

SmartScan

Single Well and Dual Well

Interface Profiler



Application Area

The SmartScan provides non-contact interface level measurement and density profile. It can detect a single interface or report the position of multiple interface layers. The most common industries for the Smart Scan include:

- Petrochemical
- Chemical
- Offshore
- Refining

Advantages

Recognizable benefits of the SmartScan include:

- Measure changes in specific gravity over entire range of the vessel
- Track multiple interfaces
- Pinpoint emulsion layers
- Identify mixing and separation of materials

Function

The SmartScan uses a compact scintillator inside a probe. 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 in the same probe (S3910) or in a second probe (S3920). The SmartScan's microprocessor-controlled motor drive system raises and lowers the probe(s) through the process media in a drywell(s). Process density affects the amount of radiation reflected back into the probe (S3910) or transmitted from the source probe to the detector probe (S3920). A remote microprocessor-based transmitter produces two 4 ... 20 mA outputs proportional to density and elevation when properly adjusted.

Technical Data

System Accuracy

- Position Resolution (Repeatability) 2.5 mm (0.1 in)
- Density Resolution S3910/S3911: 0.05 SpG or 5% of Span, whichever greater at 5 seconds response time
S3920/S3921: 0.005 SpG or 1% of Span, whichever greater at 5 seconds response time

Radiation Source

- S3910/S3911 Cesium-137: 0.37 GBq (10 mCi)
- S3920/S3921 Cesium-137: 1.85 GBq (50 mCi)

Measurement Range

- S3910/S3911 45.7 m (150 ft.)
- S3920/S3921 24.4 m (80 ft.)

Max. Scan Speed

76 mm per second (3 inches per second)

Power Requirements

- Voltage 110 VAC or 230 VAC; +/- 10%; single phase, 50 ... 60 Hz
- Power Standard: 250 Watts, Heated: 500 Watts
- Voltage Remote Electronics 90 ... 270 VAC, 50 ... 60 Hz
- Power Remote Electronics 20 VA max

Ambient Conditions

- Humidity 0-95%, non-condensing
- Vibration Less than 0.5 g @ 300 Hz

Temperature

- Standard/CSA Motor Drive
-20 ... 48 °C (-4 ... 118 °F)
Heated: -50° C ... 48° C (-58° F ... 118° F)
- ATEX Remote Electronics
-20 ... 48 °C (-4 ... 118 °F)

Remote Electronics
0 ... 50 °C (32 ... 122 °F)

Process Temperature

5 ... 48 °C (41 ... 118 °F)

Approximate Weight

381 ... 635 kg (840 lbs. ... 1400 lbs.) Weights vary due to model and drywell pipe size/schedule

Materials

Housing Carbon steel with polyester coating

Mounting Legs Carbon steel with polyester coating

Sensor Sodium Iodide Scintillator with 316 stainless steel housing

Housing Versions

Housing and mounting legs are available in 316 stainless steel.

Electronic Versions

The remote electronics provides one 4 ... 20 mA signal representing sensor position and one 4 ... 20 mA signal representing density. Additional functions may be programmed

Approvals

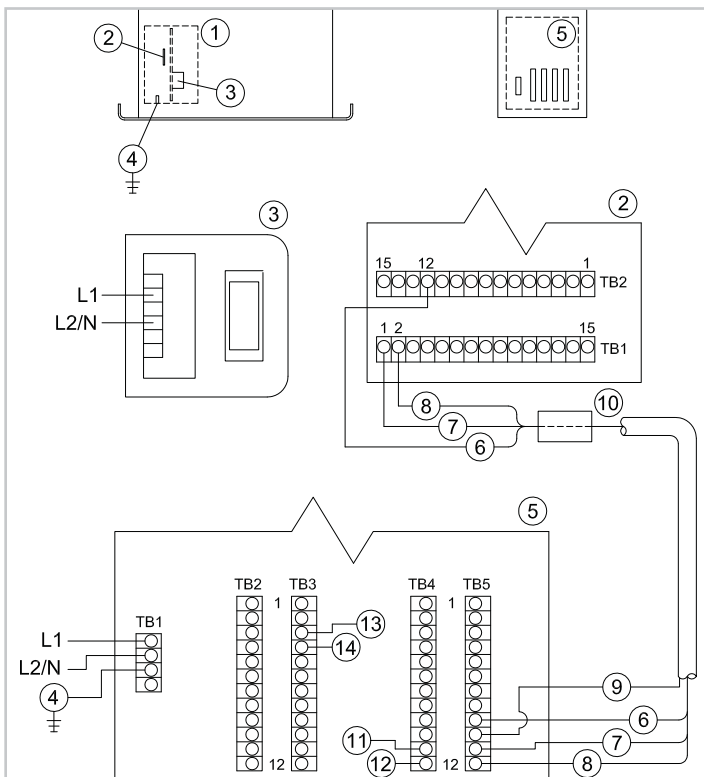
CSA Class I, Div. 1, GR, C, D, or Class I, Zone 1 Ex d IIB T3

ATEX II 2 G EEx d (ia) c IIB T3

Operation

The SmartScan system is adjusted using the remote electronics module. No additional software is required. In addition, the SmartScan unit includes a handheld controller that may be used to manually control the motor drive.

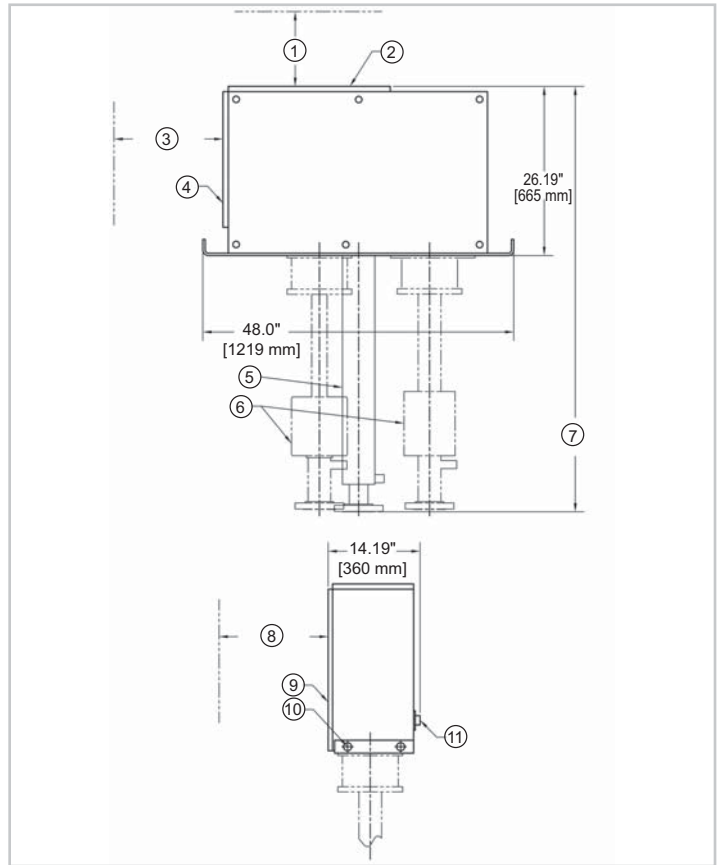
Electrical Connection



Connections

- 1 Explosion Proof Electronics Housing
- 2 SmartScan Interconnect Board
- 3 Power Connection with Circuit Breaker
- 4 Ground
- 5 SmartPro Interconnect Board
- 6 RS-485 Gound (Black)
- 7 RS-485 TX/RX- (White)
- 8 RS-485 TX/RX+ (Red)
- 9 RS-485 Shield
- 10 Ferrite Bead (Included)
- 11 4 ... 20 mA Output 1 (+)
- 12 4 ... 20 mA Output 1 (-)
- 13 4 ... 20 mA Output 2 (+)
- 14 4 ... 20 mA Output 2 (-)

Dimensions



Dimensions

- 1 800 mm (30") Clearance Recommended
- 2 Top Cover
- 3 500 mm (18") Clearance Recommended
- 4 Side Cover
- 5 Single Leg (S-3911) Design
- 6 Dual Leg (S-3922) Design
- 7 1670 ± 19 mm (65.75 ± 0.75") Varies with Model
- 8 500 mm (18") Clearance Recommended
- 9 Front Cover
- 10 Lifting Holes (4)
- 11 3/4" NPT or M20 (2 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.