Density, level measurement and point level detection in the reactor

Fluid Catalytic Cracking (FCC) is one of the most important conversion processes used in petroleum refineries. As with many other refining applications, the vessels in the reactor system need to be operated and controlled at their optimum levels, as this is critical for the process productivity. Maintaining the proper levels also ensures that the expensive catalyst is used at maximum efficiency, with no waste.

**POINTRAC 31**
- Radiation-based sensor for point level detection
- Accurate measuring results independent of process conditions
- Non-contact operation is unaffected by buildup
- External mounting does not interrupt the process

**FIBERTRAC 31**
- Radiation-based sensor for continuous level measurement
  - Lightweight construction eliminates need for cranes or special rigging for mounting
  - Long detector length minimizes the need for additional platform construction

**MINITRAC 31**
- Radiation-based sensor for density measurement
  - Compact and lightweight detector mounts easily
  - External mounting does not interrupt the process
  - Non-contact technology measures through vessel walls and obstructions
  - Simple and intuitive setup

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**Reliable**
Non-invasive measurement ensures highest plant availability

**Cost effective**
Lightweight design reduces mounting costs

**User friendly**
External mounting does not interrupt the process
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<tr>
<td>Measuring range - Distance</td>
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<td>Process temperature</td>
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<td>Materials, wetted parts</td>
<td>Accuracy</td>
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<td>No wetted material</td>
<td>± 0.5 %</td>
<td>No wetted material</td>
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<tr>
<td>Seal material</td>
<td>Density</td>
<td>Seal material</td>
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<td>no media contact</td>
<td>Density</td>
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<tr>
<td>Housing material</td>
<td>Materials, wetted parts</td>
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<tr>
<td>Aluminium</td>
<td>No wetted material</td>
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<td>Stainless steel (precision casting)</td>
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<td>Protection rating</td>
<td>Threaded connection</td>
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<tr>
<td>IP66/IP67</td>
<td>Mounting from outside via supplied mounting brackets</td>
<td>IP66/IP67</td>
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<tr>
<td>Output</td>
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<td>Output</td>
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<tr>
<td>Profibus PA</td>
<td>Seal material</td>
<td>Profibus PA</td>
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<tr>
<td>Foundation Fieldbus</td>
<td>no media contact</td>
<td>Foundation Fieldbus</td>
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<tr>
<td>8/16 mA/HART - four-wire</td>
<td>Housing material</td>
<td>4 … 20 mA/HART - four-wire</td>
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<td>Aluminium</td>
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<td>Stainless steel (precision casting)</td>
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<td>Ambient temperature</td>
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<tr>
<td>-40 ... 60 °C</td>
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<td>-40 ... 60 °C</td>
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</tbody>
</table>

**POINTAC 31**

- Measuring range: Distance
- Process temperature: -40 ... 60 °C
- Process pressure: -
- Materials, wetted parts: No wetted material
- Seal material: no media contact
- Housing material: Aluminium
  - Stainless steel (precision casting)
- Protection rating: IP66/IP67
- Output: Profibus PA, Foundation Fieldbus
  - 8/16 mA/HART - four-wire
- Ambient temperature: -40 ... 60 °C

**FIBERTRAC 31**

- Measuring range: Distance 7 m
- Process temperature: -
- Process pressure: -
- Accuracy: ± 0.5 %
- Materials, wetted parts: No wetted material
- Seal material: Density
- Housing material: Aluminium
  - Stainless steel (precision casting)
- Protection rating: IP66/IP67
- Output: Profibus PA, Foundation Fieldbus
  - 8/16 mA/HART - four-wire
- Ambient temperature: -40 ... 60 °C

**MINITRAC 31**

- Measuring range: Distance
- Process temperature: -40 ... 60 °C
- Process pressure: -
- Accuracy: 0.1 %
- Materials, wetted parts: No wetted material
- Seal material: Density
- Housing material: Aluminium
  - Stainless steel (precision casting)
- Protection rating: IP66/IP67
- Output: Profibus PA, Foundation Fieldbus
  - 4 … 20 mA/HART - four-wire
- Ambient temperature: -40 ... 60 °C