INTEGRATED PRESSURE MEASUREMENT

The new sensors RPT 010 and IKT 010/IKT 011. Compact dimensions.
Direct installation, no additional power supply. No special cable needed.
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When installing a turbopump and gauge, is separate cabling required? Today it is no longer necessary!

Save time and money with the new integrated RPT 010 and IKT 010/011 vacuum sensors. Neither a separate power supply nor a separate gauge controller is needed.

Features
- New state-of-the-art concept
- Piezo/Pirani gauge kombination (RPT 010)
- Cold cathode gauge (IKT 010/011)
- Connection to TC 110/400/1200 and TM 700 via converter TIC 010 on PV.can
- Pressure signal on RS-485 and Profibus
- Up to two sensors per one turbo controller
- Turbo controller can provide additional features:
  - set points
  - analog pressure signal
  - logical functions comprising pressure and turbo status
Customer benefit

- Fewer components
- Lower costs
- Smaller and improved sensor technology
- Piezo range gas type independent
- Easy installation
- Reliable digital communication
- Unified protocol for pressure signal and status information of the turbopump
- More stable high pressure reading
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Simply connect two sensors with a TIC 010 converter directly to the drive electronics of your HiPace turbopump, reducing the number and length of cables. The sensors use digital signals to communicate with the drive electronics making for a more reliable pressure signal rather than the use of analog transmissions.

Direkte Installation

Possible configurations

- 1 RPT 010
- 2 RPT 010
- 1 IKT 010/011
- 1 RPT 010 and
  1 IKT 010/011

1 analog output, 0 – 10 V,
2 programmable
digital output or relays* (*only with TC 400/1200
and TM 700)

Turbopump status
information
and pressure data

You can read this pressure signal together with status information of your turbopump such as rotational speed, power consumption etc. via RS-485. As an alternative, you can choose from other output possibilities that the HiPace drive electronics provide.

Durable and easy to maintain

Double chamber with textured surface

Cross section of the IKT sensor
Compact dimensions

Compared to conventional vacuum gauges the new sensors are significantly smaller. In addition, the IKT sensors are characterized by a minimized magnetic stray field and, thanks to a new dual-chamber design with a textured surface, a longer service life.

The Piezo sensor offers a stable low vacuum measurement independent of gas types whereas the Pirani sensor covers the pressure range of up to \(1 \cdot 10^{-4}\) hPa.

The cold cathode sensors measure in a pressure range of \(1 \cdot 10^{-2}\) hPa to \(1 \cdot 10^{-8}\) hPa.

For an optimal adjustment to the customer-specific process they are available as a low-current version (IKT 010) and high-current version (IKT 011).

Wide measuring range

Minimized magnetic stray field

Comparison of conventional gauge and new sensor
The new sensors RPT 010 and IKT 010/IKT 011. Compact dimensions. Direct installation, no additional power supply. No special cable needed.

Dimensions (mm)

RPT 010

IKT 010 / IKT 011

DN 25 ISO-KF
## Technical data

<table>
<thead>
<tr>
<th></th>
<th>RPT 010</th>
<th>IKT 010</th>
<th>IKT 011</th>
<th>TIC 010</th>
</tr>
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<tbody>
<tr>
<td><strong>Method of measurement</strong></td>
<td>Piezo/Pirani</td>
<td>Cold cathode</td>
<td>Cold cathode</td>
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<tr>
<td><strong>Measurement range min.</strong></td>
<td>1 · 10⁻⁴ hPa</td>
<td>1 · 10⁻⁸ hPa</td>
<td>1 · 10⁻⁸ hPa</td>
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<tr>
<td><strong>Measurement range max.</strong></td>
<td>1200 hPa</td>
<td>1 · 10⁻³ hPa</td>
<td>1 · 10⁻³ hPa</td>
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<td><strong>Protection category</strong></td>
<td>IP 54</td>
<td>IP 40</td>
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<td><strong>Pressure max.</strong></td>
<td>2,000 hPa</td>
<td>10,000 hPa</td>
<td>10,000 hPa</td>
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<tr>
<td><strong>Accuracy (N₂):</strong></td>
<td>5 · 10⁻⁴ – 1 · 10⁻³ hPa: ± 50 %; 1 · 10⁻³ – 100 hPa: ± 15 %; 100 – 1200 hPa: ± 15 hPa</td>
<td>5 · 10⁻⁸ – 1 · 10⁻² hPa: ± 30 %</td>
<td>5 · 10⁻⁸ – 1 · 10⁻² hPa: ± 30 %</td>
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<tr>
<td><strong>Repeatability (N₂): % of measurement</strong></td>
<td>1 · 10⁻³ – 100 hPa: ± 3 %; 100 – 1200 hPa: ± 3 hPa</td>
<td>5 · 10⁻⁸ – 1 · 10⁻² hPa: ± 5 %</td>
<td>5 · 10⁻⁸ – 1 · 10⁻² hPa: ± 5 %</td>
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<tr>
<td><strong>Materials in contact with media</strong></td>
<td>Ceramic, nickel, Stainless steel, tungsten, silicon oxide, glass, araldite, solder</td>
<td>Stainless steel, glass, ceramic, nickel alloy</td>
<td>Stainless steel, glass, ceramic, nickel alloy</td>
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<td><strong>Temperature: Operating</strong></td>
<td>+5 – +60 °C</td>
<td>+5 – +55 °C</td>
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<td><strong>Temperature: Storage</strong></td>
<td>-40 – +65 °C</td>
<td>-40 – +70 °C</td>
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<td><strong>Weight</strong></td>
<td>&lt; 92 g</td>
<td>&lt; 280 g</td>
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## Order number

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<tr>
<th>Cable length</th>
<th>RPT 010</th>
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<td>35 cm</td>
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<td>150 cm</td>
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<td>Adapter</td>
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<td>PT R71 780 -T</td>
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PT R71 035
PT R72 050
PT R73 050
PT R71 100
PT R72 100
PT R73 100
PT R71 150
PT R72 150
PT R73 150
PT R70 000
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