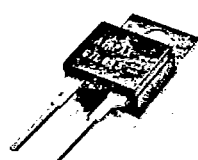


## 6700 Series Thermostats

### 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:

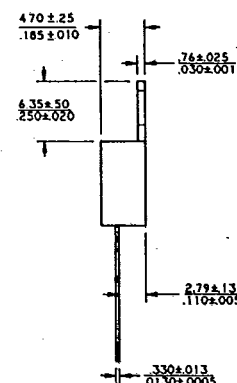
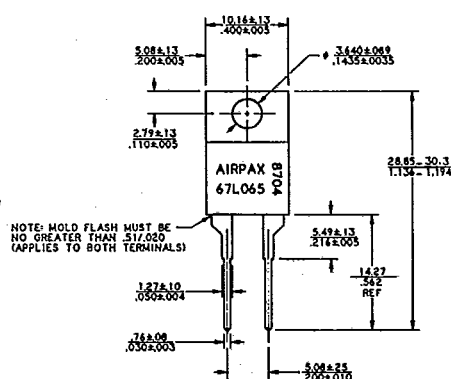
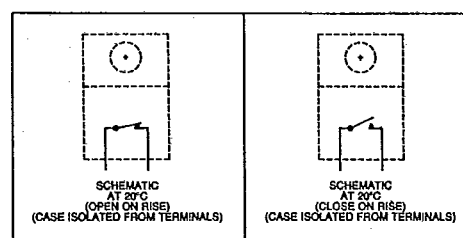
| Cycles  | Voltage | Amps (Resistive) |
|---------|---------|------------------|
| 30,000  | 48 VDC  | 1                |
| 30,000  | 120 VAC | 1                |
| 100,000 | 5 VDC   | .020             |
| 100,000 | 5 VDC   | .001             |

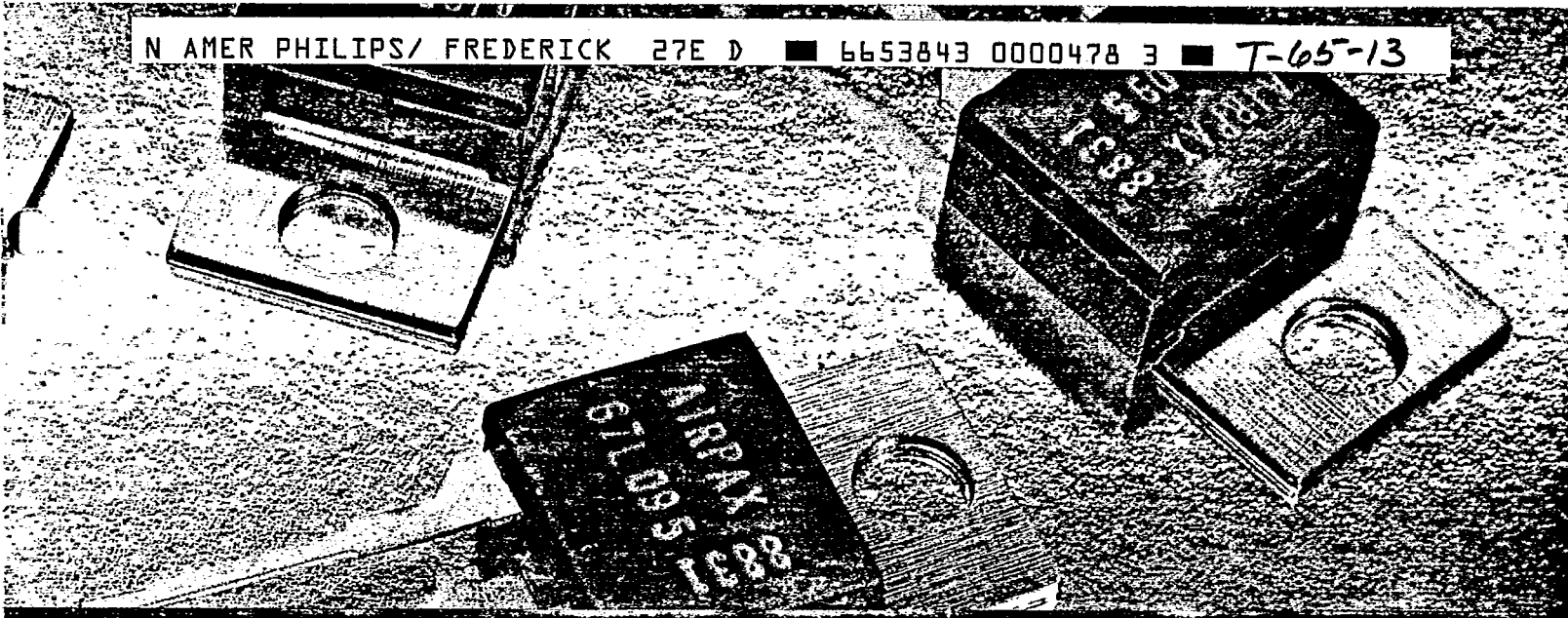
**Contact Operations:** Either open on rise or close on rise

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

**Standard Operating Temperature Tolerance:**  $\pm 5^\circ\text{C}$  ( $\pm 9^\circ\text{F}$ ) Nominal operating temperature settings in  $5^\circ\text{C}$  ( $9^\circ\text{F}$ ) 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:** \_\_\_\_\_

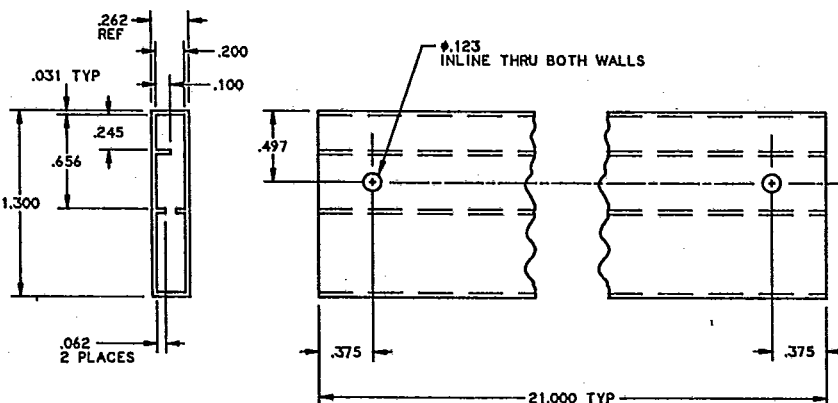
F = Fan (CLR)  
L = Limit (OPR)

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.

| °C.    |     |       |       | °F. |       |       |     | °C.   |        |     |       | °F.    |     |       |        | °C. |       |        |     | °F.   |  |  |  | °C. |  |  |  | °F. |  |  |  |
|--------|-----|-------|-------|-----|-------|-------|-----|-------|--------|-----|-------|--------|-----|-------|--------|-----|-------|--------|-----|-------|--|--|--|-----|--|--|--|-----|--|--|--|
| -34.44 | -30 | -22   | 15.56 | 60  | 140   | 65.56 | 150 | 302   | 115.56 | 240 | 484   | 165.56 | 330 | 628   | 215.56 | 420 | 788   | 257.22 | 495 | 923   |  |  |  |     |  |  |  |     |  |  |  |
| -33.89 | -28 | -20   | 16.11 | 61  | 141.8 | 66.11 | 151 | 303.8 | 116.11 | 241 | 485.8 | 166.11 | 331 | 629.8 | 216.11 | 421 | 789.8 | 257.78 | 496 | 924.8 |  |  |  |     |  |  |  |     |  |  |  |
| -33.33 | -26 | -18   | 16.67 | 62  | 142.6 | 66.67 | 152 | 305.6 | 116.67 | 242 | 487.6 | 166.67 | 332 | 631.6 | 216.67 | 422 | 791.6 | 258.33 | 497 | 926.6 |  |  |  |     |  |  |  |     |  |  |  |
| -32.78 | -24 | -16   | 17.22 | 63  | 143.4 | 67.22 | 153 | 307.4 | 117.22 | 243 | 489.4 | 167.22 | 333 | 633.4 | 217.22 | 423 | 793.4 | 258.89 | 498 | 928.6 |  |  |  |     |  |  |  |     |  |  |  |
| -32.22 | -22 | -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 | -20 | -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 | -18 | -11.2 | 18.89 | 66  | 150.8 | 68.89 | 156 | 312.8 | 118.89 | 246 | 474.8 | 168.89 | 336 | 636   | 218.89 | 426 | 798.8 | 260.56 | 501 | 933.8 |  |  |  |     |  |  |  |     |  |  |  |
| -30.56 | -16 | -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 | 935.8 |  |  |  |     |  |  |  |     |  |  |  |
| -30    | -14 | -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 | -12 | -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 | -10 | -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 | -8  | -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 | -6  | -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 | -4  | 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 | -2  | 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 |       |        |     |       |        |     |       |        |     |       |        |     |       |  |  |  |     |  |  |  |     |  |  |  |



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

Information subject to change without notice.

# AIRPAX

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