



Product Catalog

Pressure
Temperature
& Electronics



www.flofab.com

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Flo Fab is a direct distributor of gauges and thermometers, providing high volumes of low cost quality products, satisfying the needs of OEMs.

Since our beginning, Flo Fab has grown into its own name brand of products with our main manufacturing facility producing Pressure Transmitters & Level Sensors.

Flo Fab's ability to provide exceptional field support and service brought about an increase in customer demand, resulting in our expanding into pressure gauges, thermometers, diaphragm seals, and various other products associated with the water and wastewater industries.

Our Goal is to build strong and lasting relationships with our customers. To that end, we apply our knowledge and expertise to each and every unique application need, providing the best product, at the best price, together with an unsurpassed level of customer service.

Product Catalog

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STEEL UTILITY GAUGE

MODEL FFBR100D



Model FFBR101D

FEATURES:

- Dial Sizes: 1½", 2", 2½", and 4"
- An inexpensive utility gauge for the broad commercial market
- Suitable for air, water, oil, gas or any other media not corrosive to brass
- Available in bottom or center connect ⅛" or ¼" (M) NPT
- Accuracy: 3-2-3%

SPECIFICATIONS:

- Black Steel Case
- Brass Socket and Movement
- Dial Sizes: 1½", 2", 2½", and 4"
- Phosphor Bronze Bourdon Tube
- Dry, Non-Fillable
- Connection Sizes:
 - ⅛" (M) NPT on 1½" and 2"
 - ¼" (M) NPT on 2" and 2½"
- Accuracy: 3-2-3%
- Ambient Temperature: -50 °F to +160 °F
- Dual Scale: PSI & BAR (x100=kPa)
- IP52 Enclosure
- Overpressure: 25% FSO
- Working pressure: 75% FSO

FIELD OPTIONS:

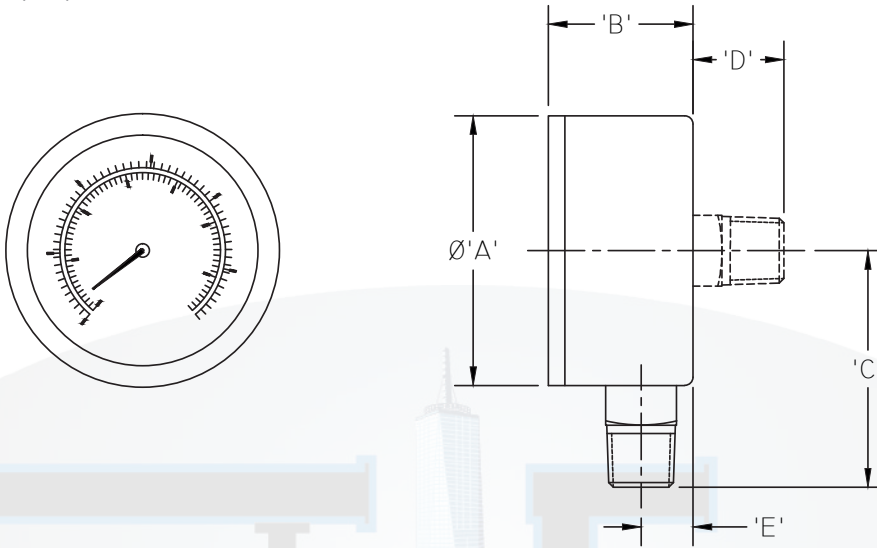
- U-clamp Mount (UC)
- Front Flange Mount (FF)
- Back Flange Mount (BF)
- Plastic Case

RANGE	RANGE CODES	FIGURES	MINOR, INC.
30/0" VAC	A	5" hg	0.5" hg
30/0/15	CB	10" hg / 5 PSI	0.5" hg / 0.5 PSI
30/0/30	CC	10" hg / 10 PSI	1" hg / 0.5 PSI
30/0/60	CD	10" hg / 10 PSI	2" hg / 1 PSI
30/0/100	CE	30" hg / 20 PSI	5" hg / 2 PSI
30/0/150	CF	30" hg / 20 PSI	5" hg / 2 PSI
30/0/300	CH	30" hg / 50 PSI	10" & 5 PSI
0/15	B	2 PSI	0.2 PSI
0/30	C	5 PSI	0.5 PSI
0/60	D	10 PSI	1 PSI
0/100	E	20 PSI	2 PSI
0/160	F	20 PSI	2 PSI
0/200	G	40 PSI	5 PSI
0/300	H	50 PSI	5 PSI
0/400	I	50 PSI	5 PSI
0/600	K	100 PSI	10 PSI
0/1000	M	200 PSI	20 PSI
0/1500	N	200 PSI	20 PSI
0/2000	O	400 PSI	50 PSI
0/3000	P	500 PSI	50 PSI
0/5000	R	1000 PSI	100 PSI
0/6000	S	1000 PSI	100 PSI
0/10,000	U	2000 PSI	200 PSI

STEEL UTILITY GAUGE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



BRI00D
DRY GAUGE

DIAL SIZE	'A'	'B'	'C'	'D'	'E'
Ø1.50 BOTTOM	1.65	0.875	1.43	0.615	0.315
Ø1.50 BACK	1.65	1.05	-	0.550	-
Ø2.00 (1/8)	2.05	1.125	1.615	0.635	0.37
Ø2.00 (1/4)	2.05	1.125	1.815	0.700	0.37
Ø2.50	2.49	1.20	1.22	0.700	0.40
Ø4.00	3.95	1.40	2.845	0.905	0.48

ORDERING GUIDE

Example: FFBR102D158C

FFBR102	D	15	8	C
Model Number	Dial Size	Connector Size	Pressure Range	
101 - bottom connect	1.5" - 15	8 - 1/8" NPT	See chart on page 1	
102 - back connect	2.0" - 20	4 - 1/4" NPT		
Fill Type	2.5" - 25			
D - dry, non-filled	4" - 40			

Available in Front Flange (FF), Back Flange (BF), and U-Clamp (UC) Mount.

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



LIQUID FILLED GAUGE

MODEL FFBR200



Model FFBR201L Shown

FEATURES:

- Dial Sizes: 1½", 2", 2½", 4", and 6"
- High quality line of liquid filled gauges, also available dry
- Glycerine fill dampens vibration to help extend the life of the gauge
- Bottom and back connections
- ⅛", ¼", and ½" (M)NPT

SPECIFICATIONS:

- Brass Internals and Connection
- Dial Sizes: 1½", 2", 2½", 4", and 6"
- Phosphor Bronze Bourdon Tube
- Glycerine fill standard
- Accuracy:
 - 1½" and 2" Dial Sizes: 2%
 - 2½" Dial: 1.6%
 - 4" and 6" Dial Sizes: = 1%
- Connection Sizes:
 - ⅛" (M) NPT on 1½" and 2"
 - ¼" (M) NPT on 2", 2½", and 4"
 - ½" (M) NPT on 4" and 6"
- Dual Scale: PSI & BAR
- Ambient Temperature:
 - Filled: 0 °F to +150 °F
 - Dry: -30 °F to +150 °F
- Enclosure: IP65

FIELD OPTIONS

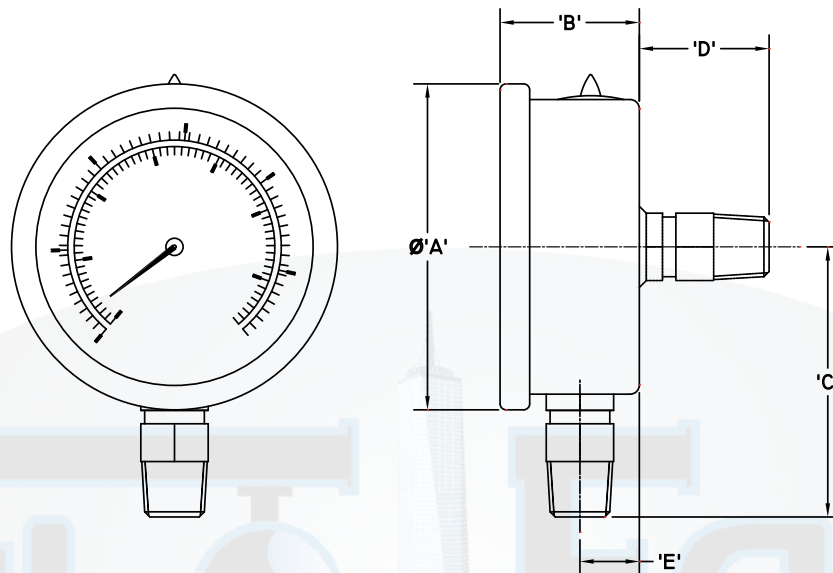
- Single Scale (PSI)
- Available in Dry
- Front Flange (FF), Back Flange (BF), and U-Clamp (UC) mount
- Alternate fills available

RANGE	RANGE CODES	MAJOR, INC.	MINOR, INC.
30/0" VAC	A	5	0.5
30/0/15	CB	5	0.5
30/0/30	CC	10	1
30/0/60	CD	10	1
30/0/100	CE	20	2
30/0/150	CF	20	2
30/0/300	CH	50	10
0/15	B	2	0.2
0/30	C	5	0.5
0/60	D	10	1
0/100	E	20	2
0/160	F	20	2
0/200	G	40	4
0/300	H	50	5
0/400	I	50	5
0/500	J	100	10
0/600	K	100	10
0/800	L	100	10
0/1000	M	200	20
0/1500	N	200	20
0/2000	O	400	50
0/3000	P	500	50
0/4000	Q	500	50
0/5000	R	1000	100
0/6000	S	2000	200
0/10,000	U	2000	200
0/15,000	V	2000	200

LIQUID FILLED GAUGE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



BR200
FILLABLE GAUGE

DIAL SIZE	'A'	'B'	'C'	'D'	'E'
Ø1.50	1.85	1.08	1.58	0.74	0.9
Ø2.00 (1/8)	2.25	1.155	2.15	0.91	0.585
Ø2.00 (1/4)	2.25	1.155	2.165	0.935	0.585
Ø2.50	2.675	1.16	1.00	1.22	0.458
Ø4.00 (1/4)	4.29	1.4	3.2	1.256	0.703
Ø4.00 (1/2)	4.29	1.4	3.24	1.293	0.703
Ø6.00	6.40	1.93	4.10	1.15	0.56

SINCE 1981

ORDERING GUIDE

Example: FFBR201L204F

FFBR201	L	20	2	F
Model Number		Dial Size	Connector Size	Pressure Range
201 - bottom connect		1.5" - 15	8 - 1/8" NPT	See chart on page 1
202 - back connect		2.0" - 20	4 - 1/4" NPT	
Fill Type		2.5" - 25	2 - 1/2" NPT	
D - dry, non-filled		4" - 40		
L - Liquid, glycerine filled		6" - 60		

Available in Back Flange (BF), Front Flange (FF), and U-Clamp (UC) mount

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



LEAD FREE LIQUID FILLED PRESSURE GAUGE



Model FFBRLF201L

MODEL FFBRLF200

FEATURES:

The Model FFBRLF200 Lead Free Liquid Filled Pressure Gauge from Flo Fab Inc. is an accurate, bottom connected, liquid-filled pressure gauge. Its lead free construction allows it to be specified within drinking water pump, pipeline and filtration system installations, or anywhere that the mitigation of lead contamination risk is a concern.

SPECIFICATIONS:

- Lead Free Brass Internals and Connection
- Lead Free Phosphor Bronze Bourdon Tube
- Dial Sizes: 1½", 2", 2½", 4", and 6"
- Glycerine fill standard
- Accuracy:
 - 1½" and 2" Dial Sizes: 2%
 - 2½" Dial: 1.6%
 - 4" and 6" Dial Sizes: = 1%
- Connection Sizes:
 - ⅛" (M) NPT on 1½" and 2"
 - ¼" (M) NPT on 2", 2½", and 4"
 - ½" (M) NPT on 4" and 6"
- Dual Scale: PSI & BAR
- Ambient Temperature:
 - Filled: 0 °F to +150 °F
 - Dry: -30 °F to +150 °F
- Enclosure: IP65

FIELD OPTIONS:

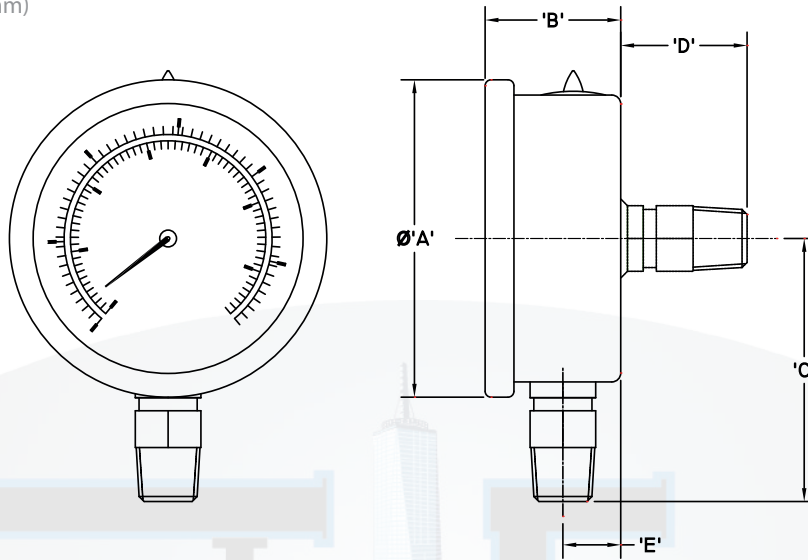
- Single Scale (PSI)
- Available in Dry
- Front Flange (FF), Back Flange (BF), and U-Clamp (UC) mount
- Alternate fills available

RANGE	RANGE CODES	MAJOR, INC.	MINOR, INC.
30/0" VAC	A	5	0.5
30/0/15	CB	5	0.5
30/0/30	CC	10	1
30/0/60	CD	10	1
30/0/100	CE	20	2
30/0/150	CF	20	2
30/0/300	CH	50	10
0/15	B	2	0.2
0/30	C	5	0.5
0/60	D	10	1
0/100	E	20	2
0/160	F	20	2
0/200	G	40	4
0/300	H	50	5
0/400	I	50	5
0/500	J	100	10
0/600	K	100	10
0/800	L	100	10
0/1000	M	200	20
0/1500	N	200	20
0/2000	O	400	50
0/3000	P	500	50
0/4000	Q	500	50
0/5000	R	1000	100
0/6000	S	2000	200
0/10,000	U	2000	200
0/15,000	V	2000	200

LEAD FREE LIQUID FILLED PRESSURE GAUGE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



BR200
FILLABLE GAUGE

DIAL SIZE	'A'	'B'	'C'	'D'	'E'
Ø1.50	1.85	1.08	1.58	0.74	0.9
Ø2.00 (1/8)	2.25	1.155	2.15	0.91	0.585
Ø2.00 (1/4)	2.25	1.155	2.165	0.935	0.585
Ø2.50	2.675	1.16	1.00	1.22	0.458
Ø4.00 (1/4)	4.29	1.4	3.2	1.256	0.703
Ø4.00 (1/2)	4.29	1.4	3.24	1.293	0.703
Ø6.00	6.40	1.93	4.10	1.15	0.56

ORDERING GUIDE

Example: FFBRLF201L204F

FFBRLF201	L	20	2	F
Model Number		Dial Size	Connector Size	Pressure Range
201 - bottom connect		1.5" - 15	8 - 1/8" NPT	See chart on page 1
202 - back connect		2.0" - 20	4 - 1/4" NPT	
Fill Type		2.5" - 25	2 - 1/2" NPT	
D - dry, non-filled		4" - 40		
L - Liquid, glycerine filled		6" - 60		

Available in Back Flange (BF), Front Flange (FF), and U-Clamp (UC) mount

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



STAINLESS STEEL LIQUID FILLED GAUGES



Model FFBR251L

MODEL FFBR250L

FEATURES:

The Model FFBR250L from Flo Fab Inc. is a high quality line of liquid filled gauges. Its crimped, welded stainless steel bezel and glycerine fill is designed for gas or liquid applications that require damping.

SPECIFICATIONS:

- Stainless steel welded connection
- Stainless steel crimped bezel
- Glycerine Fill Standard (Dry Available)
- Accuracy:
 - 1½" and 2" dial Sizes: 2%
 - 2½" Dial: 1.6%
 - 4" and 6" Dial Sizes: 1%
- Dual Scale: PSI & BAR (x100=kPa)
- Single Scale (PSI) Available
- Ambient Temperature:
 - Filled: 0 °F to +150 °F
 - Dry: -30 °F to +150 °F
- Enclosure: IP65

FIELD OPTIONS:

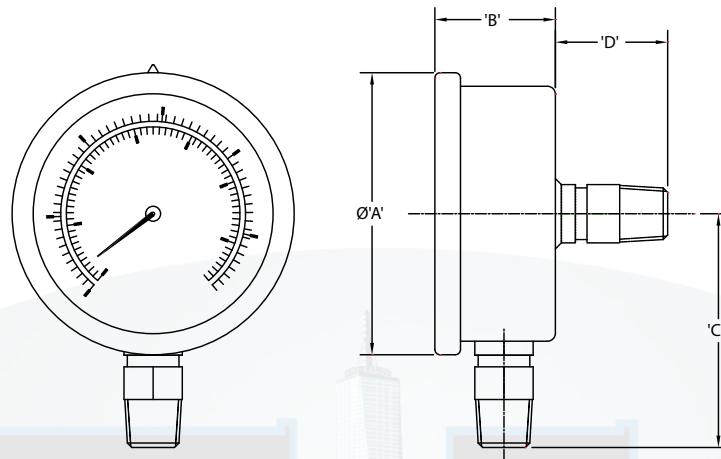
- Dial Sizes:
 - 1½", 2", 2½", 4", 6"
- Connection Sizes:
 - 1/8" (M) NPT on 1½" and 2"
 - ¼" (M) NPT on 2", 2½", and 4"
 - ½" (M) NPT on 4" and 6"
- Front Flange (FF) or Back Flange (BF) Mount
- U-Clamp Mount (UC)

RANGE	CODE	MAJOR INC.	MINOR INC.
30/0" VAC	A	5	0.5
30/0/15	CB	5	0.5
30/0/30	CC	10	1
30/0/60	CD	10	1
30/0/100	CE	20	2
30/0/150	CF	20	2
30/0/300	CH	50	10
0/15	B	2	0.2
0/30	C	5	0.5
0/60	D	10	1
0/100	E	20	2
0/160	F	20	2
0/200	G	40	4
0/300	H	50	5
0/400	I	50	5
0/500	4	100	10
0/600	K	100	10
0/800	L	100	10
0/1000	M	200	20
0/1500	N	200	20
0/2000	O	400	50
0/3000	P	500	50
0/4000	Q	500	50
0/5000	R	1000	100
0/6000	S	2000	200
0/10,000	U	2000	200
0/15,000	V	2000	200

STAINLESS STEEL LIQUID FILLED GAUGES

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



BR250L
SS LIQUID FILLED GAUGE

DIAL SIZE	'A'	'B'	'C'	'D'
Ø1.50	1.85	1.08	1.58	0.74
Ø2.00 (1/8)	2.25	1.155	2.15	0.91
Ø2.00 (1/4)	2.25	1.155	2.165	0.935
Ø2.50	2.675	1.16	1.00	1.22
Ø4.00 (1/4)	4.29	1.4	3.2	1.256
Ø4.00 (1/2)	4.29	1.4	3.24	1.293

SINCE 1981

ORDERING GUIDE

Example: FFBR251L158C

FFBR251	L	20	2	F
Model Number		Dial Size	Connector Size	Pressure Range
251 - bottom connect		1.5" - 15	8 - 1/8" NPT	See chart on page 1
252 - back connect		2.0" - 20	4 - 1/4" NPT	
Fill Type		2.5" - 25	2 - 1/2" NPT	
D - dry, non-filled		4" - 40		
L - Liquid, glycerine filled		6" - 60		

*Available in Front Flange (FF), Back Flange (BF), and U-Clamp (UC) Mount

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



ALL STAINLESS STEEL GAUGE



Model FFBR301L

SPECIFICATIONS:

- 316 Stainless Steel Case with bayonet bezel design
- 316 Stainless Steel Internals
- Stainless Steel Bourdon Tube & Connection
- IP65 Enclosure
- Glycerine fill standard, Dry available
- Accuracy: 2½" Dial - 1.6%;
4" and 6" Dials - 1%
- Dual Scale: PSI & BAR (x100=kPa)
- Ambient Temperature: Filled: +30 °F to +160 °F; Dry: -30 °F to +180 °F
- Safety Glass Lens
- Welded Socket
- Overpressure Limit: 30% FSO
- Working Pressure: 75% FSO

FIELD OPTIONS:

- 2½", 4", and 6" dial sizes
- ¼"(M) NPT on 2½" and 4"
- ½"(M) NPT on 4" and 6"
- Front Flange (FF) or Back Flange (BF) Mount
- U-Clamp Mount (UC)

MODEL FFBR300

FEATURES:

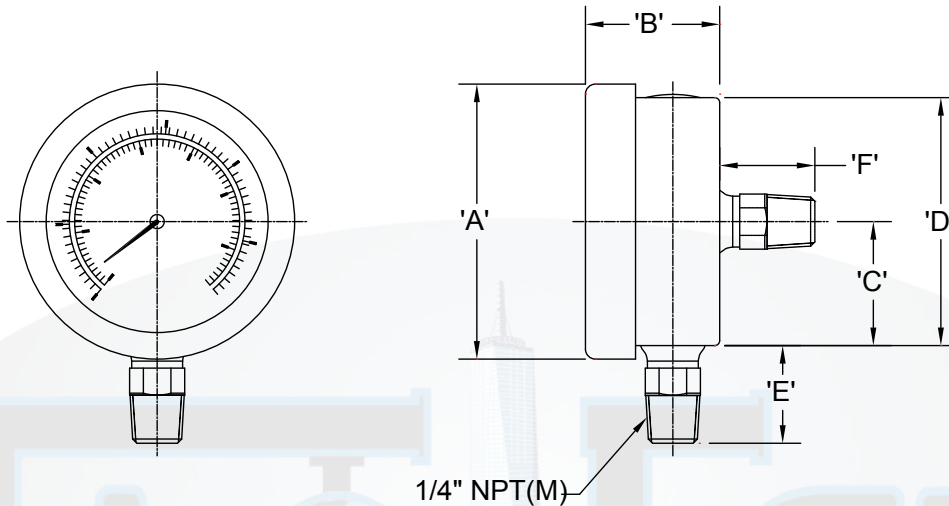
The Model FFBR300 series from Flo Fab Inc. is a high-quality dry or liquid-filled, all stainless steel back or bottom mount gauge for applications where brass may not be an option.

RANGE	RANGE CODES	MAJOR	MINOR
30/0" VAC	A	5	0.5
30/0/15	CB	5	0.5
30/0/30	CC	10	1
30/0/60	CD	10	1
30/0/100	CE	20	2
30/0/150	CF	20	2
30/0/300	CH	50	10
0/15	B	2	0.2
0/30	C	5	0.5
0/60	D	10	1
0/100	E	20	2
0/160	F	20	2
0/200	G	40	4
0/300	H	50	5
0/400	I	50	5
0/500	J	100	10
0/600	K	100	10
0/800	L	100	10
0/1000	M	200	20
0/1500	N	200	20
0/2000	O	400	50
0/3000	P	500	50
0/4000	Q	500	50
0/5000	R	1000	100
0/6000	S	2000	200
0/10,000	U	2000	200
0/15,000	V	2000	200

ALL STAINLESS STEEL GAUGES

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



DIAL SIZE	'A'	'B'	'C'	'D'	'E'	'F'
Ø2.50 (1/4)	2.745	1.96	1.238	2.475	0.975	0.975
Ø2.50 (1/2)	2.745	1.96	1.238	2.475	1.37	1.37
Ø4.00 (1/2)	4.35	1.96	1.963	3.925	1.37	1.37
Ø6.00 (1/2)	6.35	1.96	2.925	5.85	1.37	1.37

ORDERING GUIDE

Example: FFBR301L254F

FFBR301	L	25	2	F
Model Number		Dial Size	Connector Size	Pressure Range
301 - bottom connect		2.5" - 25	4 - 1/4" NPT	See chart on page 1
302* - back connect		4" - 40	2 - 1/2" NPT	
Fill Type		6" - 60		
D - dry, non-filled				
L - Liquid, glycerin filled				

*Available in Front Flange (FF), Back Flange (BF), and U-Clamp (UC) Mount

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



PROCESS PRESSURE GAUGE



Model FFBR411/412

MODEL FFBR400/FFBR800

FEATURES:

Model FFBR400/FFBR800 Series from Flo Fab Inc. are a family of highly rugged stainless steel and brass process pressure gauges. They are designed to provide reliable process pressure measurements within safety critical environments such as oil and gas, chemical processing, power stations, environmental engineering and plant construction environments.

SPECIFICATIONS:

- Dial Size: 4½"
- Accuracy: 0.5% FS (ANSI Grade 2A)
- Phenolic-Solid Front/Blow-Out Back Case
- Lens: Shatterproof Safety Glass
- Movement: 304 Stainless Steel with Over/Under Stops
- Knife Edge Micro-Adjustable Pointer
- IP65 Enclosure
- Working Pressure: 75% FSO
- Over Pressure: 20% Up to 10K PSI; 10% over 10K PSI
- Ambient/Process Temperature
Filled: -40 °F to +160 °F
Dry: -40 °F to +180 °F

OPTIONS:

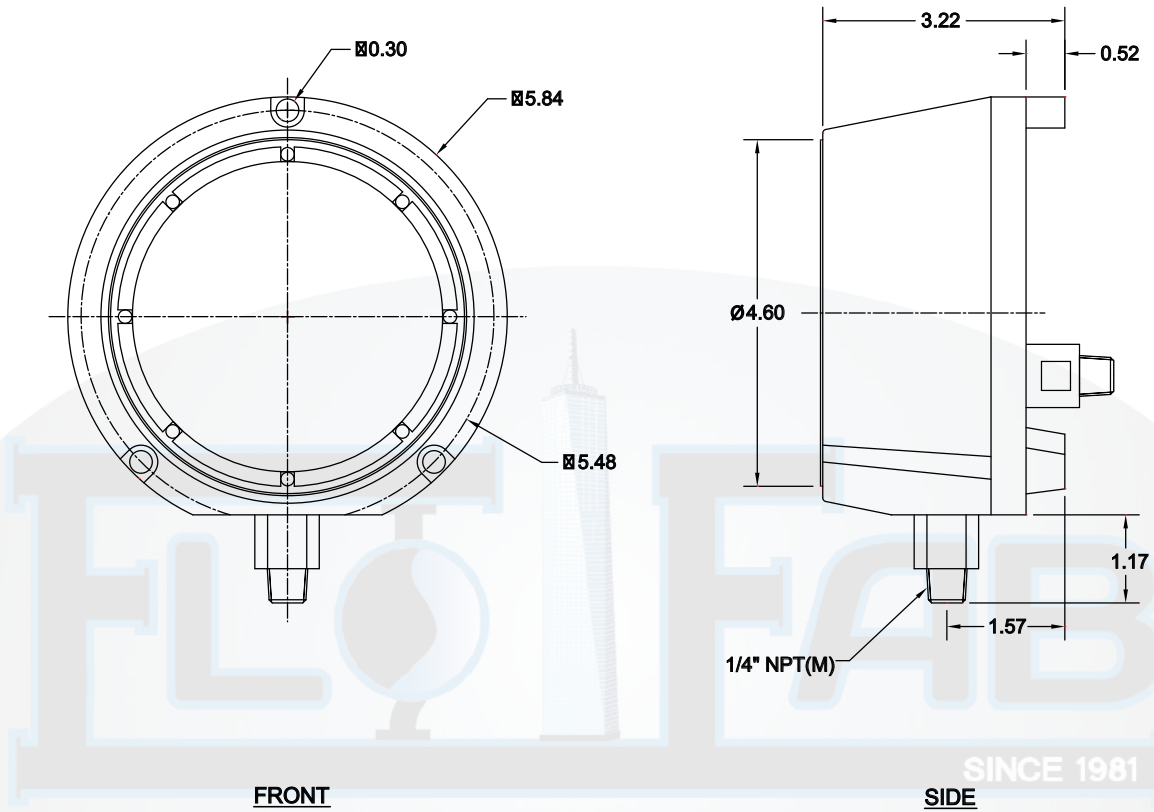
- AISI 316 Stainless Steel Bourdon tube & socket (BR400)
- Brass tube and socket (BR800)
- Liquid Fillable/No Kit Required; Monel tube & socket available
- Connection Sizes: ¼" or ½" NPT Male
- Bottom mount or back mount (see ordering guide)
- Vibration Free Movement

RANGE	RANGE CODES	FIGURES	MINOR, INC.
30/0 Hg Vac	A	5"	0.2"
30/0/15	CB	10" & 5 PSI	1" & 0.5 PSI
30/0/30	CC	10" & 5 PSI	1" & 0.5 PSI
30/0/60	CD	10" & 10 PSI	2" & 1 PSI
30/0/100	CE	10" & 20 PSI	2" & 1 PSI
30/0/150	CF	10" & 30 PSI	5" & 2 PSI
30/0/200	CG	10" & 50 PSI	5" & 2 PSI
30/0/300	CH	10" & 50 PSI	10" & 5 PSI
0/15 PSI	B	3 PSI	0.2 PSI
0/30 PSI	C	5 PSI	0.2 PSI
0/60 PSI	D	5 PSI	0.5 PSI
0/100 PSI	E	10 PSI	1 PSI
0/160 PSI	F	20 PSI	1 PSI
0/200 PSI	G	20 PSI	2 PSI
0/300 PSI	H	50 PSI	2 PSI
0/400 PSI	I	50 PSI	2 PSI
0/600 PSI	K	50 PSI	5 PSI
0/800 PSI	L	100 PSI	5 PSI
0/1000 PSI	M	100 PSI	10 PSI
0/1500 PSI	N	250 PSI	10 PSI
0/2000 PSI	O	200 PSI	20 PSI
0/3000 PSI	P	500 PSI	20 PSI
0/5,000 PSI	R	1,000 PSI	50 PSI
0/10,000 PSI	U	1,000 PSI	100 PSI
0/15,000 PSI	V	2,500 PSI	100 PSI
0/20,000 PSI	V2	2,000 PSI	200 PSI

PROCESS PRESSURE GAUGE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



ORDERING GUIDE

Example: FFBR411D454M

FFBR4	11	D	45	4	M
Model #	Mount Type	Fill Type	Dial Size	Connector Size	Pressure Range
FFBR4 - SS Internals	11 - bottom mt	D - dry, non-filled	4.5"	2 - 1/2" NPT	See chart on page 1
FFBR8 - Brass Internals	12 - back mt	L - Glycerine filled		4 - 1/4" NPT	

Option: VFM - Vibration Free Movement

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



LOW PRESSURE DIAPHRAGM GAUGE



Model FFBR500D

MODEL FFBR500D

FEATURES:

The Model FFBR500D Series from Flo Fab Inc. is a family of dry, non-fillable, diaphragm-based pressure gauges, designed to provide reliable economical measurements of pressures below 10 PSI. Available in brass and stainless steel construction to meet most application and media requirements.

SPECIFICATIONS:

- Accuracy:
 - 2½" Dial: 2.5%
 - 4" and 4½" Dials: 1%
- Dry, Non-fillable
- Working Pressure: 75% FSO
- Overpressure: 30% FSO
- Ambient/Process Temperature: -30 °F to 150 °F
- Enclosure: IP52
- Twist Lock Plastic Lens
- Black Steel Case
- Brass Internals and Connection
- Capsule-Type Diaphragm for Low-Pressure Measurements

FIELD OPTIONS:

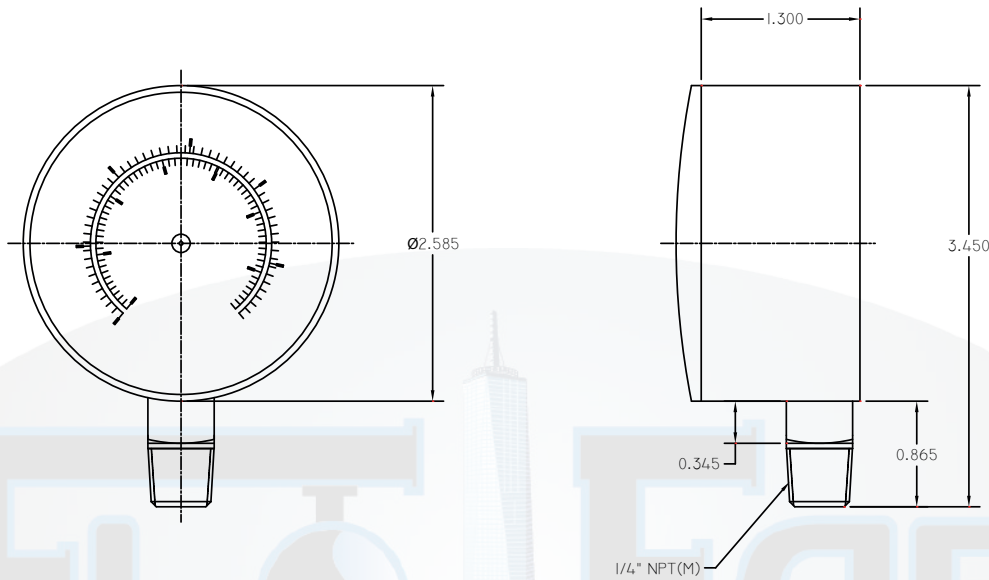
- Dial Sizes: 2½", 4" and 4½"
- Connection Sizes: ¼" NPT, ½" NPT on 4½" dial
- 304 Stainless Steel Case (4", 4½" Dial)
- Phenolic Case (4½" Dial)
- Front Flange (FF), Back Flange (BF), and U-Clamp (UC) mount

RANGE	RANGE CODES	FIGURES	MINOR, INC.
100-0" WC Vac	AZ	10" WC	1"
55-0" WC Vac	A4	10" WC	1"
32-0" WC Vac	A	4" WC	0.5"
0-15" WC	W	3" WC	0.2"
0-32" WC	X	10" WC	0.5"
0-55" WC	Y	10" WC	1"
0-100" WC	Z	10" WC	2"
0-3 PSI	A1	1 PSI	0.05 PSI
0-5 PSI	A2	1 PSI	0.10 PSI
0-10 PSI	A3	2 PSI	0-2 PSI

LOW PRESSURE DIAPHRAGM GAUGE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBR501D-254Y
63MMX1/4"NPT BOTTOM
0-55" W/C/OZ

SINCE 1981

ORDERING GUIDE

Example: FFBR501D452M

FFBR501	D	45	4	M
Model Number		Dial Size	Connector Size	Pressure Range
501 - bottom mount		2.5"	4 - 1/4" NPT	See chart on page 1
502 - back mount		4"		
Fill Type		4.5"	4.5 - 1/2" NPT	
D - dry, non-filled				

Available in Back Flange (BF), Front Flange (FF), and U-Clamp (UC) mount

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



CONTRACTOR GAUGE SERIES

MODEL FFBR601D

FEATURES:

The Model FFBR601D from Flo Fab Inc. is a family of durable contractor pressure gauges, designed to meet the needs of contractors involved in HVAC, plumbing, and industrial and commercial refrigeration applications. Quality and affordability make this series the most attractive gauge for any project where bronze internals are suitable for use.



Model FFBR601D
Contractor Gauge Series

SPECIFICATIONS:

- Available dial size: 4.5"
- Stainless steel case
- Bronze Bourdon Tube
- Brass socket and movement
- Lead Free Brass
- Glass lens
- Full scale, ASME B40.100 Grade 1A
- Zero adjust screw on dial

APPLICATIONS:

- HVAC
- Plumbing
- Refrigeration
- Steam heated processes *

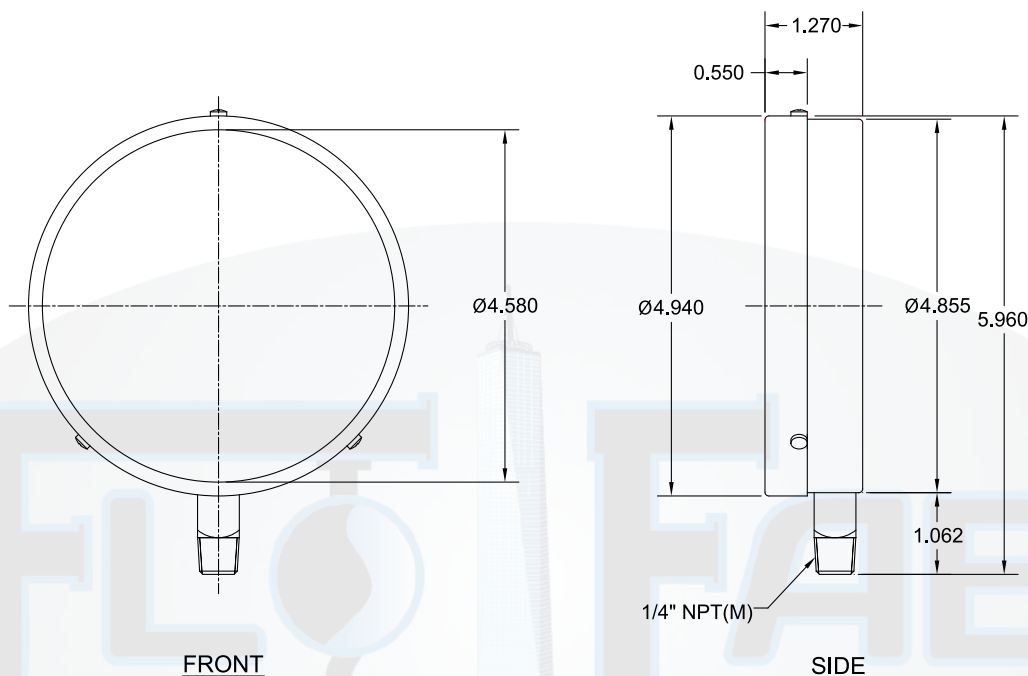
***Note:** a pigtail siphon should always be used when putting pressure gauge into steam service

RANGE	RANGE CODES	MAJOR	MINOR
30" HG VAC	A	5" HG	2" HG
30/0/30	CC	5 PSI	1 PSI
30/0/100	CE	10 PSI	1 PSI
30/0/160	CF	25 PSI	2.5 PSI
0/15	B	2.5 PSI	0.25 PSI
0/30	C	5 PSI	1 PSI
0/60	D	10 PSI	1 PSI
0/100	E	10 PSI	1 PSI
0/160	F	20 PSI	2 PSI
0/200	G	20 PSI	2 PSI
0/300	H	50 PSI	5 PSI
0/400	I	50 PSI	5 PSI
0/500	J	50 PSI	5 PSI
0/600	K	50 PSI	5 PSI

CONTRACTOR GAUGE SERIES

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBR601D-454E
CONTRACTOR GAUGE, 4.5" 1/4" NPT, LM
0/100 PSI

SINCE 1981

ORDERING GUIDE

Example: FFBR601D454F

FFBR601	D	45	4	F
Model Number		Dial Size	Connector Size	Pressure Range
601 - bottom connect		4.5" - 45	4 - 1/4" NPT	See chart on page 1
Fill Type				
D - dry, non-filled				

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ALUMINUM CASE CONTRACTOR GAUGE SERIES



Model FFBR651D
Aluminum Case Contractor Gauge Series

MODEL FFBR651D

FEATURES:

Model FFBR651D from Flo Fab Inc. is a rugged, lightweight Contractor pressure gauge, designed to meet the needs of contractors involved in HVAC, plumbing, and industrial and commercial refrigeration applications. The aluminum case provides lightweight durability with the reliability that comes with the Blue Ribbon contractor series.

SPECIFICATIONS:

- Available dial size: 4.5"
- Aluminum Case
(For rust and corrosion resistance)
- Lead Free Brass
- Plastic Lens
(Resists breakage and won't shatter)
- Accuracy: $\pm 1\%$
- Adjustable pointer on dial
(For additional fine tuning)
- Large, easy to read numbers
(On single scale PSI only dial)

APPLICATIONS:

- HVAC
- Plumbing
- Refrigeration
- Steam heated processes *

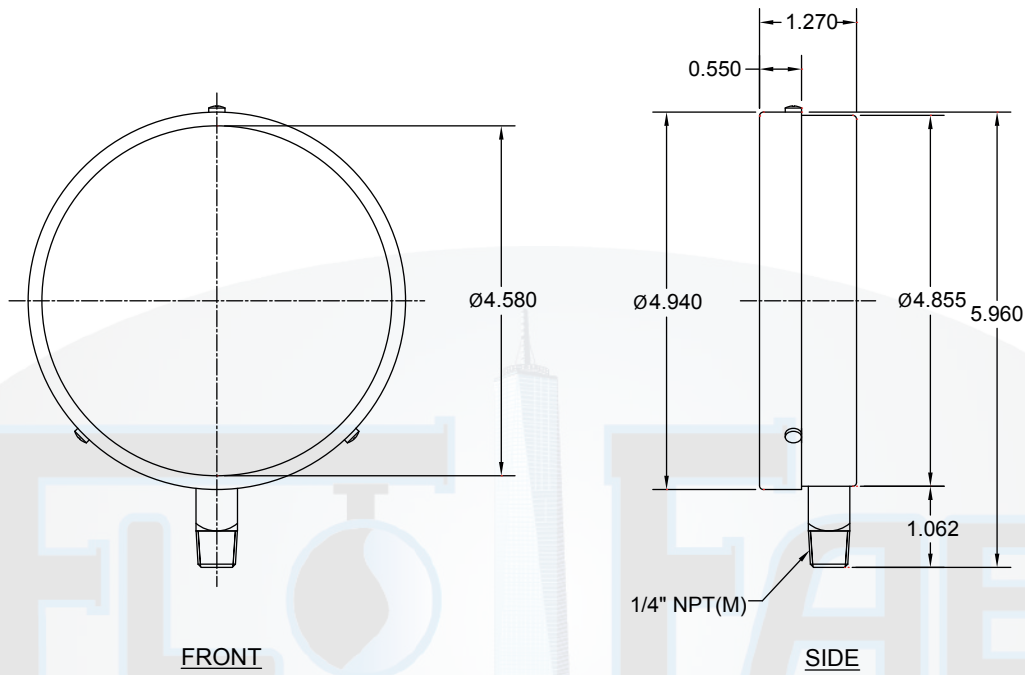
***Note:** a pigtail siph on should always be used when putting pressure gauge into steam service.

RANGE	RANGE CODES	MAJOR	MINOR
30" HG VAC	A	5" HG	2" HG
30/0/30	CC	5 PSI	1 PSI
30/0/100	CE	10 PSI	1 PSI
30/0/160	CF	25 PSI	2.5 PSI
0/15	B	2.5 PSI	0.25 PSI
0/30	C	5 PSI	1 PSI
0/60	D	10 PSI	1 PSI
0/100	E	10 PSI	1 PSI
0/160	F	20 PSI	2 PSI
0/200	G	20 PSI	2 PSI
0/300	H	50 PSI	5 PSI
0/400	I	50 PSI	5 PSI
0/500	J	50 PSI	5 PSI
0/600	K	50 PSI	5 PSI

ALUMINUM CASE CONTRACTOR GAUGE SERIES

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBR651D-454E
CONTRACTOR GAUGE, 4.5" 1/4" NPT, LM
0/100 PSI

SINCE 1981

ORDERING GUIDE

Example: FFBR651D454F

FFBR651	D	45	4	F
Model Number		Dial Size	Connector Size	Pressure Range
651 - bottom connect		4.5" - 45	4 - 1/4" NPT	See chart on page 1
Fill Type				
D - dry, non-filled				

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



DUAL PRESSURE & TEMPERATURE AMMONIA GAUGE

MODEL FFBR700



Model FFBR701

FEATURES:

The Model FFBR700 Series from Flo Fab Inc. is a Dual Pressure and Temperature gauge, designed specifically for ammonia-based closed refrigeration systems.

SPECIFICATIONS:

- Dial Sizes: 2.5" and 4"
- 304 Stainless Steel Case and Ring
- Polycarbonate Lens
- 316 Stainless Steel Tube and Socket
- Bottom and Back 1/4" NPT Connection
- Movement: 304 Stainless Steel
- Pointer: Aluminum
- Ambient Process Temperature:
 - Dry: -40 °F to +150 °F
 - Liquid Filled: -4 °F to +150 °F
- Accuracy:
 - 2.5" Dial: 1.6% FS
 - 4" Dial: 1% FS
- Enclosure Rating: IP65

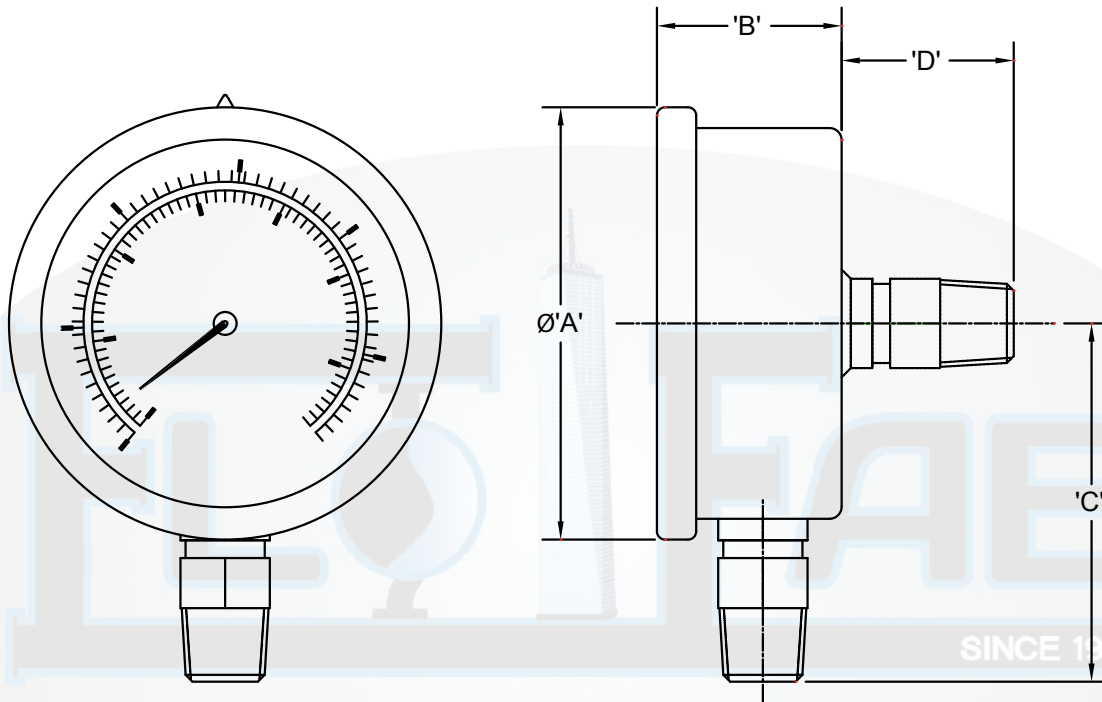
ORDERING GUIDE:

BOTTOM MOUNT		
Pressure Range	2.5" Dial	4" Dial
30" 0-150 PSI	BR701D-254CC	BR701D-404CC
30" 0-300 PSI	BR701D-254CF	BR701D-404CF
BACK MOUNT		
Pressure Range	2.5" Dial	4" Dial
30" 0-150 PSI	BR702D-254CC	BR702D-404CC
30" 0-300 PSI	BR702D-254CF	BR702D-404CF

DUAL PRESSURE & TEMPERATURE AMMONIA GAUGE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



**FFBR700
DUAL TEMP/PRESSURE
AMMONIA GAUGE**

DIAL SIZE	'A'	'B'	'C'	'D'
Ø2.50	2.675	1.16	1.00	1.22
Ø4.00	4.29	1.4	3.2	1.256

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



GAS PRESSURE TEST GAUGES

MODEL FFBRGT

FEATURES:

The Model FFBRGT Series from Flo Fab Inc. is a combined utility gas pressure test gauge and valve body. Before gas is run into the system, it is charged with air. The gauge then indicates whether or not there is a leak present within the line. The valve body serves strictly as a bleed port. Series units support the reliable, cost-effective testing of gas line pressures within both commercial and residential applications.

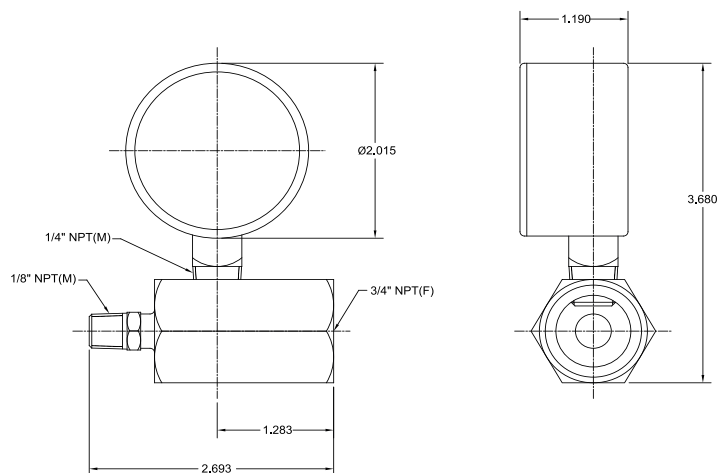


Model FFBRGT

SPECIFICATIONS:

- Dial Size: 2"
- Measurement Range: 0-15 to 0-100 PSI (1/10# increments - only for 0-15)
- Connection: 3/4" FPT
- Accuracy: 3-2-3%

PART NO.	RANGE
BRGT-15	0-15
BRGT-30	0-30
BRGT-60	0-60
BRGT-100	0-100



FRONT

SIDE

BRGT15
2" GAS TEST GAUGE
3/4" NPT(F)



WATER PRESSURE TEST GAUGES

MODEL FFBRWT

FEATURES:

The Model FFBRWT300 water pressure test gauge from Flo Fab Inc. is a 2" dial utility gauge. The gauge adapts directly to a water tap to accurately and cost-effectively measure line and system pressures. The 3/4" Female hose swivel fits all standard hose connections.



Model FFBRWT300

SPECIFICATIONS:

- Dial Size: 2"
- Range: 0-300 PSI
- Connection: 3/4" FHT Brass Swivel
- Accuracy: 3-2-3%
- Max Pointer Available

PART NO.	RANGE
FFBRWT-300	0-300 PSI



BOILER GAUGE / TRIDICATOR



Model FFBRPT
Boiler Gauge / Tridicator

MODEL FFBRPT

FEATURES:

- 2½" and 3" Dial Sizes
- Bottom and Back Connect
- Acrylic Lens & Ring
- Brass Tube & Socket
- Aluminum Pointer

SPECIFICATIONS:

- Temperature Range: 30-250 °F/C
- Pressure Range: 0-75 PSI
- Accuracy:
 - Pressure: 3-2-3%
 - Temperature: 3%

PRODUCT OVERVIEW:

The Model FFBRPT from Flo Fab Inc. is a family of high-accuracy tridicators. A tridicator is a dual purpose instrument that reads both temperature and pressure levels on the same dial face using an independent pointer and scale. This instrument, also known as a "Boiler Gauge," is used primarily on heating systems and boilers.

FIELD OPTIONS:

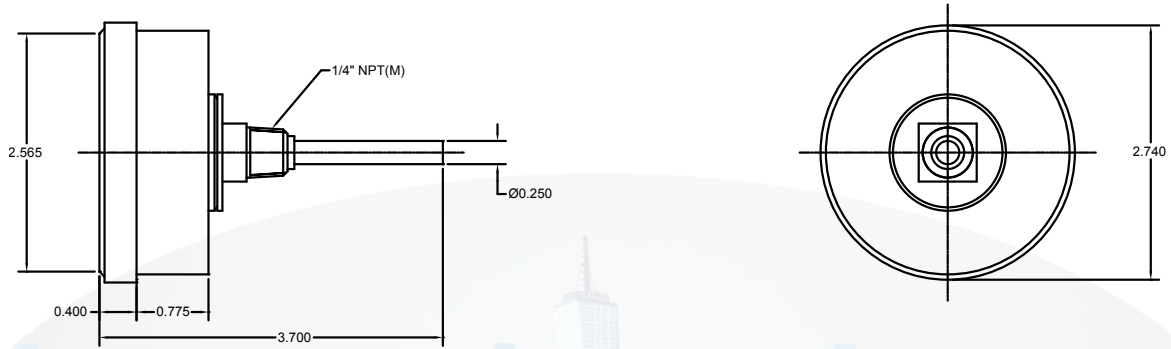
- Connection Sizes:
 - 2.5" Dial: ¼" NPT
 - 3" Dial: ½" NPT

TRIDICATORS			
DIAL SIZE	MOUNTING	RANGE	PART #
2.5"	¼" NPT Back	0-75 PSI 50-320 °F/C	BRPT-00
2.5"	¼" NPT Back	0-75 PSI 30/250 °F/C	BRPT-01
2.5"	¼" NPT Back	0-75 PSI 30-250 °F/C	BRPT-04
3"	½" NPT Back	0-75 PSI 30-350 °F/C	BRPT-02
3"	½" NPT Bottom	0-75 PSI 30-250 °F/C	BRPT-03
3"	½" NPT Bottom	0-200 PSI 30-250 °F/C	BRPT-05
3"	½" NPT Back	0-200 PSI 30-250 °F/C	BRPT-07
3"	½" NPT Back	0-100 PSI 30-250 °F/C	BRPT-08
3"	½" NPT Back	0-250 PSI 30-250 °F/C	BRPT-98
3"	½" NPT Bottom	0-250 PSI 30-250 °F/C	BRPT-99

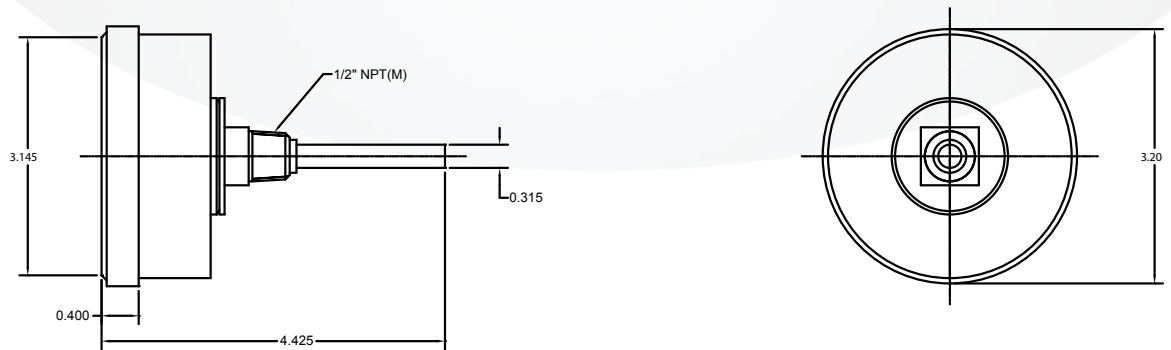
BOILER GAUGE / TRIDICATOR

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBRPT-00
2.5" TRIDICATOR, 1/4" NPT
0-75 PSI/KPA & 50-320 F/C
BACK, 2.15" STEM



FFBRPT-07
3.0" TRIDICATOR, 1/2" NPT
0-200 PSI/KPA & 30-250 F/C
BACK, 2.75" STEM

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LEAD FREE LIQUID FILLED PRESSURE GAUGE



Model FFBRLF201L

MODEL FFBRLF200

FEATURES:

The Model FFBRLF200 Lead Free Liquid Filled Pressure Gauge from Flo Fab Inc. is an accurate, bottom connected, liquid-filled pressure gauge. Its lead free construction allows it to be specified within drinking water pump, pipeline and filtration system installations, or anywhere that the mitigation of lead contamination risk is a concern.

SPECIFICATIONS:

- Lead Free Brass Internals and Connection
- Lead Free Phosphor Bronze Bourdon Tube
- Dial Sizes: 1½", 2", 2½", 4", and 6"
- Glycerine fill standard
- Accuracy:
 - 1½" and 2" Dial Sizes: 2%
 - 2½" Dial: 1.6%
 - 4" and 6" Dial Sizes: = 1%
- Connection Sizes:
 - ⅛" (M) NPT on 1½" and 2"
 - ¼" (M) NPT on 2", 2½", and 4"
 - ½" (M) NPT on 4" and 6"
- Dual Scale: PSI & BAR
- Ambient Temperature:
 - Filled: 0 °F to +150 °F
 - Dry: -30 °F to +150 °F
- Enclosure: IP65

FIELD OPTIONS:

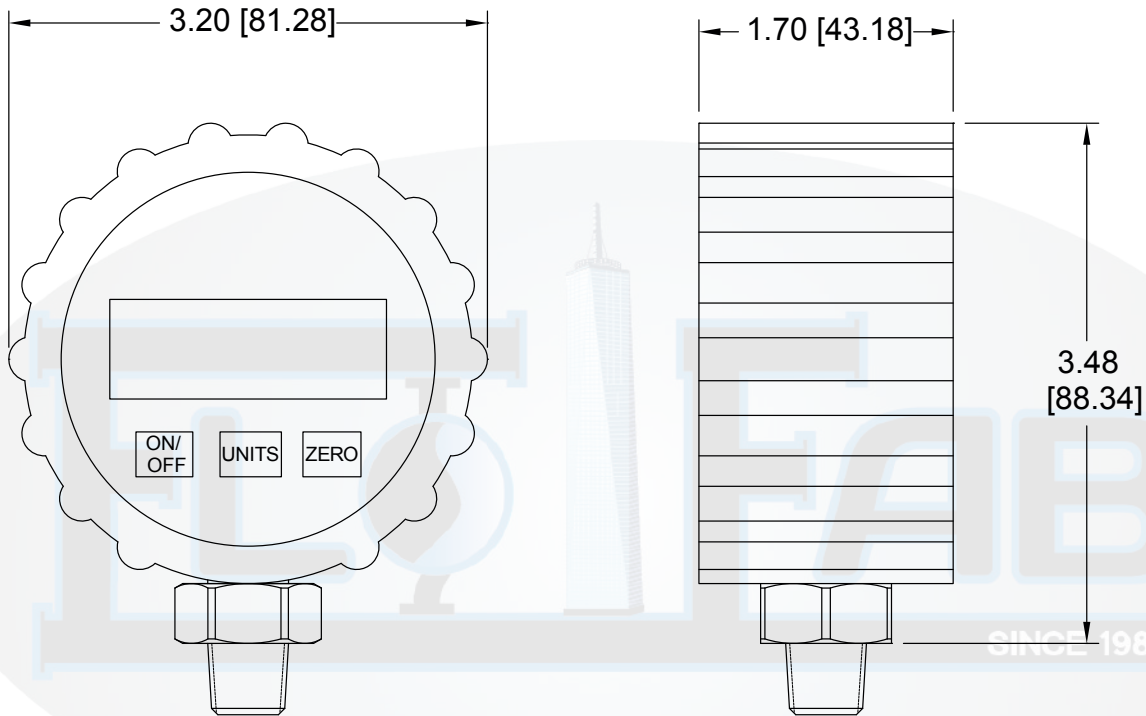
- Single Scale (PSI)
- Available in Dry
- Front Flange (FF), Back Flange (BF), and U-Clamp (UC) mount
- Alternate fills available

RANGE	RANGE CODES	MAJOR, INC.	MINOR, INC.
30/0" VAC	A	5	0.5
30/0/15	CB	5	0.5
30/0/30	CC	10	1
30/0/60	CD	10	1
30/0/100	CE	20	2
30/0/150	CF	20	2
30/0/300	CH	50	10
0/15	B	2	0.2
0/30	C	5	0.5
0/60	D	10	1
0/100	E	20	2
0/160	F	20	2
0/200	G	40	4
0/300	H	50	5
0/400	I	50	5
0/500	J	100	10
0/600	K	100	10
0/800	L	100	10
0/1000	M	200	20
0/1500	N	200	20
0/2000	O	400	50
0/3000	P	500	50
0/4000	Q	500	50
0/5000	R	1000	100
0/6000	S	2000	200
0/10,000	U	2000	200
0/15,000	V	2000	200

DIGITAL PRESSURE GAUGE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD RANGES (additional ranges upon request)		
-15 to 30 PSI	-15 to 50 PSI	-15 to 100 PSI
0 to 500 PSI	0 to 750 PSI	0 to 1000 PSI
0 to 2500 PSI	0 to 5000 PSI	0 to 7500 PSI
0 to 10,000 PSI	0 to 20,000 PSI	0 to 40,000 PSI

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



MUD GAUGE DIAPHRAGM TYPE



FFBRMG
Mud Gauge Diaphragm Type

FFBRMG

FEATURES:

- Pressure range from 5K PSI to 15K PSI (345 to 1,034 BAR)
- Socket and case welded for high vibration and corrosive service
- Fixed pointer and movable dial
- 4" glycerine filled dial
- Weather proof/anti-corrosive gun metal casting
- Easy-to-read analog display

APPLICATIONS:

- Mud pump pressure
- Stand pipe pressure
- Oil and gas well head pressures

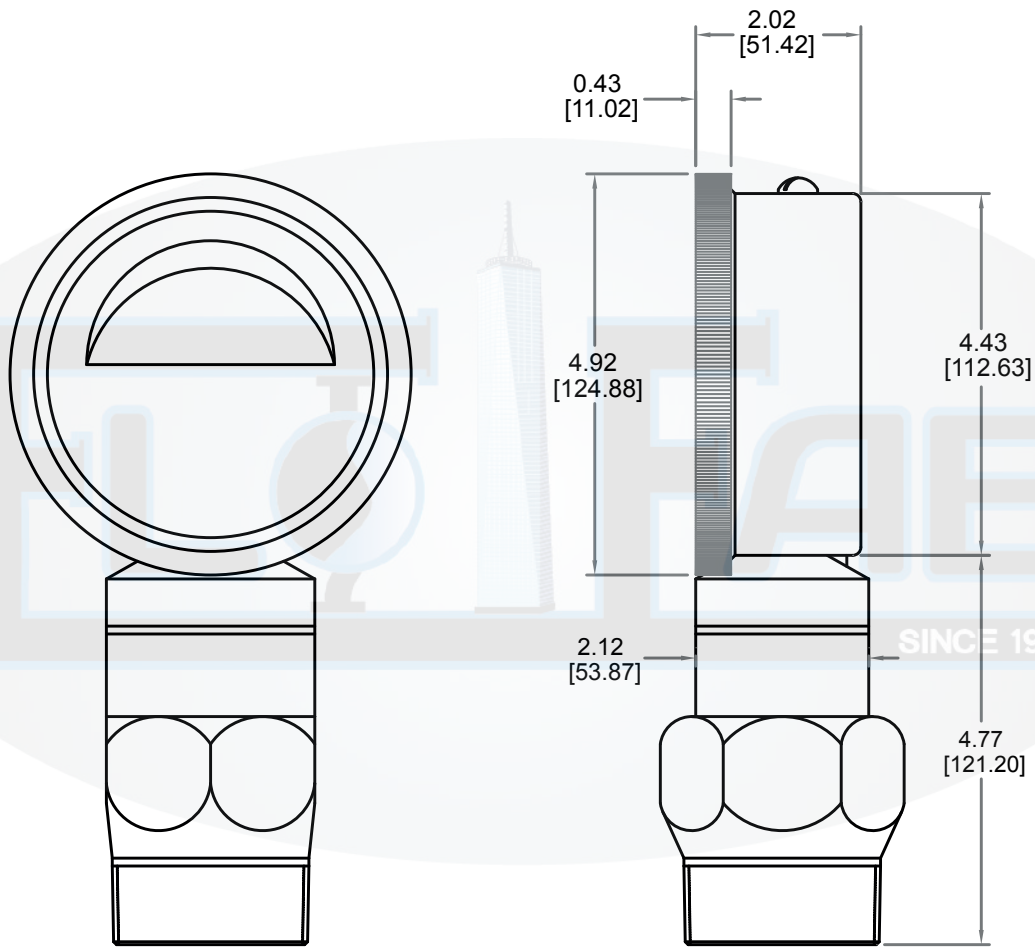
SPECIFICATIONS:

- **Bourdon tube:** 316 stainless steel
- **Movement:** 304 stainless steel
- **Diaphragm:** 316L stainless steel
- **Casing:** Anti-corrosion treated carbon steel
- **Process Connection:** Bottom mount 2" NPT
- **Static Accuracy:** 2.5% FSO
- **Pressure Ranges:** 0 to 10K PSI thru 0 to 15K PSI (690 thru 1,034 BAR)
- **Dial:** 4" Glycerine filled plexiglass
- **Neoprene rubber pad** for mud protection

MUD GAUGE DIAPHRAGM TYPE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.

PRESSURE CONVERSION / CUSTOM DIAL TABLE

TO CONVERT FROM TO	psi	mbar	bar	atm	Pa	kPa	cmH ₂ O @ 20 °C	inH ₂ O @ 20 °C	ftH ₂ O @ 20 °C	mmHg @ 0 °C	inH ₂ O @ 0 °C	kg/cm ²	ft sea water
psi	1	68.9476	0.0689476	0.0680460	6894.76	6.8947	70.433	27.730	2.3108	51.7149	2.03602	0.07030686	2.2457
mbar	0.0145038	1	0.001	9.86923 x 10 ⁻⁴	100	0.100	1.0215	0.40218	0.03352	0.75006	0.0295300	0.00101972	0.32571
bar	14.5038	1000	1	0.986923	100000	1000	1021.5	402.18	33.52	750.06	29.5300	1.019716	32.571
atm	14.6959	1013.25	1.01325	1	101325	101.325	1035.08	407.511	35.959	760.0	29.9213	1.033227	33.002
Pa	1.45038 x 10 ⁻⁴	0.01	0.00001	9386923 x 10 ⁻⁶	1	0.001	0.010215	0.0040218	3.352 x 10 ⁻⁴	7.5006 x 10 ⁻³	2.95300 x 10 ⁻⁴	1.019716 x 10 ⁻⁵	3.2571 x 10 ⁻⁴
kPa	0.145038	10.0	0.010	0.0098692	1000	1	10.215	4.02118	0.3352	7.5006	0.295300	0.0101972	0.32571
cmH ₂ O @ 20 °C	0.014198	0.97891	9.7891 x 10 ⁻⁴	9.66105 x 10 ⁻⁴	97.891	0.097891	1	0.3937	0.035281	0.73424	0.028907	9.9821 x 10 ⁻⁴	0.031884
inH ₂ O @ 20 °C	0.036063	2.4864	0.0024864	2.45392 x 10 ⁻³	248.64	0.24864	2.5400	1	0.083333	1.8650	0.073424	0.0025354	0.080986
ftH ₂ O @ 20 °C	0.432756	29.8368	0.0298368	0.0294470	2983.68	2.98368	30.480	12	1	22.380	0.881089	0.030425	0.97183
mmHg @ 0 °C	0.0193368	1.33322	0.0013322	0.00131579	133.322	0.133322	1.3619	0.53620	0.04468	1	0.03937	0.00135951	0.043424
inH ₂ O @ 0 °C	0.491154	33.8639	0.0338639	0.0334211	3386.39	3.38639	34.593	13.619	1.13491	25.400	1	0.0345316	1.1030
kg/cm ²	14.2233	980.665	0.980665	0.967842	98060.5	98.0665	1001.8	394.41	32.868	735.559	28.959	1	31.9410
ft sea water	0.4453	30.702	0.030702	0.030301	3070.2	3.0702	31.3638	12.3482	1.02900	23.029	0.90664	0.031308	1



MODEL 'FFTS' FILTER TYPE SNUBBER



Model 'FFTS' Filter Type Snubber

FEATURES:

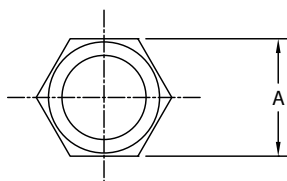
Pressure Oscillations and other sudden pressure changes can affect the delicate mechanisms of a pressure gauge or pressure transmitter. This can result in either complete failure of the instrument or false and inaccurate readings. Pressure snubbers are designed to reduce or prevent these oscillations and fluctuations from reaching and affecting pressure instruments.

Pressure snubbers stop pressure spikes only; a pressure snubber will not stop any overpressure. Spikes last for milliseconds only, over pressures lasting longer than that can damage the pressure sensor.

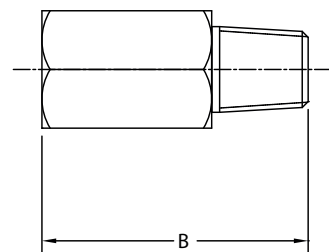
The Pressure snubbers shown are the "filter" type using a porous filter media made of sintered metal. Because the filter element is a fine mesh type, it should be used on processes that do not contain anything that would clog the media. In the event that the snubber does get clogged with dirt or particulate from the process, our snubbers can be disassembled for cleaning if necessary.

SPECIFICATIONS:

- **Connection Sizes:** 1/4" or 1/2" NPT
- **Stainless steel or brass**
- **Water, air, oil or gas**
- **No moving parts - nothing to break or wear out**
- **Pressure rating:**
 - Brass: 3,000 PSI
 - Stainless Steel: 10,000 PSI



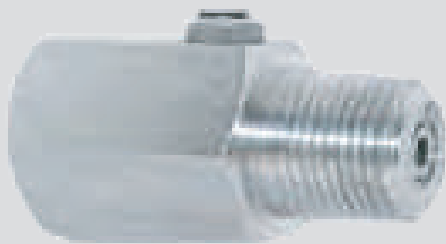
FRONT



SIDE



PRESSURE SNUBBER WITH CHOKE VALVE



Pressure Snubber with Choke Valve

FEATURES:

- Adjustable pressure pulsation dampener protects pressure gauges against pressure perturbation, surges, and fluid hampers
- Isolates gauge for service or replacement

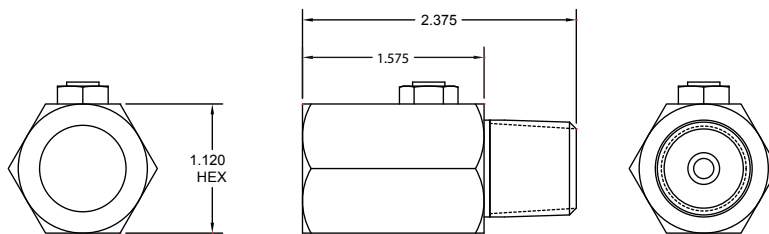
APPLICATIONS:

- Pulsation
- Heavy duty process
- Industrial

PRESSURE RANGES:

- 3,000 to 10,000 PSI

SPECIFICATIONS:



STAINLESS STEEL SNUBBER

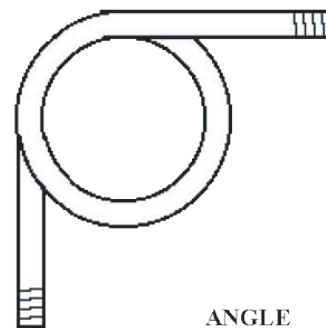
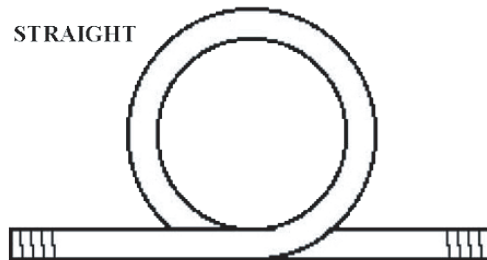
PART #	THREAD	"B"	"C"	"D" HEX	MAXIMUM PRESSURE
FFMSB4	1/4-1/8 NPT	0.51" (13 mm)	1.77" (45 mm)	0.67" (17 mm)	3,000 PSI
FFMSS4	1/4-1/8 NPT	0.51" (13 mm)	1.77" (45 mm)	0.67" (17 mm)	5,000 PSI
FFMSB6	3/8-1/8 NPT	0.59" (16 mm)	2.36" (60 mm)	1.18" (30 mm)	5,000 PSI
FFMSS6	3/8-1/8 NPT	0.59" (16 mm)	2.36" (60 mm)	1.18" (30 mm)	10,000 PSI
FFMSB8	1/2-1/4 NPT	0.79" (20 mm)	2.36" (60 mm)	1.18" (30 mm)	5,000 PSI
FFMSS8	1/2-1/4 NPT	0.79" (20 mm)	2.36" (60 mm)	1.18" (30 mm)	10,000 PSI



SIPHON (PIGTAIL)



Pigtail Siphons from Blue Ribbon Corporation are typically used to act as a cooling or warming leg for applications where the process temperature may be higher or lower than the "normal" working temperature range, as specified by NIST B40.1, in relation to the instrumentation. Temperature extremes can lead to measurement inaccuracy, or otherwise shorten the life span of instrumentation that is not specifically designed for severe duty applications.



PART #	DESCRIPTION	PRESSURE	TEMP
FFA03B	¼" NPT Brass Pigtail	250 PSI	+400 °F
FFA031	¼" NPT Iron Pigtail, Schedule 40 Iron	500 PSI	+400 °F
FFCPS4	¼" NPT Steel Pigtail, Schedule 80 Steel	1000 PSI	+850 °F
FFCPS2	½" NPT Steel Pigtail	1000 PSI	+850 °F
FFCPSS4	¼" NPT Stainless Steel Pigtail	2000 PSI	+1000 °F
FFCPSS2	½" NPT Stainless Steel Pigtail	2000 PSI	+1000 °F



GAUGE COCK & MINI VALVES



FFA14

1/4" (F) NPT X 1/4" (F) NPT
 Brass Body Rating:
 700 PSI at +250 °F

	A	B
In.	1.60	1.30
MM	40	33



FFA15

1/4" (F) NPT X 1/4" (M) NPT
 Brass Body Rating:
 700 PSI at +250 °F

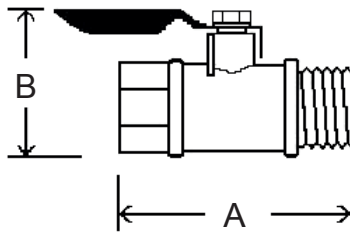
	A	B
In.	1.60	1.35
MM	40	34

FFNV--B--1/4

Needle Valve
 1/4" (F) NPT X 1/4" (F) NPT
 Brass Body Rated at 5000 PSI

	A	B
In.	1.62	1.94
MM	41	49

Dimensional Reference:





INSTRUMENTATION VALVES

Flo Fab Inc.'s High-quality instrumentation valves are designed for heavy-duty process control or other industrial applications that require high-pressure carbon steel or stainless steel shut-off valves.

Our valves are available hard seat (10,000 PSI) or soft seat (6,000 PSI), 1/4" or 1/2" NPT, straight or angle pattern, male x male, female x female, or male x female configurations to suit a variety of requirements.

FFNVS Super Mini		FFNV (1/4" NPT) Mini		FFNV (1/2" NPT) & FFNVL (1/4" NPT) Full Size		FFHV Hex Body		FFGV Multi-Port			
	In.	mm		In.	mm		In.	mm		In.	mm
A	1.02	26	A	1.81	46	A	2.67	68	A	3.65	93
B	0.32	8	B	0.50	13	B	2.64	67	B	3.23	82
C1	0.40	10	C	0.17	4	C	1.12	29	C	1.26	32
C2	0.20	6	D	0.44	11	D	0.73	19	D	1.65	42
D	0.46	12	E	0.34	9	E	2.25	57	E	0.75	19
E	0.75	19	F	0.75	19				F	2.25	57
F	0.52	13	G	0.61	15						
G	1.31	33	H	1.04	26						

Part Number System:	
<p>Valve Designation</p> <ul style="list-style-type: none"> FFNVS = "Super Mini" Style FFNV = Standard Size FFNVL = Full Size Body 1/4" NPT FFHV = Hex Body Valve FFGV = Multi-Port Gauge Valve <p>Body Material</p> <ul style="list-style-type: none"> CS = Carbon Steel SS = 316 Stainless Steel <p>Connection Size</p> <ul style="list-style-type: none"> 1/4 = 1/4" NPT 3/8 = 3/8" NPT 1/2 = 1/2" NPT 	<p>Outlet Connection</p> <ul style="list-style-type: none"> F = Female M = Male <p>Inlet Connection</p> <ul style="list-style-type: none"> F = Female M = Male <p>Body Pattern</p> <ul style="list-style-type: none"> 180 = Straight Pattern 90 = Angle Pattern <p>Seat / Pressure Rating</p> <ul style="list-style-type: none"> GS = Gas Service / 6000 PSI HS = Hydraulic Service / 1000 PSI



PRESSURE LIMITING VALVE



Pressure Limiting Valve

FEATURES:

Gauge Savers Flo Fab Inc. are called Overload Protectors or Pressure Limiting Valves. The PLV cuts off pressure rising above the desired pressure value (preset value), thus preventing failure of pressure gauge (instruments) and also stops possible damages such as hazardous leakages, explosions, etc.

The Gauge Saver shuts off the system with quick and positive action of built in push-rod device. As and when, the pressure falls below the preset pressure value, the line and/or the pressure gauge will be automatically put into operation again. The Gauge Saver is of extreme importance and necessity for the protection of the pressure sensitive instruments against over pressures, sudden line induced pressure surges, which are principal causes of the instrument and subsequent system failure. The Gauge Saver can be supplied to function at different cut-off-pressure values upon special request. Repeat accuracy of the unit depends on the rate of pressure rise. However, an accuracy of $\pm 10\%$ of the set pressure may be expected.

SPECIFICATIONS:

- Prevents damage to gauge and instruments due to sudden pressure surge
- 316 Stainless Steel Construction
- Compact Design
- Automatic Positive Action
- Inline Installation
- Repeatable Performance
- Maximum Working Pressure: 6,000 PSI

Available Configurations

PLV	1/2" MALE	1/2" MALE	6,000 PSI
PLV	1/2" MALE	1/2" FEMALE	6,000 PSI
PLV	1/2" FEMALE	1/2" FEMALE	6,000 PSI
PLV	1/4" FEMALE	1/4" FEMALE	6,000 PSI
PLV	1/4" MALE	1/4" MALE	6,000 PSI
PLV	1/4" MALE	1/4" FEMALE	6,000 PSI

Available Ranges

RANGE	ADJUSTMENT SPAN (PSI)
1	50 TO 120
2	80 TO 120
3	150 TO 300
4	250 TO 600
5	700 TO 1000
6	1200 TO 1800
7	2000 TO 3000
8	3000 TO 6000



TEST PORT PLUGS

PIPING SYSTEM TEST PLUGS

FEATURES:

Piping System Test Plugs from Flo Fab Inc. are designed for permanent installation into piping systems for quick access during maintenance checks. They are designed to be used with gauge adapters for pressure tests or pocket thermometer insertion without shutting down or draining the system. Models are available with the Nordel or Neoprene Cores, Brass or Stainless Steel bodies, in sizes ranging from 1/8" NPT through 1/2" NPT. Cap and chain included.



Test Port Plugs

MODEL #	NOMINAL SIZE (IN)	OAL (IN)	MATERIAL	PRESSURE/TEMPERATURE	LOWER CONNECTION (IN)	BODY HEX (IN)	CAP HEX (IN)	CORE MATERIAL
FFBLU-18TP	1/8 NPT	1-1/4	Brass	200 °F/1000 PSI	1/8 NPT	13/16	9/16	Nordel
FFBLU-14TP	1/4 NPT	1-1/2	Brass	200 °F/1000 PSI	1/4 NPT	1-1/16	1-1/2	Nordel
FFBLU-38TP	3/8 NPT	1-1/2	Brass	200 °F/1000 PSI	3/8 NPT	1-1/16	1-1/2	Nordel
FFBLU-12TP	1/2 NPT	1-1/2	Brass	200 °F/1000 PSI	1/2 NPT	1-1/16	1-1/2	Nordel
FFBLU-SST-25TP	1/4 NPT	1-1/2	SS 304	200 °F/1000 PSI	1/4 NPT	1-1/16	1-1/2	Nordel
FFBLU-12TPXL	1/2 NPT	3"	Brass	200 °F/1000 PSI	1/2 NPT			Nordel
FFBLU-14TPXL	1/4 NPT	3"	Brass	200 °F/1000 PSI	1/4 NPT			Nordel



DIAPHRAGM SEAL

SERIES 1000

FEATURES:

The Flo Fab Series 1000 diaphragm seal is an economical isolation device used to protect pressure instrumentation from the media to be measured. Designed with a rugged, two-piece bolted construction for pressure ranges from 30"Hg vacuum to 2500 PSI, the Series 1000 provides exceptional protection in corrosive applications or where the pressure instrumentation process port alone may be prone to clogging.



Series 1000

SPECIFICATIONS:

Housing

- 316 Stainless Steel

Diaphragm

- 316 Stainless Steel

Construction

- Two-Piece Bolted

Gasket

- Buna-N (30 PSI to 2500 PSI)
- Viton (30"HgV to 30 PSI)

Connection

- Bottom: 1/4", 1/2", 3/4" and 1" NPT
- Top: 1/4" and 1/2" NPT

Process Temperature

- -22 °F to +212 °F (-30 °C to +100 °C)

OPTIONS:

- Flushing Port/Connection
- Viton and Teflon Gaskets
- Monel, Hastelloy-C Diaphragm

LOWER HOUSING

FFBR-D-1000	1/4" SS Lower
FFBR-D-1001	1/2" SS Lower
FFBR-D-1002	1/2" SS Lower with Flushing Port
FFBR-D-1003	3/4" SS Lower
FFBR-D-1004	3/4" SS Lower with Flushing Port
FFBR-D-1005	1" SS Lower
FFBR-D-1006	1" SS Lower with Flushing Port
FFBR-D-1007-V	1/4" Viton
FFBR-D-1008-V	1/2" Viton
FFBR-D-1009-V	3/4" Viton

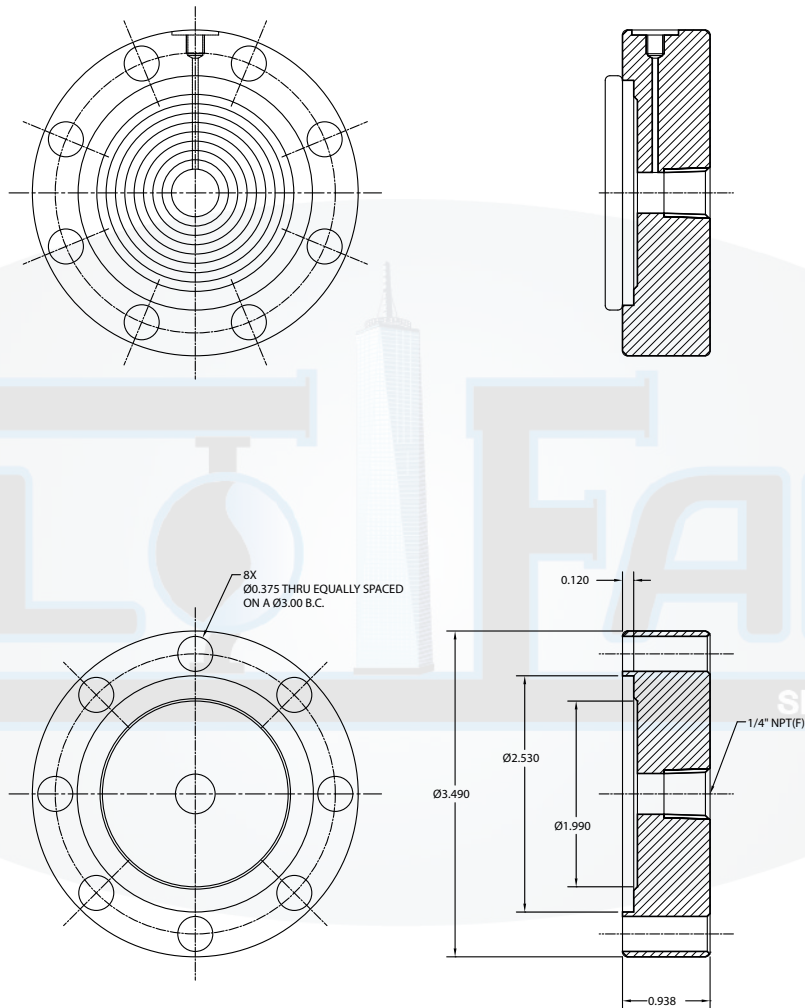
UPPER HOUSING

FFBR-D-2000	1/4" NPT SS 316 SS Diaphragm
FFBR-D-2001	1/4" NPT SS Monel Diaphragm
FFBR-D-2002	1/4" NPT SS Hastelloy-C Diaphragm
FFBR-D-2003	1/4" NPT SS Viton Diaphragm
FFBR-D-2004	1/2" NPT SS 316 SS Diaphragm
FFBR-D-2005	1/2" NPT SS Monel Diaphragm
FFBR-D-2006	1/2" NPT SS Hastelloy-C Diaphragm
FFBR-D-2007	1/2" NPT SS Viton Diaphragm

DIAPHRAGM SEAL

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBR-D-1000/BR-D-2000
3.5" DIA.
316SST

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



PVC DIAPHRAGM SEAL

SERIES 3000

FEATURES:

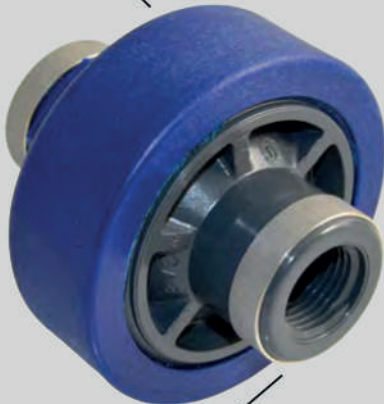
The Series 3000 from Flo Fab Inc. is a Teflon diaphragm seal or isolation device with PVC construction, used to provide economical protection of pressure sensing instrumentation from measured media. This Series is particularly useful for the economical protection of instrumentation from corrosion and clogging, and offers an option for application where some materials may be limited by corrosion.

SPECIFICATIONS:

- **Housing:** PVC
- **Diaphragm:** Teflon
- **Operating Pressure:** Vacuum to 200 PSI
- **Instrument Connection:** 1/4" NPT
- **Process Connection:** 1/4" and 1/2" NPT
- **Process Temperature:** +77 °F to +104 °F)

PVC Diaphragm Seal	
FFBR-D-3000	1/4" FNPT x 1/4" FNPT
FFBR-D-3001	1/4" FNPT x 1/2" FNPT

Provision for fill port and SS band



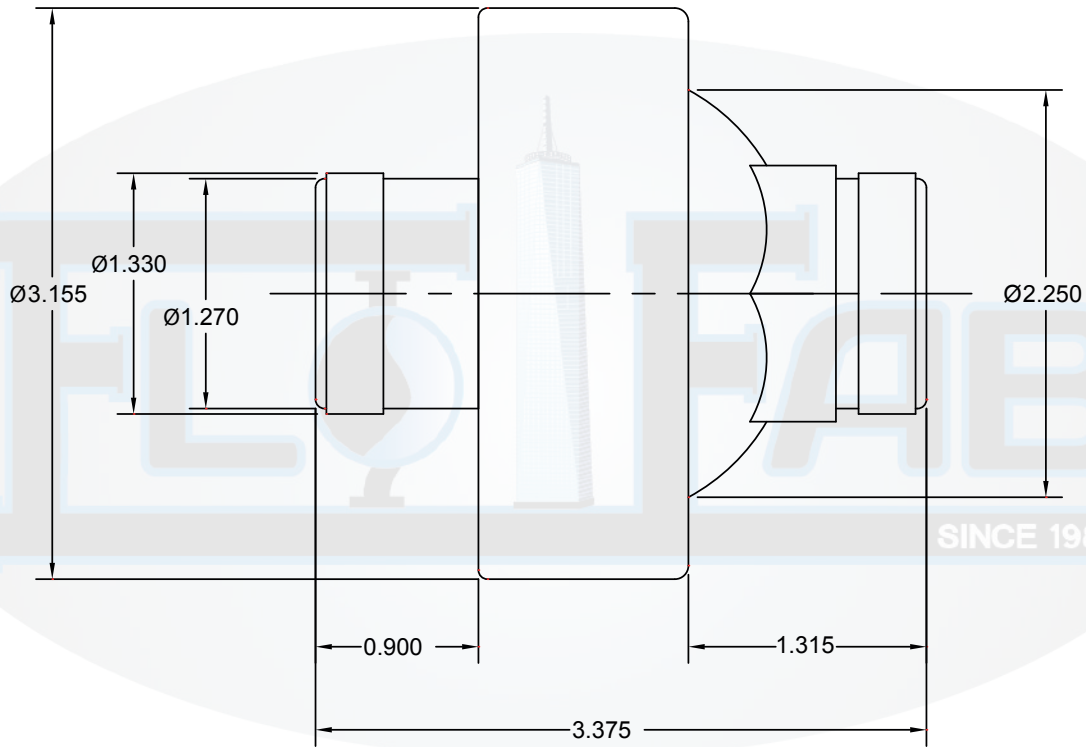
Stainless Steel Band - Prevents splitting when installing.

Series 3000

PVC DIAPHRAGM SEAL

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



DIAPHRAGM SEAL PVC/TEFLON 3000 SERIES

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



DIAPHRAGM SEAL

SERIES 4000

FEATURES:

The Series 4000 from Flo Fab Inc. are diaphragm seals or isolation devices used to provide economical protection of pressure sensing instrumentation from measured media. The Series is designed with a stainless steel diaphragm for small to medium instrumentation ranging from 30 to 2500 PSI. The Series 4000 provides ultimate protection for gauges and measuring instruments thru 4½" dial sizes in applications where space limitations are a concern.



Series 4000

TECHNICAL SPECIFICATIONS:

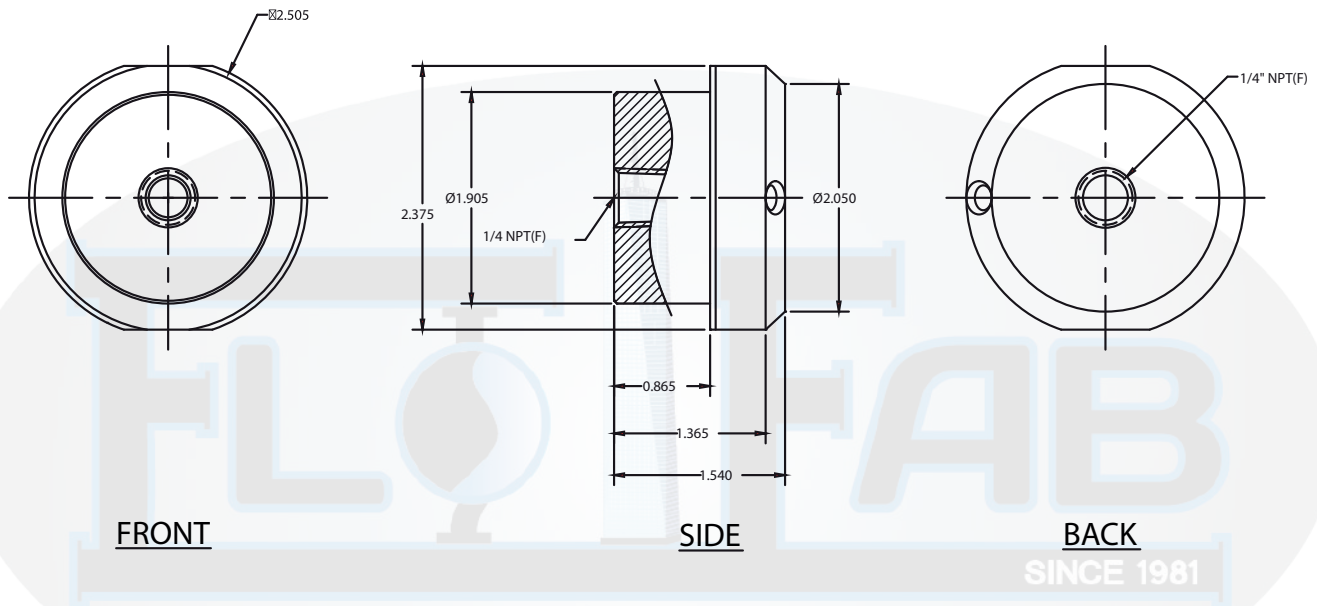
- **Housing:** 316 Stainless Steel
- **Diaphragm:** 316 Stainless Steel
- **Operating Pressure:** 30 to 2500 PSI
- **Instrument:** ¼" NPT
- **Process Connection:** ¼" NPT
- **Process Temperature:** -49 °F to +302 °F

Part #	Description
FFBR-D-4000	¼" NPT x ¼" NPT

DIAPHRAGM SEAL

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBR-D-4000
316SS
4000 SERIES

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



STAINLESS STEEL DIAPHRAGM SEAL

SERIES 5000

FEATURES:

The Series 5000 from Flo Fab Inc. are diaphragm seals or isolation devices used to provide economical protection of pressure sensing instrumentation from measured media. The Series is designed with a stainless steel diaphragm for small to medium instrumentation ranging from 30 to 2500 PSI. The Series 5000 provides ultimate protection for gauges and measuring instruments thru 4½" dial sizes in applications where space is at a premium.



Series 5000

TECHNICAL SPECIFICATIONS:

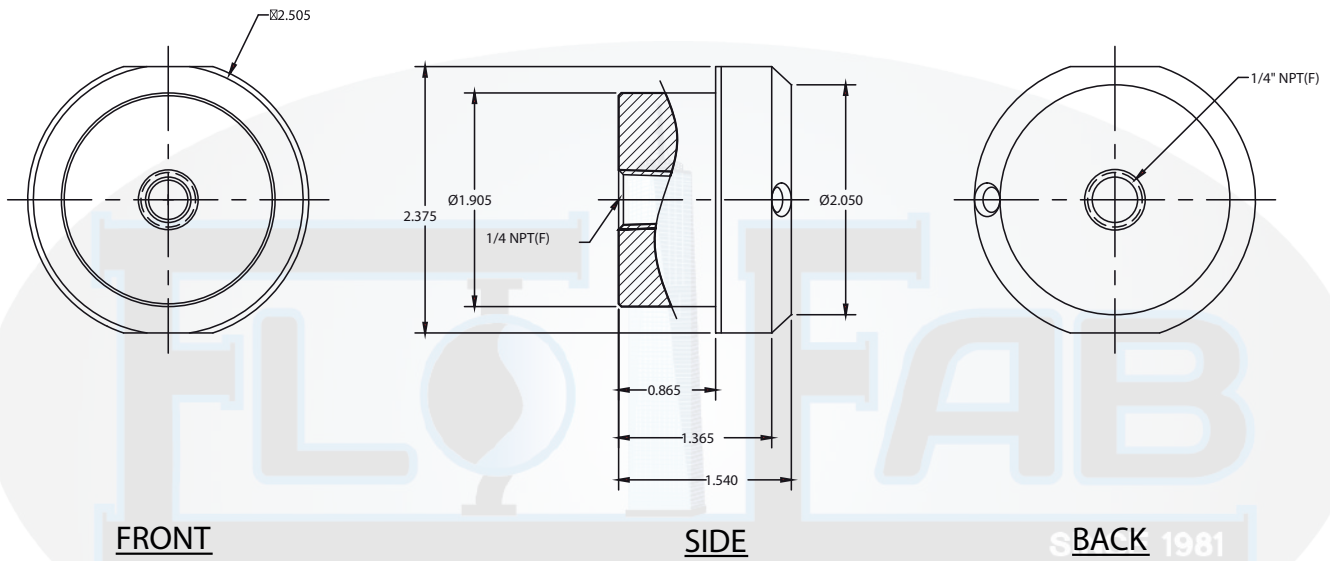
- **Housing:** 316 Stainless Steel
- **Diaphragm:** 316 Stainless Steel
- **Operating Pressure:** 30 to 2500 PSI
- **Instrument:** ¼" NPT
- **Process Connections:** ¼" and ½" NPT
- **Process Temperature:** -49 °F to +302 °F

Part #	Description
FFBR-D-5000	¼" NPT x ¼" NPT
FFBR-D-5001	¼" NPT x ½" NPT
FFBR-D-5002	½" NPT x ½" NPT

STAINLESS STEEL DIAPHRAGM SEAL

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



DIAPHRAGM SEAL
316SS
5000 SERIES

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.

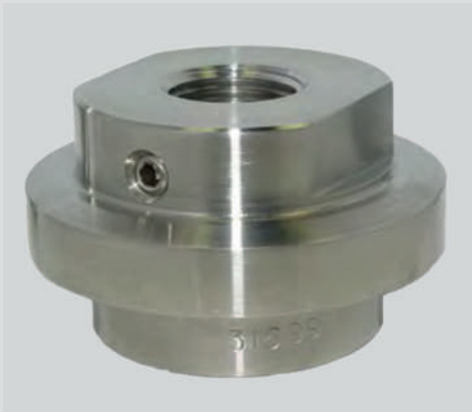


DIAPHRAGM SEAL

SERIES 6000

FEATURES:

The Series 6000 from Flo Fab Inc. is a lightweight, all-stainless steel, welded one-piece diaphragm seal or isolation device, used to provide economical protection of pressure sensing instrumentation from measured media. The Series is designed for small instrumentation ranging from vacuum to 2500 PSI. It also provides protection for gauges and measuring instruments in dial sizes ranging from 1½" to 3½", as well as in space-limited applications.



Series 6000

TECHNICAL SPECIFICATIONS:

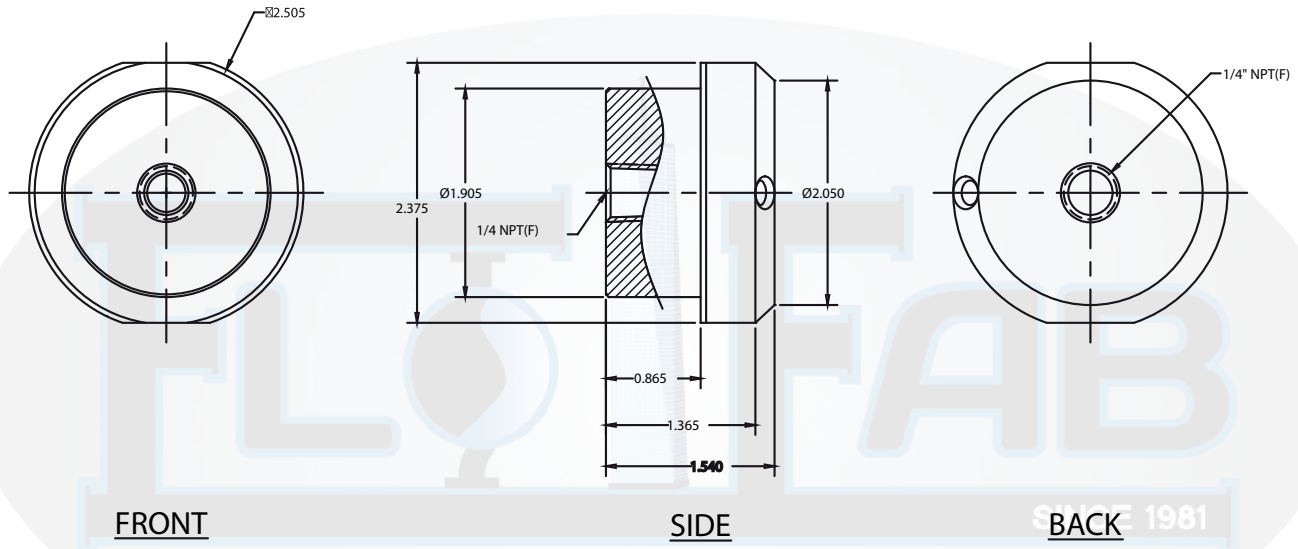
- **Housing:** 316 Stainless Steel
- **Diaphragm:** 316 Stainless Steel
- **Operating Pressure:** Vacuum to 2500 PSI
- **Instrument:** ¼" NPTF
- **Process Connections:** ¼" NPTF, ¼" NPTM, ½" NPTF
- **Process Temperature:** -46 °F to +302 °F

Part #	Description
FFBR-D-6000	¼" NPT x ¼" NPT
FFBR-D-6001	¼" NPTF x ½" NPTM
FFBR-D-6002	½" NPTF ½" NPTF

DIAPHRAGM SEAL

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBR-D-6000
316SS
6000 SERIES

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



3" AND 5" DIAL BIMETAL THERMOMETER

MODEL FFBR3 AND FFBR5



Model FFBR3
3" Dial Bi-Metal Thermometer

FEATURES:

- All Stainless Steel Construction
- 3" (75mm) and 5" (127mm) dial size
- Glass Lens
- Anti-Parallax Dial
- Vibration resistant design for reduced needle flutter
- Fast Response
- Hermetically sealed IP68
- Accuracy: $\pm 1\%$ Full Scale
- Welded Stem

APPLICATIONS:

- Heating and Air Conditioning
- Industrial Wastewater
- Accurate Temperature Measurements

SPECIFICATIONS:

- Dial: 3" (75mm) and 5" (127mm)
- Aluminum with black markings, anti-parallax
- Case, Ring and Stem AISI 304 SS
- Recalibrator Screw Standard
- Lens: Glass, hermetically sealed
- Connection: 1/2" NPT standard
- Movement: Bi-metallic coil
- Pointer: Aluminum, painted black
- Maximum Operating Pressure: 125 PSI (861 kPa)
- Operating Temperature: 75% of full scale value (recommended maximum)
- Ambient Temperature: -58 °F to 248 °F (-50 °C to 120 °C)
- Accuracy: $\pm 1\%$ of full scale
- Enclosure Rating: IP68

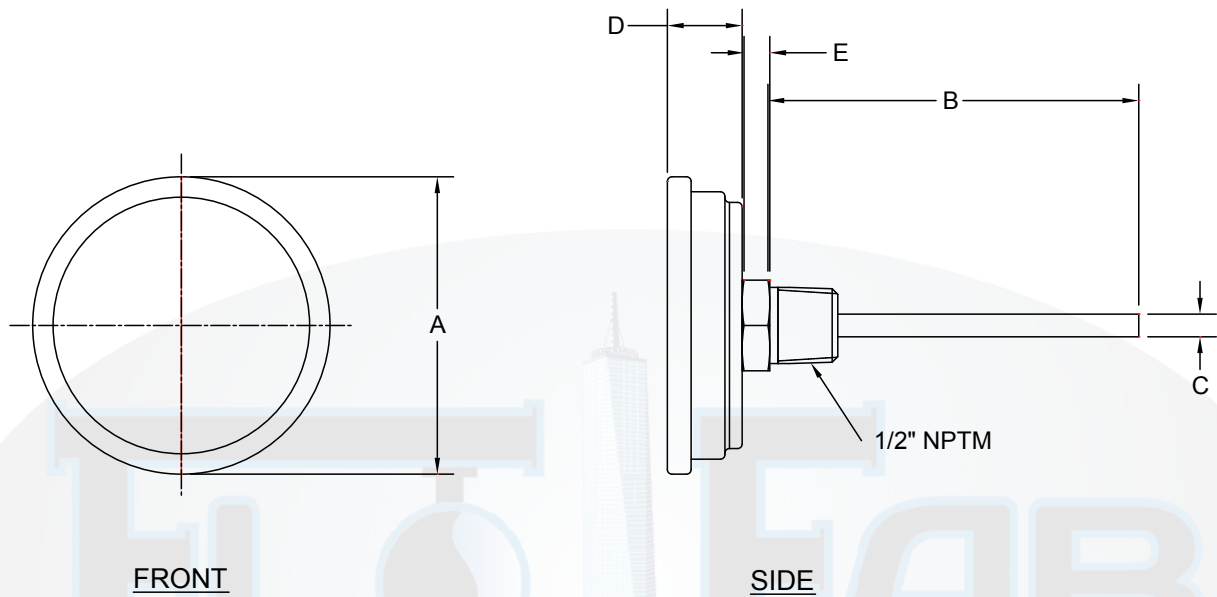
ORDERING GUIDE

STEM LENGTH*	PART NUMBER		CODE	RANGE
	3" DIAL	5" DIAL		
2.5"	FFBR3-2	FFBR5-2	TA	-40/120 F & C
4"	FFBR3-4	FFBR5-4	TB	-40/160 F & C
6"	FFBR3-6	FFBR5-6	TE	0/150 F & C
9"	FFBR3-9	FFBR5-9	TG	0/200 F & C
12"	FFBR3-12	FFBR5-12	TJ	20/240 F & C
15"	FFBR3-15	FFBR5-15	TI	0/250 F & C
18"	FFBR3-18	FFBR5-18	TM	50/300 F & C
24"	FFBR3-24	FFBR5-24	TP	50/400 F & C
			TR	50/550 F & C
			TS	150/750 F & C
			TT	200/1000 F & C

3" AND 5" DIAL BIMETAL THERMOMETER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBR3-4-TG-C
3" BIMETAL THERMOMETER
1/2" NPT, 0-100 C
BACK, 4" STEM

SINCE 1981

		A	B	C	D	E
3" DIAL	IN.	3.18"	STEM LENGTH	.25"	.60"	.38"
	MM	80.78	STEM LENGTH	6.45	15.24	9.76
5" DIAL	IN.	5.13"	STEM LENGTH	.25"	.67"	.38"
	MM	130.87	STEM LENGTH	6.45	16.95	9.76

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



BIMETAL THERMOMETER ADJUSTABLE ANGLE TYPE



Model FFBR3A and FFBR5A
Bi-Metal Thermometer Adjustable Angle Type

MODEL FFBR3A AND FFBR5A

FEATURES:

- All Stainless Steel Construction
- Adjustable Angle Connection
- 3" (75mm) and 5" (127mm) dial size
- Glass Lens
- Anti-Parallax Dial
- Vibration resistant design for reduced needle flutter
- Fast Response
- Hermetically sealed IP68
- Accuracy: $\pm 1\%$ Full Scale
- Welded Stem

APPLICATIONS:

- Heating and Air Conditioning
- Industrial
- Wastewater

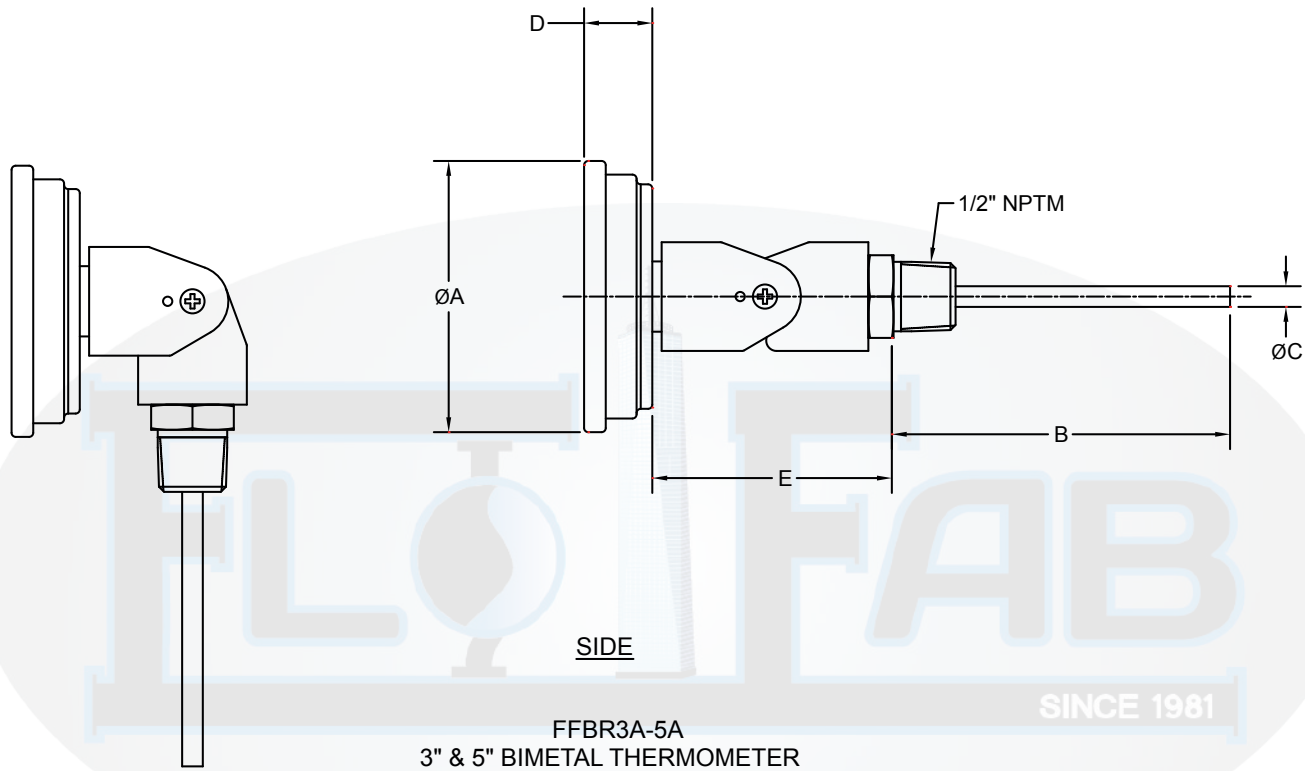
SPECIFICATIONS:

- Dial: 3" (75mm) and 5" (127mm)
- Aluminum with black markings, anti-parallax
- Case, Ring and Stem AISI 304 SS
- Recalibrator Screw Standard
- Lens: Glass, hermetically sealed
- Connection: $\frac{1}{2}$ " NPT standard
- Pointer: Aluminum, painted black
- Maximum Operating Pressure: 125 PSI (861 kPa)
- Operating Temperature: 75% of full scale (recommended)
- Ambient Temperature: -58 °F to 248 °F (-50 °C to 120 °C)
- Accuracy: $\pm 1\%$ of full scale
- Enclosure Rating: IP68

BIMETAL THERMOMETER ADJUSTABLE ANGLE TYPE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



ORDERING GUIDE

		A	B	C	D	E
3" DIAL	IN.	3.18"	STEM LGTH	.25"	.60"	.38"
	MM	80.78	STEM LGTH	6.45	15.24	9.76
5" DIAL	IN.	5.13"	STEM LGTH	.25"	.67"	.38"
	MM	130.87	STEM LGTH	6.45	16.95	9.76

STEM LENGTH*	PART NUMBER		CODE	RANGE
	3" DIAL	5" DIAL		
2.5"	FFBR3A-2	FFBR5A-2	TA	-40/120 F & C
4"	FFBR3A-4	FFBR5A-4	TB	-40/160 F & C
6"	FFBR3A-6	FFBR5A-6	TE	0/150 F & C
9"	FFBR3A-9	FFBR5A-9	TG	0/200 F & C
12"	FFBR3A-12	FFBR5A-12	TJ	20/240 F & C
15"	FFBR3A-15	FFBR5A-15	TI	0/250 F & C
18"	FFBR3A-18	FFBR5A-18	TM	50/300 F & C
24"	FFBR3A-24	FFBR5A-24	TP	50/400 F & C
			TR	50/550 F & C
			TS	150/750 F & C
			TT	200/1000 F & C

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



INDUSTRIAL THERMOMETER 9" SCALE ADJUSTABLE ANGLE TYPE



Model FFBR9A35
(Shown with Brass Thermowell)

MODEL FFBR9A

FEATURES:

- Two screws permit 180° case rotation and stem positioning in 10° increments, for easy viewing adjustment
- Available in 3.5" and 6" stem lengths
- Blue spirit filled thermometer set inside V-shaped aluminum scale with high-contrast black on white numeric scale for easy reading
- NIST traceable calibration with guaranteed accuracy to ± 1 scale deviation
- Black enameled die cast aluminum construction with glass front minimizing dirt and dust build up for ranges up to 400 °F (200 °C)
- Optional plastic face
- 1¼" -18 UNEF swivel nut connection assembly with tapered bulb chamber for proper well seating
- Available in Straight Form and 90° Back Angle

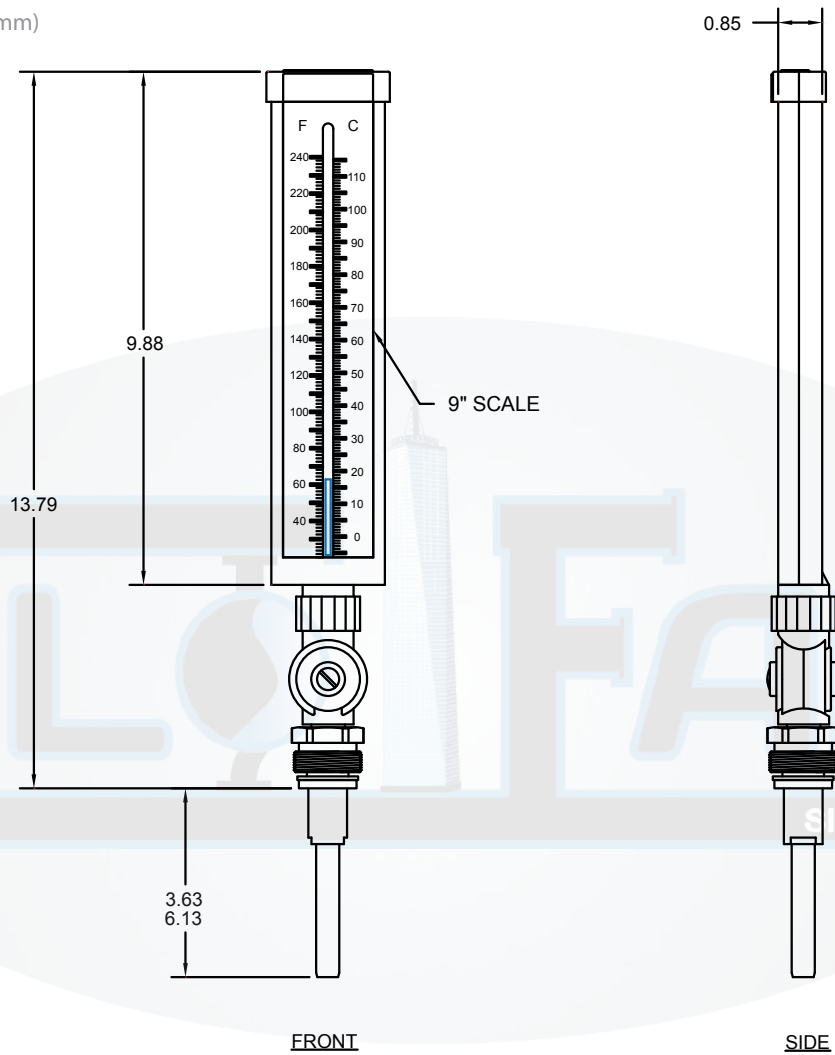
SPECIFICATIONS:

- Dial: 9" (230mm) aluminum
- Lens: Glass
- Connection: 1¼" -18 UNEF swivel nut
3.5" or 6" stem length (see ordering guide)
- Scale: Aluminum painted white with black markings
- Bulb Chamber: Tapered cast aluminum with graphite fill
- Tube, Sensing Liquid: Glass, spirit organic fluid
- Adjustment: Fully adjustable
- Accuracy: $\pm 1\%$
- Enclosure Rating: IP54

INDUSTRIAL THERMOMETER 9" SCALE ADJUSTABLE ANGLE TYPE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



ORDERING GUIDE

Example: FFBR9A35-240

MODEL	STEM LENGTH	TEMP RANGE
FFBR9A	35 = 3.5"	110 = -40-110 °F/C
	6 = 6"	120 = 0-120 °F/C
		180 = 0-180 °F/C
		160 = 30-160 °F/C
		240 = 30-240 °F/C
		300 = 30-300 °F/C

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



HOT WATER THERMOMETERS

MODELS FFBRHW5/5A

OVERVIEW:

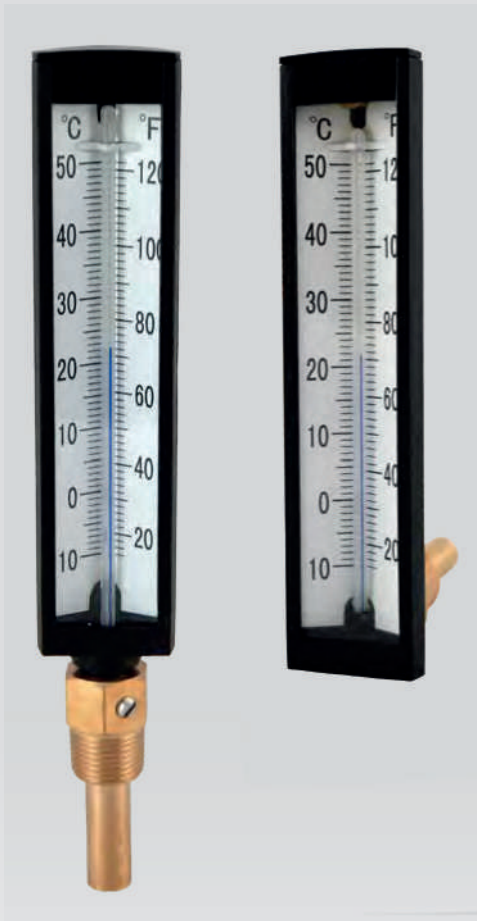
The FFBRHW5/5A series thermometers are rugged and economical. Available in both bottom and adjustable angle connections with an easy to read dual scale, they provide an excellent option for a number of heat related applications.

APPLICATIONS:

- Hydronic heating system
- Boiler
- Water line temperature measurement

SPECIFICATIONS:

- 5" Valox case
- Easy-to-read black on white scale
- Blue Liquid Filled (Mercury-free)
- ½" NPT Connection
- Separable Brass well
- Bottom and adjustable connection
- Accuracy: ± 1 Scale Division

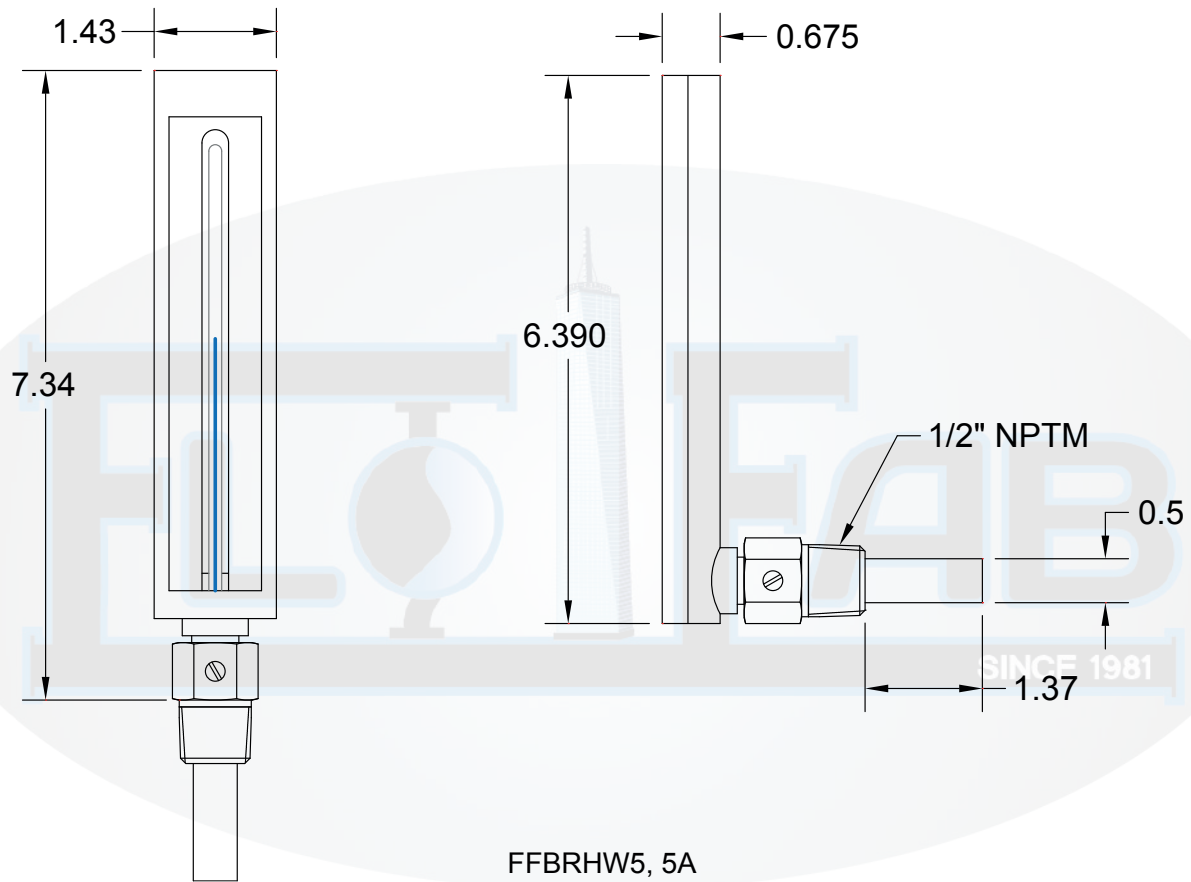


Models FFBRHW5/5A

HOT WATER THERMOMETERS

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBRHW5, 5A
THERMOMETER

Temp. Range	Straight	Angle
-40 to 110 F/C	FFBRHW5S	FFBRHW5A
30 to 240 F/C	FFBRHW5S-240	FFBRHW5A-240

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



HOT WATER THERMOMETER

MODEL FFBRHW

FEATURES:

- An economical and accurate means to measure air or water temperatures
- Separable thermowell with optional sweat well
- Bimetallic element
- Dual scale (Fahrenheit & Celsius)
- Easy to install
- ½" NPT Connection
- 1 year warranty

SPECIFICATIONS:

- 2.5" dial (63mm), aluminum case
- Glass lens
- ½" NPT Connection
- Bi-metallic sensing element
- Recalibrator Standard
- Accuracy: ±1



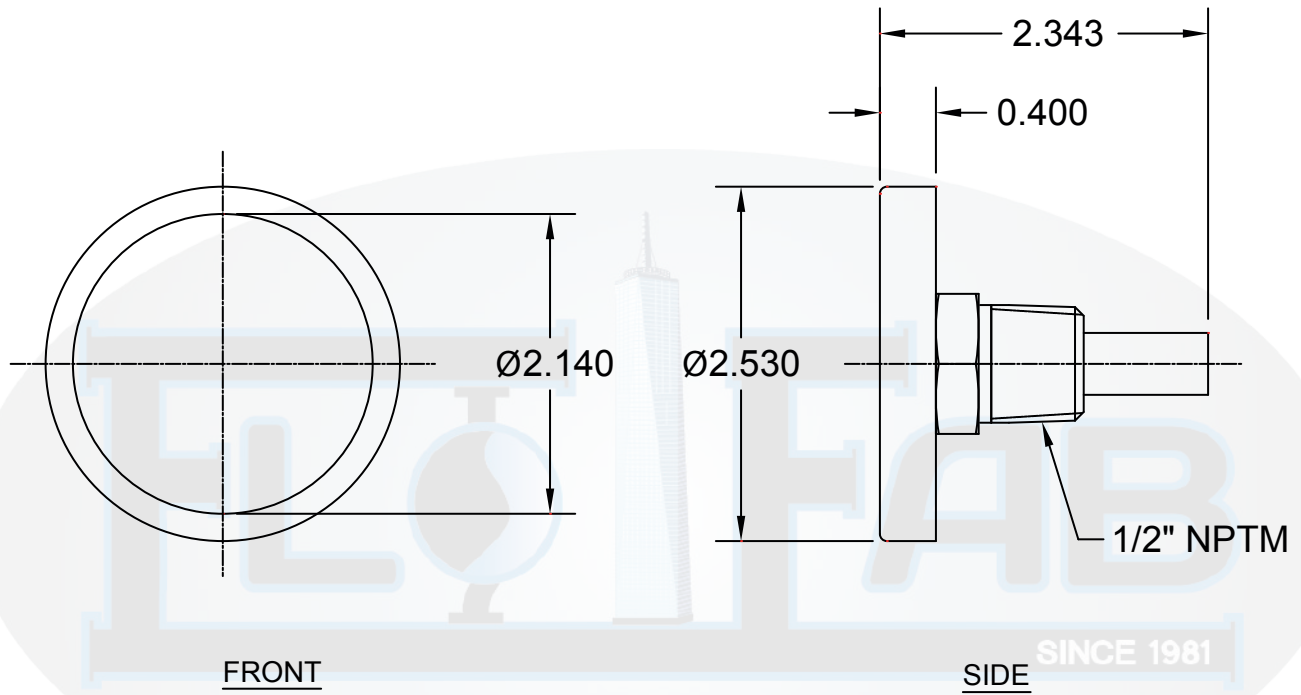
Model FFBRHW
Hot Water Thermometer

Part Number	Temp. Range	Connection
FFBRHW	30 to 240 °F	½" NPT
FFBRHW-SW	30 to 240 °F	¾" Sweat Well

HOT WATER THERMOMETERS

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



FFBRHW
2.5" hot water thermometer

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



BIMETAL THREADED THERMOWELLS

MODEL FFBRTW

FEATURES:

Model FFBRTW bimetal threaded thermowells from Flo Fab Inc. are designed to protect the thermometer from possible exposure to process media that may be corrosive or under pressure. Thermowells also facilitate removal of the industrial thermometer without interruption of the process. Their durable design offers high reliability and media compatibility in a range of sizes and materials.

SPECIFICATIONS:

- **Thermometer Connection:**
 - ½" NPT female (other thread sizes available upon request)
- **Process Connection:**
 - ¾", ½" or 1" NPT connection (other thread sizes available upon request)
- **Bore:**
 - 0.260" (6.5mm)
- **Construction:**
 - Stepped construction
 - Tapered construction standard
- **Materials:**
 - Brass, AISI 304 stainless steel, AISI 316 stainless steel
 - Other materials available upon request



Model FFBRTW
Bimetal Threaded Thermowells

ORDERING GUIDE

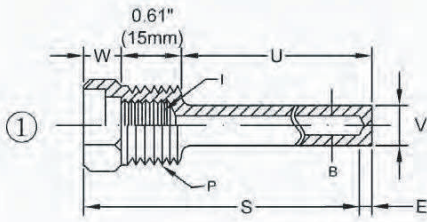
Example: FFBR-TW22-4-BRS
Brass Bimetal Thermowell, 3.5" NPT 4" Stem

Model	Connection	Stem Length	Material
FFBR-TW	22 - ½" NPT	2.5 - 2.5"	BRS - Brass
	75 - ¾" NPT	4 - 4"	304 - 304 SS
		6 - 6"	316 - 316 SS
		9 - 9"	

BIMETAL THREADED THERMOWELLS

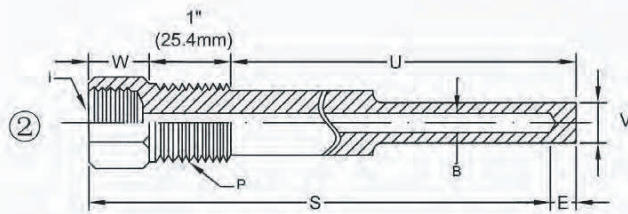
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

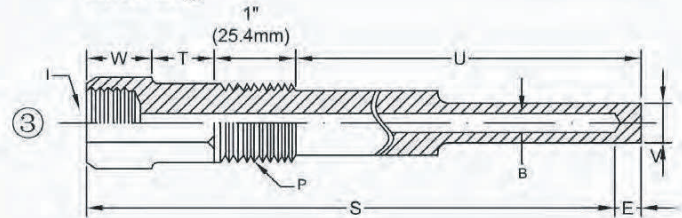


Stem	W	U	S	E	V	B	I	P
2.5"	0.40" (10.16mm)	1.75" (44.45mm)	2.5" (63.50mm)	0.26" (6.60mm)	0.44" (11.18mm)	0.26" (6.60mm)	1/2" NPSM	3/4" NPT

U	Insertion Length
E	Tip Thickness
S	Stem Length
T	Lagging Extension
W	Wrench Allowance
B	Bore Diameter
V	Shank Diameter
P	Process Connection
I	Internal Thread



With Lag



Stem	W	U	U(With Lag)	S	E	V	B	T	I	P
4"	0.75" (19.05mm)	2.50" (63.50mm)	1.90" (48.26mm)	4" (101.60mm)	0.25" (6.35mm)	0.5" (12.70mm)	0.26" (6.60mm)	0.6" (15.24mm)	1/2" NPSM	3/4" NPT
6"	0.75" (19.05mm)	4.50" (114.30mm)	2.50" (63.50mm)	6" (152.40mm)	0.25" (6.35mm)	0.5" (12.70mm)	0.26" (6.60mm)	2" (50.80mm)	1/2" NPSM	3/4" NPT
9"	0.75" (19.05mm)	7.50" (190.50mm)	4.50" (114.30mm)	9" (228.60mm)	0.25" (6.35mm)	0.5" (12.70mm)	0.26" (6.60mm)	3" (76.20mm)	1/2" NPSM	3/4" NPT
12"	0.75" (19.05mm)	10.50" (266.70mm)	7.50" (190.50mm)	12" (304.80mm)	0.25" (6.35mm)	0.5" (12.70mm)	0.26" (6.60mm)	3" (76.20mm)	1/2" NPSM	3/4" NPT
15"	0.75" (19.05mm)	13.50" (342.9mm)	10.50" (266.70mm)	15" (381.00mm)	0.25" (6.35mm)	0.5" (12.70mm)	0.26" (6.60mm)	3" (76.20mm)	1/2" NPSM	3/4" NPT
18"	0.75" (19.05mm)	16.5" (419.1mm)	13.50" (342.9mm)	18" (457.20mm)	0.25" (6.35mm)	0.5" (12.70mm)	0.26" (6.60mm)	3" (76.20mm)	1/2" NPSM	3/4" NPT
24"	0.75" (19.05mm)	22.5" (571.5mm)	19.50" (495.30mm)	24" (609.60mm)	0.25" (6.35mm)	0.5" (12.70mm)	0.26" (6.60mm)	3" (76.20mm)	1/2" NPSM	3/4" NPT

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



INDUSTRIAL THREADED THERMOWELLS

MODEL FFBR9TW

FEATURES:

- Designed for use with all 9" (228mm) Industrial thermometers.
- Allows for easy replacement of thermometer without interruption of the industrial process.
- Protects thermometer from exposure to the process media.
- 1-year warranty

SPECIFICATIONS:

- **Thermometer Connection:**
 - 1/2" NPT female (other thread sizes available upon request)
- **Process Connection:**
 - 3/4", 1/2" NPT standard, optional thread sizes available
- **Bore:**
 - 0.467" (11.9mm)
- **Construction:**
 - Stepped construction
 - Tapered construction standard
- **Materials:**
 - Brass, AISI 304 stainless steel, AISI 316 stainless steel
 - Other materials available upon request



Model FFBR9TW
Industrial Threaded Thermowells

ORDERING GUIDE

Example: FFBR9TW-B-35
Brass Thermowell with 3.5" Stem

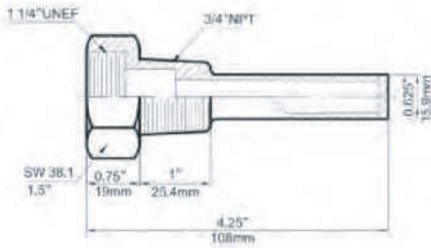
Model	Material	Stem Length	Lagging
FFBR9TW	B-Brass	35-3.5"	1-1"
	LFB - Lead Free Brass	6-6"	25-2.5"
	SS - 304 Stainless Steel		

INDUSTRIAL THREADED THERMOWELLS

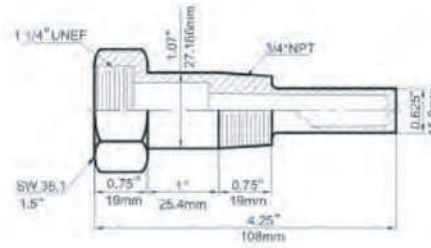
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

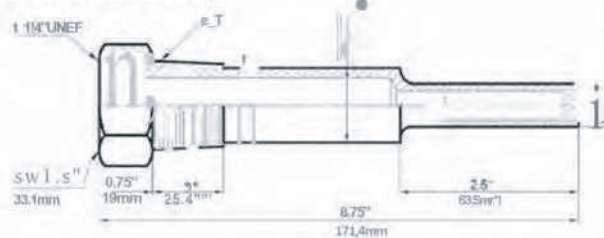
3.5" Stem without Lag



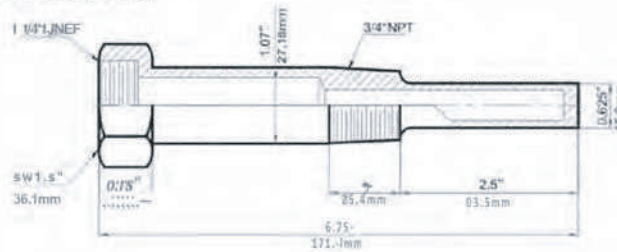
3.5" Stem with Lag



6" Stem without lag



6" Stem with lag



Stem	W	U	U(With Lag)	S	E	V	B	T	I	P
3.5"	0.75" (19.05mm)	2.50" (63.50mm)	1.50" (38.10mm)	3.5" (88.90mm)	0.16" (4.06mm)	0.62" (15.75mm)	0.44" (11.18mm)	1.00" (25.40mm)	1 1/4"-18 UNEF	3/4" NPT
6"	0.75" (19.05mm)	5.00" (127.00mm)	2.50" (63.50mm)	6" (152.40mm)	0.16" (4.06mm)	0.62" (15.75mm)	0.44" (11.18mm)	2.5" (63.50mm)	1 1/4"-18 UNEF	3/4" NPT
8"	0.75" (19.05mm)	7.00" (177.80mm)	4.50" (114.30mm)	8" (203.20mm)	0.16" (4.06mm)	0.62" (15.75mm)	0.44" (11.18mm)	2.5" (63.50mm)	1 1/4"-18 UNEF	3/4" NPT
12"	0.75" (19.05mm)	11.00" (279.40mm)	8.00" (203.20mm)	12" (304.80mm)	0.16" (4.06mm)	0.62" (15.75mm)	0.44" (11.18mm)	3" (76.20mm)	1 1/4"-18 UNEF	1" NPT
18"	0.75" (19.05mm)	17.00" (431.80mm)	14.00" (355.60mm)	18" (457.20mm)	0.16" (4.06mm)	0.62" (15.75mm)	0.44" (11.18mm)	3" (76.20mm)	1 1/4"-18 UNEF	1" NPT

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SUBMERSIBLE PUMP LIFT STATION / SLUDGE LEVEL TRANSMITTER

MODEL FFBC001 BIRDCAGE®

FEATURES:

- 3-inch diameter sensing diaphragm resists clogging
- Protective baffle plate reduces risk of sensor damage
- Corrosion-resistant, all stainless steel construction
- Stock quantities available to ship in 1 to 3 days
- Surge protection from lightning strikes and voltage spikes
- Ranges from 0-5 thru 0-500 PSI (0-10 thru 0 to 1153 meters FTWC)
- Lifetime Surge Warranty Replacement Program when partnered with the BCP3000 Surge Protector (sold separately)

APPLICATIONS:

- Submersible pump lift station level monitoring
- Wet wells
- Process sumps
- Water tanks and reservoirs
- Process sludge
- Water and wastewater level monitoring

PRODUCT OVERVIEW:

The FFBC001 Birdcage® Series from Flo Fab Inc. is a highly accurate level transmitter designed specifically for sludge level monitoring and pump lift stations. Its all stainless steel design incorporates a 3-inch diameter clog-resistant sensing diaphragm and corrosion resistant protective baffle plate. These features, combined with over 25 years of proven field service, make the Birdcage® the industry standard in water and wastewater level measurement.

FIELD OPTIONS:

- 4-20 mA or 0-5 Vdc Output
- FM/CSA Hazardous approvals
- Temperature Output
- External Lightning Surge Protection Package



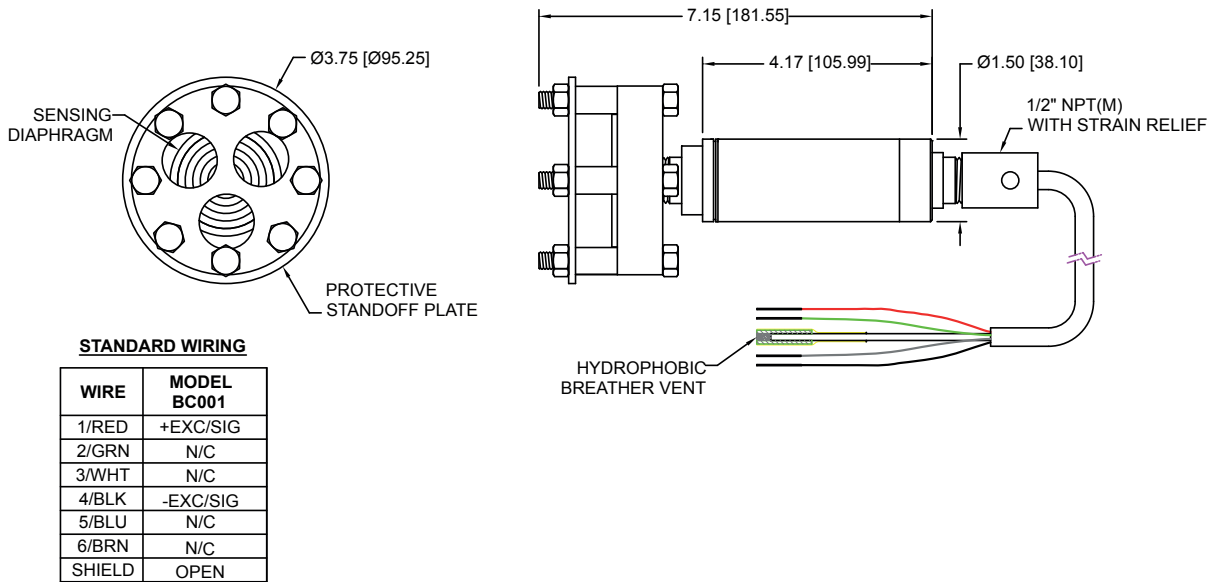
Model FFBC001 Birdcage®



SUBMERSIBLE PUMP LIFT STATION / SLUDGE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA
- **Circuit Protection:** RFI and EMI surge protection
- **Load Impedance:** 1,350 Ω max. at 36 Vdc and 750 Ω at 24 Vdc
- **Input Current:** 8 mA, nominal
- **Insulation Resistance:** >10 M Ω at 50 Vdc and +70 °F
- **Connection:** 1/2" NPT (M) conduit with 40 feet of 3-conductor, 18 AWG Hytrel jacketed cable (optional Tefzel jacketing)

MATERIALS OF CONSTRUCTION

316 stainless steel

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-18 °C to +60 °C)
- **Operating Ambient:** -40 °F to +150 °F (-40 °C to +66 °C)
- **Effect on Zero Span** $\pm 2\%$ FSO/100 °F

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 ° F)

- **Standard:** $\pm 0.5\%$
- **Optional:** $\pm 0.2\%$
- **Zero Balance and FSO:** \pm FSO at +70 °F

MECHANICAL

- **Process connection:** Oil filled diaphragm
- **Proof Pressure:** 2X FSO or 22,500 PSI (1,551 BAR), whichever is less
- **Burst Pressure:** 5X FSO or 22,500 PSI (1,551 BAR), whichever is less
- **External Pressure:** 500 PSI max. (35 BAR)
- **Weight:** 5.5 lb (2.5 kg)

PRESSURE RANGES

0-5 thru 0-500 PSI (0-10 FTWC thru 0-1153 FTWC)
0-3 thru 0-335 meters WC

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice. Please contact



SUBMERSIBLE LEVEL TRANSMITTER

MODEL FFBR313L

PRODUCT OVERVIEW:

The Model FFBR313L from Flo Fab Inc. is a line of highly accurate and reliable submersible level transmitters. Their corrosion-resistant 316L stainless steel construction and an integrated hydrophobic breather vent help to provide years of maintenance-free service life.

FEATURES:

- Ranges of 0-20" WC thru 300 PSI (50 MBAR to 21 BAR)
- Rated to 900 FTWC (275 meters WC)
- 0.875" Diameter
- Up to $\pm 0.10\%$ FSO accuracy
- 316L stainless steel housing with optional titanium
- Hytrel jacketed cable with optional Tefzel®
- Lightning suppression as standard

APPLICATIONS:

- Wet wells, ponds, rivers and tank level measurements
- Water treatment
- Ground water monitoring
- Dredging levels
- Shipboard level control

FIELD OPTIONS:

- Slim 0.69" (1.74 cm) diameter (Model BR313S)
- Titanium construction (Model BR313L-NI)
- Additional Hytrel and Tefzel® jacketed cable lengths
- Tapered inlet with stand-off plate for wastewater
- Remote zero and span adjustments



Model FFBR313L
Submersible Level Transmitter

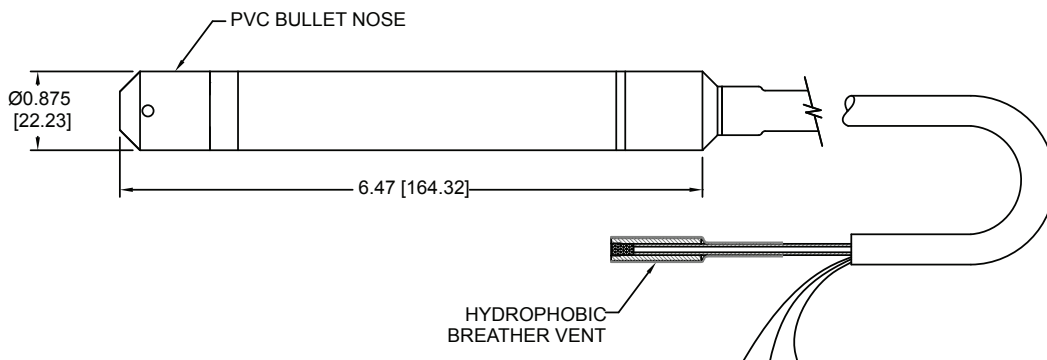
SUBMERSIBLE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313L
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Excitation Voltage: 9 to 36 Vdc • Output Signal: 4-20 mA • Circuit Protection: Short circuit or reversed wired – Indefinite • Load Resistance: 1400 Ω max. at 40 Vdc excitation • Response Time: ≤5 ms to 90% • Connection: Hytrel jacketed, 4-conductor, 18 AWG with vent tube and hydrophobic filter, 8' long, other lengths available.
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Housing: 316L stainless steel, optional titanium • Pressure Cavity: 316L stainless steel
STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
Standard: ±0.5% FSO, ±0.2% FSO, and ±0.1% FSO

MECHANICAL
<ul style="list-style-type: none"> • Zero Balance and FSO: ±1.0% FSO @ +70 °F • Process Connection: PVC bullet nose • External Pressure: Rated to 900 FTWC (274 meters) max. • Proof Pressure: 2X FSO • Burst Pressure: 4X FSO • Approximate Weight: 10 oz (0.3 kg) nominal, options may increase weight • Diameter: 0.875" (2.22 cm)
PRESSURE RANGES
• 0-20" WC thru 0 to 300 PSI (0-50 MBAR thru 0-21 BAR)
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: 0 °F to +140 °F (-32 °C to +60 °C) • Operating: -40 °F to +185 °F (-40 °C to +85 °C) • Storage: -40 °F to +195 °F (-40 °C to +90.6 °C) • Effect on Zero/Span: <±2.0% FSO/100 °F

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SLIM SUBMERSIBLE LEVEL TRANSMITTER

MODEL FFBR313S

FEATURES:

- Slim 0.685" (17.4 mm) diameter housing
- 0 to 20" WC thru 300 PSI (211 meters WC)
- 4-20 mA output
- Rugged, welded, leak-proof stainless steel construction
- Silicon sensor technology

APPLICATIONS:

- Sewage lift and pump stations
- Deep well and borehole
- Groundwater monitoring
- Shipboard level control
- Weirs, wells, pond, reservoir, and dam level

PRODUCT OVERVIEW:

Model FFBR313S from Flo Fab Inc. has all of the same features as our popular BR313L, but with a slim 0.685" diameter housing for applications that have limited installation space. All Blue Ribbon submersible level transmitters feature rugged leakproof stainless steel construction, lightning surge protection and an integrated hydrophobic filter, allowing for accurate level measurements with years of corrosion-free service.

FIELD OPTIONS:

- Tapered inlet with stand-off plate for wastewater
- Remote zero and span adjustments
- Lightning suppression
- Additional Hytrel cable and Tefzel® jacketed cable lengths



Model FFBR313S
Slim Submersible Level Transmitter

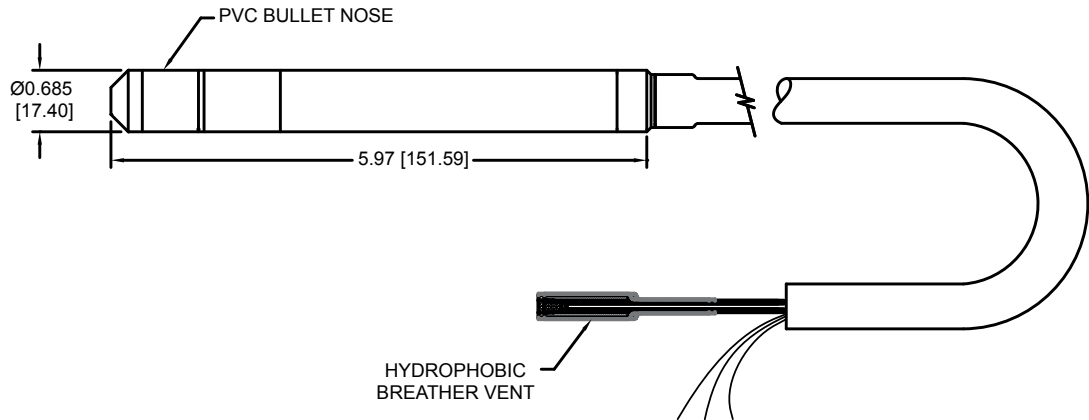
SLIM SUBMERSIBLE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313S
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA output
- **Circuit Protection:** Short circuit or reversed wired – Indefinite
- **Load Resistance:** 1400 Ω max. at 40 Vdc excitation
- **Response Time:** ≤5 ms to 90%
- **Connection:** Molded Hytrel jacket, 6-conductor with breather tube, 24 AWG, 8' long, optional lengths available, Tefzel cable optional

MATERIALS OF CONSTRUCTION

- **Housing:** Type 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO, ±0.2% FSO, and ±0.1% FSO

MECHANICAL

- **Zero Balance and FSO:** ±1.0% FSO @ +70 °F
- **Process Connection:** PVC bullet nose
- **External Pressure:** Rated to 500 PSI (35 BAR) max.
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 4X FSO
- **Approximate Weight:** 10 oz (0.3 kg) nominal, options may increase weight
- **Diameter:** 0.685" (17.4 mm)

PRESSURE RANGES

- 0-20" WC thru 500 PSI (50 MBAR to 35 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-32 °C to +60 °C)
- **Operating:** -40 °F to +150 °F (-40 °C to +65.5 °C)
- **Storage:** -40 °F to +150 °F (-40 °C to +65.5 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F

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TITANIUM SUBMERSIBLE LEVEL TRANSMITTER

MODEL FFBR313L-NI

FEATURES:

- Up to 0.10% FSO accuracy
- Slim 1.0" (2.54 cm) diameter titanium housing
- Rugged, welded, leak-proof construction
- 4-20 mA output
- 0 to 20" WC thru 0 to 300 PSI (692 FTWC)

APPLICATIONS:

- Weirs, wells, pond, reservoir, and dam level
- Rig ballast control
- Reservoirs / dams
- Groundwater monitoring
- Deep well and borehole

PRODUCT OVERVIEW:

Model FFBR313L-NI from Flo Fab Inc. utilizes an all-titanium design to provide long-term stability and continued performance under harsh conditions, including corrosive and hazardous applications. The slim design and high media resistance perform exceptionally well in downhole applications that often have tight space constraints.

FIELD OPTIONS:

- 1.0" (2.54 cm) and 0.69" (1.74 cm) housing diameters
- Remote zero-span adjustments
- Lightning suppression
- Additional lengths, Tefzel[®] or Hytrel jacketed cable



Model FFBR313L-NI
Titanium Submersible Level Transmitter

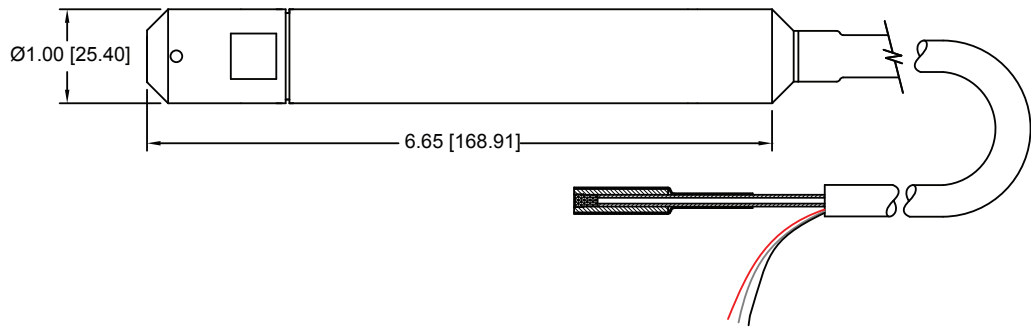
TITANIUM SUBMERSIBLE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313L/NI
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Supply Voltage: 9 to 36 Vdc • Output Signal: 4-20 mA output • Circuit Protection: Short circuit or reversed wired – Indefinite • Load Resistance: 1400 Ω max. at 40 Vdc excitation • Response Time: ≤ 5 ms to 90% • Connection: Molded Hytrel jacketed, 6-conductor with breather tube, 24 AWG, 8' long, optional lengths available, Tefzel [*] jacketed cable optional
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Housing: Titanium • Wetted Material: Titanium / Ceramic and Viton
STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
<ul style="list-style-type: none"> • Standard: $\pm 0.5\%$ FSO, $\pm 0.2\%$ FSO, and $\pm 0.1\%$ FSO

MECHANICAL
<ul style="list-style-type: none"> • Zero Balance and FSO: $\pm 1.0\%$ FSO @ ± 100 °F • Process connection: PVC bullet nose • External Pressure: Rated to 500 PSI (1,153 FTWC) max. • Proof Pressure: 2X FSO • Burst Pressure: 4X FSO • Approximate Weight: 10 oz (0.3 kg) nominal, options may increase weight • Diameter: 1.0" (2.54 cm)
PRESSURE RANGES
<ul style="list-style-type: none"> • 0-20" WC thru 300 PSI (50 MBAR to 35 BAR)
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: 0 °F to +140 °F (-18 °C to +60 °C) • Operating: -40 °F to +150 °F (-40 °C to +65.5 °C) • Storage: -40 °F to +150 °F (-40 °C to +65.5 °C) • Effect on Zero/Span: $< \pm 2.0\%$ FSO/100 °F

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



SUBMERSIBLE LEVEL TRANSMITTER FOR HAZARDOUS LOCATIONS



Model FF313AI
Submersible Level Transmitter
for Hazardous Locations

Current Approvals:



Pending Approvals:



MODEL FF313AI

FEATURES:

- ATEX & IEC approvals
- Submersible to 700 FTWC (213.4 meters WC)
- 1" diameter
- FM & CSA approvals pending
- All 316L stainless steel construction
- Lightning suppression standard

APPLICATIONS:

- Wet wells, ponds, rivers and tank level
- Water treatment
- Ground water monitoring
- Irrigation

PRODUCT OVERVIEW:

The GP:50 Model FF313AI from Flo Fab Inc. is an ATEX intrinsically safe submersible level transmitter, providing high-accuracy level measurements for hazardous locations. The corrosion-resistant 316L stainless steel construction, integrated lightning suppression and hydrophobic breather vent help provide years of maintenance-free service.

APPROVALS:

Currently Available:

- ATEX/IEC Intrinsically Safe: II 1 G Ex ia IIC T5 Ga

Pending:

- ATEX/IEC Zone 2: II 3 G Ex nA/ic IIC T5 Gc
- FM, CSA Intrinsically Safe: Class I, Division 1, Groups A-G, T5, Ex ai IIC T5
- FM/CSA: Division/ Zone 2: Class I Division 2, Groups A-G, T5, Ex nC/nA/nL T5

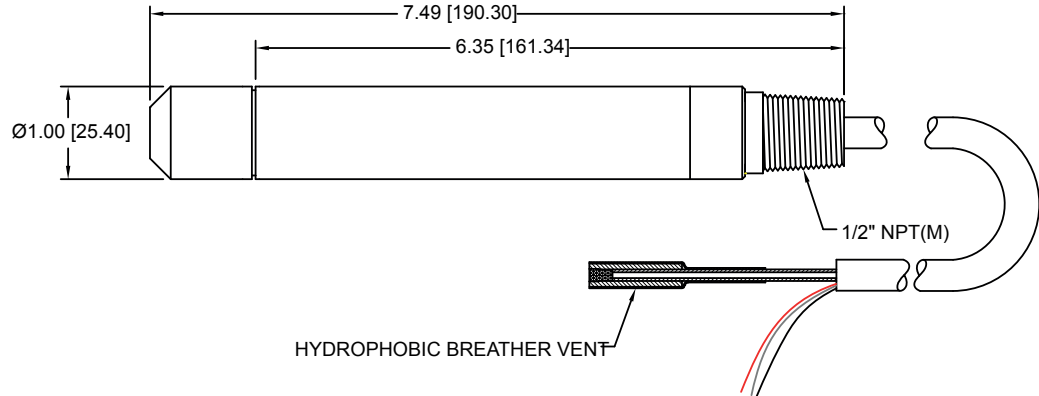
SUBMERSIBLE LEVEL TRANSMITTER FOR HAZARDOUS LOCATIONS

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313AI
RED	+EXC/SIG
BLK	-EXC/SIG
DRN	CASE GND



REFERENCE SPECIFICATIONS

ELECTRICAL	MECHANICAL
<ul style="list-style-type: none"> • Supply Voltage: 9 to 36 Vdc • Output Signal: 4-20 mA • Circuit Protection: Lightning and surge protection optional • Response Time: <5 ms • Connection: 1/2" NPT (M) conduit with 8.5' of 18 AWG, 4 conductor, shielded, Hytrel jacketed cable with integral vent tube and hydrophobic filter 	<ul style="list-style-type: none"> • Process Connection: 7/16-20 (M) with PVC bullet nose • Proof Pressure: 1.5X FSO • Burst Pressure: 3X FSO • Weight: <12 oz (340 g) • Diameter: 1" (25.4 mm)
STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)	PRESSURE RANGES
Standard: ±0.5% FSO Improved: ±0.2% FSO Zero & Span Balance: ±2.0% FSO	<ul style="list-style-type: none"> • 0 to 5 PSI thru 0 to 300 PSI (344 mBAR thru 21 BAR) • 0 to 12 FTWC thru 0 to 700 FTWC (762 mm thru 213 m WC)
MATERIALS OF CONSTRUCTION	THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Housing and Pressure Cavity: 316 stainless steel (Optional Titanium) • Cable: Hytrel (Optional Tefzel) 	<ul style="list-style-type: none"> • Compensated: 0 °F to +140 °F (-7 °C to +60 °C) • Operating Temperature: -40 °F to +185 °F (-40 °C to +85 °C) • Storage: -40 °F to +195 °F (-40 °C to +90.6 °C) • Effect on Zero/Span: < ±2.0% FSO/100 °F

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



SERIAL / DIGITAL INTERFACE SUBMERSIBLE LEVEL TRANSMITTER



Model FFBR913
Serial/Digital Interface Submersible
Level Transmitter

MODEL FFBR913

PRODUCT OVERVIEW:

Model FFBR913 from Flo Fab Inc. provides an asynchronous serial communication output (SDI-12-v 1.3) typically used in remote environments. The low power required (6.0 to 36 Vdc) is convenient for battery or solar power applications and provides direct communication with most data loggers and data acquisition systems. The incorporation of a hydrophobic breather vent and stainless steel housing ensure extended trouble-free service necessary for remote locations.

FEATURES:

- SDI-12 - Serial/Digital interface at 1200 baud
- 0-30" WC to 0-700 FTWC (762 mm to 213.4 meters WC)
- Welded, leak-proof, 316L stainless steel construction
- Optional 0.685" diameter
- Up to $\pm 0.05\%$ FSO accuracy
- Optional Tefzel[®] jacketed cable

APPLICATIONS:

- Ground water monitoring
- Remote well monitoring including wet wells, ponds, and riverbeds
- Water treatment
- Irrigation Systems

FIELD OPTIONS:

- Sludge screen for viscous media or wastewater
- Cable lengths to more than 3,000 ft with optional Tefzel jacketed cable
- Titanium construction

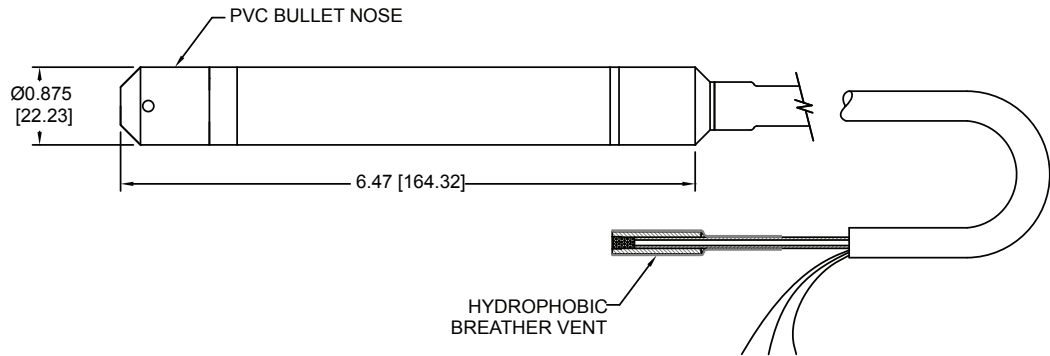
SERIAL/DIGITAL INTERFACE SUBMERSIBLE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 913
RED	+EXC
BLK	-EXC
GRN	SDI-12 DATA
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 6.0 to 36 Vdc
- **Output Signal:** SDI-12- standard version 1.3
- **Input Impedance:** >10 MΩ
- **Resolution:** 24-bit
- **Baud Rate:** 1200 baud
- **Circuit Protection:** Short circuit or reversed wired – Indefinite Input protection and EMC filtering
- **Response Time:** 1 sec.
- **Idle Current:** <50 μA, <15 mA consumption during measurement
- **Connection:** Hytrel jacketed, 4 conductor, 18 AWG with vent tube and hydrophobic filter, 8' long, optional lengths available

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard:** ±0.5% FSO
- **Improved:** ±0.20% FSO, ±0.1% FSO, ±0.5% FSO
- **Zero Balance and FSO:** ±1.0% FS

MATERIALS OF CONSTRUCTION

- **Housing:** 316L SST (Optional Titanium)
- **Pressure Cavity:** 316L stainless steel (Optional Titanium)

MECHANICAL

- **Process connection:** PVC bullet nose
- **External Pressure:** Case rated to 900 FTWC (275 Meters WC)
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 3X FSO
- **Weight:** <10 oz, 284 g
- **Diameter:** 0.875" (2.2 cm) standard; 0.685" (1.7 cm) optional

PRESSURE RANGES

- 0-30" WC to 0-700 feet WC (762 mm to 213.4 meters WC)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-7 °C to +60 °C)
- **Operating Temperature:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Storage:** -40 °F to +195 °F (-40 °C to +90.6 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F
- **Temperature Resolution:** ±0.1 °C

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



PVC SUBMERSIBLE LEVEL TRANSMITTER

MODEL FFBR313G

FEATURES:

- 1.25" (3.175 cm) diameter poly vinyl chloride housing
- Available with bullet nose or flush ceramic diaphragm
- 0 to 2 PSI thru 0 to 300 PSI (5 FTWC thru 692 FTWC)
- Corrosion resistant, leak-proof construction
- 4-20 mA output

APPLICATIONS:

- Submersible pump lift station level monitoring
- Water tanks and reservoirs
- Process sumps
- Water and wastewater level monitoring
- Water recycling
- Other aggressive media

PRODUCT OVERVIEW:

Model FFBR313G utilizes a flush ceramic sensor to reduce grease and bio-solid buildup and minimize cleanup. The chemical resistant PVC provides stability and continued performance under the harsh conditions associated with waste water and other aggressive media applications.

FIELD OPTIONS:

- Additional lengths, Tefzel[®] or Hytrel jacketed cable
- 0-5Vdc output
- SAE-4, flush ceramic, or bullet nose process connection
- ATEX/IEC Intrinsically Safe: II 1 G Ex ia IIC T5 Ga
- ATEX Zone 2: II 3 G Ex nA/ic IIC T5 Gc



Model FFBR313G
PVC Submersible Level Transmitter

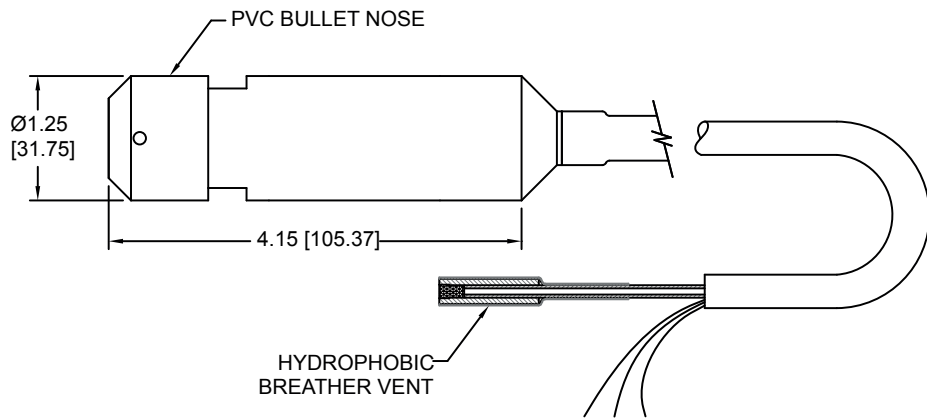
PVC SUBMERSIBLE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313G
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Supply Voltage: 9 to 36 Vdc • Output Signal: 4-20 mA output • Circuit Protection: Short circuit or reversed wired – Indefinite • Load Resistance: 1400 Ω max. at 40 Vdc excitation • Response Time: ≤ 5 ms to 90% • Connection: Molded Hytrel jacketed, 6-conductor with breather tube, 24 AWG, 8' long, optional lengths available, Tefzel[®] jacketed cable optional
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Housing: Poly vinyl chloride • Wetted Material: Ceramic Al₂O₃ 96%
STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
Standard: $\pm 0.5\%$ FSO, $\pm 0.2\%$ FSO, and $\pm 0.1\%$ FSO

MECHANICAL
<ul style="list-style-type: none"> • Zero Balance and FSO: $\pm 1.0\%$ FSO @ +70 °F • Process Connection: Flush ceramic, options available • External Pressure: Rated to 500 PSI (1,153 ft WC) max. • Proof Pressure: 2X FSO • Burst Pressure: 4X FSO • Approximate Weight: 10 oz (0.3 kg) nominal, options may increase weight • Diameter: 1.25" (3.175 cm)
PRESSURE RANGES
• 0-2psi thru 300 psi (7FTWC- 692 FTWC)
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: 32 °F to +140 °F (0 °C to +60 °C) • Operating: 32 °F to +170 °F (0 °C to +76 °C) • Storage: -40 °F to +150 °F (-40 °C to +65.5 °C) • Effect on Zero/Span: $< \pm 2.0\%$ FSO/100 °F at full scale

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



FLUSH SUBMERSIBLE LEVEL TRANSMITTER

MODEL FFBR313F

FEATURES:

- 28mm flush ceramic sensor
- 0 to 2 PSI thru 0 to 30 PSI (69 FTWC)
- Corrosion resistant, leak-proof construction
- 1.50" diameter housing
- 4-20 mA output
- 1/2" NPT conduit with Hytrel[®] cable rated for Hydrocarbons
- Flush design saves cost and down time by eliminating sensor clean up

APPLICATIONS:

- Submersible pump lift station level monitoring
- Water tanks and reservoirs
- Process sumps
- Water and wastewater level monitoring
- Water recycling
- Other aggressive media

PRODUCT OVERVIEW:

Model 313F utilizes a 1.12" diameter flush ceramic sensor to reduce grease and biosolid buildup and minimizes cleanup. The corrosion-resistant 316L stainless steel construction, and an integrated hydrophobic breather vent help provide years of maintenance-free service.

FIELD OPTIONS:

- Additional lengths, Tefzel[®] or Hytrel jacketed cable
- PVC housing (see model 313G)
- Field re-zeroing option



Model FFBR313F
Flush Submersible Level Transmitter

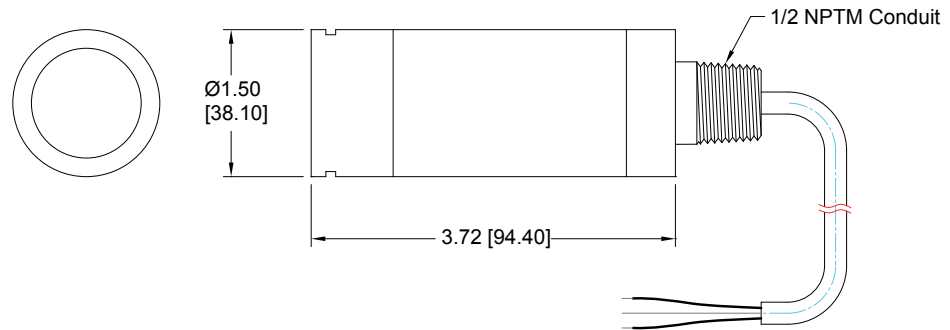
FLUSH SUBMERSIBLE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313F
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Supply Voltage: 9 to 36 Vdc • Output Signal: 4-20 mA output • Circuit Protection: Short circuit or reversed wired – Indefinite • Load Resistance: 1400 Ω max. at 40 Vdc excitation • Response Time: ≤3 ms to 90% • Connection: 1/2" NPT conduit w/6 ft 18 AWG multi-lengths available, Tefzel[®] jacketed cable optional
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Housing: Optional 316L Stainless Steel (Optional titanium or PVC) • Wetted Material: Ceramic Al₂O₃
STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
Standard: ±0.5% FSO, ±0.2% FSO, and ±0.1% FSO

MECHANICAL
<ul style="list-style-type: none"> • Zero Balance and FSO: ±1.0% FSO @ +70 °F • Process Connection: Flush ceramic, options available • External Pressure: Rated to 500 PSI (1,153 ft WC) max. • Proof Pressure: 2X FSO • Burst Pressure: 4X FSO • Approximate Weight: 1 lb (0.5 kg) nominal, options may increase weight • Diameter: 1.5"
PRESSURE RANGES
• 0-2 PSI thru 0 to 30 PSI
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: 0 °F to +140 °F (-32 °C to +60 °C) • Operating: -40 °F to +185 °F (-40 °C to +85 °C) • Storage: -40 °F to +150 °F (-40 °C to +65.5 °C) • Effect on Zero/Span: <±2.0% FSO/100 °F at full scale

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



LOW-COST SUBMERSIBLE LEVEL TRANSMITTER



Model FFBR1102 / 1103
Low-Cost Submersible
Level Transmitter

MODEL FFBR1102 / 1103

FEATURES:

- Low-cost, high-reliability
- Submersible to 700 feet WC (213.4 meters WC)
- 1" (2.5 cm) diameter
- Up to $\pm 0.2\%$ FSO accuracy
- All 316L stainless steel construction (optional titanium)

APPLICATIONS:

- Wet wells, ponds, rivers and tank level measurements
- Water and waste water treatment
- Ground water monitoring
- Irrigation

PRODUCT OVERVIEW:

The Model 1102/1103 from Flo Fab Inc. is a family of submersible level transmitters, designed to provide high-accuracy measurements at a competitive price point. They are offered with an all 316L stainless steel construction for extended corrosion-free service life. An optional sludge screen is available for viscous media or wastewater applications.

FIELD OPTIONS:

- Lightning and surge protection
- Optional sludge screen for viscous media or wastewater
- Cable lengths to more than 3,000 ft with optional Tefzel jacketed cable
- Optional Titanium construction

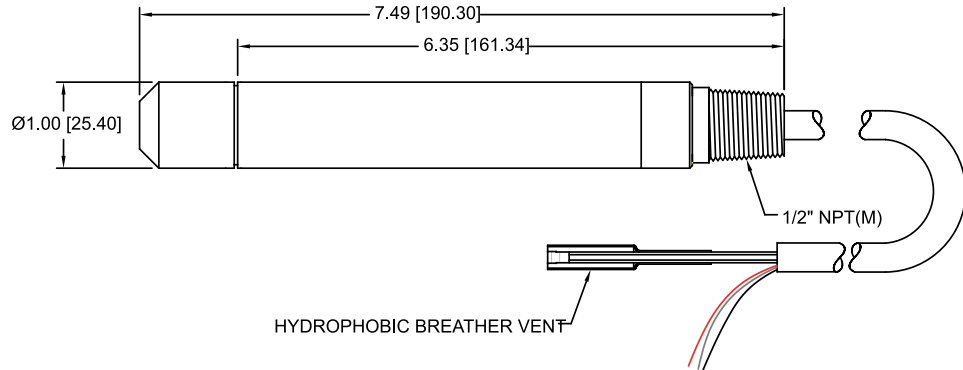
LOW-COST SUBMERSIBLE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 1102	MODEL 1103
RED	+EXC	+EXC/SIG
GRN	+SIG	N/C
WHT	N/C	N/C
BLK	-EXC/SIG	-EXC/SIG
BLU	N/C	N/C
BRN	N/C	N/C
SHIELD	OPEN	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL	MECHANICAL
<ul style="list-style-type: none"> • Supply Voltage: 9 to 36 Vdc • Output Signal: (1102) 0 to 5 Vdc (1103) 4-20 mA • Circuit Protection: Lightning and surge protection optional • Response Time: <5 ms • Connection: 1/2" NPT (M) conduit with 8.5' of 18 AWG, 4 conductor, shielded, Hytrel jacketed cable with integral vent tube and hydrophobic filter 	<ul style="list-style-type: none"> • Process Connection: 7/16-20 (M) with PVC bullet nose • Proof Pressure: 1.5X FSO • Burst Pressure: 3X FSO • Weight: <12 oz (340 g) • Diameter: 1" (25.4 mm)
STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)	PRESSURE RANGES
Standard: ±0.5% FSO Improved: ±0.2% FSO Zero & Span Balance: ±2.0% FSO	<ul style="list-style-type: none"> • 0 to 5 PSI thru 0 to 300 PSI (344 mBAR thru 21 BAR) • 0 to 12 FTWC thru 0 to 700 FTWC (762 mm thru 213 m WC)
MATERIALS OF CONSTRUCTION	THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Housing and Pressure Cavity: 316 stainless steel (Optional Titanium) • Cable: Hytrel (Optional Tefzel °) 	<ul style="list-style-type: none"> • Compensated: 0 °F to +140 °F (-7 °C to +60 °C) • Operating Temperature: -40 °F to +185 °F (-40 °C to +85 °C) • Storage: -40 °F to +195 °F (-40 °C to +90.6 °C) • Effect on Zero/Span: < ±2.0% FSO/100 °F

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



SUBMERSIBLE LEVEL TRANSMITTER WITH SLUDGE SCREEN

MODEL FFBR1103-Y481

FEATURES:

- Removable PVC sludge screen
- Enhanced internal surge and lightning protection
- Low cost, high reliability
- Submersible to 700 FT WC (213.4 meters WC)
- 1" diameter
- Up to $\pm 0.2\%$ FSO accuracy
- Optional Tefzel[®] jacketed cable
- All 316L stainless steel construction

APPLICATIONS:

- Wet wells, ponds, rivers and tank level
- Water treatment
- Ground water monitoring
- Irrigation

PRODUCT OVERVIEW:

The GP:50 Model 1103-Y481 from Flo Fab Inc. is a submersible level transmitter, providing high-accuracy level measurements at a competitive price point. Its durable design features a corrosion-resistant all 316L stainless steel housing and pressure cavity. The removable PVC sludge screen allows for easy periodic maintenance and cleaning.

FIELD OPTIONS:

- Cable lengths to more than 3,000 ft with optional Tefzel jacketed cable
- Lifetime surge protection warranty

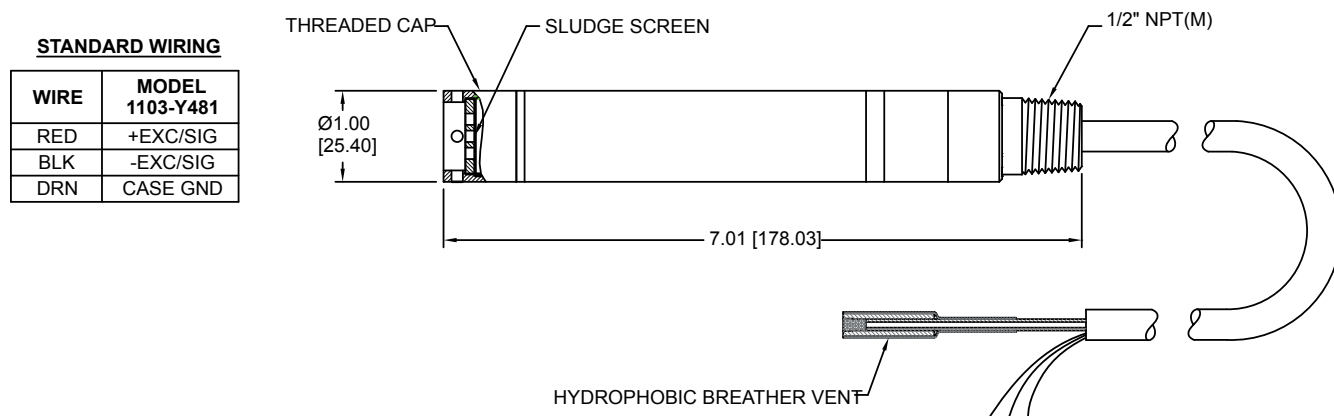


Model FFBR1103-Y481
Submersible Level Transmitter
with Sludge Screen

SUBMERSIBLE LEVEL TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



REFERENCE SPECIFICATIONS

ELECTRICAL	MECHANICAL
<ul style="list-style-type: none"> • Supply Voltage: 9 to 36 Vdc • Output Signal: 4-20 mA • Circuit Protection: Lightning and surge protection optional • Response Time: <5 ms • Connection: 1/2" NPT (M) conduit with 8.5' of 18 AWG, 4 conductor, shielded, Hytrel jacketed cable with integral vent tube and hydrophobic filter 	<ul style="list-style-type: none"> • Process Connection: Removal PVC sludge screen • Proof Pressure: 1.5X FSO • Burst Pressure: 3X FSO • Weight: <12 oz (340 g) • Diameter: 1" (25.4 mm)
STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)	PRESSURE RANGES
Standard: ±0.5% FSO Improved: ±0.2% FSO Zero & Span Balance: ±2.0% FSO	<ul style="list-style-type: none"> • 0 to 5 PSI thru 0 to 300 PSI (344 mBAR thru 21 BAR) • 0 to 12 FTWC thru 0 to 700 FTWC (762 mm thru 213 m WC)
MATERIALS OF CONSTRUCTION	THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Housing and Pressure Cavity: 316 stainless steel (Optional Titanium) • Cable: Hytrel (Optional Tefzel °) 	<ul style="list-style-type: none"> • Compensated: 0 °F to +140 °F (-7 °C to +60 °C) • Operating Temperature: -40 °F to +185 °F (-40 °C to +85 °C) • Storage: -40 °F to +195 °F (-40 °C to +90.6 °C) • Effect on Zero/Span: < ±2.0% FSO/100 °F

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



LOW-COST OEM PRESSURE TRANSDUCER

MODEL FFBR1002/1003

FEATURES:

- Low-cost, high reliability
- Up to 0.20% FSO accuracy
- Compact 0.870" diameter
- Rugged, all welded construction
- NEMA - 4X/IP65 rated
- CE Approved: EN 50 081-1

APPLICATIONS:

- Automotive
- Industrial OEM
- On-board vehicle
- Compressor controls
- Pneumatic/hydraulic controls
- Pump controls

PRODUCT OVERVIEW:

The Model 1002/1003 from Flo Fab Inc. is a line of compact, rugged, all stainless steel, industrial grade OEM pressure transducers designed for high volume applications requiring an accurate, low cost pressure measurement solution. Available with a comprehensive selection of pressure ports and electrical connections.

FIELD OPTIONS:

- Vdc & 4-20 mA output
- Alternate connectors & pressure ports

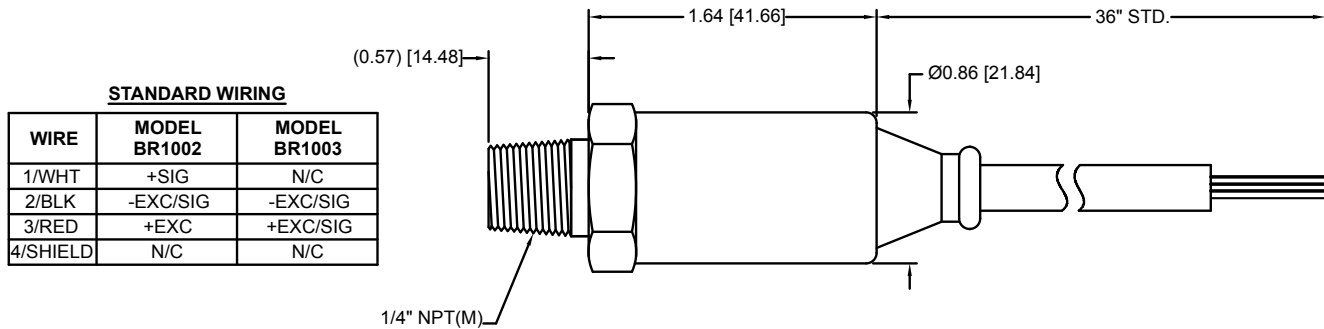


Model FFBR1002/1003
Low-Cost OEM Pressure Transducer

LOW-COST OEM PRESSURE TRANSDUCER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



REFERENCE SPECIFICATIONS

<p>ELECTRICAL</p> <ul style="list-style-type: none"> • Supply Voltage: 9 to 36 Vdc • Output Signal: (1002) 0 to 5 Vdc, 0 to 10 Vdc optional (1003) 4-20 mA • Load Resistance: 3.5 mA nominal 6 mA max. • Approvals: CE EN 50 081-1 • Response Time: <5 ms • Connection: 36" long Belden 8723, 24 AWG, 4 conductor cable 	<p>MECHANICAL</p> <ul style="list-style-type: none"> • Process Connection: 1/4" NPT (M) standard (other options available) • Proof Pressure: 1.5X FSO • Burst Pressure: 3X FSO or 17,500 PSIG (1,207 BAR), whichever is less • Weight: <4 oz (113 g)
<p>STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)</p>	<p>PRESSURE RANGES</p>
<p>Standard: ±0.5% FSO</p>	<ul style="list-style-type: none"> • 0 to 5 thru 0 to 10K PSI (0.3 thru 689 BAR), gauge, vacuum, and absolute pressure reference available
<p>Improved: ±0.2% FSO</p>	<p>THERMAL SPECIFICATIONS</p>
<p>MATERIALS OF CONSTRUCTION</p>	<ul style="list-style-type: none"> • Compensated: 0 °F to +180 °F (-17.7 °C to +82 °C) • Operating Temperature: -40 °F to +180 °F (-40 °C to +82 °C) • Storage: -40 °F to +250 °F (-40 °C to +121 °C) • Effect on Zero/Span: < ±2.0% FSO/100 °F
<ul style="list-style-type: none"> • Wetted Parts: 316 stainless steel and 17-4 stainless steel • Housing: 316 stainless steel 	

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



FLUSH DIAPHRAGM OEM PRESSURE TRANSDUCER

MODEL FFBR1002 / 1003-IA

FEATURES:

- G 1/2" flush diaphragm pressure port
- 0.25% FSO accuracy
- Compact 1.25" diameter
- Rugged, all welded construction
- IP65 rated housing
- Low Cost, High Reliability
- Compatible with wide range of fluids

APPLICATIONS:

- Automotive test
- Dynamometers
- On-board vehicle
- Boiler Controls
- Pneumatic/ Hydraulic Controls
- Pump Controls

PRODUCT OVERVIEW:

The Model 1002/1003-IA from Flo Fab Inc. is an industrial grade OEM pressure transducer featuring a G 1/2" flush corrosion-resistant pressure port designed for high viscous fluids that can plug a standard recessed process port. Available with choice of 4-20 mA, 0 to 5 Vdc or 1 to 5 Vdc output, as well as various electrical connection.

FIELD OPTIONS:

- 4-20 mA, 0 to 5 Vdc or 1 to 5 Vdc output
- Flanged process mounting
- Select electrical connections
- Hastelloy C275 wetted parts



Model FFBR1002 / 1003-IA
Flush Diaphragm OEM Pressure Transducer

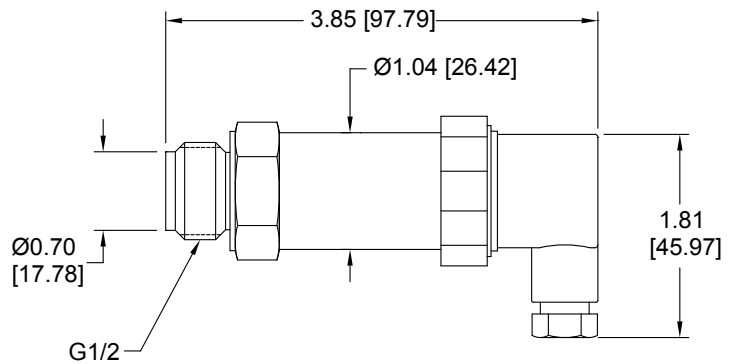
FLUSH DIAPHRAGM OEM PRESSURE TRANSDUCER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 1002-IA	MODEL 1003-IA
1/WHT	+SIG	N/C
2/BLK	-EXC/SIG	-EXC/SIG
3/RED	+EXC	+EXC/SIG
4/SHIELD	N/C	N/C



REFERENCE SPECIFICATIONS

<p>ELECTRICAL</p> <ul style="list-style-type: none"> • Supply Voltage: 12-32 Vdc • Output Signal: 1002: 0-5Vdc, 1-5Vdc optional 1003: 4-20 mA • Output Impedance: 5k ohms • Response Time: <5 ms 	<p>MECHANICAL</p> <ul style="list-style-type: none"> • Process Connection: G 1/2 standard (other options available) • Proof Pressure: 2 X FSO • Burst Pressure: 5 X FSO • Weight: < 4 oz (113 g)
<p>STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)</p> <ul style="list-style-type: none"> • Standard: ±0.25 % FSO • Zero Balance: ±1.0 % FSO • Span: ±2.0 % FSO 	<p>PRESSURE RANGES</p> <ul style="list-style-type: none"> • 0-2 to 0-3000 PSI, gauge, sealed gauge, and absolute pressure reference available
<p>MATERIALS OF CONSTRUCTION</p> <ul style="list-style-type: none"> • Wetted Parts: 316 stainless steel and 17-4 stainless steel • Housing: 316L stainless steel 	<p>THERMAL SPECIFICATIONS</p> <ul style="list-style-type: none"> • Compensated: 32° F to 158° F (0- 70 C) • Operating Temperature: -40° F to 185° F (-40 – 85 C) • Storage: -40° F to 250° F (-40 – 125 C) • Effect on Zero/Span: ±1.5% FSO/100°F

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



INDUSTRIAL GRADE PRESSURE TRANSDUCER

MODELS FFBR111, FFBR211, FFBR311

FEATURES:

- Available ranges from 0-30" WC thru 0-5K PSI (75 to 1,034 BAR)
- Choice of mV/V, VDC, & 4-20 mA output
- Rugged, welded, stainless steel construction
- High proof pressure
- Economically priced

APPLICATIONS:

- Hydraulic & pneumatic controls
- Die casting
- Rolling & steel mills
- Compression skids
- Irrigation pumps pressure
- Oilfield truck pressures
- Skidded process systems

PRODUCT OVERVIEW:

The Model FFBR111/FFBR211/FFBR311 from Flo Fab Inc. is a line of rugged, all-welded stainless steel, industrial grade pressure transducers. Designed with over 25 years of field proven experience, model BR11 offers high corrosion durability and optional 10X proof pressure ideal for demanding oil & gas, steelworks, rolling mills and process control applications, providing a low maintenance solution for the most demanding environmental applications.

FIELD OPTIONS:

- Zero & Span adjustments
- 80% and 100% shunt calibration
- Alternate connectors & pressure ports
- For Intrinsically Safe and Explosion Proof approvals, see our designated datasheet for Model BR111/BR211/311 hazardous location



Model FFBR111 / FFBR211 / FFBR311
Industrial Grade Pressure Transducer

BR5SL-TX-013
REV-A

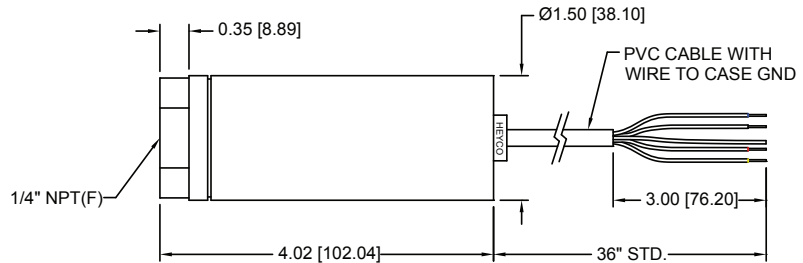
INDUSTRIAL GRADE PRESSURE TRANSDUCER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL BR111	MODEL BR211	MODEL BR311
1/RED	+EXC	+EXC	+EXC/SIG
2/GRN	+SIG	+SIG	N/C
3/WHT	-SIG	N/C	N/C
4/BLK	-EXC	-EXC/SIG	-EXC/SIG
5/BLU	+SHUNT (OPT)	+SHUNT (OPT)	+SHUNT (OPT)
6/BRN	-SHUNT (OPT)	-SHUNT (OPT)	-SHUNT (OPT)



REFERENCE SPECIFICATIONS

ELECTRICAL	STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
<ul style="list-style-type: none"> Excitation Voltage: (Model BR111) 3.5 to 15 Vdc (Model BR211) 9.0 to 36 Vdc (Optional outputs may affect excitation) (Model BR311) 9.0 to 36 Vdc Output Signal: (Model BR111) 1 to 3 mV/V (range and accuracy dependent) (Model BR211) 0 to 5 Vdc, 0 to 10 Vdc (other outputs available) (Model BR311) 4-20 mA Input Impedance: (Model BR111) 5K or 350 Ω nominal Input Current: (Model BR211) 8 mA nominal Circuit Protection: (Model BR211/BR311) RFI & EMI (Model BR211/BR311) Reverse polarity protected Response Time: <3 ms 10% to 90% Connection: 36" long PVC Jacketed cable, 4-conductor 	<ul style="list-style-type: none"> Standard: ±0.5% FSO Improved: ±0.20% FSO or ±0.1% FSO Zero Balance and FSO: ±1.0% FSO at +70 °F (+21.1 °C) for each
MATERIALS OF CONSTRUCTION	MECHANICAL
<ul style="list-style-type: none"> Wetted Parts: Ranges ≤100 PSI: 316L stainless steel Ranges >100 PSI: 17-4 PH stainless steel Housing: 300 series stainless steel 	<ul style="list-style-type: none"> Process Connection: ¼" NPT (F) Proof Pressure: 2X FSO or 22.5K PSI (1,551 BAR), whichever is less Burst Pressure: 5X FSO or 23K PSI (1,586 BAR), whichever is less, Vacuum 5X FSO in gauge pressure Approximate Weight: 10 oz, (0.3 kg) nominal (options may increase weight)
	PRESSURE RANGES
	<ul style="list-style-type: none"> 0-30" WC thru 0 to 15K PSI (0 to 1,034 BAR) PSIG, PSIS, PSIA, PSIV & compound ranges available
	THERMAL SPECIFICATIONS
	<ul style="list-style-type: none"> Compensated: 0 °F to +180 °F (-17.7 °C to +82 °C) Operating: -20 °F to +190 °F (-29 °C to +88 °C) Storage: -65 °F to +250 °F (-53 °C to +121 °C) Effect on Zero/Span: ±1.0% FSO/100 °F

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



INTRINSICALLY SAFE PRESSURE TRANSDUCER

MODEL FF311Z, I, GI, AI

FEATURES:

- 0 to 5 PSI thru 0 to 75K PSI (75 MBAR to 1,034 BAR)
- FM, CSA, ATEX & IEC approvals
- Welded, rugged construction
- Optional high overpressure protection

APPLICATIONS:

- Rig safety systems
- Wellhead control
- Gas pipeline
- Control Panels
- On-board transmission & engine monitoring

PRODUCT OVERVIEW:

The GP:50 Model FF311Z, I, GI, AI intrinsically safe pressure transducer for Flo Fab Inc. offers a rugged solution in hazardous approved areas. The transducer's all-welded stainless steel design provides years of reliable service in some of the harshest applications.

FIELD OPTIONS:

- FM, CSA, ATEX, IEC Intrinsically Safe
- Zero & Span adjust
- Alternate connectors & pressure ports
- For explosion-proof, see Model 311X/P



Model FF311 Z, I, GI, AI
Intrinsically Safe Pressure Transducer



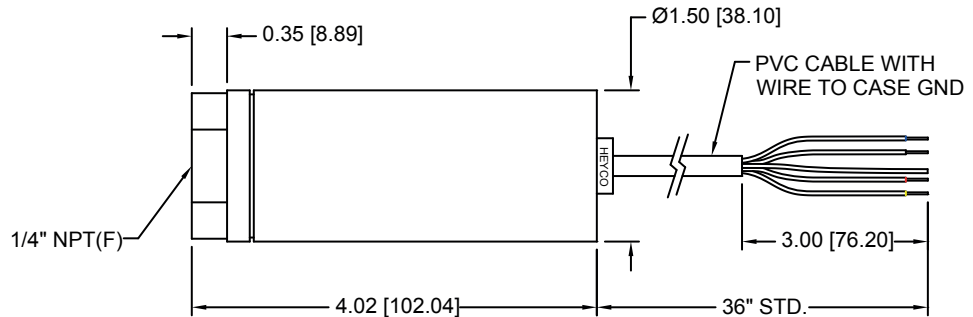
INTRINSICALLY SAFE PRESSURE TRANSDUCER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 311Z//GI/AI
1/RED	+EXC/SIG
2/GRN	CASE GND
3/WHT	N/C
4/BLK	-EXC/SIG



REFERENCE SPECIFICATIONS

ELECTRICAL	MECHANICAL
<ul style="list-style-type: none"> • Excitation Voltage: (311Z): 9 to 36 Vdc excitation (311I, GI, AI): 10 to 28 Vdc excitation • Output Signal: 4-20 mA output • Load Impedance: 750 Ω max. to 24 Vdc • Insulation Resistance: >10 MΩ @ 50 Vdc, +70 °F • Response Time: 5 ms 10% to 90% • Connection: 36" long PVC Jacketed, 18 AWG, 4 conductor cable (or equivalent) 	<ul style="list-style-type: none"> • Zero Balance and FSO: ±1% FSO at +70 °F • Process Connection: 1/4" NPT (F) for ranges <20 KPSI (1.4 BAR) High pressure coned fittings for ranges 20K to 75K PSI • Proof Pressure: 2X FSO or 22,500 PSI (1,551 BAR), whichever is less • Burst Pressure: 5X FSO or 22,500 PSI (1,551 BAR), whichever is less • Approximate Weight: 10 oz, (0.3 kg) nominal, options may increase weight
MATERIALS OF CONSTRUCTION	PRESSURE RANGES
<ul style="list-style-type: none"> • Wetted Parts: 316 or 17-4 PH stainless steel (options available, consult factory) • Housing: 316 stainless steel 	<ul style="list-style-type: none"> • 0 to 5 thru 0 to 75K PSI (0 to 0.3 thru 0 to 5,171 BAR) (PSIG, PSIS, PSIA, PSIV & Compound ranges available)
STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)	THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Standard: ±0.5% • Improved: ±0.20% and ±0.1% 	<ul style="list-style-type: none"> • Compensated: 0 °F to +180 °F (-18 °C to +82 °C) • Operating Process: -40 °F to +176 °F (-40 °C to +80 °C) • Storage: -65 °F to +250 °F (-53 °C to +121 °C) • Effect on Zero/Span: ±2.0% FSO/100 °F

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EXPLOSION PROOF & ZONE 2/DIV 2 PRESSURE TRANSMITTER

MODELS 111X/P, 211X/P, 311X/P & 311N/AN/GN



Models 111X/P, 211X/P,
311X/P & 311N/AN/GN
Explosion Proof & Zone 2/Div 2
Pressure Transmitter

APPROVALS



FEATURES:

- 0-5 PSI thru 0 to 75K PSI (75 MBAR) to 1, 034 BAR)
- FM, CSA, ATEX, & IEC approvals
- Welded, rugged construction
- Optional high overpressure protection

APPLICATIONS:

- Rig safety systems
- Wellhead control
- Gas pipeline
- Control panels
- Onboard transmission & engine monitoring

PRODUCT OVERVIEW:

FloFab Model 11X/P Explosion-proof Pressure Transducer provides a rugged solution for applications requiring hazardous approvals. The all welded, stainless steel design provides years of reliable service in some of the harshest environments.

APPROVALS:

- FM, FM/CSA: Class I/II/III, Div 1 Grps A-G, T6 at Ta=40C
 - Zone 2 / Division 2:
 - FM: Class I, Zone 2 AEx nC IIC T5, Class I, Div. 2, Grp. A, B, C, D
Class II, Grp. E, F, G, Class III T5, Ta=80C
 - CSA: Ex nA IIC T5 Ex nL IIC T5, Class I Div. 2 Grp. A, B, C, D
Class II Div. 2 Grp. E, F, G Class III T5, Ta=80C
 - ATEX: CE0575 II 3 G Ex nA IIC, Ex ic IIC T5, TA=80C
 - IEC: Ex na IIC, Ex ic IIC T5, Ta=80C
- (all Zone 2/Div 2 approvals are electrical connector dependent)
For Intrinsically Safe Approval see 311 Z, I, GI, AI Data Sheet

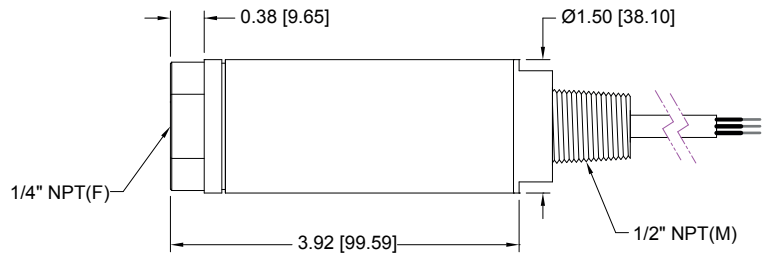
EXPLOSION PROOF & ZONE 2/DIV 2 PRESSURE TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 111X/P	MODEL 211X/P	MODEL 311X/P/N/AN/GN
RED	+EXC	+EXC	+EXC/SIG
GRN	+SIG	CASE GND	N/C
WHT	-SIG	+SIG	N/C
BLK	-EXC	-EXC/SIG	-EXC/SIG
GRN/YEL	CASE GND	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Excitation Voltage: (Model 111X/P) 3.5 to 15 Vdc (Model 211X/P) 10.5 to 32 Vdc (Model 311X/P) 9 to 36 Vdc (Model 311 N/AN/GN) 10 to 28 Vdc • Output Signal: (Model 111) 3 mV/V (Model 211) 0 to 5 Vdc, 0 to 10 Vdc (alternate outputs available) (Model 311) 4-20 mA • Load Impedance: (Model 211) 50 Ω max. 24 Vdc (Model 311) 750 Ω max. 24 Vdc • Input Impedance: (Model 111) 5K or 350 Ω nominal • Input Current: (Model 211) 8mA nominal • Insulation Resistance: >10 MΩ at 50 Vdc and +70 °F • Response Time: <5 ms 10% to 90% • Connection: 1/2" NPT M conduit w/ 6ft 18 AWG multi-conductor cable
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Wetted Parts: 17-4 PH stainless steel (Hastelloy C-276 and Inconel available, consult factory) • Housing: 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
Standard ±0.5%
Improved ±0.2% and ±0.1%
Zero Balance and FSO: ±1% FSO at +70 °F
MECHANICAL
<ul style="list-style-type: none"> • Process Connection: 1/4" NPT (F) for ranges <20 KPSI (1.4 BAR) High pressure coned fittings for ranges 20K to 75K PSI (1,379 to 5,171 BAR) • Proof Pressure: 1.5X FSO ≤30K PSI, 1.2X FSO >30K PSI • Burst Pressure: 2.5X FSO ≤10K PSI, 5X FSO >10K PSI and ≤30K PSI, 1.5X ≤75K PSI • Approximate Weight: 1 lb (0.5 kg) nominal, options may increase weight • Unit designed to meet or exceed IP67 Rating. (Some options may affect rating, consult factory)
PRESSURE RANGES
• 0 to 5 PSI thru 0 to 75K PSI (0 to 0.3 BAR thru 0 to 5,171 BA R) (PSIG, PSIS, PSIA, PSIV & compound ranges available)
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: 0 °F to +180 °F (-17.7 °C to +82 °C) • Operating: -40 °F to +176 °F (-40 °C to +80 °C) • Storage: -65 °F to +250 °F (-53°C to +121 °C) • Effect on Zero/Span: ±2.0% FSO/100 °F

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HAZARDOUS LOCATION PRESSURE TRANSMITTER



Model FFBR240/340 AI/AN
Hazardous Location Pressure Transmitter

Current Approvals:



Pending Approvals:



MODEL FFBR240/340 AI/AN

FEATURES:

- Compact design for easier installation
- All stainless steel welded rugged construction
- ATEX & IEC Approvals
- Improved accuracy and thermally compensated
- Ranges 0 to 1 PSI thru 0 to 30K PSI (69 Mbar to 2068 Bar)
- FM, & CSA Approvals Pending

APPLICATIONS:

- Natural Gas Compression
- Rig safety systems
- Well head control
- Control panels
- On-board transmission & engine monitoring

PRODUCT OVERVIEW:

Model 40 series incorporates over 25 years of oil field proven design in a 1" diameter package. The 40 series provides a rugged solution for hazardous approved areas, especially where space constraints are a concern. Its all-welded stainless steel design will provide years of reliable service in some of the harshest environments.

APPROVALS:

Currently Available:

- ATEX/IEC Intrinsically Safe: II 1 G Ex ia IIC T5 Ga

Pending:

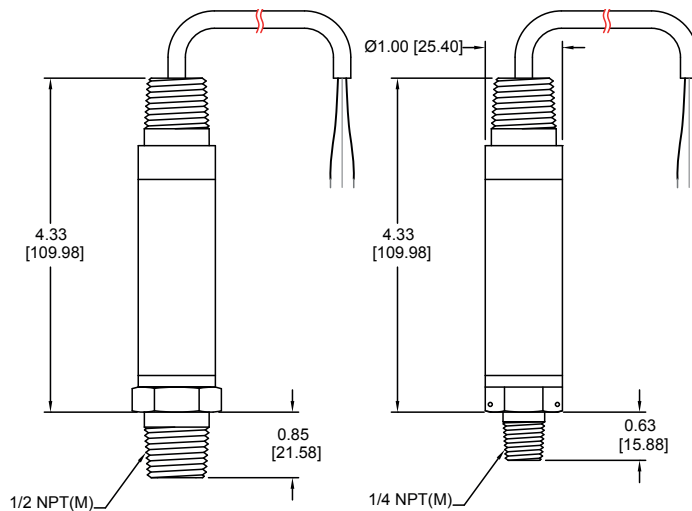
- ATEX/IEC Zone 2: II 3 G Ex nA/ic IIC T5 Gc
- FM, CSA Intrinsically Safe: Class I, Division 1, Groups A-G, T5, Ex ai IIC T5
- FM/CSA: Division/ Zone 2: Class I Division 2, Groups A-G, T5, Ex nC/nA/nL T5

HAZARDOUS LOCATION PRESSURE TRANSDUCER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING		
WIRE	MODEL BR240	MODEL BR340
RED	+EXC	+EXC/SIG
GRN	+SIG	N/C
WHT	N/C	N/C
BLK	-EXC/SIG	-EXC/SIG
GRN/YEL	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Excitation Voltage: (Model 240) 10.5 to 32 Vdc (Model 340) 10 to 28 Vdc • Output Signal: (Model 240) 0-5 Vdc and 4-20 mA • Load Impedance: (Model 240) 50K Ω max. 24 Vdc (Model 340) 750 Ω max. 24 Vdc • Input Current: (Model 240) 8 mA nominal • Insulation Resistance: >10 MΩ at 50 Vdc and +70 °F • EMI Specs: EMC directive 2004/108/EC, EN 61326 emission • Connection: 1/2" NPT M conduit w/ 6ft 18 AWG multi-conductor cable
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Wetted Parts: ≤2000 PSI 316L SST w/silicon oil fill (Fomblin oil fill available, consult factory) >2000 PSI 17-4 PH SST (Hastelloy C-276 and Inconel available, consult factory) • Housing: 316 stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
<ul style="list-style-type: none"> • Standard ±0.25% FSO • Optional ±0.15%
Zero Balance and FSO: ±1% FSO at +70 °F
MECHANICAL
<ul style="list-style-type: none"> • Process Connection: 1/4" NPT (M), options available • Proof Pressure: 2X FSO • Burst Pressure: 5X FSO • Approximate Weight: 0.5 lb nominal, options may increase weight • Environmental: Design to meet IP67 (Some options may affect this. Consult factory if critical.)
PRESSURE RANGES
• 0 to 1 PSI thru 0 to 30K PSI, some options may affect range (PSIG, PSIS, PSIA, PSIV & compound ranges available)
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: 0 °F to +180 °F (-17.7 °C to +82 °C) • Operating: -40 °F to +176 °F (-40 °C to +80 °C) • Storage: -65 °F to +250 °F (-53 °C to +121 °C) • Effect on Zero/Span: ±1.0% FSO/100 °F

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



FLUSH MOUNT PRESSURE TRANSMITTER

MODEL FFBR340-IM



Model FFBR340-IM
Flush Mount Design

Current Approvals:



FEATURES:

- Flush faced sensor minimizes media plugging and damage
- Compact 1" diameter
- Rugged, all-welded stainless steel design
- No zero offset from installation
- 5X proof pressure

APPLICATIONS:

- Wastewater treatment
- Onboard vehicles
- Skidded systems
- Sludge and slurries
- Adhesives and paints
- Pump suction and discharge lines of blender trucks
- Corrosive and high viscosity media

PRODUCT OVERVIEW:

The Model FFBR340-IM series from Flo Fab Inc. is a flush diaphragm industrial pressure transmitter designed for locations where high viscosity media can clog or damage traditional non-flush port sensor designs. The rugged, all-welded, Inconel design of the BR340-IM series provides durability and greater resistance to corrosive media, and with minimal clamping sensitivity there is no zero offset from installation.

FIELD OPTIONS:

- Direct NPT or flanged process mounting
- Select electrical connectors
- 4-20 mA or 0-5Vdc output

AVAILABLE APPROVALS:

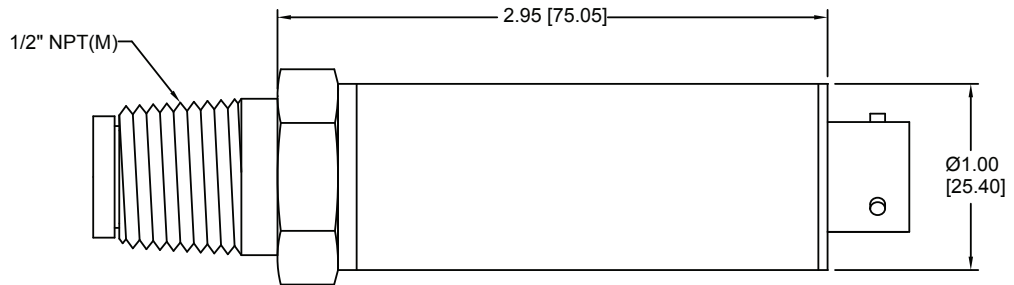
- ATEX & IEC Hazardous approvals
- FM & CSA Pending

FLUSH MOUNT PRESSURE TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING	
PIN	MODEL 340IM
A/1/RED	+EXC/SIG
B/2/GRN	N/C
C/3/WHT	N/C
D/4/BLK	-EXC/SIG
E/5/BLU	N/C
F/6/BRN	N/C



REFERENCE SPECIFICATIONS

<p>ELECTRICAL</p> <ul style="list-style-type: none"> • Supply Voltage: 9.0 to 40 Vdc • Output Signal: 4-20 mA • Load Impedance: 1,350 Ω max. at 36 Vdc and 750 Ω max. Vdc • Zero Balance: ±2% FSO at 70 °F • Insulation Resistance: > 10 MΩ at 50 Vdc and 70 °F • Connection: 1/2" NPT (M) conduit with 36" cable leads or 6-pin Bendix connector 	<p>MECHANICAL</p> <ul style="list-style-type: none"> • Process Connection: 1/2" NPT (M) • Proof Pressure: 5X FSO or 2K PSI (138 BAR), whichever is less • Burst Pressure: 7X FSO or 3500 PSI (242 BAR), whichever is less • Burst Pressure: 0-50 thru 0-500 PSI (3.5 thru 35 BAR) gauge, sealed gauge, absolute • Environmental: Design to meet IP67 (Some options may affect this. Consult factory if critical.)
<p>MATERIALS OF CONSTRUCTION</p> <ul style="list-style-type: none"> • Wetted Parts: Inconel 718 • Housing: 316 stainless steel 	<p>TEMPERATURE</p> <ul style="list-style-type: none"> • Compensated: 0 °F to +180 °F (-18 °C to +82 °C) • Operating Ambient: -20 °F to +190 °F (-29 °C to +88 °C) • Maximum Operating Process: +250 °F (+121 °C) • Effect on Zero/Span: <±2.0% FSO/100 °F
<p>STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)</p> <p>Standard: ±0.5% FSO Improved: ±0.2% FSO</p>	

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



SMART RANGEABLE HAZARDOUS LOCATION PRESSURE TRANSMITTER



Model FFBR411, 411XP

Smart Rangeable Pressure Transmitter



MODEL FFBR411, 411XP

FEATURES:

- 4-20 mA with digital HART protocol
- 0-15 PSI thru 0-100K PSI (0-1 thru 6,895 BAR)
- 5:1 turndown ratio
- Secondary containment for oil services
- Submersible version
- FM, CSA explosion-proof versions

APPLICATIONS:

- Offshore rigs and pumping platforms
- Oil and gas/chemical pipeline and processing
- Marine and shipboard service
- Submersible level

PRODUCT OVERVIEW:

GP:50 Model 411, 411X/P from Flo Fab Inc. is a SMART rangeable pressure transmitter incorporating a 4-20 mA output with digital HART protocol. Units are offered with both CSA and FM approval options, as well as a variety of process and electrical connections. Improved accuracy provides for a stable measurement throughout the total compensated temperature range.

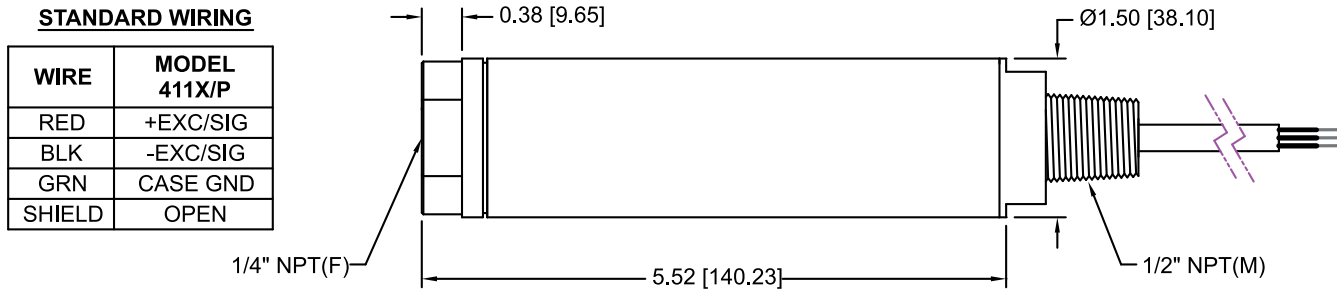
FIELD OPTIONS:

- 5:1 turndown ratio for most ranges
- Multiple pressure and temperature outputs
- Exotic wetted materials
- Submersible level option
- Alternate process connections
- Optional 4-20 mA temperature output

SMART RANGEABLE HAZARDOUS LOCATION PRESSURE TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Supply Voltage: 12-36 Vdc • Output Signal: Two wire 4-20 mA with digital HART protocol (optional 4-20 mA temperature output) • Input Impedance: 250 Ω at 17 Vdc • Insulation Resistance: Better than 10 MΩ at 50 Vdc • Circuit Protection: RFI/EMI, reverse polarity (voltage transients above 45 V to 20 A at 0.02 milliseconds) • Resolution: 12-bit • Frequency Response: From 0.07 to 40 sec (software adjustable) • Connection: 1/2" NPT M conduit with 6-ft 18 AWG multi conductor cable
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Wetted Parts: 17-4 PH stainless steel (Optional Inconel 718, K12X, or 13-8 Monel) • Housing: 316 stainless steel
STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
Standard: ±0.25% FSO Improved: ±0.1% FSO
Zero Balance and FSO: ±0.5% FSO at +70 °F
PRESSURE RANGES
<ul style="list-style-type: none"> • 0-15 PSI thru 0-100K PSIS, PSIA, PSIV, PSIG (1 BAR V thru 6,895 BAR) • Range Adjustments: 5:1 for ranges 0-5 PSI thru 0-100K PSI (0.3 BAR thru 6,895 BAR)

MECHANICAL
<ul style="list-style-type: none"> • Process Connection: 0-5 thru 0-15K PSI (0-0.3 thru 0-1,035 BAR), PSIV: 1/4" NPT (F) 0-20K thru 0-50K PSI (0-1,380 thru 0-3,450 BAR): Autoclave type F-250-C 0-60K thru 0-75K PSI (0-4,135 thru 0-5,170 BAR): Autoclave type F-312-C150 • Proof Pressure: 0-15K (1,035 BAR) PSI 1.5X FSO 20K-100K (6,894 BAR) PSIG 1.2X FSO • Burst Pressure: 0-15K 3X FSO 20K-100K (6,894 BAR) PSIG 1.5X FSO or 125K PSIG (8,618 BAR), whichever is less • Long-term Stability: 0.25% FSPR over six months • Approximate Weight: <24 oz (0.7 kg) • Enclosure: IP67
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: 0 to +170 °F (-18 °C to +77 °C) • Operating Ambient: -40 °F to +185 °F (-40 °C to +85 °C) • Effect on Zero/Span (1:1): ±0.25% FSO/100 °F • At 5:1 Ranging: ±0.50% FSO/100 °F

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



SMART DIFFERENTIAL PRESSURE TRANSMITTER

MODEL FFBRGPIDP



Model FFBRGPIDP
Smart Differential Pressure Transducer

FEATURES:

- High accuracy up to $\pm 0.075\%$ FSO
- Static line and single sided overpressure protection up to 3,625 PSI (250 BAR)
- 4-20 mA output, available with or without HART®
- 30:1 turndown
- Optional LCD display with push button adjustment
- Differential pressure ranges from 0 to 0.5" WC thru 0-3K PSID (207 BAR)

APPLICATIONS:

- Chemical processing
- Sanitary tank level
- Pulp and paper
- Marine
- Food and beverage

PRODUCT OVERVIEW:

The Model FFBRGPIDP from Flo Fab Inc. is a rugged, low range / high line process differential pressure transmitter that provides precise measurement in a 4-20 mA output with optional HART communication. Ranges as low as 0.5" WCD are available with 3,625 PSI of line and single-sided proof pressure. Internal push button adjustments for rangeability and configuration are available, as well as integrated LCD display.

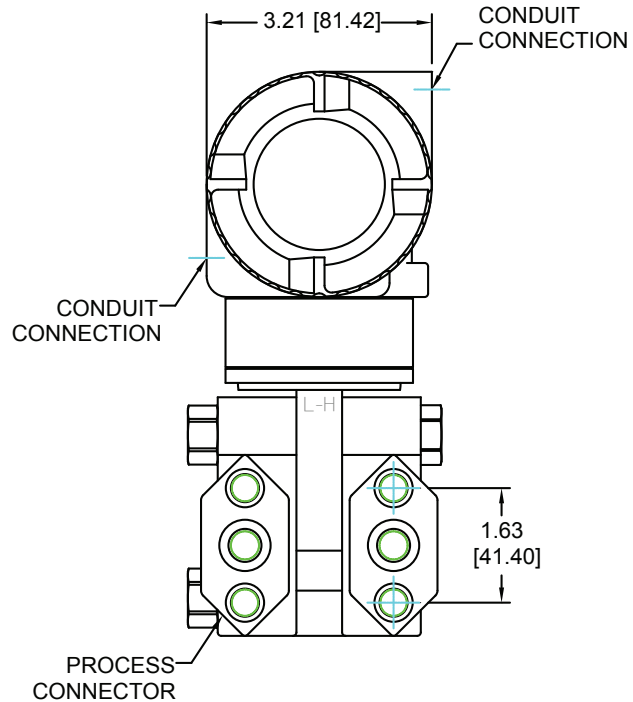
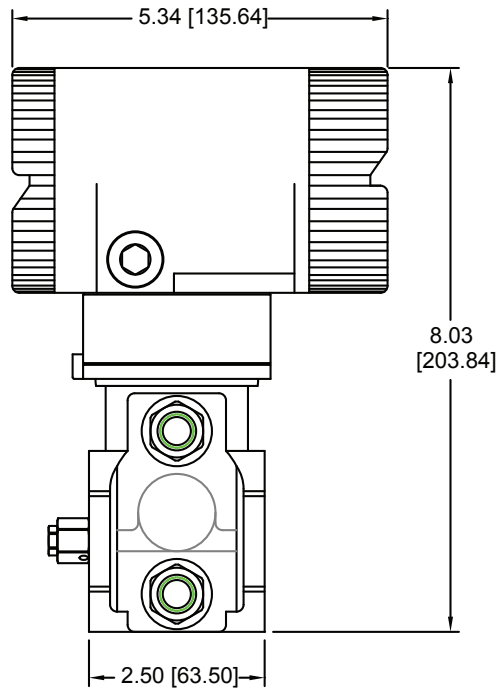
FIELD OPTIONS:

- Push button adjust with LCD display
- Exotic wetted parts
- 1 to 5 Vdc low power

SMART DIFFERENTIAL PRESSURE TRANSMITTER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Supply Voltage: 11.5 to 40 Vdc (Optional low power: 7 to 36 Vdc) • Output Signal: 4-20 mA, 4-20mA with HART, 1 to 5 Vdc • Response Time: <750 milliseconds • Connection: ½" NPT (F) on aluminum alloy, epoxy coated housing with internal terminal block
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Wetted Parts: 316 stainless steel (Optional exotic materials) • Housing: Epoxy coated aluminum alloy
STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
Standard: ±0.2% FSO Improved: ±0.075% FSO Static Line Pressure Effect: 0.5" WC thru 30 PSI: ±0.60% FSO/1000 PSI 50 PSI thru 3000 PSI: ±1.0% FSO/1000 PSI

MECHANICAL
<ul style="list-style-type: none"> • Process Connection: ¼" NPT (F) with optional ½" NPT (F) • Line Pressure Rating: 3,625 PSI (250 BAR) • Proof Pressure Rating: 3,625 PSI (250 BAR) • Approximate Weight: 8.5 lb (3.9 kg)
PRESSURE RANGES
0 to 0.5" WC thru 0 to 3K PSID (12 MBAR to 207 BAR)
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: -40 °F to +350 °F (-40 °C to +177 °C) • Operating Process: -50 °F to +360 °F (-45 °C to +182 °C) • Operating Ambient: -50 °F to +120 °F (-45 °C to +49 °C) • Storage: -60 °F to +190 °F (-51 °C to +82 °C)
OPTIONAL
<ul style="list-style-type: none"> • Optional LCD Indicator: Operative limits of the standard indicator are -20 °F to + 185 °F (-29 °C to + 85 °C), normal operating limits are -4 °F to + 185 °F (-20 °C to +82 °C)

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



HIGH-ACCURACY PRESSURE TRANSDUCER

MODEL FFBR241 / 341

FEATURES:

- High accuracy to $\pm 0.05\%$ FSO
- High thermal stability $\pm 0.25\%$ FSO/100°F
- -40 to +250 °F compensation
- Compact, lightweight, all stainless steel design
- Less than 4 millisecond response time

APPLICATIONS:

- Dynamometer testing
- Transmission testing
- Brake testing
- Hydraulic & Pneumatic valve testing
- Jet engine testing
- Emission test stands

PRODUCT OVERVIEW:

Flo Fab Inc. Model 241/341 is our most accurate pressure transducer. It is designed specifically for aerospace and automotive test stand applications. The compact, corrosion-resistant, all-welded stainless steel design of the Model 241/341 offers ease of installation within space constrained environments. Static accuracy is available to $\pm 0.05\%$ FSO, with a total thermal error of 0.20% FSO over the compensated temperature range.

FIELD OPTIONS:

- Optional zero and span adjustment
- Shunt calibration for active line testing without a pressure source
- Comprehensive list of process and electrical connections for existing application retrofits



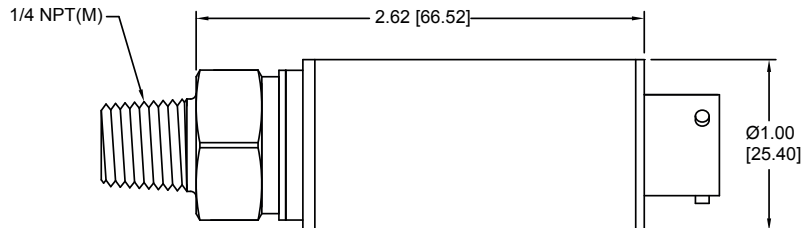
Model FFBR241 / 341
High-Accuracy Pressure Transducer

HIGH-ACCURACY PRESSURE TRANSDUCER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

MODEL BR241 WIRING		MODEL BR341 WIRING	
PIN/WIRE	DESCRIPTION	PIN/WIRE	DESCRIPTION
A/1/RED	+EXC	A/1/RED	+EXC
B/2/GRN	+SIG	B/2/BLK	-EXC/SIG
C/3/-	N/C	C/3/-	N/C
D/4/BLK	-EXC/SIG	D/4/BLU	PROGRAM GND
E/5/BRN	N/C or SHUNT	E/5/BRN	N/C or SHUNT
F/6/ORG	PROGRAM	F/6/ORG	PROGRAM



REFERENCE SPECIFICATIONS

ELECTRICAL
<ul style="list-style-type: none"> • Supply Voltage: 9 to 36 Vdc (some options may affect this) • Output Signal: (Model 241) 0 to 5 Vdc (Model 341) 4-20 mA • Load Resistance: (Model 241) 100K Ω min. (Model 341) 1150 Ω max. at 32 Vdc • Circuit Protection: Reverse polarity protected Output may be grounded indefinitely Over voltage protection to 1kV for <1ms • Response Time: <4m Sec (Typical) • Connection: PTIH-10-6P
MATERIALS OF CONSTRUCTION
<ul style="list-style-type: none"> • Wetted Parts: \leq1,000 PSI (69 BAR): 316 stainless steel >1,000 PSI (69 BAR): 17-4 PH stainless steel • Housing: 300 series stainless steel
STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)
<ul style="list-style-type: none"> • \pm0.10% and \pm0.05% FSO

MECHANICAL
<ul style="list-style-type: none"> • Process Connection: 1/4" NPT (M) (consult factory for complete list of options) • Proof Pressure: 2X FSO or 22.5K PSI max. (1,551 BAR) (varies by pressure range) • Burst Pressure: 5X FSO or 22.5K PSI max. (1,551 BAR)
PRESSURE RANGES
<ul style="list-style-type: none"> • 0-30" WC thru 15K PSI (1,034 BAR) Gauge, Vacuum, Absolute, Sealed Gauge (both hermetic and non-hermetic)
THERMAL SPECIFICATIONS
<ul style="list-style-type: none"> • Compensated: 0 °F to +180 °F (-18 °C to +82 °C) • Effect on Zero/Span: \pm0.5% FSO/100 °F each (\pm1.0% FSO/100 °F from -40 to 185 °F / (-40 °C to +85 °C) • Operating Temp: -40 °F to +250 °F (-40 °C to +121 °C) • Storage Temp: -40 °F to +250 °F (-40 °C to +121 °C)
Improved performance options: <ul style="list-style-type: none"> • Expanded Ranges: -40 °F to +250 °F (-40 °C to +121 °C) • Improved Performance: \pm0.20% FSO over compensated range

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



INDUSTRIAL THERMOCOUPLE

MODEL FFBR-TC

FEATURES:

- Designed to mount directly into a thermowell
- ATEX, FM, CSA and explosion proof approvals
- Spring loaded sensor ensures positive contact to base of thermowell bore
- Wide selection of temperature calibration ranges, connection heads, insertion and neck lengths for custom applications
- K-Type thermocouple with temperatures from 0 to 1260 °C

APPLICATIONS:

- Oil and Gas
- Chemical industries
- Automotive test stand
- Power generation

PRODUCT OVERVIEW:

Flo Fab Inc. FFBR-TC is an economical thermocouple approved for explosion proof hazardous locations where reliable and accurate process temperatures are required. With a large range of temperatures, ranges, and probe lengths available, the model BRTC is adaptable for most temperature applications or processes.

APPROVALS:

- CSA Explosion-proof Class I Div 1
- FM Explosion-proof Class I Div 1
- EEx-d (ATEX) acc. to directive 94/9/EC



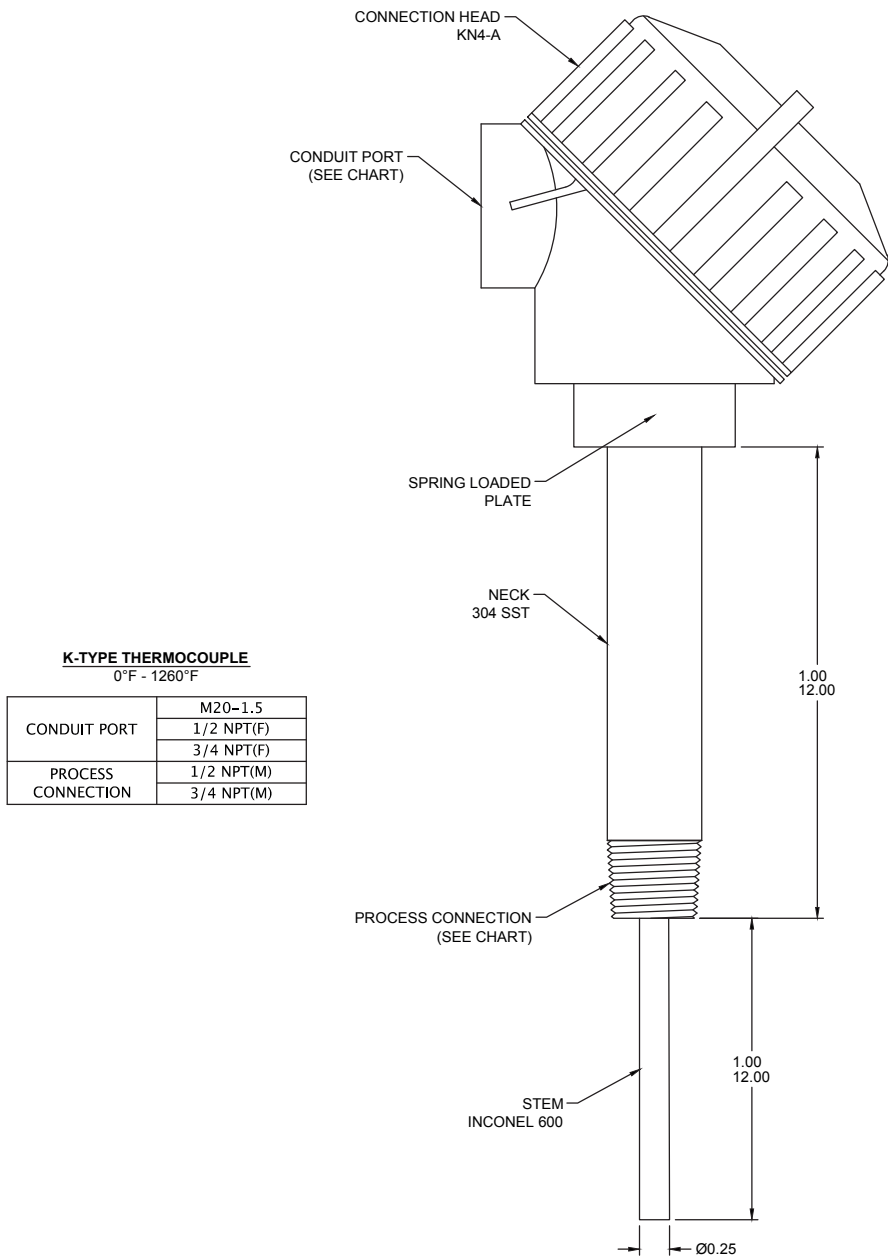
Model FFBR-TC
Industrial Thermocouple



INDUSTRIAL THERMOCOUPLE

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



BIRDCAGE® SERIES SURGE PROTECTOR

MODEL FFBCP3000

FEATURES:

- Lifetime warranty against lightning and voltage surges for BC001 Birdcage®
- 17mm DIN rail mount chassis (BCP3006)
- Replaceable surge module (BCP3005)
- On-board failure lights go from green to red
- For 4-20mA or 0-5Vdc systems
- High current gas discharge tubes (GDT)
- Fast response Surge-Arresting Diodes (SAD)



Model FFBCP3000
Birdcage® Series Surge Protector

TECHNICAL SPECIFICATIONS:

- Power: 24 VDC
- IEC Category/EN Type: C1/C2/C3/D1
- Highest Continuous Voltage (Uc): DC/AC: 28V/20V
- Lightning Test Current (Limp) Per Path: 2.5 kA
- Nominal Current In: 450 MA
- Nominal Discharge Surge Current (8/20) μ s: 10 ka
- Total Surge Current (8/20) μ s: 20 kA
- Response Time: < 1 ms
- Resistance per Path: 2.2 Ω
- Insulation Test Voltage: 500 VDC
- Auxiliary Voltage Un: 8 VDC.38 VDC
- Auxiliary Power: < 0.8 w
- Temperature Range: -40° to +85°C
- Protection: IP20
- Test Standard: IEC61643 / DIN EN 61643-21
- Remote Indication Contact: N/C Contact
- Max. Operating Voltage: 250 VAC
- Dimensions (H x W x D): 99 x 17.5 x 90 mm
- Max. Operating Current: 0.2A (250 VAC) / 0.2a (220 VDC)



CABLE HANGER

MODEL FF BCH2000

FEATURES:

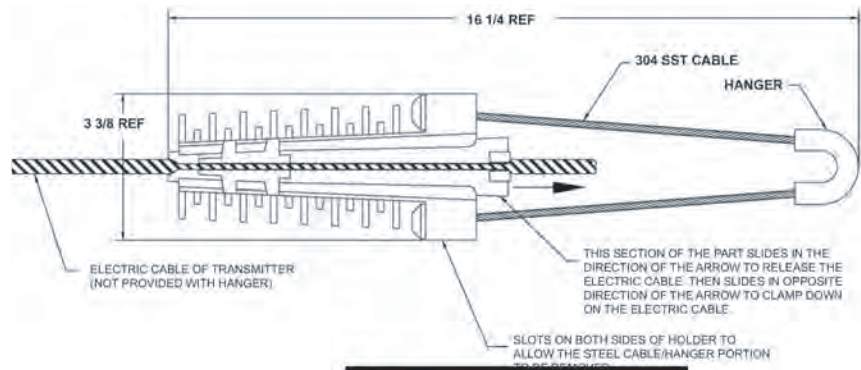
- Low cost, high durability
- Withstands 200 pounds of weight
- Heavy duty molded plastic
- Tapered insert - non-slip design
- Made for Standard Blue Ribbon polyurethane & Tefzel ° cable

PRODUCT OVERVIEW:

The Model FF BCH2000 Cable Hanger from Flo Fab Inc. is designed to eliminate unnecessary stresses on the transmitter while installed in the application. Affordably priced, the BCH2000 Cable Hanger is designed for easy installation within a variety of environments.



Model FF BCH2000
Cable Hanger





PUMP CONTROLLER

MODEL FFBD300

OVERVIEW:

The Model FFBD300 Pump Controller is designed exclusively for use with the Flo Fab Inc. Birdcage® submersible level transmitter to provide multiple pump alternation for pumping stations and water municipalities. Featuring four programmable relays switches, a large 6 digit LED dual display, AC or DC power input, and digital communication options, the BD300 is suited for the most demanding environments.



Models FFBD300
Pump Controller



FEATURES:

- 0-20 mA, 4-20 mA, 0-5 V, 1-5 V, and $\pm 10V$ Inputs
- Large Dual-Line 6-Digit Display, 0.60" & 0.46"
- NEMA 4X, IP65 Front
- Universal 85-265 VAC, or 12/24 VDC Input Power Models
- Programmable Display & Function Keys
- 32-Point, Square Root, or Exponential Linearization
- Multi-Pump Alternation Control
- USB, RS-232, RS-485 Serial Communication Options
- Modbus® RTU Communication Protocol Standard
- Free BULLDOG Pro Software for Operation, Monitoring, and Programming
- Standard 1/8 DIN (45mm x 92mm)

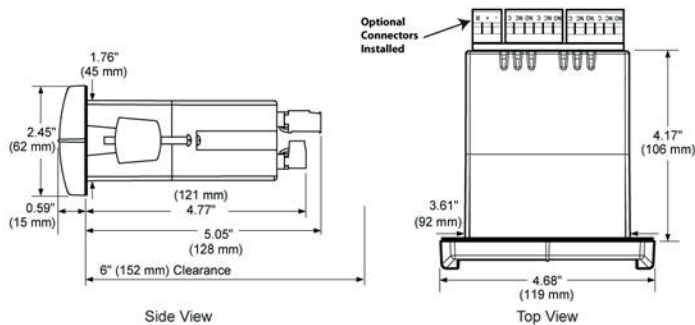
FIELD OPTIONS:

- 4 Relays + Isolated 4-20 mA Output
- External 4-Relay & Digital I/O Expansion Modules
- Sunlight Readable Display Models

PUMP CONTROLLER

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



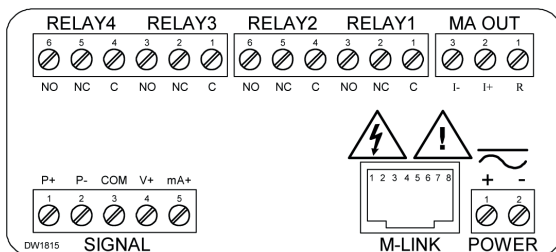
Notes:

1. Panel cutout required: 1.772" x 3.622" (45 mm x 92 mm)
2. Panel thickness: 0.040 - 0.250" (1.0 mm - 6.4 mm)
3. Mounting brackets lock in place for easy mounting
4. Clearance: Allow 6" (152 mm) behind the panel

NEMA 4X FIELD ENCLOSURES:

Thermoplastic NEMA 4X enclosures are constructed for indoor or out door use.

CONNECTION DIAGRAM:



FFBD281

ACCESSORIES:

MODEL	DESCRIPTION
FFBDDRMK	DIN RAIL MOUNTING KIT FOR TWO EXPANSION MODULES
FFBDXM	4-RELAY EXPANSION MODULE
FFBDIO	4 DIGITAL INPUTS & 4 DIGITAL OUTPUTS MODULE
FFBDCCC	METER COPY CABLE
FFBDUSBSA	USB SERIAL ADAPTER
FFBD281	1/8 DIN ENCLOSURE

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



DUAL INPUT PUMP CONTROLLER

MODEL FFBD306

OVERVIEW:

The Model FFBD306 Dual Input Pump Controller from Flo Fab Inc. offers high-reliability monitoring and control when used with the Birdcage[®] submersible level transmitter. Unit features dual input process control with Math Functions, Programmable Display & Function Keys, RS-242, RS-485 and Modbus[®] RTU Serial Communication Protocol, making it suitable for use in a variety of industrial applications.

FEATURES:

- Dual Input Process Controller with Math Functions
- 0-20 mA, 4-120 mA, 0-5 V, 1-5 V, and $\pm 10V$ Inputs
- Large Dual-Line 6-Digit Display, 0.60" & 0.46"
- NEMA 4X, IP65 Front
- Universal 85-265 VAC, or 12/24 VDC Input Power
- Programmable Display & Function Keys
- 32-Point, Square Root, or Exponential Linearization
- Multi-Pump Alternation Control
- USB, RS-232, RS-485 and Modbus[®] RTU Serial Communication Protocol
- Free BULLDOG Pro Software for Operation, Monitoring, and Programming
- Standard 1/8 DIN (45mm x 92mm)

FIELD OPTIONS:

- 4 Relays + Isolated 4-20 mA Output
- External 4-Relay & Digital I/O Expansion Modules
- Sunlight Readable Display Models



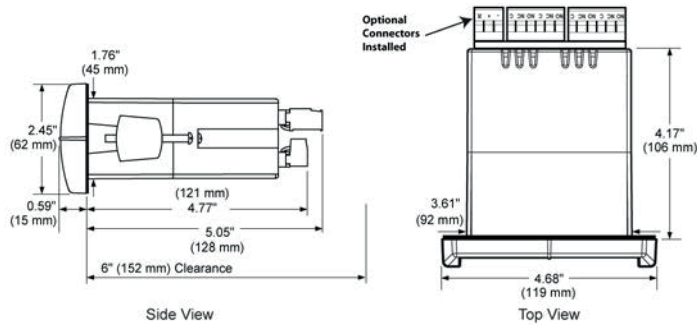
Models FFBD306
Pump Controller



DUAL INPUT PUMP CONTROLLER

DIMENSIONAL DRAWING

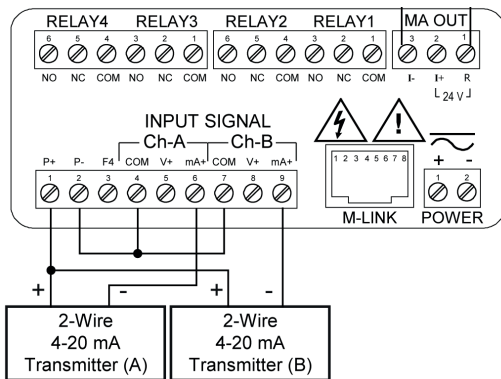
All dimensions are in inches (mm)



Notes:

1. Panel cutout required: 1.772" x 3.622" (45 mm x 92 mm)
2. Panel thickness: 0.040 - 0.250" (1.0 mm - 6.4 mm)
3. Mounting brackets lock in place for easy mounting
4. Clearance: Allow 6" (152 mm) behind the panel

CONNECTION DIAGRAM:



NEMA 4X FIELD ENCLOSURES:

Thermoplastic NEMA 4X enclosures are constructed for indoor or outdoor use.



FFBD281

ACCESSORIES:

MODEL	DESCRIPTION
FFBDDRMK	DIN RAIL MOUNTING KIT FOR TWO EXPANSION MODULES
FFBDXM	4-RELAY EXPANSION MODULE
FFBDIO	4 DIGITAL INPUTS & 4 DIGITAL OUTPUTS MODULE
FFBDCCC	METER COPY CABLE
FFBDUSBSA	USB SERIAL ADAPTER
FFBD281	1/8 DIN ENCLOSURE

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



SET POINT PUMP CONTROLLER

MODEL FFBD100

OVERVIEW:

The Model FFBD100 Bulldog from Flo Fab Inc. is a set point pump controller designed exclusively for use with the Blue Ribbon Birdcage[®] level sensor providing basic pump control functions.

The FFBD100 controller is an easy and inexpensive solution for monitoring and controlling pump station water levels. With six programmable level set points for pump control, including on/off set points for two pumps and settings for two alarms, and a preprogrammed set of default parameters to simplify the user interface and set-up.



Model FFBD100
Set Point Pump Controller


FEATURES:

- Control ON-OFF for two pumps
- Front-panel programming
- Analog output for runtimes
- Secure menu for all other preset values
- 24 VDC power
- Accepts 4-20 mA or 1-5 VDC
- Non-volatile memory, no batteries
- Alternation of pumps set as default
- Set points continuously displayed, along with current level readings.



SET POINT PUMP CONTROLLER

Standard Specifications listed below. Consult factory for further options, which may change the overall dimensions.

Set point Range	Low and High points are selected independently
Display	Two 4 digit, 7 segment, 14.2mm (0.56") high LED's
Control Action	Selectable for Reverse (pump up) or Direct (pump down): Selectable for alternation or not
Control Output Ratings	Relays: 2 each SPDT, 10A at 240 VAC resistive, 1/2 hp at 120 VAC, 1/3 hp at 240 VAC Alarm Relays: 2 each SPST 3A at 240 VAC resistive, 1.5A at 240 VAC inductive, pilot Duty Rating: 240 VA 2A at 120 VAC or 1A at 240 VAC
Additional Outputs	Two switched voltage outputs mirror action of relays, for recording motor start cycles and run times
Accuracy	$\pm 0.25\%$ of reading ± 1 least significant digit
Resolution	1 count or 0.1 counts (sensor dependent)
Isolation	Relays and SSR outputs, 1500 VAC from all inputs and outputs; 24 VDC loop power, 500 VAC to all inputs and outputs
Power Consumption	5 VA maximum
Electrical supply	100 to 240 VAC nominal, +10% to 15%, 50 to 400 Hz single phase; 132 to 240 VDC +10% to 20%
Loop Powered Supply	Isolated +24 VDC supplies power to the Birdcage or Pressure Sensor
Temperature Range	Operating Range: -10 °C to 55 °C (-14 °F to 130 °f) Storage Range: -40 °C to +80 °C (-40 °F to +175 °F)
Agency Approvals	UL508, CE 
Humidity Range	0 to 90% up to 40 °C for non-condensingw
Memory Backup	Non-volatile memory, no batteries
Panel Cutout	92mm X 92mm (3.625" X 3.625")
Depth Behind Mounting Services	103mm (4.0")
Weight	454 g (16 oz)
Front Panel Rating	IP66 (Type NEMA 4X)

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



DUAL SET POINT PUMP CONTROLLER

MODEL FFBD200

FEATURES:

The Bulldog Model FFBD200 versatile, simple, and inexpensive, making it the ideal instrument for controlling dual pump lifting stations. Setpoints for ON/OFF and HI/LO alarms are easily set on the front panel. These same buttons also Enable/Disable pump alternation. A selectable time delay of up to 60 seconds on power-up for pump two prevents both pumps from starting at the same time and a large current draw. Alarms for pump seal failure and motor windings overheating are indicated by lights on the front panel. The dial can also display a runtime clock for each pump. An isolated 4-20 mA retransmission is standard. The front face is rated NEMA-4X for outdoor panel mounting. The FFBD-200 is also available with RS-232 or RS-485 protocol for connectivity with SCADA systems.



Model FFBD200
Dual Set Point Pump Controller




SPECIFICATIONS:

- Selectable pump alternation when used with two pumps to minimize pump wear. With alternation "On", a seal failure or over temperature condition will force the non-failed pump to lead status and stop alternation
- Alarm light for seal failure when used with a submersible pump that includes a moisture sensor
- Alarm light for overheating when used with a pump that includes a thermostat. Pump is removed from service & can be brought back online manually or automatically when pump has cooled down
- Runtime displayed by a front panel button.
- 24 VDC power for level transmitter
- 4-20 mA or voltage signal output
- Non-volatile memory, no batteries
- Test System function simulates process input to test program, or to ensure pumps are operating
- User-selectable security lock-out of programming and/or setpoints

SET POINT PUMP CONTROLLER

Standard Specifications are listed below. Consult factory for further options, which may change the overall dimensions.

Input	4 (or 0) to 20 mADC or 2 (or 0) to 10 VDC selectable
Input Impedance	Current = 10 Ω , Voltage = 100K Ω
Output Ratings	Control Relays: SPDT, 10A @ 240 VAC resistive, ¼ hp @ 120 VAC, ⅓hp @ 240 VAC Alarm Relays: SPST, 3A @ 240 VAC resistive, ⅓hp @ 120 VAC
Control Type	On/Off, reverse (pump out) or direct (pump in) acting
Accuracy	$\pm 0.25\%$ of span ± 1 least significant digit
Display	Two 4 digit, 7 segment, 14.2mm (0.56") high LED's
Resolution	1 count
Power Consumption	7.5 VA maximum
Electrical Supply	100 to 240 VAC nominal, + 10% to 15%, 50 to 400 Hz single phase; 132 to 240 VDC + 10% to 15%
Loop Powered Supply	Isolated + 24 VDC @ 50 mA, regulated
Temperature Range	Operating Range: -10 °C to 55 °C (-14 °F to 130 °F) Storage Range: -40 °C to +80 °C (-40 °F to +175 °F)
Humidity Range	0 to 90% up to 40 °C for non- condensing
Seal Failure (Moisture Sensor)	Power: 2.5 VDC Search Current: 3 micro amps Resolution: 10K to 500K ohms in 10K ohm steps
Agency Approvals	UL508, CE 
Memory Backup	Non-volatile memory, no batteries
Panel Cutout	92mm X 92mm (3.622" X 3.622")
Weight	454 g (16 oz)
Front Panel Rating	IP66 (Type NEMA 4X)
Options	RS-232 or RS-485 with Modbus protocol; Ethernet using TCP/IP
Accessories	Weatherproof Enclosures, NEMA 4X

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



MODEL FFBB4000 QUAD PUMP CONTROLLER

MODEL FFBB4000

OVERVIEW:

With the accuracy of pressure-sensing level transmitters and the simplicity of float inputs, the Flo Fab Inc. Model FFBB4000 is the ideal controller for your application. This quad pump controller is easily configured for either analog sensors or float discrete inputs.



Model FFBB4000
Quad Pump Controller

FEATURES:

- Field configured for floats or analog sensor inputs, including 20 VDC loop power
- Optional 4 analog sensor inputs or 18 discrete (float switches)
- Alternates pumps and performs lag pump delays
- Provides high and low alarms with full front panel
- Adjustable parameter values
- Optional VFD speed control output
- Pump up (fill) or pump down (empty) control
- 6 Amp pump relay outputs and alarm outputs
- Visual indication up to 255 feet
- Full front panel setup for all control options and menu items
- 120 VAC input power. Line rate and transient protection
- Isolated and transient protected (4-20 mA) analog level input
- RS-232 serial port
- Modbus Protocol
- RTU or ASCII mode
- First ON - First OFF, or First ON - Last OFF alternation
- Alternator logic skips disabled pumps, remembers lead pump position during outage
- Timed (1 minute) level simulation
- Security code protected parameter setup
- Status of discrete inputs may be viewed from front of controller
- Phoenix-style connectors
- Adjustable lag pumps delay
- High and Low level alarm relays and alarm indication
- Wet well level analog input zero and span adjustments

MODEL BB4000 QUAD PUMP CONTROLLER

Standard Specifications listed below. Consult factory for further options, which may change the overall dimensions.

Input Power	120 VAC ($\pm 10\%$, 13 VA max), metal oxide varistor transient protection
EMI Line Filter	Pie type
Agency Approvals	UL508, CAN/CSA
Ambient Operating Temperature	Without analog outputs: $-20\text{ }^{\circ}\text{C}$ to $+65\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$ to $+149\text{ }^{\circ}\text{F}$) With analog outputs: $-20\text{ }^{\circ}\text{C}$ to $+50\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$ to $+122\text{ }^{\circ}\text{F}$)
Level Display	3-digit, 7-segment LED, 0-25 foot range (selectable decimal point position)
Indicators	LED
Color	White with Blue silk screening
Relays	6A at 250 VAC. 6A at 30 VDC
Loop Powered Supply	Isolated $+24\text{ VDC}$ at 50 mA, regulated
Level Analog Input	Isolated 4-20 mA, $250\ \Omega$ load, transient protected
Discrete Inputs	Optically isolated and transient protected. Each input draws 7 mA at 24 VDC
Power for Discrete Inputs	Unregulated 24 VDC. Transient protected.
Power for Analog Inputs	Regulated $20\text{ VDC} \pm 1\text{V}$. Transient protected.
Analog Outputs	Isolated 4-20 mA. Maximum load resistance: $600\ \Omega$. Each output may be configured as a speed reference for any of the pumps, or set to follow well level input.
Auxiliary Analog Inputs	4 isolated 4-20 mA. $250\ \Omega$ load, transient protected.
Variable Frequency	<ul style="list-style-type: none"> VFD speed reference: the controller must be ordered with an analog output Drive Control for speed control of each pump that will be on a VFD. Three setup parameters are provided to establish a linear wet level v/s pump speed curve. Pump speed clamp logic: will not allow VFD speed reference to drop below the "VFD Minimum Speed" setup parameter value. Pump start speed boost logic: if enabled, will temporarily ramp pump speed to 100% to give the check valve a chance to open. Call pump last logic: the controller will call pumps in the Bypass Mode last (external circuitry must be connected to discrete inputs on the controller, to signal when a pump is in the Bypass Mode).

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice.



JUNCTION BOX

MODEL FFBCJ4000

FEATURES:

The Model FFBCJ4000 Junction box from Flo Fab Inc. with an IP66 rated corrosion resistant enclosure is designed specifically for water and waste water applications. The VALOX construction, non-metallic screws and hydrophobic vent filter provide a maintenance free option to sheet steel J-boxes and the convenient 3 pole terminal strip allows for simple hook-up with the Flo Fab Inc. FFBCP3000 lightning surge protector and Bird Cage level transmitter.



MODEL FFBCJ4000

SPECIFICATIONS:

- Overall size (W x H x D): 5" x 3" x 4"
- IP66 Rated Enclosure
- Corrosive resistant VALOX[®] construction
- ASTM-D-48 up to +280 °F heat deflection temperature
- Four holes for surface mounting
- Maintenance-free Hydrophobic filter
- Two cord grips accommodate 0.23" to 0.47" cables
- Finger safe, three-pole terminal strip

DIMENSION: INCHES (mm)	
Inside Height	4.69 (119.02)
Inside Width	2.61 (66.4)
Inside Depth	3.72 (69.06)
Outside Height	5.03 (127.83)
Outside Width	3.06 (77.83)
Outside Depth	4.02 (76.67)



Pressure, Temperature & Electronics

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www.flofab.com

WARRANTY

Flo Fab Inc. warrants its products to the original customer/purchaser against defects in material and workmanship for a period of one (1) year from the date of sale by Flo Fab, as shown in its shipping documents.

REPAIRS

Flo Fab Inc. offers a comprehensive service program with qualified technicians that evaluate our products. If you are experiencing trouble with a product, please contact our Sales Department.

If you wish to return any equipment to Flo Fab Inc., you must contact our Sales Department to obtain a Return Goods Authorization (RGA) number.

In order to service you better, items being returned to Flo Fab Inc. should be labeled with the RGA number on the outside of the package. Please include as much of the following information as possible on the packing slip:

Original Purchase Order Number, Invoice Number, Return Address, Contact Name and Telephone Numbers. Specify failures and the reason for return on the packing slip.

DUE TO THE CONTAMINANTS THAT ARE PRESENT IN WASTE WATER APPLICATIONS, UNITS BEING RETURNED FOR REPAIR MUST BE SANITIZED PRIOR TO SHIPMENT TO BLUE RIBBON. UNITS WILL BE RETURNED TO THE SENDER AND NOT REPAIRED IF FOUND UNSAFE FOR HANDLING.



Sales and Service:

Quebec, Canada Tel. : (450) 621-2995 Fax: (450) 621-4995	Lake Worth Florida, USA 33467-5749
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Toronto, Canada Tel. : +1 (647) 544-2995

www.flofab.com

SERVICE 24/7 : parts@flofab.com

Model FFBCOOI - Birdcage®

Invented, patented and trademark by the founder of Flo Fab Inc., the Birdcage® has become the industry standard for reliable, lift-station level transmitters.

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