The multi component analyser MCA 10 HWIR serves the continuous emission measurement of pollutants in flue gas (e.g. CO, NO, N\textsubscript{2}O, NO\textsubscript{x}, NH\textsubscript{3}, H\textsubscript{2}S, SO\textsubscript{2}, HF*) as system additionally TOC) and the measurement of CO\textsubscript{2}, H\textsubscript{2}O and O\textsubscript{2} as well as the continuous process control.

The device is suitability tested according to DIN EN 15267-3 and certified in compliance with QAL1 as well as MCERTS Performance Standards. As a part of the analyser system MCA 10 HWIR it is suitability tested and certified for systems after "TA Luft", 17th and 27th BImSchV according to DIN EN 15267-3.

**Application**

The MCA 10 HWIR is applicable all-purpose for measurement of emissions, raw gases or processes. As system in regulatory and operational emission measurement systems, amongst others, it serves the exhaust concentration control in combustion plants with different types of fuel, the thermal waste treatment, the combustion optimisation and the process management control.

**Application examples:**

- Power plants
- Waste incineration plants
- Refineries
- Cement industry
- Industrial exhaust air
- Paper mills
- Glass industry
- Chemical industry

**Function**

By the functional principle of the multi component analyser MCA 10 HWIR up to twelve infrared gas components can be detected simultaneously. As measuring methods bi-frequency measuring method and gas filter correlation are applied. Optionally, an oxygen measurement via zirconium dioxide cell is possible.

The analyser evaluates internally all specification-depending required concentrations with all necessary compensations and standardisations. By a connected PC the visualisation and operating with device-own user software is executed. The operating surface is designed for one-click operating via touch function.

Optionally, the additional connections at the device can be used for connection of external devices (e.g. for measurement of total organic carbon or mercury).
### Measuring ranges

<table>
<thead>
<tr>
<th>Component</th>
<th>Certification range</th>
<th>Measuring range 2</th>
<th>Measuring range 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>0...75 mg/m³</td>
<td>0...300 mg/m³</td>
<td>0...5000 mg/m³</td>
</tr>
<tr>
<td>CO₂</td>
<td>0...25 vol. %</td>
<td>0...50 vol. %</td>
<td>-</td>
</tr>
<tr>
<td>NO</td>
<td>0...200 mg/m³</td>
<td>0...400 mg/m³</td>
<td>0...3000 mg/m³</td>
</tr>
<tr>
<td>NO₂</td>
<td>0...50 mg/m³</td>
<td>0...500 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>N₂O</td>
<td>0...50 mg/m³</td>
<td>0...3000 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>NH₃</td>
<td>0...10 mg/m³</td>
<td>0...50 mg/m³</td>
<td>0...500 mg/m³</td>
</tr>
<tr>
<td>SO₂</td>
<td>0...75 mg/m³</td>
<td>0...300 mg/m³</td>
<td>0...2500 mg/m³</td>
</tr>
<tr>
<td>HCl</td>
<td>0...15 mg/m³</td>
<td>0...90 mg/m³</td>
<td>0...5000 mg/m³</td>
</tr>
<tr>
<td>HF*</td>
<td>-</td>
<td>0...20 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>H₂O</td>
<td>0...40 vol. %</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CH₄</td>
<td>0...50 mg/m³</td>
<td>0...500 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>TOC</td>
<td>0...15 mg/m³</td>
<td>0...30 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>O₂</td>
<td>0...25 vol. %</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Measuring methods

**Bi-frequency measuring method**

![Bi-frequency measuring method diagram]

**Gas filter correlation**

![Gas filter correlation diagram]

### Highlights of the device

- Modularly structured hot gas analyser system (without gas cooler)
- Continuous, extractive measurement of up to twelve infrared components
- Field-proven components, modern photometer technology
- Long operation times, high reliability
- Compact 19” insertion of the analyser → easy mounting
- Easy system design
- Pre-calibrated → immediately deployable
- Integrated control
- Integrated zero gas provision
- Self control (additional control of inlet temperature)
- Zero point drift control
- Remote diagnosis and system setting via Ethernet
- First-class price-performance ratio

### System design

![System design diagram]