



## PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

Large chamber flat glass gauges in reflex and transparent styles for turbulent surface or extremely transparent liquids.



### FEATURES

- Reliable, easy to understand level reference.
- Gives users the ability to visually inspect liquid characteristics (transparent style).
- Non-intrusive.
- Operation is independent of most liquid characteristics. Multiple liquids can be processed through the same vessel without concerns for density, surface turbulence, dielectric, conductivity, etc.
- No electrical power required. Provide accurate direct liquid level measurement in remote locations where power is not available. Not affected by power failures.
- Suitable for full vacuum applications.
- Provide a near-unlimited length of measure.
- Optional offshore coating 2600 protection; ideal cost-effective solution for corrosive offshore environments.
- NACE materials available for sour gas service, both wetted and environmental.
- Optional shields available to prolong glass life in corrosive environments (transparent style only).
- Used for verification of other level instrument technology.
- Standard flat gasket seat allows easy removal of gasket residue during rebuild.
- Cross ties between vision slots in transparent style gauges provide higher strength chamber due to reduction of unsupported beam length.
- High pressure cover engineered to allow maximum pressure regardless of glass size.
- Can install with other instrumentation.
- FM approved.

### GENERAL APPLICATION

Direct reading liquid level measurement applications in the petroleum, chemical and general process industries. They are not recommended for steam/water applications.

### TECHNICAL DATA

Materials: Carbon or stainless steel chamber; IFG-5500 gaskets and cushions; tempered Borosilicate glass rated to 600°F

Glass size: 4 through 9

Visible length: 6¾" to 139 ¾" (171 to 3550 mm)

Connections: End, side or back; threaded, socketweld or flanged

Pressure ratings (max):  
 RLC: 2400 psig (165 barg)  
 TLC: 1580 psig (109 barg)

Temperature range\*: -20° to 600°F (-29° to 316°C)

\*Non-steam/water applications

# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## OVERVIEW

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RLC and TLC gauge models combine high pressure covers and a large cylindrical chamber and can improve accuracy in determining turbulent vessel liquid levels. In addition to simulating the function of a stilling well and providing a liquid column approximately four times the diameter of standard gauges, large chamber gauges can provide end connections up to 2" NPTF that can accommodate various instrumentation. Process liquid levels are observed through the glass as it rises and falls in the gauge chamber.

#### Model RLC – Reflex style gauge

Reflex style gauges have a single vision slot through which light can enter the gauge chamber to determine liquid level. Above the liquid level, glass prisms reflect the surrounding light back to the observer appearing silvery. Below the liquid level, the liquid fills the prisms causing the glass to become relatively transparent, typically appearing dark to the observer. An opaque liquid such as milk would reflect the light directly at the surface of the prisms, where it appears as a solid column of white.

The interface between the liquid and gas occurs where the silvery and dark/opaque area intersect.

#### Model TLC – Transparent style gauge

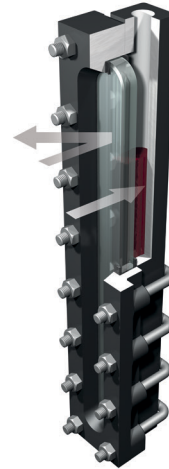
Transparent style gauges have a vision slot on both sides of the chamber. Light enters the gauge from the side opposite the observer so that both the level of a liquid and its characteristics can be seen. Illuminators are available for use with transparent gauges for easier liquid observation in dark environments.

Transparent gauges may be used for interface applications.

All materials in large chamber gauges conform to ASTM specifications.

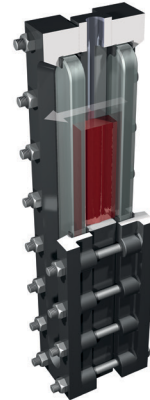
#### REFLEX

(Model RL shown for illustrative purposes only)



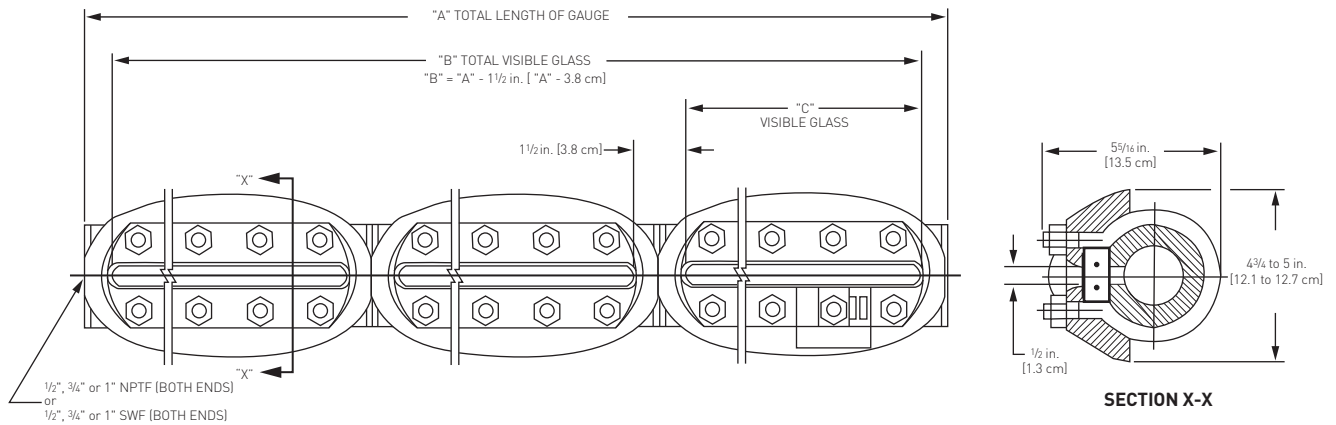
#### TRANSPARENT

(Model TL shown for illustrative purposes only)



# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## DIMENSIONS - END CONNECTED



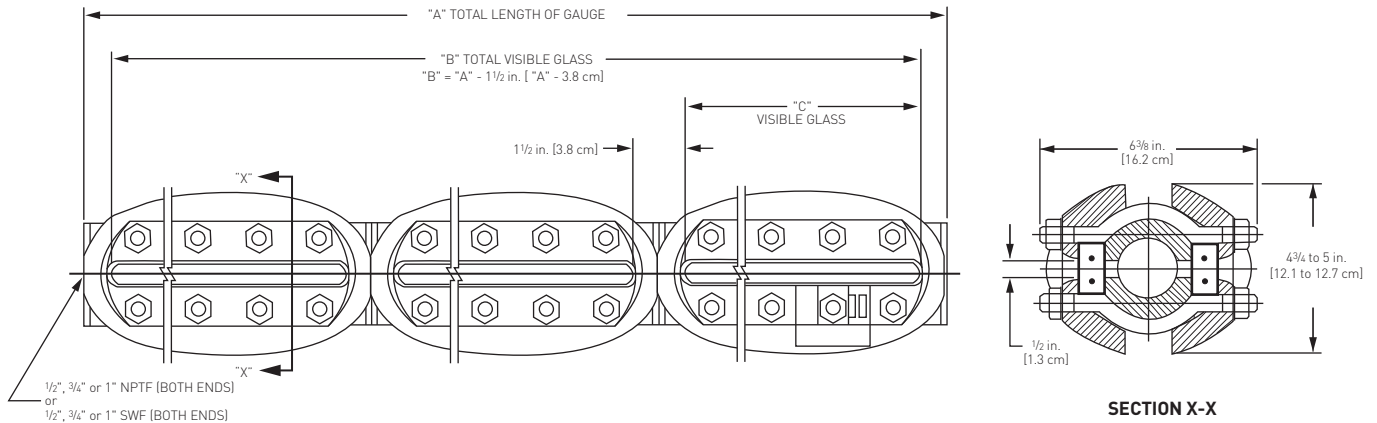
Unit Designation is assigned as follows:

Example: 3RLC6 Gauge

The first number equals the number of gauge sections (3);

The next three letters indicate gauge model (RLC – Reflex Large Chamber);

The last number denotes the glass size (6).



Unit Designation is assigned as follows:

Example: 3TLC6 Gauge

The first number equals the number of gauge sections (3);

The next three letters indicate gauge model (TLC – Transparent Large Chamber);

The last number denotes the glass size (6).

## DIMENSIONS - END CONNECTED

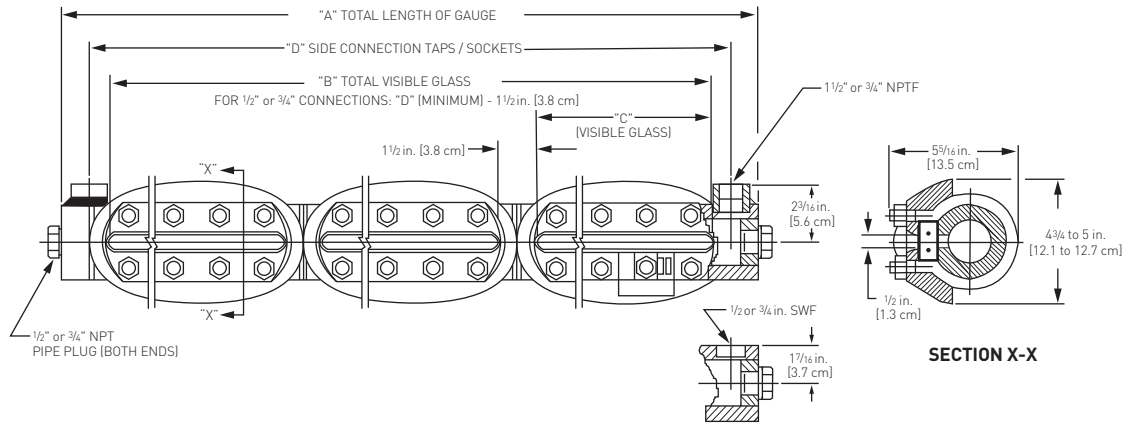
Glass size	Dim 'C' in inches [cm]	Dimension 'A' (overall length) in inches [cm]										Quantity per section (reflex)		Quantity per section (transparent)	
		Number of sections										Bolt	Nut	Bolt	Nut
4	6.75 [17.1]	8.25	16.50									4	8	8	16
		[21.0]	[41.9]												
5	7.87 [20.0]	9.37	18.75									5	10	10	20
		[23.8]	[47.6]												
6	9.12 [23.2]	10.62	21.25	31.87								6	12	12	24
		[27.0]	[54.0]	[81.0]											
7	10.25 [26.0]	11.75	23.5	35.25	47	58.75						6	12	12	24
		[29.8]	[59.7]	[89.5]	[119.4]	[149.2]									
8	11.87 [30.2]	13.37	26.75	40.12	53.50	66.87	80.25	93.62	107	120.37	133.75	7	14	14	28
		[34.0]	[67.9]	[101.9]	[135.9]	[169.9]	[203.8]	[237.8]	[271.8]	[305.8]	[339.7]				
9	12.62 [32.1]	14.12	28.25	42.37	56.50	70.62	84.75	98.87	113	127.12	141.25	7	14	14	28
		[35.9]	[71.8]	[107.6]	[143.5]	[179.4]	[215.3]	[251.1]	[287.0]	[322.9]	[358.8]				

### NOTE

For 1/2" and 2" NPTF or SWF, add 2.75 [69.9] to Dimension "A".

# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## DIMENSIONS - SIDE CONNECTED



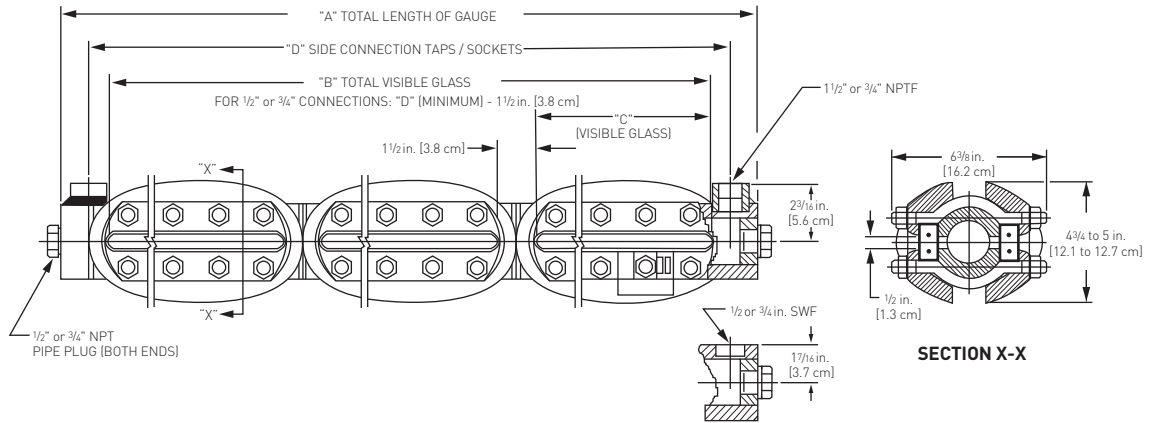
Unit Designation is assigned as follows:

Example: 3RLC6 Gauge

The first number equals the number of gauge sections (3);

The next three letters indicate gauge model (RLC – Reflex Large Chamber);

The last number denotes the glass size (6).



Unit Designation is assigned as follows:

Example: 3TLC6 Gauge

The first number equals the number of gauge sections (3);

The next three letters indicate gauge model (TLC – Transparent Large Chamber);

The last number denotes the glass size (6).

## DIMENSIONS - SIDE CONNECTED

Glass size	Minimum and maximum dimension 'D' in inches [cm] for 1/2" or 3/4" NPT/socketweld connections										
	Centers available in 1/8 in. [0.3 cm] increments between minimum and maximum										
	Standard side connection is to the right of the gauge vision										
	Number of sections										
	1	2	3	4	5	6	7	8	9	10	
4	Min.	8.25 [21.0]	16.50 [41.9]								
	Max.	9.25 [23.5]	18.62 [47.3]								
5	Min.	9.37 [23.8]	18.75 [47.6]								
	Max.	10.50 [26.7]	21.12 [53.7]								
6	Min.	10.62 [27.0]	21.25 [54.0]	31.87 [81.0]							
	Max.	11.62 [29.5]	23.37 [59.4]	35.12 [89.2]							
7	Min.	11.75 [29.8]	23.50 [59.7]	35.25 [89.5]	47.00 [119.4]	58.75 [149.2]					
	Max.	13.25 [33.7]	26.62 [67.6]	40.00 [101.6]	53.37 [135.6]	66.75 [169.5]					
8	Min.	13.37 [34.0]	26.75 [67.9]	40.12 [101.9]	53.50 [135.9]	66.87 [169.9]	80.25 [203.8]	93.62 [237.8]	107.00 [271.8]	120.37 [305.7]	133.75 [339.7]
	Max.	14.0 [35.6]	28.12 [71.4]	42.25 [107.3]	56.37 [143.2]	70.50 [179.1]	84.62 [214.9]	98.75 [250.8]	112.87 [286.7]	127.00 [322.6]	141.12 [358.5]
9	Min.	14.12 [35.9]	28.25 [71.8]	42.37 [107.6]	56.50 [143.5]	70.62 [179.4]	84.75 [215.3]	98.87 [251.1]	113.00 [287.0]	127.12 [322.9]	141.25 [358.8]
	Max.	16.37 [41.6]	31.75 [80.6]	46.87 [119.1]	58.62 [148.9]	80.12 [203.5]	93.50 [237.5]	106.87 [271.5]	120.25 [305.4]	133.62 [339.4]	147.00 [373.4]

### NOTE

Consult factory for minimum front or back connections.

# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## PRESSURE/TEMPERATURE RATINGS - MODEL RLC

Glass size	Dim. 'C' in inches [cm]	Dimension 'A' in Inches [cm] 1/2" and 3/4" NPT/socketweld connections								Quantity per section (Reflex)		Quantity per section (Transparent)	
		Number of Sections								Bolt	Nut	Bolt	Nut
4	6.75 [17.1]	For 1/2" NPT or socketweld connections: Dimension 'D' + 1.87" (4.8cm)								4	8	8	16
5	7.87 [20.0]	For 3/4" NPT or socketweld connections: Dimension 'D' + 2.12" (5.4cm)								5	10	10	20
6	9.12 [23.2]									6	12	12	24
7	10.25 [26.0]									6	12	12	24
8	11.87 [30.2]									7	14	14	28
9	12.62 [32.1]									7	14	14	28

### PRESSURE/TEMPERATURE RATINGS USING STANDARD GASKET MATERIAL<sup>[1]</sup>

Glass size	Maximum working pressure psig (kPa) at temperatures to:						
	100°F ( 38°C)	200°F ( 93°C)	250°F (121°C)	300°F (149°C)	400°F (204°C)	500°F (260°C)	600°F (316°C)
4 - 9	2400 (16550)	2330 (16060)	2305 (15890)	2280 (15720)	2220 (15310)	2080 (14340)	1840 (12690)

#### NOTE

1. Optional gasket material may result in a de-rated maximum pressure for the gauge.

### PRESSURE/TEMPERATURE RATINGS USING STANDARD GASKET MATERIAL<sup>[1]</sup> AND STEEL MR0175/MR0103 NACE BOLTING

Glass size	Maximum working pressure psig (kPa) at temperatures to:						
	100°F ( 38°C)	200°F ( 93°C)	250°F (121°C)	300°F (149°C)	400°F (204°C)	500°F (260°C)	600°F (316°C)
4 - 9	2160 (14890)	2095 (14440)	2075 (14310)	2050 (14130)	2000 (13790)	1870 (12890)	1655 (11410)

#### NOTE

1. Optional gasket material may result in a de-rated maximum pressure for the gauge.

### PRESSURE/TEMPERATURE RATINGS USING STANDARD GASKET MATERIAL<sup>[1]</sup> AND STAINLESS STEEL MR0175/MR0103 NACE BOLTING

Glass size	Max. working pressure psig (kPa) at temp. up to:	
	100°F (38°C)	
4	1275 (8790)	
5	1380 (9510)	
6	1440 (9930)	
7	1295 (8930)	
8	1310 (9030)	
9	1235 (8510)	

#### NOTE

1. Optional gasket material may result in a de-rated maximum pressure for the gauge.

# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## PRESSURE/TEMPERATURE RATINGS - MODEL TLC

### PRESSURE/TEMPERATURE RATINGS USING STANDARD GASKET MATERIAL<sup>[1]</sup>

Glass size	Maximum working pressure psig (kPa) at temperatures to:						
	100°F (38°C)	200°F (93°C)	250°F (121°C)	300°F (149°C)	400°F (204°C)	500°F (260°C)	600°F (316°C)
4 - 9	1580 (10890)	1540 (10620)	1520 (10480)	1500 (10340)	1460 (10070)	1370 (9450)	1220 (8410)

#### NOTE

1. Optional gasket material may result in a de-rated maximum pressure for the gauge.

### PRESSURE/TEMPERATURE RATINGS USING STANDARD GASKET MATERIAL<sup>[1]</sup> AND STEEL MR0175/MR0103 NACE BOLTING

Glass size	Maximum working pressure psig (kPa) at temperatures to:						
	100°F (38°C)	200°F (93°C)	250°F (121°C)	300°F (149°C)	400°F (204°C)	500°F (260°C)	600°F (316°C)
4 - 9	1420 (9790)	1385 (9550)	1370 (9450)	1350 (9310)	1315 (9070)	1235 (8510)	1100 (7580)

#### NOTE

1. Optional gasket material may result in a de-rated maximum pressure for the gauge.

### PRESSURE/TEMPERATURE RATINGS USING STANDARD GASKET MATERIAL<sup>[1]</sup> AND STAINLESS STEEL MR0175/MR0103 NACE BOLTING

Glass size	Max. working pressure psig (kPa) at temp. up to:	
	100°F (38°C)	
4	1240 (8550)	
5	1345 (9270)	
6	1405 (9690)	
7	1260 (8690)	
8	1275 (8790)	
9	1200 (8270)	

### PRESSURE/TEMPERATURE RATINGS USING STANDARD GASKET MATERIAL<sup>[1]</sup> AND ALUMINOSILICATE GLASS

Glass size	Maximum working pressure psig (kPa) at temperatures to:		
	600°F (316°C)	750°F (399°C)	800°F (427°C)
4 - 9	1220 (8410)	995 (6860)	920 (6340)

#### NOTE

1. Optional gasket material may result in a de-rated maximum pressure for the gauge.

# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## MATERIAL SPECIFICATIONS

### MATERIAL SPECIFICATIONS

Ref. no.	Description	Standard materials					Optional materials
		Carbon steel to -20°F	STS wetted to -20°F	STS construction to -325°F	Sour gas service to -20°F	Low temp steel to -50°F	
1	Cover	size 4-6	ASTM A216 Carbon steel (cast) Gr. WCB	ASTM A351 316/316L STS (cast) Gr. CF3M	ASTM A216 Carbon steel (cast) Gr. WCB	ASTM A352 Carbon steel (cast) Gr. LCB	ASTM A351 304/304L STS Gr. CF3 ASTM A182 Gr. F51 Duplex 2205 STS ASTM A494 Hastelloy® B Gr. N-12MV ASTM A352 Carbon steel Gr. LCB ASTM A743 Alloy 20 Gr. CN7M ASTM B564 Monel® 400 N04400 ASTM A494 Hastelloy® C Gr. CW12MW ASTM A123 Galvanized steel
		size 7-9	ASTM A105 Carbon steel (forged)		ASTM A105 Carbon steel (forged)	ASTM A350 Carbon steel (forged) Gr. LF2 Cl. 1	
2	Chamber	ASTM A106 Gr. B Carbon steel	ASTM A312 316/316L STS	ASTM A106 Gr. B Carbon steel per NACE MR0175 &/or MR0103	ASTM A312 316/316L STS	ASTM A312 304/304L STS ASTM A790 Duplex 2205 STS ASTM B165 Monel® 400 ASTM B474 Alloy 20 (CARP 20 Cb3)® ASTM B622 Hastelloy® B (N10001) ASTM B622 Hastelloy® C (N10276) ASTM A123 Galvanized steel	
3	Stud	AISI 4140 or 4142 Alloy steel per ASTM A193 Gr. B7		ASTM A193 316 STS Gr. B8M Cl. 2	AISI 4140 or 4142 Alloy steel per ASTM A193 Gr. B7	ASTM A320 Alloy steel Gr. L7	ASTM A153 Galvanized steel
4	Nut	ASTM A194 Carbon steel Gr. 2 or 2H		ASTM A194 316 STS Gr. 8M	ASTM A194 Carbon steel Gr. 2 or 2H	ASTM A194 316 STS Gr. 8M	ASTM A153 Galvanized steel
7	Gasket	Garlock® IFG-5500					Garlock® 3000,3100,3200,3300 Grafoil® Gr. GHR w/316 STS insert PCTFE (replaces Kel-F®) Gylon® 3500, 3504, 3510 Teflon® (25% glass filled, virgin)
8	Cushion	Garlock® IFG-5500					Buna-N Neoprene® Viton® Grafoil® Gr. GHR w/316 STS insert consult factory for others
9	Shield <sup>(1)</sup>	None					ASTM D351 Mica Gr. V-4 PCTFE (replaces Kel-F®)
48	Glass	Reflex or transparent style tempered Borosilicate					Aluminosilicate (transparent only)
100	U-bolt	AISI 4140 or 4142 Alloy steel per ASTM A193 Gr. B7		ASTM A193 316 STS Gr. B8M Cl. 2	AISI 4140 or 4142 Alloy steel per ASTM A193 Gr. B7	ASTM A320 Alloy steel Gr. L7	ASTM A153 Galvanized steel
125	Washer	ASTM B633 Zinc plated Carbon steel		18-8 STS (302-304 STS)	ASTM B633 Zinc plated Carbon steel	18-8 STS (302-304 STS)	None
331	Band	Rubber					None

### NOTE

- Under no circumstances should shields be used in reflex style gauges, as they will keep the fluid from coming into contact with the reflective prisms, thereby prohibiting visibility of the liquid level in the gauge.

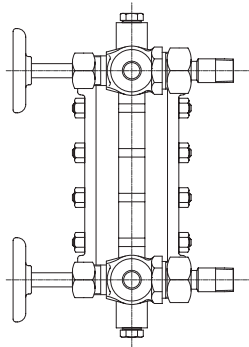
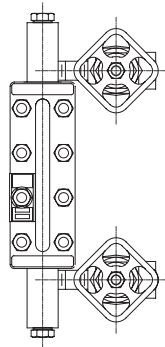
# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## ACCESSORIES

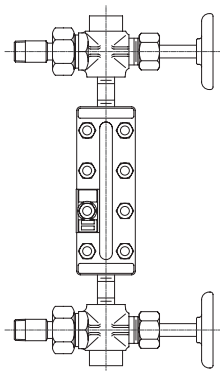
### Gaugecocks

Penberthy 100 through 700 offset and straight pattern gaugecocks isolate the gauge chamber from the liquid contents of the vessel. Gaugecocks can be factory assembled in a variety of configurations.

SIDE CONNECTED GAUGE W/GAUGECOCKS



END CONNECTED GAUGE W/GAUGECOCKS



### Illuminators

Complementary illuminators are 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 mounted readily on virtually any transparent gauge.

Single and double incandescent units are available for one or two section gauge models. Models are offered with 25 watt or 60 watt ratings, are explosion proof and dust tight and meet Class 1, Division II, Groups B, C and D service.

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

### Flexible fiberglass insulation blanket

Lightweight, silicone coated fiberglass cover and liner, with or without PTFE window. Can be used with frost proof extensions and illuminator.

### Internal heating/cooling chamber

Heating/cooling tube passes through the inside of the gauge and is in direct contact with liquid.

### Frost-proof extensions

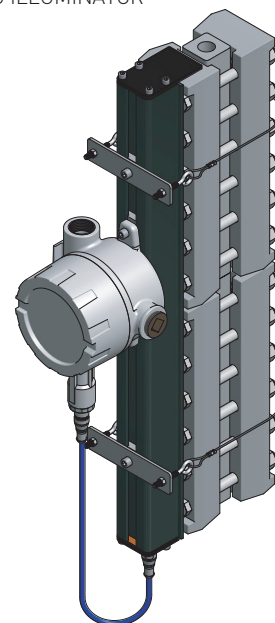
Clear plastic windows that fit over the visible part of the glass in flat glass gauges.

In low temperature applications, they inhibit build-up of frost over the visible part of the gauge, preventing obstruction of the liquid level view.

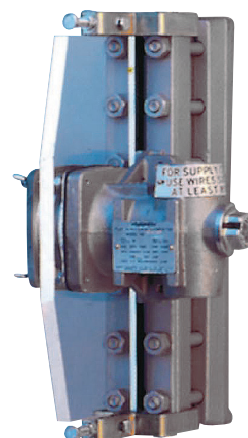
### Gauge scales

Attach to gauge cover to provide a graduated read out of liquid level. Available in a variety of units, feet/inch and meter/centimeter are standard.

LED ILLUMINATOR



INCANDESCENT ILLUMINATOR





# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## MODEL STRUCTURE

### SELECTION GUIDE

Example:										PART 2 - PAGE 10						
01	RLC	4	S	S	C	W	E	B	X	F	F	6	S	00825	T	
<b>Number of Sections</b>																
01	1 Section															
02	2 Section															
03	3 Section															
04	4 Section															
05	5 Section															
06	6 Section															
07	7 Section															
08	8 Section															
09	9 Section															
10	10 Section															
<b>Gauge Type</b>																
RLC	Large Chamber Reflex Gauge															
TLC	Large Chamber Transparent Gauge															
<b>Glass Size</b>																
4	Size 4															
5	Size 5															
6	Size 6															
7	Size 7															
8	Size 8															
9	Size 9															
<b>Wetted Parts Material</b>																
C	Carbon steel [Standard]															
S	316/316L Stainless steel															
F	304/304L Stainless steel															
M	Monel®															
<b>Cover Material</b>																
C	Carbon steel [Standard]															
S	316/316L Stainless steel															
F	304/304L Stainless steel															
L	Low Temperature CS to -50°F															
N	Normalized A105															
<b>Bolting Material</b>																
C	STL A193 B7/A194 2H [Standard]															
S	SST A193 B8M/A194 8M															
L	LT A320 L7/A194 8M															
N	STL NACE A193 B7M/A194 2HM															
A	LT NACE A320 L7M/A194 7M															
<b>NACE MR-01-75 &amp;/OR MR-01-03</b>																
X	None															
W	NACE wetted															
E	Environmental															
<b>End Connection Size</b>																
C	½" [Standard]															
E	¾"															
F	1"															
H	1½"															
J	2"															

### PART 3 - PAGE 11

S S X X X D X

# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## MODEL STRUCTURE

PART 1 - PAGE 9

SELECTION GUIDE - PART 2

PART 3 - PAGE 11

01	RLC	4	S	S	C	W	E	Example:	B	X	F	F	6	S	00825	T	S	S	X	X	X	D	X					
<b>End Connection Type</b>																												
<b>B</b>	NPT Female [Standard]																											
<b>D</b>	Socketweld Female																											
<b>F</b>	Plugged																											
<b>G</b>	Socketweld Male																											
<b>N</b>	Raised SO																											
<b>End Pressure Class</b>																												
<b>X</b>	None																											
<b>1</b>	PCL 150																											
<b>3</b>	PCL 300																											
<b>6</b>	PCL 600																											
<b>9</b>	PCL 900																											
<b>F</b>	PCL 1500																											
<b>T</b>	PCL 2500																											
<b>Side Connection Size</b>																												
<b>X</b>	None																											
<b>C</b>	½"																											
<b>E</b>	¾"																											
<b>F</b>	1" [Flange Only]																											
<b>G</b>	1½" [Flange Only]																											
<b>H</b>	1½" [Flange Only]																											
<b>J</b>	2" [Flange Only]																											
<b>Side Connection Type</b>																												
<b>X</b>	None								<b>S</b>	Raised Face SW																		
<b>B</b>	NPT Female [Standard]								<b>T</b>	Flat Face SW																		
<b>D</b>	Socketweld Female								<b>U</b>	RTJ SW																		
<b>F</b>	Raised Face TH								<b>V</b>	Raised Face WN																		
<b>N</b>	Raised Face SO								<b>W</b>	Flat Face WN																		
<b>P</b>	Flat Face SO								<b>Y</b>	RTJ WN																		
<b>R</b>	RTJ SO																											
<b>Side Pressure Class</b>																												
<b>X</b>	None																											
<b>1</b>	PCL 150																											
<b>3</b>	PCL 300																											
<b>6</b>	PCL 600																											
<b>9</b>	PCL 900																											
<b>F</b>	PCL 1500																											
<b>T</b>	PCL 2500																											
<b>Side Connection Location</b>																												
<b>X</b>	None																											
<b>S</b>	Right Side Connected [Standard]																											
<b>L</b>	Left Side Connected																											
<b>B</b>	Back Connected																											
<b>F</b>	Front Connected																											
<b>P</b>	2 Bottom Sides																											
<b>Connection Dimension</b>																												
<b>XXXXX</b>	None																											
<b>00000</b>	1st 3dig = whole", last 2 fract"																											
<b>Gasket Material</b>																												
<b>S</b>	Grafoil®/SS Insert								<b>U</b>	Buna-N																		
<b>T</b>	PTFE Teflon®								<b>V</b>	Viton®																		
<b>K</b>	Garlock® 3300								<b>D</b>	25% Glass in PTFE																		
<b>L</b>	Gylon® 3510								<b>P</b>	PCTFE (KEL-F)																		
<b>Y</b>	Gylon® 3504								<b>C</b>	TopChem 2000																		
<b>A</b>	Garlock® IFG-5500 [Standard]																											

# PENBERTHY MODELS RLC AND TLC DIRECT READING LIQUID LEVEL GAUGES

## MODEL STRUCTURE

### PART 1 - PAGE 9

01 RLC 4 S S C W E

### SELECTION GUIDE - PART 3

**Example:** S S X X X D X



### PART 2 - PAGE 10

B X F F 6 S 00825 T

	S	S	X	X	X	D	X
<b>Cushion Material</b>							
S	Grafoil®/SS Insert						
T	PTFE Teflon®						
K	Garlock® 3300						
L	Gylon® 3510						
Y	Gylon® 3504						
A	Garlock® IFG-5500 [Standard]						
U	Buna-N						
V	Viton®						
D	25% Glass in PTFE						
P	PCTFE (KEL-F)						
C	TopChem 2000						
<b>Paint Specification</b>							
X	None						
S	Standard						
O	Offshore Spec 2600						
<b>Option 1 Description</b>							
X	None						
B	1 Welded Support Bracket						
C	2 Welded Support Brackets						
D	3 Welded Support Brackets						
<b>Option 2 Description</b>							
X	None						
<b>Option 3 Description</b>							
X	None						
B	Mica Shields V-4						
C	PCTFE Shields (KEL-F)						
D	Mica Shields V-2						
E	PCTFE Shields 1/16" (KEL-F)						
<b>Option 4 Description</b>							
X	None						
D	Belleville Washers						
P	Sch. 160 Piping						
<b>Option 5 Description</b>							
X	None						
A	Aluminosilicate Glass						
B	For -50°F Service						
C	USA Origin only						

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