2 FOR YOUR PERSONAL SAFETY

2.1 Authorised personnel

To ensure that the I.S. 1 system functions correctly and safely, it may only be assembled, installed and operated by authorised personnel. Different qualifications are required for the different activities.

2.1.1 Fitting

Fitting requires:
- Practical technical basic training
- Knowledge of safety guidelines in the workplace

2.1.2 Installation

Installation requires:
- Practical electrotechnical basic training
- Knowledge of the current electrotechnical safety guidelines
- Knowledge of the installation methods for explosion protected electrical plants
- Knowledge of safety guidelines in the workplace

2.1.3 Commissioning

Commissioning requires:
- Knowledge of all electrical and functional parameters and properties of the I.S. 1 system
- Knowledge of the function and commissioning of bus systems
- Knowledge of the connected sensors and actuators
- Knowledge of the safety guidelines in the workplace, in particular behavior in hazardous locations
2.2 Intended use of the I.S. 1 system

The I.S. 1 system may only be operated for its intended purpose and with the specified system configuration. Any other use of or modifications to the I.S. 1 system invalidates any liability on the part of the company R. STAHL.

Special applications

Contact R. STAHL SCHALTGERÄTE GmbH before using the I.S. 1 system for any special applications.

**DANGER OF EXPLOSION!**

If the I.S. 1 system is modified this will endanger its explosion protection or intrinsic safety. In some circumstances, this can cause explosive sparking or non-permissible surface temperatures.

- Do not modify the I.S. 1 system construction or safety parameters.

2.2.1 Electromagnetic compatibility

The I.S. 1 system has been tested for electromagnetic compatibility in compliance with EN 61 326-1 and IEC 1000-4-2, 6 and -11, as well as NAMUR NE 21.
2.3 Safety instructions and protective measures

Application area

When the I.S. 1 system is used in hazardous locations:

- Read and comply fully with the safety instructions for explosion protection in Chapter 2.4.
- Comply with the warning instructions in the handling introduction sections in these operating instructions.

Storage

- The storage temperature range for the I.S. 1 system is between −40 °C and +70 °C.
- The maximum permissible humidity without condensation is 95%.
- Keep the I.S. 1 system in the original packaging until assembly and protect from moisture and damage.

Warning

DAMAGE TO THE I.S. 1 SYSTEM!

If the I.S. 1 system is incorrectly stored, it can be damaged.

- Store the I.S. 1 system only under the specified conditions.
## 2.4 Explosion protection

### 2.4.1 Overview of the I.S. 1 system in various application areas

<table>
<thead>
<tr>
<th>Installation of the I.S. 1 field station in</th>
<th>I.S. 1 components</th>
<th>Installation of the components in</th>
</tr>
</thead>
<tbody>
<tr>
<td>safe areas</td>
<td>BusRail and terminations CPU &amp; Power Module for Zone 2, Type 9440/15 Input and Output Modules Types 94xx/12, 94xx/10</td>
<td>Cabinet or rack</td>
</tr>
<tr>
<td>Zone 2</td>
<td>BusRail and terminations CPU &amp; Power Module for Zone 2, Type 9440/15 Input and Output Modules, Types 94xx/12</td>
<td>Enclosure, suitable for Zone 2</td>
</tr>
<tr>
<td>Zone 1</td>
<td>BusRail and terminations CPU &amp; Power Module for Zone 1, Type 9440/12 Input and Output Modules Types 94xx/12</td>
<td>Enclosure EEx e</td>
</tr>
</tbody>
</table>
### 2.4.2 Tabular overview of measures to maintain explosion protection

<table>
<thead>
<tr>
<th>Measure</th>
<th>Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comply with nationally applicable requirements for explosion protection.</td>
<td>In the EU: Guideline 94/9/EEC (ATEX 100a), Guideline 95 / C 332 / 06 (118a), EN 60 079-14</td>
</tr>
<tr>
<td>The I.S. 1 system may only be operated in Zone 1 in specific system configurations. These include: • CPU &amp; Power Module for Zone 1 • EEx e enclosure • Limited number of connectable I/O modules • Fieldbus isolating repeater for Ex i fieldbus</td>
<td>Safety instructions, see Chapter 5.1</td>
</tr>
<tr>
<td>The modules of the I.S. 1 system may only be connected to the specified field devices. The Ex i values resulting from the connection must be checked. Dangers in the Ex-area may result from: • Usage of incorrect modules • Non-compliance of the Ex I values for field devices and I/O modules due to incorrect connection</td>
<td>Technical data for the system and technical data for the components, see Chapter 13.2.5 and Chapter 13.3</td>
</tr>
<tr>
<td>Only operate intrinsically safe circuits with the specified maximum values for current and voltage. Interconnection of several circuits may endanger the intrinsic safety.</td>
<td>Safety instructions, see Chapter 5.1 and Chapter 7.1</td>
</tr>
<tr>
<td>Safety measures for assembly/disassembly</td>
<td>Safety instructions, see Chapter 6.1 and for assembly of components, see Chapter 6.3.1</td>
</tr>
<tr>
<td>Safety measures for connection</td>
<td>Safety instructions, see Chapter 5.1 and Chapter 7.1</td>
</tr>
<tr>
<td>Safety measures for error rectification</td>
<td>Safety instructions, see Chapter 11.1</td>
</tr>
<tr>
<td>Safety measures for expanding the I.S. 1 system</td>
<td>Safety instructions, see Chapter 12.1</td>
</tr>
</tbody>
</table>

**Tab. 2-1** Measures for maintaining explosion protection
2.5 Waste disposal

The components of the I.S. 1 system contain the following environmentally harmful materials:

<table>
<thead>
<tr>
<th>Component</th>
<th>Environmentally harmful material(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure</td>
<td>Polyamide, polycarbonate</td>
</tr>
<tr>
<td>Electronic printed circuit boards</td>
<td>Diverse</td>
</tr>
<tr>
<td>Terminals</td>
<td>Polyamide</td>
</tr>
</tbody>
</table>

**Tab. 2-2** Environmentally harmful materials in the components of the I.S. 1 system

**Environmental guidelines**
Dispose of the modules in compliance with national environmental guidelines.