

Palmer

Pressure & Temperature Chart Recorders

FEATURES

- Mercury Free or Mercury Filled Temperature Systems Available
- All – Welded construction prevents deterioration
- 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, interconnection capillary, and armor available on certain designs
- Standard case compensated system for uncompensated capillary lengths not exceeding 25'
- ALL 316 Stainless Steel Pressure Elements.

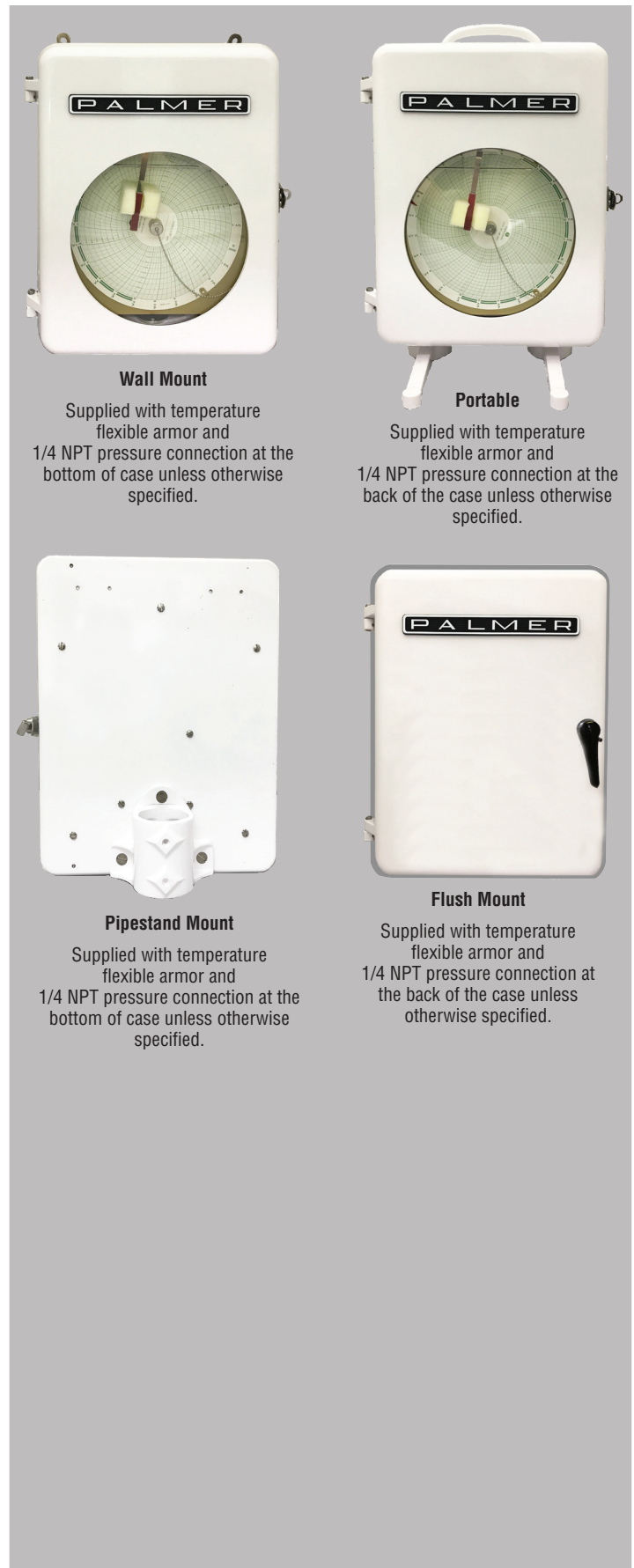
SPECIFICATIONS

Case Mounting:	Wall, Flush, Pipestand or Portable
Chart Size:	8" & 12"
Pens:	2 or 3 pen
Range:	From -30° up to 1000°F Temperature From -30° up to 600°F Mercury Free From 0 up to 30,000 PSI Pressure
Accuracy:	± 1 chart graduation for Temperature ± 1/2 chart graduation for Pressure
Chart Drive:	Battery Operated, Electric or Spring Wound
Pen Configurations:	Available in 2 or 3 pen configurations

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, two, or three felt tip pen options for a combination of both pressure and 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 temperature flexible armor and 1/4 NPT pressure connection at the bottom of case unless otherwise specified.

Portable

Supplied with temperature flexible armor and 1/4 NPT pressure connection at the back of the case unless otherwise specified.

Pipestand Mount

Supplied with temperature flexible armor and 1/4 NPT pressure connection at the bottom of case unless otherwise specified.

Flush Mount

Supplied with temperature flexible armor and 1/4 NPT pressure connection at the back of the case unless otherwise specified.



APPLICATIONS INCLUDE

The Natural gas market –

- System upset on gas lines
- Tracking pressure over time for safety and security

Waste water treatment Storage tanks where no power is available -

Monitoring of water pressure

- In high rise buildings to monitor water pressure for fire fighting sprinkler systems;
- The same for many old buildings where sprinklers were added years after initial construction, periodic checks to maintain fire department approval certificates;
- Irrigation pumps: pumping water from rivers or lakes to supply crop field needs;
- Municipal water system pressure checks.

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 -

- e.g. the cylinders on the skid are pressurized air bottles,
- Used if hydraulic pumps fail, then can operate the valve closings of the well, pneumatically, by air.
- Testing the integrity of the air bottles monthly or quarterly
- The chart recorder is used to record, document and prove the safety of the air system test.

RECORDER WEIGHTS

8" Pressure & Temperature Recorder, Flush Mount - 13 lbs

12" Pressure & Temperature Recorder, Portable Mount - 20 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
-30° to 120°F
0° to 100°F
0° to 120°F
0° to 150°F
0° to 200°F
0° to 250°F
0° to 300°F
0° to 400°F
0° to 500°F
0° to 600°F
0° to 800°F *
0° to 1000°F *

°C Temperature Ranges
0° to 60°C
0° to 100°C
0° to 120°C
0° to 150°C
0° to 200°C
0° to 250°C
0° to 300°C
0° to 350°C *
0° to 400°C *
0° to 500°C *
0° to 600°C *

NOTE: * Mercury Ranges Only

PRESSURE RANGES

PSI Pressure Ranges	
0 to 1 PSI	0 to 350 PSI
0 to 3 PSI	0 to 400 PSI
0 to 5 PSI	0 to 500 PSI
0 to 6 PSI	0 to 600 PSI
0 to 8 PSI	0 to 750 PSI
0 to 10 PSI	0 to 800 PSI
0 to 15 PSI	0 to 1000 PSI
0 to 20 PSI	0 to 1500 PSI
0 to 25 PSI	0 to 2000 PSI
0 to 30 PSI	0 to 2500 PSI
0 to 35 PSI	0 to 3000 PSI
0 to 45 PSI	0 to 4000 PSI
0 to 50 PSI	0 to 5000 PSI
0 to 60 PSI	0 to 6000 PSI
0 to 75 PSI	0 to 8000 PSI
0 to 100 PSI	0 to 10,000 PSI
0 to 120 PSI	0 to 15,000 PSI
0 to 150 PSI	0 to 20,000 PSI
0 to 200 PSI	0 to 30,000 PSI
0 to 250 PSI	3 to 15 PSI
0 to 300 PSI	

oz/in2 Pressure Ranges
0 to 10 oz/in2
0 to 15 oz/in2
0 to 20 oz/in2
0 to 25 oz/in2
0 to 30 oz/in2
0 to 50 oz/in2
kPa Pressure Ranges
0 to 5 kPa
0 to 20 kPa
0 to 80 kPa
0 to 100 kPa
0 to 500 kPa
0 to 800 kPa
0 to 1000 kPa
0 to 2000 kPa
0 to 5000 kPa

Hg Pressure Ranges
0 to 10 Hg
0 to 39 Hg
0 to 50 Hg
inH ₂ O Pressure Ranges
0 to 10 in H ₂ O
0 to 15 in H ₂ O
0 to 20 in H ₂ O
0 to 25 in H ₂ O
0 to 30 in H ₂ O
0 to 40 in H ₂ O
0 to 50 in H ₂ O
0 to 60 in H ₂ O
0 to 100 in H ₂ O

PRESSURE ELEMENTS

Pressure Ranges are offered in 8" and 12" Chart Recorders

Standard Pressure Element: 316 SS helical coil with Stainless Steel Fittings and tubing for ranges 30 to 10,000 PSI, with 1/4" NPT.

High Pressure Element: 316 Stainless Steel bourdon tube for ranges > 10,000 PSI, with autoclave fitting. 15,000, 20,000 and 30,000 with calibration on rise only.

Low-pressure Material: 316 Stainless Steel bellows diaphragm, tubing and fittings, for ranges below 30 PSI.

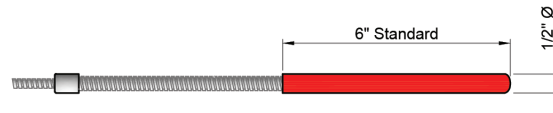


RECORDER TEMPERATURE BULBS

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

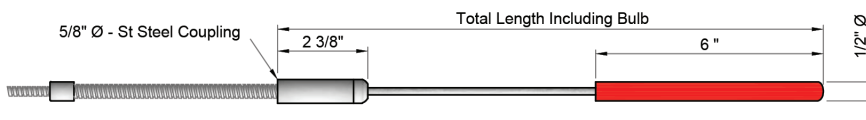
specified range. Rapid response to changes in temperature make it extremely accurate and reliable. The system is completely welded to prevent deterioration. Points most susceptible to physical damage are reinforced with added flexible armor.

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



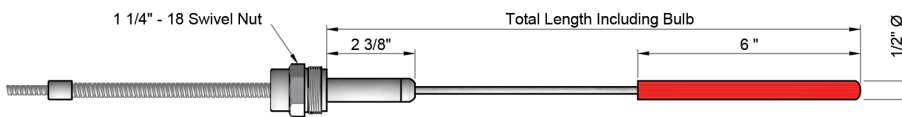
Bulb 45-5
Plain Bulb in Stainless Steel

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.



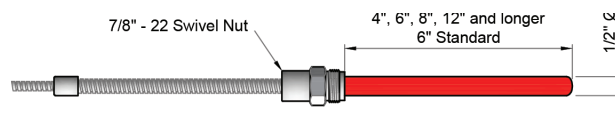
Bulb 45-11
Bendable Stiff Armor between Plain Bulb and Flexible Armor

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.



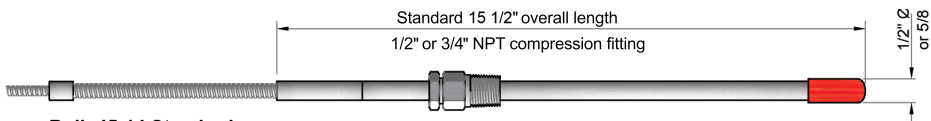
Bulb 45-12
Bendable Stiff Armor between Plain Bulb and Swivel Nut

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

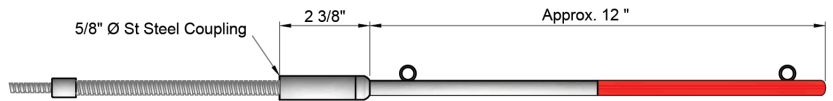
Bulb 45-14: A bulb & capillary system designed to be inserted into thermowells of various lengths (closed receptacle) in the process or through a union hub (open end) directly into the process, or using the 1/2" NPT or 3/4" NPT probe compression fitting, directly into the process. Uses 1120-7 (3/4" NPT) 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

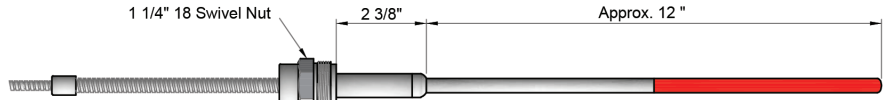
RECORDER TEMPERATURE BULBS

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

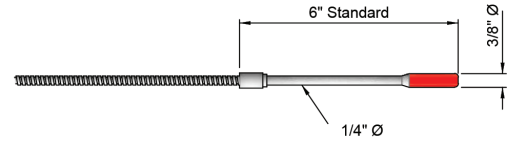
Bulb 45-30: A bulb & capillary system designed to be hung from a threaded connection and dropped into a tank or bin. Uses 1140-7 (3/4" NPT) or 1140-8 (1" NPT) standard & 1141-7 (3/4" NPT) or 1141-8 (1" NPT) extension neck union hubs (for going through insulation on a tank or pipe) or a 1140-9 surface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



Bulb 45-30
Air Temperature Bulb for Union Connection

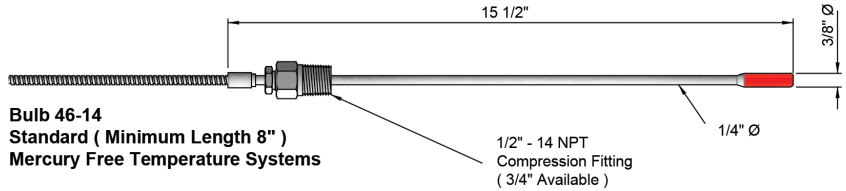
Bulbs for Mercury Free Temperature Systems

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

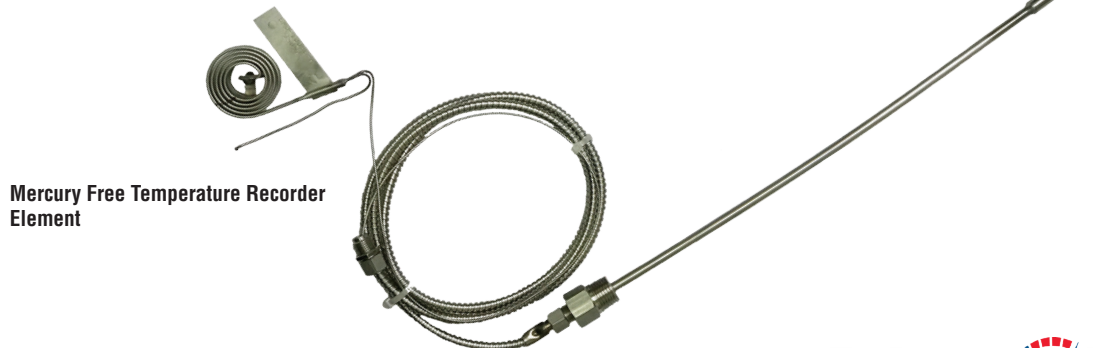
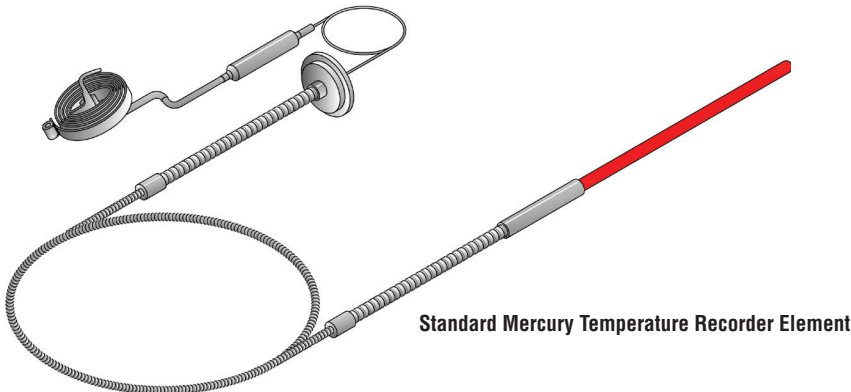


Bulb 46-5
Standard (Minimum Length 6")
Mercury Free Temperature Systems

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



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



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. Also available in Black and Purple.

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)

Three pen recorder - Red pen, Blue pen and Green 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"

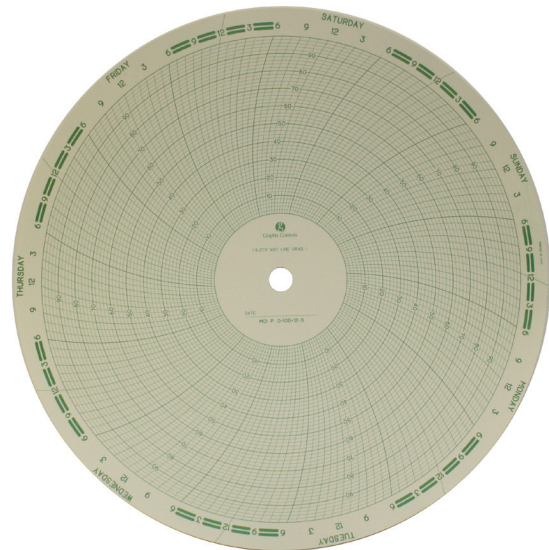
Circular Charts Ranges

0° to 100°F or °C or PSI	24HR
0° to 100°F or °C or PSI S	7DAY
0° to 150°F or PSI	24HR
0° to 200°F or PSI	24HR
0° to 250°F or PSI	24HR
0° to 300°F or PSI	24HR
0° to 1000PSI	24HR
0° to 2000PSI	24HR
0° to 3000PSI	24HR
0° to 5000PSI	24HR
0° to 10000PSI	24HR

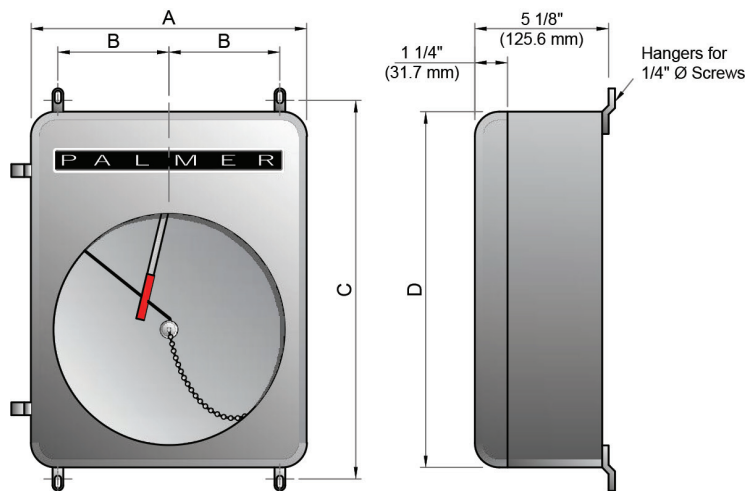
Stocked 12"

Circular Charts Ranges

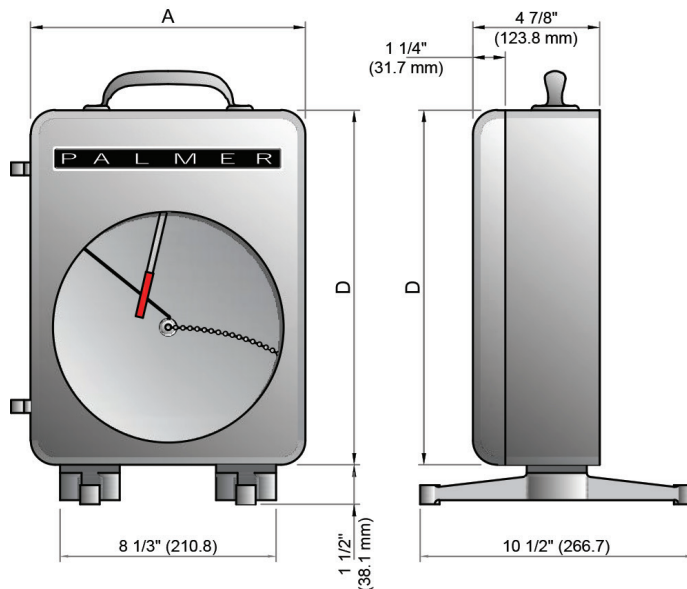
0° to 100°F or °C or PSI	24HR
0° to 100°F or °C or PSI S	7DAY
0° to 150°F or PSI	24HR
0° to 150°F or PSI S	7DAY
0° to 200°F or PSI	24HR
0° to 200°F or PSI S	7DAY
0° to 1000PSI	24HR
0° to 3000PSI	24HR



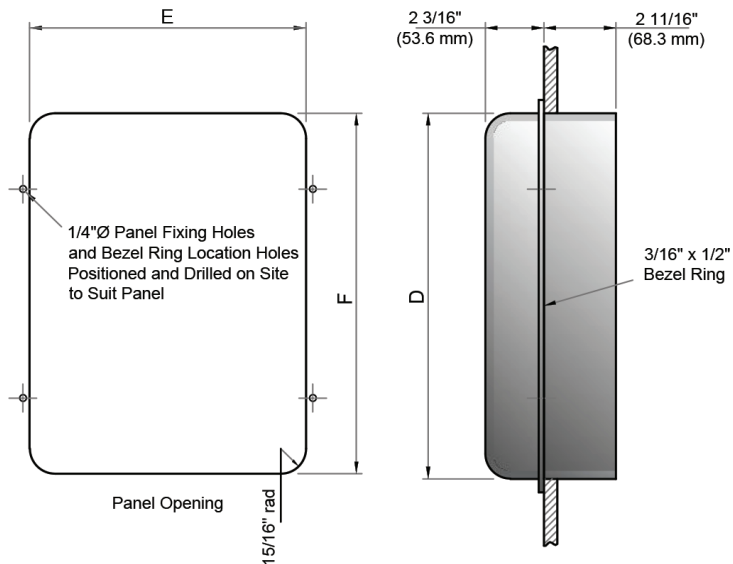
Wall Mounted



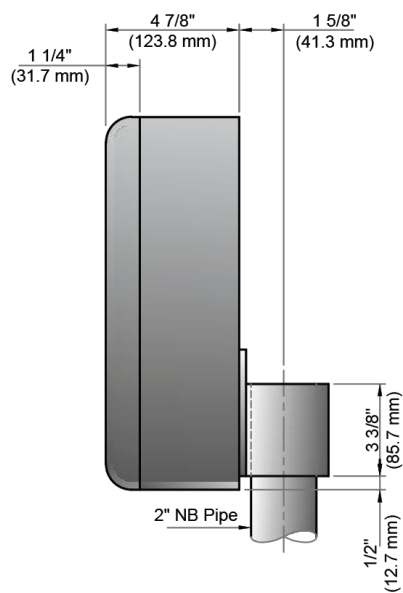
Portable



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