

Gas Actuated Thermometers

FEATURES

- *Uniformly graduated scales*
- *Accurate to $\pm 1\%$ of range span*
- *4 1/2" dial size*
- *Adjustable pointer*
- *Fast response*
- *Inert gas fill – ideal for applications where Mercury is prohibited*
- *Stainless steel bulb*
- *Stainless steel spring armor over stainless steel capillary tubing*



ALL STAINLESS STEEL
ADJUST ANGLE
THERMOMETER



REMOTE READING TYPE WITH
SLIDING UNION BULB

Gas Actuated Thermometers – Case Styles/Dimensions

SURFACE (WALL) OR DIRECT MOUNT TYPES

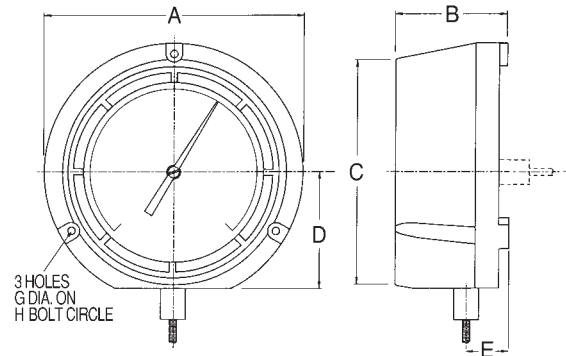


Snap-in glass retaining ring.

Standard for 4½" remote.

STYLE	DIAL SIZE	MATERIAL
P	4½"	Polypropylene

SURFACE (WALL) OR DIRECT MOUNT TYPES



GAUGE SIZE	A	B	C	D	E	F	G	H
4½ INCH	5.83	2.56	5.08	2.62	1.00	.20	.24	5.39

SURFACE (WALL) MOUNT TYPES

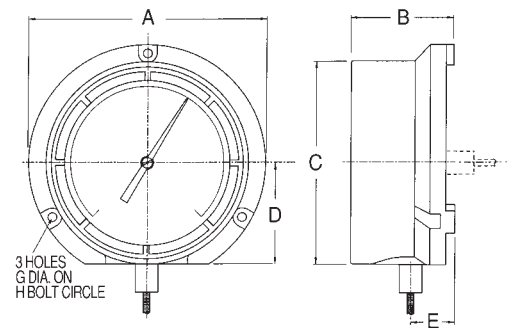


Style "A" has bayonet type glass retaining ring.

Extra cost option.

STYLE	DIAL SIZE	MATERIAL
A	4½"	Aluminum Black Textured Enamel Finish

SURFACE (WALL) MOUNT TYPES



GAUGE SIZE	A	B	C	D	E	F	G	H
4½ INCH	5.81	2.69	5.00	2.50	1.12	.20	.22	5.38

HINGED FRONT TYPE FOR FLUSH MOUNTING



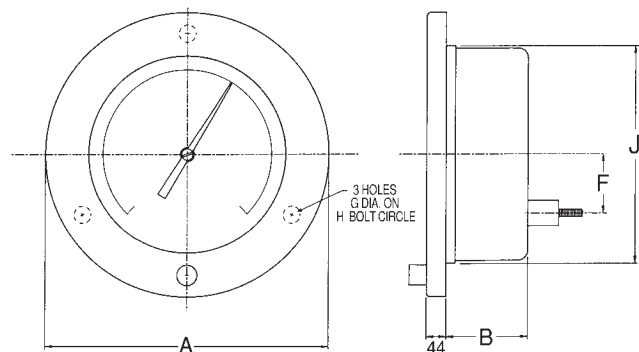
Molded plastic hinged front ring allows easy access to dial and pointer.

Extra cost option.

NOTE: Only available with rear (back) connection.

STYLE	DIAL SIZE	MATERIAL
W	4½"	Aluminum Black Textured Enamel Finish

HINGED FRONT TYPE FOR FLUSH MOUNTING



GAUGE SIZE	A	B	F	G	H	J
4½ INCH	6.31	1.63	1.35	.19	5.38	4.88

X-PANEL HOLE CUT-OUT DIAMETER

Gas Actuated Thermometers – Case Styles/Dimensions

SURFACE (WALL) MOUNT TYPES



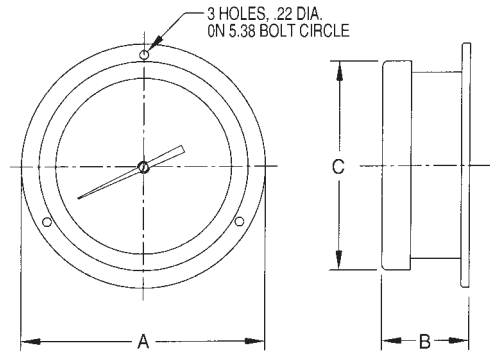
BAYONET TYPE GLASS RETAINING RING

4 1/2" dial size remote mount
thermometers.

Extra cost option.

STYLE	DIAL SIZE(S)	MATERIAL
X	4 1/2"	Stainless Steel

SURFACE (WALL) MOUNT TYPES



GAUGE SIZE	A	B	C	G	H
4 1/2 INCH	5.90	2.10	5.05	.22	5.38

HINGED FRONT TYPE FOR FLUSH MOUNTING



Front flanged case for semi-flush
mounting.

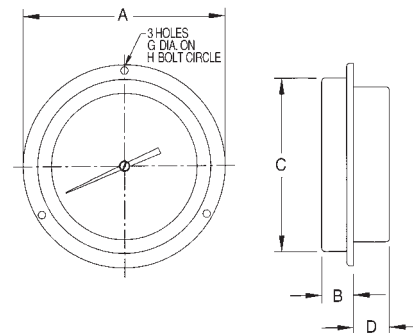
Bayonet type glass retaining ring.

Extra cost option.

NOTE: Only available with rear (back) connection.

STYLE	DIAL SIZE(S)	MATERIAL
V	4 1/2"	Stainless Steel

HINGED FRONT TYPE FOR FLUSH MOUNTING



GAUGE SIZE	A	B	C	D	G	H
4 1/2 INCH	5.90	.94	5.05	1.04	.22	5.55

DIRECT MOUNT TYPES (Flangeless Case)

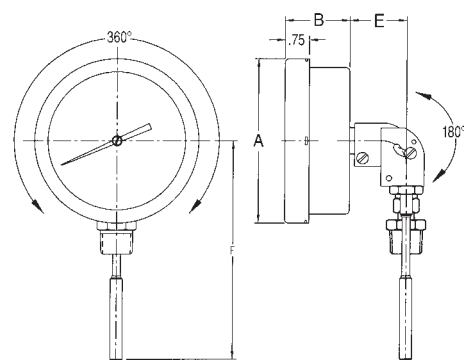


BAYONET TYPE GLASS RETAINING RING

Standard on all stainless steel
adjust angle.

STYLE	DIAL SIZE(S)	MATERIAL
Y	4 1/2"	Stainless Steel

DIRECT MOUNT TYPES (Flangeless Case)



GAUGE SIZE	A	B	E	F
4 1/2 INCH	5.04	2.00	1.75	6.81

X-PANEL HOLE CUT-OUT DIAMETER

Gas Actuated Thermometers – Selection Terms

RANGE

The maximum operating temperature should not exceed 75% of the full-scale range. The normal operating range should be in the middle half of the range (between 25% and 75% of the full-scale range); whenever possible.

ACCURACY

All Weksler gas actuated dial thermometers have an accuracy of $\pm 1\%$ of the full-scale range. For accurate readings the entire sensitive portion of the bulb must be fully immersed into the medium being measured.

CASE

A wide variety of case styles and materials are offered. Determine how the thermometer is to be mounted: direct, surface (wall) or flush (in panel). Determine the desired case material: polypropylene, aluminum (black enameled) or stainless steel (300 series).

FACE

A gasketed glass window is standard. Where breakage is a concern, a plastic or shatterproof glass window is optional at extra cost. Plastic windows are not suitable where head temperature exceeds 150°F (65°C).

POINTER

All Weksler gas actuated thermometers have adjustable pointers. This permits pointer repositioning during calibration check or allows maximum precision at a selected point within the scale range.

MOUNTING

Weksler gas actuated thermometers are available in remote mounted types (with capillary tubing between case and sensing bulb) and direct mounted types (sensing bulb is attached directly to case). Remote mounted types allow the temperature to be read at a location remote from the actual temperature source. Remote mounting is also desirable to isolate the head (case, scale, pointer and internal parts) from the damaging effects of shock, vibration or excessive heat that may be present at the temperature source. Direct mounted thermometers are available in "adjust angle" types which allow the head of the thermometer to be positioned for the most desirable viewing angle. Direct mounted units are installed directly on pipes, tanks or other vessels.

BULB TYPES

Weksler gas actuated thermometers are available with various styles of plain bulbs or union connection bulbs. The bulb is the sensing element at the tip of the thermometer that reacts to temperature changes. The entire thermometer including the bulb, head assembly and capillary tubing (on remote types) is filled with an inert nitrogen gas offering fast response and linear dial graduations. Plain bulbs are those without threaded fittings for sensing air temperature or liquid temperatures in open tanks, vats, sinks, etc. Union connected bulbs have threaded swivel nuts that hold the bulb into a bulb fitting such as a thermowell, bushing or flange.

HIGH PRESSURE OR CORROSIVE APPLICATIONS

In these applications, use of a separable thermowell is recommended. In addition to protecting the thermometer, thermowells facilitate removal of the thermometer without having to shut down the system.

Gas Actuated Thermometers – How to Order

TABLE 1

REMOTE AND DIRECT MOUNTED TYPES		
BASE CATALOG NO.	DIAL SIZE	TYPE
413B	4½"	REMOTE MOUNTED
453B	4½"	ALL STAINLESS STEEL ADJUSTABLE ANGLE

TABLE 2 – BULB TYPE AND SIZE

FOR REMOTE MOUNT TYPES		
PLAIN BULB FOR AIR TEMPERATURE		CODE
 13" Long .375 Diameter		A
PLAIN BULB FOR LIQUIDS IN OPENTANKS, VATS, SINKS, ETC.		C*
 6" Long .50" Diameter		
*Only available with standard spring armor. Cannot exceed 40 ft. N/A with interlock armor.		
SLIDING UNION CONNECTION WITH 12" BENDABLE EXTENSION		3
 3" x .375" Diameter Bulb, ½ NPT Swivel Nut		
 18" Bendable		8
SLIDING UNION CONNECTION WITH 12" BENDABLE EXTENSION		N
 3" x .625" Diameter Bulb, 1"-20 NEF-2B Swivel Nut		
 3½" x .625" Diameter Bulb, w/1"-20 NEF-2B Swivel Nut		J
FOR DIRECT MOUNT TYPES		
⅜" O.D. – ½"-14 NPSM Swivel Nut Union Connection (fixed length) Wells, bushings or flanges required for installation		
		
CODE	STEM LENGTH	FITS WELL*
4	4"	4¼" O.A.
6	6"	6½" O.A.
9	9"	9¼" O.A.
2	12"	12¼" O.A.
*Uses "K" Series Thermowells (See page 7)		

TABLE 3 – CASE STYLES

WALL MOUNTED TYPES	
CODE	CASE TYPE
P	Molded Polypropylene, Turret Type standard
A	Aluminum, Rear Flange Black Aluminum Bayonet Ring Extra cost option
X	Stainless Steel, Rear Flange Stainless Steel Bayonet Ring Extra cost option
FLUSH PANEL MOUNTED STYLES	
V	Stainless Steel Case and Bayonet Ring Front Flange – Semi-Flush Mounting Extra cost option
W	Aluminum Case Hinged Front Plastic Bezel Extra cost option
DIRECT MOUNTED TYPES	
CODE	CASE TYPE
Y	Stainless Steel, Flangeless Stainless Steel Bayonet Ring Standard on base catalog No. 453B

Gas Actuated Thermometers – How to Order

TABLE 4

CONNECTION LOCATION	AVAILABILITY	
CODE	ALL SS ADJUSTABLE ANGLE	REMOTE MOUNT
C = Center Back	•	
L = Lower		•
R = Rear		•

TABLE 5

CODE	CAPILLARY TYPE
S	Spring Armor
I	Interlock Armor*
X	None

*Required for lengths greater than 40 ft.

TABLE 6

CODE	LENGTH OF CAPILLARY TUBING LENGTHS UP TO 100'
00	None
02	2'
05	5'
10	10'

TABLE 7 – STANDARD RANGES

CODE	FAHRENHEIT	CODE	DUAL SCALE
FR	–320/100	DB	–40/180°F & –40/80°C
FS	–120/120	DC	–20/120°F & –80/50°C
FC	–40/180	DD	0/120°F & –15/50°C
FF	0/120	DF	0/300°F & –10/150°C
FI	0/300	DH	20/240°F & 0/110°C
FL	20/240	DI	50/550°F & 10/290°C
FN	50/550	DP	50/750°F & 0/400°C
FO	50/750	DQ	400/1200°F & 200/650°C
FQ	400/1200		

TABLE 8 – OPTIONS

FEATURES	OPTION CODE
Plastic Lens	PD
Shatterproof Glass	SG
Movable Red Set Hand	SH
Markings on Dial	DM
Paper Tag Attached to Instrument	NN
Stainless Steel Tag Attached by Wire	NH

HOW TO ORDER

1. Specify 4-digit Base Catalog No. from Table 1 413B

2. Add Bulb Digit from Table 2 3

3. Add Case Style Digit from Table 3 P

4. Add Connection Location Digit from Table 4 L

5. Add Capillary Type Digit from Table 5 (enter "X" if none required) S

6. Add Capillary Length Digit from Table 6 (enter "00" if none required) 05

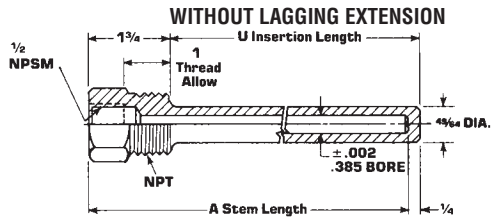
7. Add Range Code Digits from Table 7 FF

8. Add Optional Feature Code Digit from Table 8 ()

Gas Actuated Thermometers – Thermowells

“K” SERIES THERMOWELLS

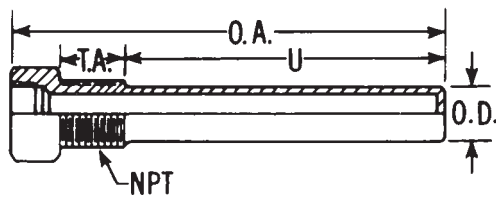
(Fits $\frac{5}{8}$ " O.D. Bulb with $\frac{1}{2}$ " NPSM Swivel Nut)



		PART NUMBERS – 3/4 NPT		
A	U	BRASS	304 SS	316 SS
4	2½	S3B4K	S3G4K	S3J4K
6	4½	S3B6K	S3G6K	S3J6K

“5F” SERIES THERMOWELL

(Fits $\frac{5}{8}$ " O.D. Bulb with 1-20 NEF-2B Swivel Nut)



		PART NUMBERS – 3/4 NPT**		
O.A. LENGTH	U DIM.	BRASS	304 SS	316 SS
4¼	2½	D1E5F2	D6E5F2	D4E5F2
6¾	5	D1M5F2	D6M5F2	D4M5F2

Gas Actuated Thermometers – Conversion Table

NOTE: The numbers in the center of each column refer to the temperature either in degrees Celsius or Fahrenheit which it is desired to convert into the

other scale. If converting from Fahrenheit degrees to Celsius degrees the equivalent temperature will be found in the left column, while if converting from

degrees Celsius to degrees Fahrenheit the answer will be found in the column on the right.

-459.4 to -10			-9 to +50			51 to 110			120 to 700			710 to 1300		
C		F	C		F	C		F	C		F	C		F
-273	-459.4		-22.8	-9	15.8	10.6	51	123.8	48.9	120	248	377	710	1310
-268	-450		-22.2	-8	17.6	11.1	52	125.6	54.4	130	266	382	720	1328
-262	-440		-21.7	-7	19.4	11.7	53	127.4	60.0	140	284	388	730	1346
-257	-430		-21.1	-6	21.2	12.2	54	129.2	65.6	150	302	393	740	1364
-251	-420		-20.6	-5	23.0	12.8	55	131.0	71.1	160	320	399	750	1382
-246	-410		-20.0	-4	24.8	13.3	56	132.8	76.7	170	338	404	760	1400
-240	-400		-19.4	-3	26.6	13.9	57	134.6	82.2	180	356	410	770	1418
-234	-390		-18.9	-2	28.4	14.4	58	136.4	87.8	190	374	416	780	1436
-229	-380		-18.3	-1	30.2	15.0	59	138.2	93.3	200	392	421	790	1454
-223	-370		-17.8	0	32.0	15.6	60	140.0	98.9	210	410	427	800	1472
-218	-360		-17.2	1	33.8	16.1	61	141.8	100	212	413.6	432	810	1490
-212	-350		-16.7	2	35.6	16.7	62	143.6	104	220	428	438	820	1508
-207	-340		-16.1	3	37.4	17.2	63	145.4	110	230	446	443	830	1526
-201	-330		-15.6	4	39.2	17.8	64	147.2	116	240	464	449	840	1544
-196	-320		-15.0	5	41.0	18.3	65	149.0	121	250	482	454	850	1562
-190	-310		-14.4	6	42.8	18.9	66	150.8	127	260	500	460	860	1580
-184	-300		-13.9	7	44.6	19.4	67	152.6	132	270	518	466	870	1598
-179	-290		-13.3	8	46.4	20.0	68	154.4	138	280	536	471	880	1616
-173	-280		-12.8	9	48.2	20.6	69	156.2	143	290	554	477	890	1634
-169	-273	-459.4	-12.2	10	50.0	21.1	70	158.0	149	300	572	482	900	1652
-168	-270	-454	-11.7	11	51.8	21.7	71	159.8	154	310	590	488	910	1670
-162	-260	-436	-11.1	12	53.6	22.2	72	161.6	160	320	608	493	920	1688
-157	-250	-418	-10.6	13	55.4	22.8	73	163.4	166	330	626	499	930	1706
-151	-240	-400	-10.0	14	57.2	23.3	74	165.2	171	340	644	504	940	1724
-146	-230	-382	-9.44	15	59.0	23.9	75	167.0	177	350	662	510	950	1742
-140	-220	-364	-8.89	16	60.8	24.4	76	168.8	182	360	680	516	960	1760
-134	-210	-346	-8.33	17	62.6	25.0	77	170.6	188	370	698	521	970	1778
-129	-200	-328	-7.78	18	64.4	25.6	78	172.4	193	380	716	527	980	1796
-123	-190	-310	-7.22	19	66.2	26.1	79	174.2	199	390	734	532	990	1814
-118	-180	-292	-6.67	20	68.0	26.7	80	176.0	204	400	752	538	1000	1832
-112	-170	-274	-6.11	21	69.8	27.2	81	177.8	210	410	770	543	1010	1850
-107	-160	-256	-5.56	22	71.6	27.8	82	179.6	216	420	788	549	1020	1868
-101	-150	-238	-5.00	23	73.4	28.3	83	181.4	221	430	806	554	1030	1886
-95.6	-140	-220	-4.44	24	75.2	28.9	84	183.2	227	440	824	560	1040	1904
-90.0	-130	-202	-3.89	25	77.0	29.4	85	185.0	232	450	842	566	1050	1922
-84.4	-120	-184	-3.33	26	78.8	30.0	86	186.8	238	460	860	571	1060	1940
-78.9	-110	-166	-2.78	27	80.6	30.6	87	188.6	243	470	878	577	1070	1958
-73.3	-100	-148	-2.22	28	82.4	31.1	88	190.4	249	480	896	582	1080	1976
-67.8	-90	-130	-1.67	29	84.2	31.7	89	192.2	254	490	914	588	1090	1994
-62.2	-80	-112	-1.11	30	86.0	32.2	90	194.0	260	500	932	593	1100	2012
-56.7	-70	-94.0	-0.56	31	87.8	32.8	91	195.8	266	510	950	599	1110	2030
-51.1	-60	-76.0	0	32	89.6	33.3	92	197.6	271	520	968	604	1120	2048
-45.6	-50	-58.0	0.56	33	91.4	33.9	93	199.4	277	530	986	610	1130	2066
-40.0	-40	-40.0	1.11	34	93.2	34.4	94	201.2	282	540	1004	616	1140	2084
-38.9	-38	-36.4	1.67	35	95.0	35.0	95	203.0	288	550	1022	621	1150	2102
-37.8	-36	-32.8	2.22	36	96.8	35.6	96	204.8	293	560	1040	627	1160	2120
-36.7	-34	-29.2	2.78	37	98.6	36.1	97	206.6	299	570	1058	632	1170	2138
-35.6	-32	-25.6	3.33	38	100.4	36.7	98	208.4	304	580	1076	638	1180	2156
-34.4	-30	-22.0	3.89	39	102.2	37.2	99	210.2	310	590	1094	643	1190	2174
-33.3	-28	-18.4	4.44	40	104.0	37.8	100	212.0	316	600	1112	649	1200	2192
-32.2	-26	-14.8	5.00	41	105.8	38.3	101	213.8	321	610	1130	654	1210	2210
-31.1	-24	-11.2	5.56	42	107.6	38.9	102	215.6	327	620	1148	660	1220	2228
-30.0	-22	-7.6	6.11	43	109.4	39.4	103	217.4	332	630	1166	666	1230	2246
-28.9	-20	-4.0	6.67	44	111.2	40.0	104	219.2	338	640	1184	671	1240	2264
-27.8	-18	-0.4	7.22	45	113.0	40.6	105	221.0	343	650	1202	677	1250	2282
-26.7	-16	3.2	7.78	46	114.8	41.1	106	222.8	349	660	1220	682	1260	2300
-25.6	-14	6.8	8.33	47	116.6	41.7	107	224.6	354	670	1238	688	1270	2318
-24.4	-12	10.4	8.89	48	118.4	42.2	108	226.4	360	680	1256	693	1280	2336
-23.3	-10	14.0	9.44	49	120.2	42.8	109	228.2	366	690	1274	699	1290	2354
			10.0	50	122.0	43.3	110	230.0	371	700	1292	704	1300	2372

INTERPOLATION FACTORS

C		F
0.56	1	1.8
1.11	2	3.6
1.67	3	5.4
2.22	4	7.2
2.78	5	9.0
3.33	6	10.8

C		F
3.89	7	12.6
4.44	8	14.4
5.00	9	16.2
5.56	10	18.0