DSG
GEN 2000® Electronics

Radiation-based Density Measurement

**Application Area**
The DSG is well-suited for continuous density measurement of vapors, liquids or slurries in pipes and vessels. The most common industries for the DSG include:
- Mining
- Power
- Pulp and Paper
- Upstream Oil and Gas
- Refining

**Advantages**
Recognizable benefits of the DSG include:
- Non-contact measurement
- May be installed on live process with no piping modifications
- Unaffected by fluid viscosity, deflection, or refractive properties
- Gauge firmware is compatible with a wide range of density units for calibration flexibility

**Function**
The detector uses a compact scintillator inside its housing. This scintillator 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 pipe or vessel opposite the detector. Density changes vary radiation intensity at the scintillator. The detector’s microprocessor-based transmitter produces a 4 … 20 mA HART output proportional to density when properly adjusted.

**Technical Data**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>System Accuracy</td>
<td>Typically +/- 1% of span</td>
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</table>
| Power Requirements | AC Non-heated: 90 ... 250 VAC, 50 ... 60Hz, 15 VA  
DC Non-heated: 20 ... 60 VDC (< 100 mV, 1 ... 1000Hz ripple), 15 VA  
DC Heated: 24 VDC +/- 10%, 25 VA  
Wire Size: 14 to 22 AWG (1.63 to 0.64 mm) per local electrical code |
| Ambient Conditions | Temperature: -4°F/-20°C to 122°F/+50°C  
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  
User Rating: 6A at 240 VAC, or 6A 24 VDC (SPDT Form C), or ¼ HP at 120 VAC |
| Auxiliary Inputs | Standard: Frequency input (0 to 100kHz)  
Optional: RS-485 |
| Weight | 15 lbs. (6.8 kg) |

**Materials**

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
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<tbody>
<tr>
<td>Electronics Housing</td>
<td>Cast Aluminum ASTM A357</td>
</tr>
<tr>
<td>Housing Coating</td>
<td>Polyester powder coating or PVC coating</td>
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<tr>
<td>Sensor</td>
<td>Sodium Iodide Crystal</td>
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**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 electronic versions available for the DSG is 4 ... 20 mA HART. Optional electronic versions include Foundation Fieldbus or Frequency output for SmartPro.

**Approvals**
The DSG is suitable for use in hazardous areas and is approved according to CSA, GOST-R, FM, and ATEX certifications. The gauge also fulfills NEPSI, KTL, and JIS requirements.
**Specifications Sheet**

### Dimensions

![Diagram of Dimensions]

1. **External Ground Terminal**
2. **Use 5/16” [8 mm] Mounting Hardware (2 places)**
3. **Sensor Electronics**
4. **Clearance for Servicing 10.0” [254 mm] preferred, 6.0” [152 mm] minimum**
5. **3/4” NPT (2 places)**
6. **Sensing Area**

### Information

You can find additional information about Ohmart/VEGA product offerings from our home page, www.ohmartvega.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.ohmartvega.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, 8:00A.M.-5:00P.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.*