SOLITRAC 31

4 … 20 mA/HART four-wire

Radiation-based sensor for continuous level and interface measurement

Area of application

The SOLITRAC 31 is a radiation-based sensor with PVT rod detector 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 SOLITRAC 31 is ideal for use in cylindircal vessels, reactors, autoclaves, separators and mixing vessels.

Advantages

- High plant availability through non-contact measurement
- Best measurement performance through PVT detector with maximum sensitivity
- Simple mounting through supplied accessory

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 so-called scintillator 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

Span	0.5 … 3 m (1.64 … 9.84 ft)
Reproducibility	±0.5 % at -40 °C … +60 °C (-40 °F … +140 °F)
Ambient, storage and transport temperature	-40 °C … +60 °C (-40 °F … +140 °F)Extended range available
Voltage supply	
Operating voltage	20 … 72 V DC; 20 … 253 V AC, 50/60 Hz
Max. power consumption	4 W; 6 VA
Analogue input	
Input type	4 … 20 mA passive
Internal load	250 Ω
Switching input	
Input type	
– Open Collector	10 mA
– Relay contact	100 mA
Relay output	
Turn-on 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
Current output	
Range	4 … 20 mA/HART, active or passive
Max. load	500 Ω (300 Ω with intrinsically safe IS)
Switching output	
Type of output	NPN transistor output (floating)
Turn-on voltage	< 55 V DC
Load current	< 400 mA
SIL rating	up to SIL2

Materials/Scintillator

The detector tube consists of stainless steel. Polyvinyltoluene (PVT) is used as scintillation material.

Housing versions

The housing is available as double chamber version of Aluminium or stainless steel in protection class IP 66/IP 67.

Electronics versions

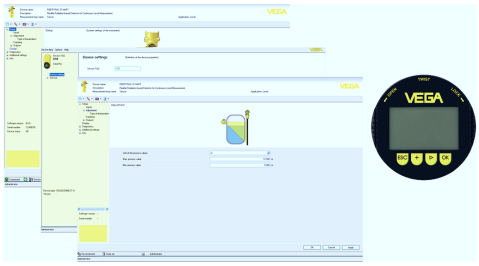
4 … 20 mA/HART is available as electronics version. Intrinsically safe outputs are optionally available.

Approvals

You can find detailed information on the existing approvals in the "*configurator*" on our homepage under www.vega.com/configurator.

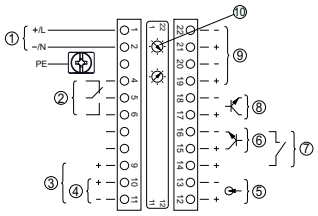
Operation

The adjustment of the instrument is carried out via the optional indicating and adjustment module PLICSCOM or via a PC with the adjustment software PACTware and respective DTM. Further adjustment options are available via HART communicator as well as manufacturer-specific programs such as AMS™ or PDM.



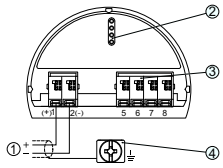
Electrical connection

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

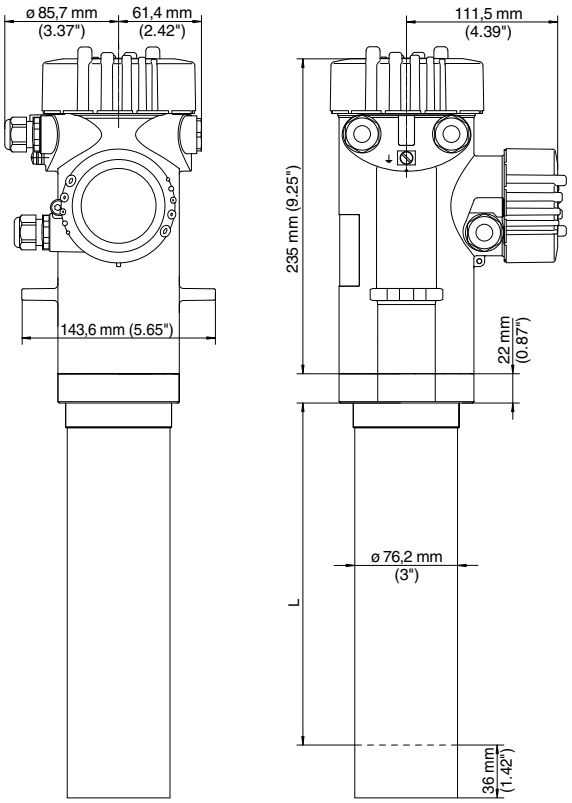
1 *Power supply*
2 *Relay output*
3 *4 … 20 mA active output (only explosion protected instruments)*
4 *4 … 20 mA passive output (only explosion protected instruments)*
5 *4 … 20 mA input*
6 *Switching input Open Collector*
7 *Switching input relay contact*
8 *Switching output (NPN transistor)*
9 *Multisensor communication bus*
10 *2 x address switches for multisensor systems*



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 SOLITRAC 31

Information

You can find further information about the VEGA product line on our homepage www.vega.com.
In the download section under www.vega.com/downloads you'll find free operating instructions, product information, brochures, approval documents, instrument drawings and much, much more.

Instrument selection

With the "*finder*" you can select the most suitable measuring principle for your application: www.vega.com/finder.
You can find detailed information on the instrument versions in the "*configurator*" on our homepage under www.vega.com/configurator.

Contact

You can find the VEGA agency serving your area on our homepage www.vega.com.

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