Self Regulating Heated Sample Lines
PSG Ex² Extruded SR

Application
The self regulating heated sample lines series PSG Ex² Extruded SR are used for for continuous extractive gas analysis. They serve primarily for the transport of the humid sample gas stream from the sample point to the analyser house. The holding temperature of the line thereby has to be above water vapour resp. acid dew point of the sample gas. In this way uncontrolled condensation of water vapour on the way to the analyser and therefore washing out of gas components in condensate is prevented. Also failure of the measurement by a freezing line at ambient temperatures below 0°C is avoided.

Technology
The robust lines with thick-walled extruded flame resistant and extremely weather resistant TPU or PVC outer jacket are equipped with high quality self-regulating Raychem® heating cable. Insulation is done with a thermal or glass fibre fleece. For prevention of electrostatic chargings the patented Ex²-technology is used. Depending on the used heating cable holding temperatures of up to 150°C at -20°C ambient temperature can be reached. Solutions down to -52°C are also possible. Up to 12 PTFE, PFA, stainless steel or special alloy tubes as internal line and also interchangeable internal tubes are available.

Functions
Because of the self-regulating heating cable for operation an additional temperature controller is not necessary. The heating cable consists of two parallel arranged supply conductors connected with an electrically conductive polymer plastic. During operation conductivity of the plastic is decreasing with increasing temperature due to molecular expansion until the heating cable specific maximum temperature is reached. When the heating cable temperature now drops the process reverses.

✔ For use in Ex-zone 1 and 2
✔ Patented Ex²-technology for prevention of electrostatic chargings
✔ No temperature controller necessary
✔ Raychem® heating cables
✔ 30 / 100 / 120 / 150°C holding temperature at -20°C ambient temperature
✔ Up to 300m at a stretch
✔ Arbitrary cut to length for assembly on-site (video tutorial on YouTube) or ready-made ex works
✔ Robust design with thick-walled extruded, flame resistant, extremely weather resistant PVC, PE or TPU outer jacket
✔ Internal tube made of PTFE, PFA, stainless steel or special alloy
✔ Up to 12 internal lines as option
✔ Interchangeable internal lines as option

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### Technical data and order numbers

<table>
<thead>
<tr>
<th><strong>Construction data</strong></th>
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<tbody>
<tr>
<td><strong>Holding temperature</strong></td>
<td>°C</td>
<td>30</td>
<td>100</td>
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<tr>
<td>Heat insulation / weight</td>
<td>kg/m</td>
<td>thermal- or glass fibre fleece / 1,1</td>
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<tr>
<td>Insulation thickness</td>
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<td>10</td>
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<td>Heating cable type</td>
<td>5BTV</td>
<td>12XTV</td>
<td>15XTV</td>
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<tr>
<td>Outer jacket</td>
<td>2mm PVC, PE or TPU extruded</td>
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<tr>
<td>Outer diameter</td>
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<tr>
<td>Ambient temperature</td>
<td>°C</td>
<td>-20 to +65</td>
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<tr>
<td>Max. operating pressure abs. SS316L line</td>
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<td>400</td>
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<tr>
<td>Protection class</td>
<td>IP64 (EN60529)</td>
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<tr>
<td>Ex-protection heating cable</td>
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<td>Ex e IIC T6 Gb Ex ID A21 IP66 T80°C</td>
<td>Ex e IIC T3 Gb Ex ID A21 IP66 T200°C</td>
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<tr>
<td>Temperature class</td>
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<td>T3</td>
<td>T3</td>
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<tr>
<td>Protection against electrostatic</td>
<td>patented Ex²-technology</td>
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<td>Max. heating circuit (32A fuse protection)</td>
<td>m</td>
<td>160</td>
<td>135</td>
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#### Electric data

| **Max. Power (tₜ = +10°C)** | W/m | 16 | 38 | 47 |
| **Electrical connection** | with 0.5m protruded heating cable |
| **Power supply** | 230V 50/60Hz or optional 120V 50/60Hz |

#### Order numbers for 1m line 230V 50/60Hz

| **1 x PTFE internal tube 6mm** | 1m | 54002978 | 54002983 | 54002576 |
| **1 x Stainless steel internal tube 6mm** | 1m | 54002979 | 54002447 | 54002981 |
| **1 x PTFE internal tube 8mm** | 1m | 54002708 | 54002984 |  |
| **1 x Stainless steel internal tube 8mm** | 1m | 54002980 | 54002982 |  |

#### Order number for assembly ex works

- PTFE-Ex-cap ending: 50085503
- PTFE-Ex-cap with electr. connection: 50085502

#### Order number for assembly on-site

- PTFE-Ex-cap ending: 50084503
- PTFE-Ex-cap with electr. connection: 50084502

*150°C on request*

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**Options**

- Up to 12 internal PTFE and/or PFA and/or stainless steel and/or special alloy tubes with dimensions DN4/6, DN6/8, DN8/10, DN10/12 or inch
- Interchangeable internal lines
- Power supply 115V 50/60Hz
- Cable gland M63 x 1.5 (clamping range 36-48mm), PA, for cabinet wall mounting, IP68, mounted or separately

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**Assembly**

**Patented Ex²-technology**

- Integrated aluminium layer for reliable discharging of static chargings at the outer jacket

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... because safety comes first!