

Rosemount™ CMB Chamber



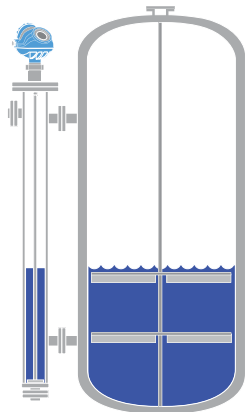
CE

- Allows external mounting of process level instrumentation, which enables isolation of the process for live maintenance
- Optimized for use with the Rosemount 3308 and 5300 Guided Wave Radar
- Pressure Equipment Directive (PED) compliant design available
- Used worldwide by major industries: Power, Petro-Chemical, Refining, Oil & gas, Chemical, and Process Steam Raising sectors. Ideal for critical areas and general purpose applications
- Includes hydrostatic pressure test and certificate
- Can be paired with a Magnetic Level Indicator for a low maintenance solution with high accuracy and local indication

Reliable performance in challenging applications

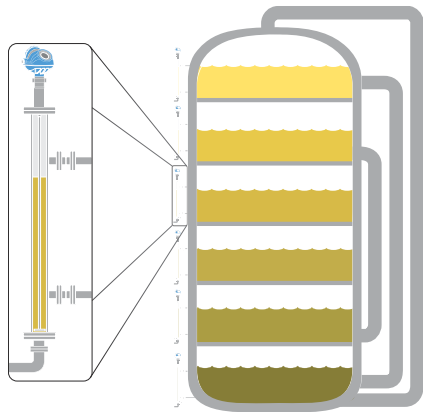
Rosemount CMB is a self-contained chamber for externally mounting the Rosemount range of process level instruments to a vessel. It is also useful for in-tank restrictions that do not allow mounting of the instrument in a vessel. This approach offers many advantages when solving application challenges.

In-tank constraints



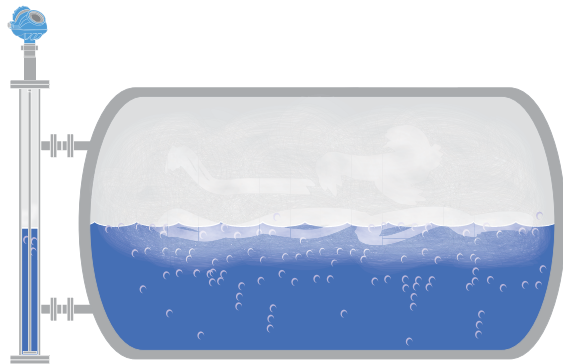
- Agitator
- Heat exchanger
- Internal structures

Isolation of instrument



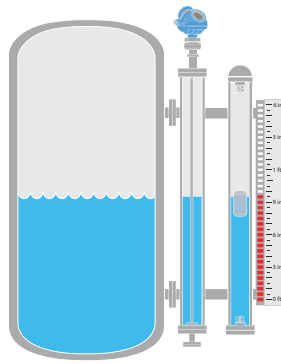
- Live maintenance
- Safety
- Hazardous liquids
- High pressures and temperatures

Turbulent vessel conditions



- Chamber acts as a stilling well

Redundant solution



- Redundant system for use in a wide range of applications

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Ordering information

Specifications and options

See the Specifications and options section for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See the Material selection section for more information.

Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in [Figure 1](#).

Figure 1: Model Code Example

CMB G 1 2 F H 2	Q00023	XC
1	2	3

1. Required model components (choices available on most)
2. Unique Q-number for each chamber
3. Additional options (variety of features and functions that may be added to products)

Ordering information



- Allows external mounting of process level instrumentation
- Enables isolation of the process for live maintenance
- Designed according to:
 - PED 2014/68/EU
 - ASME B31.3 and B31.1
- Welded according to ISO 3834-2/ASME IX

Required model components

Model

Code	Description
CMB	Chamber

Chamber type

Code	Description
G ⁽¹⁾	Chamber with Guided Wave Radar
S	Chamber with sight glass
M ⁽²⁾	Magnetic level gauge/indicator/transmitter (MLG/MLI/MLT)
D ⁽³⁾	Dual chamber with Radar and MLG/MLI/MLT
N ⁽¹⁾	Chamber with Non-Contacting Radar
X	Special

(1) Refer to the Best Practices for Using Radar in Still Pipes and Chambers [Technical Note](#) for guidelines for choosing and installing Rosemount™ Process radar devices in chambers.

(2) Requires Instrument connection type code N.

(3) There are two versions available for this chamber type, specify desired version on your request:

- Radar mounted in the same pipe with the MLG/MLI/MLT
- Chamber mounted in parallel with the MLG/MLI/MLT

Related information

Chamber type

Materials of construction

Code	Description
1	316/316L/1.4401/EN 1.4404
H	Alloy C-276 (EN 2.4819/UNS N10276)
M	Alloy 400 (UNS N04400)
D ⁽¹⁾	Duplex (EN 1.4462/UNS S31803/22Cr)
F	Alloy 304 (UNS S30400)
L	Alloy 625 (EN 2.4856/UNS N06625)

Code	Description
C ⁽¹⁾	Carbon steel (A105/A106 Gr. B)
S	316L/EN 1.4404
X	Special material (consult factory)

(1) Requires Chamber type code G or N.

Related information

[Special material](#)

Size

Code	Description
2	2-in. (DN50)
3	3-in. (DN80)
4	4-in. (DN100)

Instrument connection type

Code	Description
F	Flanged
T	Threaded
N	N/A

Related information

[Instrument connection type](#)

Chamber rating

Code	Description
A	ASME B16.5 Class 150 flange
B	ASME B16.5 Class 300 flange
C	ASME B16.5 Class 600 flange
D	ASME B16.5 Class 900 flange
E	ASME B16.5 Class 1500 flange
F	ASME B16.5 Class 2500 flange
G	EN1092-1 PN6 flange
H	EN1092-1 PN16 flange
I	EN1092-1 PN40 flange
J	EN1092-1 PN64 flange
K	EN1092-1 PN100 flange
L	EN1092-1 PN160 flange
M	EN1092-1 PN250 flange

Code	Description
N	EN1092-1 PN320 flange
O	EN1092-1 PN400 flange
P	EN1092-1 PN25 flange
X	Special

Center-to-center

Select code for chamber standard length. Longer chamber is available, contact factory.

Code	Description
1	0-1 m
2	1-2 m
3	2-3 m
4	3-4 m
5	4-5 m
6	5-6 m
7	6-7 m
8	7-8 m
9	8-9 m

Q-number

Q-number is unique for each quotation and is provided to you.

Code	Description
QXXXXX	Reference number for this particular quotation

Additional options

Consolidate or assemble to

Code	Description
XC ⁽¹⁾	Consolidate to transmitter
XA ⁽²⁾	Assemble and pressure tested

(1) Selecting the XC option code for the Rosemount 5300 Guided Wave Radar and a Rosemount chamber will result in matching, consolidating, configuring, and shipping of the two products in one crate. Note that the flange bolts are only hand-tightened.

(2) Chamber and radar level transmitter are assembled together.

Related information

[Dimensions checklist for option code XC and XA](#)

Customer specific requirements

Additional requirements can be specified in quotation, for example:

Non-destructive testing (NDT)

The following tests are available upon request:

- Visual inspection
- Dye penetrating test
- Positive Material Identification (PMI)
- Post Weld Heat Treatment (PWHT)
- Pickling and passivation
- Radiograph of welds
- Hardness testing
- Other tests are available upon request (consult factory for additional information)

GWR vapor compensation probe

Saturated steam under high pressure can influence radar level transmitter measurements. A Rosemount Guided Wave Radar (GWR) level transmitter, with a Dynamic Vapor Compensation probe fitted, automatically compensates for this and maintains the level accuracy. Refer to Rosemount 5300 [Product Data Sheet](#) for further information about Dynamic Vapor Compensation. Specify chamber dimension T according to [Table 1](#).

Weld inspection

In addition to visual inspection, X-Ray can be used to inspect chamber body welds. Where X-Ray is not practical, inspection of the branch connection welds is available using Dye Penetrate Inspection (DPI) on stainless steel or Magnetic Particle Inspection (MPI) on carbon steel.

Special material

Special material can be specified in quotation, for example:

- Alloy 316 Ti (1.4571/UNS S31635)
- Super Duplex (1.4410/UNS S3850)⁽¹⁾
- Alloy Titanium Grade 2 3.7035
- Low Temperature Carbon steel A350 LF2/A333 Gr. 6⁽¹⁾

(1) Requires Chamber type code G or N.

Material certification

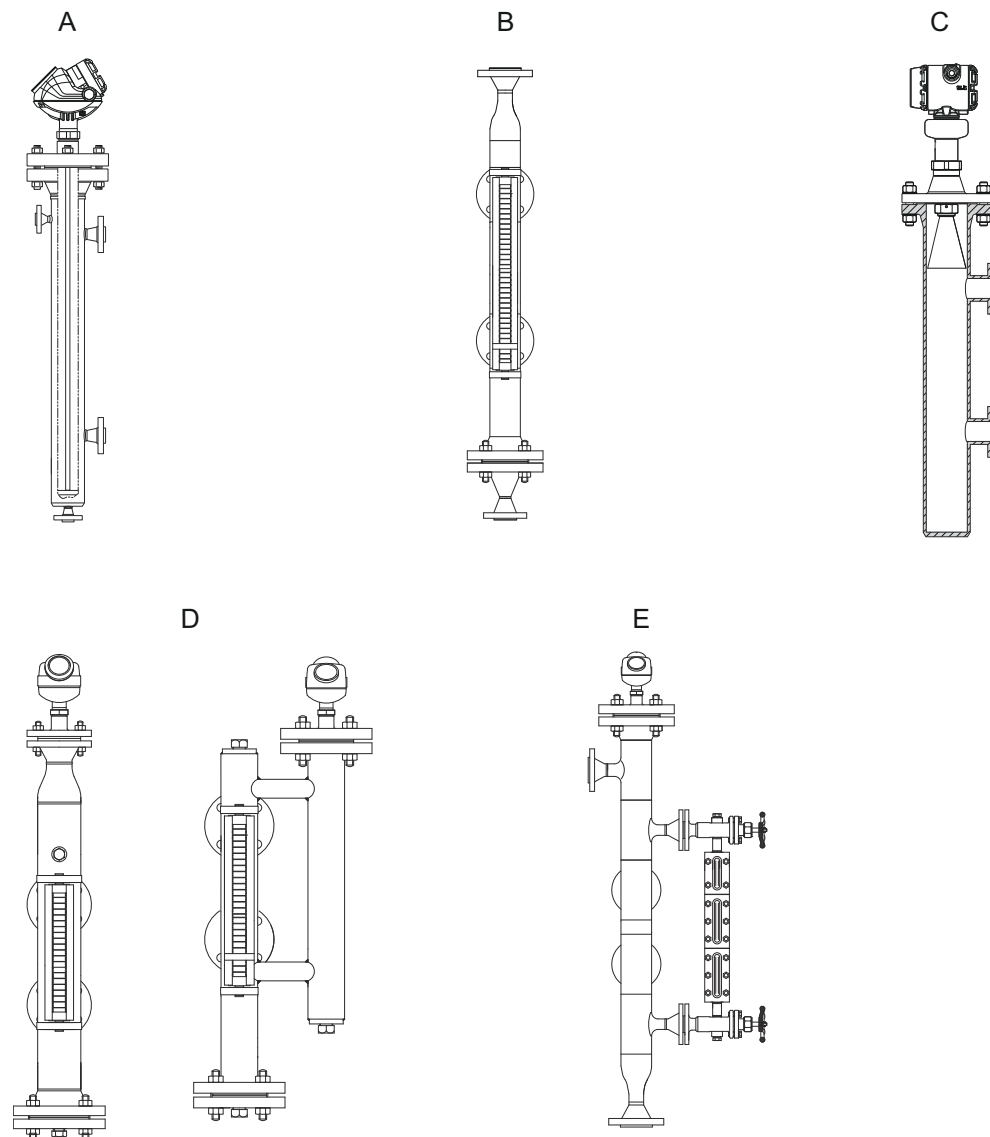
Material traceability certification conforming to EN 10204 3.1 is available, and Positive Material Identification (PMI) can also be ordered. PMI is a process to identify the composition of the material of the chamber and can be requested to support any material certificates that have been supplied. Requests for PMI should be made when making an inquiry.

Valves

Valves are commonly mounted on the drain or vent connection to allow draining or venting of the chamber. It is common practice to also mount valves on the process connection to allow isolation of the chamber. Valves can be supplied with the Rosemount CMB, and details are available upon request.

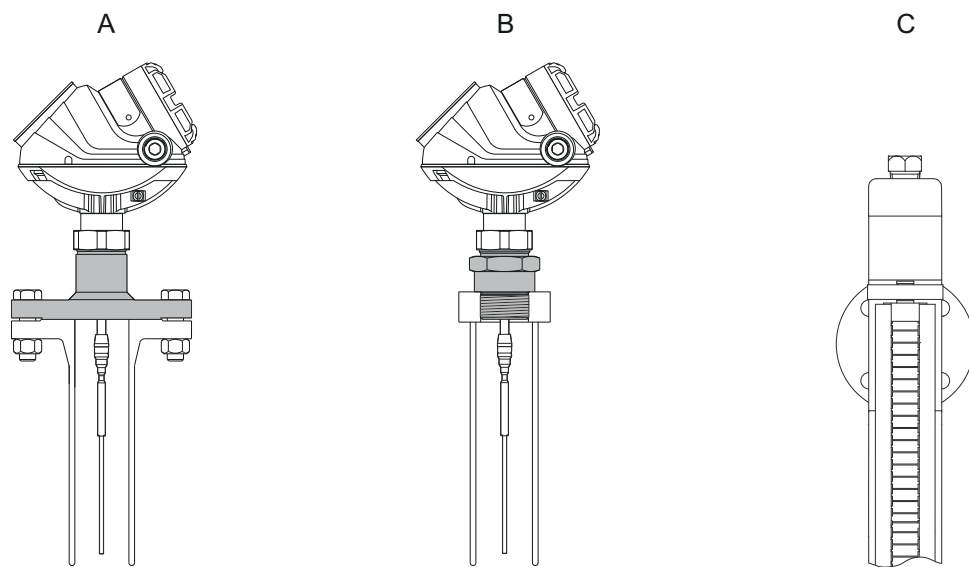
Specifications

Chamber type



- A. Chamber with Guided Wave Radar
- B. Magnetic level gauge/indicator/transmitter
- C. Chamber with Non-Contacting Radar
- D. Dual chamber with Radar and MLG/MLI/MLT – there are two versions available for this chamber type:
 - Radar mounted in the same pipe with the MLG/MLI/MLT
 - Chamber mounted in parallel with the MLG/MLI/MLT
- E. Chamber with sight glass

Instrument connection type

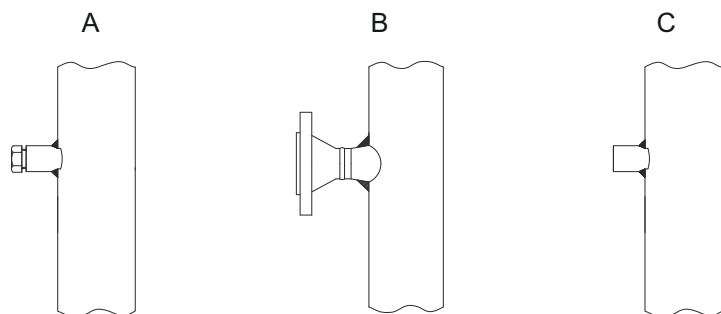


- A. *Flange connection*
- B. *Threaded connection*
- C. *Connection without instrument*

Chamber design examples

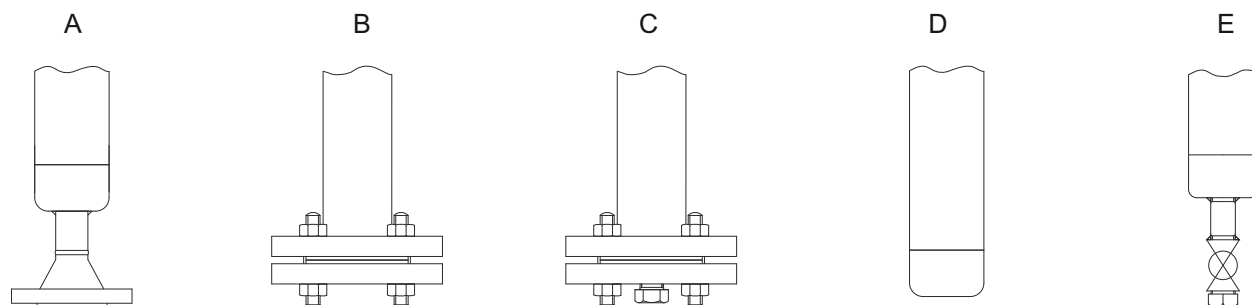
There are several options available for the process, vent, and drain connections of the chamber. Connection examples are presented here:

Vent connection (examples)



- A. Vent plug G/NPT 1/2
- B. Flange connection
- C. Weld stub

Drain connection (examples)



- A. Pipe cap with drain flange
- B. Flange connection
- C. Flange connection with drain plug
- D. Pipe cap without drain
- E. Pipe cap with drain valve

Chamber dimensions

Figure 2: Chamber Dimensions

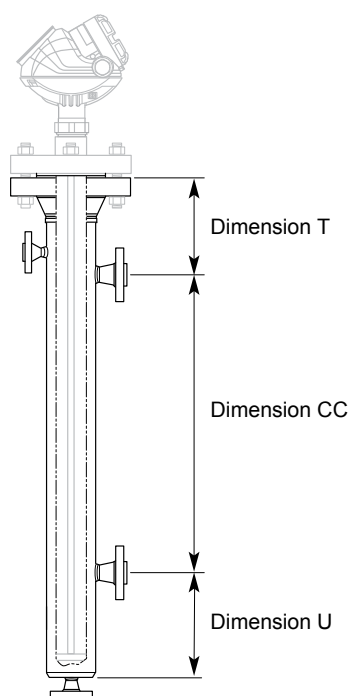


Table 1: Chamber Dimensions

Chamber design	Dimension		
	T	U	CC ⁽¹⁾
Standard	10.8 in. (275 mm)	11.4 in. (290 mm)	Customer specific dimension
Standard with radar option R1	22.0 in. (560 mm)	11.4 in. (290 mm)	Customer specific dimension
Standard with radar option R2	28.0 in. (710 mm)	11.4 in. (290 mm)	Customer specific dimension
Customer specific dimension and/or design	Customer specific dimension ⁽²⁾	Customer specific dimension ⁽²⁾	Customer specific dimension

(1) The chamber center-to-center dimension is critical and must match with the process vessel center-to-center.

(2) For radar probe length calculation, blind zones, and reduced accuracy zones, refer to Rosemount 5300 [Product Data Sheet](#) and Rosemount 3308 [Product Data Sheet](#).

Dimensions checklist for option code XC and XA

- Verify the T and U dimensions: For radar probe length calculation, blind zones, and reduced accuracy zones, refer to Rosemount 5300 [Product Data Sheet](#) and Rosemount 3308 [Product Data Sheet](#).
- Make sure to select the right centering disc size. Refer to [Centering discs](#).
- Make sure the chamber and radar instrument connections match according to; size, rating, and flange face. Refer to Rosemount 5300 [Product Data Sheet](#) and Rosemount 3308 [Product Data Sheet](#).

Centering discs

Figure 3: Centering Disc

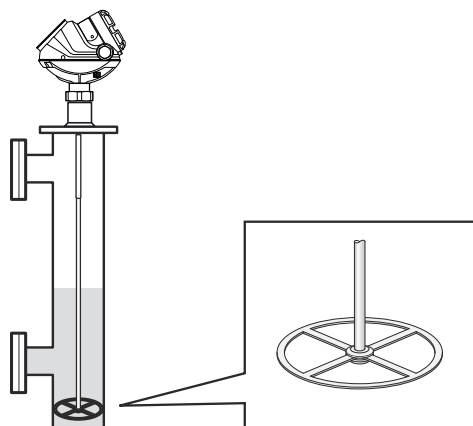


Table 2: Centering Disc Size Recommendation for Different Pipe Schedules

Pipe size	Pipe schedule			
	5s, 5 and 10s,10	40s, 40 and 80s, 80	120	160
2-in.	2-in.	2-in.	N/A ⁽¹⁾	N/A ⁽²⁾
3-in.	3-in.	3-in.	N/A ⁽¹⁾	2-in.
4-in.	4-in.	4-in.	3-in.	3-in.
5-in.	4-in.	4-in.	4-in.	4-in.
6-in.	6-in.	6-in.	4-in.	4-in.
7-in.	N/A ⁽¹⁾	6-in.	N/A ⁽¹⁾	N/A ⁽¹⁾
8-in.	8-in.	8-in.	6-in.	6-in.

(1) Schedule is not available for pipe size.

(2) No centering disc is available.

For more information: www.emerson.com

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