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PRODUCT DATASHEET

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Product Data Sheet
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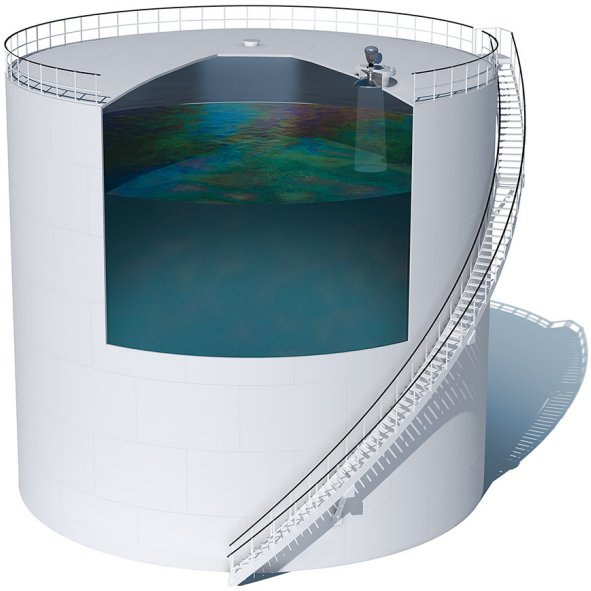
Rosemount™ 5900C Radar Level Gauge

Reliable non-contact measurement for tank gauging systems

Get the highest reliability for monitoring bulk liquids

- Certified IEC 61508 SIL 2 capable
- Measures level with ±3 mm (0.12 in.) instrument accuracy
- Bus powered for convenient and safe 2-wire installation
- Full functionality, wired or wireless
- No need to take non-pressurized tanks out of service during installation

Improve plant efficiency and safety



The highest reliability for your bulk liquid storage tanks

The Rosemount 5900C level gauge with its non-contact radar measurement method ensures state-of-the-art reliability.

- No moving parts
- Less maintenance
- Reliable loss control data

The Rosemount 5900C is normally combined with multiple spot temperature sensors for API standard net volume calculations. It measures level in all bulk storage tank types and products, ranging from liquefied gases, light products, heavy fuel oil, and bitumen.

More efficient operations

- Fewer interruptions and slow-downs
- Most Rosemount 5900C antenna types are installed with the tanks in operation
- Emerson™ wireless solution can drastically reduce installation cost and provide access to remote tanks
- The Rosemount 5900C is an integrated part of complete tank gauging solutions from Emerson, who has supplied tank gauging for more than 100 000 bulk liquid storage tanks

Taking overfill safety to a higher level

- Certified SIL 2 capable safety according to IEC 61508
- Enables API 2350 compliant solutions

Contents

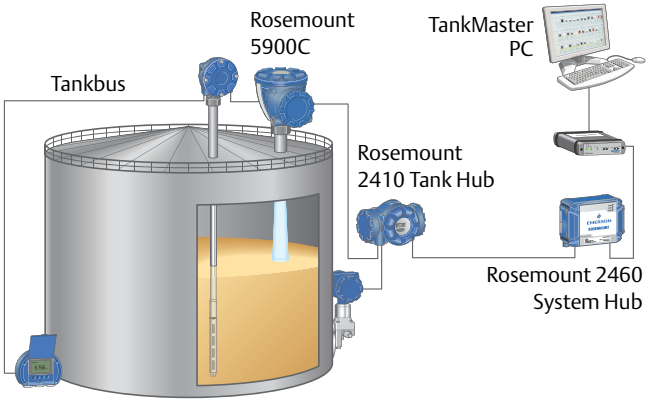
Get complete level and inventory information

The Rosemount 5900C level gauge is normally integrated into a complete tank gauging system including average temperature measurement for net volume calculation. Data can be displayed remotely, on a host computer or the TankMaster™ inventory software package. In most cases measurement data is transmitted to the control room via TRL2 Modbus® communication from the tank hub. As an alternative, data can be transmitted via FOUNDATION™ Fieldbus communication directly from the gauge to the control room, without using the tank hub.

The Rosemount 5900C is optimized for medium accuracy applications. For highest precision, we recommend the Rosemount 5900S Radar Level Gauge.

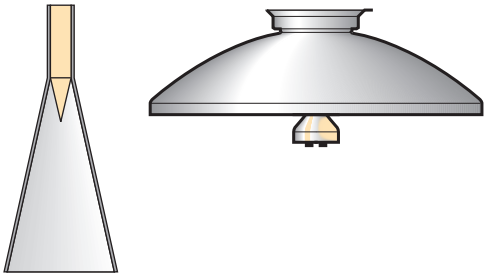
With Rosemount's proprietary emulation technology, tank gauging devices can be cost-effectively added to an existing system using the previous vendor's communication protocol.

Using an Emerson wireless solution is an alternative that saves installation cost and enables full tank gauging functionality for remote tanks where long distance field wiring is obsolete.



Drip-off means no condensation

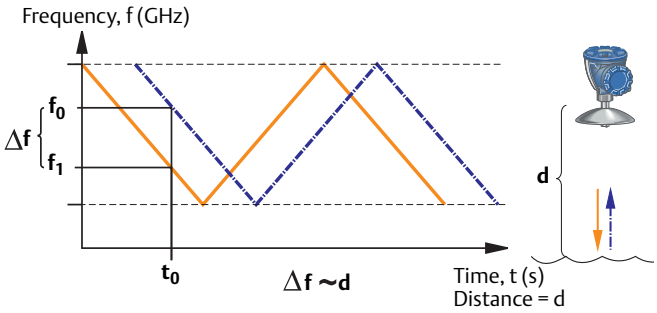
Since the antenna has an inclined polished PTFE surface where microwaves are emitted, it is less susceptible to condensed water or product. Condensation drops do not coat the active antenna part, so the radar signal remains strong, resulting in higher accuracy and better reliability.



The FMCW method

The FMCW method (Frequency Modulated Continuous Wave) means that the transmitted radar signal has a linear frequency variation. The reflection from the liquid surface has a slightly different frequency compared with the signal transmitted from the antenna when the reflection is received.

The difference in frequency is directly proportional to the distance to the liquid surface and to the liquid level. This technology enables a very accurate and stable measured value.



The FMCW method is based on a radar sweep with varying frequency.

Ordering information

Rosemount 5900C Radar Level Gauge with parabolic antenna

Rosemount 5900C with parabolic antenna is a non-contact radar level gauge. The parabolic antenna is the preferred antenna type for installation on tanks with fixed roofs without a still-pipe. It can be installed on existing manhole covers and close to the tank wall due to the narrow radar beam and the high signal-to-noise ratio. In certain cases, it can be used on tanks with floating roofs to measure the distance down to a target plate on the floating roof.

- Measures all products ranging from light products to heavy fuel oil and asphalt
- Tolerant to product build-up and condensation
- Certified SIL 2 capable according to IEC 61508
- Communicates via a 2-wire, intrinsically safe Tankbus for easy and safe installation
- Installation normally with tank in service

Table 1. Rosemount 5900C Radar Level Gauge with Parabolic Antenna Ordering Information

Model	Product description
5900C	Radar Level Gauge
Performance class	
3	±3 mm (0.12 in.) instrument accuracy
Safety certification (SIS)	
S[1]	Certified IEC 61508 SIL 2 capable
F	None. Ready for upgrade to Safety Certification (SIS)
0	None
Redundancy	
1	None. Single radar level gauge electronics
Tankbus: power and communication	
F	Bus powered 2-wire FOUNDATION Fieldbus (IEC 61158)
Hazardous location certification	
I1	ATEX Intrinsic Safety
I2	INMETRO Intrinsic Safety (Brazil)
I4[2]	Japan Intrinsic Safety
I5	FM-US Intrinsic Safety
I6	FM-Canada Intrinsic Safety
I7	IECEx Intrinsic Safety
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety
IP	KC Intrinsic Safety (South Korea)

Table 1. Rosemount 5900C Radar Level Gauge with Parabolic Antenna Ordering Information

IW	CCOE/PESO Intrinsic Safety (India)
NA	None
Custody transfer type approval	
0	None
Level measurement method	
1	10 GHz FMCW radar technology
2	10 GHz FMCW radar technology for the US market
Housing	
A	Standard enclosure, polyurethane-coated aluminum, IP 66/67
Cable/conduit connections	
1	½ - 14 NPT, female thread (1 plug included)
2	M20 x 1.5 adapters, female thread (2 adapters and 1 plug included)
G	Metal cable glands (½ - 14 NPT). Minimum temperature -20 °C (-4 °F). ATEX/IECEx Exe approved (2 glands and 1 plug included)
E	eurofast® male connector (1 plug included)
M	minifast® male connector (1 plug included)
Antenna	
1P	Parabolic antenna
Antenna size	
F	20 in./DN 500, Ø=440 mm (17.3 in.)
Antenna material	
S	SST AISI 316L/EN 1.4436
Tank seal	
PF	PTFE with FEP fluoropolymer O-ring
Tank connection	
WE	Welded installation
CL	Clamped/Threaded installation
Antenna options	
0	None
V[(3)]	Proof test verification reflector

Table 1. Rosemount 5900C Radar Level Gauge with Parabolic Antenna Ordering Information

Options (include with selected model number)

Safety certificate	
QT[4]	IEC 61508 certificate and FMEDA-data
Calibration certificate	
Q4	Calibration certificate (printed copy)
Material traceability certificate	
Q8	Antenna material traceability certification per EN 10204 3.1 (printed copy)
Overfill protection approval	
U1[5]	TÜV/DIBt WHG approval for overfill protection
U2	SVTI approval for overfill protection (Switzerland)
Tag plate	
ST	Engraved SST tag plate
Extended warranty	
WR3	3-year limited warranty
WR5	5-year limited warranty
Typical model number: 5900C 3 S 1 F I5 0 2 A 1 1P F S PF WE 0 Q4	

1. Requires Rosemount 2410 Tank Hub with either Analog output 4-20 mA or Relay output code 1 or 2.
2. Not available with Cable entry/Conduit connections code E or M.
3. Not available with Options code U1.
4. Requires Safety certification (SIS) code S.
5. Requires one or more relay outputs in the Rosemount 2410 Tank Hub.

Rosemount 5900C Radar Level Gauge with cone antenna

Rosemount 5900C with cone antenna is a non-contact radar level gauge. It is designed for easy installation on fixed-roof tanks with smaller nozzles.

- Communicates via a 2-wire, intrinsically safe Tankbus for easy and safe installation
- Installation normally with tank in service
- Certified SIL 2 capable according to IEC 61508
- Measures on a variety of products except asphalt or similar for which the parabolic antenna is recommended

Table 2. Rosemount 5900C Radar Level Gauge with Cone Antenna Ordering Information

Model	Product description
5900C	Radar Level Gauge
Performance class	
3	±3 mm (0.12 in.) instrument accuracy
Safety certification (SIS)	
S[(1)]	Certified IEC 61508 SIL 2 capable
F	None. Ready for upgrade to Safety Certification (SIS)
0	None
Redundancy	
1	None. Single radar level gauge electronics
Tankbus: power and communication	
F	Bus powered 2-wire FOUNDATION Fieldbus (IEC 61158)
Hazardous location certification	
I1	ATEX Intrinsic Safety
I2	INMETRO Intrinsic Safety (Brazil)
I4[(2)]	Japan Intrinsic Safety
I5	FM-US Intrinsic Safety
I6	FM-Canada Intrinsic Safety
I7	IECEx Intrinsic Safety
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety
IP	KC Intrinsic Safety (South Korea)
IW	CCOE/PESO Intrinsic Safety (India)
NA	None

Table 2. Rosemount 5900C Radar Level Gauge with Cone Antenna Ordering Information

Custody transfer type approval	
0	None
Level measurement method	
1	10 GHz FMCW radar technology
2	10 GHz FMCW radar technology for the US market
Housing	
A	Standard enclosure, polyurethane-coated aluminum, IP 66/67
Cable/conduit connections	
1	½ - 14 NPT, female thread (1 plug included)
2	M20 x 1.5 adapters, female thread (2 adapters and 1 plug included)
G	Metal cable glands (½ - 14 NPT). Minimum temperature -20 °C (-4 °F). ATEX/IECEx Exe approved (2 glands and 1 plug included)
E	eurofast male connector (1 plug included)
M	minifast male connector (1 plug included)
Antenna	
1C	Cone antenna
Antenna size	
4	4 in. /DN 100 Ø=93 mm (3.7 in.)
6[(3)]	6 in./DN 150 Ø=141 mm (5.5 in.)
8[(3)]	8 in./DN 200 Ø=189 mm (7.4 in.)
X	Customer specific, consult factory
Antenna material	
S	SST AISI 316L/EN 1.4436
X	Customer specific, consult factory
Tank seal	
PV	PTFE with Viton® fluoroelastomer O-rings
PK	PTFE with Kalrez® perfluoroelastomer O-rings
QV	Quartz with Viton fluoroelastomer O-rings
QK	Quartz with Kalrez perfluoroelastomer O-rings
Tank connection	
ANSI Hole Pattern (SST AISI 316L) - flat face[(4)]	
6T	6 in. Class 150
8T	8 in. Class 150

Table 2. Rosemount 5900C Radar Level Gauge with Cone Antenna Ordering Information

EN hole pattern (SST EN 1.4404) - flat face[4]	
KT	DN 150 PN16
MT	DN 200 PN10
ANSI flanges (SST AISI 316L) - raised face	
4A	4 in. Class 150
4B	4 in. Class 300
6A	6 in. Class 150
8A	8 in. Class 150
EN flanges (SST EN 1.4404) - flat face	
JA	DN 100 PN16
JB	DN 100 PN40
KA	DN 150 PN16
LA	DN 200 PN16
Other	
00	None
XX	Customer specific, consult factory
Antenna options	
0	None
1[5]	Extended cone antenna, total length 500 mm (20 in.)
X	Customer specific, consult factory

Options (include with selected model number)

Safety certificate	
QT[6]	IEC 61508 certificate and FMEDA-data
Calibration certificate	
Q4	Calibration certificate (printed copy)
Material traceability certificate	
Q8	Antenna material traceability certification per EN 10204 3.1 (printed copy)
Overfill protection approval	
U1[7]	TÜV/DIBt WHG approval for overfill protection
U2	SVTI approval for overfill protection (Switzerland)
Tag plate	
ST	Engraved SST tag plate

Table 2. Rosemount 5900C Radar Level Gauge with Cone Antenna Ordering Information

Extended warranty	
WR3	3-year limited warranty
WR5	5-year limited warranty
Typical model number: 5900C 3 S 1 F I5 0 2 A G 1C 8 S PV 8A 0 ST	

1. Requires Rosemount 2410 Tank Hub with either Analog output 4-20 mA or Relay output code 1 or 2.
2. Not available with Cable entry/Conduit connections code E or M.
3. Only for free propagation installations.
4. Thin flange for non-pressurized applications. Max pressure 0,2 bar (2.9 psi).
5. Requires Antenna size code 4 or 6.
6. Requires Safety certification (SIS) code S.
7. Requires one or more relay outputs in the Rosemount 2410 Tank Hub.

Rosemount 5900C Radar Level Gauge with still-pipe array antenna

The Rosemount 5900C with array antenna is a non-contact radar level gauge for still-pipe measurement. It is available in two versions, fixed and hinged-hatch. Typical applications are crude oil tanks with floating roofs and gasoline/product tanks with or without inner floating roofs.

- Suitable for crude oil, gasoline, or similar products
- Certified SIL 2 capable according to IEC 61508
- Tolerant against rust and product deposits inside the pipe
- Communicates via a 2-wire, intrinsically safe Tankbus for easy and safe installation
- Installation normally with tank in service
- Hinged-hatch version enables easier product sampling and hand-dips

Table 3. Rosemount 5900C Radar Level Gauge with Still-Pipe Array Antenna Ordering Information

Model	Product description
5900C	Radar Level Gauge
Performance class	
3	±3 mm (0.12 in.) instrument accuracy
Safety certification (SIS)	
S[(1)]	Certified IEC 61508 SIL 2 capable
F	None. Ready for upgrade to Safety Certification (SIS)
0	None
Redundancy	
1	None. Single radar level gauge electronics
Tankbus: power and communication	
F	Bus powered 2-wire FOUNDATION Fieldbus (IEC 61158)
Hazardous location certification	
I1	ATEX Intrinsic Safety
I2	INMETRO Intrinsic Safety (Brazil)
I4[(2)]	Japan Intrinsic Safety
I5	FM-US Intrinsic Safety
I6	FM-Canada Intrinsic Safety
I7	IECEx Intrinsic Safety
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety
IP	KC Intrinsic Safety (South Korea)
IW	CCOE/PESO Intrinsic Safety (India)
NA	None

Table 3. Rosemount 5900C Radar Level Gauge with Still-Pipe Array Antenna Ordering Information

Custody transfer type approval	
0	None
Level measurement method	
1	10 GHz FMCW radar technology
2	10 GHz FMCW radar technology for the US market
Housing	
A	Standard enclosure, polyurethane-coated aluminum, IP 66/67
Cable/conduit connections	
1	½ - 14 NPT, female thread (1 plug included)
2	M20 x 1.5 adapters, female thread (2 adapters and 1 plug included)
G	Metal cable glands (½ - 14 NPT). Minimum temperature -20 °C (-4 °F). ATEX/IECEx Exe approved (2 glands and 1 plug included)
E	eurofast male connector (1 plug included)
M	minifast male connector (1 plug included)
Antenna	
1A	Still-pipe array antenna
Antenna size	
5	5 in./DN 125, Ø=120 mm (4.7 in.)
6	6 in./DN 150, Ø=145 mm (5.7 in.)
8	8 in./DN 200, Ø=189 mm (7.4 in.)
A	10 in./DN 250, Ø=243 mm (9.6 in.)
B	12 in./DN 300, Ø=293 mm (11.5 in.)
Antenna material	
S	SST (AISI 316L/EN 1.4404) and PPS (Polyphenylene sulfide)
Tank seal	
FF	Fixed flange installation with fluorosilicone O-ring
HH	Integrated hatch installation with fluorosilicone O-ring (direct access to pipe with hand gauge)
Tank connection	
ANSI hole pattern (SST AISI 316L) - flat face	
5A	5 in. Class 150
6A	6 in. Class 150
8A	8 in. Class 150
AA	10 in. Class 150
BA	12 in. Class 150

Table 3. Rosemount 5900C Radar Level Gauge with Still-Pipe Array Antenna Ordering Information

Hole Pattern (SST EN 1.4404) - flat face	
KA	DN 150 PN 16
LA	DN 200 PN 10
MB	DN 250 PN 16
Antenna options	
0	None
C	Clamp flange in galvanized steel (for still-pipes without a flange). Possible for 6-in., 8-in., 10-in., and 12-in. tank connections
V[3][4]	Proof test verification reflector. Same size as tank connection

Options (include with selected model number)

Safety certificate	
QT[5]	IEC 61508 certificate and FMEDA-data
Calibration certificate	
Q4	Calibration certificate (printed copy)
Material traceability certificate	
Q8	Antenna material traceability certification per EN 10204 3.1 (printed copy)
Overfill protection approval	
U1[6]	TÜV/DIBt WHG approval for overfill protection
U2	SVTI approval for overfill protection (Switzerland)
Tag plate	
ST	Engraved SST tag plate
Extended warranty	
WR3	3-year limited warranty
WR5	5-year limited warranty
Typical model number: 5900C 3 S 1 F I5 0 2 A G 1C 8 S PV 8A 0 ST	

1. Requires Rosemount 2410 Tank Hub with either Analog output 4-20 mA or Relay output code 1 or 2.
2. Not available with Cable entry/Conduit connections code E or M.
3. Requires Antenna size 6 or 8.
4. Not available with Options code U1.
5. Requires Safety certification (SIS) code S.
6. Requires one or more relay outputs in the Rosemount 2410 Tank Hub.

Rosemount 5900C Radar Level Gauge with LPG/LNG antenna

The Rosemount 5900C with LPG/LNG antenna is a non-contact radar level gauge for measurement on pressurized or cryogenic liquefied gas. Radar signals are transmitted inside the still-pipe which enables the gauge to have a sufficiently strong echo even under surface boiling conditions.

- Certified SIL 2 capable according to IEC 61508
- Reference device function enables measurement verification with the tank in service
- Communicates via a 2-wire, intrinsically safe Tankbus for easy and safe installation
- Built-in pressure sensor for vapor compensation for best performance in pressurized applications
- Integrated ball valve

Table 4. Rosemount 5900C Radar Level Gauge with LPG/LNG Antenna Ordering Information

Model	Product description
5900C	Radar Level Gauge
Performance class	
3	±3 mm (0.12 in.) instrument accuracy
Safety certification (SIS)	
S[(1)]	Certified IEC 61508 SIL 2 capable
F	None. Ready for upgrade to Safety Certification (SIS)
0	None
Redundancy	
1	None. Single radar level gauge electronics
Tankbus: power and communication	
F	Bus-powered 2-wire FOUNDATION Fieldbus (IEC 61158)
Hazardous location certification	
I1	ATEX Intrinsic Safety
I2	INMETRO Intrinsic Safety (Brazil)
I4[(2)]	Japan Intrinsic Safety
I5	FM-US Intrinsic Safety
I6	FM-Canada Intrinsic Safety
I7	IECEx Intrinsic Safety

Table 4. Rosemount 5900C Radar Level Gauge with LPG/LNG Antenna Ordering Information

IM	Technical Regulations Customs Union (EAC) Intrinsic Safety
IP	KC Intrinsic Safety (South Korea)
IW	CCOE/PESO Intrinsic Safety (India)
NA	None
Custody transfer type approval	
0	None
Level measurement method	
1	10 GHz FMCW radar technology
2	10 GHz FMCW radar technology for the US market
Housing	
A	Standard enclosure, polyurethane-coated aluminum, IP 66/67
Cable/conduit connections	
1	½ - 14 NPT, female thread (1 plug included)
2	M20 x 1.5 adapters, female thread (2 adapters and 1 plug included)
G	Metal cable glands (½ - 14 NPT). Minimum temperature -20 °C (-4 °F). ATEX/IECEx Exe approved (2 glands and 1 plug included)
E	eurofast male connector (1 plug included)
M	minifast male connector (1 plug included)
Antenna	
G1	LNG still-pipe antenna (with integrated ball-valve)
G2[(3)]	LPG still-pipe antenna (with integrated ball-valve and pressure transmitter)
Antenna size	
A	4 in. Schedule 10, Ø=107 mm (4.2 in.)
B	4 in. Schedule 40, Ø=101 mm (4.0 in.)
D	DN 100, Ø=99 mm (3.9 in.)
Antenna material	
S	SST AISI 316/316L and SST EN1.4401/1.4404
Tank seal	
QA	Quartz sealing
Tank connection	
ANSI flanges (SST AISI 316/316 L) - raised face	
1B[(4)]	1.5 in. Class 300
2A[(4)]	2 in. Class 150
2B[(4)]	2 in. Class 300

Table 4. Rosemount 5900C Radar Level Gauge with LPG/LNG Antenna Ordering Information

3A[4]	3 in. Class 150
3B[4]	3 in. Class 300
4A	4 in. Class 150
4B	4 in. Class 300
6A	6 in. Class 150
6B	6 in. Class 300
8A	8 in. Class 150
8B	8 in. Class 300
Antenna options	
V	Measurement verification kit with 1 verification pin and 1 pipe end deflector kit

Options (include with selected model number)

Safety certificate	
QT[5]	IEC 61508 certificate and FMEDA-data
Calibration certificate	
Q4	Calibration certificate (printed copy)
Material traceability certificate	
Q8	Antenna material traceability certification per EN 10204 3.1 (printed copy)
Overfill protection approval	
U1[6]	TÜV/DIBt WHG approval for overfill protection
U2	SVTI approval for overfill protection (Switzerland)
Tag plate	
ST	Engraved SST tag plate
Hydrostatic pressure test	
P1	Antenna hydrostatic pressure testing
Extended warranty	
WR3	3-year limited warranty
WR5	5-year limited warranty
Typical model number: 5900C 3 S 1 F I5 0 2 A G 1C 8 S PV 8A 0 ST	

1. Requires Rosemount 2410 Tank Hub with either Analog output 4-20 mA or Relay output code 1 or 2.
2. Not available with Cable entry/Conduit connections code E or M.
3. Requires Hazardous location certification code I1, I2, I4, I5, I6, I7, IM or IP.
4. Requires Antenna size code A.
5. Requires Safety certification (SIS) code S.
6. Requires one or more relay outputs in the Rosemount 2410 Tank Hub.

Rosemount 5900C Radar Level Gauge with 1- and 2-in. still-pipe antennas

The 1- and 2-in. still-pipe gauges are suitable for clean liquids only and can be delivered complete with still-pipe, deflection plate, and fittings without any need for welding.

Table 5. Rosemount 5900C Radar Level Gauge with 1- and 2-in. Still-Pipe Antennas Ordering Information

Model	Product description
5900C	Radar Level Gauge
Performance class	
3	±3 mm (0.12 in.) instrument accuracy
Safety certification (SIS)	
S[1]	Certified IEC 61508 SIL 2 capable
F	None. Ready for upgrade to Safety Certification (SIS)
0	None
Redundancy	
1	None. Single radar level gauge electronics
Tankbus: power and communication	
F	Bus powered 2-wire FOUNDATION Fieldbus (IEC 61158)
Hazardous location certification	
I1	ATEX Intrinsic Safety
I2	INMETRO Intrinsic Safety (Brazil)
I4[2]	Japan Intrinsic Safety
I5	FM-US Intrinsic Safety
I6	FM-Canada Intrinsic Safety
I7	IECEx Intrinsic Safety
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety
IP	KC Intrinsic Safety (South Korea)
IW	CCOE/PESO Intrinsic Safety (India)
NA	None
Custody transfer type approval	
0	None
Level measurement method	
1	10 GHz FMCW radar technology
2	10 GHz FMCW radar technology for the US market
Housing	
A	Standard enclosure, polyurethane-coated aluminum, IP 66/67

Table 5. Rosemount 5900C Radar Level Gauge with 1- and 2-in. Still-Pipe Antennas Ordering Information

Cable/conduit connections		
1	½ - 14 NPT, female thread (1 plug included)	
2	M20 x 1.5 adapters, female thread (2 adapters and 1 plug included)	
G	Metal cable glands (½ - 14 NPT). Minimum temperature -20 °C (-4 °F). ATEX/IECEx Exe approved (2 glands and 1 plug included)	
E	eurofast male connector (1 plug included)	
M	minifast male connector (1 plug included)	
Antenna		
11[(3)]	Still-pipe 1-in. antenna (deflector plate included)	
12	Still-pipe 2-in. antenna (deflector plate included)	
Antenna size		**Antenna**
2	2-in./DN 50 plate	1 in.
0	2 1/2-in./DN 65 plate	1 in.
3	3-in./DN 80 plate	1 in., 2 in.
4	4-in./DN 100 plate	1 in., 2 in.
6	6-in./DN 150 plate	2 in.
8	6-in./DN 200 plate	2 in.
Antenna material		**Antenna**
S	SST AISI 316L/EN 1.4436	1 in., 2 in
X	Customer specific, consult factory	1 in.
Tank seal		
PV	PTFE with Viton fluoroelastomer O-rings	
PK	PTFE with Kalrez perfluoroelastomer O-rings	
QV	Quartz with Viton fluoroelastomer O-rings	
QK	Quartz with Kalrez perfluoroelastomer O-rings	
Tank connection		
ANSI flanges (SST AISI 316/316 L) - flat face		**Antenna**
2A	2 in. Class 150	1 in.
2B	2 in. Class 300	1 in.
3A	3 in. Class 150	1 in., 2 in.
3B	3 in. Class 300	1 in., 2 in.
4A	4 in. Class 150	1 in., 2 in.
4B	4 in. Class 300	1 in., 2 in.
6A	6 in. Class 150	2 in.

Table 5. Rosemount 5900C Radar Level Gauge with 1- and 2-in. Still-Pipe Antennas Ordering Information

8A	8 in. Class 150	2 in.
EN flanges (SST EN 1.4404) - flat face		**Antenna**
HB	DN 50 PN40	1 in.
IA	DN 80 PN16	1 in., 2 in.
IB	DN 80 PN40	1 in., 2 in.
JA	DN 100 PN16	1 in., 2 in.
JB	DN 100 PN40	1 in., 2 in.
KA	DN 150 PN16	2 in.
LA	DN 200 PN16	2 in.
Other		**Antenna**
00	None	1 in., 2 in.
XX	Customer specific, consult factory	1 in.
Antenna options		**Antenna**
0	None (excluding still-pipe)	2 in.
1	Still-pipe, length 3.0 m (9.8 ft)	1 in., 2 in.
2	Still-pipe, length 6.0 m (19.7 ft)	2 in.
3	Still-pipe, length 9.0 m (29.5 ft)	2 in.
4	Still-pipe, length 12 m (39.4 ft)	2 in.
X	Customer specific, consult factory	1 in.

Options (include with selected model number)

Safety certificate	
QT[4]	IEC 61508 certificate and FMEDA-data
Calibration certificate	
Q4	Calibration certificate (printed copy)
Material traceability certificate	
Q8	Antenna material traceability certification per EN 10204 3.1 (printed copy)
Overfill protection approval	
U1[5]	TÜV/DIBt WHG approval for overfill protection
U2	SVTI approval for overfill protection (Switzerland)
Tag plate	
ST	Engraved SST tag plate

Table 5. Rosemount 5900C Radar Level Gauge with 1- and 2-in. Still-Pipe Antennas Ordering Information

Extended warranty	
WR3	3-year limited warranty
WR5	5-year limited warranty
Typical model number: 5900C 3 S 1 F I5 0 2 A G 11 2 S PK 2B 1 ST	

1. Requires Rosemount 2410 Tank Hub with either Analog output 4-20 mA or Relay output code 1 or 2.
2. Not available with Cable entry/Conduit connections code E or M.
3. Antenna and still-pipe 3000 mm included.
4. Requires Safety certification (SIS) code S.
5. Requires one or more relay outputs in the Rosemount 2410 Tank Hub.

Specifications

General

Measurement principle

FMCW (Frequency Modulated Continuous Wave)

Instrument accuracy[1]

± 3 mm (0.12 in.)

Temperature stability

Typically <± 0.5 mm (0.020 in.) in -40 to +70 °C (-40 to +158 °F)

Fieldbus (standard)

FOUNDATION Fieldbus FISCO (Tankbus)

Update time

New measurement every 0.3 s

Repeatability

0.2 mm (0.008 in.)

Maximum level rate

Up to 200 mm/s

Metrology sealing possibility

Yes

Installation considerations

See Rosemount 5900C Radar Level Gauge Reference Manual

Communication/display/configuration

Output variables and units

- Level, and ullage: meter, centimeter, millimeter, feet, or inch
- Level rate: meter/second, meter/hour, feet/second, feet/hour, inch/minute
- Signal strength: mV

Configuration tools

Rosemount TankMaster WinSetup, Field Communicator

1. *Instrument accuracy is under reference conditions. Reference conditions are: Measurement in test bench at Rosemount Tank Radar AB in Mölnlycke Sweden. Test bench is calibrated minimum yearly by an accredited laboratory (SP Technical Research Institute of Sweden). Measuring range is up to 30 m (98 ft.). Ambient temperature and humidity is close to constant during tests. Total uncertainty in test bench is below 0.15 mm (0.006 in.).*

FOUNDATION Fieldbus characteristics

Polarity sensitive

No

Quiescent current draw

51 mA

Lift-off minimum voltage

9.0 VDC

Device capacitance/inductance

See "Product certifications" on page 26.

Class (Basic or Link Master)

Link Master (LAS)

Number of available VCRs

Maximum 20, including one fixed

Links

Maximum 40

Minimum slot time/maximum response delay/minimum intermessage delay

8/5/8

Blocks and execution time

Block	Execution time
1 Resource block	N/A
5 Transducer blocks (Level, Register, Adv_Config, Volume, and LPG)	N/A
6 Analog Input (AI)	10 ms
2 Analog Output (AO)	10 ms
1 Proportional/Integral/Derivate (PID)	15 ms
1 Signal Characterizer (SGCR)	10 ms
1 Integrator (INT)	10 ms
1 Arithmetic (ARTH)	10 ms
1 Input Selector (ISEL)	10 ms
1 Control Selector (CS)	10 ms
1 Output Splitter (OS)	10 ms

For more information, see the FOUNDATION Fieldbus Blocks Manual.

Instantiation

Yes

Conforming FOUNDATION Fieldbus

ITK 6.2.0

Plantweb™ alert support

Yes

Action support wizards

Restart measurement, write protect device, factory reset - measurement configuration, start/stop device simulation, set as surface, reset statistics, change all modes, register/remove false echo, refresh echo peaks, pin verification, change vapor pressure, change vapor temperature.

Advanced diagnostics

Software, memory/database, electronics, internal communication, simulation, level correction, level measurement, ambient temperature, vapor pressure/temperature correction, LPG verification pin, and manual measurement values.

Electric

Tankbus cabling

0.5-1.5 mm^2 (AWG 22-16), twisted shielded pairs

Power supply

FISCO: 9.0 - 17.5 VDC polarity insensitive (for example from 2410 Tank Hub)

Entity: 9.0 - 30.0 VDC polarity insensitive

Bus current draw

50 mA

Microwave output power

< 1 mW

Built-in Tankbus terminator

Yes (to be connected if required)

Daisy chain possibility

Yes

Mechanical

Housing material & surface treatment

Polyurethane-coated die-cast aluminum

Cable entry (connection/glands)

Two ½ - 14 NPT entries for cable glands or conduits. One metal plug to seal any unused port is enclosed in the transmitter delivery.

Optional:

- M20 x 1.5 conduit/cable adapter
- Cable glands in metal (½ - 14 NPT)
- 4-pin male eurofast connector or A size Mini 4-pin male minifast connector

Total weight

Transmitter head	Weight
Rosemount 5900C transmitter head	5.1 kg (11.2 lbs)

Transmitter head with antenna		Weight
Rosemount 5900C with cone antenna		Appr. 12 kg (26 lbs)
Rosemount 5900C with parabolic antenna		Appr. 17 kg (37 lbs)
Rosemount 5900C with still-pipe array antenna		Appr. 13.5-24 kg (30-53 lbs)
Rosemount 5900C with LPG/LNG antenna	6 in. 150 psi	Appr. 30 kg (66 lbs)
	6 in. 300 psi	Appr. 40 kg (88 lbs)

Antennas

The Rosemount 5900C antennas have a drip-off design which for some versions also include inclined polished PTFE surfaces. Condensation on the antenna is minimized, and the radar signal remains strong. This results in maintenance free operation, high accuracy and reliability. There is always a suitable antenna for every tank type, tank opening and application:

- Parabolic
- Cone
- Still-pipe array
- LPG/LNG
- 1-in./2-in. still-pipe

Transmitter head

The same transmitter head is used for all Rosemount 5900C antenna types, minimizing spare part requirements:

- The dual compartment transmitter housing, with electronics and cabling separated, can be replaced without opening the tank
- It is protected against lightning, moisture/rain, and has a surface protection against sulfur and salt spray atmospheres
- Electronics consists of one encapsulated unit
- No need for re-calibration

Environment

Ambient operating temperature

-40 to +70 °C (-40 to +158 °F)
Minimum start-up temperature is -50 °C (-58 °F).

Storage temperature

-50 to +85 °C (-58 to +185 °F)

Humidity

0-100% relative humidity

Ingress protection

IP 66/67 and NEMA® 4X

Vibration resistance

IEC 60770-1 level 1 and IACS UR E10 test 7.

Telecommunication

Compliance with:

- FCC 15B Class A, and 15C
- R&TTE (EU directive 99/5/EC) ETSI EN 302372; EN 50371
- IC (RSS210-5)

Electromagnetic compatibility

EMC (EU directive 2004/108/EC) EN 61326-1;

EN 61326-3-1

Transient/built-in lightning protection

According to IEC 61000-4-5, level 2 kV line to ground. Complies with IEEE 587 Category B transient protection and IEEE 472 surge protection.

Low Voltage Directive (LVD)

LVD (EU directive 2006/95/EC) EN/IEC 61010-1

Rosemount 5900C with parabolic antenna

Operating temperature in tank

Max. +230 °C (+445 °F)

Measuring range

0.8 to 30 m (2.6 to 100 ft.) below flange.

(Possibility to measure 0.5 to 50 m (1.6 to 164 ft.). Accuracy may be reduced. For longer measuring range, please consult your local representative.)

Pressure range

Clamped/threaded: -0.2 to 0.2 bar (-2.9 to 2.9 psig)

Welded: -0.2 to 10 bar (-2.9 to 145 psig)

Material exposed to tank atmosphere

Antenna: material corresponds to AISI 316/316L and

EN 1.4401/1.4404.

Sealing: PTFE

O-ring: FEP fluoropolymer

Antenna dimension

440 mm (17 in.)

Manway size and installation

500-mm (20-in.) opening

The parabolic antenna is installed on the manway cover by using the flange ball. It is designed for easy adjustment of the antenna inclination and orientation within the specified limits.

The flexible flange ball can be installed on both horizontal or inclined manways without any special arrangements.

Tank connection

The gauge is clamped in a 96-mm (3.78-in.) diameter hole, or welded in a 117-mm (4.61-in.) diameter hole.

Rosemount 5900C with cone antenna

Measuring range, accuracy, and cone dimensions

When selecting cone antenna dimension, it is generally recommended to use as large antenna diameter as possible.

Standard cone antennas are available for 4-, 6- and 8-in. tank openings. The 4- and 6-in. cones can be extended to fit long tank nozzles.

Level accuracy is up to ±3 mm (0.12 in.) for 8-in. cone antennas. For 4- and 6-in. cone antennas accuracy depends on installation conditions.

Measuring range

8-in. cone: 0,8 to 20 m (2.6 to 65 ft.) below flange.
(Possibility to measure 0,4 to 30 m (1.3 to 100 ft.).
Accuracy may be reduced.)

6-in. cone: 0.8 to 20 m (2.6 to 65 ft.) below flange.
(Possibility to measure 0.3 to 25 m (1 to 80 ft.).
Accuracy may be reduced.)

4-in. cone: 0.8 to 15 m (2.6 to 50 ft.) below flange.
(Possibility to measure 0.2 to 20 m (0.7 to 65 ft.).
Accuracy may be reduced.)

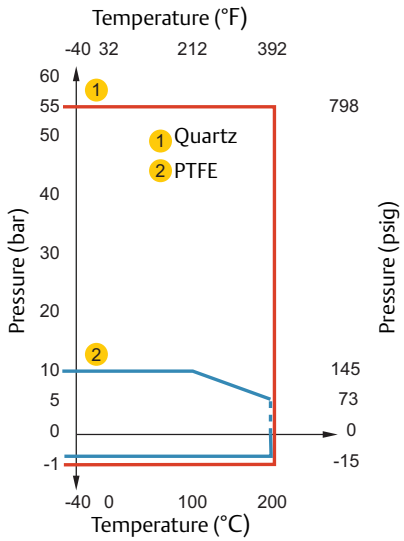
Material exposed to tank atmosphere

Antenna: SST AISI 316L/EN 1.4436

Tank seal alternatives:
PTFE with Viton fluoroelastomer O-rings
PTFE with Kalrez perfluoroelastomer O-rings
Quartz with Viton fluoroelastomer O-rings
Quartz with Kalrez perfluoroelastomer O-rings

Pressure/temperature rating

Figure 1. Temperature and Maximum Pressure Relation



Rosemount 5900C with still-pipe array antenna

Operating temperature in tank

-40 to 120 °C (-40 to 248 °F)

Measuring range

0.8 to 30 m (2.6 to 100 ft.) below flange.
(Possibility to measure 0.5 to 40 m (1.6 to130 ft.). Accuracy may be reduced. For longer measuring range, please consult your local representative.)

Pressure range

Fixed version: -0.2 to 2 bar (-2.9 to 29 psig) at 20 °C (68 °F).
Hinged hatch version: -0.2 to 0.5 bar (-2.9 to 7.2 psig) for 5 to 8-in. pipes.
-0.2 to 0.25 bar (-2.9 to 3.6 psig) for 10- and 12-in. pipes.

Material exposed to tank atmosphere

Antenna: Polyphenylenesulphide (PPS)
Sealing: PTFE
O-ring: Fluorosilicone
Flange: material corresponds to AISI 316/316L and EN 1.4401/1.4404.

Still-pipe dimensions

5, 6, 8, 10, or 12 in.

Rosemount 5900C with LPG/LNG antenna

Operating temperature at ball valve

-55 to 90 °C (-67 to 194 °F)

Operating temperature in tank

-170 to 90 °C (-274 to 194 °F)

Measuring range

1.2 to 30 m (3.9 to 100 ft.) below flange.
(Possibility to measure 0.8 to 60 m (2.6 to 200 ft.). Accuracy may be reduced. For longer measuring range, please consult your local representative.)

Pressure range

-1 to 25 bar (-14.5 to 365 psig).

Note
Flanges may have higher pressure rating than 25 bar, but maximum tank pressure is still 25 bar.

Pressure sensor (option)

Rosemount 2051. It is available with various hazardous location certifications, "Product certifications Rosemount 2051" on page 29.

For more information, see the 2051 Product Data Sheet.

Material exposed to tank atmosphere

Antenna and flange: material corresponds to AISI 316/316L and EN 1.4401/1.4404.

Sealing: Quartz and PTFE.

Still-pipe dimension compatibility

Antenna choices for 4-in. sch. 10, 4-in. sch 40,
or 100 mm (99 mm inner diameter) still-pipe dimensions.

Flange size and rating

4-in. class 150/300
6-in. class 150/300
8-in. class 150/300

Verification possibility

A patented reference device function enables measurement verification with the tank in service. A verification pin mounted in a still-pipe hole, and a deflection plate with a verification ring at the lower still-pipe end provide reference echoes at fixed pre-defined distances.

Rosemount 5900C Radar Level Gauge with 1- and 2-in. still-pipe antennas

Measuring range

1-in. still-pipe antenna: 0.2 to 3 m (0.7 to 9.8 ft.) below flange.
2-in. still-pipe antenna: 0.2 to 12 m (0.7 to 39 ft.) below flange.

(Possibility to measure longer ranges. For more information, contact your local Emerson representative.)

Material exposed to tank atmosphere

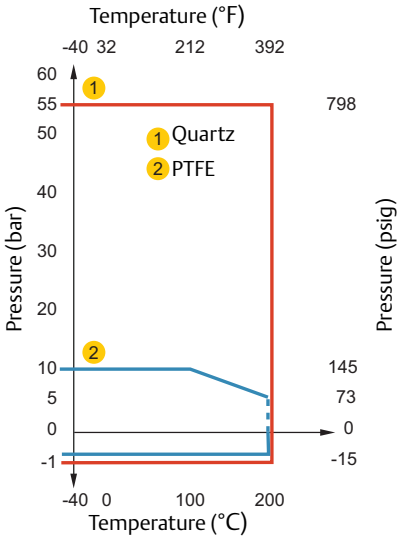
Antenna: SST 316L

Sealing: PTFE fluoropolymer or Kalrez perfluoroelastomer

O-ring: PTFE fluoropolymer or Quartz

Pressure/temperature rating

Figure 2. Temperature and Maximum Pressure Relation



Product certifications

Rev 2.1

European directive information

The most recent revision of the EU Declaration of Conformity can be found at Emerson.com/Rosemount.

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). Complies with FM 3810:2005 and CSA: C22.2 No. 1010.1.

Telecommunication compliance

FCC

This device complies with Part 15C of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Certificate: K8C5900

IC

This device complies with RSS210-5.

Certificate: 2827A-5900

Radio Equipment Directive (RED)

This device complies with ETSI EN 302 372 and EN 62479.
EU directive 2014/53/EU.
The device shall be installed according to requirements ETSI EN 302372.

CE mark

The product complies with applicable EU directives (EMC, ATEX,LVD, and RED). Based on the low emitted effects from the gauges (below 0.1 mW) compared to limits given by the Rec. 1999/519/EC, no additional measures are needed.

Installing equipment in North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

North America

I5 USA Intrinsic Safety

Certificate: FM 17US0030X

Standards: FM Class 3600:2011, FM Class 3610:2010, FM Class 3810:2005, ANSI/NEMA 250:2003, ANSI/IEC 60529:2004, ANSI/ISA 60079-0:2013, ANSI/ISA 60079-11:2013, ANSI/ISA 60079-26:2011

Markings: IS/I,II,III/1/ABCDEFG/T4 Ta = -50°C to 80°C - 9240040-917; Entity; FISCO
Cl 1 Zone 0/1 AEx ia IIC T4 Ta = -50°C to 80°C - 9240040-917; Entity; FISCO
DIP/II,III/1/EFG/T4 Ta = -50°C to 80°C
Type 4X; IP66; IP67

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Specific conditions for safe use (X):

1. Parabolic and Array antennas with plastic surfaces and the surface of the painted housing may, under certain extreme conditions, generate an ignition-capable level of electrostatic. Appropriate measures must be taken to prevent electrostatic discharge.
2. Class I, Zone 0/1 notation: For installation in Zone classified locations, the Rosemount 5900 Radar Level Gauge was evaluated so that an [ib] associated apparatus can connect to it restricting the installation of the electronics to a Zone 1 location while still allowing the antenna to enter a Zone 0 location.

I6 Canada Intrinsic Safety

Certificate: FM17CA0016X

Standards: CSA-C22.2 No. 157-92:1992 (R2012), CSA-C22.2 No. 1010-1:2004 (R2009), CSA-C22.2 No. 25-1966:1992 (R2009), CSA-C22.2 No. 60529-05:2005 (R2010), CSA-C22.2 No. E60079-0:2011: CSA-C22.2 No. E60079-11:2011: CSA-C22.2 No. 94:2011

Markings: IS/I,II,III/1/ABCDEFG/T4 Ta = -50°C to 80°C - 9240040-917; Entity; FISCO
Class 1 Zone 0 Ex ia IIC T4 Ta = -50°C to 80°C - 9240040-917; Entity; FISCO
DIP/II,III/1/EFG/T4 Ta = -50°C to 80°C
Type 4X; IP66; IP67

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Specific conditions for safe use (X):

1. Parabolic and Array antennas with plastic surfaces and the surface of the painted housing may, under certain extreme conditions, generate an ignition-capable level of electrostatic. Appropriate measures must be taken to prevent electrostatic discharge.

Europe

I1 ATEX Intrinsic Safety

Certificate: FM09ATEX0057X

Standards: EN 60079-0:2012, EN 60079-11:2012, EN 60079-26:2007, EN 60529:2013

Markings:  II 1/2 G Ex ia IIC T4 Ta = -50°C to 80°C; IP66, IP67*
II 1/2 G Ex ia IIC T4 Ta = -50°C to 80°C; FISCO; IP66, IP67*

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Special conditions for safe use (X):

1. The enclosure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact or friction.
2. Parabolic and Array antennas with plastic surfaces may, under certain extreme conditions, generate an ignition-capable level of electrostatic charge for IIC applications. Therefore, when these antennas are used in Category 1G, Group IIC, appropriate measures must be taken to prevent electrostatic discharge.
3. *Category 1/2 notation: The Rosemount 5900 Radar Level Gauge was evaluated so that an [ib] associated apparatus can connect to it restricting the installation of the electronics to a Zone 1 location while still allowing the antenna to enter a Zone 0 location.

International

I7 IECEx Intrinsic Safety

Certificate: IECEx FMG 09.0009X

Standards: IEC 60079-0:2011, IEC 60079-11:2011, IEC 60079-26:2006

Markings: FISCO: Ex ia IIC Ga/Gb; IP66, IP67
Entity: Ex ia IIC Ga/Gb; IP66, IP67
Tamb = -50°C to +80°C

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Specific conditions for safe use (X):

1. The enclosure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact or friction.
2. Parabolic and Array antennas with plastic surfaces may, under certain extreme conditions, generate an ignition-capable level of electrostatic charge for IIC applications. Therefore, when these antennas are used in EPL Ga, Group IIC, appropriate measures must be taken to prevent electrostatic discharge.
3. Ga/Gb notation: The Rosemount 5900 Radar Level Gauge was evaluated so that an [ib] associated apparatus can connect to it restricting the installation of the electronics to a Zone 1 location while still allowing the antenna to enter a Zone 0 location.

Brazil

I2 INMETRO Intrinsic Safety

Certificate: UL-BR 17.0982X

Standards: ABNT NBR IEC 60079-0:2013, 60079-11:2013, 60079-26:2016

Markings: Ex ia IIC T4 Ga/Gb
Tamb: -50 °C to + 80 °C
IP66/IP67

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Specific conditions for safe use (X):

1. See certificate for special conditions.

China

I3 China Intrinsic Safety

Certificate: GYJ16.1251X

Standards: GB 3836.1 – 2010, GB 3836.4 – 2010, GB 3836.20 – 2010

Markings: Ex ia IIC T4 Ga

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Specific conditions for safe use (X):

1. See certificate for special conditions.

Technical Regulations Customs Union (EAC)

IM EAC Intrinsic Safety

Certificate: RU C-SE.AA87.B.00346

Markings: Ga/Gb Ex ia IIC T4 X
Tamb: -50 °C to + 80 °C
IP66/IP67

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Specific conditions for safe use (X):

1. See certificate for special conditions.

Japan

I4 Japan Intrinsic Safety

Certificate: CML 17JPN2301X

Markings: Ex ia IIC T4 Ga/Gb
-50°C ≤ Ta ≤+80°C

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Specific conditions for safe use (X):

1. See certificate for special conditions.

Republic of Korea

IP Korea Intrinsic Safety

Certificate: 14-KB4BO-0573X

Markings: Ex ia IIC T4 Ga/Gb
(-50 °C ≤ Ta ≤ +80 °C)

	Ui	Ii	Pi	Ci	Li
Entity parameters	30 V	300 mA	1.3 W	1.1 nF	1.5 µH
FISCO parameters	17.5V	380 mA	5.32 W	1.1 nF	1.5 µH

Specific conditions for safe use (X):

1. See certificate for special conditions.

Additional certifications

Functional Safety Certification (SIS)

S Functional Safety

Certificate: ROS 1312032 C004
SIL 2 1-in-1 (1oo1) option, with 4-20mA or K1/K2 relay

Standards: IEC 61508:2010 Parts 1-7

Germany WHG Certification (DIBt)

Certificate: Z-65.16-500

Belgium Overfill Certification (Vlarem)

Certificate: Raptor Vlarem II Certificate Raptor

India Intrinsic Safety

Certificate: P349859/1

Markings: Ex ia IIC Ga/Gb

Product certifications Rosemount 2051

Extract from Rosemount 2051 Product Certifications Rev: 1.8

North America

IE USA FISCO

Certificate: FM16US0231X

Standards: FM Class 3600 – 2011, FM Class 3610 – 2010, FM Class 3611 – 2004, FM Class 3810 – 2005

Markings: IS CL I, DIV 1, GP A, B, C, D when connected per Rosemount drawing 02051-1009 (-50 °C ≤ Ta ≤ +60 °C); Type 4x

Specific Conditions of Use:

1. The Model 2051 transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

IF Canada FISCO

Certificate: 2041384

Standards: CSA Std. C22.2 No. 142 - M1987, CSA Std. C22.2 No. 213 - M1987, CSA Std. C22.2 No. 157 - 92, CSA Std. C22.2 No. 213 - M1987, ANSI/ISA 12.27.01 – 2003, CAN/CSA-E60079-0:07, CAN/CSA-E60079-11:02

Markings: Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawing 02051-1008. Ex ia IIC T3C. Single Seal. Enclosure Type 4X

Europe

IA ATEX FISCO

Certificate: Baseefa08ATEX0129X

Standards: EN60079-0:2012+A11:2013, EN60079-11:2012

Markings: ⟨Ex⟩ II 1 G Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +60 °C)

	Ui	Ii	Pi	Ci	Li
FISCO parameters	17.5V	380 mA	5.32 W	0 µF	0 mH

Special conditions for safe use (X):

1. If the equipment is fitted with an optional 90V transient suppressor, it is incapable of withstanding the 500V isolation from earth test and this must be taken into account during installation.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact and abrasion when located in Zone 0.

International

IG IECEx FISCO

Certificate: IECEx BAS 08.0045X

Standards: IEC60079-0:2011, IEC60079-11:2011

Markings: Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +60 °C)

	Ui	Ii	Pi	Ci	Li
FISCO parameters	17.5V	380 mA	5.32 W	0 nF	0 µH

Special conditions for safe use (X):

1. If the equipment is fitted with an optional 90V transient suppressor, it is incapable of withstanding the 500V isolation from earth test and this must be taken into account during installation.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact and abrasion when located in Zone 0. The equipment contains thin wall diaphragms. The installation, maintenance, and use shall take into account the environmental conditions to which the diaphragms will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

Brazil

IB INMETRO FISCO

Certificate: UL-BR 14.0759X

Standards: ABNT NBR IEC 60079-0:2008 + Errata 1:2011; ABNT NBR IEC 60079-11:2009

Markings: Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +60 °C)

	Ui	Ii	Pi	Ci	Li
FISCO parameters	17.5V	380 mA	5.32 W	0 nF	0 µH

Special conditions for safe use (X):

1. If the equipment is fitted with an optional 90 V transient suppressor, it is incapable of withstanding the 500 V insulation from earth test and this must be taken into account during installation.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact and abrasion when located in atmospheres that require EPL Ga.

Technical Regulations Customs Union (EAC)

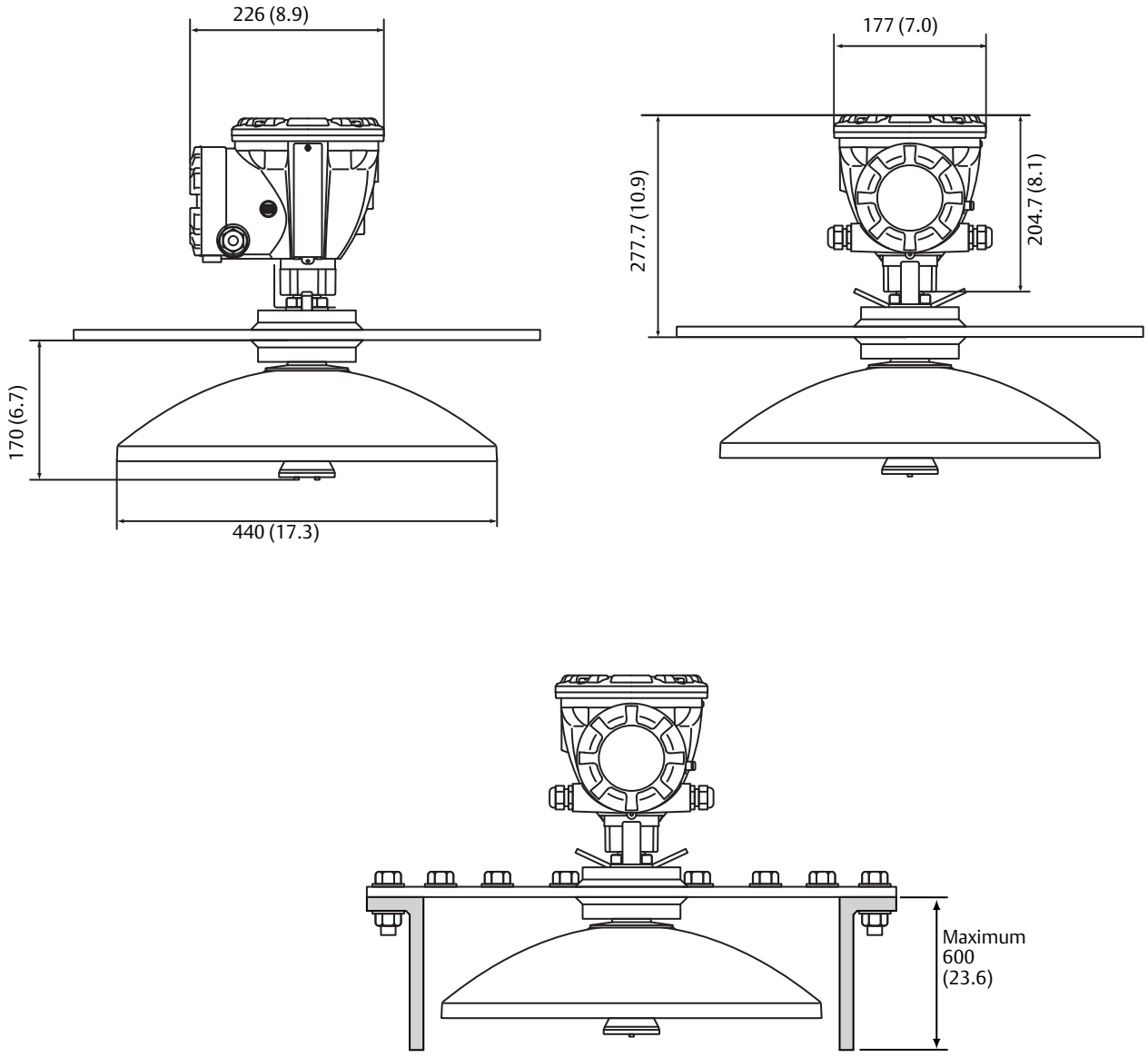
IM EAC Intrinsically Safe
Certificate: TC RU C-US.AA87.B.00588
Markings: 0Ex ia IIC T4 Ga X (-60°C ≤ Ta ≤ +70°C)

Special Conditions for Safe Use (X):

1. See certificate for special conditions.

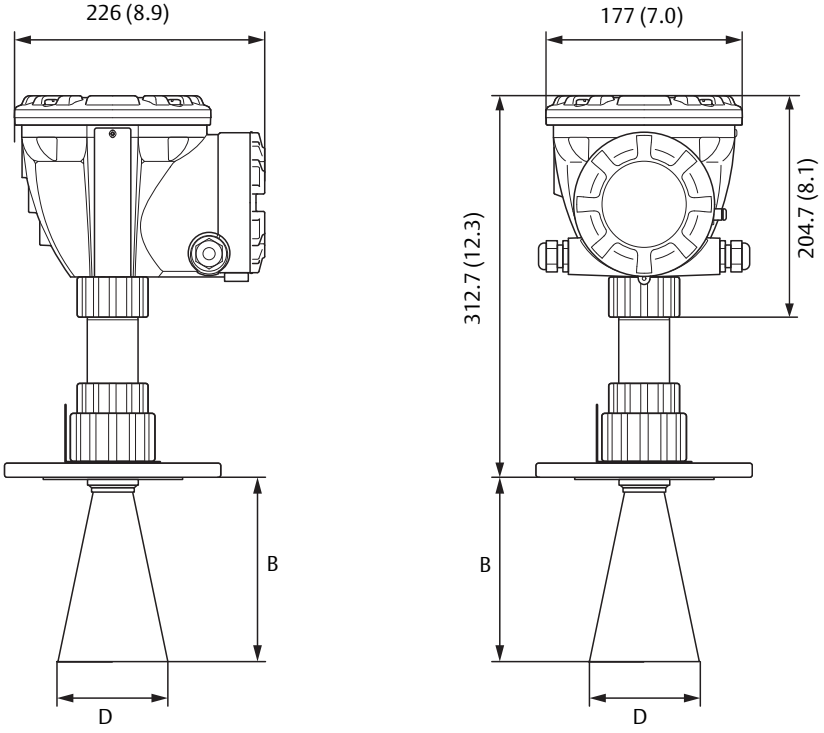
Dimensional drawings

Figure 3. Rosemount 5900C with Parabolic Antenna Dimensions



Dimensions are in millimeters (inches).

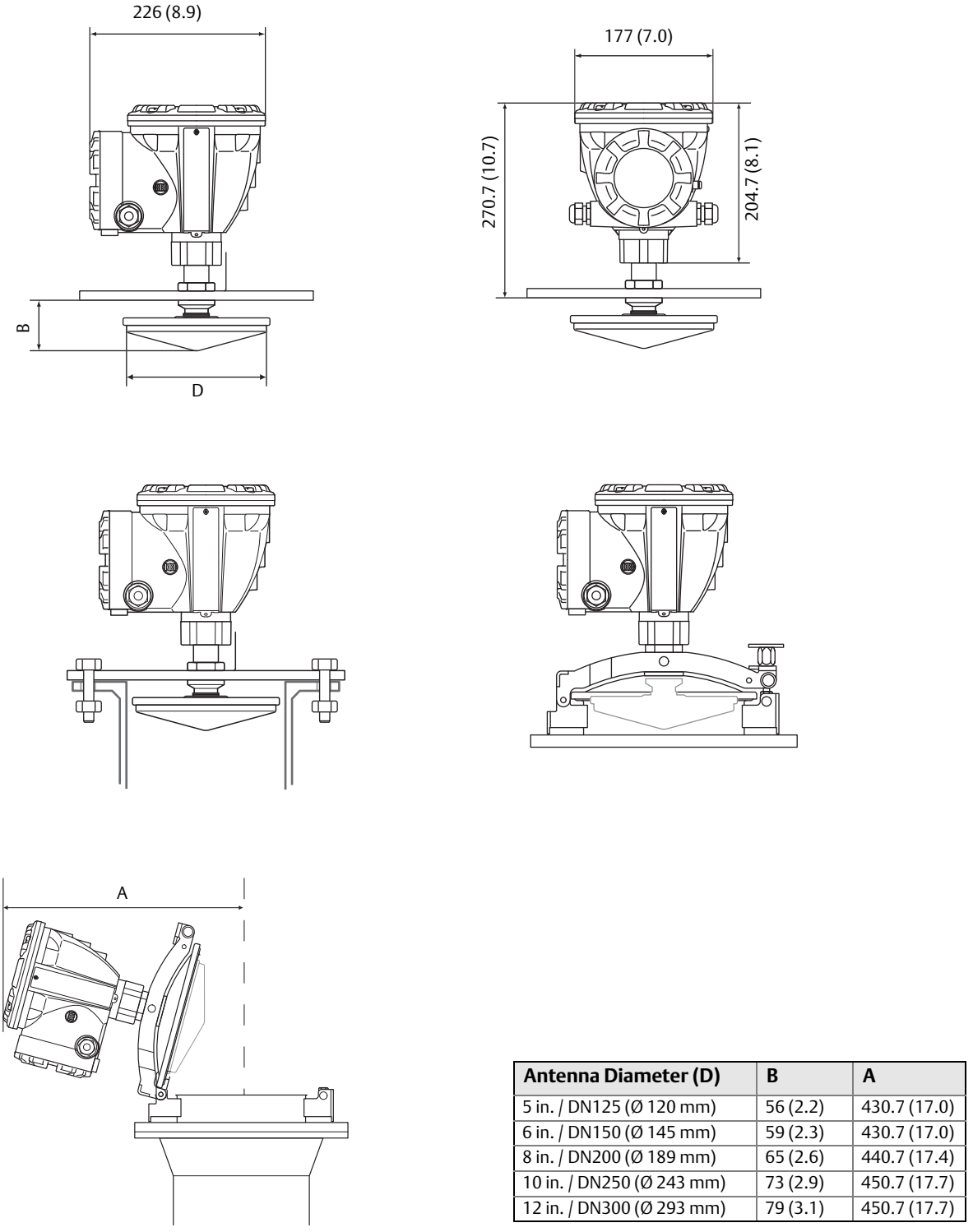
Figure 4. Rosemount 5900C with Cone Antenna Dimensions



Antenna Diameter (D)	B
4 in. /DN100 Ø 93 mm (3.7 in.)	150 (5.91)
6 in. /DN150 Ø 141 mm (5.6 in.)	260 (10.24)
8 in. /DN 200, Ø=189 mm (7.4 in.)	370 (14.57)

Dimensions are in millimeters (inches).

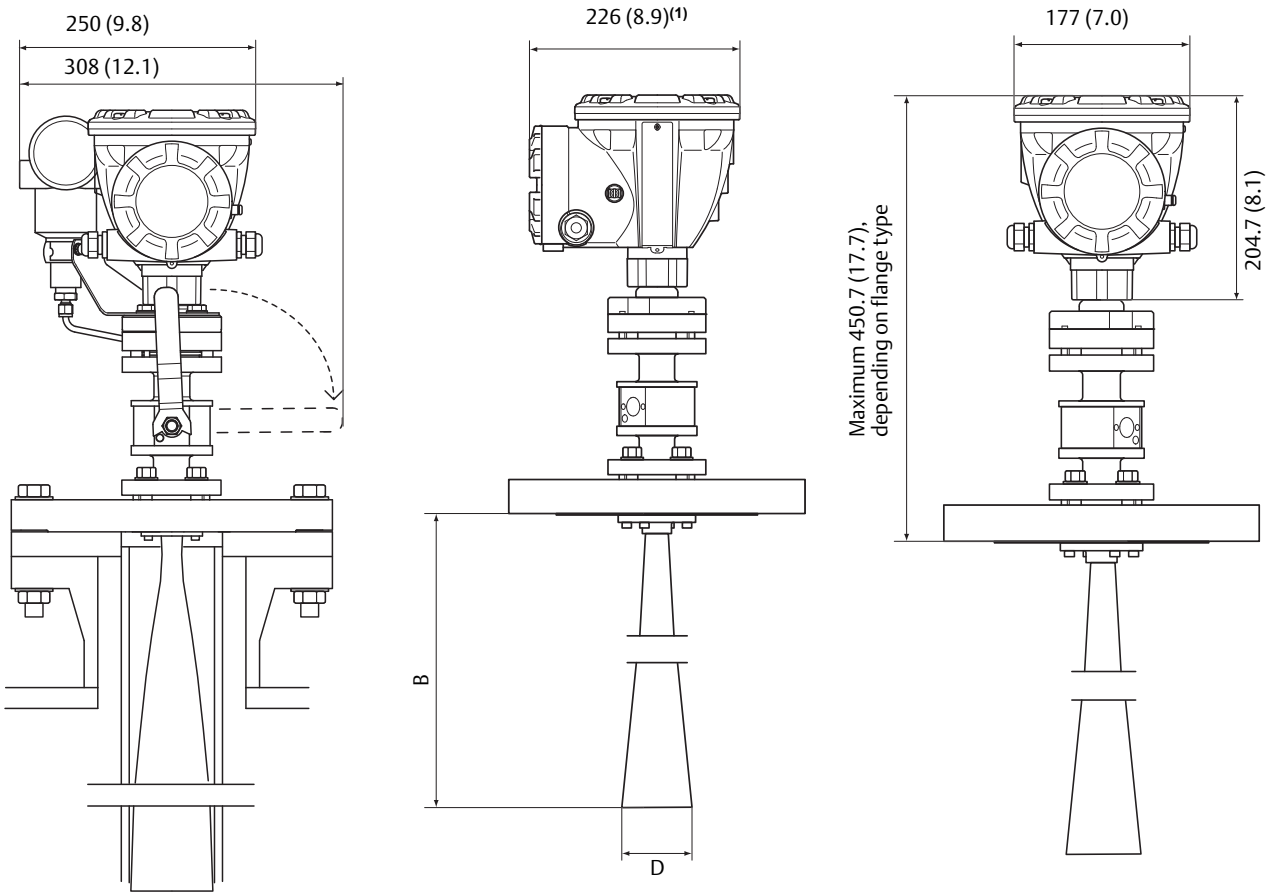
Figure 5. Rosemount 5900C with Still-Pipe Array Antenna Dimensions



Antenna Diameter (D)	B	A
5 in. / DN125 (Ø 120 mm)	56 (2.2)	430.7 (17.0)
6 in. / DN150 (Ø 145 mm)	59 (2.3)	430.7 (17.0)
8 in. / DN200 (Ø 189 mm)	65 (2.6)	440.7 (17.4)
10 in. / DN250 (Ø 243 mm)	73 (2.9)	450.7 (17.7)
12 in. / DN300 (Ø 293 mm)	79 (3.1)	450.7 (17.7)

Dimensions are in millimeters (inches).

Figure 6. Rosemount 5900C with LPG/LNG Antenna Dimensions



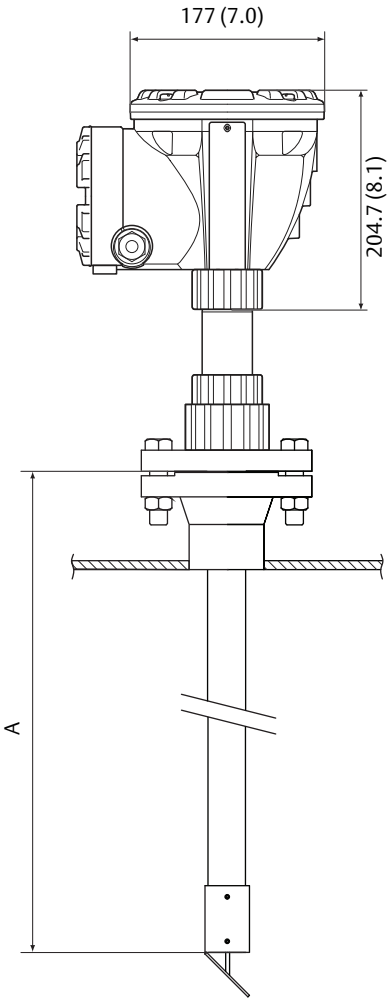
1. 302 (11.9) with pressure transmitter option

Antenna Diameter (D)	B
4 in. Sch10 (Ø 107 mm)	752 (29.6)
4 in. Sch40 (Ø 101 mm)	534 (21.0)
DN100 (Ø 99 mm)	502 (19.8)

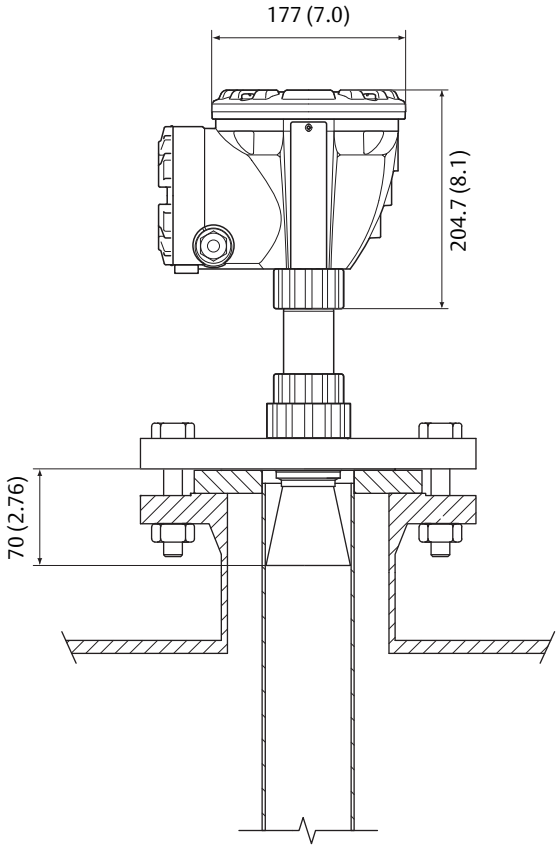
Dimensions are in millimeters (inches).

Figure 7. Rosemount 5900C with 1- and 2-in. Still-Pipe Antennas Dimensions

1-in. still-pipe antenna



2-in. still-pipe antenna



A. Standard length 3000 mm (118.1 in.)

Dimensions are in millimeters (inches).

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