

INDUSTRIAL THERMOMETERS

Sky Blue Fill

Economy Line

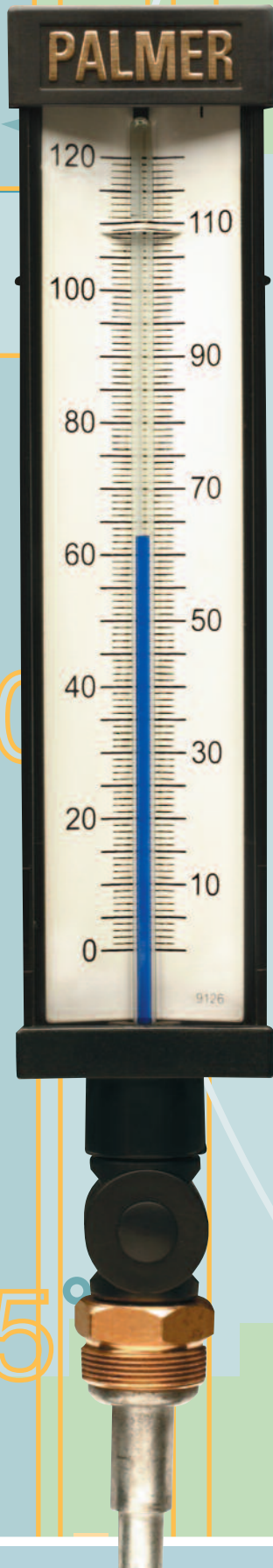
New! Solar Digital

Classic Line

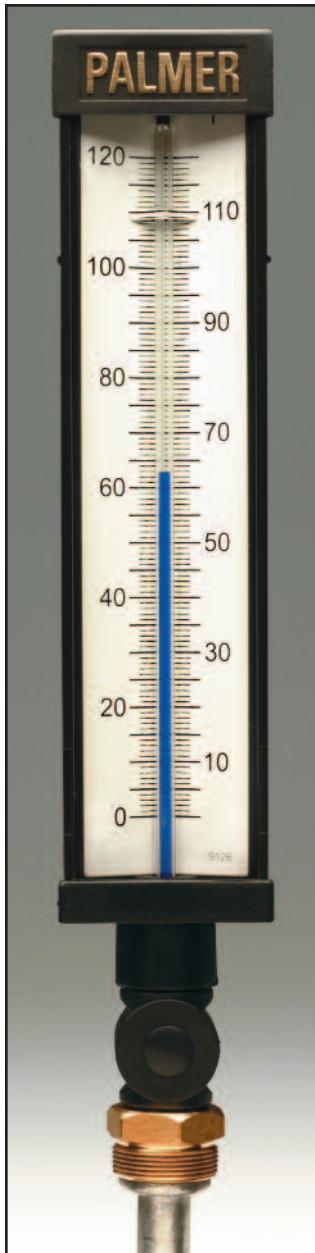
Prover Tank

Narrow Case

Wide Case



Model 9AL • 9FL • 9ALSB • 9FLSB Economy Industrial Thermometers



“SKY BLUE” Fill (SB) Environmentally Safe Models are filled with a mercury-free Blue Liquid. SB Models are available in 9" Cases, with either 3-1/2" or 6" Stem Lengths, Ranges up to 300°F. Mercury filled models are still available.

All Angle Adjustment: (pictured at right) Just two screws permit cases to be rotated 180° and stems to be positioned in 10° increments. Users can “infinitely” adjust Economy Line Industrial Thermometers to virtually any viewing angle required.

Easy Readability: Standard Lens front glass tube is “Red Reading” Mercury-Filled or Sky Blue Fill. Compact, yet visible 9" (229mm) Plastic or Aluminum, or 12" (305mm) Aluminum (only) cases, fitted with a “V” shaped white aluminum scale graduated with bold black lines and numerals.

Accuracy: Economy Line Industrial Thermometers are calibrated against standards traceable to the National Institute of Standards and Technology (NIST) and are guaranteed accurate to ±1 scale division.



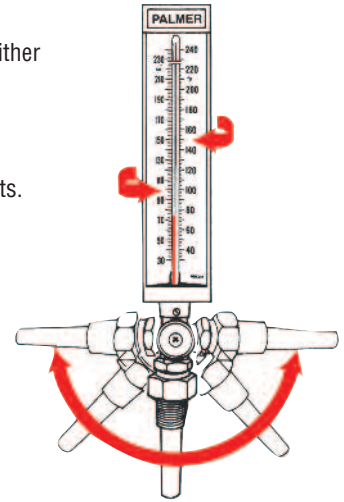
Construction: User selection of either tough, black-finished molded high temperature Plastic Case (9FL Models) or extruded, black-finished Aluminum Case (9AL or 12AL Models). Glass crystal, machined Brass Swivel Nut, and cast aluminum stem and seat are standard on all 3-1/2" stems.

Connection Assembly: Tapered Bulb Chamber allows maximum metal-to-metal contact with matching tapered thermowell for fast response and increased accuracy. Brass Swivel Nut is industry standard 1-1/4"-18 UNEF thread.

Range and Stem Length Selection: Full selection of Fahrenheit or Dual F & C Range scales available from -40 to 400°F (-40 to 204°C). Stock stem lengths are 3.5" (89 mm), 6" (152 mm), 8" (203 mm), 9" (229 mm) and 12" (305 mm).

Air Duct Construction: Air Duct Models feature a super-sensitive bare bulb protected by a 3/4" diameter perforated aluminum bulb guard. This design allows exposure to circulating air while still protecting the glass tube from any impact.

*Environmentally Safe, Sky Blue Fill,
Industrial Thermometer*



9AL, 9FL Standard Range Codes			
°F Code	°F Div	Dual, °F & °C Code	°F/°C Div
-40/110F	2°	-40/110F&C	2°F/2°C
0/120F	1°	0/120F&C	1°F/0.5°C
0/160F	2°	0/160F&C	2°F/0.5°C
20/180F	2°	20/180F&C	2°F/1°C
30/240F	2°	30/240F&C	2°F/1°C
30/300F	2°	30/300F&C	2°F/1°C
50/400F*	5°	50/400F&C*	5°F/2°C
100/550F	NA	100/550F&C	NA

* AL only, and not available in “Sky Blue” Fill

9AL, 9FL Base Model Numbers									
		Aluminum Case (AL)				Plastic Case (FL)			
		Mercury Fill		Sky Blue Fill (SB)		Mercury Fill		Sky Blue Fill (SB)	
Case Size		9" Scale*							
Bulb Type		Tapered	Air Duct (AD)	Tapered	Air Duct (AD)	Tapered	Air Duct (AD)	Tapered	Air Duct (AD)
Stem Length	3.5" (89mm)	9AL3.5	NA	9ALSB3.5	NA	9FL3.5	NA	9FLSB3.5	NA
	6" (152mm)	9AL6	9ALAD6	9ALSB6	9ALADSB6	9FL6	9FLAD6	9FLSB6	9FLADSB6
	8" (203mm)	9AL8	NA	9ALSB8	NA	9FL8	NA	9FLSB8	NA
	9" (229mm)	9AL9	NA	9ALSB9	NA	9FL9	NA	9FLSB9	NA
	12" (305mm)	9AL12	9ALAD12	9ALSB12	9ALADSB12	9FL12	9FLAD12	9FLSB12	9FLADSB12

* Optional 12" Case available, Aluminum only.

Model 9AL • 9FL • 9ALSB • 9FLSB

**Economy
Industrials**

Specifications

Case Length: 9" (220mm) Plastic or Aluminum Case, optional 12" (305mm) Aluminum.

Case Material: Painted Aluminum (AL) or Molded Plastic (FL).

Case Style: All Angle Adjustable.

Crystal: Glass Crystal Standard.

Scale: High visibility V-shaped painted white aluminum scale, black markings.

Glass Tube: Mercury Fill: Red Reading Lens glass, individually calibrated, thoroughly annealed and aged for permanent accuracy.

Sky Blue Fill: Magnified Lens; highly visible.

Fill: "Red-Reading" Mercury Fill, or Sky Blue Fill (SB Models)

Accuracy: Accurate to ± 1 scale division.
Fitting: 1-1/4"-18 UNEF machined Brass Swivel Nut.

Stem Material: Standard Cast Aluminum Stem and Seat.

Bulb: Choice of Tapered Bulb Chamber or perforated Air Duct design.

Calibration: Calibrated to NIST traceable standards.

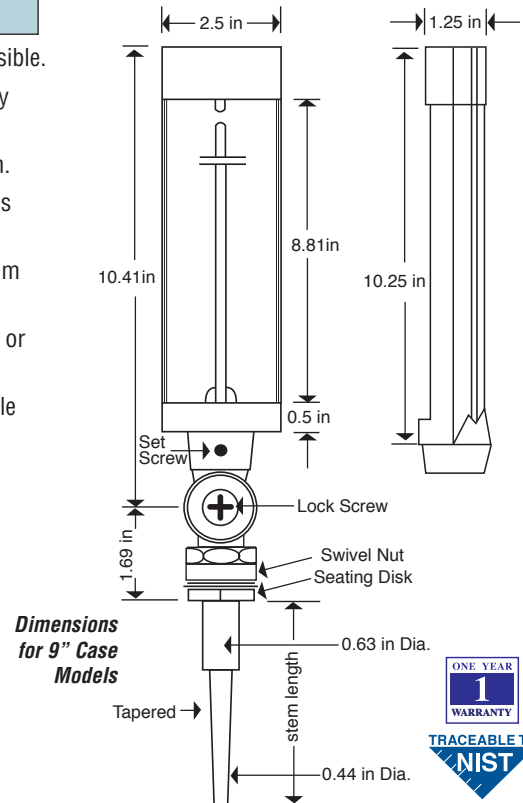
Ordering Information

9AL, 9FL Option Codes

Code	Option Description
12	12" (305 mm) Case Substitute "12" in place of "9" inch Scale in Base Model No. Table
(B)	Brass Stem and Seat
(PC)	Plastic Crystal
Discontinued	Red Spirit Fill (300°F/150°C limit)
(S)	Stainless Steel Stem/Seat material
58	Adjustable, Tilting Air Duct Flange Order Part No. "58" as a separate item
1140-9 or 1140-9	Flanged Union Connection Order Part No. 1140-9 or 1141-9

Standard three holes drilled in flange; 9/32" (7.1 mm) diameter equally spaced on 2-5/16" (57.7 mm) diameter bolt circle.

Specify either: Model 1140-9: 0.75" (19.1 mm) Flanged Union Connection, or Model 1141-9: 2.5" (63 mm) Extended Neck Flanged Union.



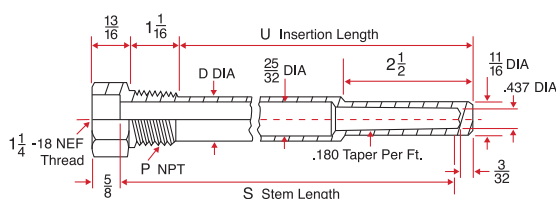
Part Number Example

Base Model No.	Stem Length	Temp. Range	Option Code
9FLAD	6	30/240F&C	(S)
9" Case, Plastic Case Air Duct Mercury Fill	6" Stem	30/240°F & 0/114°C Dual Scale Range	Stainless Steel Stem and Seat

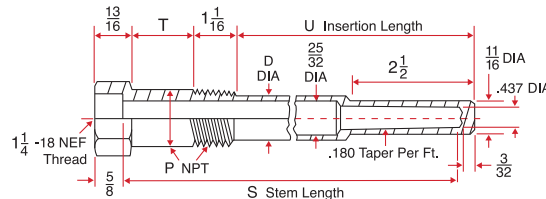
Economy Thermowells with 3/4"-14 NPT External Thread for Industrial Thermometers

Well Material	Regular Series Thermowells			Lagging Extension Thermowells			
	Stem Length "S"	Insertion Length "U"	Model Number	Stem Length "S"	Insertion Length "U"	Lagging Extension "T"	Model Number
Cast Brass	3.5"	2.5"	1140-203-01A	3.5"	1.75"	1"	1141-203-01A
Cast Brass	6"	5"	1140-206-01A	6"	2.5"	2.5"	1141-206-01A
Mach. Brass	8"	7"	1140-208-01	8"	4"	3"	1141-208-01
Mach. Brass	9"	8"	1140-209-01	9"	5"	3"	1141-209-01
Mach. Brass	12"	11"	1140-212-01	12"	8"	3"	1141-212-01

For a full listing of Industrial Thermometer Thermowells & Union Connections, please request catalog No. PW1100.



"P" = 3/4"-14 NPT External Thread



Air Duct Stem Model with bare bulb

Register your product at www.palmerwahl.com/register

Specifications subject to change without notice



Solar Digital Thermometers

Model PST500 • PST550 Solar Digital Industrial Thermometers



Model PST500

Can be powered by a flashlight!

PST500 Solar Digital Thermometer

PST550 Solar Digital Thermometer with Transmitter

NEW! Palmer PST Solar Digital Industrial Thermometers are environmentally friendly, mercury-free thermometers, *which can even be powered by a flashlight!* Palmer Thermometers set industry standards for accuracy, quality, and rugged operation. They offer 1% accuracy and are designed and constructed for long-term service.

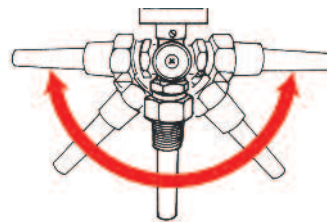
Direct Replacement for Industrial Glass and Bimetal Thermometers.

Transmitter: Single unit allows for local reading and remote transmitting. Dual sensors offer convenient and reliable independent operation for a variety of applications.

All Angle Adjustment: Just one screw permits cases to be rotated 180° and stem to be positioned in 10° increments. Users can “infinitely” adjust thermometers to virtually any viewing angle required.

Easy Readability: Large digital display can be seen from a distance.

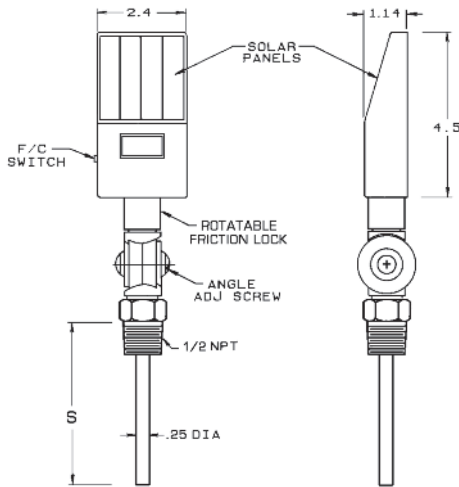
Self Powered: No need for batteries.



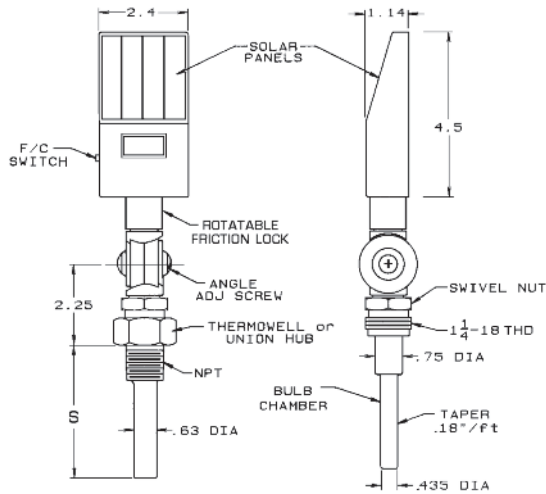
Specifications		
	PST500	PST550
Solar Powered Digital Thermometer		
Output	NA	4-20mA Transmitter
Case	Hi-Impact ABS Case, All Angle Adjustable	
Range	-50° to 300°F (-45° to 150°C) F & C Switchable	
Display	1/2" LCD digits, wide ambient formula	
Accuracy	1% of reading or 1°, whichever is greater	
Resolution	1/10° between -19.9° to 199.9°F (-28° to 93°C)	
Recalibration	Through case potentiometer adjustment	
Lux Rating	10 Lux (one foot candle)	
Update	10 seconds	
Ambient Temperature	-30° to 140°F (-35° to 60°C)	
Ambient Temp Error	Zero	
Humidity	100%	
Sensor	Glass passivated Thermistor - NTC	Thermistor based - NTC
Fitting	1-1/4"-18 UNEF Machined Brass Swivel Nut	
Stem Material	Standard Cast Aluminum Stem and Seat	
Stem Assemblies	Bimetallic, Industrial, Air Duct type	
Transmitter		
Range	NA	-58° to 302°F (-50° to 150°C)
Output	NA	4-20 mA
Ambient Operating Temp	NA	-15° to 185°F (-25° to 85°C)
Ambient Error	NA	0.01% Span (°C)
Supply	NA	8 to 35 VDC
Max Load Resistance	NA	775W with 24VDC Supply
Accuracy	NA	0.1% of Span
Sensor	NA	Platinum 100ΩRTD



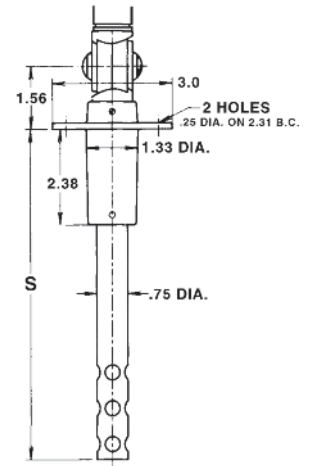
Model PST500 • PST550 Solar Industrial Digital Thermometers



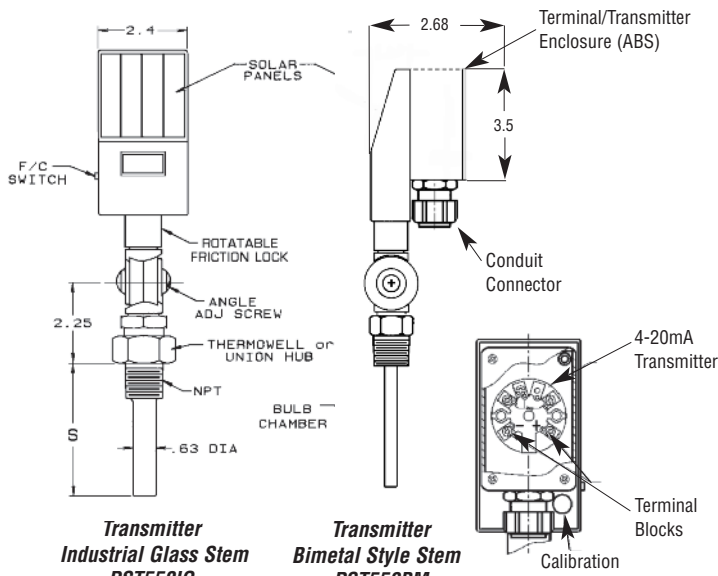
Bimetal Style Stem Assembly PST500BM



Industrial Glass Stem Assembly PST500IG

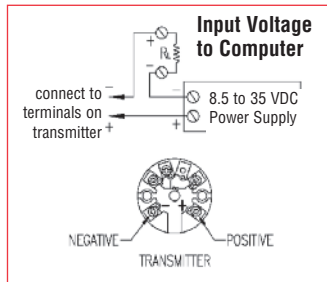


Air Duct Stem Assembly PST500AD and PST550AD



Transmitter Industrial Glass Stem PST550IG

Transmitter Bimetal Style Stem PST550BM



For RL = 250Ω			
V VOLT	I mA	°F	°C
1	4	-58	-50
5	20	+302	+150

Compatible with most building automation systems with 4-20mA input



Ordering Information

Stem Length	Solar Thermometer			Solar Thermometer with Transmitter		
	Bimetal Style	Industrial Glass	Air Duct	Bimetal Style	Industrial Glass	Air Duct
2.5"	PST500BM025 ¹	NA	NA	PST550BM025	NA	NA
3.5"	NA	PST500IG035 ²	NA	NA	PST550IG035	NA
4"	PST500BM040 ¹	NA	NA	PST550BM040	NA	NA
6"	PST500BM060 ¹	PST500IG060 ²	PST500AD060	PST550BM060	PST550IG060	PST550AD060
9"	NA	NA	PST500AD090	NA	NA	PST550AD090
12"	NA	NA	PST500AD120	NA	NA	PST550AD120

Bimetal Style: Fully interchangeable with Bimetallic Dial Thermometers
Industrial Glass: Fully interchangeable with Industrial Glass Thermometers
¹ Sockets available. ² without Socket



Register your product at www.palmerwahl.com/register

Specifications subject to change without notice



Model 200 Series • 300 Series Classic Industrials

Mercury Thermometers are the most reliable thermometers in the world. Palmer Industrial Thermometers set industry standards for accuracy, quality, and rugged operation. With looks to match their performance, these classic thermometers are designed and constructed for long-term industrial process service. For some applications requiring maximum response time using a union instead of a thermowell, specify one piece stem and bulb.

Specifications

Case Length: 300 Series - 9" (220mm) Case, or 200 Series - 12" (305mm) Case.

Case Material: Extruded "V" shaped brass with chrome finish.

Case Styles: Straight, 90° Back Angle, Left Side, Right Side, Incline, or Recline Angle. Please contact the factory for custom models and special needs.

Crystal: Instrument Quality Glass, Plastic optional.

Scale: 300 Series: Numerals and graduations are printed on a painted metal scale, Engraved Scale for Optional ranges. 200 Series: Scales are individually engraved for each glass tube. Optional Dual Scales available.

Glass Tube: "Red-Reading" Lens glass, individually calibrated, thoroughly annealed and aged for permanent accuracy.

Fill: "Red-Reading" Mercury Fill Standard, Red Spirit Fill optional (up to 300°F/150°C only).

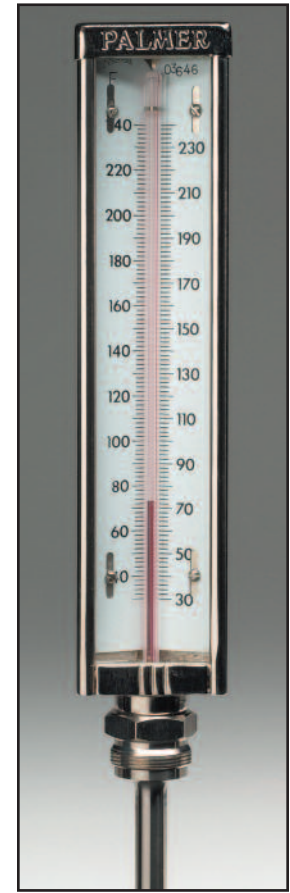
Accuracy: ±1/2 scale division, ±1 scale division if Red Spirit Filled. Special calibration from customer supplied set points available.

Calibration: Calibrated to NIST traceable standards.

Fitting: 1-1/4"-18 UNEF machined Brass Swivel Nut connection is standard. Stainless Steel optional.

Bulb: Tapered design for maximum contact and heat transfer from Thermowell. Stem and Bulb are Stainless Steel.

Wells & Fittings: Palmer Industrial Thermowells are listed in Palmer Catalog PW1100.



Model 209 Straight Industrial Thermometer



200 / 300 Series Base Model Numbers

200 Series 12" Scale Code	300 Series 9" Scale Code	Case Style
209	309	Straight
229	329	90° Back Angle
268R	368R	Right Side Angle**
268L	368L	Left Side Angle**
249-301 ¹	249-301 ¹	30° Incline Angle
249-45I	349-45I	45° Incline Angle
249-30R ¹	249-30R ¹	30° Recline Angle
249-45R	349-45R	45° Recline Angle
249-75R	349-75R	75° Recline Angle
249-105R	349-105R	105° Recline Angle

** Illustration to show example of the position of stem to case. See table above for model numbers. ¹ Discontinued



Left Side Angle



Right Side Angle

200 / 300 Series Standard Range Codes

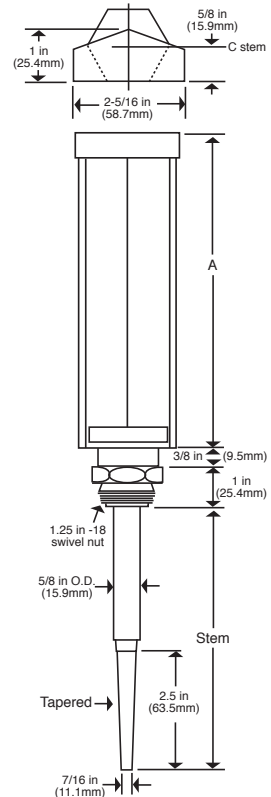
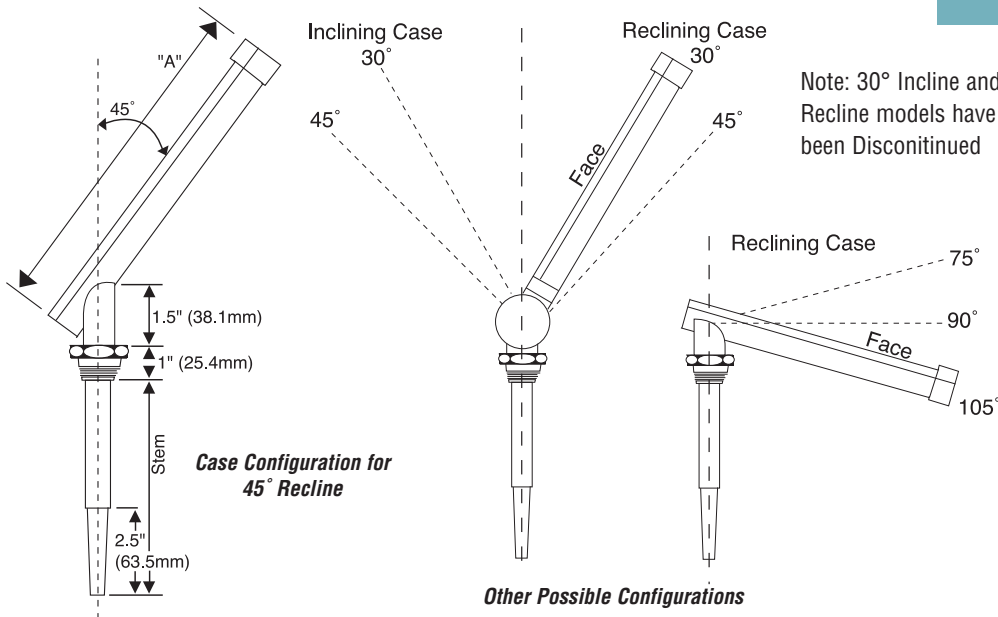
°F Code	9" Case Div	12" Case Div*	°C Code	9" Case Div	12" Case Div*
0/100F	1°	0.5°	-18/40C	1°	0.5°
0/100F&R	1°	0.5°	0/80C	1°	0.5°
30/180F	2°	1°	0/115C	1°	1°
30/240F	2°	2°	0/150C	2°	1°
170/270F	1°*	1°	10/205C	2°	2°
170/270F&P	1°*	1°			
30/300F	2°	2°			
50/400F	5°	2°			
200/300F	1°*	1°			
200/400F	2°	2°			

200 / 300 Series Optional Range Codes*

°F Code	9" Case Div	12" Case Div	°C Code	9" Case Div	12" Case Div
-40/110F	2°	1°	-40/45C	1°	0.5°
-30/130F	2°	1°	40/265C	2°	2°
0/160F	2°	1°	95/405C	NA	NA
180/360F	2°	2°			
180/360F&P	2°	1°			
250/400F	2°	2°			
100/550F	NA	NA			
150/600F	NA	NA			
200/750F	NA	NA			

* Engraved Scale

Model 200 Series • 300 Series



Ordering Information

To select a thermometer, please specify the following:

- 1) Base Model Code for Case Size and Case Style from table pg 6
- 2) Stem Length Code from table below
- 3) Range Code from tables pg 6
- 4) Specify Option Codes from table at right

200 / 300 Series Option Codes	
Code	Option Description
(DH)	Case Drain Holes
(DS)	Dual Scale
(ES)	Special Engraved Scale (Std on 200, 12")
(OPS)	One-Piece Stem/Bulb
(PC)	Plastic Crystal
(RS)	Red Spirit Fill (up to 300°F)
(SN)	304 SS Swivel Nut

200 / 300 Series Stem Length Codes	
Code	Length (mm)
3.5	3.5" (89mm)
6	6" (152.4mm)
8	8" (203mm)
12	12" (305mm)

Part Number Example			
Base Model No.	Stem Length	Temp. Range	Option Code
329	3.5	30/240F	(RS)
90° Back Angle, 9" Case	3.5" Stem Length	30° to 240°F Range	Red Spirit Fill

Straight Case Configuration



Prover Tank Industrial Thermometers

Prover Tank 12" Base Model Numbers						
Stem Length	Straight	90° Back Angle	Left Side Mount	Right Side Mount	30° Incline Mount	30° Recline Mount
3.5"	210P3.5	210PBA3.5	210PLS3.5	210PRS3.5	210PI3.5 ¹	210PR3.5 ¹
6"	210P6	210PBA6	210PLS6	210PRS6	210PI6 ¹	210PR6 ¹
8"	210P8	210PBA8	210PLS8	210PRS8	210PI8 ¹	210PR8 ¹
12"	210P12	210PBA12	210PLS12	210PRS12	210PI12 ¹	210PR12 ¹

¹ Discontinued

Part Number Example		
Base Model No.	Stem Length	Temp. Range
210P	3.5	10/120F
Straight, 12" Case	3.5" Stem Length	10° to 120°F Range

- Range: 10° to 120°F (1/2° divisions) Add Range Code **10/120F** to Base Model Number to complete a Prover Tank Model number
- Over-range reservoir to 150°F
- Nickel Plated Scale to resist gasoline vapors
- 12" Brass Case/Chrome Finish
- "Red-Reading" Mercury Fill

NOTE: Longer Stem Lengths available on request.

Register your product at www.palmerwahl.com/register

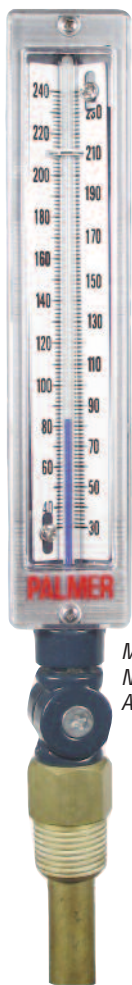
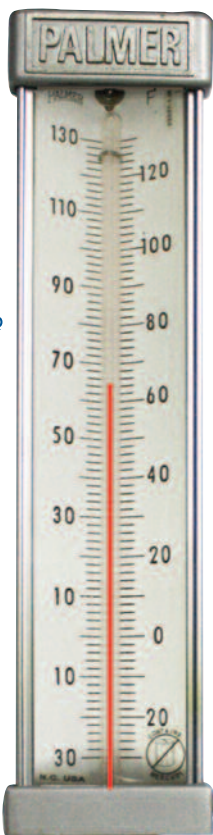
Specifications subject to change without notice

All Angle Wide or Narrow Case

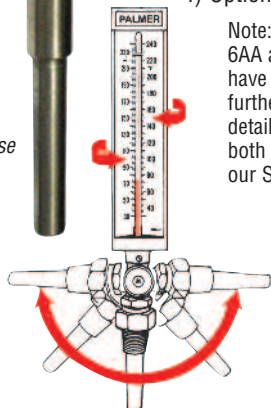
Model 3AA • 2AA • 7AA • All Angle Wide or Narrow Case Thermometers



Model 3AA
Wide Case
All Angle



Model 7AA
Narrow Case
All Angle



All Angle Adjustment: Just two screws permit cases to be rotated 180° and stems to be positioned in 10° increments. Users can "infinitely" adjust Wide Case Industrial Thermometers to virtually any viewing angle required.

All Angle, Wide Case Models 3AA and 2AA are a versatile solution to many problems encountered in ordering, stocking, and replacing Industrial Thermometers. 2-1/4" wide in either 9" or 12" case. All Angle Adjustment feature allows one thermometer to be "infinitely" adjusted to virtually any installation and viewing angle, greatly simplifying engineering and purchasing operations. Red Reading, Mercury-Filled tubes for high visibility and accuracy. Red Spirit Fill also available.

All Angle, Narrow Case Model 7AA offers quality and economy together in a space saving thermometer. Only 1-11/32" wide with a 6-1/2" case, this thermometer also includes a Brass thermowell. Features All Angle Adjustment.

Specifications

Case Length: 3AA: 9" (229mm); 2AA: 12" (305mm). 7AA: 6-1/2" (165.1 mm).

Case Width: 3AA, 2AA: 2.25" (57mm) Case. 7AA: 1-11/32" (34 mm) Case.

Case Material: 3AA, 2AA: Aluminum. 7AA: Blue Painted Aluminum.

Case Style: All Angle Adjustable.

Crystal: 3AA, 2AA: Instrument Glass. 7AA: Plastic Crystal and Cover.

Scale: Black numerals and graduations on aluminum scale. Engraved scale standard on 12".

Glass Tube: 3AA, 2AA: "Red-Reading" Lens glass, individually calibrated, thoroughly annealed and aged for permanent accuracy. 7AA: Magnified Lens; compact, yet visible.

Fill: 3AA, 2AA: "Red-Reading" Mercury Fill Standard, Red Spirit optional. 7AA: Sky Blue Fill.

Accuracy: 3AA, 2AA: ±1/2 scale division, ±1 scale division if Red Spirit Filled. 7AA: 1% of Full Scale.

Calibration: 3AA, 2AA: Calibrated to NIST traceable standards.

Fitting: 3AA, 2AA: 1-1/4" -18 UNEF Brass Swivel Nut, Stainless Steel optional. 7AA: Blue Painted Aluminum Knuckle.

Bulb: 3AA, 2AA: Stainless Steel, tapered, 0.437" (11mm). 7AA: Aluminum, Straight Shank, 3/8" Diameter.

Thermowell: 3AA, 2AA: See Palmer Thermowell Catalog PW1100. 7AA: 1/2" NPT Brass Thermowell with 0.531" diameter included.

Ordering Information

Please specify the following:

- 1) Base Model Number
- 2) Stem Length Code
- 3) Range Code
- 4) Options Code (not 7AA)

Note: The 7AA replaces the 6AA and 6000 Series which have been discontinued. For further information, and a detailed drawing comparing both models, please contact our Sales office.

Stem Length Codes		
7AA	3AA / 2AA	Length (mm)
2.25	NA	2.25" (57.2mm)
NA	3.5	3.5" (89mm)
NA	6	6" (152.4mm)
NA	8	8" (203mm)
NA	12	12" (305mm)

3AA / 2AA Option Codes	
Code	Option Description
(DH)	Drain Holes
(DS)	Dual Scale
(ES)	Engraved Scale
(OPS)	One Piece Stem/Bulb
(PC)	Plastic Crystal
(RS)	Red Spirit Fill
(SN)	304SS Swivel Nut

7AA / 3AA / 2AA STANDARD RANGE CODES

°F Range Code	7" Div	9" Div	12" Div*	Dual Range Code	7" Div	9" Div	12" Div*
-40/110F	NA	2°	1°	-40/110F&C	NA	2°F / 2°C	1°F / 1°C
0/120F	NA	1°	1°	0/120F&C	NA	1°F / 0.5°C	1°F / 0.2°C
0/160F	2°	2°	1°	0/160F&C	2°	2°F / 0.5°C	1°F / 0.2°C
20/180F	NA	2°	1°	20/180F&C	NA	2°F / 1°C	1°F / 0.5°
30/240F	2°	2°	1°	30/240F&C	2°	2°F / 1°C	1°F / 0.5°C
30/300F	NA	2°	2°	30/300F&C	NA	2°F / 1°C	2°F / 1°C
50/400F*	NA	5°	5°	50/400F&C*	NA	5°F / 2°C	5°F / 2°C

* Mercury Fill only.

