Controls
Temperature Controlling Devices

Snap-Action Thermostat
Bulb and Capillary

Features
- Liquid filled bulb and capillary, non-indicating adjustable range thermostat.
- 72” capillary length.
- Panel Mount.
- Rating – 20 AMP at 120V or 240V.
- Temperature Range: 32°F(0°C) - 572°F (300°C)
- 2½ % Differential
Catalog Number: AC602021HCT1
### Surface Mount Thermostat

**Features**
- Small size: 2” X ½” X ¾”.
- Economical.
- Sensitive and accurate.
- Fast response.
- Adjustable through temperature range with stop tab to prevent setting in excess of limits.
- Stainless steel shell.
- Mounting bracket included.
- Contacts open on temperature rise.
- 10 amps @ 120 VAC, 5 amps @ 240 VAC.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Range</th>
<th>Approx. F/Full Turn Adj. Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>30000-0</td>
<td>50˚ to 300˚F</td>
<td>250˚F</td>
</tr>
<tr>
<td>30000-48</td>
<td>85˚ to 250˚F</td>
<td>175˚F</td>
</tr>
<tr>
<td>30002-0</td>
<td>50˚ to 600˚F</td>
<td>575˚F</td>
</tr>
</tbody>
</table>

### Cartridge Thermostat

**Features**
- Fast response.
- Extreme sensitivity of 0.1˚F.
- Vibration resistance.
- Adjustable through temperature range with optional locking device.
- Close control.
- 10 amps @ 120 VAC, 5 amps @ 240 VAC.
- Locating pin prevents unit from turning when adjusting temperature (pin is removable).

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Sheath Material</th>
<th>Range</th>
<th>Approx. F/Full Turn Adj. Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>17002-0</td>
<td>St. Steel</td>
<td>-100˚ to 400˚F</td>
<td>110˚F</td>
</tr>
</tbody>
</table>
## Controls
### Temperature Controlling Devices

#### Hex Head

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Shell and Head</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>17100-0</td>
<td>¾” X 4 ½”</td>
<td>-100˚ to 400˚F</td>
</tr>
<tr>
<td>17102-0</td>
<td>St. St. Shell</td>
<td>-100˚ to 600˚F</td>
</tr>
</tbody>
</table>

#### Coupling Head

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Shell and Head</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>18000-0</td>
<td>¾” X 4 ½”</td>
<td>-100˚ to 400˚F</td>
</tr>
<tr>
<td>18002-0</td>
<td>St. St. Shell</td>
<td>-100˚ to 600˚F</td>
</tr>
</tbody>
</table>

#### Flange Head

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Shell and Head</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>17300-0</td>
<td>¾” X 4 ½”</td>
<td>-100˚ to 400˚F</td>
</tr>
<tr>
<td>17302-0</td>
<td>St. St. Shell</td>
<td>-100˚ to 600˚F</td>
</tr>
</tbody>
</table>
Series 100, Sub-Panel-Thermocouple Temperature Controller

Description
The Series 100 controller was designed for general purpose commercial and industrial temperature regulating applications. The latest solid state technology and an innovative modular packaging concept has produced a uniquely flexible family of controllers. Low cost, a choice of many standard features and fast delivery make this series of controllers equally to both the OEM and the end users.

Features
• 120/240 VAC power input.
• Power and load lamps.
• Adjustable span and offset.
• Adjustable bandwidth or hysteresis.
• Process and set point display capability.
• Triac output.
• Proportioning
• 24 V to drive solid state relay.
• Designed to UL and CSA standards.

Specifications
• Power Input: 115/230VAC ± 10%, 50/60Hz (field selectable); 24VAC ± 10% optional.
• Sensor: Thermocouple, type J.
• Setpoint Range: 0°F to 1000°F.
• Control Modes: Proportioning with adjustable Bandwidth (1°C to 10°C) and cycle rate of 2 sec for Triac or 10 sec for relay outputs.
• Setpoint Adjustment: Local Potentiometer.
• Control Accuracy: Typically better that 0.5% of range.
• Control Stability: Typically better than ± 1°C with ± 10°C change in ambient temperature or ± 10% change in line voltage.
• Sensor Fault Protection: Open sensor causes output to de-energize (Thermocouple).
• Operating Ambient temperature: 0°C to 55°C (32°F to 130°F).

How To Order
Specify catalog numbers as follows:
- 10 Amp Triac Cat. No. AC100-2A040-JT03
- 28 VDC output to drive SSR Cat. No. AC100-2A090-JT03
Controls
Temperature Controlling Devices

Series 120R, Panel Mounting, Solid State Temperature Controller

Description
The Series 120R controller is an economical alternative to the fluid filled (bulb and capillary) type thermostat for any application which could benefit from the improved performance and reliability of an electronic temperature control. Its compact, completely enclosed construction with industry standard mounting, integral setpoint, high current output capability and wide variety of sensor configurations, make this controller an ideal choice to replace mechanical thermostats in many industrial and commercial applications.

Features
• 115/230 VAC power inputs.
• UL class 2 low voltage sensor circuit.
• Completely enclosed design.
• UL recognized (file no. E105669).
• 24 volts to drive SSR.

Advantages Over Bulb & Cap Thermostat
• Faster response.
• Better accuracy and sensitivity.

Specifications
• Power Input: 115/230VAC ± 15%, 50/60Hz (field selection).
• Control Mode: On-off with 2°F hysteresis typical.
• Setpoint Range: 0˚ - 500˚F
• Setpoint Accuracy: Typically better than 1% of span.
• Setpoint Stability: Typically better that ± 1°F over allowable operating ambient temperature or with ± 10% line voltage variation.
• Sensor: Type J thermocouple
• Sensor Fault Protection: Open or shorted sensor causes output to de-energize.
• Operating Ambient Temperature: 0˚C to 70˚C (32˚ to 158˚F).

How To Order
Specify catalog number as follows:
AC120R-D38-JT02


**Controls**

Digital Indicating Temperature controller

Model 16A 2123, Mini 1/16 DIN Thermocouple Sensing

**In Stock Items**

**Specifications**

- **Selectable Inputs:** Thermocouple, RTD, DC voltage, or DC current selectable
- **Input Impedance:**
  - Thermocouple = 3 megohms minimum
  - Current = 10 ohms
  - RTD current = 200µA
  - Voltage = 5000ohms
- **Sensor Break Protection:** User determines control output to protect system after customer set time
- **Display:** Two 4 digit, 7 segment .30” high LEDs
- **Control Action:** Reverse (usually heating) Direct (usually cooling) selectable
- **Proportional Band:** 1 to 9999˚F, ˚C, or counts
- **Reset Time:** (Integral): Off or .1 to 99.9 minutes
- **Rate Time:** (Derivative): Off or .01 to 99.99 minutes
- **Cycle Rate:** 1 to 80 seconds
- **On-Off Differential:** Adjustable 1°F, 1°C or 1 count to full scale in 1°F, 1°C, or 1 count steps
- **Alarm On-Off Differential:** 1°F, 1°C, or 1 count
- **Accuracy:** ± .25% of span, ± 1 least significant digit
- **Supply Voltage:** 100 to 240 VAC, nominal., +10-15%, 50 to 400 Hz.
  single phase; 132 to 240 VDC, nominal., + 10-20%
- **Power Consumption:** 5VA maximum
- **Operating Temperature:** -10 to +55˚C (+14 to 131˚F)
- **Storage Temperature:** -40 to +80˚C (-40 to 176˚F)
- **Control Output Ratings:**
  - Relay: SPDT, 3 A @ 240 VAC resistive; 1.5 A @ 240 VAC inductive;
  Pilot duty rating: 250 VA 2 A @ 120 VAC or 1A @ 240 VAC
  - Alarm Relay: SPST, 3 A @ 240 VAC resistive;
  1.5 A @ 240 VAC inductive; Pollit duty rating: 240 VA, 2 A @ 120 VAC or 1A @ 240 VAC
  - Switched Voltage (isolated): 15 VDC @ 20 mA
- **Panel Cutout:** 45 mm x 45mm (1.775” x 1.775”)
- **Depth Behind Mounting Surface:** 115.3 mm (4.54”)
- **Weight:** 227 g (8oz)
- **Front Panel Rating:** Type 4X, (IP65)

**How To Order**

To order, specify part number

Model 16 A 2 1 2 3

- **Features**
- **Alarm**
- **Output A**
- **Output B**

2 = Standard 1 = Yes 2 = 15VDC 3 = Relay

Web: www.hotwatt.com Email: sales@hotwatt.com
Controls
Temperature Controlling Devices

Solid State Relays

Features
- 3-32 VDC Input
- 600 volt blocking voltage
- 4000 volt isolation
- Zero voltage turn-on
- Built-in snubber
- 100% tested at rate current
- High surge capability
- U.L. recognized
- C.S.A. certified

Thermocouple Probes Features
- Thermocouples are precise temperature-sensing devices manufactured of the highest grade materials to provide maximum performance and reliability.
- Tip Style: Closed end-grounded.
- Probe size and material: .187” dia., 316 stainless steel.
- Lead wire: 20 gage fiberglass insulated. Standard commercial tolerances of ¾%.
- Thermocouple material and temperature range: Iron/Constantin-type J, 0-1200°F.
- ISA color coded:
  - Iron White
  - Constantin Red with white tracer

3/16” Diameter Cartridge Type

How To Order

Specify Catalog Number per table below

<table>
<thead>
<tr>
<th>Line Volts</th>
<th>Maximum Load Current</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-330 VAC</td>
<td>25 Amps</td>
<td>AC-D1225</td>
</tr>
</tbody>
</table>

Temp Range | Catalog Number | ISA Type |
0°F to 1200°F | HT-111206-001 | J         |

For compression fittings, consult factory.

Coupling Head Type

Temp Range | Catalog Number | ISA Type |
0°F to 1200°F | AC HT-121202-001 | J         |