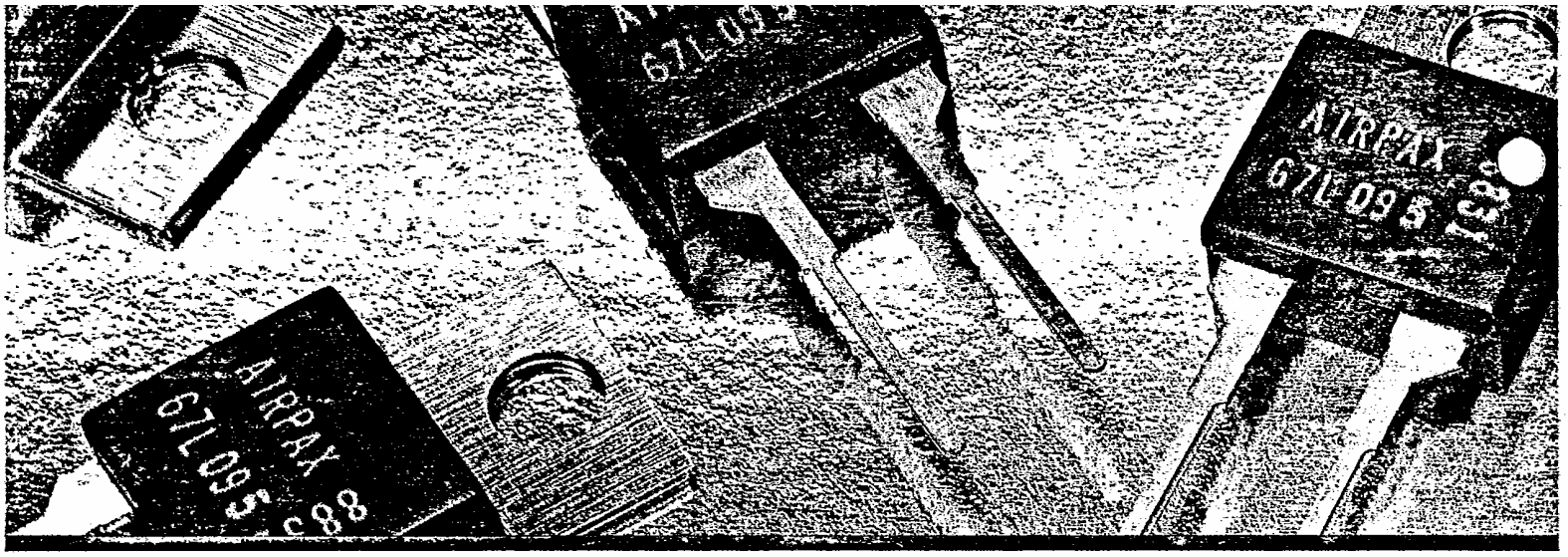
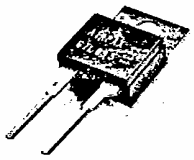


6700 Series Thermostats

6700 P.C. Board Thermostat



The Airpax Series 6700 is a miniature bimetallic snap acting thermostat which provides accurate and reliable sensing and switching in a single device. Primarily developed for thermal management applications on power supplies, the Series 6700 is also ideally suited for use on crowded P.C. boards. It provides fast, positive response and excellent repeatability with 1 amp switching capability at 48 VDC over its operating temperature range of 40°C to 110°C (104°F to 230°F). The operating temperature is pre-set at the factory and is non-adjustable in the field.

The single pole/single throw switch assembly features a bimetallic element that is rated 100,000 cycles at 5 VDC 20 mA resistive or in excess of 1,000,000 operations mechanically. This unit features a positive snap action, available in either normally closed, open on rising temperature or normally open, close on rising temperature.

The 6700 thermostat dimensionally conforms to the international product package standard Y220/T0220. Thus, the 6700 may be automatically placed and soldered onto P.C. boards with high speed automated equipment, eliminating the need for the expensive hand placement and termination required today for most power supply thermostats.

The nickel-plated copper mounting bracket allows this device to be directly mounted to the heat sink to sense an over-temperature condition caused by other components mounted close by or insufficient cooling due to external conditions.

Typical uses include turning on an indicator light, sounding an audible alarm, switching on a control circuit to send a message to a display screen or even switching a circuit to shut down a system. Applications include computers and computer peripherals, aircraft, automotive, and test equipment.

Specifications:

Contact Resistance: 50 Milliohms max. (before and after rated life)

Contact Ratings:

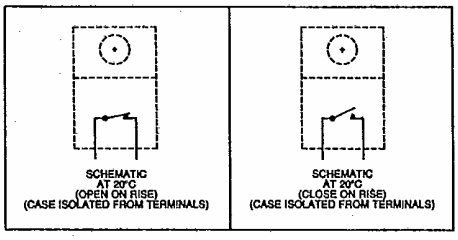
Cycles	Voltage	Amps (Resistive)
30,000	48 VDC	1
30,000	120 VAC	1
100,000	5 VDC	.020
100,000	5 VDC	.001

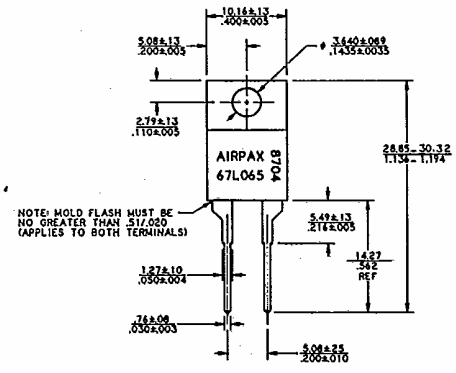
Contact Operations: Either open on rise or close on rise

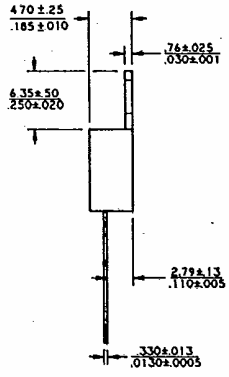
Operating Temperature Range: 40°C (104°F) to 110°C (230°F)

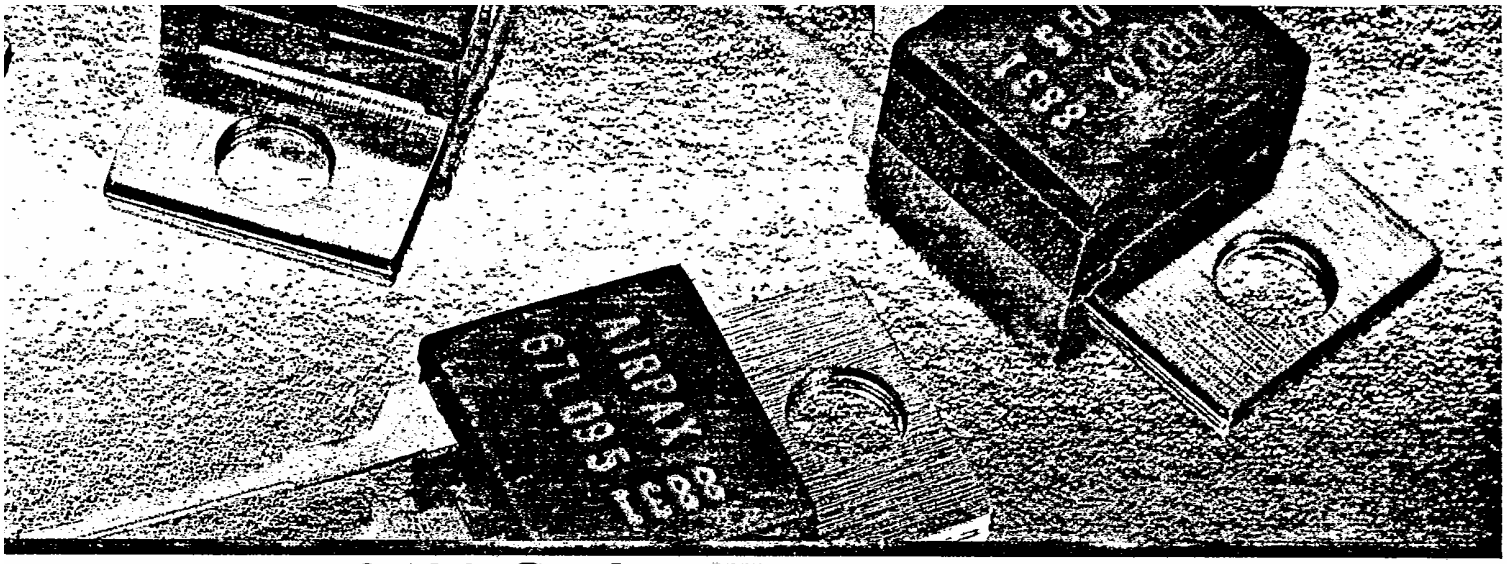
Standard Operating Temperature Tolerance: ±5°C (±9°F) Nominal operating temperature settings in 5°C (9°F) increments

US Patent No: 4,795,997









6700 Series Thermostats

Short Term Exposure Limit: 260°C (500°F), 10 sec.

Long Term Exposure Limit: −55°C (−67°F) to 160°C (320°F)

Dielectric Strength: 1480 VAC 60 Hz, 1 second terminals to case

Insulation Resistance: 100 Megohms at 500 VDC

Contact Bounce - make: 3 ms max.

Weight: Approximately 0.5 grams

Seal: Epoxy sealed for wave soldering and cleaning. Moisture proof per Airpax Spec. S-722 (unit will not leak while submerged in 9" of water for a minimum of two minutes).

Vibration: Per Mil-Std-202, Method 204D, Test Condition D, 10-2,000 Hz.

Shock: Per Mil-Std-202, Method 213, Test Condition C, 100 G's, 6 milliseconds, ½ sine wave.

Humidity: Moisture resistant per Mil-Std-202F, Method 106E.

Chemical Resistance: Unit is resistant to water, salt, alcohol, ammonia, trichlorethane, and most other organic solvents.

Solderability: Terminal material is selectively striped with 60/40 solder for improved solderability.

Resistance to Soldering Heat: Per Mil-Std-202F, Method 210A, Test Condition E.

Mechanical Life: 1,000,000 operations.

UL & CSA File Numbers:
UL Recognized E36687
CSA Certified LR25561

Materials:

Seal: High temperature epoxy

Base: PPS (Polyphenylene Sulfide), 94 VO rated

Terminals: 65% Copper, 18% Nickel

Contacts: Gold-plated Silver cross bar

Bracket: Nickel-plated copper

6700 SERIES STANDARD CALIBRATIONS

OPERATE (±5°C)	RESET (MIN °C)	DIFFERENTIAL (MIN °C)
40	20	4
45	20	4
50	30	4
55	30	4
60	40	4
65	40	4
70	50	4
75	50	4
80	55	6
85	55	6
90	60	6
95	60	6
100	70	6
105	70	6
110	80	6

How to use this chart

Each thermostat Part Number consists of functional "building blocks" to enable the user to specify clearly and precisely the desired characteristics in each category. Select the proper Code in each category, then transfer it to the box indicated. Unless a special requirement is indicated, the Part Number will be complete when the proper temperature is selected. If you have a special requirement, please call Airpax for a factory assigned number to complete the Part Number.

Example: A 67F060 thermostat will close (make contact) on a rising temperature from 55°C to 65°C and will reset (break contact) on a falling temperature no less than 4°C lower than the actual close temperature and no lower than 40°C actual temperature.

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Contact Operation:
F = Fan (CLR)
L = Limit (OPR)

Operating Temperature in Degrees C.

Factory Assigned Number for Special Requirements

Temperature set point calibration is checked at Airpax with precision test equipment and proven methods. Because customer checking methods may differ, a typical variance allowed for correlation is ±1 degree C.

TEMPERATURE CONVERSION TABLE

If center column value is °F, the °C equivalent is to the left. If center column value is °C, the °F equivalent is to the right.

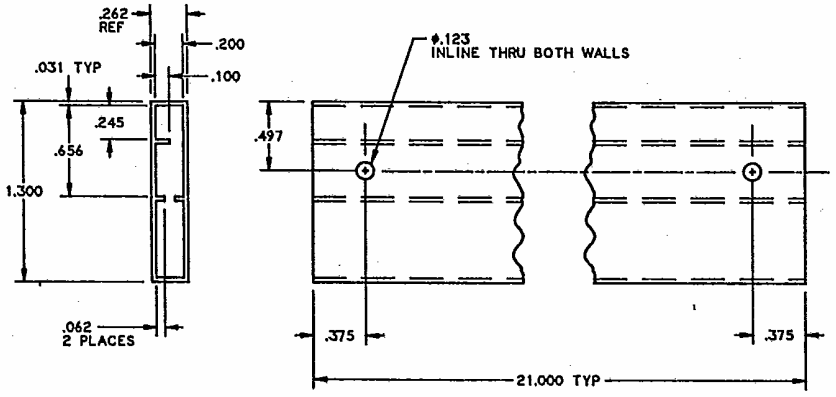
°C.		°F.	°C.		°F.	°C.		°F.	°C.		°F.	°C.		°F.	°C.		°F.
-34.44	-30	-22	15.56	60	140	65.56	150	302	115.56	240	464	165.56	330	626	215.56	420	788	257.22	495	923
-33.89	-29	-20.2	16.11	61	141.8	66.11	151	303.8	116.11	241	465.8	166.11	331	627.8	216.11	421	789.8	257.78	496	924.8
-33.33	-28	-18.4	16.67	62	143.6	66.67	152	305.6	116.67	242	467.6	166.67	332	629.6	216.67	422	791.6	258.33	497	926.6
-32.78	-27	-16.6	17.22	63	145.4	67.22	153	307.4	117.22	243	469.4	167.22	333	631.4	217.22	423	793.4	258.89	498	928.4
-32.22	-26	-14.8	17.78	64	147.2	67.78	154	309.2	117.78	244	471.2	167.78	334	633.2	217.78	424	795.2	259.44	499	930.2
-31.67	-25	-13	18.33	65	149	68.33	155	311	118.33	245	473	168.33	335	635	218.33	425	797	260	500	932
-31.11	-24	-11.2	18.89	66	150.8	68.89	156	312.8	118.89	246	474.8	168.89	336	636.8	218.89	426	798.8	260.56	501	933.8
-30.56	-23	-9.4	19.44	67	152.6	69.44	157	314.6	119.44	247	476.6	169.44	337	638.6	219.44	427	800.6	261.11	502	935.6
-30	-22	-7.6	20	68	154.4	70	158	316.4	120	248	478.4	170	338	640.4	220	428	802.4	261.67	503	937.4
-29.44	-21	-5.8	20.56	69	156.2	70.56	159	318.2	120.56	249	480.2	170.56	339	642.2	220.56	429	804.2	262.22	504	939.2
-28.89	-20	-4	21.11	70	158	71.11	160	320	121.11	250	482	171.11	340	644	221.11	430	806	262.78	505	941
-28.33	-19	-2.2	21.67	71	159.8	71.67	161	321.8	121.67	251	483.8	171.67	341	645.8	221.67	431	807.8	263.33	506	942.8
-27.78	-18	-0.4	22.22	72	161.6	72.22	162	323.6	122.22	252	485.6	172.22	342	647.6	222.22	432	809.6	263.89	507	944.6
-27.22	17	-1.4	22.78	73	163.4	72.78	163	325.4	122.78	253	487.4	172.78	343	649.4	222.78	433	811.4	264.44	508	946.4
-26.67	-16	-3.2	23.33	74	165.2	73.33	164	327.2	123.33	254	489.2	173.33	344	651.2	223.33	434	813.2	265	509	948.2
-26.11	-15	5	23.89	75	167	73.89	165	329	123.89	255	491	173.89	345	653	223.89	435	815	265.56	510	950
-25.56	-14	6.8	24.44	76	168.8	74.44	166	330.8	124.44	256	492.8	174.44	346	654.8	224.44	436	816.8	266.11	511	951.8
-25	-13	8.6	25	77	170.6	75	167	332.6	125	257	494.6	175	347	656.6	225	437	818.6	266.67	512	953.6
-24.44	-12	10.4	25.56	78	172.4	75.56	168	334.4	125.56	258	496.4	175.56	348	658.4	225.56	438	820.4	267.22	513	955.4
-23.89	-11	12.2	26.11	79	174.2	76.11	169	336.2	126.11	259	498.2	176.11	349	660.2	226.11	439	822.2	267.78	514	957.2
-23.33	-10	14	26.67	80	176	76.67	170	338	126.67	260	500	176.67	350	662	226.67	440	824	268.33	515	959
-22.78	-9	15.8	27.22	81	177.8	77.22	171	339.8	127.22	261	501.8	177.22	351	663.8	227.22	441	825.8	268.89	516	960.8
-22.22	-8	17.6	27.78	82	179.6	77.78	172	341.6	127.78	262	503.6	177.78	352	665.6	227.78	442	827.6	269.44	517	962.6
-21.67	-7	19.4	28.33	83	181.4	78.33	173	343.4	128.33	263	505.4	178.33	353	667.4	228.33	443	829.4	270	518	964.4
-21.11	-6	21.2	28.89	84	183.2	78.89	174	345.2	128.89	264	507.2	178.89	354	669.2	228.89	444	831.2	270.56	519	966.2
-20.56	-5	23	29.44	85	185	79.44	175	347	129.44	265	509	179.44	355	671	229.44	445	833	271.11	520	968
-20	-4	24.8	30	86	186.8	80	176	348.8	130	266	510.8	180	356	672.8	230	446	834.8	271.67	521	969.8
-19.44	-3	26.6	30.56	87	188.6	80.56	177	350.6	130.56	267	512.6	180.56	357	674.6	230.56	447	836.6	272.22	522	971.6
-18.89	-2	28.4	31.11	88	190.4	81.11	178	352.4	131.11	268	514.4	181.11	358	676.4	231.11	448	838.4	272.78	523	973.4
-18.33	-1	30.2	31.67	89	192.2	81.67	179	354.2	131.67	269	516.2	181.67	359	678.2	231.67	449	840.2	273.33	524	975.2
-17.78	0	32	32.22	90	194	82.22	180	356	132.22	270	518	182.22	360	680	232.22	450	842	273.89	525	977
-17.22	1	33.8	32.78	91	195.8	82.78	181	357.8	132.78	271	519.8	182.78	361	681.8	232.78	451	843.8	274.44	526	978.8
-16.67	2	35.6	33.33	92	197.6	83.33	182	359.6	133.33	272	521.6	183.33	362	683.6	233.33	452	845.6	275	527	980.6
-16.11	3	37.4	33.89	93	199.4	83.89	183	361.4	133.89	273	523.4	183.89	363	685.4	233.89	453	847.4	275.56	528	982.4
-15.56	4	39.2	34.44	94	201.2	84.44	184	363.2	134.44	274	525.2	184.44	364	687.2	234.44	454	849.2	276.11	529	984.2
-15	5	41	35	95	203	85	185	365	135	275	527	185	365	689	235	455	851	276.67	530	986
-14.44	6	42.8	35.56	96	204.8	85.56	186	366.8	135.56	276	528.8	188.56	366	690.8	235.56	456	852.8	277.22	531	987.8
-13.89	7	44.6	36.11	97	206.6	86.11	187	368.6	136.11	277	530.6	186.11	367	692.6	236.11	457	854.6	277.78	532	989.6
-13.33	8	46.4	36.67	98	208.4	86.67	188	370.4	136.67	278	532.4	186.67	368	694.4	236.67	458	856.4	278.33	533	991.4
-12.78	9	48.2	37.22	99	210.2	87.22	189	372.2	137.22	279	534.2	187.22	369	696.2	237.22	459	858.2	278.89	534	993.2
-12.22	10	50	37.78	100	212	87.78	190	374	137.78	280	536	187.78	370	698	237.78	460	860	279.44	535	995
-11.67	11	51.8	38.33	101	213.8	88.33	191	375.8	138.33	281	537.8	188.33	371	699.8	238.33	461	861.8	280	536	996.8
-11.11	12	53.6	38.89	102	215.6	88.89	192	377.6	138.89	282	539.6	188.89	372	701.6	238.89	462	863.6	280.56	537	998.6
-10.56	13	55.4	39.44	103	217.4	89.44	193	379.4	139.44	283	541.4	189.44	373	703.4	239.44	463	865.4	281.11	538	1000.4
-10	14	57.2	40	104	219.2	90	194	381.2	140	284	543.2	190	374	705.2	240	464	867.2	281.67	539	1002.2
-9.44	15	59	40.56	105	221	90.56	195	383	140.56	285	545	190.56	375	707	240.56	465	869	282.22	540	1004
-8.89	16	60.8	41.11	106	222.8	91.11	196	384.8	141.11	286	546.8	191.11	376	708.8	241.11	466	870.8	282.78	541	1005.8
-8.33	17	62.6	41.67	107	224.6	91.67	197	386.6	141.67	287	548.6	191.67	377	710.6	241.67	467	872.6	283.33	542	1007.6
-7.78	18	64.4	42.22	108	226.4	92.22	198	388.4	142.22	288	550.4	192.22	378	712.4	242.22	468	874.4	283.89	543	1009.4
-7.22	19	66.2	42.78	109	228.2	92.78	199	390.2	142.78	289	552.2	192.78	379	714.2	242.78	469	876.2	284.44	544	1011.2
-6.67	20	68	43.33	110	230	93.33	200	392	143.33	290	554	193.33	380	716	243.33	470	878	285	545	1013
-6.11	21	69.8	43.89	111	231.8	93.89	201	393.8	143.89	291	555.8	193.89	381	717.8	243.89	471	879.8	285.56	546	1014.8
-5.56	22	71.6	44.44	112	233.6	94.44	202	395.6	144.44	292	557.6	194.44	382	719.6	244.44	472	881.6	286.11	547	1016.6
-5	23	73.4	45	113	235.4	95	203	397.4	145	293	559.4	195	383	721.4	245	473	883.4	286.67	548	1018.4
-4.44	24	75.2	45.56	114	237.2	95.56	204	399.2	145.56	294	561.2	195.56	384	723.2	245.56	474	885.2	287.22	549	1020.2
-3.89	25	77	46.11	115	239	96.11	205	401	146.11	295	563	196.11	385	725	246.11	475	887	287.78	550	1022
-3.33	26	78.8	46.67	116	240.8	96.67	206	402.8	146.67	296	564.8	196.67	386	726.8	246.67	476	888.8	288.33	551	1023.8
-2.78	27	80.6	47.22	117	242.6	97.22	207	404.6	147.22	297	566.6	197.22	387	728.6	247.22	477	890.6	288.89	552	1025.6
-2.22	28	82.4	47.78	118	244.4	97.78	208	406.4	147.78	298	568.4	197.78	388	730.4	247.78	478	892.4	289.44	553	1027.4
-1.67	29	84.2	48.33	119	246.2	98.33	209	408.2	148.33	299	570.2	198.33	389	732.2	248.33	479	894.2	290	554	1029.2
-1.11	30	86	48.89	120	248	98.89	210	410	148.89	300	572	198.89	390	734	248.89	480	896	290.56	555	1031
-0.56	31	87.8	49.44	121	249.8	99.44	211	411.8	149.44	301	573.8	199.44	391	735.8	249.44	481	897.8	291.11	556	1032.8
0	32	89.6	50	122	251.6	100	212	413.6	150	302	575.6	200	392	737.6	250	482	899.6	291.67	557	1034.6
.56	33	91.4	50.56	123	253.4	100.56	213	415.4	150.56	303	577.4	200.56	393	739.4	250.56	483	901.4	292.22	558	1036.4
1.11	34	93.2	51.11	124	255.2	101.11	214	417.2	151.11	304	579.2	201.11	394	741.2	251.11	484	903.2	292.78	559	1038.2
1.67	35	95	51.67	125	257	101.67	215	419	151.67	305	581	201.67	395	743	251.67	485	905	293.33	560	1040
2.22	36	96.8	52.22	126	258.8	102.22	216	420.8	152.22	306	582.8	202.22	396	744.8	252.22	486	906.8	293.89	561	1041.8
2.78	37	98.6	52.78	127	260.6	102.78	217	422.6	152.78	307	584.6	202.78	397	746.6	252.78	487	908.6	294.44	562	1043.6
3.33	38	100.4	53.33	128	262.4	103.33	218	424.4	153.33	308	586.4	203.33	398	748.4	253.33	488	910.4	295	563	1045.4
3.89	39	102.2	53.89	129	264.2	103.89	219	426.2	153.89	309	588.2	203.89	399	750.2	253.89	489	912.2	295.56	564	1047.2
4.44	40	104	54.44	130	266	104.44	220	428	154.44	310	590	204.44	400	752	254.44	490	914	296.11	565	1049
5	41	105.8	55	131	267.8	105	221	429.8	155	311	591.8	205	401	753.8	255	491	915.8	296.67	566	1050.8
5.56	42	107.6	55.56	132	269.6	105.56	222	431.6	155.56	312	593.6	205.56	402	755.6	255.56	492	917.6	297.22	567	1052.6
6.11	43	109.4	56.11	133	271.4	106.11	223	433.4	156.11	313	595.4	206.11	403	757.4	256.11	493	919.4	297.78	568	1054.4
6.67	44	111.2	56.67	134	273.2	106.67	224	435.2	156.67	314	597.2	206.67	404	759.2	256.67	494	921.2	298.33	569	1056.2
7.22	45	113	57.22	135	275	107.22	225	437	157.22	315	599	207.22	405	761						
7.78	46	114.8	57.78	136	276.8	107.78	226	438.8	157.78	316	600.8	207.78	406	762.8						
8.33	47	116.6	58.33	137	278.6	108.33	227	440.6	158.33	317	602.6	208.33	407	764.6						
8.89	48	118.4	58.89	138	280.4	108.89	228	442.4	158.89	318	604.4	208.89	408	766.4						
9.44	49	120.2	59.44	139	282.2	109.44	229	444.2	159.44	319	606.2	209.44	409	768.2						
10	50	122	60	140	284	110	230	446	160	320	608	210	410	770						
10.56	51	123.8	60.56	141	285.8	110.56	231	447.8	160.56	321	609.8	210.56	411	771.8						
11.11	52	125.6	61.11	142	287.6	111.11	232	449.6	161.11	322	611.6	211.11	412	773.6						
11.67	53	127.4	61.67	143	289.4	111.67	233	451.4	161.67	323	613.4	211.67	413	775.4						
12.22	54	129.2	62.22	144	291.2	112.22	234	453.2	162.22	324	615.2	212.22	414	777.2						
12.78	55	131	62.78	145	293	112.78	235	455	162.78	325	617	212.78	415	779						
13.33	56	132.8	63.33	146	294.8	113.33	236	456.8	163.33	326	618.8	213.33	416	780.8						
13.89	57	134.6	63.89	147	296.6	113.89	237	458.6	163.89	327	620.6	213.89	417	782.6						
14.44	58	136.4	64.44	148	298.4	114.44	238	460.4	164.44	328	622.4	214.44	418	784.4						
15	59	138.2	65	149	300.2	115	239	462.2	165	329	624.2	215	419	786.2						

Tolerance Scale

°C.		°F.	°C.		°F.
0.56	1	1.8	7.78	14	25.2
1.11	2	3.6	8.34	15	27.0
1.67	3	5.4	8.89	16	28.8
2.22	4	7.2	9.45	17	30.6
2.78	5	9.0	10.00	18	32.4
3.33	6	10.8	10.56	19	34.2
3.89	7	12.6	11.11	20	36.0
4.44	8	14.4	11.67	21	37.8
5.00	9	16.2	12.22	22	39.6
5.56	10	18.0	12.78	23	41.4
6.11	11	19.8	13.34	24	43.2
6.67	12	21.6	13.89	25	45.0
7.22	13	23.4			

Packaging: (standard)
All samples and production orders will be shipped in plastic, industry standard shipping tubes.

Information subject to change without notice.



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