

Palmer

Temperature Chart Recorders

FEATURES

- Mercury Free or Mercury Filled Temperature Systems Available
- Accuracy ± 1 chart graduation
- Carefully heat treated coil provides superior spring action.
- Durable, low maintenance design: thermal system and other parts easily replaced by field technician
- 300 Series stainless steel bulb and interconnection capillary, with armor protection available on certain designs
- Standard case compensated system for uncompensated capillary lengths not exceeding 25'

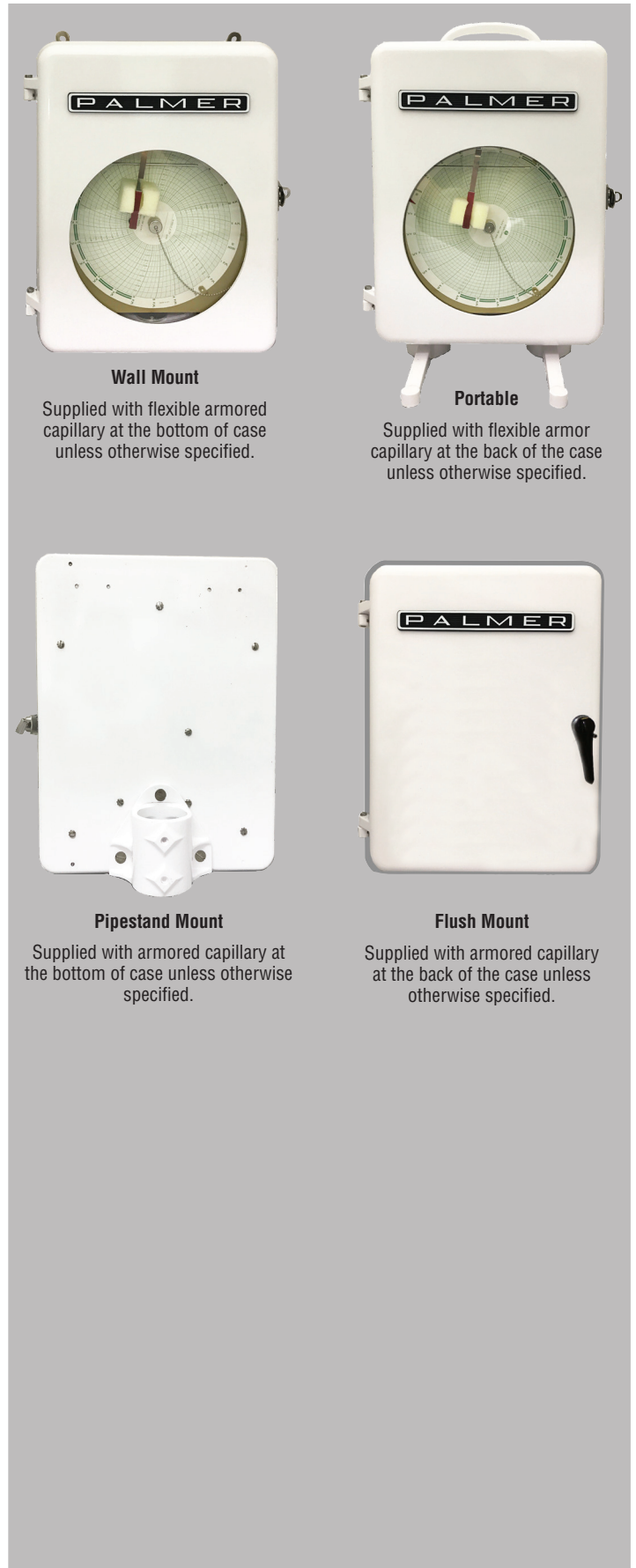
SPECIFICATIONS

Case Mounting:	Wall, Flush, Pipestand or Portable
Chart Size:	8" & 12"
Pens:	1 or 2 pen
Ranges:	From -30° up to 1000°F Mercury From -30° up to 600°F Mercury Free
Accuracy:	± 1 chart graduation
Chart Drive:	Battery Operated, Electric, or Spring Wound
Pen Configurations:	Available in single or dual for temperature

Weatherproof construction; heavy die cast aluminum case with a now standard white powder coat finish (a selection of other finishes available) heavy lockable door with weather stripping, available with or without window; ruggedly built for outdoor use and to withstand high levels of vibration; 1/2" diameter screened air vent holes; adjustable drawer pull latch with available hasp for lock; all stainless steel corrosion resistant internals; felt tip pens; micro-adjustable wire linkage; 8" and 12" circular chart sizes; one, or two felt tip pen options for temperature.

All of the recorders have front doors that open for changing the charts, pens, or batteries and winding of mechanical clocks, if equipped. Those doors are available with instrument glass, shatter-proof safety glass, plexiglass, or solid front doors with no window.

Specifications subject to change without notice.



Wall Mount

Supplied with flexible armored capillary at the bottom of case unless otherwise specified.

Portable

Supplied with flexible armor capillary at the back of the case unless otherwise specified.

Pipestand Mount

Supplied with armored capillary at the bottom of case unless otherwise specified.

Flush Mount

Supplied with armored capillary at the back of the case unless otherwise specified.



APPLICATIONS INCLUDE

The Natural gas market –

- System upset on gas lines where there is no power
- Tracking temperature over time for safety and security

Waste water treatment Storage tanks where no power is available -

- Monitoring of temperature
- In old buildings to monitor hot water temperatures from boilers in assorted tanks and lines for liquid or particulate product storage or transfer;
- Forest service monitoring of stream and lake temperatures

OIL rigs / BOP skids -

- The chart recorder is used to record whatever temperatures being measured that needs documentation

RECORDER WEIGHTS

8" Temperature Recorder, Flush Mount -	12.1 lbs
8" Temperature Recorder, Wall Mount -	12.5 lbs
12" Temperature Recorder, Wall Mount -	16.1 lbs

TEMPERATURE RANGES

Standard Recorder Temperature Ranges: From -30° up to 1000°F / 0° up to 600°C

Mercury Free Temperature Ranges: From -30°F up to 600°F

NOTE: If other ranges are required, please contact Customer Service.

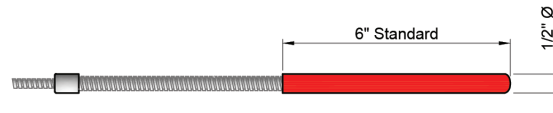
°F Temperature Ranges	°C Temperature Ranges
-30° to 120°F	0° to 60°C
0° to 100°F	0° to 100°C
0° to 120°F	0° to 120°C
0° to 150°F	0° to 150°C
0° to 200°F	0° to 200°C
0° to 250°F	0° to 250°C
0° to 300°F	0° to 300°C
0° to 400°F	0° to 350°C *
0° to 500°F	0° to 400°C *
0° to 600°F	0° to 500°C *
0° to 800°F *	0° to 600°C *
0° to 1000°F *	

NOTE: * Mercury Ranges Only

Palmer's temperature recorder elements must pass stringent quality control. All mercury filled systems conform to ASME and other designations such as 5A or 5B. All non mercury systems conform to ASME designations of 1B. Each system is pressurized while filling and will have over-range capabilities above and below its

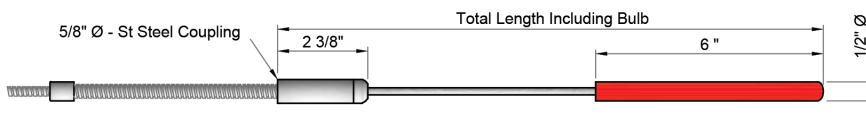
specified range. Rapid response to changes in temperature make it extremely accurate and reliable. The system is completely welded to prevent deterioration. Points most susceptible to physical damage are reinforced with added flexible armor.

Bulb 45-5: A bulb & capillary system designed to be dropped into a tank or bin & hung from the capillary.



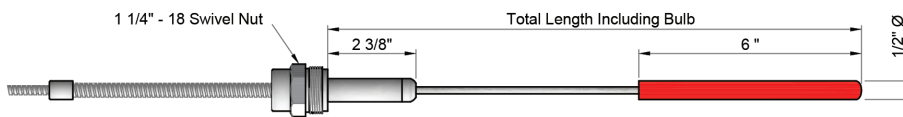
Bulb 45-5
Plain Bulb in Stainless Steel

Bulb 45-11: A bulb & capillary system designed to be dropped into a tank or bin & hung from the capillary, with a bendable section in the middle to expand possible insertion options.



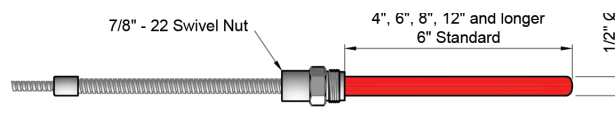
Bulb 45-11
Bendable Stiff Armor between Plain Bulb and Flexible Armor

Bulb 45-12: A bulb & capillary system designed to be screwed into a threaded connection and dropped into a tank or bin. Uses 1140-7 (3/4" NPT) or 1140-8 (1" NPT) standard & 1141-7 (3/4" NPT) or 1141-8 (1" NPT) extension neck union hubs (for going through insulation on a tank or pipe) or a 1140-9 surface mount flanged union connection for duct mounting.



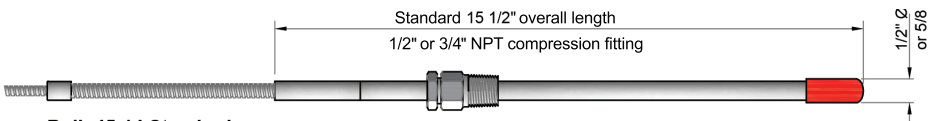
Bulb 45-12
Bendable Stiff Armor between Plain Bulb and Swivel Nut

Bulb 45-13: A bulb & capillary system designed to be inserted into a thermowell (closed receptacle) in the process or through a union hub (open end) directly into the process. Uses 1150-7 (3/4" NPT) or 1150-8 (1" NPT) standard & 1151-7 (3/4" NPT) or 1151-8 (1" NPT) extension neck (for going through insulation on a tank or pipe) open ended union hubs, or 1150-9 surface mount flanged union connection, or 1150-XXX-XX standard, 1151-XXX-XX extension neck (for going through insulation), 1154-XXX-XX built-up heavy wall, 1155-XXX-XX built-up extension neck heavy wall, 1156-XXX-XX weld-in, & 1157-XXX-XX flanged thermowells (closed receptacle). See thermowell catalog to fill in X areas for thread-size, length, and material.



Bulb 45-13
Bulb for Well or Union Connection

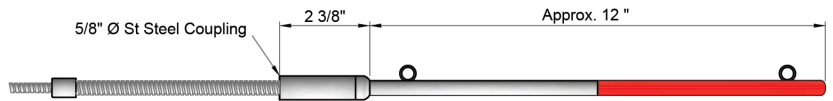
Bulb 45-14: A bulb & capillary system designed to be inserted into thermowells of various lengths (closed receptacle) in the process or through a union hub (open end) directly into the process, or using the 1/2" NPT or 3/4" NPT probe compression fitting, directly into the process. Uses 1120-7 (3/4" NPT) or 1120-8 (1" NPT) standard & 1121-7 (3/4" NPT) or 1121-8 (1" NPT) extension neck (for going through insulation on a tank or pipe) open ended union hubs, or 1120-9 surface mount flanged union connection. For thermowells (closed receptacle), use CP-970-01-1, -2, -3, & -4 for 4-7/8", 5-7/8", 7-7/8", or 11-7/8" overall lengths for the 5/8" diameter probes. Use CP-2083-1, 2, -3, -4, etc. for similar lengths for the 1/2" diameter probes.



Bulb 45-14 Standard
Bulb Construction permits Instrument to be used in Wells of varied lengths

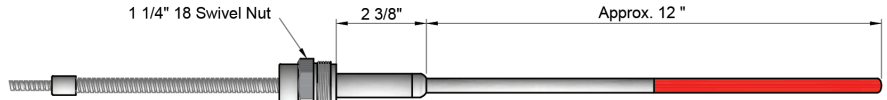
RECORDER TEMPERATURE BULBS

Bulb 45-29: A bulb & capillary system designed to be hung by two mounting rings for air temperature measurement. For best results, bulb needs to be mounted away from wall boundary layers of air.



Bulb 45-29
Plain Air Temperature Bulb with Rings for Suspending in Air Stream

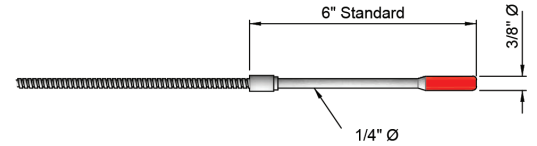
Bulb 45-30: A bulb & capillary system designed to be hung from a threaded connection and dropped into a tank or bin. Uses 1140-7 (3/4" NPT) or 1140-8 (1" NPT) standard & 1141-7 (3/4" NPT) or 1141-8 (1" NPT) extension neck union hubs (for going through insulation on a tank or pipe) or a 1140-9 surface mount flanged union connection for duct mounting.



Bulb 45-30
Air Temperature Bulb for Union Connection

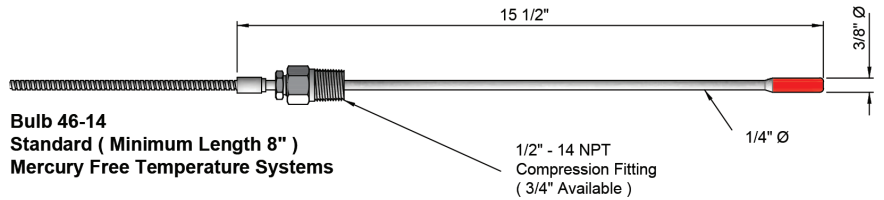
Bulbs for Mercury Free Temperature Systems

Bulb 46-5: Standard (Minimum Length 6")
For Mercury Free Temperature Systems

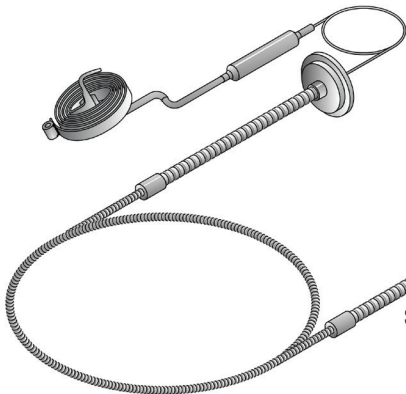


Bulb 46-5
Standard (Minimum Length 6")
Mercury Free Temperature Systems

Bulb 46-14: Standard (Minimum Length 8")
For Mercury Free Temperature Systems



Bulb 46-14
Standard (Minimum Length 8")
Mercury Free Temperature Systems



Standard Mercury Temperature Recorder Element



Mercury Free Temperature Recorder Element

RECORDER DRIVES

PC-11 battery Intrinsically safe (1.5 volt "C" cell*) powered eleven speed motor (60 min., 96 min., 12 hr., 24 hr., 48 hr., 7 day, 8 day, 14 day, 16 day, 31 day, or 32 day rotation speed).

With "OFF" option.



PC-12 battery Intrinsically safe (1.5 volt "C" cell*) powered twelve speed motor (30 min., 60 min., 2 hr., 4 hr., 6 hr., 8 hr., 12 hr., 24 hr., 3 day, 4 day, or 7 day rotation speed). *3.6 volt lithium "C" cell for very cold ambient temperatures.

No "OFF" Option.

Spring Wound Drive:

Switchable Dual Speed Clock. - By use of a shift lever, the drive can be set for 24 hour or 7 day rotation. Rotation is set at factory to conform to your specifications. Verify that the drive is set properly. To wind the drive, remove chart and use the key furnished with the recorder.

Standard Rotation: 24 hour / 7 day

Special Order Rotations:

Dual Speed: 15 minute / 1 hour

1 hour / 3 hour

2 hour / 8 hour

96 minute / 24 hour

Single Speed: 4 hour



Electric Chart Drive:

When installing, check to verify that proper voltage and frequency are used.

Standard Rotation: 7 day, 110/120V - 60 Hz

Optional Rotation: 24 hr, 110/120V - 60 Hz

Special Order Rotations:

12 hr, 110/120V - 60Hz

24 hr, 110/120V - 60Hz

2 day, 110/120V - 60Hz

24 hr, 110V - 50Hz



RECORDER PENS

Disposable Fine point, felt tip pens in Red, Green and Blue. Black & Purple also available.

Colors other than standard may be specified for either pen arm.

One pen recorder - Red pen (Standard)

Two pen recorder - Red pen and Blue pen (Standard)



RECORDER CHARTS

Explore our in-stock recorder charts for 8 inch and 12 inch circular temperature chart recorders. Special order charts are always available.

Stocked 8"

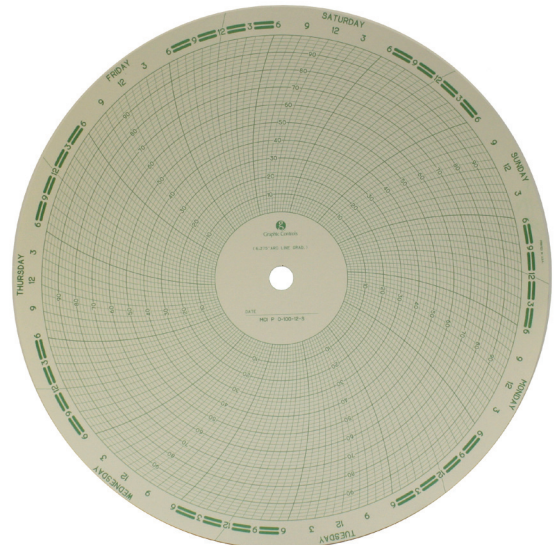
Circular Charts Ranges

0° to 100°F or °C	24HR
0° to 100°F or °C S	7DAY
0° to 150°F	24HR
0° to 200°F	24HR
0° to 250°F	24HR
0° to 300°F	24HR

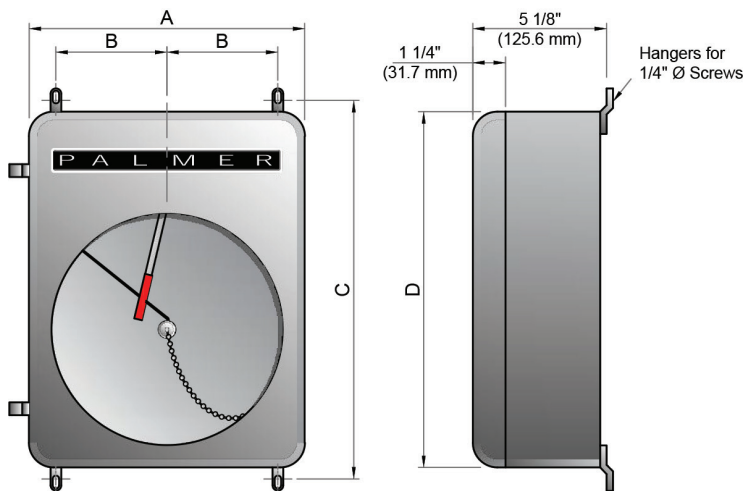
Stocked 12"

Circular Charts Ranges

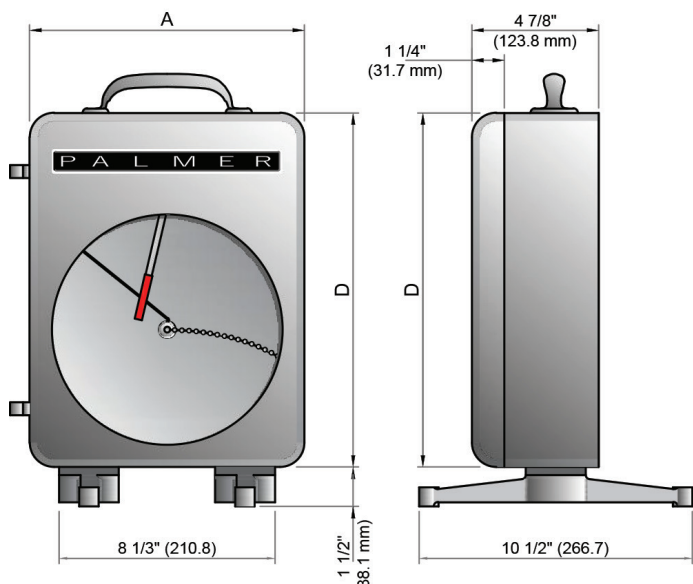
0° to 100°F or °C	24HR
0° to 100°F or °C S	7DAY
0° to 150°F	24HR
0° to 150°F S	7DAY
0° to 200°F	24HR
0° to 200°F S	7DAY



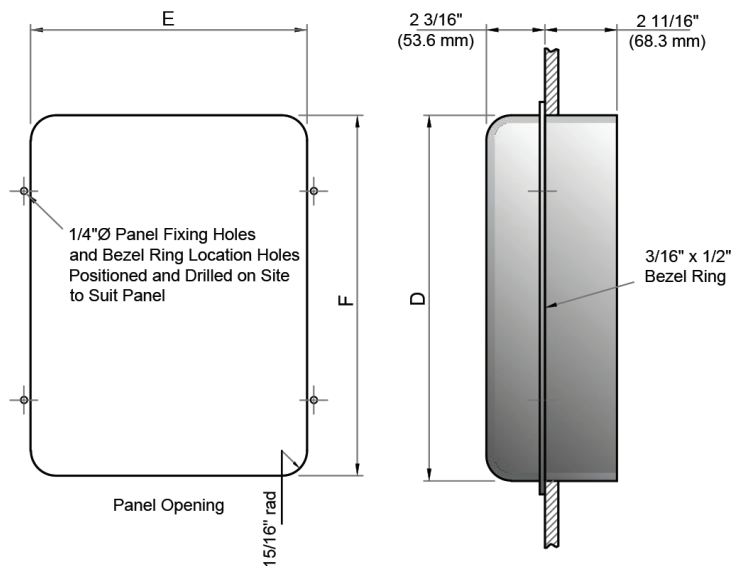
Wall Mounted



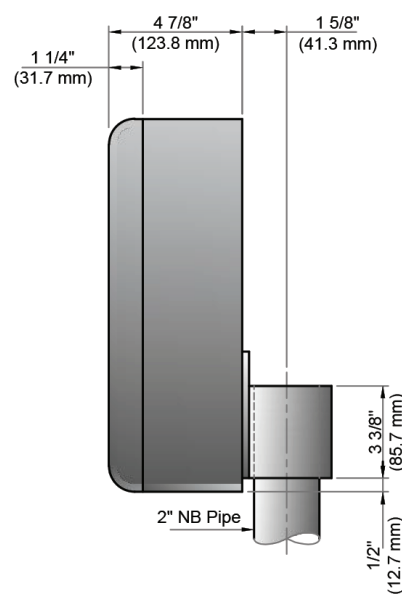
Portable



Flush Mounted



Pipestand Mounted



Dimensions	8in		12in	
	in	mm	in	mm
A	10-9/16	268.3	13-1/16	331.8
B	4-1/4	107.9	4-1/2	114.3
C	14-1/2	361.9	16-3/8	415.9
D	13-5/8	346.0	15-13/16	401.6
E	10-5/16	261.9	12-13/16	325.4
F	13-7/16	341.3	15-9/16	395.3