Universal Chamber
Model 5xx

DESCRIPTION

The Model 5xx is a self-contained external chamber, also referred to as a cage, designed for use with our top mounting level transmitters or switches. Quality construction and a wide selection of configurations make this chamber an ideal means of accessing various level technologies without mounting them directly into the process vessel. The chambers are suitable for use with Eclipse® Guided Wave Radar transmitters; Jupiter® Magnetostrictive transmitters; Modulevel® Displacer transmitters; electronic point level switches; and top-mounted displacer switches.

FEATURES

- Sealed or flanged-top chamber options
- 2”, 3” and 4” nominal chamber diameters to accommodate all sensing elements
- Carbon steel and stainless steel materials of construction are standard options with a variety of special alloys available
- Rugged commercial construction available as well as ASME B31.3, ASME B31.1, NACE or combined NACE and ASME B31.3 construction options
- Flange ratings up to 2500# (ASME) or PN 400 (EN 1092-1)
- Applications up to +426 °C (+800 °F) for carbon steel construction or +537 °C (+1000 °F) for stainless steel; verify level instrument is equipped for necessary process temperatures

APPLICATIONS

MEDIA: Liquids or slurries, clean or dirty, light hydrocarbons to heavy acids (SG=0.23 to 2.20)

VESSELS: Process & storage, bridles, bypass chambers, interface, sumps & pits up to unit pressure & temperature ratings.

CONDITIONS: Most liquid level measurement and control applications including those with varying dielectric, vapors, turbulence, foam, buildup, bubbling or boiling and high fill/empty rates. Also, liquid/liquid interface level measurement or density control.

MODEL NUMBER

Model:	X	5																N	N						
Digit:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

X = product with a specific customer requirement

1 PRODUCT

5	External Chamber

2 UNIT OF MEASUREMENT

E	English (inches)
M	Metric (cm)

3 MOUNTING & CONSTRUCTION

	PC Orientation	Top	Bottom
B	Side/Side	Flange	Cap
C	Side/Side	Flange	Flange
H	Side/Bottom	Flange	Flange
J	Side/Bottom	Flange	Cap
K	Side/Side	Cap	Cap
L	Side/Bottom	Cap	Cap

4 DIGIT CHAMBER / FLANGE RATING

ASME	
A	150#
B	300#
C	600#
D	900#
E	1500#
F	2500#

EN 1092-1	
1	PN16
2	PN25
3	PN40
4	PN63
5	PN100
6	PN160
7	PN250
8	PN320
9	PN400

5 MATERIAL OF CONSTRUCTION

A	316/316L Stainless Steel Chamber
B	316/316L Stainless Steel Chamber with Carbon Steel Fittings and Flanges
C	304/304L Stainless Steel Chamber
D	304/304L Stainless Steel Chamber with Carbon Steel Fittings and Flanges
G	321 Stainless Steel
H	347 Stainless Steel
J	904L Stainless Steel
L	Carbon Steel
M	Low Temp Carbon Steel
P	Monel 400
Q	Hastelloy C-276
R	Alloy 20
S	Inconel 625
T	Incoloy 825
U	254 SMO
6	Duplex Stainless Steel
7	Super Duplex Stainless Steel (UNS S32750)

6 CONSTRUCTION CODE

	PED
D	NACE MR0175 / MR0103
E	ASME B31.3 & NACE MR0175 / MR0103
J	Industrial
Z	ASME B31.3
	Non-PED
1	Industrial Grade (std.)
2	ASME B31.1 for Power Piping Standard
3	ASME B31.3 for Process Piping Standard
4	Industrial Grade with NACE MR0175 / MR0103
6	ASME B31.3 and NACE MR0175 / MR0103

7 CHAMBER HEAD FLANGE(S) TYPE

N	No Chamber Flange
	ASME
A	RF Slip-On (standard for Digit 4 = A, B or C)
B	RF Weld Neck
C	RF Socket Weld (Digit 4 = A or B)
J	RTJ Weld Neck (standard for Digit 4 = D, E or F)
	EN 1092-1
6	Weld Neck (Type 11) Type A
7	Weld Neck (Type 11) Type B2 (standard for Digit 4 = 4, 5, 6, 7 or 8)
8	Weld Neck (Type 11) Type B1 (standard for Digit 4 = 1, 2 or 3)

8 PROCESS CONNECTION TYPE

	Use with 9th Digit ASME Sizes
M	Threaded NPT-M (male)
N	Threaded NPT-F (female)
P	Pipe Nipple Plain End
Q	Socket Weld
R	Pipe Nipple Butt Weld End
S	Weldolet
T	Sockolet
W	Thredolet
A	RF Slip-On Flange
B	RF Weld Neck Flange
C	RF Socket Weld Flange
J	RJ Weld Neck Flange
	Use with 9th Digit EN 1092-1 Sizes
6	Weld Neck (Type 11) EN 1092-1 Type A
7	Weld Neck (Type 11) EN 1092-1 Type B2
8	Weld Neck (Type 11) EN 1092-1 Type B1

MODEL NUMBER

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9 PROCESS CONNECTION SIZE

	ASME		EN 1092-1
A	½"	**1**	DN 15
B	¾"	**2**	DN 20
C	1"	**3**	DN 25
D	1½"	**4**	DN 40
E	2"	**5**	DN 50
F	2½"	**6**	DN 65
G	3"	**7**	DN 80
H	4"	**8**	DN 100
J	6"	**9**	DN 150

10 GASKET STYLE FOR CHAMBER FLANGE(S)

N	None (if mating flanges not supplied)
B	Spiral wound with graphite filler and carbon steel outer ring
C	Spiral wound with graphite filler, inner ring matching chamber material; outer ring material can vary
D	RTJ oval ring
E	RTJ octagonal ring (standard when digit 7 = J)

11 CHAMBER BOLTING MATERIAL

N	None (if mating flanges are not supplied)
	Stainless Steel
A	304 Stainless Steel Class 2, A-193 Gr B8 Class 2 / A-194 Gr 8
C	316 Stainless Steel Class 2, A-193 Gr B8M Class 2 / A-194 Gr 8M
D	316 Stainless Steel Class 2 with PTFE coating, A-193 Gr B8M Class 2 / A-194 Gr 8MA
G	316 Stainless Steel Class 2 + NACE, A-193 Gr B8M Class 2 / A-194 Gr 8MA
	Alloy
M	Alloy Steel, A-193 Gr B7 / A-194 Gr 2H (Available when digit 5 + B, D or L)
P	Alloy Steel + NACE, A-193 Gr B7M / A-194 Gr 2HM (Available when digit 5 = B, D or L)
S	Alloy Steel with zinc plating, A-193 Gr B7 / A-194 Gr 2H (+390 °F (+210 °C) is max. temp. for zinc-plated bolting)
T	Alloy Steel with zinc plating + NACE, A-193 Gr B7M / A-194 Gr 2HM (+390 °F (+210 °C) is max. temp. for zinc-plated bolting)
U	Alloy Steel with PTFE coating, A-193 Gr B7 / A-194 Gr 2H

12 VENT SIZE

N	None		
	ASME		**EN 1092-1**
1	½"	**A**	DN 15
2	¾"	**B**	DN 20
3	1"	**C**	DN 25
4	1½"	**D**	DN 40
5	2"	**E**	DN 50

13 VENT TYPE

N	None
	Use with 12th Digit ASME Sizes
A	Ball Valve, FNPT × FNPT
B	Ball Valve, SW × SW
C	Ball Valve, SW × FNPT
D	Gate Valve, FNPT × FNPT
E	Gate Valve, SW × SW
F	Gate Valve, SW × FNPT
1	Threaded NPT-F (female) with plug
2	Socket Weld
3	Threaded NPT-M (male)
4	Pipe Nipple Plain End
5	Pipe Nipple Butt Weld End
6	RF Slip-On Flange
7	RF Weld Neck Flange
9	RJ Weld Neck Flange
G	RF Flange Ball Valve w/ spool
H	RF Flange Gate Valve w/ spool
	Use with 12th Digit EN 1092-1 Sizes
R	Weld Neck (Type 11) Type A
S	Weld Neck (Type 11) Type B2
T	Weld Neck (Type 11) Type B1

14 DRAIN SIZE

N	None		
	ASME		**EN 1092-1**
1	½"	**A**	DN 15
2	¾"	**B**	DN 20
3	1"	**C**	DN 25
4	1½"	**D**	DN 40
5	2"	**E**	DN 50

MODEL NUMBER

Model:	X	5	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨				N	N		N	N			
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15 DRAIN TYPE

N	None
	Use with 14th Digit ASME Sizes
A	Ball Valve, FNPT × FNPT
B	Ball Valve, SW × SW
C	Ball Valve, SW × FNPT
D	Gate Valve, FNPT × FNPT
E	Gate Valve, SW × SW
F	Gate Valve, SW × FNPT
1	Threaded NPT-F (female) with plug
2	Socket Weld
3	Threaded NPT-M (male)
4	Pipe Nipple Plain End
5	Pipe Nipple Butt Weld End
6	RF Slip-On Flange
7	RF Weld Neck Flange
9	RJ Weld Neck Flange
G	RF Flange Ball Valve w/ spool
H	RF Flange Gate Valve w/ spool
	Use with 14th Digit EN 1092-1 Sizes
R	Weld Neck (Type 11) Type A
S	Weld Neck (Type 11) Type B2
T	Weld Neck (Type 11) Type B1

16 CHAMBER HEIGHT DIMENSIONS — inches (mm)

	Dimension A	Dimension B	Instument Type
A	6.00 (152)	8.00 (203)	Guided Wave Radar
B	8.00 (203)	8.00 (203)	
C	10.00 (254)	8.00 (203)	
D	12.00 (305)	8.00 (203)	
E	14.00 (356)	8.00 (203)	
F	6.00 (152)	12.00 (305)	
G	8.00 (203)	12.00 (305)	
H	10.00 (254)	12.00 (305)	
J	12.00 (305)	12.00 (305)	
K	14.00 (356)	12.00 (305)	
L	10.00 (254)	8.00 (203)	Displacer Switches
M	6.00 (152)	8.00 (203)	Ultrasonic and Thermal Dispersion Switches
P	6.00 (152)	8.00 (203)	Magnetostrictive
R	7.31 (186)	6.00 (152)	Displacer Transmitters
S	9.31 (236)	6.00 (152)	
T	12.62 (321)	6.00 (152)	

17 Insulation Options

N	No Insulation Required
	Insulation Blankets
A	Chamber pipe only: up to +260 °C (+500 °F)
B	Chamber pipe only: +260 to +538 °C (+500 to +1000 °F)
C	Chamber and flanges: up to +260 °C (+500 °F)
D	Chamber and flanges: +260 to +538 °C (+500 to +1000 °F)
	Cryogenic
L	Process temperature down to -100° C (-150 °F)
P	Process temperature down to -196° C (-320 °F)
	Other Options (available for applications up to +260 °C (+500 F)
H	Electric heat tracing (includes insulation blanket)
J	Steam jacket (½" NPT inlet / outlet)
S	Steam tracing (⅜" tubing, includes insulation blanket)

18 Unused

N	None

19 Unused

N	None

20 Chamber Code

1	2" S10
2	2" S40
8	2" S80
K	2” S160
L	2" SXXS
A	3" S10
B	3" S40
C	3" S80
D	3” S160
M	3" SXXS
E	4" S10
F	4" S40
G	4" S80
H	4” S160
J	4" SXXS

21 Unused

N	None

22 Unused

N	None

23–25 Piping Dimensions

X X X	Specified in **Inches** — when Model Digit 2 = E (max = 214) Specified in **Centimeters** — when Model Digit 2 = M (max = 543)

MODEL NUMBER

DIGIT 16 INSTRUMENT GUIDELINES

<table>
<tr><th colspan="3">Instrument</th><th>Digit 16</th></tr>
<tr><td colspan="2" rowspan="4">Guided Wave Radar</td><td>Steam Probes</td><td>B</td></tr>
<tr><td>Coaxial and Caged Probes</td><td>A</td></tr>
<tr><td>Single Rod Probes</td><td>C</td></tr>
<tr><td>Flexible Probes</td><td>J</td></tr>
<tr><td colspan="3">Magnetostrictive</td><td>P</td></tr>
<tr><td colspan="3">Displacer Switches</td><td>L</td></tr>
<tr><td colspan="3">Ultrasonic and Thermal Dispersion Switches</td><td>M</td></tr>
<tr><td rowspan="5">Displacer Transmitters</td><td rowspan="2">0.5 S.G.</td><td>Flange Rating ≤ 600#/PN100</td><td>S</td></tr>
<tr><td>Flange Rating ≥ 900#/PN160</td><td>T</td></tr>
<tr><td rowspan="2">1.0 S.G.</td><td>Flange Rating ≤ 600#/PN100</td><td>R</td></tr>
<tr><td>Flange Rating ≥ 900#/PN160</td><td>S</td></tr>
<tr><td>2.0 S.G.</td><td>Flange Rating ≤ 600#/PN100</td><td>S</td></tr>
</table>

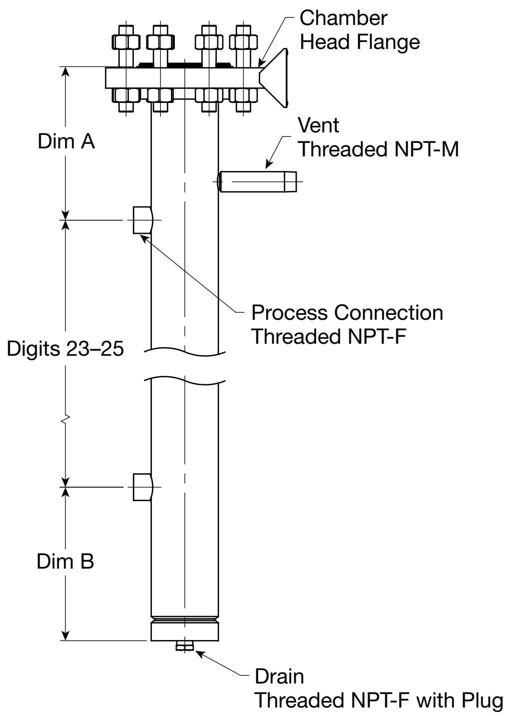
- Vent connections or high pressure chamber flanges may require larger A or B dimensions

Dim A: Top of process piping dimension to face of primary chamber component

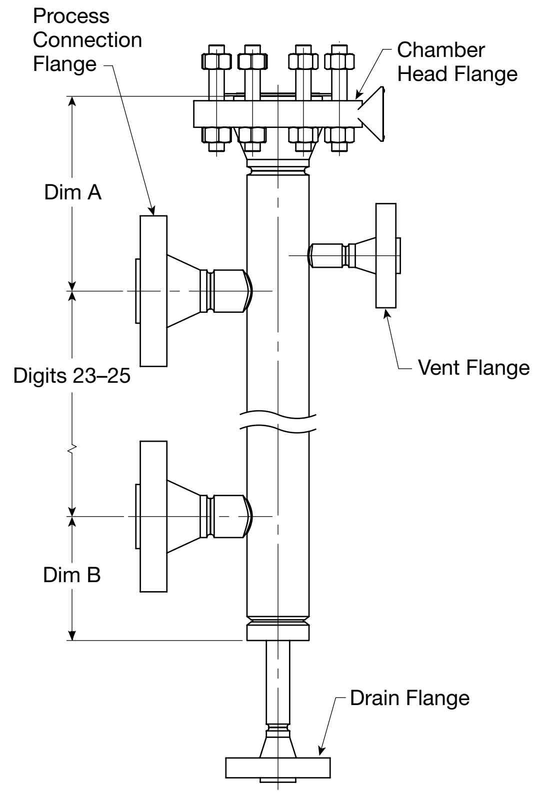
Dim B: Bottom of process piping dimension to face of primary chamber component

Dim B is not applicable for side-bottom configurations

DIMENSIONS

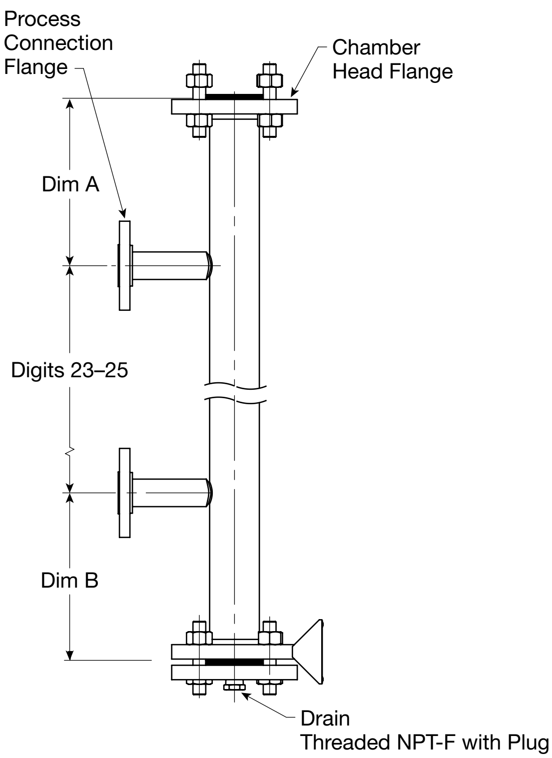


5XB-XXXA-NXXX-XNX1-XNNNBNN-XXX
3" S40 Chamber: SIDE-SIDE
(Flange Top & Cap Bottom)
RF SO Chamber Head Flange
Threaded NPT-F Process Connection,
Vent – Threaded NPT-M
Drain – Threaded NPT-F with Plug

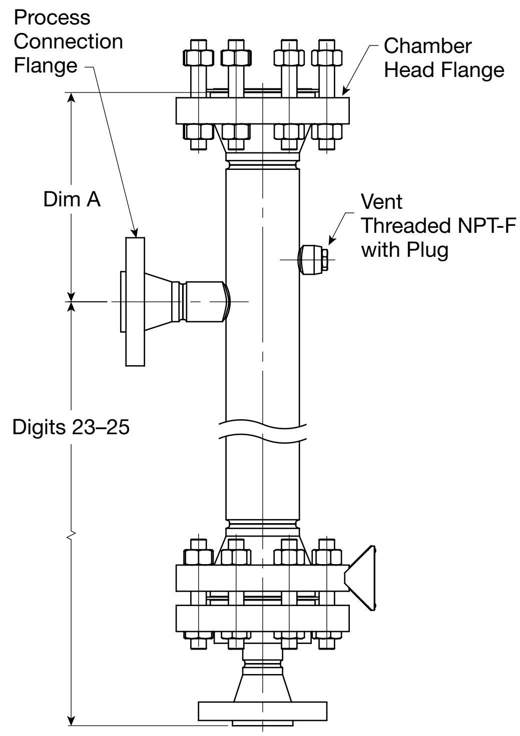


5XB-XXXB-BXXX-X7X7-XNNNCNN-XXX
3" S80 Chamber: SIDE-SIDE
(Flange Top & Cap Bottom),
RF Weldneck Chamber Head Flange
RF Weldneck Process Connection Flange,
Vent – RF Weldneck Flange
Drain – RF Weldneck Flange

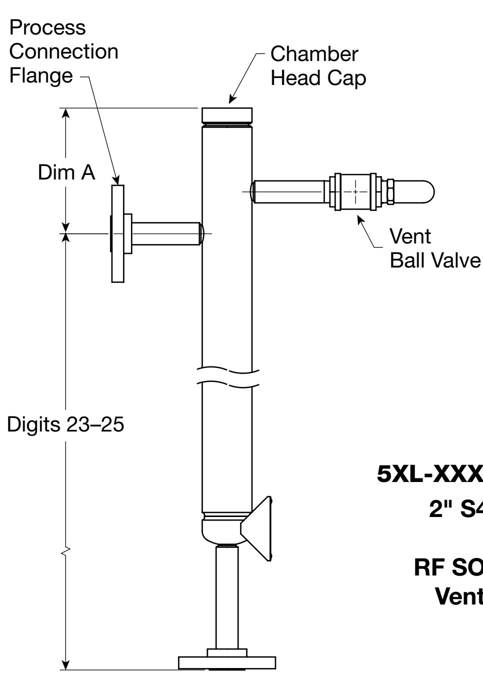
DIMENSIONS



5XC-XXXA-AXXX-NNXX-XNNN2NN-XXX
2" S40 Chamber: SIDE-SIDE
(Flange Top & Bottom),
RF SO Chamber Head Flange,
RF SO Process Connection Flange,
Drain – Threaded NPT-F with Plug



5XH-XXXB-BXXX-XXNN-XNNNBNN-XXX
2" S80 Chamber: SIDE-BOTTOM
(Flange Top & Bottom),
RF Weldneck Chamber Head Flange
RF Weldneck Process Connection Flange,
Vent – Threaded NPT-F with Plug



5XL-XXXN-AXNN-XANN-XNNN2NN-XXX
2" S40 Chamber: SIDE-BOTTOM
(Cap Top & Bottom),
RF SO Process Connection Flange,
Vent – Ball Valve (FNPT × FNPT)

QUALITY

The quality assurance system in place at AMETEK LMS guarantees the highest level of quality throughout the company. AMETEK LMS is committed to providing full customer satisfaction both in quality products and quality service.

The AMETEK LMS quality assurance system is registered to ISO 9001 affirming its commitment to known international quality standards providing the strongest assurance of product/service quality available.

WARRANTY

All AMETEK LMS mechanical level and flow controls are warranted free of defects in materials or workmanship for three full years from the date of original factory shipment.

If returned within the warranty period; and, upon factory inspection of the control, the cause of the claim is determined to be covered under the warranty; then, AMETEK LMS will repair or replace the control at no cost to the purchaser (or owner) other than transportation.

AMETEK LMS shall not be liable for misapplication, labor claims, direct or consequential damage or expense arising from the installation or use of equipment. There are no other warranties expressed or implied, except special written warranties covering some AMETEK LMS products.

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