Foodservice catalog

Solutions that help you achieve your foodservice goals.

COOPER-ATKINS

Handling food is your business. Helping you do it safely is ours.

Every day, businesses like yours rely on Cooper-Atkins. Our products and expertise assure better temperature monitoring and more energy-efficient operations for foodservice businesses worldwide.

You can rely on us, too. Every product in our versatile range of digital and mechanical solutions helps enhance food safety, improve quality and reduce waste. As part of the Copeland portfolio of brands, Cooper-Atkins is engineered for sustainability.

We're proud of our 135+ years of service to the foodservice industry and the in-depth, practical knowledge that comes with it. Our products withstand the rigors of daily professional use, watch over every step of prep, and monitor critical equipment.

Improve your world

From farm to table

Our refrigeration expertise and targeted temperature management solutions help retain the quality and safety of food during its critical journey from harvest to customer. A growing portfolio of connected devices helps make this simple and allows you to rest easy when it comes to protecting your customers, staff and brand reputation.

When stakes are high

With customer safety and satisfaction on the line, it's important to have solutions that meet your needs. Cooper-Atkins supports HACCP compliance and food quality with:

- ***Time/Temperature Instruments:*** *Our robust selection of loggers, trackers and probing devices is a key component of Copeland's foodservice temperature monitoring expertise.*
- ***Connected Solutions:*** *Our Bluetooth-enabled devices transform food safety. They connect with software to eliminate paper records, delivering actionable results in near real-time.*

A limited manufacturer warranty backs every Cooper-Atkins solution, so you can be confident in your investment.

Cooper-Atkins products deliver reliable results for 27 of the top 30 global foodservice brands. We appreciate the opportunity to put our insights and resources to work for you.

Not sure where to start? Our experts will help you to find your best option. They'll guide you to the right products, customize existing solutions or even assist in creating new ones to meet specific challenges.

Contact your Cooper-Atkins representative to learn more.

To reach full potential

FEATURED PRODUCTS

As a leader in the marketplace, we understand your concerns and proactively listen to our customers. We are always looking to keep ahead of the curve and provide the best tools for our end-users. As a result, we are constantly researching and developing "intelligent" tools that you don't even know you need...yet!

Multi-Function Thermometer

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Transmit temperatures wirelessly to your mobile device

Accurate for Life Digital Thermometers

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Durable, fast response thermocouple for harsh environments

KwikSwitch

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Folding thermocouple features interchangeable Type K probes

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NAFEM ServSafe

POCKET TEST THERMOMETERS

A pocket test thermometer takes the guesswork out of cooking and assures that a safe temperature has been reached to destroy harmful bacteria. With magnifying lens and crisp dial faces or large LCD displays, taking the temperatures of food, liquids, and surfaces are an easy task.

Cooper-Atkins' bimetal pocket test thermometers have an external dimple on the stem to indicate the minimum insertion point. Digitals yield a faster response and provide greater overall accuracy with little to no drift out of calibration, so are less likely to give variable readings.

- Protective pocket sheath
- Magnifying lens for easy viewing

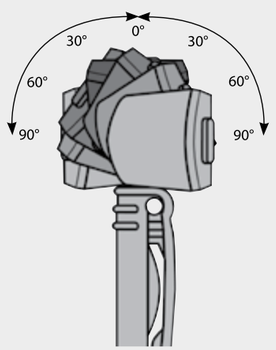
Bimetal

	1246-01(C)	1246-02(C)	1246-03(C)
	Bimetal Pocket Test	Bimetal Pocket Test	Bimetal Pocket Test
Temperature Range:	-40° to 180°F (-40° to 80°C)	0° to 220°F (-20° to 100°C)	50° to 550°F (10° to 285°C)
Accuracy:	±2°F (±1°C)	±2°F (±1°C)	±5°F (±3°C)
Housing Material:	Stainless Steel	Stainless Steel	Stainless Steel
Dial Diameter:	1″ (25 mm)	1″ (25 mm)	1″ (25 mm)
Stem Diameter:	0.150″ (3.0 mm)	0.150″ (3.0 mm)	0.150″ (3.0 mm)
Stem Length:	5″ (127 mm)	5″ (127 mm)	5″ (127 mm)
Lens Material:	Magnifying Polycarbonate	Magnifying Polycarbonate	Magnifying Polycarbonate
Antimicrobial Plastic:	Yes Sheath Only	Yes Sheath Only	Yes Sheath Only
Weight:	0.5 oz (14 g)	0.5 oz (14 g)	0.5 oz (14 g)
Regulatory Listings::	NSF	NSF	NSF
Limited Warranty:	1 Year	1 Year	1 Year

Digital

	DPS300	DT300
	Swivel Head Digital	Oval Style Digital
Temperature Range:	-40° to 302°F (-40° to 150°C)	-40° to 302°F (-40° to 150°C)
Accuracy:	±2°F (±1°C)	±2°F (±1°C)
Resolution:	0.1°	0.1°
Response Time:	<18 seconds	<20 seconds
Stem Length:	4.75″ (121 mm)	4.625″ (117 mm)
Shaft Diameter:	0.150″ (3.8 mm)	0.150″ (3.8 mm)
Housing:	ABS Plastic	ABS Plastic
Power:	(1) 1.5V #LR44	(1) 1.5V #LR44
Auto Shut-Off:	10 min.	-
Display LCD:	0.5″ (13 mm)	0.875″ (22 mm)
Weight:	1 oz (28 g)	0.5 oz (14 g)
Regulatory Listings::	CE RoHS	CE RoHS
Limited Warranty:	1 Year	1 Year

DPS300
Swivel Head Digital
Pocket Test



Adjustable 180° swivel head for easy viewing from any angle

BIMETAL COOKING THERMOMETERS

Our specialty foodservice thermometers are marked with correct temperature zones for food safety and product quality. With a large selection of NSF-listed thermometers specifically for cooking and hot holding, you will get the results you want every time.

- HACCP guidelines
- Stainless steel construction

323 Roasting thermometer preset pointer for accurate measurements

3270 Deep fry thermometer wooden handle and hold / ideal zoned dial

	322	323	329
	Candy/Jelly/ Deep-Fry Thermometer	Roasting Thermometer	Deep-Fry Confection Paddle Thermometer
Temperature Range:	200° to 400°F (90° to 200°C)	120° to 200°F (49° to 93°C)	100° to 400°F (40° to 200°C)
Accuracy:	±5°F (+/- 3C)	±2°F (±1°C)	±2°F (±1°C)
Housing Material:	Stainless Steel	Stainless Steel	Stainless Steel
Dial Diameter:	2.5″ (64 mm)	2.5″ (64 mm)	-
Stem Diameter:	0.19″ (4.8 mm)	0.19″ (4.8 mm)	-
Stem Length:	6″ (152.4 mm) w/ vessel clip	6″ (152 mm)	12.5″ (318 mm)
Lens Material:	Glass	Glass	Non-Toxic Liquid-Filled Glass Tube
Weight:	2 oz (57 g)	2 oz (57 g)	4 oz (113.4 g)
Regulatory Listings:	NSF	NSF	-
Limited Warranty:	1 Year	1 Year	1 Year

	3210	3270
	Grill Surface Thermometer	Deep-Fry Thermometer
Temperature Range:	100° to 600°F (50° to 300°C)	50° to 550°F (10° to 285°C)
Accuracy:	±25°F (±14°C)	±10°F (±6°C)
Housing Material:	Aluminum	Stainless Steel
Dial Diameter:	2.5″ (64 mm)	2.5″ (64 mm)
Stem Diameter:	-	0.25″ (6.3 mm)
Stem Length:	-	15″ (381 mm)
Lens Material:	Glass	Glass
Weight:	3 oz (85 g)	5.5 oz (156 g)
Regulatory Listings:	NSF	-
Limited Warranty:	1 Year	1 Year

3210 Grill surface thermometer with unique grips for easy removal from hot grill surfaces

329 Paddle thermometer with easy-to-grip plastic handle and preset pointers

BIMETAL COOKING THERMOMETERS

Our specialty foodservice thermometers are marked with correct temperature zones for food safety and product quality. With a large selection of NSF-listed thermometers specifically for cooking and hot holding, you will get the results you want every time.

- HACCP guidelines
- Stainless steel construction

2237-04
Make the perfect espresso every time!

	1236-70	2237-04
	Espresso Thermometer	Espresso Thermometer
Temperature Range:	0° to 220°F	0° to 220°F (-10° to 104°C)
Accuracy:	±2°F	±2°F (±1°C)
Housing Material:	Stainless Steel	Stainless Steel
Dial Diameter:	1″ (25 mm)	1.75″ (44 mm)
Stem Diameter:	0.15″ (3.6 mm)	0.15″ (3.8 mm)
Stem Length:	5″ (127 mm)	7″ (178 mm) w/ vessel clip
Lens Material:	Magnifying Polycarbonate	Magnifying Polycarbonate
Weight:	0.5 oz (14 g)	1 oz (28 g)
Regulatory Listings:	NSF	NSF
Limited Warranty:	1 Year	1 Year

	24HP	26HP
	Oven Thermometer	Holding Cabinet Thermometer
Temperature Range:	100° to 600°F (50° to 300°C)	100° to 175°F (38° to 80°C)
Accuracy:	±25°F (14°C)	±3°F (2°C)
Housing Material:	Stainless Steel	Stainless Steel
Dial Diameter:	2″ (50 mm)	2″ (50 mm)
Stem Diameter:	-	-
Stem Length:	-	-
Lens Material:	Glass	Glass
Weight:	1.5 oz (43 g)	1.5 oz (43 g)
Regulatory Listings:	NSF	NSF
Limited Warranty:	1 Year	1 Year

24HP
Voted most reliable oven thermometer by America's Test Kitchen.

REFRIGERATOR AND FREEZER THERMOMETERS

Freezers and coolers protect the freshness of food and ingredients. Temperature systems from small mechanical thermometers that hang or stick inside refrigerated units to more sophisticated panel meters and wireless monitoring are available. Keep constant and accurate temperatures to stay compliant and prevent food spoilage.

- HACCP guidelines
- Food grade plastic

	25HP	330	335	535
	Refrigerator Thermometer	Vertical Glass Tube	Horizontal Glass Tube	Cooler Thermometer
Temperature Range:	-20° to 80°F (-29° to 27°C)	-40° to 120°F (-40° to 50°C)	-40° to 80°F (-40° to 25°C)	-20° to 120°F (-30° to 50°C)
Accuracy:	±2°F (±1°C)	±2°F (±1°C)	±2°F (±1°C)	±5°F (±3°C)
Housing Material:	Stainless Steel	Food Grade Plastic	Stainless Steel	Plastic
Dimensions:	2.375 x 1.5″ x 3″ (60 mm x 38 mm x 76 mm)	0.625 x 0.25″ x 4.25″ (16 mm x 6.4 mm x 108 mm)	4.75 x 0.875″ x 1.125″ (121 mm x 22 mm x 29 mm)	2″ (51 mm)
Lens Material:	Glass	-	Food Grade Polycarbonate	Plastic
Weight:	1.5 oz (43 g)	0.25 oz (7 g)	1 oz (28 g)	0.5 oz (14 g)
Regulatory Listings:	NSF	NSF COMPONENT	NSF	-
Limited Warranty:	1 Year	1 Year	1 Year	1 Year

	2560
	Digital Thermometer
Temperature Range:	-22° to 122°F (-30° to 50°C)
Accuracy:	±1°F (±0.5°C)
Housing Material:	Antimicrobial Plastic
Dimensions:	3.562 x 1.25″ x 3.5″ (90 mm x 32 mm x 89 mm)
Lens Material:	Food Grade Polycarbonate
Weight:	1.5 oz (43 g)
Regulatory Listings:	CE NSF RoHS
Limited Warranty:	1 Year

STORAGE AND WALL

Short-term holding for perishable and potentially hazardous foods must be monitored carefully. Foods in dry storage also require proper monitoring. Our oversized wall thermometers allow easy monitoring of temperatures in critical food-related areas and increase employee awareness.

- HACCP guidelines
- Oversized wall thermometers for easy viewing

	212-150-8	212-159-8	212-159C-8
	12″ Wall w/ Humidity Scale	12″ Cooler/Freeze w/ Humidity Scale	12″ Cooler/Freezer w/ Humidity Scale, Celsius
Temperature Range:	-40° to 120°F (-40° to 50°C)	-10° to 80°F	-25° to 35°C
Accuracy:	±3°F (1.5°C)	±3°F	±1°C
Lens Dimensions:	11.5″ (292 mm)	11.5″ (292 mm)	11.5″ (292 mm)
Lens Material:	Plastic with UV additive	Plastic with UV additive	Plastic with UV additive
Weight:	15 oz (425 g)	15 oz (425 g)	15 oz (425 g)
RH Range:	0 to 100%	0 to 100%	0 to 100%
RH Accuracy:	±5% @ 50 to 99% RH	±5% @ 50 to 99% RH	±5% @ 50 to 99% RH
Limited Warranty:	1 Year	1 Year	1 Year

PANEL METERS

Easily monitor the internal temperature of your coolers and freezers without opening the door. Our NSF-listed panel meters offer an easy solution to reading internal air temperatures, perfect for use in walk-in refrigerators, display cases, holding and specialty cabinets, dairy cases, freezers and more.

- Retro-fit applications
- Remote interior temperature readings

	DM120
	Front Flange, Back Connect
Temperature Range:	-40° to 120°F (-40° to 48°C)
Accuracy:	±2°F (±1°C)
Resolution:	0.1°
Ambient Operating Range:	15° to 150°F up to 90% non-condensing
Response Time:	30 second updates
LCD:	1.3″ x 0.5″ (33 mm x 13 mm)
Lead Length:	39″ (1 m)
Case Material:	Stainless Steel
Case Dimensions:	3.0″ x 1.375″ (76 mm x 27 mm)
Power:	(1) 1.5V #LR754
Mounting:	Front Flange
Weight:	2.5 oz (71 g)
Regulatory Listings:	CE NSF COMPONENT RoHS
Limited Warranty:	1 Year

	6142-20 6142-58	6812-01	7112-01
	Front Flange, Back Connect	Back Flange	Front Flange, Back Connect
Temperature Range:	-40° to 60°F (-40° to 15°C)	-40° to 60°F (-40° to 15°C)	-40° to 60°F (-40° to 15°C)
Accuracy:	±2°F (±1°C) at 10° to 40°F (-12° to 4.5°C)	±2°F (±1°C) at 10° to 40°F (-12° and 4.5°C)	±2°F (±1°C) at 10° to 40°F (-12° to 4.5°C)
Dial Dimension:	2″ (51 mm)	2″ (51 mm)	2.5″ (64 mm)
Capillary Length:	48″ (1.2 m) - 6142-20 20′ (6.1 m) - 6142-58	48″ (1.2 m)	48″ (1.2 m)
Case Material:	Stainless Steel	Stainless Steel	Stainless Steel
Flange:	Front	Back	Front
Connection:	Back	Back	Back
Mounting:	Flush	Surface	Flush
Weight:	5 oz (142 g)	5 oz (142 g)	7 oz (198 g) - 7112-01
Regulatory Listings:	RoHS NSF COMPONENT	RoHS NSF COMPONENT	RoHS NSF COMPONENT
Limited Warranty:	1 Year	1 Year	1 Year

DIGITAL PANEL METERS

Easily monitor the internal temperature of your coolers and freezers without opening the door. Our NSF-listed panel meters offer an easy solution to reading internal air temperatures, perfect for use in walk-in refrigerators, display cases, holding and specialty cabinets, dairy cases, freezers and more. Our digital panel meters are suitable for a wide range of applications.

- Retro-fit applications
- Remote interior temperature readings

	PM120-0-8	SP160-01
	Mini Rectangular, White	Rectangualar Solar
Temperature Range:	-40° to 122°F (-40° to 50°C)	-58° to 158°F (-50° to 70°C)
Accuracy:	±1.8°F (±1°C) from -4° to 122°F (-20° to 50°C) ±3.6°F (±2C°) below -4°F (20°C)	±1°F (0.5°C) from 32° to 122°F (0 to 50°C) ±2°F from -4° to 32°F (-20° to 50°C) ±3.6°F/2°C <-4°F (-20°C) and > 122°F (50°C)
Resolution:	0.1°	0.1°
Ambient Operating Range:	0° to 120°F up to 90% non-condensing	0° to 120°F up to 90% non-condensing
Response Time:	30 seconds	10 second updates
LCD:	1.875″ x 0.625″ (48 mm x 16 mm)	1.4″ x 0.5″ (36 mm x 13 mm)
Lead Length:	39″ (1 m)	48″ (1.2 m)
Case Material:	Polycarbonate	ABS Plastic
Case Dimensions:	2.7″ x 1.4″ x 1.1″ (69 mm x 36 mm x 28 mm)	4.5″ x 1.125″ x .625″ (114 mm x 29 mm x 16 mm)
Power:	(1) 1.5V AA	Solar w/ battery back-up (1) 1.5V AAA
Mounting:	Optional Mounting Flange (Model 9302)	Hangs
Weight:	2 oz (57 g)	3 oz (85 g)
Regulatory Listings:	CE RoHS	CE RoHS
Limited Warranty:	1 Year	1 Year

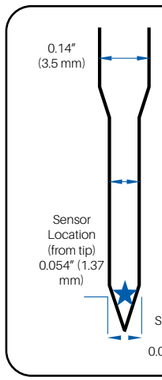
	TRH122M
	Mini Thermometer Hygrometer
Temperature Range:	14° to 122°F (-10° to 50°C)
Accuracy:	±2°F (±1°C)
Humidity:	10% to 99% RH
RH Accuracy:	±5% from 25% to 95% RH
Unit Dimensions:	2.75″ x .75″ x 4.25″ (17 mm x 19 mm x 108 mm)
Resolution:	0.1°
Display - LCD	1.5″ x 0 .5″ (38 mm x 13 mm)
Power:	(1) 1.5V Battery AAA
Mounting:	Hangs
Weight:	3 oz (85 g)
Regulatory Listings:	CE RoHS
Limited Warranty:	1 Year

ACCURATE FOR LIFE DIGITAL THERMOMETERS

Thermistor-based technology has developed over time to produce an inexpensive, accurate and quick-responding digital thermometer. Thermistor instruments can be very accurate within a limited temperature range. Our digital pocket tests will help you obtain readings faster because the thermistor sensor is located in the tip of the stem and they have easy-to-read LCD displays.

- Easy-to-read digital display
- Accurate for Life*
- Quick response time

1. Waterproof IPX7
2. Max/Min and Hold Modes
3. Antimicrobial Plastic
4. Flashing Temperature Alarm
5. °F/°C Selectable
6. Reduced Tip for <6 Second Response Time



★=Thermistor Sensor Location

The tip diameter of our thermometers is 0.046" (1.19 mm) where the thermistor sensor is located. This location is within the FDA Food Code's recommended guidelines.

Not to Scale

* **Accurate for Life** digital thermometers are guaranteed to maintain accuracy specification as set by Cooper-Atkins for a period of 10 years from the date of purchase.

If Cooper-Atkins is unable to successfully calibrate and verify the digital thermometer to accuracy specification as set by us, we will replace the digital thermometer at no cost to the customer. Such replacement shall be provided if no evidence of tampering, mishandling, misuse, neglect, or accidental damage is found on the device as determined by us.

In no event shall Cooper-Atkins be liable for any direct, indirect, or consequential loss or damage sustained by the customer arising from or in connection with this guarantee.

Cooper-Atkins' standard one-year limited warranty, available at https://www.copeland.com/en-us/terms, shall apply in addition to this guarantee.

	DFP450W	DPP400W	DPP800W
	Pocket Test w/ Temperature Alarm	Pen-Style Pocket Test	MAX Pocket Test with Extended Sheath
Temperature Range:	-40° to 450°F (-40° to 232°C)	-40° to 392°F (-40° to 200°C)	-40° to 450°F (-40° to 232°C)
Accuracy:	±2°F (±1°C)	±2°F (±1°C)	±1°F (0.5°C)
Resolution:	0.1°	0.1°	0.1°
Response Time (in liquid):	<6 seconds	<6 seconds	<6 seconds
LCD Display:	0.875" x 0.375 (22 mm x 9.5 mm)	0.975" x 0.25 (22 mm x 6 mm)	1.5" x 0.5 (38 mm x 13 mm)
Stem Length:	4.75" (121 mm)	2.75" (70 mm)	4" (102 mm)
Power:	(1) 1.5V #LR44	(1) 1.5V #LR44	(1) 1.5V #LR44
Battery Life:	500 hours	500 hours	500 hours
Auto Off:	10 min.	10 min.	10 min.
Water Resistance Rating:	IPX7 Dishwasher Safe	IPX7	IPX7 Dishwasher Safe
Regulatory Listings:	CE NSF RoHS	CE NSF RoHS	CE NSF RoHS
Limited Warranty:	1 Year	1 Year	1 Year

INFRARED THERMOMETERS

Non-contact infrared thermometers measure surface temperatures fast. These units are lightweight, ergonomically designed and eliminate cross-contamination during temperature checks. Infrared thermometers are perfect for measuring items in display cases, salad bars, and buffets.

Optical resolution is expressed as a ratio of the distance to the object and the diameter of the temperature measurement area. The larger the ratio number, the better the instrument's resolution, and the smaller the spot size that can be measured. The laser sighting included in some instruments assists in aiming at the measured spot.

- Quickly measure surface temperatures
- Laser sighting
- Prevents cross-contamination

412 Gun-style infrared with thermocouple jack

	412	413-0-1
	Infrared w/ Thermocouple Jack	Infrared w/ Laser & Thermocouple Jack
Temperature Range:	Infrared -76° to 932°F (-60° to 500°C) Type K Thermocouple Jack -83° to 1999°F (-64° to 1400°C)	Infrared -67 to 482°F (-55 to 250°C)
Infrared Accuracy:	Infrared ±4°F (±2°C)	<32°F: ±1.8°F ±0.1° / degree. Between 32° & 59°F: ±1.8°F, between 59° & 95°F: ±1.1°F, between 95° & 149°F: ±1.8°F, >149°F: ±1.5% of reading <0°C: 1.0°C ±0.1° / degree. Between 0° & 15°C: ±1.0°C, between 15° & 35°C: ±0.6°C, between 35° & 65°C: ±1.0°C, >65°C: ±1.5% of reading
Probe Accuracy:	Thermocouple Jack ±2°F (±1°C)	Thermocouple Jack ±1.8°F (-5°C)
Resolution:	0.1°/1° above 200°F	0.1, 1 above 200°F
Ambient Operating Range:	32° to 122°F (0° to 50°C)	32° to 122°F (0° to 50°C)
Laser:	Single Dot	Single Dot
Distance to Spot (D:S):	12:1	12:1
Emissivity:	0.95 default adjustable from 0.10 to 1.0	.95 Fixed
Power:	(2) 1.5V AAA	(2) 1.5V AAA
Battery Life:	180 hours	180 hours
Auto Off:	60 seconds	Yes - IR mode after 15 seconds of non-use: Probe mode after 4 minutes of non-use
Weight:	6 oz (170 g)	6 oz (170 g)
Regulatory Listings:	CE RoHS	CE RoHS
Limited Warranty:	1 Year	2 Years

	470	480
	Mini Infrared	DualTemp Infrared and Probe
Temperature Range:	-27° to 428°F (-33° to 220°C)	Infrared -27° to 428°F (-33° to 220°C) Probe -67° to 626°F (-55° to 330°C)
Infrared Accuracy:	Infrared ±3.6°F (±2°C)	Infrared ±4°F (±2°C)
Probe Accuracy:	-	Thermocouple ±2°F (±1°C)
Resolution:	0.1°/1° above 200°F	0.1°/1°F above 200°F
Ambient Operating Range:	32° to 122°F (0° to 50°C)	32° to 122°F (0° to 50°C)
Laser:	-	-
Distance to Spot (D:S):	1:1	1:1
Emissivity:	Preset at 0.95	0.95 default adjustable from 0.10 to 1.0
Power:	(1) #CR2032	(1) #CR2032
Battery Life:	40 hours	40 hours
Auto Off:	15 seconds	15 seconds
Weight:	1 oz (28 g)	2.5 oz (72 g)
Regulatory Listings:	CE RoHS	CE RoHS
Limited Warranty:	1 Year	1 Year

480 DualTemp infrared and probe

TIMERS

Time and temperature are joint components for many applications. Cooper-Atkins' timers are popular because of their large, easy-to-read displays. Our digital timers feature an adjustable volume control, stopwatch capabilities, wall or magnet mounting, non-skid rubber feet and grease-resistant keypads. Recall settings help save time in the kitchen.

- Large, easy-to-read display
- Adjustable volume control
- Memory recall feature




	DTT361-01	FT24	TC6	TFS4
	Cook N Cool Thermo-Timer	Large Single-Station Timer	Six-Button Timer	Multi-Station Timer
Unit Range:	-25° to 392°F (-310° to 200°C) 23:59:59 hours	23:59:59 hours	23:59:59 hours	99 hours 59 minutes
Resolution:	1 second	1 second	1 second	Hours/minutes Minutes/seconds
Power:	(3) 1.5V AAA	(4) 1.5V "C"	1.5V AAA	(4) 1.5V "C" 9374 AC Adapter (optional)
Memory / Recall:	Yes	Yes	Yes	Yes
Modes:	Clock, Timer, Preset Temperature	-	Counts up/down	Counts up/down
Alarm Level (Decibel):	80 decibels	90 decibels	85 decibels	90 decibels
Housing:	ABS Plastic Probe and cord temp. limit 400°F/204°C	ABS Plastic	ABS Plastic	ABS Plastic
LCD Dimensions:	2.25" x 1.5" (57 mm x 38 mm)	0.875" x 2.25" (22 mm x 54 mm)	0.625" x 1.625" (16 mm x 41 mm)	3" x 3" (76 mm x 76 mm)
Weight:	7 oz (198 g)	1 lb 3 oz (539 g)	2 oz (57 g)	1 lb 6 oz (523 g)
Regulatory Listings:	NSF, CE, RoHS	CE	CE	CE, RoHS
Limited Warranty:	1 Year	1 Year	1 Year	1 Year

- Programmable time and temperature alarms
- Set a "High" alarm when monitoring the cooking process
- Set a "Low" alarm for monitoring the cooling process
- Replacement Probe (#9406) is available

FT24 Timer
With volume control and a flashing red light when alarm goes off

Wire hanger is perfect for mounting on coffee urns and air pots.



	TM60	TS100	TW3
	Long Ring Mechanical Timer	Timer/ Stopwatch	Large Digit Multi-Function Timer
Unit Range:	0 to 60 minutes	99 minutes 59 seconds	99 minutes 59 seconds
Resolution:	1 minute	1 second	1 second
Power:	Wind up	1.5V LR44	1.5V AAA
Memory / Recall:	-	Yes	Yes
Modes:	Counts down	Counts up	Counts down, counts up after set time is reached
Alarm Level (Decibel):	70 decibels	70 decibels	70 decibels
Housing:	Stainless Steel	ABS Plastic	ABS Plastic
LCD Dimensions:	-	-	1.5" x 2.5" (38 mm x 76 mm)
Weight:	4 oz (113 g)	1 oz (28 g)	3 oz (85 g)
Regulatory Listings:	CE, RoHS	CE, RoHS	CE, RoHS
Limited Warranty:	1 Year	1 Year	1 Year

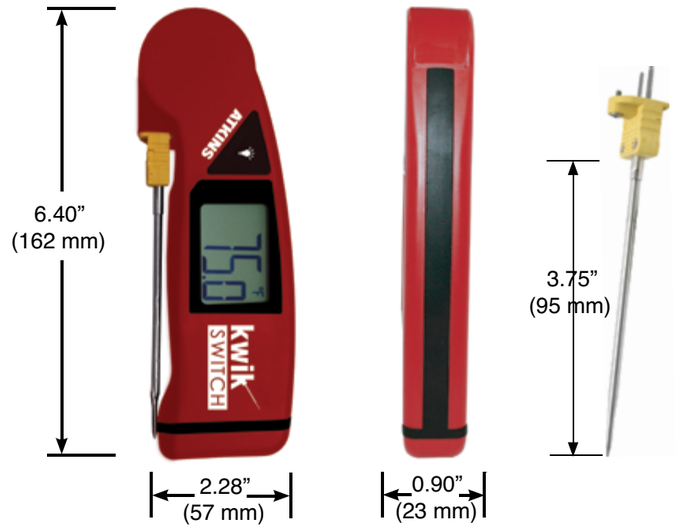
KWIKSWITCH AND STEAK GENIUS FOLDING THERMOCOUPLES

The KwikSwitch is a folding thermocouple instrument featuring a replaceable probe while maintaining a total system accuracy of ±1°F (±0.5°C). This NSF-certified unit is made of durable ABS plastic and is IPX7 waterproof rated. This easy-to-use device turns on and off by simply flipping the probe open and closed, and includes an automatic shut-off after 10 minutes to conserve battery life.

The Steak Genius includes the steak doneness reading from rare (R) to well done (WD), depending on the temperature of the meat.

94100 KwikSwitch Folding Thermocouple with Probe

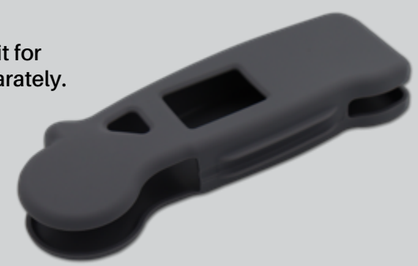
94100-01 Steak Genius Folding Thermocouple with Probe



Steak Genius Temperature Table

TEMP. READING °F	STEAK DONENESS
99.9 and below	
100.0 - 104.9	R-
105.0 - 109.9	R
110.0 - 114.9	R+
115.0 - 119.9	MR-
120.0 - 124.9	MR
125.0 - 129.9	MR+
130.0 - 136.9	M-
137.0 - 142.9	M
143.0 - 149.9	M+
150.0 - 154.9	MW-
155.0 - 159.9	MW
160.0 - 164.9	MW+
165.0 - 169.9	W-
170.0 - 173.9	W
174	W+
and above	

Rubber boot 9418 wraps around the unit for protection - sold separately.



Specifications

94100 KwikSwitch Folding Thermocouple with Probe
Temperature Range: -40° to 500°F (-40° to 260°C)
Total System Accuracy: ±1°F (±0.5°C) from -40° to 212°F (-40 to 100°C)
Instrument Accuracy: ±0.5°F (±0.3°C) from -40° to 212°F (-40 to 100°C)
Resolution: 0.1
Display Update Rate: 0.5 seconds
ABS Plastic housing
Folding probe with storage slot for 53337-K probe
Large easy to read LCD with 0.75” digits
Auto Shut-off: after 10 minutes of inactivity
Backlight Display
Low battery indicator
IPX7* waterproof rated (*submerged 30” for 30 mins)
Battery operated (2 AAA 1.5V Alkaline)
Battery Life: 1000 hours (without backlight active)
5-year instrument limited warranty

53337-K Replacement DuraNeedle Probe
Temperature Range: -40° to 500°F (-40° to 260°C)
Total System Accuracy: ±1°F (±0.5°C) from -40° to 212°F (-40 to 100°C)
Instrument Accuracy: ±0.5°F (±0.3°C) from -40° to 212°F (-40 to 100°C)
Resolution: 0.1
Display Update Rate: 0.5 seconds

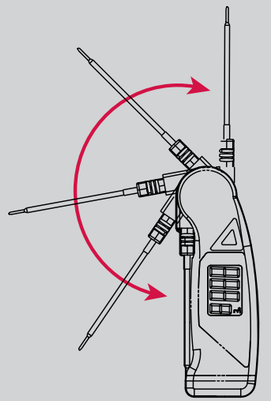
CE RoHS NSF

Packaging

Individual Package Weight: 7oz. (198 grams) w/ probe
Package Dimensions: 5.375” x 9.125” x 1.125” (137 mm x 232 mm x 29 mm)
Package Cube: .03
Units per Package (6)/Units per master carton (36)

Folding Thermocouple features interchangeable Type K probes!

- Maintains total system accuracy when replacing with new 53337-K probe
- Compatible with induction cooking equipment



ECONOTEMP

Get advanced technology at an affordable price. The EconoTemp is a general purpose, thermocouple temperature monitoring instrument that is a step up from the digital pocket test, offering greater speed and more versatility. The removable rubber boot provides superior impact resistance and has molded tabs on the side to hold and store most needle probes.

The slim line design sits nicely in the palm of your hand and provides an ergonomic grip.

- Industry leading 5-year limited warranty
- Ergonomic design
- Water resistant

Instruments

	32311	32322
	EconoTemp	EconoTemp Plus
Temperature Range:	-40° to 500°F (-40° to 260°C)	-40° to 1000°F (-40° to 538°C)
Accuracy:	±1°F (±0.5°C)	±1°F (±0.5°C)
Housing Material:	ABS Plastic	ABS Plastic
Resolution:	1°	0.1° up to 495°F (257°C)
Power:	(3) 1.5V AAA	(3) 1.5V AAA
Battery Life:	4500 hours	4500 hours
Auto Off:	10 min.	10 min.
Weight:	6 oz (170 g)	6 oz (170 g)
Regulatory Listings:	CE NSF COMPONENT RoHS	CE RoHS
Limited Warranty:	5 Years	5 Years

9368 Bracket

See on page 43

Kits

93013-K	93230-K	93232-K	93233-K	94020-K
Kit Includes:				
32311-K Instrument	32311-K Instrument	32311-K Instrument	32311-K Instrument	32311-K Instrument
50012-K Probe	50336-K Probe	50306-K Probe	50012-K Probe	50337-K Probe
50306-K Probe	9368 Wall Bracket	50336-K Probe	50306-K Probe	9368 Wall Bracket
50335-K Probe		14235 Case	50336-K Probe	
14057 Case		9368 Wall Bracket	14235 Case	
			9368 Wall Bracket	

AQUATUFF

For a durable, fast response thermocouple, look no further than the AquaTuff series. The AquaTuff Series Thermocouple Instruments are highly accurate, NIST traceable and most importantly, as the AquaTuff name implies, are IPX7 waterproof rated for greater reliability and durability in harsh environments. They are ideally suited for wet, steam-filled environments in kitchens and processing areas.

The non-Wrap&Stow enclosure design allows for maximum versatility and can be used with any Type K thermocouple probe.

- Industry leading 5-year limited warranty
- IPX7 waterproof
- Ergonomic design

9369 Bracket

See on page 43

Instruments

	35100	35200
	Waterproof Thermocouple	Waterproof Thermocouple
Temperature Range:	-100° to 999°F (-73° to 537°C)	-100° to 999°F (-73° to 537°C)
Accuracy:	±0.5°F (±0.3°C)	±0.5°F (±0.3°C)
Housing Material:	ABS Plastic	ABS Plastic
Resolution:	0.1°	0.1°/ 1° selectable
Hold:	-	Yes
Backlight:	-	Yes
Power:	(2) 1.5V AAA	(2) 1.5V AAA
Battery Life:	1800 hours	1800 hours
Auto Off:	10 min.	10 min.
Replacement Item For:	38653-K 38658-K	39658-K
Weight:	5 oz (142 g)	5 oz (142 g)
Regulatory Listing:	CE NSF RoHS	CE NSF RoHS
Limited Warranty:	5 Years	5 Years

Kits

93086-K	93970-K	94003-K
Kit Includes:		
35100-K Instrument	35200-K Instrument	35100-K Instrument
50012-K Probe	50012-K Probe	50209-K Probe
50209-K Probe	50306-K Probe	9369 Wall Bracket
50306-K Probe	50335-K Probe	
14235 Medium Case	14235 Medium Case	

IPX7 Waterproof

All the AquaTuff instruments are IPX7 waterproof rated and durable for harsh environments.

An IPX7 level reading means the instrument can be completely submerged in 1 meter of water for 30 minutes without water damage.

The non Wrap&Stow instruments are compatible with any Type K thermocouple probe for maximum versatility thermocouple instruments.

AQUATUFF WRAP&STOW

The AquaTuff series with Wrap&Stow probes are the right choice when accuracy is your top priority. Total system accuracy ensures this instrument and probe combination will deliver trustworthy results. The probe is calibrated with a TRUE 0.9°F accuracy and probes can be replaced in the field without the need for recalibration. Wrap&Stow designs are available with a unique cable storage channel so that the heavy duty probe can be stored safely alongside the unit housing.

Wrap&Stow probes can be replaced at your location and maintain a total system accuracy within food safety guidelines without need for further calibration.

- Industry leading 5-year limited warranty
- IPX7 waterproof
- Unique cable storage channel

Instruments

	35132	35135	35140
	w/ DuraNeedle Probe	w/ Angled Surface Probe	w/ MicroNeedle Probe
Temperature Range:	-100° to 500°F (-73° to 260°C)	-100° to 500°F (-73° to 260°C)	-100° to 500°F (-73° to 260°C)
Accuracy:	±0.9°F (±0.5°C) total system accuracy	±0.5°F (±0.3°C) Instrument only	-±0.9°F (±0.5°C) total system accuracy
Housing Material:	ABS Plastic	ABS Plastic	ABS Plastic
Resolution:	0.1°	0.1°	0.1°
Hold:	No	No	No
Backlight:	No	No	No
Power:	(2) 1.5V AAA	(2) 1.5V AAA	(2) 1.5V AAA
Battery Life:	1800 hours	1800 hours	1800 hours
Auto Off:	10 min.	10 min.	10 min.
Weight:	7 oz (199 g)	8 oz (227 g)	7 oz (199 g)
Regulatory Listings:	CE NSF RoHS	CE RoHS	CE NSF RoHS
Probe Response Time:	1 second (Liquid)	2 seconds (Oiled Surface)	1 second (Liquid)
Limited Warranty:	5-Year Instrument	5-Year Instrument	5-Year Instrument

Instruments

	35232	35235	35240
	w/ DuraNeedle	w/ Angled Surface Probe	w/ MicroNeedle Probe
Temperature Range:	-100° to 500°F (-73° to 260°C)	-100° to 500°F (-73° to 260°C)	-100° to 500°F (-73° to 260°C)
Accuracy:	-±0.9°F (±0.5°C) total system accuracy	±0.5°F (±0.3°C) Instrument only	±0.9°F (±0.5°C) total system accuracy
Housing Material:	ABS Plastic	ABS Plastic	ABS Plastic
Resolution:	0.1°/ 1° selectable	0.1°/ 1° selectable	0.1°/ 1° selectable
Hold:	Yes	Yes	Yes
Backlight:	Yes	Yes	Yes
Power:	(2) 1.5V AAA	(2) 1.5V AAA	(2) 1.5V AAA
Battery Life:	1800 hours	1800 hours	1800 hours
Auto Off:	10 min.	10 min.	10 min.
Weight:	7 oz (199 g)	8 oz (227 g)	7 oz (199 g)
Regulatory Listings:	CE NSF RoHS	CE RoHS	CE NSF RoHS
Probe Response Time:	1 second (Liquid)	2 seconds (Oiled Surface)	1 second (Liquid)
Limited Warranty:	5-Year Instrument	5-Year Instrument	5-Year Instrument

Replacement Probe

55032

DuraNeedle Replacement Probe

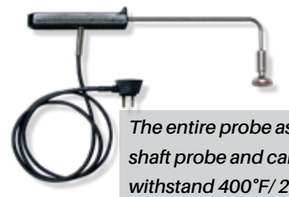
55035

Angled Surface Replacement Probe

55040

MicroNeedle Replacement Probe

1-year limited warranty on probe



The entire probe assembly, shaft probe and cable can withstand 400°F/ 204°F.

55035 *Used to spot check food equipment surfaces during receiving, cooking, prep and holding. Do not immerse probe into food or liquids.*

Caution: *These probes are not for immersion into food or liquids, including highly acidic, alkaline, or salty foods such as citrus or tomato-based foods. Do not bring into contact with these types of foods for extended periods of time.*

THERMOCOUPLE PROBES

High quality thermocouple thermometers should be paired with the most appropriate probe for the application. Cooper-Atkins' thermocouple probes are the most extensive line you will find in the foodservice industry and are well suited for numerous tasks. Each probe is designed by Cooper-Atkins engineers, manufactured and built with high-temperature, abrasion-resistant cables. Probes are designed and built to the highest standards allowing for probe interchangeability with minimal impact on total system accuracy.

Used to measure insertion and immersion temperatures of food products including solids, semi-solids and liquids.

- Most extensive probe line in the industry
- Custom manufacturing available for unique applications

Heavy duty probe with large handle grip.

Insertion

	50101-K	50143-K
	Frozen Product Needle Probe	Heavy Duty Needle Probe
Temperature Range:	-40° to 400°F (-40° to 205°C)	-40° to 500°F (-40° to 260°C)
Max Tip Temperature:	400°F (205°C)	500°F (260°C)
Max Cable Temperature:	400°F (205°C)	176°F (80°C)
Response Time (in Liquid):	4 seconds	5 seconds
Shaft Length:	3″ (76 mm)	4″ (102 mm)
Shaft Tip Diameter:	0.150″ (3.8 mm)	0.150″ (3.8 mm)
Cable Length Max Extended:	30″ (762 mm) Flexible Armored Cable	48″ (1.2 m) Polyurethane Jacket
Weight:	1 lb (454 g)	5 oz (142 g)
Limited Warranty:	1 Year	1 Year

Insertion

	50208-K	50209-K
	Fry Vat Probe Armored Cable	MicroNeedle - Coil Cable *
Temperature Range:	-40° to 400°F (-40° to 205°C)	-100° to 500°F (-73° to 260°C)
Max Tip Temperature:	400°F (205°C)	500°F (260°C)
Max Cable Temperature:	400°F (205°C)	176°F (80°C)
Response Time (in Liquid):	8 seconds	1 second
Shaft Length:	7.3″ (185 mm)	3.5″ (89 mm)
Shaft Tip Diameter:	0.188″ (4.8 mm)	0.043″ (1 mm)
Cable Length Max Extended:	30″ (762 mm) w/ Flexible Armored Jacket	48″ (1.2 m) Polyurethane Jacket
Weight:	3 oz (85 g)	2 oz (57 g)
Limited Warranty:	1 Year	1 Year

** Not recommended for use in highly acidic or alkaline products such as citrus and tomato products.*

50208-K Fry vat probe unique depth stop allows you to place probe through fryer basket.

THERMOCOUPLE PROBES

High quality thermocouple thermometers should be paired with the most appropriate probe for the application. Cooper-Atkins' thermocouple probes are the most extensive line you will find in the foodservice industry and are well suited for numerous tasks. Each probe is designed by Cooper-Atkins engineers, manufactured and built with high-temperature, abrasion-resistant cables. Probes are designed and built to the highest standards allowing for probe interchangeability with minimal impact on total system accuracy.

Used to measure insertion and immersion temperatures of food products including solids, semi-solids and liquids.

- Most extensive probe line in the industry
- Custom manufacturing available for unique applications

Insertion




	50335-K	50336-K	50360-K	50361-K
	Needle Probe w/ Coil Cable	DuraNeedle - Coil Cable	Oven Needle Probe	Armored Meat Probe
Temperature Range:	-40° to 500°F (-40° to 260)	-40° to 500°F (-40° to 260)	-40° to 400°F (-40° to 205°C)	-40° to 400°F (-40° to 205°C)
Max Tip Temperature:	500°F (260°C)	500°F (260°C)	500°F (260°C)	400°F (205°C)
Max Cable Temperature:	176°F (80°C)	176°F (80°C)	600°F (316°C)	400°F (205°C)
Max Oven Application Temperature:	-	-	400°F (205°C)	-
Response Time (in Liquid):	4 seconds	2 seconds	2 seconds	4 seconds
Shaft Length:	4.5″ (114 mm)	6″ (152 mm)	5.5″ (140 mm)	3.875″ (98 mm)
Shaft Tip Diameter:	0.125″ (3.2 mm)	0.085″ (2.2 mm)	0.085″ (2.2 mm)	0.085″ (2.2 mm)
Cable Length Max Extended:	48″ (1.2 m) Polyurethane Jacket	48″ (1.2 m) Polyurethane Jacket	35″ (889 m) Stainless Steel Overbraid	10′ (3 m) Flexible Armor
Weight:	2 oz (57 g)	2 oz (57 g)	1 oz (28 g)	6 oz (170 g)
Limited Warranty:	1 Year	1 Year	1 Year	1 Year

THERMOCOUPLE PROBES

High quality thermocouple thermometers should be paired with the most appropriate probe for the application. Cooper-Atkins' thermocouple probes are the most extensive line you will find in the foodservice industry and are well suited for numerous tasks. Each probe is designed by Cooper-Atkins engineers, manufactured and built with high-temperature, abrasion-resistant cables. Probes are designed and built to the highest standards allowing for probe interchangeability with minimal impact on total system accuracy.

Used to measure insertion and immersion temperatures of food products including solids, semi-solids and liquids.

- Most extensive probe line in the industry
- Custom manufacturing available for unique applications

50207-K
MicroNeedle Probe

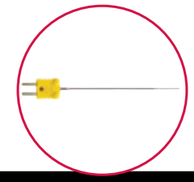
Direct connect probe allows for single-handed operation!

Direct Connect with Flanged Connector

	51210-K	51337-K
	MicroNeedle w/ Flanged Connector *	DuraNeedle w/ Flanged Connector *
Temperature Range:	-100° to 500°F (-73° to 260°C)	-100° to 500°F (-73° to 260°C)
Max Tip Temperature:	500°F (260°C)	500°F (260°C)
Response Time: (in Liquid)	1 second	1 second
Shaft Length:	3.75″ (95 mm)	4″ (102 mm)
Shaft Tip Diameter:	0.043″ (1 mm)	0.085″ (2.2 mm)
Cable Length Max Extended:	Direct Connect (no cable)	Direct Connect (no cable)
Weight:	0.5 oz (14 g)	0.5 oz (14 g)
Limited Warranty:	1 Year	1 Year

Thermocouple Insertion Probes: 50207-K, 50210-K, 50217-K, 50337-K, 51210-K, 51337-K
Used to measure insertion and immersion temperatures of food products including solids, semi-solids and liquids. The probe should only be immersed or penetrated into food up to 1/2″ / 13mm of the yellow plastic connector.

Direct Connect



	50207-K	50210-K	50337-K
	UltraFine Chiseled Tip - Direct Connect *	MicroNeedle - Direct Connect *	DuraNeedle Direct Connect
Temperature Range:	-100° to 500°F (-73° to 260°C)	-100° to 500°F (-73° to 260°C)	-100° to 500°F (-73° to 260°C)
Max Tip Temperature:	500°F (260°C)	500°F (260°C)	500°F (260°C)
Response Time: (in Liquid)	1 second	1 second	1 second
Shaft Length:	3.75″ (95 mm)	3.75″ (95 mm)	4″ (102 mm)
Shaft Tip Diameter:	0.043″ (1 mm)	0.043″ (1 mm)	0.085″ (2.2 mm)
Cable Length Max Extended:	Direct Connect (no cable)	Direct Connect (no cable)	Direct Connect (no cable)
Weight:	0.5 oz (14 g)	0.5 oz (14 g)	0.5 oz (14 g)
Limited Warranty:	1 Year	1 Year	1 Year

***Caution:** These probes are not for use with highly acidic, alkaline, or salty foods such as citrus or tomato-based foods. Do not bring into contact with these types of foods for extended periods of time. The probe should only be immersed or penetrated into food up to 1/2″ / 13mm of the yellow plastic connector. The plastic connector is permitted to come into contact with food for a short period but is not designed for long term contact with food*

THERMOCOUPLE PROBES

High quality thermocouple thermometers should be paired with the most appropriate probe for the application. Cooper-Atkins' thermocouple probes are the most extensive line you will find in the foodservice industry and are well suited for numerous tasks. Each probe is designed by Cooper-Atkins engineers, manufactured and built with high-temperature, abrasion-resistant cables. Probes are designed and built to the highest standards allowing for probe interchangeability with minimal impact on total system accuracy.

Surface probes are suitable for measuring temperatures on a variety of surfaces. Griddles or grills should be checked frequently to ensure that proper cooking temperatures are maintained.

- Most extensive probe line in the industry
- Custom manufacturing available for unique applications

Note:
The major source of error in reading surface temperature is obtaining adequate heat transfer from the surface into the measuring probe tip.

To reduce this error:
1) use a small amount of oil or grease to improve heat transfer;
2) use a large contact area and
3) press the probe firmly against the measuring surface.

50012-K Swiveling bell sensor self-orients to the surface for superior contact.

50014-K Weighted probe allows for hands-free use

Surface



	50001-K	50012-K	50014-K
	Right Angle Flat Surface Probe	120° Angle Surface Probe	Weighted Griddle Surface Probe
Temperature Range:	-40° to 400°F (-40° to 205°C)	-40° to 500°F (-40° to 260°C)	-40° to 500°F (-40° to 260°C)
Max Tip Temperature:	400°F (205°C)	500°F (260°C)	500°F (260°C)
Max Cable Temperature:	400°F (205°C)	176°F (80°C)	400°F (205°C)
Response Time:	7 seconds (oiled surface)	4 seconds (oiled surface)	2 seconds (oiled surface)
Shaft Length:	9″ (229 mm)	4.5″ (114 mm)	-
Cable Length Max Extended:	30″ (762 mm) Flexible Armored Cable	48″ (1.2 m)	30″ (762 mm) Flexible Armored Cable
Weight:	6 oz (170 g)	5 oz (142 g)	2 lb (907 g)
Limited Warranty:	1 Year	1 Year	1 Year

Thermocouple Insertion Probes: 50001-K, 50012-K
Used to spot-check food equipment surfaces during receiving, cooking, prep and holding. Do not immerse probe into food or liquids.

Caution: *These probes are not for immersion into food or liquids, including highly acidic, alkaline, or salty foods such as citrus or tomato-based foods. Do not bring into contact with these types of foods for extended periods of time.*

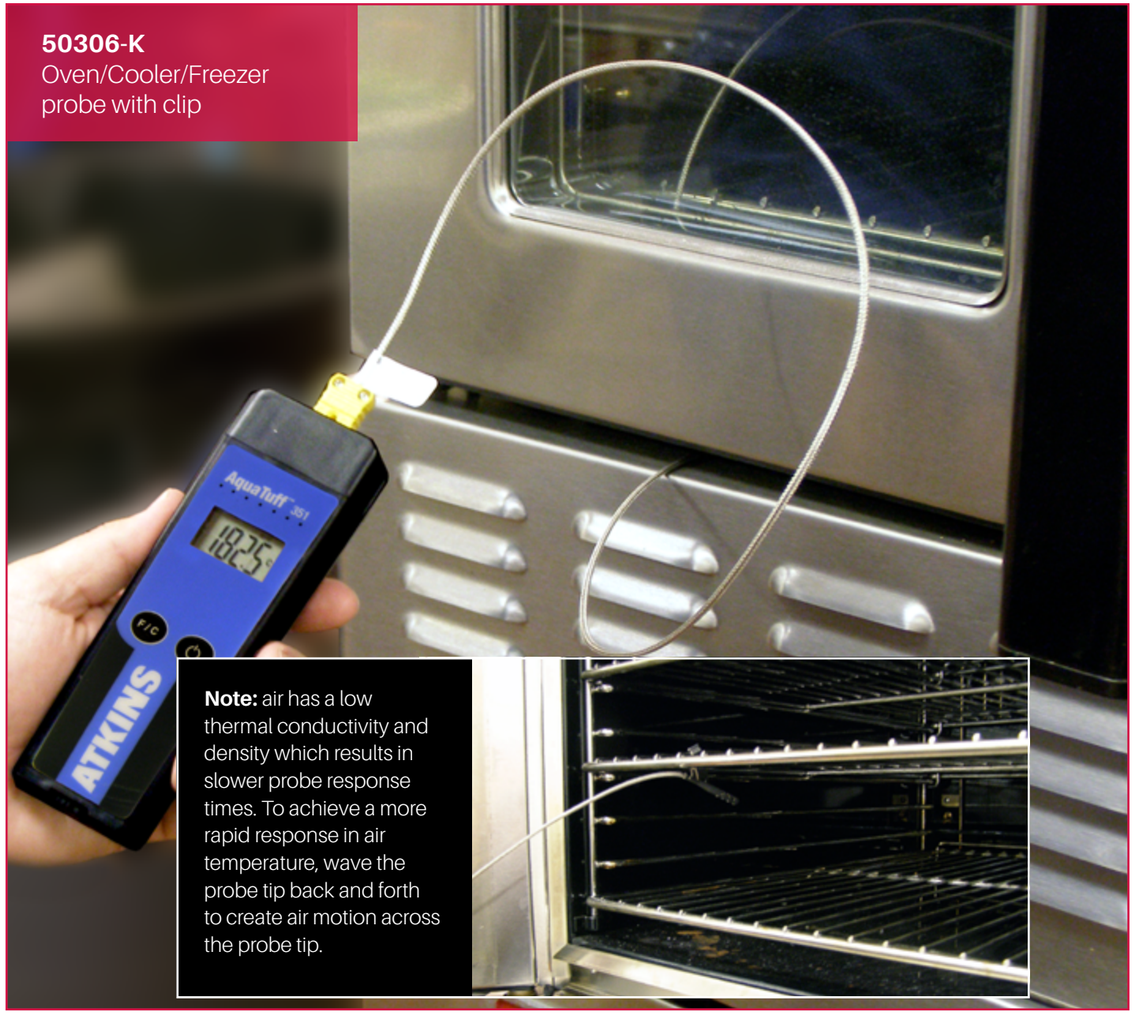
THERMOCOUPLE PROBES

High quality thermocouple thermometers should be paired with the most appropriate probe for the application. Cooper-Atkins' thermocouple probes are the most extensive line you will find in the foodservice industry and are well suited for numerous tasks. Each probe is designed by Cooper-Atkins engineers, manufactured and built with high-temperature, abrasion-resistant cables. Probes are designed and built to the highest standards allowing for probe interchangeability with minimal impact on total system accuracy.

These probes are suitable for measuring air temperatures. Some are designed to measure ambient temperature, while other models monitor internal temperatures and include a clip for attaching the sensor inside freezers, coolers or ovens.

- Most extensive probe line in the industry
- Custom manufacturing available for unique applications

50306-K
Oven/Cooler/Freezer probe with clip



Note: air has a low thermal conductivity and density which results in slower probe response times. To achieve a more rapid response in air temperature, wave the probe tip back and forth to create air motion across the probe tip.

Air and Ambient

	50306-K	50332-K
	Oven/Cooler/Freezer Probe w/ Clip	Hand-Held Air Probe - Coil Cable
Temperature Range:	-100° to 600°F (-73° to 316°C)	-100° to 500°F (-73° to 260°C)
Max Tip Temperature:	600°F (316°C)	500°F (260°C)
Max Cable Temperature:	600°F (316°C)	176°F (80°C)
Response Time:	1 second (liquid) 10 sec. 5 m/second air	10 seconds in 5 m/second air
Shaft Length:	2.125" (54 mm)	4" (102 mm)
Cable Length Max Extended:	43" (1.1 m) Stainless Steel Overbraid	48" (1.2 m) Polyurethane Jacket
Weight:	1 oz (28 g)	2 oz (57 g)
Limited Warranty:	1 Year	1 Year

THERMOCOUPLE PROBES

High quality thermocouple thermometers should be paired with the most appropriate probe for the application. Cooper-Atkins' thermocouple probes are the most extensive line you will find in the foodservice industry and are well suited for numerous tasks. Each probe is designed by Cooper-Atkins engineers, manufactured and built with high-temperature, abrasion-resistant cables. Probes are designed and built to the highest standards allowing for probe interchangeability with minimal impact on total system accuracy.

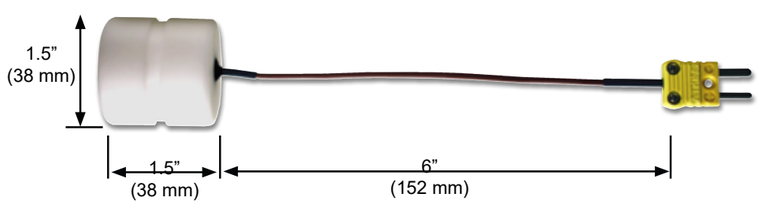
Cooper-Atkins manufactures hundreds of different probes for a multitude of uses that can be custom-designed for specific needs. For information on any item not shown or listed here, please contact Customer Service at copeland.com/cooper-atkins

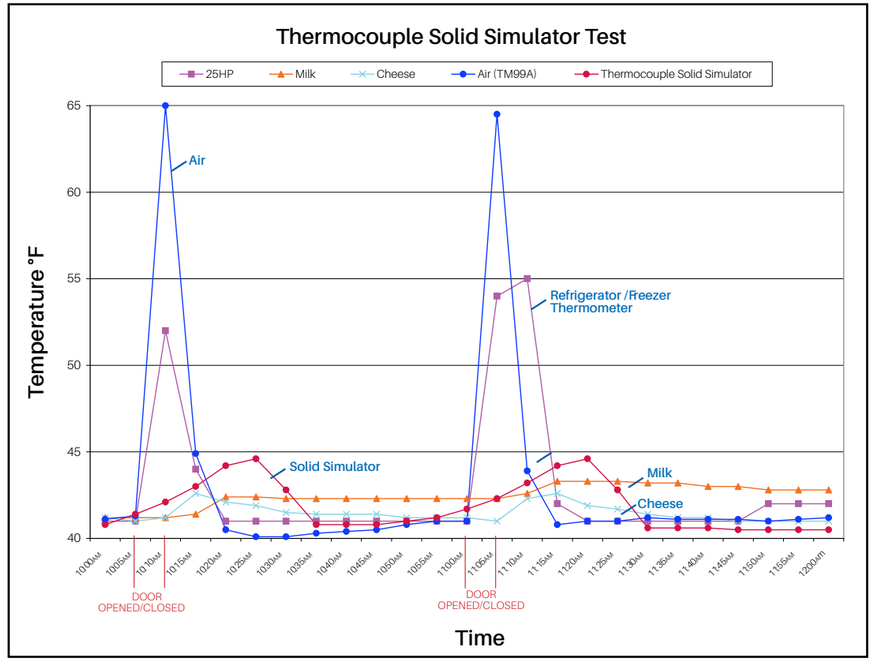
- Most extensive probe line in the industry
- Custom manufacturing available for unique applications

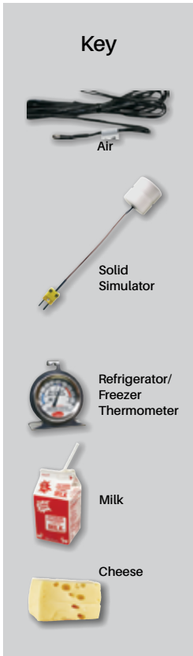
Miscellaneous Probes



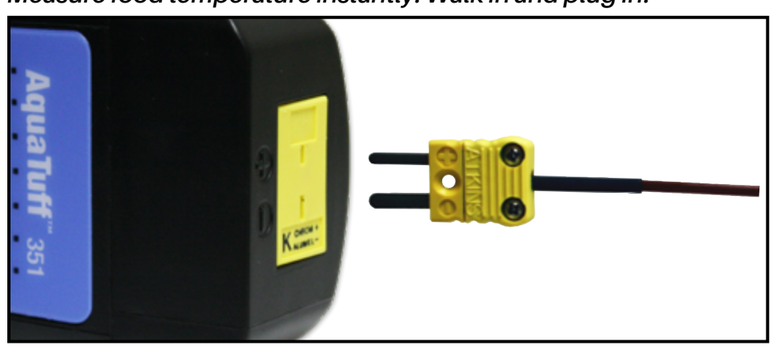

	39138-K	50416-K	50701-K	52048-K
	Air Bare Tip w/ 36" Cable	Air Probe Bare Tip 15' Cable	Combo Probe - Heavy Duty T-Handle *	Solid Simulator
Temperature Range:	-328° to 400°F (-200° to 205°C)	-328° to 400°F (-200° to 205°C)	-100° to 500°F (-73° to 260°C)	-40° to 180°F (-40° to 82°C)
Max Tip Temperature:	400°F (205°C)	400°F (205°C)	500°F (260°C)	180°F (82°C)
Max Cable Temperature:	400°F (205°C)	400°F (205°C)	400°F (205°C)	-
Response Time:	1 sec. liquid & 7 sec. 5 m/sec. air	1 sec. liquid & 7 sec. 5 m/sec. air	2 seconds liquid	Stabilization of Simulator - up to 2 hours
Shaft Length:	-	-	35" (889 mm)	-
Cable Length Max Extended:	36" (914 mm) FEP Jacket	15' (4.6 m) FEP Jacket	36" (914 mm) Fluoroelastomer Jacket	6" (152 mm) FEP Jacket
Weight:	1 oz (28 g)	-	15 oz (425 g)	2.5 oz (71 g)
Limited Warranty:	1 year	1 Year	1 Year	1 Year







Measure food temperature instantly! Walk in and plug in!



Accessories

9424

20200

51337-K

ACCESSORIES

Cooper-Atkins carries various accessories for your temperature instruments. Protect your investments by storing instruments in cases designed specifically for the unit and use extension cables to increase cable length on any thermocouple probe.

- Instrument storage
- Thermocouple extension cables and connectors
- Probe wipes and thermometer validation

Instrument Storage



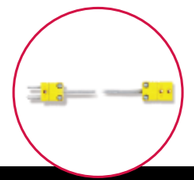
	9339	9368	9369
	Soft Pouch/Case/Holster	EconoTemp Wall Bracket	AquaTuff Wall Bracket
Dimensions:	8.5″ x 3.5″ x 1″ (220 mm x 90 mm x 25 mm)	5″ x 3-5/8″ x 1-1/4″ (127 mm x 92 mm x 32 mm)	4-5/16″ x 2-7/8″ x 1-1/2″ (110 mm x 73 mm x 38 mm)
Housing Material:	Nylon	ABS Plastic	ABS Plastic




	14057	14235	14240	14245
	Soft Carrying Case	Medium Hard Carrying Case	Small Hard Carrying Case	Large Hard Carry Case
Dimensions:	9″ x 3.5″ x 2″ (229 mm x 89 mm x 51 mm)	8″ x 12″ x 3″ (203 mm x 305 mm x 76 mm)	6″ x 8.5″ x 2.5 (152 mm x 216 mm x 63.5 mm)	12″ x 17″ x 3″ (305 mm x 432 mm x 76 mm)
Housing Material:	Soft Vinyl	ABS Plastic	ABS Plastic	ABS Plastic

See instructions on how to make a proper ice bath on page 46

Extension Cables and Connectors




10046	10040-K
Reinforced 10′ Extension Cable	48″ Coiled Retractable Extension Cable

Accessories




9150	9325	9351	9366
Boxed Probe Wipes	ValCup Thermometer Validation Cup	.15″ Diameter Pan / Vessel Clip	.25″ Diameter Pan / Vessel Clip

Thermometer probe wipes
- 70% Isoprophyl
- 200 wipe packets per box
- 10 boxes per carton

Properly cleaning your Cooper-Atkins instrument ensures quality performance and extends the life of your product.

General Instrument Care Guidelines

Do not clean with abrasives or solvents, use only mild detergents. Avoid contact with corrosive materials such as alcohol or other caustic cleaning agents. Wipe with a soft damp cloth to avoid scratching. If the unit is not waterproof, do not submerge or use excessive liquids when cleaning. Refer to our website for product specifications and waterproof ratings. Avoid exposing the instrument to severe shock. Be sure to utilize the supplied carrying case, storage pouch or wall-mount bracket. This provides a safe storage area and prevents build up of dust. After the instrument is cleaned and sanitized, dry and store. Do not use or store in excessively hot or cold areas.

Infrared Thermometers

Do not allow water or soap to get inside the instrument or on the lens. Avoid splashes and spills and do not submerge. The sensor lens is the most delicate part of the instrument and should be kept clean. Care should be taken when cleaning the lens. To remove particles from the lens, either wipe with a soft damp cloth, cotton swab with medical alcohol (on lens only), or use low pressure, compressed air. Do not use solvents to clean the lens as this may cause damage. Allow the lens to fully dry before using.

Thermocouple / Thermistor Insertion Probes & Digital /Bi-Metal Thermometers

To avoid cross-contamination, always clean thermometer stems thoroughly before and after each use. Do not allow the probe tip to remain in sanitizing solution for an extended period of time. Remove stubborn grease from the stem with a scouring pad or fine steel wool. Cooper-Atkins probe wipes help meet HACCP guidelines and are an ideal way of cleaning and sanitizing probe shafts between temperature checks. Avoid exposing the probe / thermometer to extreme temperatures.

Battery Replacement

If there is no display when the thermometer is turned on, check the condition of the batteries. Also check that the battery terminals are clean and batteries are properly installed. If batteries show signs of corrosion, remove immediately and replace.

Refer to the product Operating Instructions or User Guide and Instrument Warranty booklet for battery installation and replacement guidelines. Always wash, rinse and sanitize these products.

Antimicrobial Additive

The antimicrobal additive used in specified instrument housings, thermometer sheaths and timers, inhibits the growth of bacteria on the unit. However, it does not protect users or others against food bacteria.

For further information or questions on caring for your Cooper-Atkins products contact Customer Service at: copeland.com/cooper-atkins

Using accurately calibrated thermometers is an essential component of any basic HACCP plan. Cooper-Atkins believes that every foodservice professional should implement validation testing into their regular routine to ensure their thermometers are accurate.

Fact or Fiction?

Thermometer calibration is an FDA requirement.

FACT: Regular calibration of the device is an important practice and a provision of the Food Code. While calibration is a requirement, there are many misconceptions about the meaning of calibration. True calibration is a formal comparison of an item to a known standard of higher accuracy and is conducted within a controlled environment.

Validation, which many people think of as calibration, is the confirmation that your thermometers are accurate within acceptable tolerances. It is a quick and easy comparison of a thermometer against a single temperature point, such as an ice bath, and can be performed onsite in your facility.

Requiring calibration does not mean adjusting the calibration settings.

Fact or Fiction?

An appropriate foodservice thermometer must be adjustable in the field in order to meet calibration requirements.

FICTION: Against popular belief, adjusting a thermometer's accuracy is not a requirement. Some digital thermometers include an adjustment feature, often referred to as a calibration button, that allows a user to reset the accuracy that eliminates any error in the instrument that may have developed over time.

While this may sound like a useful feature, if the conditions are not controlled accurately, it could introduce more error at critical test temperatures! For example, say the actual temperature a thermometer is measuring is 36°F, but assumed to be 32°F (i.e. due to an improperly made ice bath) and is then adjusted to display 32°F. When this thermometer is used again and takes a reading of 40°F, the true temperature of the item being measured is really 44°F! When no "field" adjustment of calibration settings is introduced, you eliminate the risk of introducing error into the instrument .

Fact or Fiction?

Using the ice bath method is an effective way to quickly validate the accuracy of your thermometers.

FACT: When validating thermometers, it is usually by means of a single test point such as an ice bath (32°F) and is a confirmation that the instrument is accurate within acceptable tolerances. When creating a proper ice bath, use crushed, not cubed ice and just enough water to displace the air that may be present between the ice chips. Tests show that using cubed ice can result in an ice bath with a baseline temperature higher than 32°F, which may result in a false reading.

While validation is a useful and important activity, it should not replace regularly scheduled calibration.

Cooper-Atkins' ValCup was designed to accurately validate all types of thermometers quickly and easily. Just follow the simple directions printed on the cup and insert your thermometer for fast results.

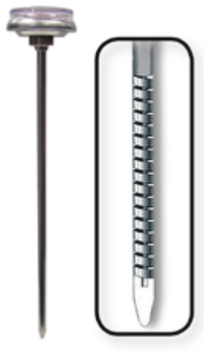
In a food safety system, temperature and time are the two most important components in preventing foodborne illness. Proper cooking, storing, holding and monitoring of temperatures is vital in preventing bacterial growth in foods. Using the correct tools becomes an essential component of your food safety plan.

Different sensor technologies are available that are within the recommended guidelines for the foodservice temperature range. Electronic/digital thermometers tend to be preferred over the older mechanical/bimetal types. Digitals yield a faster response and provide greater overall accuracy with little to no drift out of calibration, so are less likely to give variable readings.

When choosing a thermometer, the following points should be considered: temperature range and resolution, the sensing element & insertion point, accuracy and calibration.

Bimetal

If you cut open a bimetal thermometer stem lengthwise, you would see a coil (about 2" in length) that senses the temperature. To register an accurate temperature, the entire coil must be exposed to the heat or cold source. Some thermometers have a dimple on the stem as a guide for insertion depth. and should not be used for thin product, like burger patties. The 0.14" (3.5 mm) diameter of the stem could leave an unsightly hole in some foods.

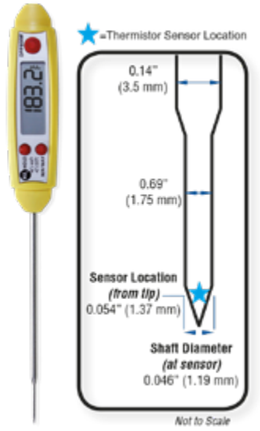


The coil expands (unwinds) or contracts (winds tighter) with change in temperature, turning the pointer on the dial, which could take up to 20 seconds to stabilize. The accuracy can be affected by shakes, drops and exposure to extreme hot and cold temperatures, so they are designed with a nut that can be turned to adjust the pointer. Even with its magnifying lens, a bimetal thermometer can be difficult to read and accurately assess where the pointer sits. Each tick mark, if viewed from the slightest angle, could throw the interpretation of the reading off by 1°, 2° or even 10°.

Thermistor Thermometers

Thermistors are a bead type ceramic-semiconductor-thermal resistor whose resistance varies with temperature. This bead is potted in a high-thermal conductive epoxy within the tip for a quick, <6 second response time. Thermistors are highly accurate within the regulatory temperature range and are ideal for use as compliance tools.

Cooper-Atkins AFL digital thermometers' tip diameter is 0.046" (1.19 mm) where the thermistor sensor is located, which is well within the recommended guidelines. Some digitals have tips soldered with alloys to achieve a thinner diameter stem, but this can lead to corrosion and possible breakage - leaving the tip in your food. Cooper-Atkins' NSF digital thermometers are laser welded of appropriate material to ensure maximum durability.



With a large digital display and tenth degree resolution, there can be no assumptions made or judgement calls about the temperature reading. There are handheld thermistor instruments with interchangeable probes available, but the development of small chip technology also allows for pocket-size housing. A digital thermometer has factory calibrations set in its memory chip that cannot be affected by physical impact.

Thermocouple Thermometers

A thermocouple measures voltage produced at the junction of two fine wire conductors located in the tip of the probe. Typically smaller and more robust than a potted thermistor, a thermocouple probe with a welded tip offers a rapid response of 2 to 5 seconds within a much broader temperature range.

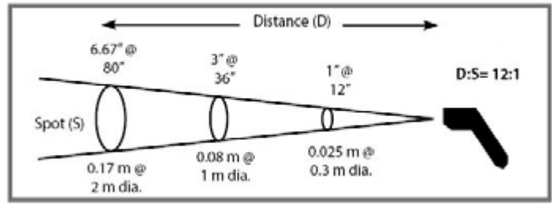
The small junction size enables it to fit in the narrowest of probe shafts. The FDA recommends the use of a thermocouple device

for determining the temperature of thin foods such as hamburger patties, pork chops, and chicken breasts. Cooper-Atkins' extensive line of probes offer multiple options that fall within these guidelines.

The best units available have a total system accuracy, or TSA (the accuracy of the probe and instrument combined) of ±0.9°F (±0.5°C). Even the more economical systems have a TSA of ±2°F (±1°C), and are within the recommended guidelines.

Infrared Thermometers

Non-contact infrared thermometers measure surface temperatures. The further away you are from the object, the larger the surface area is being measured. This optical resolution is expressed as a ratio of the distance to the diameter of the spot. An infrared thermometer collects the energy from a circular measurement spot and focuses it on the detector which converts the energy to an electrical signal that can be displayed in units of temperature after being compensated for ambient temperature variation.



When an infrared thermometer measures surface temperatures, it can potentially sense all three types of energy; therefore, the instrument must be adjusted to read only emitted energy. Some infrared thermometers allow you to change the emissivity in the unit. Others have a fixed, pre-set emissivity. Cooper-Atkins infrared thermometers are set at 0.95 or .97, which is the emissivity value for most organic materials and painted or oxidized surfaces. When measuring shiny surfaces such as aluminum or stainless steel, the reflectivity of the surface may skew the reading of an infrared thermometer. If needed, coat the shiny surface with a non-stick cooking spray prior to taking the reading.

Automated Handheld Devices

Portable handheld devices combine sophisticated software with a traditional thermocouple instrument to collect, track and store food temperature data. Some models also allow users to walk through procedural checklists, helping to ensure key tasks are completed consistently. These portable hand-held devices make adhering to HACCP guidelines less cumbersome. When a temperature or checklist item is out of the user designated range, many of today's models prompt users to take corrective action, all of which is documented for later viewing and analysis via the accompanying software.

Wireless Equipment Monitoring

Wireless monitoring systems protect inventory and help ensure equipment is working correctly by automatically measuring critical metrics, such as temperature and humidity. Equipment including walk-ins, freezers, dish machines, hot-holding boxes and dry storage rooms, can all be monitored to ensure food quality and safety. If readings fall outside of preset limits, notifications can be sent to the appropriate people. This type of technology is a great investment that ensures food is kept at safe temperatures, and will prevent costly food spoilage due to equipment failure.

Thermocouple Types: The probe thermocouple Type (J, K, or T) must match that of the thermocouple instrument. Specifications shown in this catalog are for thermocouple Type K models.

Probe Cable Styles

Flexible Armored Cable:

FEP-jacketed cable protected by flexible, stainless steel, armored hose. The armored hose protects the cable and offers outstanding abrasion, cut and chemical resistance.

Flexible Cable with FEP Jacket:

FEP insulation on primaries and outer jacket. FEP offers excellent abrasion and chemical resistance.

Flexible Cable with PVC Jacket:

PVC insulation on primaries and outer jacket. PVC offers good abrasion and chemical resistance.

Flexible Cable with Silicone Jacket:

Silicone with embedded fibers outer jacket cable, with metal braid and Aramid fillers for strength. Silicone offers good abrasion and chemical resistance.

Flexible Cable with Woven Stainless Steel Overbraid:

Polyimide film insulation on primaries and outer jacket. Cable protected by stainless steel overbraid. Offers outstanding abrasion and cut resistance and good chemical resistance.

Coiled Retractable Cable:

Polyurethane outer jacket. PFA insulation on primaries. Polyurethane offers excellent abrasion resistance and good chemical resistance.

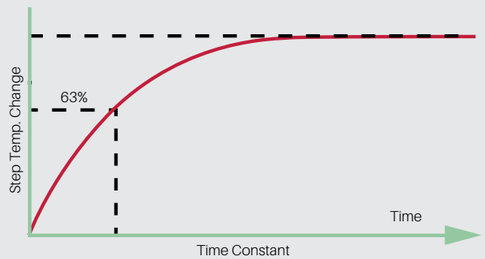
Accuracy Tolerances for Standard Thermocouples (A.N.S.I. MC 96.1 - 1982)

Type K Thermocouples

Above 32°F or 0°C: ±0.75% of reading (or ±4°F (2.2°C) whichever is greater) to 2,282°F (1,250°C)

Below 32°F (0°C): ±2.0% of reading (or ±4°F (2.2°C) if greater) to -328°F (-200°C)

Time Constant (Thermal Responce Time)

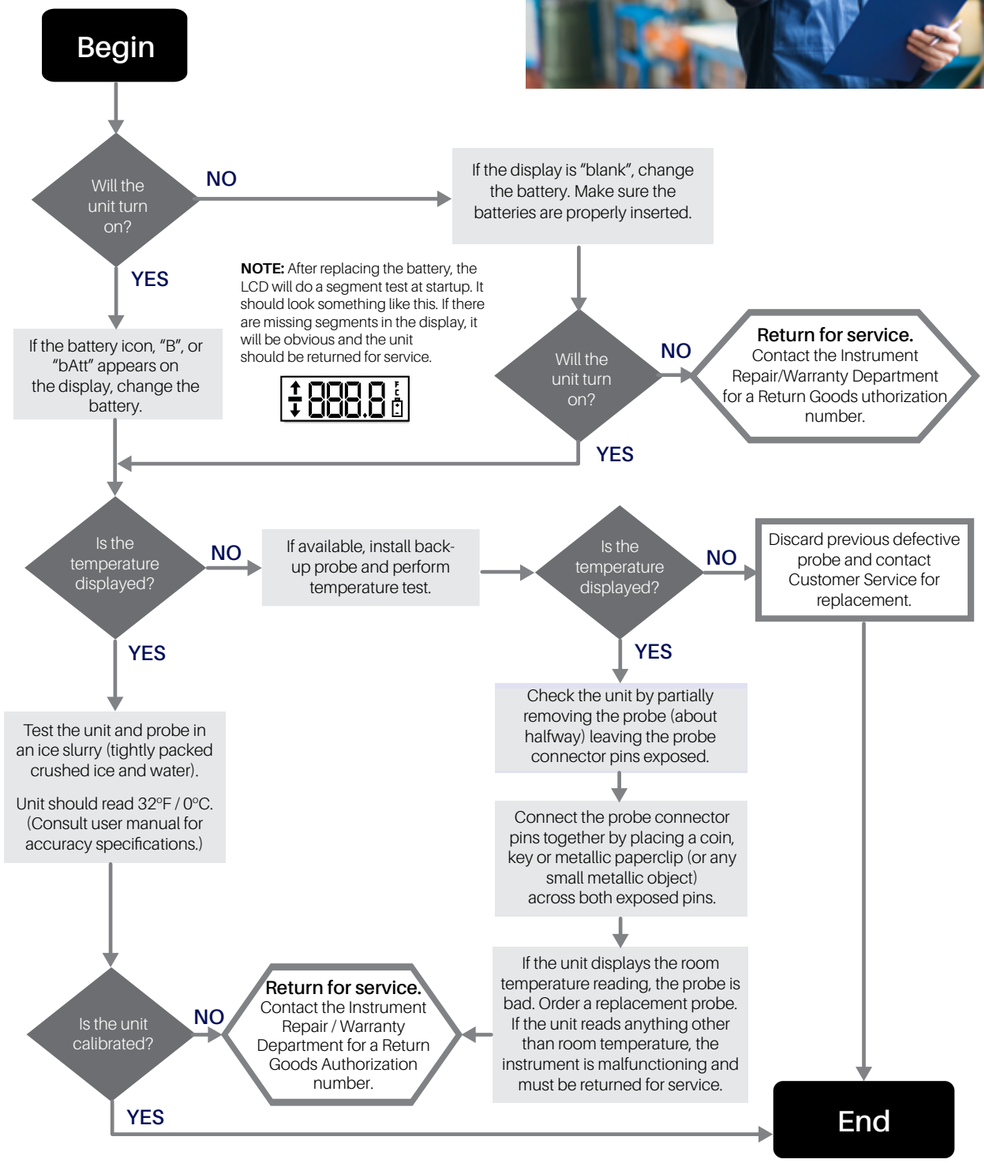


The response time of a thermocouple probe temperature can be graphed as an exponential function. One time constant is defined as the time required to reach 63.2% of the temperature change, two time constants is 86.5% and three is 95% of the temperature change. At Cooper-Atkins, the response time is stated at three time constants of the temperature change. Response times are intended as a general guideline and can differ in actual usage conditions. All testing done at the factory is under controlled conditions.

Probes with special limits of error cables are available for quote to high volume users. Avoid damage by not over-stretching or kinking the probe cables. Detach probe from the instrument by holding the plug firmly; do not pull plug out by the cable or damage may result.

TROUBLESHOOTING GUIDE

Follow these steps to troubleshoot your Thermocouple issue.



When you purchase from Cooper-Atkins, you are receiving the highest quality products available and the best overall value for your investment. The quality, features and benefits built into our instruments offer you the protection of knowing a critical piece of your food safety plan is highly reliable and guaranteed.

Hardware Support

When you contact our Technical Service Centers, a representative will attempt to isolate the problem over the phone. If they are unable to isolate the problem, you will be asked to return the product for further inspection.

In this case:

- You will be given a Return Goods Authorization (RGA) number.
- You will be asked to send the item(s) to our Service Center for evaluation by our Technical Service Specialists.
- The item(s) will be serviced, and if the problem is covered under our warranty terms, the item will be repaired/replaced in 3-5 business days and returned to you, free of charge. If the problem is not covered by our warranty terms, the Cooper-Atkins Instrument Repair/Warranty Department will call you within 3-5 days of receipt of your instrument to offer the option of repair at the repair price, or ordering a new unit at a discounted price. Based upon your approval, Cooper-Atkins will ship the repaired or replacement items and/or probes to you.

Software Support

We know how important both after-sale and ongoing factory support is to the successful implementation of a complete temperature monitoring program. That is why we utilize only our staff to install, train and support all of our customers. Our support team has been developed to provide the highest level of customer service.

Contact Info

Business Hours: Mon-Fri 8am-8pm EST,
Closed Sat-Sun

Emails:
coldchain.technicalservices@copeland.com
ca.warrantysupport@copeland.com

*Accurate for Life**

Products: DFP450W, DPP400W, DPP800W, and 2560

* **Accurate for Life** digital thermometers are guaranteed to maintain accuracy specification as set by Cooper-Atkins for a period of 10 years from the date of purchase.

Cooper-Atkins' standard one-year limited warranty, available at https://www.copeland.com/en-us/terms, shall apply in addition to this guarantee.

Atkins' thermocouple instruments and probes are covered by the industry's leading warranty program. This warranty program, combined with Cooper-Atkins' 135+ years of equipment experience, assures your instrument will provide many years of reliable service as it is specifically designed to withstand the rigors of a foodservice application.

Thermocouple Warranty

Your thermocouple instrument has a 5-year limited warranty against manufacturing or material defect.

For AquaTuff instruments, you can identify the date of manufacture by the serial number located on the back of all models. For EconoTemp models, the serial number is located inside the battery compartment.

Your thermocouple instrument has a 9-digit code, followed by the model number. The first two digits represent the month of manufacture, the second two digits represent the day of manufacture, and the third two digits are the year of manufacture.

AquaTuff Thermocouple Instruments

The AquaTuff thermocouple instrument above, serial number 011612049-35100-K, was manufactured on January 16, 2012.

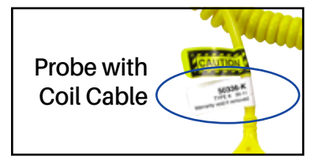
EconoTemp Thermocouple Instruments

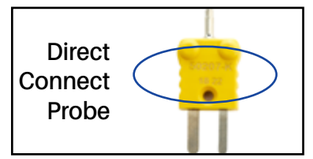
The EconoTemp thermocouple instrument above, serial number 011011020-32311-K, the date of manufacture was January 2011.

Probe Warranty

Your thermocouple probe has a 1-year limited warranty against manufacturing or material defect. You can identify when your probe was manufactured by the 4-digit serial number. On the coiled retractable cable probes and the direct connect probes, the serial number is located on the label fastened just above the mini-connector. On the Wrap&Stow probes, the serial number is located on the underside of the connector below the 2 insertion pins.

The first two digits represent the week and year of manufacture and the second two digits represent the year of manufacture. (For example: serial number 4612 was manufactured in the 46th week of 2012.)





ABS: Acrylonitrile Butadiene Styrene plastic known for its toughness, impact strength, dimensional stability, lightweight, and surface appearance.

Accuracy: The accuracy of a measurement is its closeness to a defined true or reference value.

Ambient: The conditions surrounding the instrument (temperature, humidity, etc.)

Ambient Operating Range: Range in the ambient temperature and Relative Humidity over which the instrument is designed to operate.

Blackbody: A theoretical object that radiates the maximum amounts of energy at a given temperature, and absorbs all the energy incident upon it. (The name blackbody was chosen because the color black is defined as the total absorption of light energy). Used in testing calibration of infrared thermometers.

Boiling Point: The temperature at which a substance in the liquid phase transforms to the gaseous phase; commonly refers to the boiling point of water which is 212°F (100°C) at sea level.

C: Celsius (or centigrade) relationship between Centigrade and Fahrenheit can be found by multiplying Celsius degrees by 1.8 and then adding 32.

For example 20°C is equal to (20 X 1.8) + 32 = 68°F.

°F: Fahrenheit
°F = 1.8 x°C + 32
inversely
°C = (°F-32) / 1.8

Calibration: Zeroing of an instrument to a known standard.

Calibration Procedure: A procedure that is performed to determine and set the parameters affecting an instruments performance in order to ensure its designed function within prescribed limits.

Capillary: A tube with a small bore connecting the sensor to the meter.

Clear: To restore a device to a prescribed initial state, usually the zero state.

Cold Junction: The point at which thermocouple wires are joined inside the meter.

Contamination: The unintended presence of harmful substances or micro-organisms in food.
Three contamination types are:
Biological: Bacteria, viruses, parasites, and fungi
Chemical: Pesticides, food additives, cleaning supplies
Physical: Foreign matter such as dirt, broken glass and other objects that get into the food.

Control Point: Temperature at which a system is to be maintained.

Critical Control Point (CCP): A step at which control con be applied and is essential to prevent or eliminate a hazard or to reduce it to an acceptable level.

Cross-contamination: The transfer of harmful substances or disease-causing micro-organisms to food by hands, food-contact surfaces, or cleaning cloths that touch raw food, are not cleaned and sanitized, and then touch ready-to-eat food. Cross -contamination can also occur when contaminated food or stored raw food touches or drips fluids on cooked or ready-to-eat food.

Data/Temperature Hold: The ability to freeze the display on any given measurement. Useful in applications where the instrument is not easily read while a measurement is being made.

Delta: Represents the difference between two temperatures: i.e., higher temperature minus lower temperature. Delta is the difference.

Emissivity: At a given wavelength the ratio of the infrared energy radiated by an object at a given temperature to that emitted by a blackbody at the same temperature. The emissivity of a blackbody is unity in all wavelengths.

Environment: The surroundings in which an operation is carried out including the buildings, facilities, stationary and moveable equipment, personnel, raw materials, utensils, ingredients and other materials that are used in the process.

Food Pathogens: Micro-organisms that can cause foodborne disease.

Foodborne Illness: A disease that is carried or transmitted to people by food.

Freezing Point: The temperature at which the substance goes from the liquid phase to the solid phase.

HACCP: Hazard Analysis Critical Control Points, is a quality safety system that focuses on the process of food in an operation to reduce risk.

Hygrometer: An instrument used in measuring humidity.

Ice Point: A comparison of values from a temperature measurement device to a more accurate device, where the medium is at an ice point reference of 32°F (0°C).

Ice Slurry: Used in calibrating thermometers, an ice slurry is a glass of crushed ice filled with water. This brings the temperature to 32°F (0°C) for low-end calibration.

Infrared: An area in the electromagnetic spectrum extending beyond red light from 760 nanometers to 1000 microns. It is the form of radiation used for making non-contact temperature measurements.

Infrared Thermometer: An instrument that determines the temperature of on object by means of detecting and quantifying the infrared radiation emitted therefrom.

ISA: Instrument Society of America

J-Type Thermocouple: The two thermocouple wires are made of Iron and Copper-Nickel.

K-Type Thermocouple: The two thermocouple wires are made of Nickel Chromium and Nickel Aluminum.

LCD, Liquid Crystal Display: Used on many handheld instruments because of its easy readability and very low power use.

LED, Light Emitting Diode: A semiconductor diode that emits light when voltage is applied.

Maximum Operating Temperature: The maximum temperature at which an instrument or sensor can be safely operated.

Min/Max/Average: Some instruments will record the minimum and maximum temperature and give the average temperature reading based on the min and max.

NIST: National Institute of Standards and Technology, USA

NIST Traceability: Calibration in accordance with and against standards traceable to NIST. Traceability to NIST is a means of ensuring that reference standards remain valid and their calibration remains current.

NSF: National Sanitation Foundation, is best known for its role in the developing of standards and criteria for equipment, products, and services that bear upon health. The NSF mark is widely recognized as a sign that the article to which it is affixed complies with the applicable NSF standard.

Range: The full scale value for a specific instrument setting.

Ready-to-Eat Meat & Poultry Products (RTE): Meat and poultry products that do not require further heating prior to consumption.

Reference Junction: The cold junction in a thermocouple circuit which is held at a stable, known temperature. The standard reference temperature is 32°F (0°C).

Resolution: The smallest unit that can be detected and displayed by a measurement device.

RH: Relative Humidity in % as opposed to absolute humidity which is in ppm. 100% RH means that at hot particular temperature, the air cannot absorb anymore humidity and any additional amount will become water. As the temperature increases, the % RH drops hence allowing more water to be absorbed.

RTD: Resistance Temperature Detectors

Sanitize: Reducing the harmful micro-organisms on a surface to safe levels. It is not a substitute for cleaning. Food-contact surfaces must be cleaned and rinsed before they can be effectively sanitized.

Spirit Filled: A glass tube that uses an alcohol or petroleum liquid inside instead of mercury.

Storage Temperature Range: The ambient temperature range on instrument can survive in non-operating mode and perform within specifications when expected.

Target: The target upon which the temperature is determined in an infrared reading.

Temperature Error: The maximum change in output, at any measured value within the specified range, when the transducer temperature is changed from room temperature to specified temperature extremes.

Thermistor: A semiconductor device whose resistance changes with the temperature.

Thermocouple: Denotes two wires composed of dissimilar metals that are joined together at both ends. When one end is heated, a potential difference is generated that is proportional to the junction temperature.

Thermometer: An instrument that measures temperature.

T-Type Thermocouple: The two thermocouple wires are made of Copper and Copper-Nickel

UL, Underwriters Laboratories: An independent testing agency traceable to the National Bureau of Standards. Tests products for safety and performance.

Validation: the determination of the degree of validity of a measuring device.

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14235	43
14240	43
14245	43
20200	42
212-150-8	10
212-159-8	10
212-159C-8	10
2237-04	5
24HP	6
25HP	7
2560	8
26HP	6
3210	4
322	3
323	3
3270	4
329	3
330	7
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RECEIVING:

- Check temperatures of food upon receipt and reject any potentially hazardous foods out of acceptable ranges
- Put perishable foods away promptly

Refrigerated (Food) Temperature: 41°F (5°C) or below
Frozen (Food) Temperature: 0°F (-18°C) or below

STORING:

- Use open shelving
- Check foods in multiple locations throughout a cold storage area; temperature may not be uniform
- Comply with storage time standards.

Dry Storage: 50° to 70°F (10° to 21°C)
Refrigerator (Food) Temperature: 41°F (5°C) or below
Refrigerator (Air) Temperature: 38°F (3°C) or below
Deep Chiller (Air) Temperature: 26° to 32°F (-3° to 0°C)
Freezer (Food & Air) Temperature: 0°F (-18°C) or below

THAWING / PREPPING:

- Do not thaw frozen food at room temperature
- If you thaw in a microwave, immediately begin cooking the food afterwards

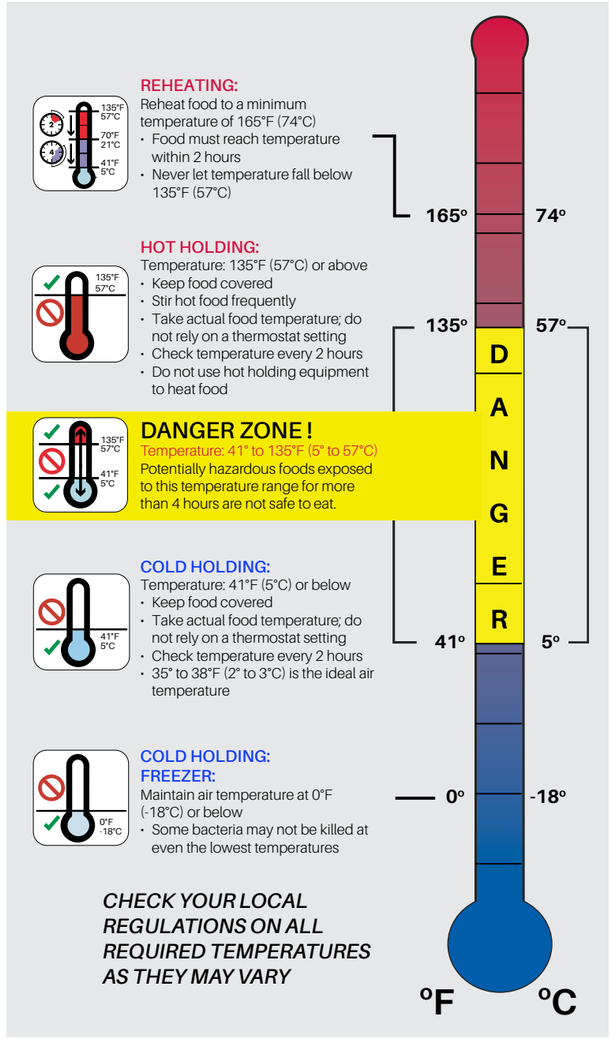
Under Running Water (Water Temperature): 70°F (21°C) or below
In the Refrigerator (Air Temperature): 38°F / 3°C or below

COOLING:

From Hot Temperature: Cool to 70°F (21°C) within 2 hours; and down to 41°F (5°C) or below within 4 hours (6 hours total)
- Do not cool at room temperature
- Divide food into small units or use a shallow pan
- Use an ice bath or blast chiller to hasten cooling

SINK / WATER TEMPERATURES:

Handwashing Water: 120°F / 49°C
Sanitizing Solutions (Heat): 171°F (77°C) for 30 sec. min.
Sanitizing Solutions (Chemical): 75° to 120°F (24° to 49°C)
Dish Machine (Warewashing) Final Rinse: 180° to 190°F max (82° to 88°C) hot water sanitizing



Minimum Cooking Temperatures

Product	Temperature	Time
Poultry Stuffed meat, seafood, poultry or pasta Stuffing made with fish, meat or poultry	165°F (74°C)	15 seconds
Ground meat & seafood Injected meat & mechanically tenderized meat Ratites (ostrich and emu) Shell eggs - being hot-held for service	155°F (68°C)	15 seconds
Seafood & commercially raised game Chops of pork, beef, veal and lamb Shell eggs - being served immediately	145°F (63°C)	15 seconds
Roasts of pork, beef, veal and lamb	145°F (63°C)	4 minutes
Fruit, vegetables, grains and legumes - hot held	135°F (57°C)	15 seconds

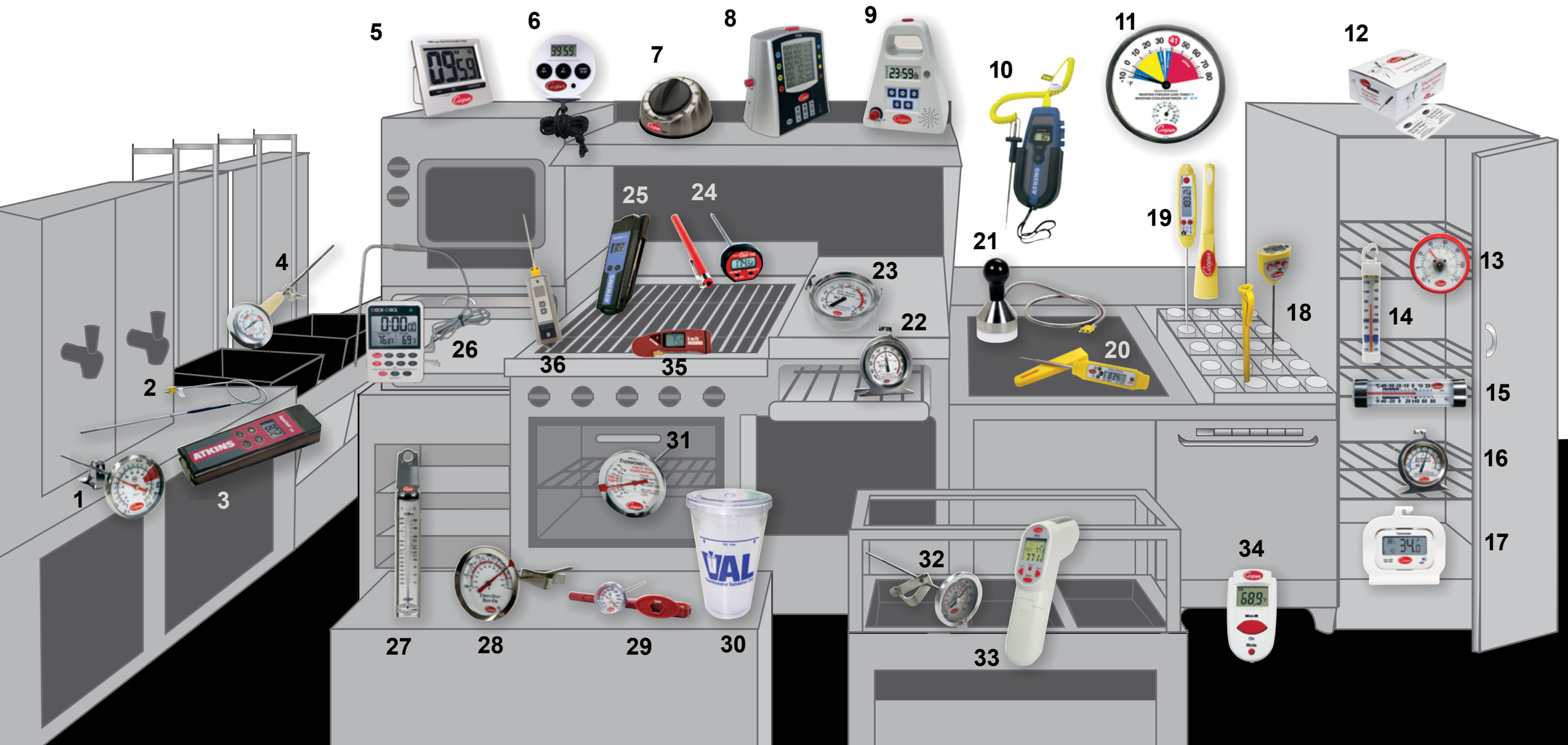
Cold Storage Shelf Life

Product	Temperature	Time
Fresh Beef	3 - 6 days	6 - 12 months
Fresh Veal, Lamb	3 - 4 days	6 - 9 months
Fresh Pork	1 - 2 days	3 - 6 months
Ground Beef, Veal and Lamb	1 - 2 days	3 - 4 months
Ground Pork	1 - 2 days	1 - 3 months
Variety Meats	1 - 2 days	3 - 4 months
Chicken, Turkey, Duck	1 - 2 days	6 months
Fillets of Fish (lean)	1 - 2 days	4 months
Fillets of Fish (fat)	1 - 2 days	3 months
Shellfish	1 - 2 days	2 - 4 months
Vegetables	1 - 2 days	8 - 10 months
Eggs	7 days	
Milk	5 to 7 days	

PROFESSIONAL FOOD SAFETY KITCHEN PRODUCTS

1. **2237** Espresso / Milk Frothing Thermometer
2. **50208** Fry Vat Probe
3. **35200-K** AquaTuff Thermocouple Instrument
4. **3270-05** Deep Fry Thermometer
5. **TW3** Large Digit Multi-function Timer
6. **TS100 99** Minute Stopwatch / Timer w/ Lanyard
7. **TM60** Long-Ring Mechanical Timer
8. **TFS4** Multi-Station, 99 Hour Digital Timer
9. **FT24** Single-Station 24 Hour Digital Timer
10. **93230-K** EconoTemp Thermocouple Combo Pack
11. **212-159** Refrigerator / Freezer Wall Thermometer
12. **9150** Boxed Probe Wipes - 200 Count
13. **535** Reach-in Cooler Thermometer
14. **330** Refrigerator / Freezer Thermometer
15. **335** Glass Tube Refrigerator / Freezer Thermometer
16. **25HP** Bimetal Refrigerator / Freezer Thermometer
17. **2560** Digital Refrigerator / Freezer Thermometer AM
18. **DFP450W** Digital Pocket Test Thermometer w/ Temp Alarm AM
19. **DPP800W** MAX Pen-Style Digital Pocket Test Thermometer AM
20. **DPP400W** Pen-Style Digital Pocket Test Thermometer AM
21. **50014-K** Weighted Griddle Probe
22. **24HP** Oven Thermometer
23. **3210-08** Grill Surface Thermometer
24. **DT300** Oval Style Digital Pocket Test Thermometer AM
25. **35132** AquaTuff Wrap&Stow Thermocouple with DuraNeedle Probe
26. **DTT361** Digital Cooking Thermo-Timer
27. **329** Paddle-Style Deep Fry / Candy / Jelly Therm
28. **322-01** Deep Fry / Candy / Jelly Thermometer
29. **1246-02** Bi-metal Pocket Test, 0° - 220°F AM
30. **9325** ValCup Thermometer Validation Cup
31. **323** Meat Thermometer
32. **2238-06** 8" Stem Test Thermometer
33. **412** Gun-Style Infrared Thermometer w/ Thermocouple Jack
34. **470** Mini Infrared Thermometer
35. **94100** KwikSwitch
36. **92020** Multi-Function Thermometer Kit

AM = Includes Antimicrobial Additive



About Copeland

Copeland, a global provider of sustainable climate solutions, combines category-leading brands in compression, controls, software and monitoring for heating, cooling and refrigeration. With best-in-class engineering and design and the broadest portfolio of modulated solutions, we're not just setting the standard for compressor leadership; we're pioneering its evolution. Combining our technology with our smart energy management solutions, we can regulate, track and optimize conditions to help protect temperature-sensitive goods over land and sea, while delivering comfort in any space. Through energy-efficient products, regulation-ready solutions and expertise, we're revolutionizing the next generation of climate technology for the better.

About Cooper-Atkins

Cooper-Atkins has been a trusted brand in the foodservice and food processing industries since 1885. The Cooper-Atkins portfolio has evolved to offer a comprehensive range of temperature management products and monitoring needs to serve many different applications, from single-point solutions to more advanced technologies. Cooper-Atkins is a Copeland brand, a global leader in sustainable heating, cooling, and refrigeration solutions.

For additional information please contact your Cooper-Atkins representative.

Copeland Cold Chain LP
67-1852 | V0724

To learn more, visit **copeland.com/cooper-atkins**

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