

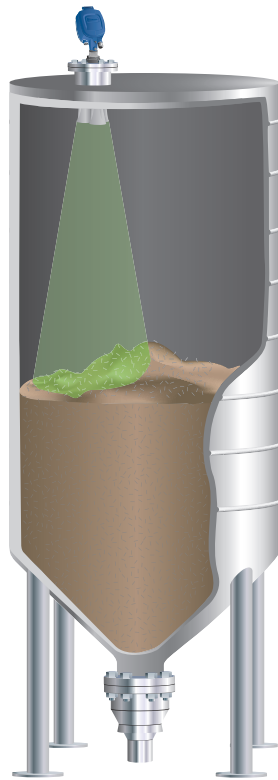
Rosemount 5708 Series

3D Solids Scanner



- Make informed decisions about inventory control with unique, dust-penetrating technology for measuring bulk solids and powders accurately
- Take the guesswork out of measuring the level, volume, and mass of materials with 3D visualization of actual distribution of product within the container
- Operate with practically any material stored in a variety of silos, bins, stockpiles, and warehouses
- Avoid maintenance issues with long term, reliable performance and self-cleaning capabilities

Overview



Single scanner connection

Measurement principle

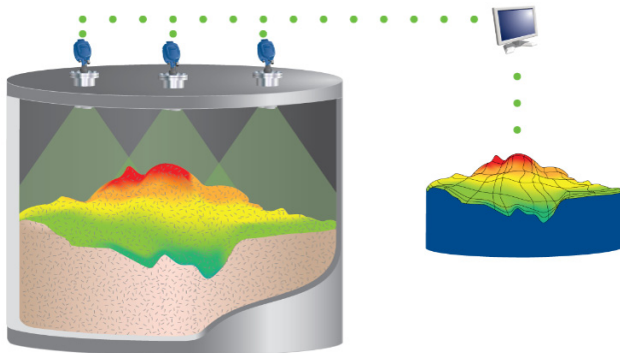
The Rosemount 5708 Series 3D Solids Scanners use a multiple point measurement technology.

The Rosemount 5708L, 5708V, and 5708S deliver accurate volume and level measurement of bulk solids and powders – regardless of material type, product characteristics, storage silo type, size, or harshness of the storage environment.

The device includes an integral array of three antennas that generate unique dust-penetrating low frequency acoustic waves and receive echoes from the contents. Using these antennas, the unit measures not only the time/distance of each echo, but also its direction.

Collecting multiple echoes from different directions and distances enables the scanner to accurately calculate the volume of stored material. It also enables the 3DVision software to generate the 3D visualization of the material.

The acoustic waves combined with self-cleaning capabilities prevent material from adhering to the internal workings of the antenna array, ensuring long-term reliable performance with very low maintenance requirements, regardless of harsh dusty conditions.



Multi scanner connection

Contents

Overview	2	Specifications - Accessories	10
Application Examples	3	Installation Requirements	12
Ordering Information	4	Product Certifications	13
Specifications	6	Dimensional Drawings	16

Application Examples

The Rosemount 5708 Series 3D Solids Scanners enable efficient process measurement and true inventory management of bulk solid materials used in a broad range of industrial applications.

The devices can measure practically any kind of solid material, stored in a variety of containers, including large open bins, bulk solid storage rooms, stockpiles and warehouses, loads that randomly form over time inside silos, and many other challenging applications that were not possible previously. The scanner can measure ranges of up to 230 ft (70 m).

Rosemount 5708L

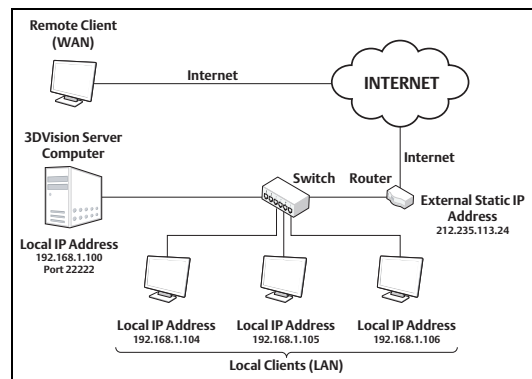
- Highly accurate readings of level
- Provides the average level of the stored contents and average distance from the scanner to the surface of the material

Rosemount 5708V

- Highly accurate readings of level and volume
- Provides minimum and maximum level/distance measurements
- Appropriate for vessels up to 40 ft (12 m) in diameter

Rosemount 5708S

- Highly accurate readings of level and volume
- Monitors inventory in large vessels
- Provides minimum and maximum level/distance measurements
- Unlimited vessel diameter when using a system of multiple scanners
- Generates 3D visualization of the stored contents on a remote computer



3D Vision computer topology

Ordering Information



The Rosemount 5708 Series 3D Solids Scanners incorporate best-in-class solutions for previously inaccessible process measurement applications in many manufacturing sectors. Characteristics include:

- Multiple point measurement
- Dust-penetrating, acoustic-based low-frequency technology
- Non-contacting measurement
- Unaffected by material type
- Long measurement range
- Low power consumption
- Remote configuration

Additional information

Specifications: see “[Functional Specifications](#)” on page 6

Certifications: see “[Product Certifications](#)” on page 13

Dimensional drawings: see “[Dimensional Drawings](#)” on page 16

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See [page 8](#) for more information on Material Selection.

Table 1. Rosemount 5708 Series 3D Solids Scanner Ordering Information

The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

Model	Product description	
5708	3D Solids Scanner	★
Model type		
LNN	Average level measurement	★
VCN	Volume measurement up to 16.4 ft (5 m) in diameter	★
VEN	Volume measurement up to 39.4 ft (12 m) in diameter	★
SEN	Volume measurement without visualization. Multi scanner system capable	★
SEV	Volume measurement with visualization. Multi scanner system capable	★
Housing material		
A	Polyurethane covered aluminum	★
Signal output		
B	4-20 mA and RS-485 with Modbus ^{®(1)}	★
Conduit/cable threads		
1	1/2 in. NPT adapter (qty = 2) supplied separately in the box	★
2	M20 x 1.5 thread	★
Hazardous locations certifications		
NA	No hazardous locations certifications ⁽²⁾	★
I1	ATEX intrinsic safety	★
I3	NEPSI intrinsic safety	★
I5	cFMus intrinsic safety	★

Table 1. Rosemount 5708 Series 3D Solids Scanner Ordering Information

The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

Process operating temperature		
S	Standard temperature - 40... +185 °F (- 40... +85 °C)	★
H	High temperature - 40... +356 °F (- 40... +180 °C) (No hazardous locations certifications available.)	
Material of antenna construction		
P	Polyurethane painted aluminum antenna	★
H	High temperature painted aluminum antenna	
O-ring material		
B	Nitrile butadiene for standard temperature	★
S	Silicone for high temperature	
Options		
Mounting plate		
8AA	8 in. (200 mm) - Matches ANSI 8", Class 150 connection; painted carbon steel	
TAA	10 in. (250 mm) - Matches ANSI 10", Class 150 connection; painted carbon steel	
8DA	200 - Matches DN 200, PN 16 connection; painted carbon steel	
TDA	250 - Matches DN 250, PN 16 connection; painted carbon steel	
Head mounting extenders/adapters		
A010	10 degrees angle adapter with extender cable for standard temperature only	
A020	20 degrees angle adapter with extender cable for standard temperature only	
E030	12 in. (300 mm) antenna cable extender for standard temperature only	
E050	20 in. (500 mm) antenna cable extender for standard temperature only	
N030	12 in. (300 mm) neck extension with extender cable for standard temperature only	
N050	20 in. (500 mm) neck extension with extender cable for standard temperature only	
X030	Hi-Temp antenna supplied with 12 in. (300 mm) extended cable ⁽³⁾ (Not field retrofit-able)	
X050	Hi-Temp antenna supplied with 20 in. (500 mm) extended cable ⁽³⁾ (Not field retrofit-able)	
X100	Hi-Temp antenna supplied with 39.4 in. (1 m) extended cable ⁽³⁾ (Not field retrofit-able)	
Example model string: 5708-SEV-A-B-2-I1-S-P-B means 3D scanner for volume measurement with visualization, ATEX intrinsic safety, with standard operation temperature antenna and O-ring.		

(1) The scanner supports communication with the Modbus RTU and provides the holding registers only. It is not used for configuration.

(2) Use when ordering high temperature antenna or for non-hazardous locations.

(3) Optional when ordering high temperature antenna.

Accessories

Table 2. Accessories Ordering Information

The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

Part number	Part description	
05708-4000-0001	3D Solids System Controller	★
05708-5000-0001	3D Solids Scanner LinkPro	★

Specifications

Functional Specifications

General	
Field of application	Bulk solids
Measurement principle	Low frequency acoustic waves
Dead Band	19.6 in. (0.5 m) from top of antenna assembly
Measurement range	Up to 230 ft. (70 m)
Minimum bulk density	12.5 lb/ft ³ (200 kg/m ³)
Process fitting	Thread, angle adapter
Emitting frequency	2.3 kHz to 7 kHz
Power supply - 4-wire instrument (active) 4 - 20 mA	
Supply voltage	18 - 32 Vdc
Power consumption	Max. 1.5 W @ 24 Vdc
Output	
Output signal	<p>4-20 mA and Modbus⁽¹⁾</p> <p>PLC / DCS / Display 4-20 mA is a 2 wire, non-loop powered, active device connection</p> <p>24 Vdc power supply</p> <p>3DVision Server</p>
Resolution	10 μ A
Current limitation	22 mA
Maximum load (Active output)	400 Ω

Communication																													
Type	Physical: RS-485 Protocol: Modbus ⁽¹⁾																												
Process pressure and temperature																													
Vessel pressure	-0.29... 43.5 PSI (-20 mBar... 3 Bar)																												
Process temperature measured on the process fitting	Standard temperature: -40... +185 F° (-40... +85 °C) High temperature: -40... +356 °F (-40... +180 °C)																												
Ambient, storage, and transport temperature	-40... +185 °F (-40... +85 °C)																												
Electrical protective measures																													
Ingress protection	IP66, IP67 according to IEC 60529																												
Measurement characteristics																													
Beam angle	Rosemount 5708L: 15 degrees Rosemount 5708V: 30-70 degrees Rosemount 5708S: 70 degrees																												
Display and configuration																													
Output units	Level and distance: feet (ft), meters (m) Volume: cubic meters (m ³), cubic feet (ft ³), liters, gallons, bushels Mass: tons (US short), tons (metric), pounds (lb) Bulk density: ton/m ³ , lbs/ft ³ Temperature: Fahrenheit (°F), Celsius (°C)																												
Output variables	<table border="1"> <thead> <tr> <th></th> <th>5708L</th> <th>5708V</th> <th>5708S</th> </tr> </thead> <tbody> <tr> <td>Level/distance</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Minimum and maximum level/distance</td> <td>N/A</td> <td>✓⁽²⁾</td> <td>✓</td> </tr> <tr> <td>Volume</td> <td>N/A</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Mass</td> <td>N/A</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>SNR</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Temperature at antenna assembly</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </tbody> </table>		5708L	5708V	5708S	Level/distance	✓	✓	✓	Minimum and maximum level/distance	N/A	✓ ⁽²⁾	✓	Volume	N/A	✓	✓	Mass	N/A	✓	✓	SNR	✓	✓	✓	Temperature at antenna assembly	✓	✓	✓
	5708L	5708V	5708S																										
Level/distance	✓	✓	✓																										
Minimum and maximum level/distance	N/A	✓ ⁽²⁾	✓																										
Volume	N/A	✓	✓																										
Mass	N/A	✓	✓																										
SNR	✓	✓	✓																										
Temperature at antenna assembly	✓	✓	✓																										

(1) The scanner supports communication with the Modbus RTU and provides the holding registers only.

(2) Valid for the Rosemount 5708VEN model.

Performance Specifications

General	
Reference conditions	Temperature 77 °F ±9 °F (25 °C ±5 °C) Relative humidity 25 - 75%
Reference accuracy ⁽¹⁾	Distance ± 0.6 in. (15 mm) at reference conditions Directional ± 2 degrees
Temperature gradient	0.5% per 10.8 °F (6 °C) gradient
Radio approvals	FCC 47 CFR part 15:2007, sub-part B, class A ^{(2) (3)}

(1) Volume accuracy is dependent upon the position of devices in relation to the product surface. It can be estimated for every installation based upon mounting position, height, and width.

(2) The device may not cause harmful interference.

(3) The device must accept any interference received, including interference that may cause undesired operation.

Physical Specifications



Material selection	
Material selection	Emerson provides a variety of Rosemount product with various product options and configurations including materials of construction that can be expected to perform well in a wide range of applications. The Rosemount product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser's sole responsibility to make a careful analysis of all process parameters (such as all chemical components, temperature, pressure, flow rate, abrasives, contaminants, etc.), when specifying product, materials, options and components for the particular application. Emerson Process Management is not in a position to evaluate or guarantee the compatibility of the process material or other process parameters with the product, options, configuration or materials of construction selected.
Housing and enclosure	
Housing	Painted aluminum die casting
Antenna	Painted aluminum die casting
Display window in housing	Polycarbonate/PC-ABS
Electrical connection	M20 for cable glands or conduit entries Recommended output cabling is low resistance, twisted shielded pairs, 20-24 AWG
Process fitting	Requires mounting plate
Weight	12.35 lb (5.6 kg)
Vessel connection	
Vessel connection	Mounting plate ⁽¹⁾
Minimum distance from filling points	24 in. (600 mm)
Minimum distance from side wall	24 in. (600 mm)
Mounting plate dimensions	According to DIN PN16 or ANSI Class 150 size and holes pattern

Electromechanical data	
Cable entry/plug	1 x M20x1.5 (cable - Ø 8... 12 mm) 1 x plug M20x1.5 2 x optional thread adaptors M20, 1/2 in. NPT
Display panel	
LCD display	4 lines x 20 characters
Adjustment elements	4 keys (ESC, +, -, E)

(1) Mounting plates are available to accommodate 4 to 10 in. (100 to 250 mm) openings. For openings smaller than 8 in. (200 mm), there are antenna extensions available to allow the antenna to be installed from the inside of the vessel below the nozzle.

Specifications - Accessories

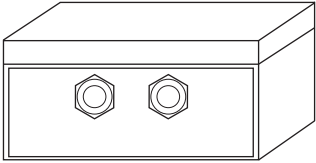
3D Solids System Controller

General	
Construction	Aluminum chassis with fanless design
Power requirements	ATX power mode DC to DC power design on-board, support from 9 ~ 36 Vdc Optional 19 V, 65 W power adapter
Data storage	1 x 2.5" SATA HDD drive bay 1x external CF socket
Physical specifications	
Dimensions (H x W x D)	19.7 x 11.8 x 5.9 in. (500 x 300 x 150 mm)  Front view  Back view
Weight	26.9 lbs (12.2 kg)
Operating temperature	
Ambient with air flow	23 to 122 °F (-5 to 50 °C) indoor installation
Storage temperature	-4 to 176 °F (-20 to 80 °C)
Relative humidity	10% to 93% (non-condensing)
Power supply	
Voltage	20-28 Vdc
Power consumption	65 W
I/O Interface	
Front	2 x USB2.0 ports
Rear	9 ~ 36 Vdc input 1 x DB15 VGA port 1 x speaker out 2 x USB2.0 ports 2 x RS-485 with auto-flow control: isolation protection on COM1 and COM2

Note

When the Rosemount 5708 Series 3D Solids Scanner is connected to the 3D Solids System Controller, the connection is active, not passive. Therefore, the device is the active module and the controller should be the passive module.

3D Solids Scanner LinkPro

Physical specifications	
Housing enclosure	Polystyrene
Weight	3.13 lb (1.42 kg)
Dimensions (L x W x H)	10 x 7 x 3.5 in. (255 x 180 x 90 mm) - not including cable glands 
Protection	IP66
Voltage supply	
Operating voltage	10 Vdc to 30 Vdc (nominal 24 Vdc)
Average power consumption (idle mode)	1.5 W
Peak power consumption (transmit mode)	18 W
Power source limitation	2 A
Ambient conditions	
Temperature	-22 to +158 °F (-30 to +70 °C)
CE Conformity	
EMC	Emission EN 301 489-7 V1.3.1:2005 standard harmonized under R&TTE Directive 1995/5/EC and EMC Directive 2004/108/EC Article 6(2)
Safety	EN 60950-1:06; EN 60950-22:06
Radio	
Spurious emissions	EN 301 511 V9.0.2
Approvals	
FCC Approval	FCC 47 CFR part:15:2007, subpart B, class A
Electromechanical data	
Cable entry/plug	2 x cable gland M20x1.5 (cable ø 8 mm to 13 mm)

Installation Requirements

3DVision Server

Processor	Intel™ Dual Core and above
RAM	At least 1 GB
Hard disk	At least 1 GB free space per year (2.8 MB per day for log files)
Graphic card resolution	Minimum 1024 x 768
Interfaces	Ethernet NIC card, serial port, USB port
Operating systems	Windows™ XP (SP2) or Windows 7

3DVision Client

Processor	Intel Dual Core and above
RAM	At least 1 GB
Hard disk	At least 1 GB free space on HD
Graphic card resolution	Minimum 1280 x 1024
Graphic card memory	1 GB
Interfaces	Ethernet NIC card, CD-ROM drive or USB port
Operating systems	Windows XP (SP2) or Windows 7
Framework	Microsoft® .NET framework 3.5 SP1

Product Certifications

European Directive Information

A copy of the EC Declaration of Conformity can be found at the end of the Rosemount 5708 Series Quick Start Guide (document number 00825-0100-4570).

The most recent revision of the EC Declaration of Conformity can be found at www.rosemount.com.

Ordinary Location Certification

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

North America

I5 US and Canada Intrinsic Safety (IS)

Certificate: 3052166

Standards:

FM Class 3600 – 2011, FM Class 3610 – 2010, FM Class 3810 – 2005, ANSI/IEC 60529 – 2004, CSA Std. C22.2. No. 25-09, CSA Std. C22.2. No. 157-92, CSA Std. C22.2 No. 1010 – 04, CAN/CSA E61241-1-1 - 2010

Markings:

IS CL I, II DIV 1, GP C, D, E, F, G when connected per Rosemount drawing 05708-1900;
T4 (-40 °C ≤ T_a ≤ +85 °C); IP 6X

For electronic modules with serial number 836xxxxxxx:

Supplies - Terminals J5.1 (+), J5.2 (GND)

U_i = 24 V, I_i = 125 mA, P_i = 3 W, C_i = 8 nF, L_i = 0

Interfaces - Terminals J5.4 (4 - 20 mA signal),

J5.3 (GND common with J5.2):

U_i = 10.5 V, I_i = 106 mA, P_i = 1.1 W, C_i = 8 nF, L_i = 0 μH

RS-485 - Terminals J6.3 (P), J6.4 (N):

U_i = 6.51 V, I_i = 651 mA, P_i = 1.06 W, C_i = 0 nF, L_i = 0 μH

Approval valid for HART® and Modbus options.

Special Conditions for Safe Use (X):

1. The 3D Solids Scanner is only for use with electronics unit marked with serial number 836xxxxxx, as these units are for use with the 3D Solids ambient temperature range.
2. Part of the enclosure is constructed of plastic. To prevent the risk of electrostatic sparking, the plastic surface should be cleaned with a damp cloth.

Europe



I1 ATEX Intrinsic Safety

Certificate: BVS14ATEXE060X

Standards:

EN60079-0:2012, EN60079-11:2012

Markings:

 II 2 G Ex ib [ia] IIB T4 Gb (-40°C ≤ T_a ≤ +85°C)
 II 1/2 D Ex ib [ia] IIIC T110°C Da/Db
(-40°C ≤ T_a ≤ +85°C)

See "Safety Instructions - BVS 14 ATEX E 060 X" on page 14.

Table 3. Interface parameters

	HART	RS-485
Voltage U _i / U _o	10.5 V	6.51 V
Current I _i / I _o	106 mA	2 x 651 mA
Power P _i / P _o	1.1 W	2 x 1.06 W
Capacitance C _i	8 nF	0 nF
Inductance L _i	~0 mH	0 mH
Capacitance C _o	16 μF	2 x 285 μF
Inductance L _o	80 μH	83.9 μH
L _o / R _o	17.77 μH/Ω	67.12 μH/Ω
Characteristics	Trapezoid	Linear
Terminals	J5.3 (4-20 mA), J5.4 (GND)	J6.3 (+), J6.4 (RTN)

Table 4. Supply Circuit Parameters

	Input	Output
Voltage U _i / U _o	24 V	24 V
Current I _i	Same values as the interconnected IS power supply	Same values as the interconnected IS power supply
Power P _i / P _o	3 W	3 W
Capacitance C _i / C _o	8 nF	Same values of the interconnected IS power supply reduced by C _i
Inductance L _i	~0 mH	Same values of the interconnected IS power supply reduced by L _i
L _o / R _o	N/A	Same values of the interconnected IS power supply reduced by L _i
Characteristics	N/A	Same values as the interconnected IS power supply
Terminals	J5.1 (+), J5.2 (GND)	J6.1 (+), J6.2 (GND)

Special Conditions for Safe Use (X):

- Dust application:
The installation of the 3D Solids Scanner or of the Antenna Unit of models providing head separation in the wall to areas requiring EPL Da (apparatus category 1D) equipment shall provide a degree of protection IP6X according to EN60529 and shall be carried out in such a way, that all metallic parts are integrated in the local equipotential bonding.
Manufacturer's technical information related to use of the 3D Solids Scanner in contact with aggressive/corrosive media and to avoid any risk of mechanical impact shall be observed.

International**China****I3** China Intrinsic Safety

Certificate: GYJ14.1362X

Standards:

GB3836.1-2010, GB3836.4-2010,
IEC61241-0 - 2004, GB12476.4-2010

Markings:

Ex ib/ia IIB Gb T4
Ex ibD/iaD 21/20 T110°C**Special Conditions for Safe Use (X):**

- The installation of the product shall provide a degree of protection IP6X according to GB4208-2008, and in such a way that all metallic parts are integrated in the local equipotential bonding.

**Safety Instructions -
BVS 14 ATEX E 060 X****Area of applicability**

These safety instructions apply to the Rosemount 5708 Series 3D Solids Scanners according to the EC type approval BVS 14 ATEX E 060 X (certification number on the type label).

If the Rosemount 5708 Series 3D Solids Scanners are installed and operated in hazardous areas, the general Ex mounting instructions and these safety instructions must be observed.

These safety instructions are part of the Rosemount 5708 Series Reference Manual (document number 00809-0100-4570).

General information

The volume measuring instrument 3D Solids Scanner is based on acoustic technology and is used to measure the volume of product using low frequency, acoustic waves in the 3-10 kHz range. The electronics uses the running time of the signals reflected by the product surface to calculate the volume of the product.

The Rosemount 5708 Series Solids Scanner is suitable for use in hazardous atmospheres for applications requiring instruments of category 2G or 1/2D. If the 3D Solids Scanners are installed and operated in hazardous areas, the general Ex mounting instructions and these safety instructions must be observed.

If the 3D Solids Scanners are installed and operated in hazardous areas, the general Ex installation regulations EN 60079-14 as well as these safety instructions must be observed.

The operating instructions as well as the valid Ex mounting regulations and standards for electrical equipment must be observed.

The installation of explosion-endangered systems and explosion-protected systems must always be carried out by qualified personnel.

Technical data**Intrinsically safe supplied models**

In ignition protection type intrinsic safety Ex ia IIB Only for connection to a certified intrinsically safe circuit. Maximum values:

- Power supply:
 $U_i = 24 \text{ Vdc}$; $I_i = 125 \text{ mA}$; $P_i = 3 \text{ W}$;
Terminals J12.1 (+), J12.2 (GND) **or** Terminals J5.1 (+), J5.3 (GND)

**Do not use J13.1, J13.2 or Do not use J6.1, J6.2
(24 Vdc output voltage)**

- 4-20 mA/HART Communication circuit (ports 3, 4 - 2 right ports in the left green connector on the back side of the electronic card)
 $U_i = 10.5 \text{ Vdc}$; $I_i = 106 \text{ mA}$; $P_i = 1.1 \text{ W}$;
- RS-485 / Modbus RTU Communication circuit (ports 3, 4 - 2 right ports in the right green connector on the back side of the electronic card)
 $U_i = 5 \text{ Vdc}$; $I_i = 0.5 \text{ A}$; $P_i = 625 \text{ mW}$;
- Sonic radiation
Radiated power (average power density) $\leq 0.1 \text{ W/cm}^2$
Pulse radiation $\leq 2 \text{ mJ/cm}^2$
Frequency range: $3.5 \text{ kHz} \leq f \leq 10 \text{ kHz}$

Application conditions

Ambient temperature range: $-40\text{ }^{\circ}\text{C} \leq T_a \leq +85\text{ }^{\circ}\text{C}$

The pressure range must be $-20\text{ mBar} \leq P_i \leq 3\text{ Bar}$
($-0.29\text{ PSI} \leq P_i \leq 43.5\text{ PSI}$)

Opening the housing

The electronics compartment may be opened for configuration via the key pads. If the instrument is operated with opened cover, or its keys pressed, make sure that no hazardous atmosphere exists.

The cover has to be screwed tightly after connection and adjustment.

Impact and friction sparks

The 3D Solids Scanner must be mounted in such a way that sparks from impact and friction between the aluminum body and other material will not occur.

Grounding

The 3D Solids Scanner has to be grounded electrostatically e.g. via the ground terminal both internally using the power cable ground and externally using the plant's earth potential equalization.

Cable entries

A tight and tension-free cable entry must be provided. The outer diameter of the connection cable must be adapted to the cable gland. The gland pressure screw has to be tightened carefully.

Unused openings for cable entries have to be sealed tightly.

The cable wires must be at least 22 AWG and cable O.D. 8-13 mm.

Selection of cables and wires

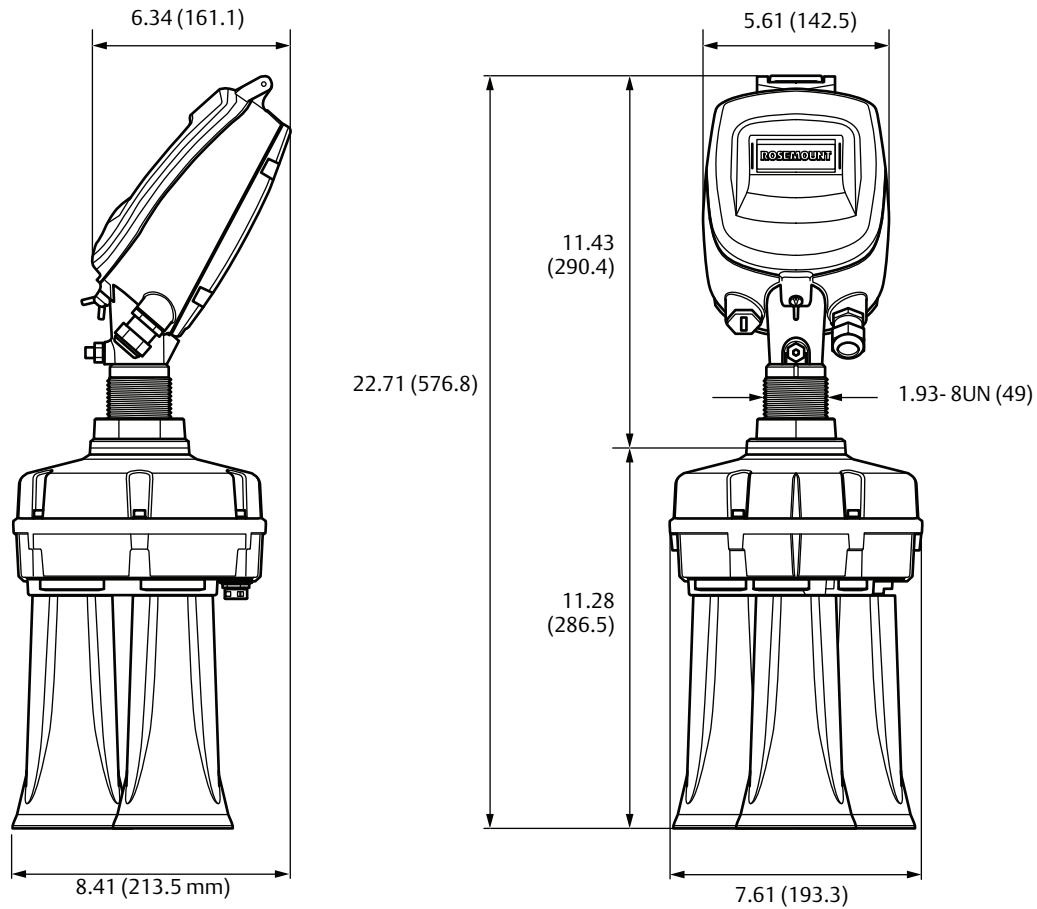
Make sure that the cables and wires used meet the operating temperature requirements and are suitable for these temperatures.

Special considerations

- The instrument must be installed and operated in a way that ensures there is no danger of ignition from electrostatic charge.
Presence of gas, dust and air as a hybrid mixture is not within the scope of the ATEX certificate.
- The seal between lower part of the housing and cover must be correctly in place and in faultless condition. The cover must be tightened carefully.
- Unused openings for cable entries have to be sealed tightly.
- Mount the 3D Solids Scanner in a way that adequately ensures that the scanner will not touch the vessel wall due to the movements of other vessel installations and flow conditions in the vessel.

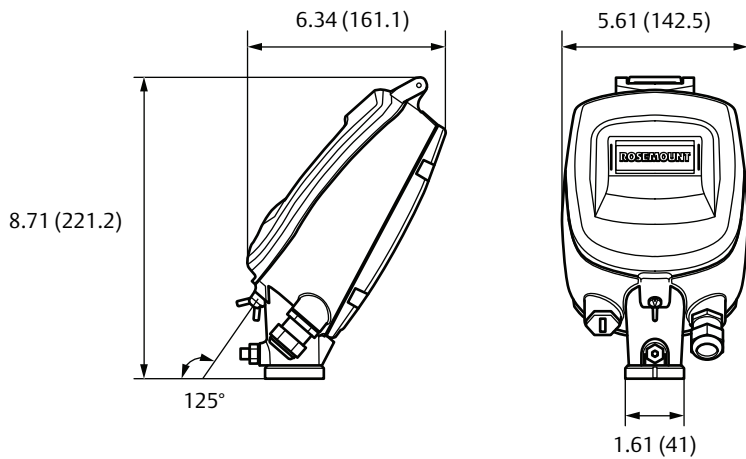
Dimensional Drawings

Figure 1. 3D Solids Scanner with Antenna Assembly



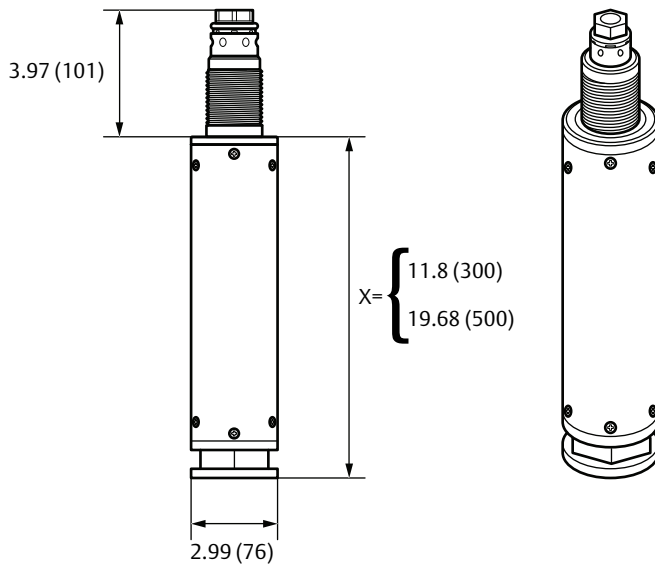
Dimensions are in inches (millimeters).

Figure 2. 3D Solids Scanner Housing



Dimensions are in inches (millimeters).

Figure 3. Accessories - Neck Extension



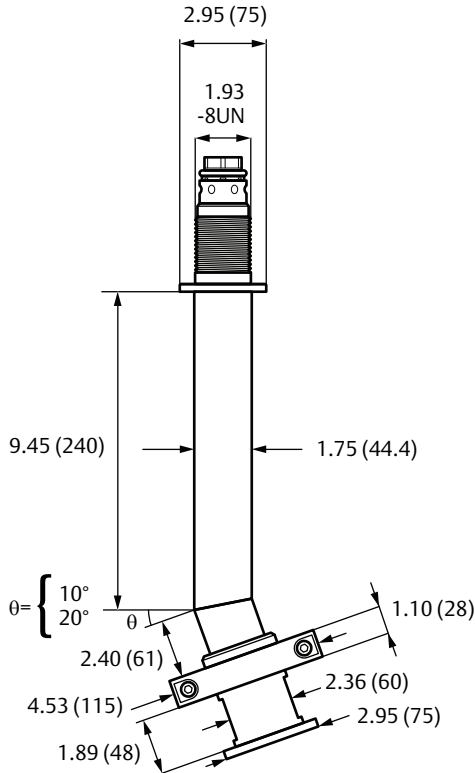
Note

X represents the available options.

The neck extension is available for standard temperature only.

Dimensions are in inches (millimeters).

Figure 4. Accessories - Angle Adapter



Note

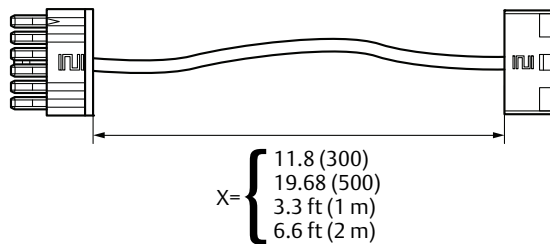
The angle adapter is available for standard temperature only.

The minimum required opening for the angle adapter is 7.61 in. (193.3 mm).

Dimensions are in inches (millimeters).

Figure 5. Accessories - cable extension

Cable extension

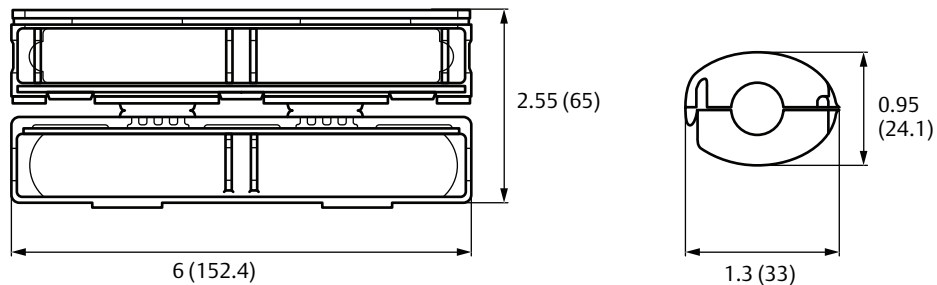


Note

X represents the available options.

The cable extension and connector are available for standard temperature only.

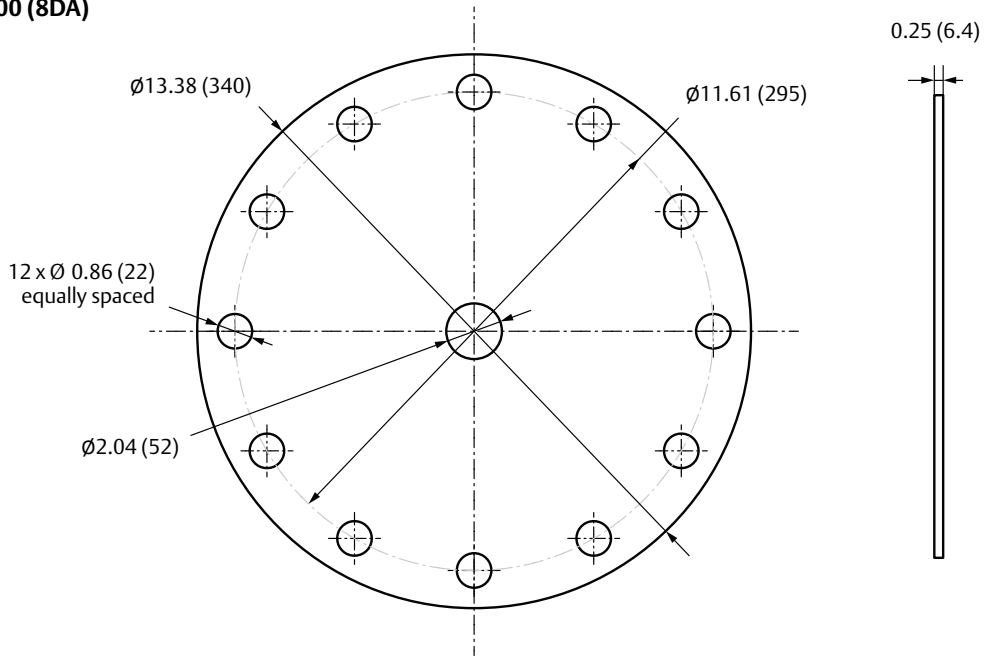
Cable extension connector



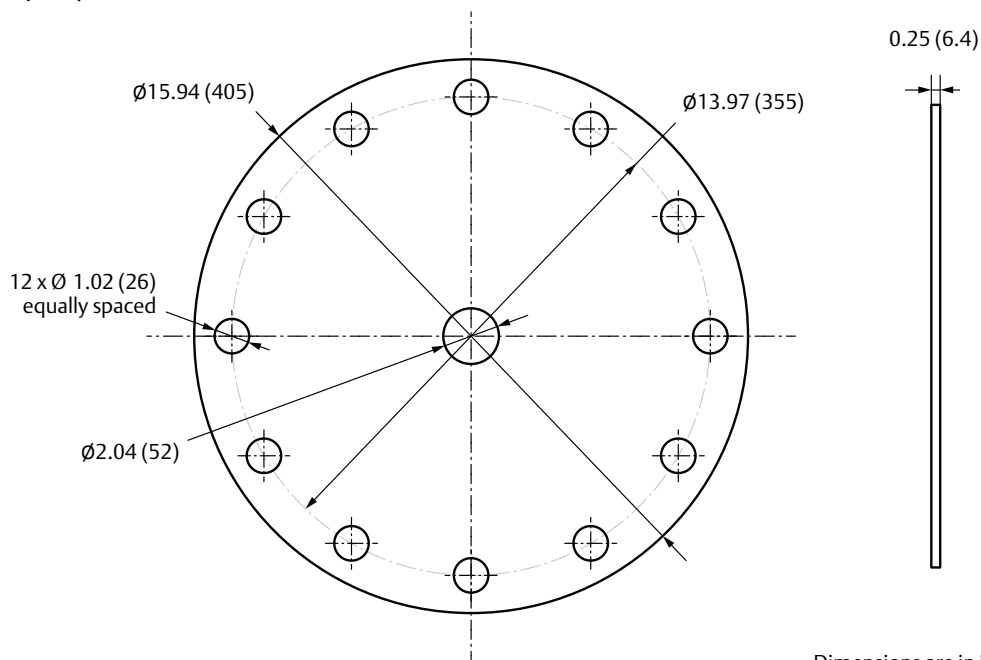
Dimensions are in inches (millimeters).

Figure 6. Accessories - Mounting Plates

DN200 (8DA)



DN250 (TDA)



Dimensions are in inches (millimeters).

Note

Several different types of mounting plates are available. For detailed information, see the Rosemount 5708 Series Reference Manual (document number 00809-0100-4570).

Mounting plates are not pressure rated.

**Emerson Process Management
Rosemount Measurement**
8200 Market Boulevard
Chanhassen MN 55317 USA
Tel (USA) 1 800 999 9307
Tel (International) +1 952 906 8888
Fax +1 952 906 8889

Emerson FZE
P.O. Box 17033
Jebel Ali Free Zone
Dubai UAE
Tel +971 4 811 8100
Fax +971 4 886 5465

**Emerson Process Management
Latin America**
1300 Concord Terrace, Suite 400
Sunrise Florida 33323 USA
Tel +1 954 846 5030

Emerson Process Management
Blegistrasse 23
P.O. Box 1046
CH 6341 Baar
Switzerland
Tel +41 (0) 41 768 6111
Fax + 41 (0) 41 768 6300

**Emerson Process Management
Asia Pacific Private Limited**
1 Pandan Crescent
Singapore 128461
Tel +65 6777 8211
Fax +65 6777 0947
Enquiries@AP.EmersonProcess.com

Emerson Beijing Instrument Co
No. 6 North Street, Hepingli
Dongcheng District, Beijing
100013
China
Tel +8610 6428 2233
Fax +8610 64287640

Standard Terms and Conditions of Sale can be found at www.rosemount.com/terms_of_sale
The Emerson logo is a trade mark and service mark of Emerson Electric Co.
Rosemount and the Rosemount logotype are registered trademarks of Rosemount Inc.
HART and WirelessHART are registered trademarks of the HART Communication Foundation.
All other marks are the property of their respective owners.
© 2014 Rosemount Inc. All rights reserved.

00813-0100-4570, Rev AB, 09/14