switching time window. If the flap transition time from reject position to normal position exceeds the set time limit a fault signal is generated. Input of “0” disables the monitor.

Enter
By touching this icon the setting are stored and the window closed.

Cancel
This icon cancels the changing and closes the window.
7.4.5 System

Note:
This menu is only visible for user group „Administrator“!

Display of page 1:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>File manager</td>
<td>To administer product pictures and logbook / product backups</td>
</tr>
<tr>
<td>2</td>
<td>Change time and date</td>
<td>To set or change time and date.</td>
</tr>
<tr>
<td>3</td>
<td>User management</td>
<td>To set up, delete or manage users.</td>
</tr>
<tr>
<td>4</td>
<td>System counter</td>
<td>Displays the number of detected metals or errors/faults.</td>
</tr>
<tr>
<td>5</td>
<td>Delete logbook</td>
<td>Deletes the recorded log book data.</td>
</tr>
<tr>
<td>6</td>
<td>AuditCheck main setup</td>
<td>Global setting for the AuditCheck.</td>
</tr>
<tr>
<td>7</td>
<td>Next</td>
<td>Get to second page.</td>
</tr>
<tr>
<td>8</td>
<td>Back</td>
<td>Skips back to the Setup menu.</td>
</tr>
</tbody>
</table>
7. Menu

Display of page 2:

1. Setup options
   Setting for:
   - Fault in case of too many metal alarms
   - display of the batch number
   - Unit ‘time’
   - Unit ‘distance’

2. Change language
   Different pre-programmed languages can be selected.

3. Device / Line
   Change of the device and line name.

4. Save / Restore product data
   Save or restore product data.

5. Revision
   Displays the software and hardware version number.

6. Display calibration
   Recalibrates the touch display.

7. Back
   Gets back to the first page.

8. Back
   Skips back to the setup menu.

7.4.5.1 File manager

Note:
By means of the “File manager” pictures can be loaded from an USB device. The files
have to be in the folder „GeniusTouch\Pictures“.
By using the S+S software “PictureResizer”, the files will be stored in the correct folder
automatically.

Note:
Pictures are displayed in the format 80 x 50 pixels. In order to save memory space and to
avoid distortions it is recommended to save the pictures at that format before copying.
Pictures can be uploaded in the data format *.jpg and *.png.
By using the S+S software “PictureResizer”, the files will be stored in correct size and
format automatically.
(1) **Button „Pictures“**
By touching this icon the content of the „GeniusTouch\Picture“-folder of the hard disk or of the USB stick (if connected) is displayed. These pictures can be used as product pictures (see 7.3.2).

(2) **Button „Backups“**
Touching the button the content of the folder „GeniusTouch\Backups“ on the hard disk resp. on the USB stick (if connected) is displayed. These backups can be relocated to an USB device for further data processing.

(3) **Refresh-Icon**
Reloads the display.

(4) **Close**
Closes the file manager.

(5) **Display of the hard disk content**
This column displays the content of the hard disk (product pictures or backups).

(6) **Display of the content of an USB device**
This column displays the content of a connected USB device (product pictures or backups).

(7) **Button „Copy“**
This button allows copying product pictures from a connected USB device to the hard disk of the display unit.
The button is not visible if display mode „Backups“ has been selected.

(8) **Button „Copy“ / „Relocate“**
- **Display „Picture“**
Pictures on the hard disk of the display unit are copied on a connected USB device.
- **Display „Backups“:**
  - Backups on the hard disk of the display unit are relocated to a connected USB device and deletes the file on the hard disk.

(9) **Delete**
Deletes the selected picture on the hard disk.
This icon is only visible if display mode „Picture“ has been selected.

**Note:**
The icon „Delete“ (9) is only visible in the display mode „Pictures“. No pictures on the USB stick can be deleted.
In display mode „Backups“ only the button „Copy“ / „Relocate“ (8) is visible.

**Note:**
If no USB device is connected pictures on the hard disk can be deleted only.
7.4.5.2 Time & Date setting

(1) **Time field**
By touching the particular digit (hour, minute, second) the numerical value can be adjusted by means of the change button.

(2) **Change buttons**
To increment or decrement the marked digit in the time field.

(3) **Date field**
By touching the arrow in the date field a calendar opens to set the date.

(4) **Enter**
Stores the date and time setting and closes the window.

(5) **Cancel**
This icon cancels the changing and closes the window.

Calendar for date setting:

(1) **Month button**
By touching the month button a certain month can be selected.

(2) **Date field**
By touching the corresponding day the date.
7. Menu

7.4.5.3 User management

The user management allows to set up new users or to change or delete existing users. Each user can be allocated to a certain authorization group. The following user groups are available:

<table>
<thead>
<tr>
<th>Function</th>
<th>Administrator</th>
<th>Operator Level 1</th>
<th>Operator Level 2</th>
<th>Operator Level 3</th>
<th>No user registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read logbook</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Save logbook</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Product change</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Allocate product picture</td>
<td>✔️</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Product teach-in</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Carry out AuditCheck</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>AuditCheck data change</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Product data change</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Menu Coil</td>
<td>✔️</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Menu Outputs</td>
<td>✔️</td>
<td>✔️</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Menu Sensors</td>
<td>✔️</td>
<td>✔️</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Menu System</td>
<td>✔️</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>
7. Menu

(1) Change user data
Change of user name, authorization and pass word of an existing user.

(2) New user
Set up a new user in the data base.

(3) Delete user
Delete an existing user in the data base.

(4) Check box standard user always logged in
When activated always the Standard User (auhtorization: Operator level 1) is logged in except no other user is logged in.

(5) Back
Gets back to the Setup-Menu.

Change user data:

1. User ID
2. User Name
3. User Group
4. Password
5. Show password while typing
6. Confirm Password

(1) Change user data
(2) New user
(3) Delete user
(4) Check box standard user always logged in
(5) Back
7. Menu

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td><strong>Drop down box user ID</strong>&lt;br&gt;This drop down box allows selecting a user whose data should be changed.</td>
</tr>
<tr>
<td>(2)</td>
<td><strong>Text field user name</strong>&lt;br&gt;Shows the current name of the selected user.&lt;br&gt;To change a name touch the text field. The text input window open to enter the new name (25 characters max.).</td>
</tr>
<tr>
<td>(3)</td>
<td><strong>Drop down box user group</strong>&lt;br&gt;Shows the current user group of the selected user. To change the user group touch the drop down box and select the new user group.</td>
</tr>
<tr>
<td>(4)</td>
<td><strong>Text field pass word</strong>&lt;br&gt;To enter a new pass word touch the text input field and enter a new pass word (12 characters max.).&lt;br&gt;To continue with the existing pass word, just ignore the text field</td>
</tr>
<tr>
<td>(5)</td>
<td><strong>Text field repeat pass word</strong>&lt;br&gt;If a new pass word has been entered it has to be repeated for security reasons.</td>
</tr>
<tr>
<td>(6)</td>
<td><strong>Show password while typing</strong>&lt;br&gt;If selected the password is shown in plain text while typed.</td>
</tr>
<tr>
<td>(7)</td>
<td><strong>Enter</strong>&lt;br&gt;By touching this icon the setting are stored and the window closed.</td>
</tr>
<tr>
<td>(8)</td>
<td><strong>Cancel</strong>&lt;br&gt;This icon cancels the changing and closes the window.</td>
</tr>
</tbody>
</table>

---

**Note:**
The data of the users „Admin“ and „Service“ cannot be changed.

**Note:**
The pass word may comprise 12 characters maximum. Capital and small letters can be used.

**Note:**
The user name may comprise 25 characters maximum. Capital and small letters can be used.

---

Add new user:

![Add User Window](image)

1. User ID:
2. User Name:
3. User Group:
4. Password:
5. Confirm Password:
6. **Show password while typing**
7. **Enter**
8. **Cancel**
### Menu

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| **1** | **Text field user ID**  
User ID from 3 to 99999999 can be allocated. The IDs 0, 1 and 2 are not available. |
| **2** | **Text field user name**  
A user name can be entered (25 characters max.). |
| **3** | **Drop down box user group**  
Select a user group. |
| **4** | **Text field pass word**  
A pass word for a user can be entered (12 characters max.). |
| **5** | **Text field repeat pass word**  
If a new pass word has been entered it has to be repeated for security reasons. |
| **6** | **Show password while typing**  
If selected the password is shown in plain text while typed. |
| **7** | **Enter**  
By touching this icon the setting are saved and the window closed. |
| **8** | **Cancel**  
This icon cancels the changing and closes the window. |

**Note:**
The pass word may comprise 12 characters maximum. Capital and small letters can be used.

**Note:**
The user name may comprise 25 characters maximum. Capital and small letters can be used.

#### Delete user:

![Delete User Window](image)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| **1** | **Drop down box user name**  
The user to be deleted can be selected. |
| **2** | **User ID**  
Displays the ID of the selected user. |
| **3** | **Enter**  
The enter unblocks the selected user to be deleted. A new window opens to confirm the cancellation. |
| **4** | **Cancel**  
Closes the window without deleting a user. |
7. Menu

Note:
The users „Admin“ and „Service“ are locked and cannot be deleted.

7.4.5.4 System counter

The window shows the content of the metal and error counter.

![System Counter Window]

<table>
<thead>
<tr>
<th></th>
<th>Metal</th>
<th>Error</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Global</td>
<td>4364</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Product</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Batch</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

(1) **Global**
All metal detection and error alarm since commissioning are displayed.

(2) **Product**
All metal detections and error alarms since last product change.

(3) **Batch**
All metal detections and error alarms since last batch change.

(4) **Back**
Skips back to the system menu.

Note:
The product counter only is displayed if a light barrier is installed.
7.4.5.5 Delete logbook

Delete Logbook

Really delete logbook?

1. Yes
2. No

(1) Enter
   To confirm if the logbook should be deleted.

(2) Cancel
   Closes the window without deleting the logbook.

Note:
Before the logbook is deleted, a backup in .csv format will be created.

7.4.5.6 AuditCheck main setup

AuditCheck Main Setup

(1) Check box error if test not OK
   By activated an alarm is generated if the AuditCheck was not successful.

(2) Number field test time window
   Enter a time window within the AuditCheck has to be carried out after a test request.
   At the of the test time window the AuditCheck window will be closed.
   To deactivate enter „0". The AuditCheck window stays open till the test has been carried out.

(3) Enter
   By touching this icon the setting are saved and the window closed.

(4) Cancel
   Closes the window without saving inputs.
### 7. Menu

#### 7.4.5.7 Setup options

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check box error too many metal detections</td>
</tr>
<tr>
<td></td>
<td>When activated an error message is generated if multiple metal detections occur within a few seconds.</td>
</tr>
<tr>
<td>2</td>
<td>Check box batch number</td>
</tr>
<tr>
<td></td>
<td>When activated a batch number has to be entered after each product change.</td>
</tr>
<tr>
<td>3</td>
<td><strong>IP-Address</strong></td>
</tr>
<tr>
<td></td>
<td>IP-Address of the device (only with activated &quot;Network&quot; option)</td>
</tr>
<tr>
<td>4</td>
<td><strong>Subnet mask</strong></td>
</tr>
<tr>
<td></td>
<td>Subnet mask of the device (only with activated &quot;Network&quot; option)</td>
</tr>
<tr>
<td>5</td>
<td><strong>Default Gateway</strong></td>
</tr>
<tr>
<td></td>
<td>Standard gateway of the device (only with activated &quot;Network&quot; option)</td>
</tr>
<tr>
<td>6</td>
<td><strong>Enter</strong></td>
</tr>
<tr>
<td></td>
<td>By touching this icon the setting are stored and the window closed.</td>
</tr>
<tr>
<td>7</td>
<td><strong>Cancel</strong></td>
</tr>
<tr>
<td></td>
<td>Closes the window without saving inputs.</td>
</tr>
</tbody>
</table>

---

**Note:**
The text fields for IP address (3), subnet mask (4) and gateway (5) only are displayed if the "Network" option is activated.
7. Menu

7.4.5.8 Change language

By touching a country flag the respective language will be loaded.

![Flags](image)

7.4.5.9 Device / Line

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Device Name: Detector 1</td>
</tr>
<tr>
<td>2</td>
<td>Line Name: Line 1</td>
</tr>
<tr>
<td>3</td>
<td>Enter</td>
</tr>
<tr>
<td>4</td>
<td>Cancel</td>
</tr>
</tbody>
</table>

(1) **Text field device name**
   Touching the text field opens a window to enter a name for the metal detector.

(2) **Text field line name**
   Touching the text field opens a text input window to enter a name for the line in which the metal detector is operated.

(3) **Enter**
   By touching this icon the setting are stored and the window closed.

(4) **Cancel**
   Closes the window without saving inputs.
7.4.5.10 Save / Restore product data

**Note:**
If data is restored from an USB-device, all data on the hard disk will be overwritten!

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
</table>
| 1 | **Save product data**  
Saving all product data (angle, sensitivity, AuditCheck data,...) on an USB-device or on the hard disk (if no USB-device is connected) |
| 2 | **Restore product data from USB device**  
Restoring saved data from an USB-device  
**Note:**  
All product data on the hard disk will be overwritten! |
| 3 | **Enter**  
The selected feature will start. |
| 4 | **Cancel**  
Closes the window. |
7. Menu

7.4.5.11 Revision

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1 | STE  
  Displays the software and hardware version number of the STE control board |
| 2 | AWE  
  Displays the software and hardware version number of the AWE evaluation board. |
| 3 | Display  
  Displays the software version number of the display. |
| 4 | Update button
  Starts the update program (only displayed if a USB stick containing an update program is connected to the equipment).
  For information on how to perform an update see 10. |
| 5 | Back
  Gets back to the system menu. |

**Attention:**
The "Update" button (4) only is displayed if a USB stick containing an update program is connected to the equipment (see 10).

7.4.5.12 Display calibration

To calibrate the display touch on the center of the target in the middle of the screen until it moves to the upper left corner. Repeat this action for every corner of the screen.

**Attention:**
If the stylus touches the screen, the target will move away from the center. Repeat as the target moves around the screen.
When the calibration is done the following window appears:

```
New calibration settings have been measured.
Tap the screen to register saved data.
Or 30 seconds to cancel saved data and keep the current

Time limit: 8 sec
```

To save the new calibration data touch the screen again within 30 seconds. If the screen is not touched within this time the new data will not be stored.
7.5 Logbook

**Note:**
To save time only the newest 500 entries will be loaded from the database. If there are more than 500 entries in the database, icon (12) appears. By pressing this icon all entries will be loaded (this could take a few minutes).

<table>
<thead>
<tr>
<th>No.</th>
<th>Logbook Entry</th>
</tr>
</thead>
</table>

1. **Consecutive number**
   Current number of records. Set to zero if the logbook is deleted.

2. **Date and time**
   Shows date and time of a record.

3. **User**
   Shows the user if registered while recording.

4. **Event**
   This line shows the recorded event.

5. **Errors messages**
   In case of error messages the background turns red.

6. **Metal alarms**
   In case of metal detection the background turns orange.

7. **Icon save logbook**
   Saves the logbook data on a USB device, or on the hard disk of the display unit if no USB device is connected.

8. **Printer icon**
   Press this icon to open the print menu (only displayed if the "Printer" option is activated). See 7.5.2

9. **Skip up**
   By touching this icon skips to newest record of the logbook.

10. **New record Icon**
    Appears if logbook is open and new events are recorded.
    By touching the icon the latest records are loaded and the most recent one is displayed.

11. **Skip down**
    By touching this icon skips to oldest record of the logbook.
7. Menu

(12) **Icon show all entries**
This icon appears if there are more than 500 entries in the database. By touching this icon, all entries will be loaded from the database.

(13) **Back**
By touching this icon gets back to the main menu.

**Note:**
The icon „Save logbook“ (7) is only visible for the user groups „Administrator“ and „Operator level 1“.

**Note:**
When touching the “Save icon” (7) while a USB device is connected the logbook file will be stored in the directory called „Genius+“. Otherwise the logbook content will be stored on the hard disk of the display unit. The data can then be copied to a USB device via data manager (see 7.4.5.1).

**Note:**
The “Printer” icon (8) only is displayed if the "Printer" option is activated, and only for users of groups "Administrator" and "Operator Level 1".

### 7.5.1 Logbook entries

The following messages and information are displayed in the logbook:

<table>
<thead>
<tr>
<th>Type</th>
<th>Incident</th>
<th>Additional Information</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>Metal</td>
<td>- Metal signal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Global metal counter</td>
<td></td>
</tr>
<tr>
<td>Info</td>
<td>Mains on/off</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Product change</td>
<td></td>
<td>- Old Product number and name</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- New Product number and name</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change of product data</td>
<td></td>
<td>- Current Pd. number / name</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Product data group</td>
<td>For learning, product angle and sensitivity are also displayed</td>
</tr>
<tr>
<td></td>
<td>Charge change</td>
<td></td>
<td>- Charge number</td>
</tr>
<tr>
<td></td>
<td>Outputs on/off</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quick learn</td>
<td>- Angle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test start</td>
<td>- User ID</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metal incident</td>
<td></td>
<td>- Metal signal</td>
</tr>
<tr>
<td></td>
<td>Test result</td>
<td>- Test number (1..3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Test sample (e.g.V2A1.0)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Test result</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test end</td>
<td>- Overall result</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time /date settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change of system data</td>
<td></td>
<td>- System data group</td>
</tr>
<tr>
<td></td>
<td>EEPROM Grundinit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bypass active</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RESET error</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>User- on/off register</td>
<td></td>
<td>- User ID</td>
</tr>
</tbody>
</table>
### 7. Menu

<table>
<thead>
<tr>
<th>Warning</th>
<th>Battery low</th>
<th>When a number of less than 50 free entries is reached for the first time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logbook nearly full</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Error</th>
<th>Receiver too high</th>
<th>- Error counter (global)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transmitter over-temperature</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Watchdog AWE</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Communication AWE</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Flap position</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Air pressure</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Conveyor belt control</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Reject container full</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Reject control</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Light barrier</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>EEPROM</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Test result</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Tester timeout</td>
<td>- Error counter (global)</td>
</tr>
<tr>
<td></td>
<td>Hardware AWE</td>
<td>- Error counter (global)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Error</th>
<th>Metal burst</th>
<th>- Error counter (global)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>External error</td>
<td>- Error counter (global)</td>
</tr>
</tbody>
</table>

#### 7.5.2 Print logbook (only with activated "Printer" option)

Pressing the "Pinter" icon (8) calls up the following menu:

![Menu with radio buttons]

In this menu the required report can be selected and printed by selecting the respective radio button.

**Attention:**
The software does not check whether an operational output device (e.g. printer) is connected to the interface!
Examples:

Intermediate protocol

All entries are output to the printer in chronological order. Logbook entries will be kept.

Report: Intermediate
Date: 21.07.2010
Time: 13:40:44

Line name: Entwickl.
Device name: Touch coil

Product changed
Emmentaler (1) --> Salami (3)
Test request

Test start
User: 99
Metal at test
Signal: 1421
21.07.2010 13:39:00
Test result
TT 1, steel 0.397: Test Ok

Test result
TT 2, stainless steel 1.588: Test Ok
Metal at test
Signal: 1016
Test result
TT 3, brass 2.5: Test Ok
Test end

Product changed
Salami (3) --> Schinken (8)
Product changed
Metal
Signal: 1615, counter: 1451
21.07.2010 13:40:06
Batch changed
Batch number: 5
21.07.2010 13:40:26
Metal
Signal: 2000, counter: 1452
21.07.2010 13:40:26
Error
External error, error counter: 15
Reset error
7. Menu

Archive protocol

As with the intermediate report, all entries are output in chronological order.

Attention:
After the output all the logbook entries will be permanently deleted

Report: Archive
Date: 21.07.2010
Time: 13:40:44

Line name: Entwickl.
Device name: Touch coil

21.07.2010 13:38:40
Product changed
Emmentaler (1) --> Salami (3)

Test request

21.07.2010 13:38:52
Test start
User: 99

Metal at test
Signal: 1421

21.07.2010 13:39:00
Test result
TT 1, steel 0.397: Test Ok

Metal at test
Signal: 2000

Test result
TT 2, stainless steel 1.588: Test Ok

Metal at test
Signal: 1016

Test result
TT 3, brass 2.5: Test Ok

Test end
Test Ok

Product changed
Salami (3) --> Schinken (8)

Metal
Signal: 1615, counter: 1451

21.07.2010 13:40:06
Batch changed
Batch number: 5

21.07.2010 13:40:26
Metal
Signal: 2000, counter: 1452

21.07.2010 13:40:26
Error
External error, error counter: 15

Reset error
Audit report

The audit report in a clearly structured form shows all the events in connection with the last audit check.

++++++++++++++++++++++++++++++++++++++++++
Report: audit
Date: 21.07.2010
Time: 13:41:27
++++++++++++++++++++++++++++++++++++++++++
Line name: Entwickl.
Device name: Touch coil
Product: Salami (3)
Sensitivity: 100 %
Product angle: 124,4°
Test request
21.07.2010 13:38:52
Test start
User: 99
Metal at test
Signal: 1421
21.07.2010 13:39:00
Test result
TT 1, steel 0.397: Test Ok
Metal at test
Signal: 2000
Test result
TT 2, stainless steel 1.588: Test Ok
Metal at test
Signal: 1016
Test result
TT 3, brass 2.5: Test Ok
Test end
Test Ok
++++++++++++++++++++++++++++++++++++++++++

Product statistics

The product statistics show the time of the last product change. The number of errors and metal signals since this change are also displayed.

++++++++++++++++++++++++++++++++++++++++++
Report: Product
Date: 21.07.2010
Time: 13:42:06
++++++++++++++++++++++++++++++++++++++++++
Line name: Entwickl.
Device name: Touch coil
Product: Schinken (8)
Sensitivity: 100 %
Product angle: 24,9°
Counter:
Metal: 00002
Error: 00001
Product changed
Salami (3) --&gt; Schinken (8)
+++++++++++++++++++++++++++++++++++++++++++
Batch statistics

The batch statistics show the time of the last batch change. The number of errors and metal signals since this change are also displayed.

++++++++++++++++++++++++++++++++++++++++++
Report: Batch
Date: 21.07.2010
Time: 13:42:25
------------------------------------------
Line name: Entwickl.
Device name: Touch coil
Product: Schinken (8)
Sensitivity: 100 %
Product angle: 24,9°
------------------------------------------
Counter:
Metal: 00001
Error: 00001
------------------------------------------
21.07.2010 13:40:06
Batch changed
Batch number: 5
++++++++++++++++++++++++++++++++++++++++++

Device report

The device report provides information about essential system settings. It shows a list of all the teach product events and displays the total number of metal signals and errors since start-up.

++++++++++++++++++++++++++++++++++++++++++
Report: Device
Date: 21.07.2010
Time: 13:43:35
------------------------------------------
Line name: Entwickl.
Device name: Touch coil
Software STE: VA.35
Hardware STE: 03
Software AWE: V1.34
Hardware AWE: 01
Software Display: V1.10
------------------------------------------
Coil number: 75
Frequency 1: 289 kHz
Frequency deviation: -2
------------------------------------------
Counter:
Metal: 01452
Error: 00015
Product: 00369
------------------------------------------
1  Emmentaler 100 %, 59,1°
2  Tilsiter 100 %, 55,1°
3  Salami 100 %, 124,4°
4  Wurst 100 %, 125,4°
5  Erdbeere 100 %, 174,9°
6  Gemuese 100 %, 124,4°
7  Broc 100 %, 94,2°
8  Schinken 100 %, 24,9°
9  Gouda 100 %, ---°
++++++++++++++++++++++++++++++++++++++++++

7.6 Quickteach

Quickteach allows relearning the current product. Product name and conveying speed need not be re-entered. To carry out a teach-in procedure see chapter 8.
8 Product teach-in

8.1 General

Many products to be inspected are electrically conductive.
This characteristic causes the same effect as metallic contaminants.
Due to this “product effect” the metal detector “learns” the product to be able to mask out or compensate this interfering effect.

The product effect is characterized as “Product angle” in metal detection terminology.
If the metal detector is set to the corresponding product angle of the product to be inspected, the effect of the product is cancelled out.

The product angle can be set between 0,0° and 180,0° in steps of 0,1 °.
It is also possible to set “no” product angle. This setting provides maximum sensitivity to all metals and is only useful if “dry” products are inspected or for the purpose of tests.

S+S metal detectors are able to determine and adjust automatically the product angle of a product (Product compensation). This procedure requires only a few steps that have to be confirmed by the user.
For an optimum automatic product compensation the metal detector requires the input of the conveying speed that should not differ +/-20% of the real speed.

8.2 Teach in procedure

The following mask appears on the screen after selecting the following menus: „Teach in new product“ (see 7.4.3.1), „Relearn selected product“ (see 7.4.3.2) or „Quickteach“ (see 7.6):

Please convey product several times!

The product to be compensated can be passed through the detector head,

Note:
- Pass 3-5 times if lumpy products have to be learned.
- Allow 5-10s passing time with pasty, powdery or endless products.
- Interferences like mechanical vibrations of the detector head and noise of the environment are also compensated during teach in procedure.

After several runs of the product the next step will be started by pressing the enter. Depending on the product effect characteristics the following action can be different:
8. Product teach-in

8.2.1 Product without effect

After touching the enter the system immediately displays „Learning successfull“. Pressing the enter again will get to „Close learning“ (see 8.3).

8.2.2 „Simple“ product (weak product effect)

After touching the enter the system gets to „Setting sensitivity“ mode.

After re-passing the product several times and touching the enter the system displays „Learning successfull“. Touching the enter again gets to the mask „Close learning“ (see 8.3).
8.2.3 „Difficult“ product (high product effect)

After touching the enter the system gets to „Auto gain“ mode.

Touching the enter after several re-passes of the product will get to „Setting sensitivity“ mode.

Pass the product again several times and after touching the enter the system displays „Learning succesful!“ Touch the enter again and the mask “Close learning“ (see 8.3) appears.
8. Product teach-in

8.2.4 „Very difficult“ product (very high product effect)

Touching the enter after several re-passes of the product will get to “Auto gain” mode.

After re-passing the product several times and touching the enter the message „Product effect too high“ will appear.

Touching the enter again will close the window.
8. Product teach-in

Potential causes:
- heavy vibration during teach-in procedure
- Metallic impurities in the product sample
- Product sample that contains metallic particles
- Metallized packaging

Remedy:
- The teach-in procedure should be repeated with a different product sample or a vibration free operation of the system have to be ensured.

8.2.5 Multifrequency systems
Multifrequency systems (two or four search frequencies) always start to compensate the product effect at the highest frequency.
If the product effect cannot be compensated the system tries the next lowest frequency according to the product teach-in procedure described above.

8.3 Close learning

Touching the enter in „Learning successful“ will get to a new mask that displays the determined results for sensitivity and phase angle and allows a manual adjustment.
8. Product teach-in

(1) **Number field sensitivity**
The determined sensitivity is displayed. It can be adjusted by touching the number field.

(2) **Number field product angle**
The determined product angle is displayed and can be adjusted by touching the number field.

(3) **Enter**
Touching the enter the data are confirmed and saved and the window closed.
9. The use of the GENIUS+ for quality insurance

To meet the demands of Total Quality Management and the HACCP concept, the Genius+ device is equipped with a permanent logbook of up to 1,500 entries and several counters for product, error and metal incidents. It is also equipped with interfaces to connect to a subordinate quality management system.

The interfaces (serial, Ethernet, WLAN and Profibus) enable a connection to the optional data management systems Insight.Log.NET or Insight.NET. They also enable a simple connection of S+S metal detectors and separators to an existing quality and data management system used by the customer.

A critical element of the HACCP system is the regular monitoring of "critical control points" (CCPs). Genius+ devices offer various configurable possibilities to carry out such tests securely and accurately.

To ensure that tests are reproducible, S+S offers a large number of different test samples. These samples can be supplied in the form of cards, sticks, mini sticks, balls or bars (for LIQUISCAN) to match different applications. Available materials include iron, V2A, V4A and brass. Available sizes range from 0.2mm to 10mm, depending on the material.

9.1 General procedure

The procedure depends largely on the quality requirements of individual companies. The following outline should therefore be seen as a general guideline.

Please note:
Tests are usually carried out together with the product.
Most audit check settings are therefore product specific and are assigned to a particular product.

1. Learn product (see chapter 7.4.3.1)
2. Convey product together with test samples. Select smallest test sample, which can be detected and meets quality requirements. Up to 3 test samples can be appointed.
3. Set basic settings for the current product in the parameter menu “Audit check” (see 7.4.3.5)
   - Alarm mode (time, Interval, external, …)
   - Start time or interval (depending on mode)
   - Test sample (defined under point 2, if applicable also user specific samples)
   - Optional: maximum test signal for up to 3 test samples
4. If several GENIUS+ devices are used and connected to a subordinate system, a distinct allocation with a significant identifier should be chosen in the setup menu “Device/Line” (see 7.4.5.9).
5. Date and time should be set correctly (see setup menu “Time/Date” under 7.4.5.2)

Depending on the quality requirements within the company, additional settings for the audit check can be configured.
They can be found in the setup menu under “Audit check basic setup” (see 7.4.5.6)

- “Error when test unsuccessful”
  In case of a faulty test (faulty result or execution) an error message is displayed. Certain configurations (such as “stop when error”) can mean that this stops the conveyor; applied to a Rapid metal detector, the setting “metal when error” would mean the device switches to “Reject”.
- “Time to start test”
  The time set here is the time to complete the test. If the test is not completed, this will lead in combination with the previous option to an error.
9. The use of the GENIUS+ for quality insurance

9.2 Carrying out a performance validation

Note:
To set up the AuditCheck data (testing point in time, test pieces etc.) see chapter 7.4.3.5.

If an AuditCheck request appears on the display or has been manually triggered (see chapter 7.4.3.6) the following mask appears:

![AuditCheck request mask](image)

1. User log in
   - Touching the field gets to the user registration (see chapter 7.2).
2. User ID
   - The ID of the logged-in user is displayed.
3. Residual time
   - If in the basic set up of the AuditCheck (see 7.4.5.6) the function „Time to start the test“ has been activated the residual time is displayed. If the test has not been started within this time frame the AuditCheck has failed.

The Continue Icon (1) starts the test procedure:
9. The use of the GENIUS+ for quality insurance

Request to pass the 1st test piece:

If the test piece has not been detected touch the cancel (2).
If the test has been successful the following message is displayed:

If the detection was caused by the test piece continue by touching the enter (3).
Was the detection caused by something else continue by touching the cancel (4).
9. The use of the GENIUS+ for quality insurance

If the signal exceeds a set level that has been set for the test piece (see 7.4.3.5) the following message is displayed:

Touching the Cancel icon (5) get to the next mask.

After completing a message is displayed whether the test has been successful or not:

Touching the enter (6) closes the window.

Note: The AuditCheck can be carried out for three test pieces per product.
10 Performing a software-update

If the touch-software of your equipment should need to be updated, we will provide you with a ZIP archive containing the update program. Please unzip this archive directly to a USB stick.

Then plug the USB stick into the USB port at the outside of the housing.

If your equipment does not have a USB port at the outside of the housing, please open the cover of the housing and connect the USB stick directly to the display board (the port is located at the rear left).
10. Performing a software-update

Use the touch-display to open the "User login" menu.

Log in as a user with administrator rights.

Then go to the "Setup \rightarrow System" menu, and there change to the second page.

On this second page, open the "Revision" menu. If a USB stick containing an update program is connected, an "Update" button will be displayed at the bottom of this menu. Click on this button, and the update program will start after a few seconds.

Press the OK icon to start the update process.

A bar display shows the progress of the update process:
10. Performing a software-update

When the update process is completed, a message will be displayed informing you whether updating was successful or not.

Click on the OK icon. After 20 seconds the update program will be closed, and the touch software will be restarted.

**Note:**
If the update process should not be successful even after several attempts, please contact us.
11 Errors and error remedying

If you should have any questions, or if there should be any malfunctions, please contact the manufacturer.

If you have any questions, please state the equipment type and serial number!

Service telephone: +49 (0) 85 54 - 30 8-180

11.1 Error messages

Error messages are indicated by a flashing red "Fault" LED at the control panel, by a corresponding error message that appears on the display, and by a release of the fault relay. If the system is configured correspondingly, it also indicates a metal alarm.

11.1.1 Communication AWE

This message appears if communication between control electronics board and evaluation electronics board (see spare parts view 13.1 No. 4) is interrupted and data can no longer be exchanged.

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data communication cable between evaluation electronics board and control electronics board is broken.</td>
<td>Check cable and connectors with ohmmeter; Replace cable, if necessary</td>
</tr>
<tr>
<td>Interface module broken.</td>
<td>Replace evaluation electronics board and control electronics board</td>
</tr>
</tbody>
</table>

11.1.2 Receiver voltage too high

This message appears if the RF voltage at the receiver is too high.

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big metal part (e.g. aluminium ladder, screwdriver, hammer, bracelets) directly beside or in the detection coil.</td>
<td>Check the detector head and the surrounding. Sometimes metal parts can be found inside or underneath the belt.</td>
</tr>
<tr>
<td>Improper installation of the search coil</td>
<td>See Op. Man Detection coil: &quot;Installation If detector head DLS is used, check on loose centering pins or fastening bolts.</td>
</tr>
</tbody>
</table>

11.1.3 Air pressure

Appears on display if the air pressure monitor responds or the connection to the sensor is interrupted.

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appears on display if the air pressure monitor responds or the connection to the sensor is interrupted.</td>
<td>Extend the air pressure recovery time Check the air pressure. Minimum value 2 bars. Increase, if necessary. Check the cable to the air pressure monitor. Switch off Power, open housing. Check with duc...</td>
</tr>
</tbody>
</table>

11.1.4 Eject control

Appears, after rejection, if no signal was sent by light barrier.

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appears, after rejection, if no signal was sent by light barrier. Causes: Product was not rejected was not detected by the light barrier Sensor connecting cable broken</td>
<td>Adjust delay time and reject duration time properly If the error repeats, check sensor and/or connection cable</td>
</tr>
</tbody>
</table>

86
11. Errors and error remedying

### 11.1.5 Reject box full

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appears, if the light barrier is blocked by products. A short circuit in the connection cable causes the same error message</td>
<td>Empty the reject box. If reject box is empty and the error message is not resettable, check the connection cable</td>
</tr>
</tbody>
</table>

### 11.1.6 Diverter position

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appears during reject operation of the diverter, if signal timing is not correct, diverter is broken diverter too slow</td>
<td>Fix the diverter mechanics Check diverter if tight or wedged pieces Check air pressure (min. 5 bars)</td>
</tr>
</tbody>
</table>

**Caution! Danger of accident! Disconnect air supply!**

Forward and return time set too short Connection to the sensors defective

Prolong the time settings Check cable and sensors

### 11.1.7 Transmitter over temperature

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation electronics board defective</td>
<td>Replace the evaluation electronics board</td>
</tr>
<tr>
<td>Coil or transmitter connection board defective</td>
<td>Contact S+S service</td>
</tr>
<tr>
<td>Improper installation of the detection coil</td>
<td>(see instruction manual of the detection coil: “Installation”). With type DLS detection coil, check whether the centering sleeves or fastening screws are loose.</td>
</tr>
</tbody>
</table>

### 11.1.8 Watchdog AWE

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software error of the evaluation electronics board</td>
<td>If this occurs several times, contact S+S service</td>
</tr>
</tbody>
</table>

### 11.1.9 Conveyor belt control

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
</table>
| Motor overload (thermal contact) Error message E35 at the display of the frequency converter | - Let the motor cool down  
- Check the conveyor belt for possible mechanical influences  
- Reset the error message at the frequency converter |
| Other frequency converter error Error messages E01 – E60 (see frequency converter manual) | As described in the frequency converter manual |

### 11.1.10 Light barrier

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>After a metal signal the synchronisation light barrier was not interrupted within the set time. For example, this may be due to an unwanted conveyor stop or to a defective connection cable.</td>
<td>If this error is permanently repeated: Check the connection cable</td>
</tr>
</tbody>
</table>
11. Errors and error remedying

### 11.1.11 EEPROM

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>System and product data memory defective.</td>
<td>Replace the control electronics board</td>
</tr>
</tbody>
</table>

### 11.1.12 Test result

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>An error occurred while the system test was performed</td>
<td>Repeat the system test, check the test piece</td>
</tr>
<tr>
<td></td>
<td>If this occurs several times, check the system</td>
</tr>
<tr>
<td></td>
<td>and product settings.</td>
</tr>
</tbody>
</table>

### 11.1.13 Test timeout

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The system test was not performed within the specified time frame.</td>
<td></td>
</tr>
</tbody>
</table>

### 11.1.14 Hardware AWE

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error info 3</td>
<td>Check output 4 of the AWE (relay output) for</td>
</tr>
<tr>
<td>Short-circuit relay output AWE</td>
<td>correct polarity or short-circuit</td>
</tr>
<tr>
<td>Error info 4</td>
<td>Replace the evaluation electronics board</td>
</tr>
<tr>
<td>Initialisation error at the evaluation electronics board</td>
<td></td>
</tr>
</tbody>
</table>

### 11.1.15 Metal burst

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulation of metal events (if configured correspondingly)</td>
<td></td>
</tr>
<tr>
<td>More than 10 metal events within 5min</td>
<td></td>
</tr>
</tbody>
</table>

### 11.1.16 External error

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error signal at the external error input (IN8) of the control electronics board</td>
<td>Check and remedy the external cause of the error</td>
</tr>
</tbody>
</table>
## 11.2 Undefinable activation of the switching outputs

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improper installation of the search coil</td>
<td>See operational manual detector coil: &quot;Mounting&quot;</td>
</tr>
<tr>
<td><strong>With conveyor systems:</strong></td>
<td></td>
</tr>
<tr>
<td>Open and close electric circuits at the frame of the conveyor system, e.g. due to:</td>
<td></td>
</tr>
<tr>
<td>• loose guide plates</td>
<td>Check and tighten all screw connections. If necessary, weld frame parts.</td>
</tr>
<tr>
<td>• loose screw connections at frame parts</td>
<td></td>
</tr>
<tr>
<td>Changing contact resistance at the bearings of the tensioning and deflection pulleys or the drive pulley</td>
<td>Insulate at one side cross struts, tension and deflection rollers</td>
</tr>
<tr>
<td>Individual locations of the conveyor belt are conductive:</td>
<td></td>
</tr>
<tr>
<td>• Metallic impurities (welding spatter, metal chips, abraded matter...)</td>
<td>Remove residues from the conveyor belt. If necessary, replace the conveyor belt</td>
</tr>
<tr>
<td>• Belt junction causes metal alarms</td>
<td></td>
</tr>
<tr>
<td><strong>With round coils:</strong></td>
<td></td>
</tr>
<tr>
<td>Mechanical contact between scanning pipe and search coil</td>
<td>A gap of at minimum 10 mm has to be kept between scanning pipe and detector coil.</td>
</tr>
<tr>
<td>Sensitivity too high</td>
<td>Repeat product teach in procedure</td>
</tr>
<tr>
<td>Metal particles hard to identify due to corrosion or encapsulation.</td>
<td>Reduce sensitivity manually</td>
</tr>
<tr>
<td>Loose contact at the coil cables</td>
<td>Check the connections</td>
</tr>
<tr>
<td>High electrostatic charging of the material (possibly audible clicking sound at the detection coil)</td>
<td>Avoid static charging by additional grounding measures (contact S+S service!) Use of de-ionizing equipment</td>
</tr>
</tbody>
</table>
11.3 Replacing the backup battery

Because of energised components in the electronics housing there is a risk of injuries due to electric shock or burns. Therefore such work may only be performed by a qualified electrician under strict observation of the attached warning labels and with due regard to standard approved rules of electrical engineering.

1. As a precaution, make a backup copy of the logbook entries
2. Do not turn off the power supply to avoid any loss of data
3. Open the cover of the electronics housing

Procedure - Replacing the backup battery:

Button cell CR2032 (for STE article number 44006482):

1. Carefully remove the old backup battery a) from its holder
2. Insert the new backup battery.
3. Always observe the correct polarity (positive pole on top)!
4. Close the cover of the electronics housing again.
5. Check whether the date and time settings are still correct, and whether the logbook entries are still there.

If the backup battery is not replaced in time, the following data will be lost:
Date, time, and all the entries in the logbook.
11.4 Replacement of electronic boards

The Control-Unit GENIUS consists of the following three boards: Control electronics board (3), evaluation electronics board (5) and display board (8).

11.4.1 Replacing the control electronics board

1. Disconnect voltage supply and external circuits and open the cover at the electronics housing
2. Remove connectors (1) and (6) and remove the fastening screws (2)
3. Remove the fan (9)
4. Take out the control electronics board (3)
5. Install the new board in reverse order, but do not connect mains power supply!

The data memory is located on the STE controller board. The memory contains all device and product parameter settings. If this memory device is transferred to a new board no new settings must be performed.
11. Errors and error remedying

Replacement of the Data Memory:

<table>
<thead>
<tr>
<th>STE article number 44006482</th>
</tr>
</thead>
<tbody>
<tr>
<td>a: New controller board</td>
</tr>
<tr>
<td>b: Old controller board</td>
</tr>
<tr>
<td>c, d: Device and program memory</td>
</tr>
</tbody>
</table>

Instruction:

1. Remove data memory device c) from the board
2. Remove data memory d) from the old board b) and plug it carefully into the new board a)
3. Check that the marking on the memory device points to the right
4. Switch on power supply. The new board runs with the "old" adjustments.

Date, time and recorded events in the logbook are not transferred, when changing the Data memory device.

11.4.2 Replacing the evaluation electronics board

1. Disconnect voltage supply and external circuits and open the cover at the electronics housing
2. Remove the used connectors (1) and (6) and remove the fastening screws (4)
3. Take out the evaluation electronics board (5)
4. Install the new board in reverse order!

11.4.3 Replacing the display board

1. Disconnect voltage supply and external circuits and open the cover at the electronics housing
2. Remove the used connectors (6) and remove the fastening screws (7)
3. Take out the display board (8)
4. Install the new board in reverse order!
12 Maintenance and cleaning

Prior to cleaning turn off the system with the master switch and disconnect the system from the mains voltage.

12.1 Maintenance
The Genius+ control unit is maintenance-free, yet it is still appropriate to inspect the equipment in regular intervals:

- Are all the fastening screws tight?
- Is the housing seal in perfect condition, and does it provide proper sealing?
- Also check all the cables for possible damage (e.g. at the cable sheath).

12.2 Cleaning

12.2.1 Hints for cleaning
- Please ensure you follow the instructions below.
- Specific machine components must be cleaned with specific substances. Please use the correct materials and clean at regular intervals as suggested.
- If the building is being cleaned ensure the machines are covered up.

The following must not be used for cleaning:
- Sharp, hard or pointed objects
- Water or steam jet appliances
- Compressed air
- Hazardous and solvent-containing materials
- Cleaning agents that may attack the materials used

12.2.2 Cleaning instructions
For cleaning purposes we recommend that you use warm water with approved cleaning agents for the respective application, and a soft, lint-free cloth. Once every week the coil shaft should be thoroughly cleaned, removing any dirt accumulations and deposits. After cleaning wipe up any remaining drops of water with a dry, non-fibrous cloth until the coil shaft is dry. From time to time apply oil to the stainless steel framework (e.g. Nirostol 55 cleaning and maintenance oil which meets food industry standards).

12.2.3 Care advice for stainless steel
Only high-quality stainless steel is used in the systems. To prevent rust on the high-grade steel parts do not use substances containing chloride (e.g. cleaning or disinfecting products) or operate the machine in an atmosphere containing chloride. If this is unavoidable the steel parts must be thoroughly rubbed down immediately afterwards with cleaning oil e.g. Nirostol 55 cleaning and maintenance oil (which meets food industry standards).

Important information for stainless steel models
Stainless steel models are extremely weatherproof and are therefore able to withstand most environmental conditions. However, even stainless steel can be susceptible to a slight film of rust. These deposits are caused by contact corrosion and can be removed by following the instructions below:
- Use a stainless steel cleaner: in principle any stainless steel cleaner may be used. Please ensure you read the instructions prior to use.
- Use only cleaning agents that are halogen-free (i.e. without chlorides and fluorides), and salt and hydrofluoric acid free.
- After each cleaning rinse the machine thoroughly with tap water
- Do not use the following: non-alloy materials or substances, abrasive cloths, cleaning agents containing salt or hydrofluoric acid, chrome, silver or brass cleaners.
13  Spare parts
If you should have any questions please state equipment type and serial number!

*Spare parts and wearing parts must always be obtained from the manufacturer or from a supplier that is certified by the manufacturer.*

13.1  Spare parts view
## 13. Spare parts

### 13.2 Spare parts list

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Display cover GENIUS+ Touch</td>
<td>33011062</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Electronic GENIUS+ Touch</td>
<td>44006374</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Electronics housing GENIUS+ mounted to the detector head (incl. cover), bead blasted</td>
<td>1.4301</td>
<td>44003910</td>
<td>Sp</td>
<td>73269098</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Electronics housing GENIUS+ remote (incl. cover), bead blasted</td>
<td>1.4301</td>
<td>33002708</td>
<td>Sp</td>
<td>73269098</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Evaluation electronics board GENIUS+ AWE</td>
<td>44006480</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Control electronics board GENIUS+ STE</td>
<td>44006482</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6a</td>
<td>Mains cable standard</td>
<td>04015479</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6b</td>
<td>Mains cable US version</td>
<td>33002438</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Connection cable STE – Touch</td>
<td>44006518</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Threaded joint M16x1.5</td>
<td>33001010</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Receiver cable</td>
<td>44005410</td>
<td></td>
<td></td>
<td>Sp</td>
<td>85444290</td>
</tr>
<tr>
<td>10</td>
<td>Transmitter cable</td>
<td>04015444</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Connection cable AWE-STE</td>
<td>44005966</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Button cell (CR 2032, LITHIUM 3V)</td>
<td>33011070</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Main fuse</td>
<td>47090930</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Seal</td>
<td>NBR</td>
<td>33009700</td>
<td>Sp</td>
<td>84799080</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Fan (EBM Papst, type 414FH)</td>
<td>77010666</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Mains supply circuit for display (not shown)</td>
<td>33006482</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>USB plug-type connector (not shown)</td>
<td>33010914</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Sp/Con = Spare part / Consumable

### 13.3 Accessories

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Portable printer EM &quot;Custom Engineering&quot;</td>
<td>77010665</td>
<td></td>
<td>85340090</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper roll for printer EM</td>
<td>77010668</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>InsightLog.NET Central Data Management</td>
<td>44006118</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface cable RS232 for printer / length 1 meter</td>
<td>44006236</td>
<td></td>
<td>85444290</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface cable RS232 for PC</td>
<td>44001060**</td>
<td></td>
<td>85444290</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface cable RS485 for PC / INSIGHT</td>
<td>44001038**</td>
<td></td>
<td>85444290</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAN XPORT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WIPORT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Art. No. = Please state cable length!
14 Shipping, preservation, waste disposal, transport, storage

14.1 Shipping, preservation, waste disposal

1. Choose packing that is suitable for the type and size of unit, taking into account whether the shipment is for export by sea or airfreight, or for national or international road transport. The packing material must protect the goods from all damage under normal transport conditions.

2. Depending on the size, weight and nature of the goods, packing in cardboard boxes, boxed pallets etc. is only suitable for road transport. Use reinforced card, corrugated cardboard, blister packing and shredded paper to fill and protect the goods. Electrostatic sensitive components (electronic boards, electronic modules, etc.) must be packed in antistatic foil or foil bags prior to packing! *(this is essential!)* Stick additional warning labels on the outside of the packaging e.g. "Attention, electronic equipment, do not drop," etc. The packing should be sealed with adhesive tape and, where the weight exceeds 50 kg, additionally with wrapping tape.

2a. When packing for international road transport use the instructions above (see point 2). Larger and heavier shipments must also be protected as for export in wooden crates. Care must be taken to ensure that the goods inside the packing are protected against corrosion. Any parts that will corrode easily must be wrapped in oil paper or corrosion-protective foil. Care must be taken to prevent the components moving around within the packaging.

2b. International air freight shipments must be packed in wooden crates or on export palletizers. Care must be taken that the goods are secure and well-protected inside the packing. Any parts liable to corrode must be wrapped in oil paper, protective foil or sprayed with anti-corrosion spray.

2c. Sea-freight must be packed in seaworthy export crates. These crates can be obtained from specialist suppliers. The crates must be lined with oil paper to make them resistant to sea water and prevent corrosion. In addition, the goods must be protected against corrosion by use of a spray or be wrapping in protective foil. Care must be taken to ensure that the goods cannot move around inside the crate. After packing the sea-freight crates must be properly closed. The sea crates must also be fastened externally with securing tapes. During loading care must be taken not to damage the external packaging. The carrier must certify that the shipment has been accepted and loaded correctly by detailing this on the bill of lading, loading list etc.

3. Waste disposal: Observe the national waste disposal regulations.
14.2 Transport

- In order to avoid injury or damage to the unit it must be handled properly. In addition to following the instructions below, general health and safety good practice and specific accident prevention guidelines should be observed.
- For correct handling and storage comply with the following symbols:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Umbrella.png" alt="Umbrella" /></td>
<td>Protect against moisture</td>
</tr>
<tr>
<td><img src="Glass.png" alt="Glass" /></td>
<td>Careful: glass</td>
</tr>
<tr>
<td><img src="Up.png" alt="Arrow Up" /></td>
<td>Up</td>
</tr>
<tr>
<td><img src="Cross.png" alt="Cross" /></td>
<td>Centre of gravity</td>
</tr>
</tbody>
</table>

- Do not compress the side walls of the unit or any attached parts by pulling obliquely on ropes or chains.
- Only remove handling safeguards once all installation work has been completed.
- When handling in a loading area make sure the unit cannot topple over or slip.
- Damage caused during transportation must always be reported to the manufacturer.

14.3 Storage

- If possible the unit should be stored in a closed room until final installation.
- If the unit is stored in the open it must be covered over with tarpaulins and open underneath to allow condensation to drain off.
- Avoid any higher temperature fluctuations. It is possible that condensed water that has formed in the packing cannot properly drain and may corrode equipment surfaces. If a formation of condensed water cannot be avoided, suitable desiccants e.g. in the form of bags must be placed in the packing.
- If the unit has been packed for transportation by sea the packaging must not be damaged or opened during transit and storage.
- For storage temperature and permissible air humidity please refer to the technical data sheet.
- For correct storage comply with all storage and handling symbols:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Umbrella.png" alt="Umbrella" /></td>
<td>Protect against moisture</td>
</tr>
<tr>
<td><img src="Glass.png" alt="Glass" /></td>
<td>Careful: glass</td>
</tr>
<tr>
<td><img src="Up.png" alt="Arrow Up" /></td>
<td>Up</td>
</tr>
</tbody>
</table>
15 Annex

- EC DECLARATION OF CONFORMITY
- Technical data sheet
- Supplementary sheet passwords

Accessories:

- Data sheet interface
- UL/CSA certificate
## Dimensions GENIUS+

All dimensions in mm

## Dimensions GENIUS+ mounted to detection coil GLS

All dimensions in mm

### 8-Line Graphic Display

### GENIUS+ Touch (Optional)
### Standard design

**Performance data:**
- Multiprocessor electronics with modern digital signal processing via DSP technology
- Crystal stable search frequency (optional with multi-frequency technology) for highest sensitivity for all types of metal and high stability
- Multi-product memory for 240 products
- Self-learn system for compensation of product conductivity
- Quick-learn system for automatic product changes without disrupting the production process
- Product tracking for automatic compensation adjustment to slight product changes (e.g. recipes, dampness, defrosting)
- CE certified, FCC conform

**Operating:**
- 8-Line Graphic Display:
  - Multi lingual menu with clear text incl. four buttons for data entry plus reset button
  - Password protected for product change, product learning, parameter configuration and service menu
  - Three bright, colored LEDs for “Operation”, “Fault” and “Metal”
- Color Touch-Screen (Optional):
  - Intuitive, multi lingual menu on large 5.7” color touch-screen with separate reset button.
  - Four operation levels with separate authorizations; password protected
  - Three bright, colored LEDs for “Operation”, “Fault”, and “Metal”
  - Password protected system log file for 1,500 operation data entries for complete monitoring of metal alerts, product changes, previous tests, etc. for HACCP and ISO 9000 quality assurance
  - Menu controlled validations system for regular checkups of all functions and detection accuracy

**HACCP/GMP:**
- Password protected system log file for 1,500 data entries for complete monitoring of alerts, product changes, previous tests, etc. for quality assurance according to HACCP and ISO 9000
- Menu controlled validations system for regular checkups of all system functions and detection accuracy
- Optional InsightLog.NET software for central data management
- Optional Insight.NET software for remote control, remote diagnosis and central data management

**Housing:**
- Stainless steel 1.4301 (AISI 304), glass bead blasted
- Type of protection: IP 65
- Ambient conditions: -10° C to +50° C, 25% to 85% rH, no condensation
- Storage and shipping conditions: -10° C to +50° C, 25% to 85% rH, no condensation
- Weight: Approx 6.0 kg
- Operating voltage: 100-240 VAC (±10%), 50/60 Hz
- Current input: Approx 250 mA/115 VAC, approx 120 mA/230 VAC
- Fuse: 1.6 A, slow-blowing
- Mains cable: 1.8 m with safety plug
- Switch inputs: 2 switch inputs for proximity switches
  - 1 switch input each for sensor barrier, “Reset”, “Bypass”, “Manual Reject”, fill level indicator, air pressure monitoring
  - Additional switch inputs for special functions and options included
  - Switch outputs: 2 switch outputs 24V DC for magnetic valves and 2 additional switch outputs 24V DC, max. total current load 500mA
  - 3 switch outputs 24DC “Operation”, “Metal”, and “Fault” e.g. for signal lamp and alarm horn
  - 2 potential-free relay switch outputs (max. 250 VAC/3A) for “Metal”
  - 1 potential-free relay switch output (max. 250 VAC/3A) for “Fault”
- Can be combined with: Detection coils of GLS, RZ, DLS, ELS and LIGNUM HX
- Scanning sensitivity: See data sheet of the selected detection coil or complete device
- Self monitoring: Detection coil and outputs

### Accessories

- Software InsightLog.NET
- Software Insight.NET
- Protocol printer EN incl. serial connection cable
- ……………………………………………

### Options

- 5.7” color touch-screen incl. USB interface
- Multi-frequency technology for sensitivity optimization
  - Duo (for few different products)
  - Quattro (for many different products)
- Serial interface RS232 with plug (IP65, 4-pole)
- Serial interface RS485 with plug (IP65, 4-pole)
- Ethernet interface (TCP/IP 100 Mbit/s, IP 65, RJ45)
- WLAN interface (802.11 b/g) with integrated aerial
- Profibus
- UL/CSA certificate
- US-power cable

### Special versions

- Explosion-proof version ATEX
- ……………………………………………
- Higher degree of protection

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Subject to change without notice! 10-08-18

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Zusatzblatt für Passwort GENIUS+-Display-Touch

<table>
<thead>
<tr>
<th>Benutzer</th>
<th>Benutzergruppe</th>
<th>Passwort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin</td>
<td>Administrator</td>
<td>A5686</td>
</tr>
<tr>
<td>Operator</td>
<td>Operator Level</td>
<td>OL79</td>
</tr>
</tbody>
</table>