Specification sheet

FIBERTRAC 31

4 … 20 mA/HART - four-wire

Radiation-based sensor for continuous level and interface measurement

Application area

The FIBERTRAC 31 is a radiation-based sensor for continuous measurement of liquids and bulk solids. It is suitable for level and interface measurement under extreme process conditions, in aggressive products or products with critical properties. The FIBERTRAC 31 delivers precise measuring results even under the toughest application conditions.

Your benefit

• High plant availability through non-contact measurement
• Simple mounting on round and conical vessels thanks to flexible detector
• Cost savings through use of only one sensor for measuring ranges up to 7 m

Function

In radiation-based measurement, a Caesium-137 or Cobalt-60 isotope emits focussed gamma rays. A special sensor on the opposite side of the vessel receives this radiation. The scintillator of the sensor converts these gamma rays into signals, the number of which is detected and evaluated. Since gamma rays are attenuated when penetrating matter, the sensor is able to calculate the level, the limit level, the density and the mass flow rate from the intensity of the received radiation.

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>1 … 7 m (3.28 … 22.97 ft)</td>
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<tr>
<td>Repeatability</td>
<td>±0.5 % at -20 °C ... +50 °C (-4 °F ... +122 °F)</td>
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<tr>
<td>Ambient temperature</td>
<td>-20 °C ... +50 °C (-4 °F ... +122 °F)</td>
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<tr>
<td>Voltage supply</td>
<td>20 … 72 V DC; 20 … 253 V AC, 50/60 Hz</td>
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<tr>
<td>Max. power consumption</td>
<td>4 W; 6 VA</td>
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<tr>
<td>Analogue input</td>
<td>Input type: 4 … 20 mA passive Internal load: 250 Ω</td>
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<tr>
<td>Switching input</td>
<td>Input type: - Open Collector: 10 mA - Relay contact: 100 mA</td>
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<tr>
<td>Relay output</td>
<td>Switching voltage: min. 10 mV, max. 253 V AC, 253 V DC Switching current: min. 10 µA, max. 3 A AC, 1 A DC Breaking capacity: min. 50 mW, max. 750 VA AC, 40 W DC</td>
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<tr>
<td>Current output</td>
<td>Range: 4 … 20 mA/HART, active or passive Max. load: 500 Ω (300 Ω with intrinsically safe IS)</td>
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<tr>
<td>Switching output</td>
<td>Type of output: NPN transistor output (floating) Switching voltage: &lt; 55 V DC Load current: &lt; 400 mA Weight: max. 9.2 kg (20.3 lbs) + 1.22 kg/m (0.82 lbs/ft) SIL qualification: Optionally up to SIL2</td>
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<tr>
<td>Materials/Scintillator</td>
<td>The detector rod consists of galvanized steel with a Santoprene rubber coating. Polystyrene is used as scintillation material.</td>
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<tr>
<td>Housing versions</td>
<td>The housing is available as double chamber version of Aluminium or stainless steel in protection class IP 66/IP 67.</td>
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<tr>
<td>Electronics versions</td>
<td>The instruments are available in different electronics versions. Apart from the four-wire electronics with 4 … 20 mA/HART, two purely digital versions with Profinet PA and Foundation Fieldbus are possible.</td>
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<tr>
<td>Approvals</td>
<td>You can find detailed information on the existing approvals in the &quot;configurator&quot; on our homepage at <a href="http://www.vega.com/configurator">www.vega.com/configurator</a>.</td>
</tr>
</tbody>
</table>
**Adjustment**

The adjustment of the instrument is carried out via the optional display and adjustment module PLICSCOM or via a PC with the adjustment software PACTware and corresponding DTM. The Bluetooth version of display and adjustment module enables a wireless connection to standard adjustment units. This can be for example a PC with PACTware and Bluetooth USB adapter. Here, the adjustment is carried out via the adjustment software PACTware and the respective DTM.

Adjustment possibilities

Further adjustment options are possible via a HART Communicator as well as manufacturer-specific programs such as AMS™ or PDM.

**Electrical connection**

Two connection chambers are available. Depending on the instrument version, the signal output is either in the primary or in the secondary chamber.

**Primary terminal connections**

1. Voltage supply
2. Relay output
3. Signal output 4 ... 20 mA/HART active
4. Signal output 4 ... 20 mA/HART passive
5. Signal input 4 ... 20 mA
6. Switching input for NPN transistor
7. Switching input floating
8. Transistor output
9. Interface for sensor-sensor communication
10. Setting the bus address for sensor-sensor communication (MGC)

**Secondary terminal connections**

1. 4 ... 20 mA output option (only intrinsically safe instruments)
2. PLICSCOM connection
3. Connections for external indication (VEGADIS 61)
4. Ground connection

**Dimensions**

Dimensions FIBERTRAC 31

**Information**

You can find further information on the VEGA product line on our homepage [www.vega.com](http://www.vega.com).

In the download section under [www.vega.com](http://www.vega.com) you'll find free operating instructions, product information, brochures, approval documents, instrument drawings and much, much more.

**Instrument selection**

With the "Finder" at [www.vega.com](http://www.vega.com) and "VEGA Tools" you can select the most suitable measuring principle for your application.

You can find detailed information on the instrument versions in the "Configurator" at [www.vega.com](http://www.vega.com) and "VEGA Tools".

**Contact**

You can find the VEGA agency serving your area on our homepage [www.vega.com](http://www.vega.com).