SPIRA-tec® Sensor Chambers
ST14, ST16, ST17

The Sensor Chamber is installed upstream of the steam trap as part of the SPIRA-tec® steam trap fault detection system. The chamber is supplied with a drilled and tapped connection for the SPIRA-tec® sensor (standard or waterlogging) which is supplied separately (see other side). Steam trap status is indicated on a portable indicator (Type 30) or remote monitor (R16C & R16E).

Limiting Operating Conditions
Max. Operating Pressure (PMO) 464 psig (32 barg)
Max. Operating Temperature (TMO) Saturated Steam Temperature

Pressure Shell Design Conditions
PMA Max. allowable pressure 464 psig/482°F 32 barg/250°C
319 psig/662°F (ST17 only) 22 barg/350°C
304 psig/752°F (ST14&ST16) 21 barg/400°C
TMA Max. allowable temperature 662°F/0-319 psig (ST17 only) 350°C/0-22 barg
752°F/0-304 psig (ST16 & ST14) 400°C/0-21 barg

Sample Specification
SPIRA-tec® steam leak detection system shall consist of an in-line sensor chamber and a portable or remote indicator box and cable for test purposes.
Sensor chambers, fitted before each trap, shall have ductile iron, steel, or stainless steel bodies with screwed, socket weld or flanged connections, and incorporate a sensing element.
The hand-held indicator box shall have positive colored pass and fail lights, an internal circuit check facility. An indicator cable 4 feet long shall be provided with each box.
Optional items shall include a hand-operated remote test box for testing either a single trap or up to 12 traps, an automatic remote electronic monitoring system for up to 16 traps, a blanking plug to prevent ingress of dirt, and cable plug tails of either the push-fit type or screw-on connection style.
The system shall test for steam loss by detecting the presence or absence of condensate using the difference in conductivities of water and steam. The system shall also test for traps failed, closed or blocked by detecting temperature drops at the steam trap. Trap operation shall be indicated by a green (OK) light or a red (fail open) light, or an amber (fail closed) light on the indicator box.

Installation
The sensor chamber should be installed immediately upstream of the trap (close coupled) in a horizontal position with the direction of flow according to the arrow on the body.

Maintenance
The sensor should be removed periodically to inspect and clean the tip and insulator.

Spare Parts
Sensor and Sensor Gasket
Blanking Plug
Sensor gasket package of 10

<table>
<thead>
<tr>
<th>Construction Materials</th>
<th>No.</th>
<th>Part</th>
<th>Material - ST14</th>
<th>Material - ST16</th>
<th>Material - ST17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sensor Chamber</td>
<td>Steel</td>
<td>DIN 17245 GS C25</td>
<td>Stainless Steel AISI 316L</td>
<td>Ductile Iron DIN 1693 GGG 40</td>
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<tr>
<td>3</td>
<td>Drain Plug</td>
<td>Stainless Steel</td>
<td>BS 970 431 S 29</td>
<td>Stainless Steel AISI 316L</td>
<td>Stainless Steel BS 970 431 S 29</td>
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<tr>
<td>4</td>
<td>Drain Plug</td>
<td>Stainless Steel</td>
<td>BS 1449 304 S 16</td>
<td>Stainless Steel AISI 316L</td>
<td>Stainless Steel BS 1449 304 S 16</td>
</tr>
</tbody>
</table>

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.
In the interests of development and improvement of the product, we reserve the right to change the specification.

<table>
<thead>
<tr>
<th>Dimensions (nominal) in inches and millimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST14 &amp; ST16</td>
</tr>
<tr>
<td>1/2&quot;, 3/4&quot;</td>
</tr>
<tr>
<td>1&quot;</td>
</tr>
<tr>
<td>1-1/2&quot;, 2&quot;</td>
</tr>
<tr>
<td>(ST14 only)</td>
</tr>
<tr>
<td>ST17</td>
</tr>
<tr>
<td>1/2&quot;, 3/4&quot;</td>
</tr>
<tr>
<td>1&quot;</td>
</tr>
<tr>
<td>120</td>
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</table>
SPIRA-tec® Sensor Chambers
ST14, ST16, ST17

SPIRA-tec® sensor assemblies are installed into the sensor chamber (see other side) for detection of condensate and temperature drops at the steam trap. This indicates where the steam trap is leaking steam or is failed, closed or blocked.

<table>
<thead>
<tr>
<th>Model</th>
<th>Standard</th>
<th>Waterlogging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>3/8” BSP</td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Conductivity</td>
<td>Conductivity &amp; Temperature</td>
</tr>
<tr>
<td>Options</td>
<td>Plug Tail Assemblies (PT1, PT2, or PT3)</td>
<td></td>
</tr>
</tbody>
</table>

Limiting Operating Conditions

Max. Operating Pressure (PMO) 464 psig (32 barg)
Max. Operating Temperature (TMO) Saturated Steam Temperature

Sample Specification

**Standard Sensor:**
Sensor shall be of stainless steel construction with suitable insulator. The sensor shall be capable of determining different conductivities associated with steam and condensate.

**Waterlogging Sensor:**
Sensor shall be of stainless steel construction with suitable insulator. The sensor shall be capable of determining different conductivities associated with steam and condensate. The sensor shall also detect temperature drops associated with steam traps that fail closed, are blocked, or not in use. Sensor shall be made with plug tail on right hand or left hand side.

Installation

The sensor is installed into the side connection on the SPIRA-tec® sensor chamber. Chamber mounted upstream of trap as close as possible.

Maintenance

The sensor should be removed periodically to inspect and clean the tip and insulator.

**Determine sensor position:**
If you were to straddle the pipe facing in the direction of flow, right hand sensor would be on right side and left hand on your left side.

**Note:** You must order sensor separately. Chamber does not have sensor installed when supplied.

**Sensor types:**
SSI Steam leakage for use output only with type 30, R1C and R16C
WLSI Steam leakage and water logging for use with R1C only.
WLSI with diode steam leakage and water logging for use with R16C only.

Spiratec products shall not be used in hazardous areas and explosive atmospheres.

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