SURFACE THERMOMETERS

STANDARD DUAL MAGNET MOUNT THERMOMETER

SINGLE OR DUAL MAX-MIN LAZY HANDS

FOUR MAGNET INDUSTRIAL RAILROAD THERMOMETER

FULLY ENCLOSED SURFACE THERMOMETER

DIRECT CONTACT SPOT CHECK®

SPRING HELD PIPE-SURFACE

CLIP-ON PIPE-SURFACE THERMOMETER

MINIATURE SPOT CHECK® THERMOMETER

IR OVEN & SURFACE THERMOMETER

LOW COST DIGITAL THERMOMETERS & PROBES

DIGITAL THERMOMETER WITH PROBE ATTACHED

DIGITAL THERMOCOUPLE THERMOMETER
STANDARD DUAL MAGNET MOUNT

Over one million of these accurate, affordable surface thermometers are in service throughout the world. For more than fifty years PTC® has been manufacturing this series of specialized thermometers.

With many temperature ranges to choose from, the dual magnet surface thermometer is the logical choice for making surface measurements.

Accuracy is ±2% of Full Scale Range
2Ó Diameter x 1/2Ó High
Weighs only 1-1/2 oz.
Select from Fahrenheit or Celsius Ranges
Optional Single or Dual Max-Min Hands
Optional Tab Mounts

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RANGE</th>
<th>DIVISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>312F</td>
<td>0°F to 250°F</td>
<td>2°F</td>
</tr>
<tr>
<td>313F</td>
<td>0°F to 500°F</td>
<td>5°F</td>
</tr>
<tr>
<td>314F</td>
<td>50°F to 750°F</td>
<td>10°F</td>
</tr>
<tr>
<td>315F</td>
<td>0°F to 50°F</td>
<td>1°F</td>
</tr>
<tr>
<td>330F</td>
<td>-100°F to +160°F</td>
<td>2°F</td>
</tr>
<tr>
<td>312C</td>
<td>-20°C to +120°C</td>
<td>1°C</td>
</tr>
<tr>
<td>313C</td>
<td>-20°C to +250°C</td>
<td>2°C</td>
</tr>
<tr>
<td>314C</td>
<td>10°C to 400°C</td>
<td>5°C</td>
</tr>
<tr>
<td>315C</td>
<td>-15°C to +65°C</td>
<td>1°C</td>
</tr>
<tr>
<td>330C</td>
<td>-70°C to +70°C</td>
<td>2°C</td>
</tr>
</tbody>
</table>

SINGLE OR DUAL MAX-MIN LAZY HANDS

SINGLE ANCILLARY HAND
This handy, resettable peak reading hand is available as an accessory on PTC®’s Dual Magnet Mount, Four Magnet Mount, and Tab Mount Surface Thermometers. The ancillary hand is reset by turning the reset knob on the front of the thermometer. A non-impeding magnetic clutch holds the hand in place at either the maximum or minimum temperature reached during a cycle.

DUAL MAX-MIN ANCILLARY HANDS
Max-min hands are available on PTC®’s Dual Magnet Mount, Four Magnet Mount, and Tab Surface Thermometers as an accessory. The max-min hands remain at the highest and lowest temperatures reached until they are reset. Hands are reset by using the reset knob and magnetic wand (Part number 314.5 MM).

Features
- Accuracy is ±2% of Full Scale Range
- 2” Diameter x 1/2” High
- Weighs only 1-1/2 oz.
- Select from Fahrenheit or Celsius Ranges
- Optional Single or Dual Max-Min Hands
- Optional Tab Mounts

Magnetic Wand (Part number 314.5 MM).

Model 312F MM shown above

Model 313F
**Features**

- Accuracy of ±2% of Full Scale Range
- 2” Diameter x 1/2” High
- Weighs only 2 oz.
- Select from Fahrenheit or Celsius Ranges
- Optional Single or Dual Max-Min Hands

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**ON-SURFACE & IN-SURFACE TAB MOUNTED**

Tab mounts can be ordered in place of the standard dual magnets. Two types of tabs are available for these thermometers. Tab 1 is an on-surface mount and Tab 2 is an in-surface type mount. The drawings show both styles of mounting.

For in-surface mounting, a hole 1-1/8” diameter by 1/4” deep needs to be machined in the surface to be measured. Pilot holes also need to be drilled for the tab mounting screws. Both styles of tabs have holes for the screws. When ordering, please specify whether Tab 1 or Tab 2 mounting is required.

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Tab 1 On-Surface Mount  Tab 2 In-Surface Mount

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**Model 350FRR**

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**Model Range Divisions**

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Divisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>350FRR</td>
<td>-20°F to +160°F</td>
<td>2°</td>
</tr>
<tr>
<td>312FRR</td>
<td>0°F to 250°F</td>
<td>2°</td>
</tr>
<tr>
<td>313FRR</td>
<td>0°F to 500°F</td>
<td>5°</td>
</tr>
<tr>
<td>314FRR</td>
<td>50°F to 750°F</td>
<td>10°</td>
</tr>
<tr>
<td>315FRR</td>
<td>0°F to 150°F</td>
<td>1°</td>
</tr>
<tr>
<td>330FRR</td>
<td>-100°F to +160°F</td>
<td>2°</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Divisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>350CRR</td>
<td>-30°C to +70°C</td>
<td>1°</td>
</tr>
<tr>
<td>312CRR</td>
<td>-20°C to +120°C</td>
<td>1°</td>
</tr>
<tr>
<td>313CRR</td>
<td>-20°C to +250°C</td>
<td>2°</td>
</tr>
<tr>
<td>314CRR</td>
<td>10°C to 400°C</td>
<td>5°</td>
</tr>
<tr>
<td>315CRR</td>
<td>-15°C to +65°C</td>
<td>1°</td>
</tr>
<tr>
<td>330CRR</td>
<td>-70°C to +70°C</td>
<td>2°</td>
</tr>
</tbody>
</table>
These handy surface temperature thermometers have served the industry for over fifty years. With their unique design, the bimetal sensor is protected from contaminants and damage from handling. With an accuracy of ±2% of full scale range, these thermometers give fast and accurate temperature measurements with an inexpensive instrument.

**Features**
- Fully Enclosed--Bimetal Protected from Damage
- Accuracy is ±2% of Full Scale Range
- 2” Diameter X 1/2” High
- Weighs only 1 oz.
- Select from Fahrenheit or Celsius Ranges

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RANGE</th>
<th>DIVISIONS</th>
<th>MODEL</th>
<th>RANGE</th>
<th>DIVISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>309F</td>
<td>-50°F to +250°F</td>
<td>2°F</td>
<td>310F</td>
<td>0°F to 300°F</td>
<td>2°F</td>
</tr>
<tr>
<td>311F</td>
<td>70°F to 370°F</td>
<td>2°F</td>
<td>310C</td>
<td>-10°C to +150°C</td>
<td>2°C</td>
</tr>
<tr>
<td>309C</td>
<td>-50°C to +110°C</td>
<td>2°C</td>
<td>311C</td>
<td>20°C to 180°C</td>
<td>2°C</td>
</tr>
</tbody>
</table>

These accessories can be used to attach the thermometer to almost any flat nonhorizontal surface. The magnet & Leaf Spring will hold the thermometer to any magnetic (ferrous) surface. Applying a thin coat of the silicone grease to the back of the thermometer will hold it to a non-magnetic surface.

**ACCESSORIES**

Part No. 310.7 Magnet & Leaf Spring.
Part No. 310.8 Silicone Grease Adhesive.

Cross-section of fully enclosed surface thermometer shown with optional magnet & leaf spring accessory.
Very Fast Response Time

Accuracy is ±2% of Full Scale Range

1-3/4\" Diameter X 1/2\" High

Weighs only 1/2 oz.

Select from Fahrenheit or Celsius Ranges

Optional Dual Max-Min Hands

**Features**

PTC®’s Spot Check® Series of thermometers feature outstanding response and sensitivity. Their extremely low thermal mass and weight (1/2 ounce), along with a unique design, assure intimate contact and a very rapid readout.

The basic thermometer is intended for horizontal or slightly curved surfaces. Three options for this basic model are available:

1. Thermometer with Magnet & Leaf Spring (3 I O.7) for attaching to nonhorizontal ferrous surfaces

2. Thermometer with Max-Min Hands and Magnet & Leaf Spring (3 I O.7)

3. Thermometer with Stainless Steel Dial, Max-Min Hands, and Magnet & Leaf Spring (3 I O.7)
SPRING HELD PIPE-SURFACE THERMOMETER

Features

- For Pipes with O.D.’s of 3/4” and up
- Accuracy is ±2% of Full Scale Range
- 2” Diameter X 1” High
- Weighs only 1-1/2 oz.
- Select from Fahrenheit or Celsius Ranges
- Spring Kit Included with Each Thermometer

Model 483F shown

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RANGE</th>
<th>DIVISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>483F</td>
<td>0°F to 150°F</td>
<td>2°F</td>
</tr>
<tr>
<td>486F</td>
<td>-50°F to +250°F</td>
<td>2°F</td>
</tr>
<tr>
<td>487F</td>
<td>70°F to 370°F</td>
<td>2°F</td>
</tr>
<tr>
<td>488F</td>
<td>70°F to 500°F</td>
<td>5°F</td>
</tr>
</tbody>
</table>

Model 483C shown

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RANGE</th>
<th>DIVISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>483C</td>
<td>-20°C to +70°C</td>
<td>2°C</td>
</tr>
<tr>
<td>486C</td>
<td>-40°C to +120°C</td>
<td>2°C</td>
</tr>
<tr>
<td>487C</td>
<td>20°C to 180°C</td>
<td>2°C</td>
</tr>
<tr>
<td>488C</td>
<td>20°C to 260°C</td>
<td>2°C</td>
</tr>
</tbody>
</table>

These handy pipe-surface thermometers will fit pipes having O.D.’s of 3/4” and up. An included spring kit allows the instrument to be attached to a pipe or cylinder up to 6” in diameter. Additional kits can be ordered and the springs combine to accommodate larger diameters. The spring kit (Part No. 486.84) includes three stainless steel springs 3/4”, 2”, and 4” in length. Clips are also included to attach the springs to the thermometer.

The bimetal sensor is protected from drafts by an insulating cup which also acts as the unit’s base. The cup is made from high-temperature plastic for the lower ranges. Models 488F & 488C have an aluminum insulating cup for higher temperature use (up to 500°F).
Calibrated and designed for pipe-surface temperature measurement, these thermometers can be used on pipes up to 2-3/8\textsuperscript{\textdegree} diameter (3/4\textsuperscript{\textdegree} minimum diameter). For larger diameter pipes, our spring held thermometers are available.

Ease of use and low cost make these instruments indispensable for monitoring pipe temperatures. Thermometers have an accuracy of 2\% of full scale range.

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**CLIP-ON PIPE-SURFACE THERMOMETER**

Model 484 shown with Large, Medium and Small Clip

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**Features**

- Accuracy is 2\% of Full Scale Range
- Snaps Instantly Into Place
- Sizes to Fit 3/4\textsuperscript{\textdegree} to 2-3/8\textsuperscript{\textdegree} O.D. Pipes
- 2\textsuperscript{\textdegree} Diameter X 1\textsuperscript{\textdegree} High
- Weighs Approximately 1 oz.
- Select from Six Temperature Ranges
- Fast Response Time

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**Range**

<table>
<thead>
<tr>
<th>RANGE</th>
<th>DIV.</th>
<th>For Pipe O.D.'s</th>
<th>For Pipe O.D.'s</th>
<th>For Pipe O.D.'s</th>
</tr>
</thead>
<tbody>
<tr>
<td>0\textdegree F to 150\textdegree F</td>
<td>2\textdegree</td>
<td>483FS</td>
<td>483FM</td>
<td>483FL</td>
</tr>
<tr>
<td>-50\textdegree F to +250\textdegree F</td>
<td>2\textdegree</td>
<td>484FS</td>
<td>484FM</td>
<td>484FL</td>
</tr>
<tr>
<td>70\textdegree F to 370\textdegree F</td>
<td>2\textdegree</td>
<td>485FS</td>
<td>485FM</td>
<td>485FL</td>
</tr>
<tr>
<td>-20\textdegree C to +70\textdegree C</td>
<td>2\textdegree</td>
<td>483CS</td>
<td>483CM</td>
<td>483CL</td>
</tr>
<tr>
<td>-40\textdegree C to +120\textdegree C</td>
<td>2\textdegree</td>
<td>484CS</td>
<td>484CM</td>
<td>484CL</td>
</tr>
<tr>
<td>20\textdegree C to 180\textdegree C</td>
<td>2\textdegree</td>
<td>485CS</td>
<td>485CM</td>
<td>485CL</td>
</tr>
</tbody>
</table>
MINIATURE SPOT CHECK® THERMOMETER

These thermometers will measure surface temperatures in a space as small as 1\" x 1\"; with an accuracy of ±2% of full scale range. The small size of these instruments allows minimum "heat-stealing" from the heated surface.

The bimetal sensor is protected from drafts with a cup which also acts as the unit’s base. The bimetal sensor comes in close thermal contact with the surface to be measured, providing the thermometer with a fast response time.

The 675 Series can be used for testing the temperature of electronic parts. An isotherm of an area can be constructed by employing several of these instruments and then plotting the readings.

**Features**

- 3/4” Diameter X 3/8” High
- Weighs only 0.2 oz.
- Accuracy is ±2% of Full Scale Range
- Select from Fahrenheit or Celsius Ranges

### MODEL RANGE DIVISIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RANGE</th>
<th>DIVISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>674F</td>
<td>0°F to 250°F</td>
<td>2°F</td>
</tr>
<tr>
<td>675F</td>
<td>0°F to 500°F</td>
<td>2°F</td>
</tr>
<tr>
<td>676F</td>
<td>50°F to 750°F</td>
<td>10°F</td>
</tr>
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</table>

<table>
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<th>RANGE</th>
<th>DIVISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>674C</td>
<td>0°C to 135°C</td>
<td>5°C</td>
</tr>
<tr>
<td>675C</td>
<td>-20°C to +250°C</td>
<td>5°C</td>
</tr>
<tr>
<td>676C</td>
<td>10°C to 400°C</td>
<td>5°C</td>
</tr>
</tbody>
</table>

Cross-section of thermometer on heated surface.
These I/R thermometers are designed to measure the radiation temperature of a source. Although specifically intended for radiation temperatures, these thermometers will also accurately measure surface temperatures.

Radiation temperatures from sources such as: Calrods, wire and ribbon resistance heating elements, gas operated heat transfer panels, and incandescent lamps can be measured.

These models come with a maximum reading hand, which will retain the highest temperature reached during a cycle.

Features

- I.R. Oven & Surface Thermometer
- Accuracy is ±3% of Full Scale Range
- 1-21/32” Diameter X 9/16” High
- Weighs Approximately 0.2 oz.
- Very Fast Response
- Models 580FM & 580CM Come with Magnet & Leaf Spring
LOW COST DIGITAL THERMOMETER & PROBES

This model features outstanding accuracy and ease of use, combined with durability and low cost. The unit’s display is switchable between °F and °C readouts. Accuracy is ±0.9°F (or ±0.5°C).

The thermometer is sealed against moisture, dirt, and other contaminants. The instrument’s handle and cable can withstand temperatures up to 400°F. Cable length is 32”.

DIGITAL THERMOMETER WITH PROBE ATTACHED

This low cost digital model features interchangeable probes for all applications with a range of -100°F to +1000°F or -120°C to +550°C. Instrument includes a 9-Volt battery which provides up to 2,000 hours of operation. Display is easy to read with 3/8” high numerals.

Chose from four different probe styles: surface (31907-K), air (31903-K), immersion (31901-K), and bare tip (31905-K). Probes are ANSI type K with mini connectors. Probes are not included with the instrument and must be ordered as separate items.

PROBE TYPES MODEL
SURFACE 31907-K
AIR 31903-K
IMMERSION 31901-K
BARE TIP 31905-K

PTC INSTRUMENTS
Model 39658
Interchangeable probes provide versatility for this accurate and durable digital thermometer. The thermometer is switchable from °F or °C readings and the display digits are \( \frac{1}{2} \)" tall, making them very easy to read.

Accuracy is ±1% of reading ±1° over range of -122°F to +1999°F with the instrument itself at room temperature (20°C to 30°C). Three thermocouple types are available and probe styles are listed below.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>-112°F to +1382°F &amp; -80°C to +750°C</td>
</tr>
<tr>
<td>K</td>
<td>-112°F to +1999°F &amp; -80°C to +1100°C</td>
</tr>
<tr>
<td>T</td>
<td>-112°F to +752°F &amp; -80°C to +400°C</td>
</tr>
</tbody>
</table>

Model 38653
Stainless Steel Housing
This digital thermometer is rugged, accurate, and pocket-sized. This thermometer can be switched to read in either °F or °C and can be used with any probe listed below. Display is black-on-silver LCD digits, 0.35" tall. The thermometer weighs only 5 ounces.

Accuracy is ±0.7% of reading ±1°C (1.8°F). Three different ranges are available using Type J, K, or T thermocouples.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>-76°F to +1400°F &amp; -60°C to +760°C</td>
</tr>
<tr>
<td>K</td>
<td>-40°F to +1832°F &amp; -40°C to +1000°C</td>
</tr>
<tr>
<td>T</td>
<td>-76°F to +662°F &amp; -60°C to +350°C</td>
</tr>
</tbody>
</table>

### Probe Types for Model 39658 & 38653 Digital Thermometers

- **1/8" Surface/Immersion Probe - Blunt Tip**
  - Type: 1/8"
  - Length: 1.25" (32 mm)
  - Diameter: 0.125" (3.2 mm)
  - Probe: 48" (1.2 m) extended, 12" (305 mm) retracted

- **Flat Surface Bell Probe**
  - Type: 1/8"
  - Length: 4.5" (114 mm)
  - Diameter: 0.125" (3.2 mm)
  - Probe: 48" (1.2 m) extended, 12" (305 mm) retracted

- **Ceramic Tip Surface Probe**
  - Type: 1/8"
  - Length: 4.25" (108 mm)
  - Diameter: 0.125" (3.2 mm)
  - Probe: 48" (1.2 m) extended, 12" (305 mm) retracted

- **Bare Tip Probe, 48" - Fiberglass Cable**
  - Type: 1/8"
  - Length: 1.25" (32 mm)
  - Diameter: 0.125" (3.2 mm)
  - Probe: 48" (1.2 m) extended, 12" (305 mm) retracted

- **1/8" Diameter Needle Probe - Coiled Cable**
  - Type: 1/8"
  - Length: 1.65" (42 mm)
  - Diameter: 0.125" (3.2 mm)
  - Probe: 48" (1.2 m) extended, 12" (305 mm) retracted

- **High Temperature Probe**
  - Type: 1/8"
  - Length: 3.18" (80 mm)
  - Diameter: 0.125" (3.2 mm)
  - Probe: 50° (1.2 m) extended, 12" (305 mm) retracted

**Model 39658 & 38653**

**STAINLESS STEEL HOUSING**

**DIGITAL THERMOCOUPLE THERMOMETER**

**MODEL 38653**

**DIGITAL THERMOCOUPLE THERMOMETER**

**MODEL 39658**

**DIGITAL THERMOCOUPLE THERMOMETER**

**310-478-1134**
IMMERSION THERMOMETERS

AIR IMMERSION THERMOMETER
Model 819F with optional desk stand

OVEN RECORDING OVEN THERMOMETER
Model 618

STAINLESS STEEL STEM THERMOMETER

AIR IMMERSION WALL THERMOMETER
Model 815F

STAINLESS STEEL
ALL-ANGLE STEM THERMOMETER