

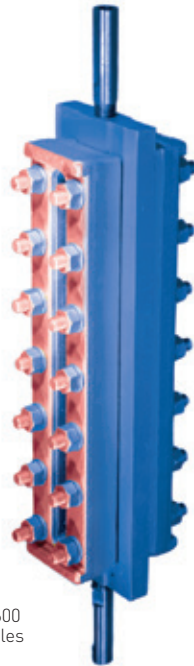


YARWAY SERIES 4300/4600/4800 LIQUID LEVEL GAUGES

Armored transparent flat glass liquid level gauges suitable for steam service on boiler drum, feedwater heater and other vessel level indication applications



Series 4300



Series 4600
with nipples

FEATURES

- Suitable for indoor or outdoor installation.
- For use with low maintenance stuffing box gauge valves (nipple connected models).
- Through bolt design allows easy servicing.
- Cover enclosed glass resists breakage.
- Thermally induced linear expansion absorbed within the stuffing box on nipple connected models or by the expansion loop on flange connected models.
- Live loaded cover bolting to withstand cyclic service.
- Mica shield protection to prevent gauge glass erosion.
- Tempered borosilicate glass for high strength and thermal shock resistance.
- Series 4600 and 4800 meet ASME Section I.
- PED 97/23/EC conformance available.

GENERAL APPLICATION

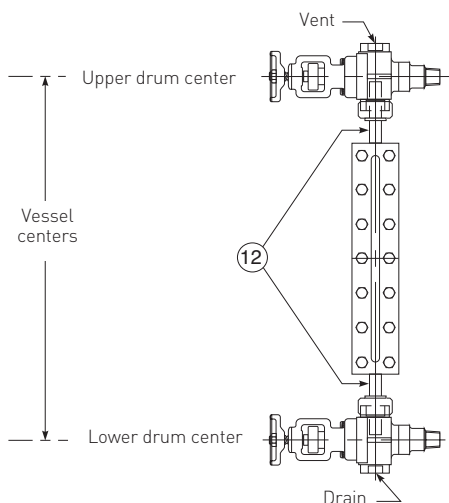
These level gauges are suitable for use in steam service for boiler drum, feedwater heater and other vessel level indication applications. Series 4600 and 4800 are especially suited to IP and LP combined cycle HRSGs. Series 4300 is not for use in ASME Section I applications.

TECHNICAL DATA

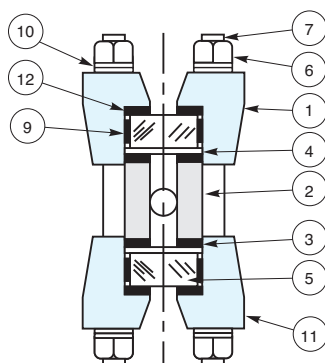
Sizes:	1/2" to 3/4" (12.5 to 19 mm)
Max pressures	
4300:	400 psi (28 bar)
4600:	650 psi (45 bar)
4800:	up to 1500 psi (103 bar)
Max. temperatures	
4300:	448°F (231°C)
4600:	497°F (258°C)
4800:	596°F (313°C)
Visibility	
4300:	10 1/4" to 69 1/8" (260 to 1756 mm)
4600:	9" to 58 1/2" (228 to 1486 mm)
4800:	9" to 35 1/2" (228 to 902 mm)
	Visibilities up to 139" (3530 mm) possible.

YARWAY SERIES 4300/4600/4800 LIQUID LEVEL GAUGES

PARTS, MATERIALS AND DIMENSIONS SERIES 4300



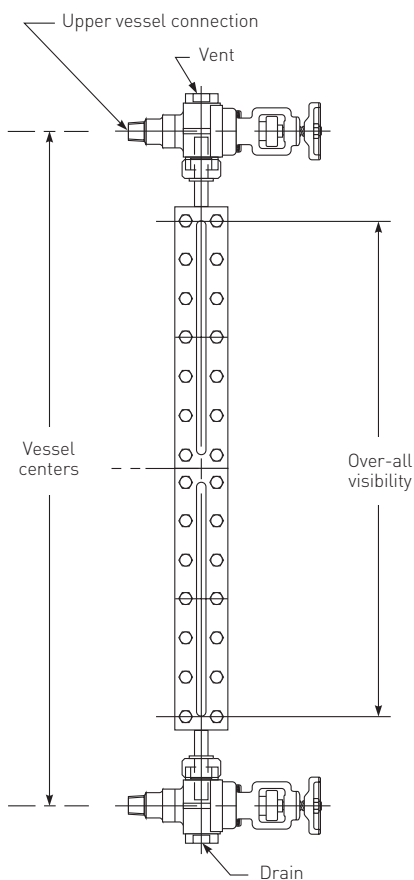
4316NB - 4319NB
shown with nipples and gaugecocks



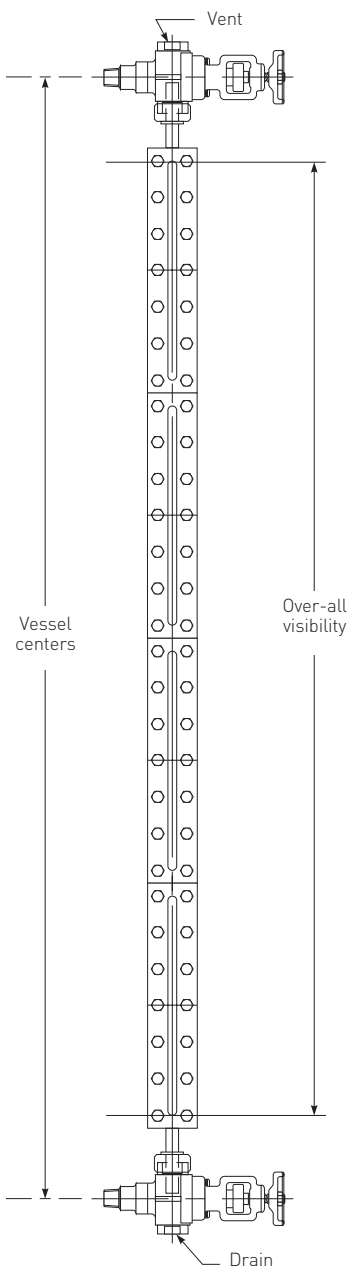
PARTS/MATERIALS

Item	Description	Material
1	Cover	ASTM A105
2	Chamber	ASTM A105
3*	Gasket	Grafoil® w/STS insert
4*	Shield	Mica
5*	Glass	Tempered borosilicate
6*	Nut	ASTM A-194 Gr. 2 or 2H
7*	Stud	ASTM A-193 Gr. B-7
8*	Cushion	Grafoil® w/Mylar insert
9*	Band	Rubber
10*	Belleville washer	17-7 PH SS
11	Nameplate	Stainless steel
12	Nipples	ASME SA479 Gr. 316/316L

* Recommended spare parts



4326NB - 4329NB
shown with nipples and gaugecocks



4347NB - 4349NB
shown with nipples and gaugecocks

DIMENSIONS, INCHES (mm) - Series 4300NB (up to 400 psig)

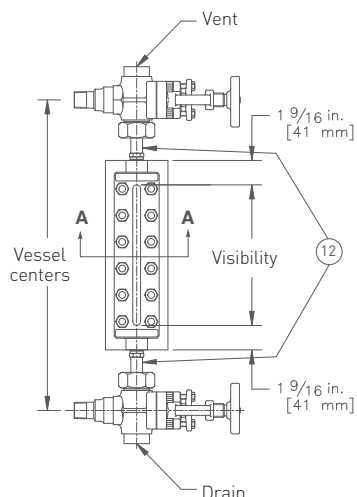
Model #	Visibility	Min. vessel centers with 4000T/4000S gaugecocks	No. of sections
4316NB	9 $\frac{1}{8}$ (232)	18 $\frac{1}{8}$ (460)	1
4317NB	10 $\frac{1}{4}$ (260)	19 $\frac{1}{4}$ (489)	1
4318NB	11 $\frac{1}{8}$ (302)	20 $\frac{3}{4}$ (530)	1
4319NB	12 $\frac{3}{8}$ (321)	21 $\frac{3}{8}$ (549)	1
4326NB	19 $\frac{1}{4}$ (502)	28 $\frac{3}{4}$ (730)	2
4327NB	22 (559)	31 (787)	2
4328NB	25 $\frac{1}{4}$ (641)	34 $\frac{1}{4}$ (870)	2
4329NB	26 $\frac{3}{4}$ (679)	35 $\frac{3}{4}$ (908)	2
4336NB	30 $\frac{3}{8}$ (772)	39 $\frac{3}{8}$ (1000)	3
4337NB	33 $\frac{3}{4}$ (857)	42 $\frac{3}{4}$ (1086)	3
4338NB	38 $\frac{3}{8}$ (981)	47 $\frac{3}{8}$ (1210)	3
4339NB	40 $\frac{7}{8}$ (1038)	49 $\frac{7}{8}$ (1267)	3
4347NB	45 $\frac{1}{2}$ (1156)	54 $\frac{1}{2}$ (1384)	4
4348NB	52 (1321)	61 (1549)	4
4349NB	55 (1397)	64 (1626)	4
4357NB	57 $\frac{1}{4}$ (1454)	66 $\frac{1}{4}$ (1683)	5
4358NB	65 $\frac{3}{8}$ (1661)	74 $\frac{3}{8}$ (1889)	5
4359NB	69 $\frac{1}{8}$ (1756)	78 $\frac{1}{8}$ (1984)	5
4368NB	78 $\frac{3}{4}$ (2000)	87 $\frac{3}{4}$ (2229)	6
4369NB	83 $\frac{1}{4}$ (2115)	92 $\frac{1}{4}$ (2343)	6
4378NB	92 $\frac{1}{8}$ (2340)	101 $\frac{1}{8}$ (2569)	7
4379NB	97 $\frac{3}{8}$ (2473)	106 $\frac{3}{8}$ (2702)	7
4388NB	105 $\frac{1}{2}$ (2680)	114 $\frac{1}{2}$ (2908)	8
4389NB	111 $\frac{1}{2}$ (2832)	120 $\frac{1}{2}$ (3061)	8

How to interpret the numbers

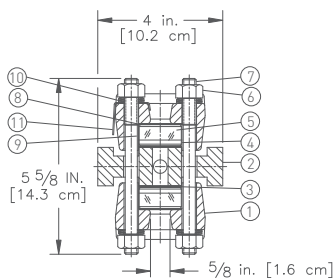
- 43 4300 transparent gauge
- 1 Number of sections
- 7 Glass size (for different visibilities) 6, 7, 8 or 9
- N Nipple connections (to gaugecocks)
- B Belleville washers

YARWAY SERIES 4300/4600/4800 LIQUID LEVEL GAUGES

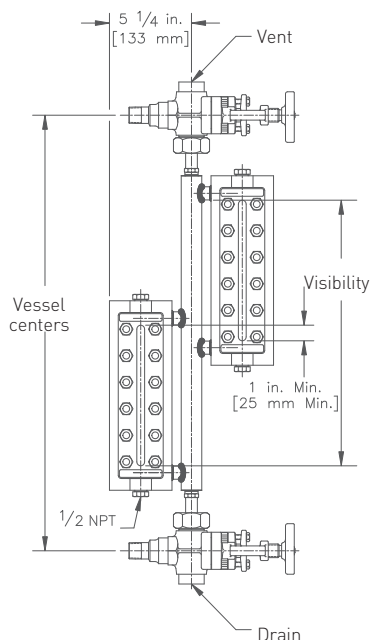
PARTS, MATERIALS AND DIMENSIONS SERIES 4600



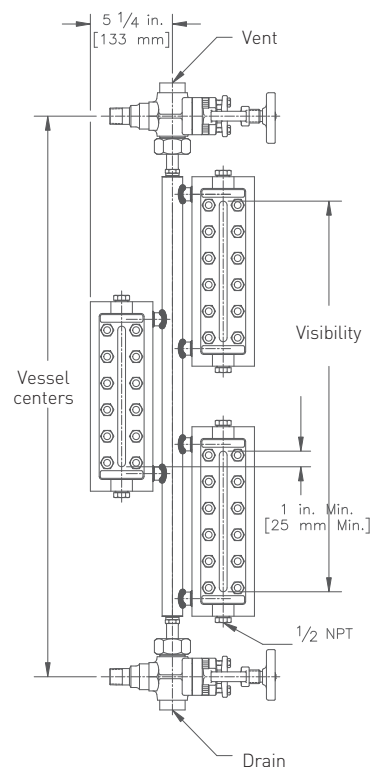
4616N - 4619N
shown with nipples and gaugecocks



Section A-A



4626N - 4629N
shown with nipples and gaugecocks



4636N - 4639N
shown with nipples and gaugecocks

PARTS/MATERIALS

Item	Description	Material
1	Cover	ASME SA105 carbon steel
2	Chamber	ASME SA285 Gr. C carbon steel
3*	Gasket	Grafoil® w/STS insert
4*	Shield	Mica
5*	Glass	Tempered borosilicate
6*	Nut	ASTM A-194 Gr. 2 or 2H
7*	Stud	ASTM A-193 Gr. B-7
8*	Cushion	Grafoil® w/STS insert
9*	Band	Rubber
10*	Belleville washer	17-7 PH SS
11	Nameplate	Stainless steel
12	Nipples (stuffing box adapters)	ASME SA479 Gr. 316/316L

If applicable

Standpipe	SA106 Gr. B carbon steel
Cross	SA181 Cl. 60 or SA105 carbon steel
Tee	SA181 Cl. 60 or SA105 carbon steel
Flange	SA105 carbon steel
Loop	SA106 Gr. B carbon steel

* Recommended spare parts

DIMENSIONS, INCHES (mm) - Series 4600N (up to 650 psig)

Model #	Max. Visibility	Min. vessel centers* with 4000T/4000S gaugecocks	No. of sections
4616N	9 [228]	19 5/8 [498]	1
4617N	10 1/8 [257]	20 3/4 [527]	1
4619N	12 1/2 [317]	23 1/8 [587]	1
4626N	17 [432]	27 5/8 [702]	2
4627N	19 1/4 [489]	29 7/8 [759]	2
4629N	24 [609]	34 5/8 [879]	2
4636N	25 [635]	35 5/8 [905]	3
4637N	28 3/8 [721]	39 [991]	3
4639N	35 1/2 [902]	46 1/8 [1172]	3
4646N	33 [838]	43 3/8 [1108]	4
4647N	37 1/2 [952]	48 1/8 [1222]	4
4649N	47 [1194]	57 5/8 [1464]	4
4656N	41 [1041]	51 5/8 [1311]	5
4657N	46 5/8 [1184]	57 1/4 [1454]	5
4659N	58 1/2 [1486]	69 5/8 [1756]	5

NOTE

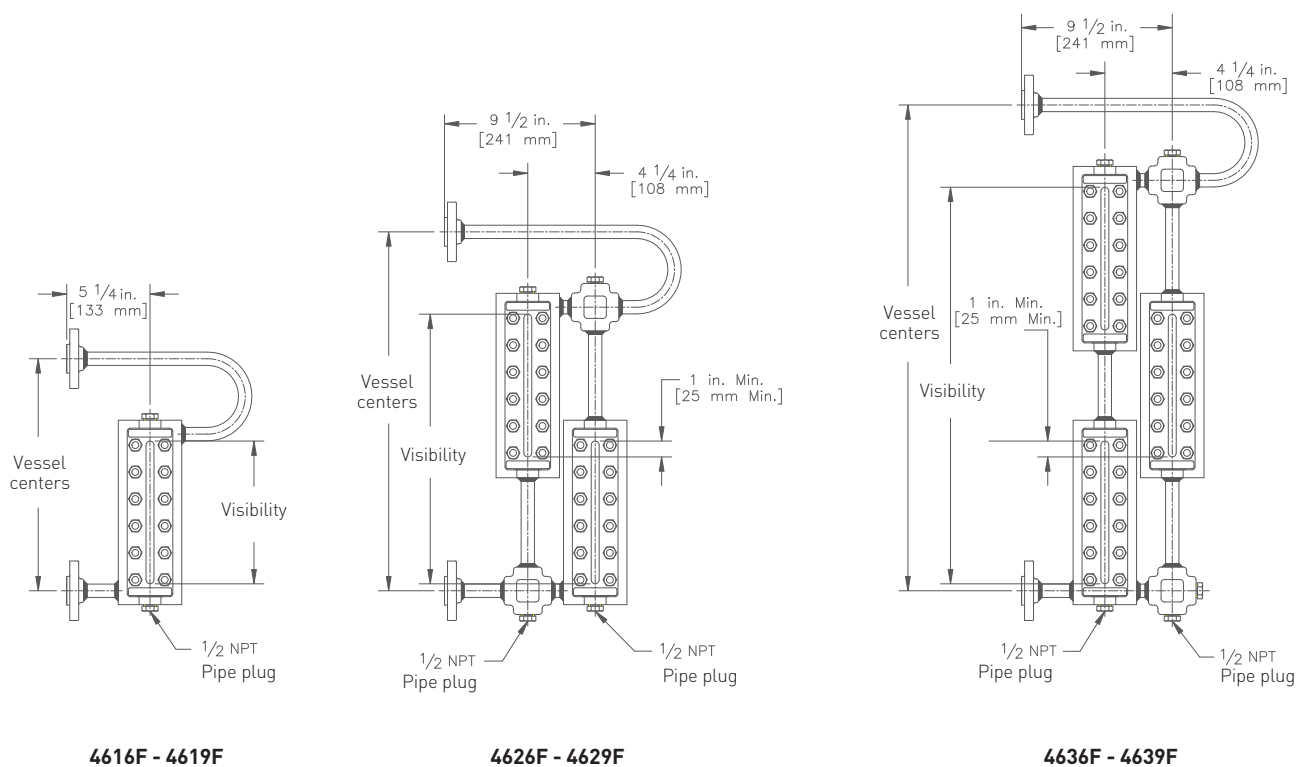
* 1/2" NPT connection, for 3/4" NPT connection add 1/2" to min. valve centers. For visibilities over 58 1/2" [1486], consult factory.

How to interpret the numbers

- 46 4600 transparent gauge
- 1 Number of sections
- 7 Glass size (for different visibilities) 6, 7 or 9
- N Nipple connections (to gaugecocks)

YARWAY SERIES 4300/4600/4800 LIQUID LEVEL GAUGES

PARTS, MATERIALS AND DIMENSIONS SERIES 4600



DIMENSIONS, INCHES (mm) - SERIES 4600F (up to 650 psig)

Model	Max. Visibility	Min. vessel centers*	No. of Sections
4616F	9 [229]	14 ⁵ / ₈ [371]	1
4617F	10 ¹ / ₈ [257]	15 ³ / ₈ [400]	1
4619F	12 ¹ / ₂ [318]	18 ¹ / ₈ [460]	1
4626F	17 [432]	22 ⁵ / ₈ [575]	2
4627F	19 ¹ / ₄ [489]	24 ⁷ / ₈ [632]	2
4629F	24 [610]	29 ⁵ / ₈ [752]	2
4636F	25 [635]	30 ⁵ / ₈ [778]	3
4637F	28 ³ / ₈ [721]	34 [864]	3
4639F	35 ¹ / ₂ [902]	41 ¹ / ₈ [1045]	3

NOTES

* 1/2" CL600 LG F SO vessel connection

For visibilities over 35 1/2" [902] consult factory

How to interpret the numbers

46 4600 transparent gauge

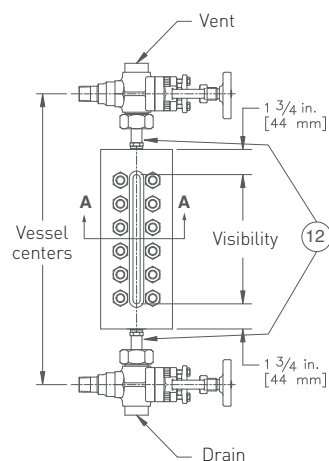
1 Number of sections

7 Glass size (for different visibilities) 6,7 or 9

F Flange connection

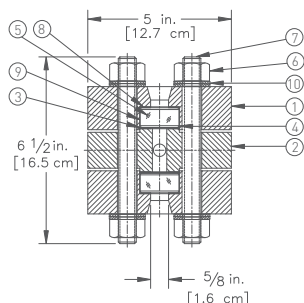
YARWAY SERIES 4300/4600/4800 LIQUID LEVEL GAUGES

PARTS, MATERIALS AND DIMENSIONS SERIES 4800

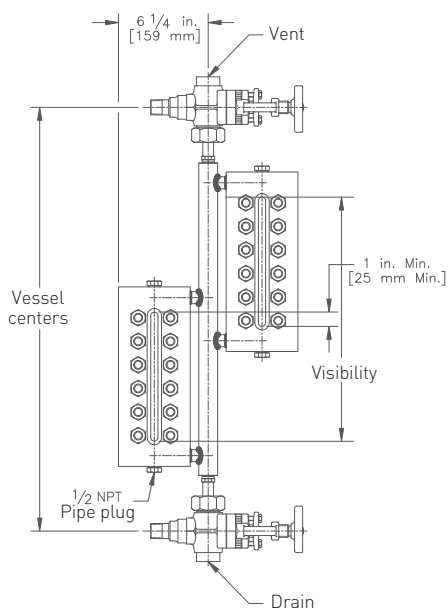


4816N-4819N

shown with nipples and gaugecocks

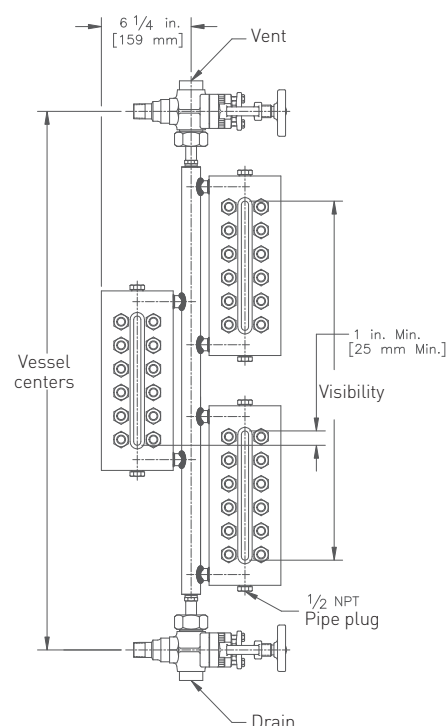


Section A-A



4826N-4829N

shown with nipples and gaugecocks



4836N-4839N

shown with nipples and gaugecocks

PARTS/MATERIALS

Item	Description	Material
1	Cover	ASME SA285 Gr. C Carbon Steel
2	Chamber	ASME SA285 Gr. C Carbon Steel
3*	Gasket	Grafoil® w/STS insert
4*	Shield	Mica
5*	Glass	Tempered borosilicate
6*	Nut	ASTM A-194 Gr. 2 or 2H
7*	Stud	ASTM A-193 Gr. B-7
8*	Cushion	Grafoil® w/STS insert
9*	Band	Rubber
10*	Belleville washer	Cad. Plated H11/H13 Carbon Steel
11	Nameplate	Stainless steel
12	Nipples	ASME SA479 Gr. 316/316L

(If Applicable)

Standpipe	SA106 Gr. B Carbon Steel
Cross	SA181 Cl. 60 or SA105 Carbon Steel
Tee	SA181 Cl. 60 or SA105 Carbon Steel
Flange	SA105 Carbon Steel
Loop	SA106 Gr. B Carbon Steel

* Recommended spare parts

DIMENSIONS, INCHES (mm) - SERIES 4800N (up to 850 psig or 1500 psig using locking collar)

Model	Max. Visibility	Min. vessel centers* with 4000T/4000S gaugecocks	No. of Sections
4816N	9 [229]	20 [508]	1
4817N	10 1/8 [257]	21 1/8 [537]	1
4819N	12 1/2 [318]	23 1/2 [597]	1
4826N	17 [432]	29 1/4 [743]	2
4827N	19 1/4 [489]	31 1/2 [800]	2
4829N	24 [610]	36 1/4 [921]	2
4836N	25 [635]	37 1/4 [946]	3
4837N	28 3/8 [721]	40 3/8 [1032]	3
4839N	35 1/2 [902]	47 3/4 [1213]	3

NOTES

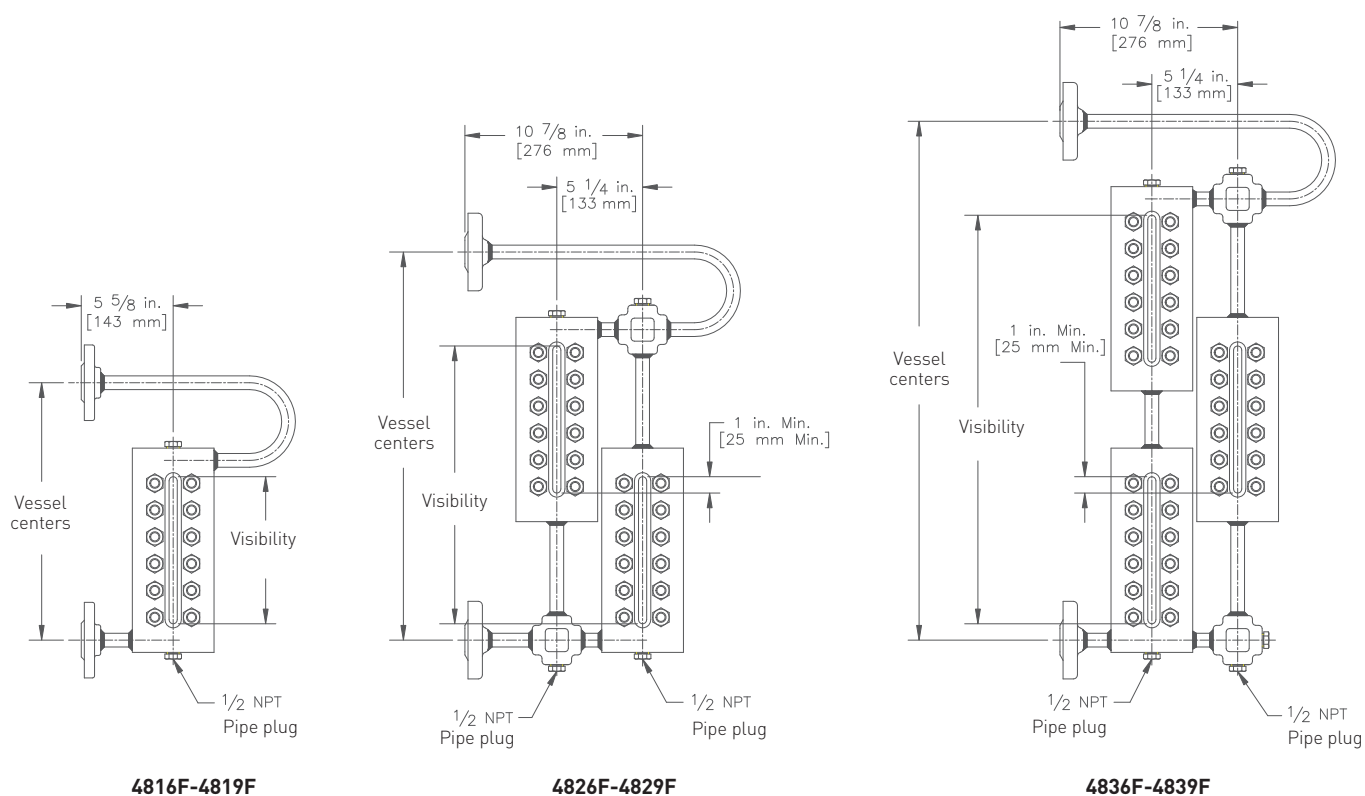
* Add 1" [25 mm] when using locking collar
For visibilities over 35 1/2" [902] consult factory

How to interpret the numbers

- 48 4800 transparent gauge
- 1 Number of sections
- 7 Glass size (for different visibilities) 6, 7 or 9
- N Nipple connections (to gaugecocks)

YARWAY SERIES 4300/4600/4800 LIQUID LEVEL GAUGES

PARTS, MATERIALS AND DIMENSIONS SERIES 4800



DIMENSIONS, INCHES (mm) - SERIES 4800F (UP TO 1500 PSIG)

Model	Max. Visibility	Min. vessel centers*	No. of Sections
4816F	9 [229]	15 $\frac{3}{4}$ [400]	1
4817F	10 $\frac{1}{8}$ [257]	16 $\frac{7}{8}$ [429]	1
4819F	12 $\frac{1}{2}$ [318]	19 $\frac{1}{4}$ [489]	1
4826F	17 [432]	23 $\frac{3}{4}$ [603]	2
4827F	19 $\frac{1}{4}$ [489]	26 [660]	2
4829F	24 [610]	30 $\frac{3}{4}$ [781]	2
4836F	25 [635]	31 $\frac{3}{4}$ [806]	3
4837F	28 $\frac{3}{8}$ [721]	35 $\frac{1}{8}$ [892]	3
4839F	35 $\frac{1}{2}$ [902]	42 $\frac{1}{4}$ [1073]	3

NOTES

* 1/2" CL1500 LG F SO vessel connection

For visibilities over 35 $\frac{1}{2}$ " [902] consult factory

How to interpret the numbers

48 4800 transparent gauge

1 Number of sections

7 Glass size (for different visibilities) 6,7 or 9

F Flange connection

YARWAY SERIES 4300/4600/4800 LIQUID LEVEL GAUGES

GAUGE ASSEMBLIES

Armored flat glass gauges are configurable to any practical length either by stacking covers along the length of a single chamber (Series 4300NB) or staggering single section gauges on a bridge (Series 4600 and 4800).

Series 4300NB, 4600N and 4800N gauges are frequently furnished as an assembly complete with a set of isolating gaugecocks and an illuminator for better visibility, as illustrated (right).

Model 4000T/4000S gaugecocks (shown right, center)

Series 4000 gaugecocks are supplied in pairs (upper and lower) and are designed specifically to be used with our gauge glasses to isolate the gauges from the pressure vessel when it becomes necessary to drain and service them. All gaugecocks are supplied with:

- outside screw and yoke.
- a vertical rising lower and horizontal leaky upper ball check shut-off.
- an offset pattern that allows the inside of the gauge glass to be cleaned easily with a minimum of disassembly.
- stuffing box gauge connections.
- solid shank vessel connection (NPT, socketwelding or flanged ends).
- threaded renewable seat and backseating stem.

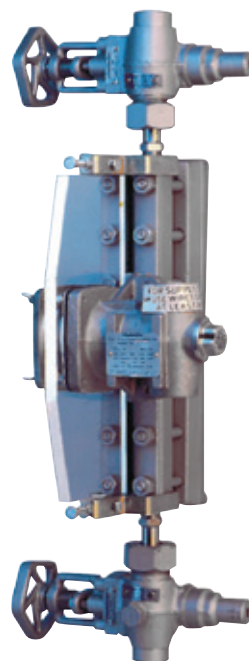
Other options are available. Contact the factory for details.

Illuminators (shown right, top and bottom)

Designed to improve liquid level observation by providing proper light distribution over the entire visible length of the transparent gauge when ambient light is insufficient. The illuminator is designed to be readily mounted on the 4300, 4600 or 4800 Series gauges.

Single and double incandescent units are available for one or two section gauge modules. These models are rated at 58 watts, are explosion proof and dust tight and meet Class 1, Division II, Groups B, C and D service.

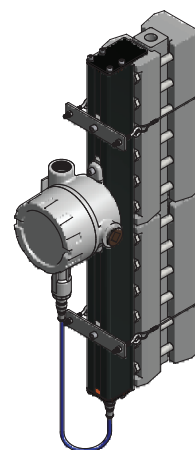
Continuous LED illuminators are available in lengths up to 74". Multiple illumination sections can be stacked to accommodate virtually any visible length.



Gauge assembly with gaugecocks and incandescent illuminator.



Series 4000 gaugecock



LED illuminator