

LSG

GEN 2000® Electronics

Radiation-based Continuous Level Detector



Application Area

The LSG is well-suited for a wide variety of continuous level measurement in liquids and bulk solids. Typical applications are the measurement of liquids in vessels, reactors, or sumps. The most common industries for the LSG include:

- Chemical
- Refining
- Upstream Oil and Gas

Advantages

Recognizable benefits of the LSG include:

- Highly sensitive detector minimizes radioactive source activity
- Electronics permit a wide variety of setup and compensation options
- Adjustable mounting system simplifies installation

Function

The detector uses a highly-sensitive scintillator rod inside a stainless steel housing. This rod produces photons when exposed to gamma radiation. The number of photons produced represents the intensity of radiation striking the detector. A photomultiplier tube converts the scintillator's photon signal to an electrical signal. A gamma source is installed on the vessel opposite the detector. Level changes expose varying lengths of the scintillator to radiation. The detector's microprocessor-based transmitter produces a 4 ... 20 mA HART output proportional to vessel level when properly adjusted.

Technical Data

System Accuracy	Typically +/- 1% of span
Power Requirements	
- AC Non-heated	90 ... 250 VAC, 50 ... 60Hz, 15 VA
- AC Heated	115 or 2230 VAC, 50 ... 60 Hz, 25 VA
- DC Non-heated	20 ... 60 VDC (< 100 mV, 1 ... 1000Hz ripple), 15 VA
- DC Heated	24 VDC +/- 10%, 25 VA
- Wire Size	1.63 ... 0.64 mm (14 ... 22 AWG) per local electrical code
Ambient Conditions	
- Temperature	-20 ... +50 °C (-4 ... 122 °F) Extended temperature options available
- Humidity	0-95%, non-condensing
- Vibration	Tested to IEC 68-2-6, IEC 68-2-27, and IEC 68-2-36
Relay Output	
- User Configurable	Diagnostic, Process high/low alarm, X-Ray Interference
- Rating	6A at 240 VAC, or 6A at 24 VDC (SPDT Form C), or ¼ HP at 120 VAC
Auxiliary Inputs	
- Standard	Frequency input (0 to 100kHz)
- Optional	RS-485
Weight	10.98 kg + 0.0065 kg x length in mm (24 lbs. + 0.362 lbs. x length in inches)

Materials

Electronics Housing	Cast Aluminum ASTM A357
Housing Coating	Polyester powder coating (Standard) or PVC coating
Sensor	Polyvinyltoluene
Sensor Conduit	304 Stainless Steel

Housing Versions

The housing carries a NEMA 4X (IP 66) rating and features two ¾" NPT conduit entries. Options for ½" NPT or M20 conduit entry adapters are available.

Electronic Versions

The standard electronic version available for the LSG is 4 ... 20 mA HART. Optional electronic versions include frequency output and RS485 for inter-gauge communication.

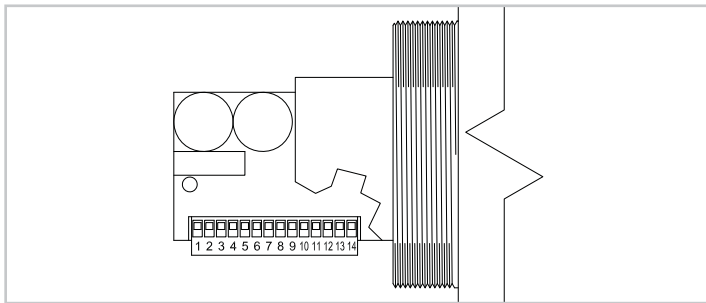
Approvals

CSA, FM, GOST-R	Class I, Div I, GR. A, B, C, D; Class II, Div I, GR. E, F, G T6 Ta= -20°C to +60°C or Class I, Zone I, GR. IIC T6 Ta= -20°C to +60°C
ATEX	II 2 G/D EExd IIC T6 Ta= -20°C to +60°C
Other Certifications	NEPSI (China), KTL (Korea), JIS (Japan) Consult VEGA for details
Note	Approvals for heated versions may vary. Consult factory.

Operation

The detector is adjusted using a PC with Ohmview configuration and calibration software via HART modem. Alternatively, a Rosemount 275 or 375 HART handheld communicator with pre-installed VEGA device description may be used.

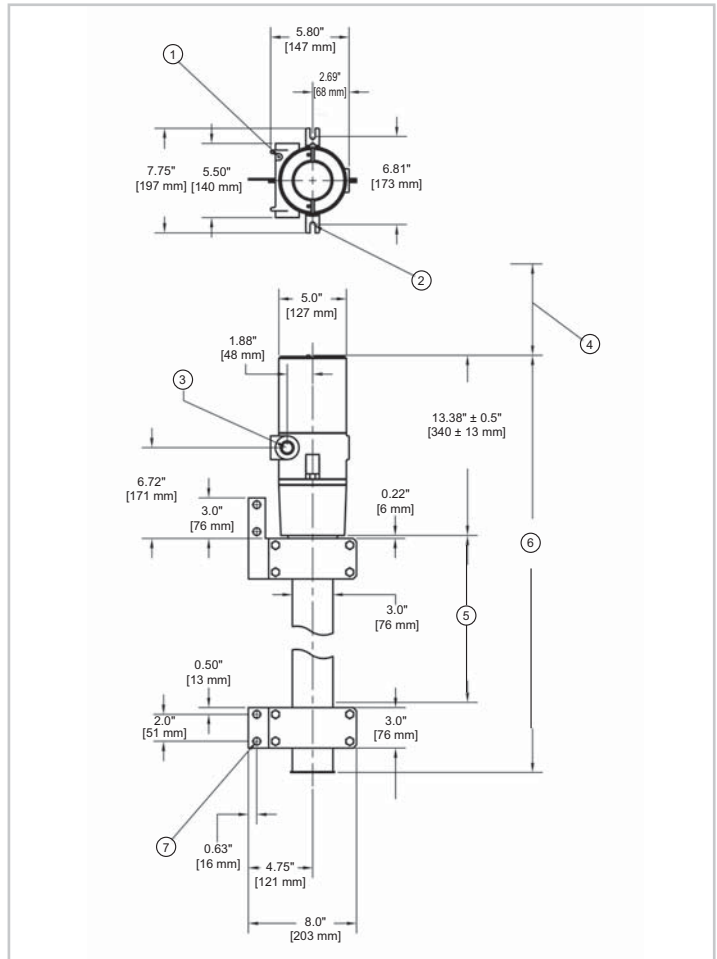
Electrical Connection



Terminals

- 1 Power in (L)
- 2 Power in (N)
- 3 Relay NO
- 4 Relay C
- 5 Relay NC
- 6 + Frequency
- 7 - Frequency
- 8 + 6V
- 9 COM
- 10 - 6V
- 11 + Auxiliary
- 12 - Auxiliary
- 13 + mA
- 14 - mA

Dimensions



Dimensions

- 1 External Ground Terminal
- 2 Use 8 mm (5/16") Mounting Hardware (2 places)
- 3 3/4" NPT (2 places)
- 4 Clearance for Servicing 10.0" preferred, 6.0" minimum
- 5 Active Length 152 to 3084 mm (6" to 120")
- 6 471 ± 25 mm Active Length, (18.56" ± 1" + Active Length)
- 7 14 mm (0.56") (4 places)

Information

You can find additional information about VEGA product offerings from our home page, www.vega-americas.com. Brochures, operating instructions, quick reference guides, specification sheets, and drawings are also available from the Downloads section of our homepage.

Device Selection

The Downloads section of our home page, www.vega-americas.com provides application data sheets so you can select the measuring principle or product for your particular application.

Contact

Please call 1-513-272-0131, Monday through Friday, 8:00 A.M.-5:00 P.M., EST (Eastern Standard Time) if you have any questions. For emergencies after hours, call the number above and follow the voice mail instructions.

All information is subject to change without notice.