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
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)
- 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 RTD Input, Analog Input, RS-485

Weight
6.8 kg (15 lbs.)

Materials
Electronics Housing Cast Aluminum ASTM A357
Housing Coating Polyester powder coating (Standard) or PVC coating
Sensor Sodium Iodide Crystal

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 frequency output and for SmartPro and RS-485 for inter-gauge communication.
Specifications Sheet

Dimensions

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

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.

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

All information is subject to change without notice.