Encapsulated Thermostats for Electronics

F20-E06
Formerly Called F11-E06

ADVANTAGES
The miniature size, high switching capability and versatility of its contacts make the JEDEC TO-220 compatible device ideal for printed circuit board mounting. The F20-E06 is epoxy sealed to withstand wave soldering and board washing operations.

APPLICATIONS
The F20-E06 is ideal to sense the temperature of a surface or of stagnant air in an enclosure and can be supplied for mounting on a printed circuit board or with flexible wire leads for remote installation. Its high temperature resistance and high dielectric strength make it the favored device for protecting heatsinks. Heat sensitive semiconductors and other valuable equipment can be saved from thermal damage by shutting down the power or simply turning on a fan.

DESCRIPTION
The CANTHERM F20-E06 has been designed to protect today’s technology and meet the requirements of tomorrow’s innovations. The F20 snap action bimetallic element will respond rapidly and accurately to changes in the temperature of the surface to which it is mounted or the air temperature in an enclosure. The single pole, single throw contacts can be configured as either normally open or normally closed, operating on rise in temperature. The average automatic reset will occur at a temperature approximately 20 - 25C below the calibrated set point.

The housing has been designed for demanding conditions such as high continuous temperatures and high voltage electrical isolation. The PC version is supplied with TO-220 style stamped lead-frame leads and are shipped in a 50 piece plastic magazine for ease of insertion and handling.

OPERATING TEMPERATURES
The F20-E06 is available from 65ºC to 160ºC with either normally closed or normally open contacts. Increments are 5ºC and standard tolerance is ±5ºC.

CONNECTIONS
The F20-E06 is available for PC board mount or a variety of flexible wire leads. Standard leads are 6", 24 AWG UL Black up to 3398 150ºC and UL1180 Teflon up to the maximum temperature. ADD “-PC” to the part number for solid pins or specify flexible lead type. Other wire types, gauges and lead lengths available upon request.
CURRENT SENSIVITY
The thermostats are not current sensitive at rated currents. At loads above the rated values, up to maximum loading there is self-heating of the current carrying contacts.
* When N/O contacts are closed, self heating will occur at currents exceeding normal rating. It is possible that, given certain combinations of set temperature current & ambient temperature, the contacts will not reset.
** Wire insulation must be appropriate

INSULATION RESISTANCE
Leads to Earth 2500 V @ 25°C
1500 V @ 100°C
On request (Requires special testing) up to 4000 V eff. AC @ 200°C
Across open contacts, dependent on response temperature 500 V eff. AC

RESPONSE TEMPERATURES, TOLERANCE
Temperature stepped in 5°C increments. Special switch-off and reset temperatures available on request. Rate of temperature rise from 0.1° C/min. to max. 1.0° C/min. Insulation of the housing will slow down the cutout’s response.

QUALITY ASSURANCE
Housing material - PPS (UL 94 V-0)
Contacts - Silver plated
MTBF - 10,000 cycles at rated current and voltage
Minimum switching current 50ma
Random sample quality testing
Function test to AQL 1.0
Nominal response temperature AQL 1.0
Measurement tolerance ±2°C AQL 4.0
Other values AQL 4.0
Thermal conductivity - 4.0 BTU ln/hr/Ft²/°F

MARKING
F20 A
B = N/O
E06 Housing
12505 Response Temperature & Tolerance 125°C, ±5K
0409C Date Code & Factory April 2009, Country Canada

ORDERING INFORMATION
<table>
<thead>
<tr>
<th>Quantity</th>
<th>Type</th>
<th>Version</th>
<th>Response Temp.</th>
<th>Tolerance</th>
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<tbody>
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<td>F20</td>
<td>A or B</td>
<td>125°C</td>
<td>05</td>
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We reserve the right to change specifications without prior notice. ADD - PC to part number for PC lead frame leads.

Typical PC P/N = F20A125053600060
With Leads P/N = F20A12505ACFA06E

UL E46827
VDE 4523-4510-1015
It is the responsibility of the customer to ensure that the devices described above are used in a safe manner and within published parameters.