

# TEMPERATURE & PRESSURE INSTRUMENTS

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# PRESSURE GAUGES

## Product Selection Considerations

**When selecting a pressure gauge, consideration must be given to the following factors:**

### Warning

Selection of the appropriate instrument is the sole responsibility of the user. Improper application or installation may cause product failure, resulting in personal injury or property damage. Consult ASME B40.100 for further information.

### Measuring Range

A measuring range of twice the system pressure is recommended to ensure utmost accuracy, safety, and product longevity. The system pressure should never exceed 75% of the measuring range.

### Process Fluid Compatibility

The selected connection and bourdon tube materials must be compatible with the process fluid being measured. For corrosive fluids, or those that may leave deposits or solidify, a diaphragm protection seal should be considered.

### Process Fluid Temperature

The process temperature should be considered so that the gauge construction is suited to the application. A coil syphon must be installed on the connection when used on a steam application.

### Ambient Conditions

The ambient temperature should be considered so that the materials of construction are suited to the application. Gauges specified for outdoor use should have a stainless steel or

plastic case. When humidity or moisture are of concern, a liquid filled gauge should be specified.

### Installation Requirements

The mounting style required (stem, surface, or panel) and connection location (bottom or back) should be considered to ensure the gauge will suit the application requirements. All gauges are furnished standard with NPT connection threads, however other connection types may be available – consult factory.

### Accuracy Requirements

The accuracy requirement of the application should be considered to ensure safety and efficiency for the operators and users of the process system.

### Liquid Fill

A liquid filled gauge should be used on applications where there are vibrations or pulsations present. The fill fluid will assist in dampening the movement assembly and help prolong the life of the gauge. All liquid filled gauges with a measuring range of 100 psi or lower (except for the self-compensating Model PLF4520L) should have the case vented through the fill port plug after installation to compensate for atmospheric changes that may affect the calibration of the filled gauge. The ambient and process temperature limits for liquid filled gauges are 0 to 140°F (-18 to 60°C).

## Specification Selections

Miljoco Pressure Gauges are available in a wide variety of configurations to suit almost any application. For assistance in determining the correct product to suit your application, please contact us with the following information:

**Dial Size:**  1½"  2"  2½"  3½"  4"  4½"  6"

**Pressure Range:** \_\_\_\_\_ **Scale:**  psi  kPa  Bar  Other \_\_\_\_\_

**Connection Size:**  1/8" NPT  1/4" NPT  1/2" NPT  Other \_\_\_\_\_

**Bourdon Tube/Socket Material:**  Bronze Tube/Brass Socket  Stainless Steel Tube & Socket

**Accuracy:**  1/2% Full Scale  1% Full Scale  1.6% Full Scale  2-1-2%  3-2-3%  Other \_\_\_\_\_

**Case Material:**  Aluminum  Stainless Steel  Plastic  Steel  Other \_\_\_\_\_

**Lens:**  Glass  Plastic  Other \_\_\_\_\_

**Pointer:**  Adjustable  Plain

**Mounting Method:**  Stem Mount  Rear Flange  Front Flange  U-Clamp

**Connection Location:**  Bottom Outlet  Back Outlet  Other \_\_\_\_\_

**Liquid Fill:**  None (Dry)  Glycerine  Silicone  Other \_\_\_\_\_

**Additional Requirements:** \_\_\_\_\_



# PREMIUM GAUGE

±1/2% Accuracy

## 4½" Dial - Grade 2A

The Miljoco P4509LX is designed to add value to any installation where a highly accurate gauge is required and the process fluid is compatible with brass and bronze. This gauge is furnished standard with a rear flange providing surface or stem mounting, and is furnished with a stainless steel rotary-type movement enhancing service life. The rear of the case can be equipped with an optional blow-out disc as an added safety feature. This gauge is ideally suited for service on air, water, glycol solutions, and gas. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

### General Specifications

- CASE:** Black cast-aluminum with a 3-hole surface-mount rear flange.
- RING:** Stainless steel.
- LENS:** Double-strength glass.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Aluminum, black, micro-adjustable.
- MOVEMENT:** Stainless steel rotary type.
- TUBE & SOCKET:** Phosphor-bronze tube, brass socket.
- CONNECTION:** 1/4" NPT brass, bottom outlet.
- ACCURACY:** ±1/2% Full Scale (ASME B40.100 Grade 2A).
- PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

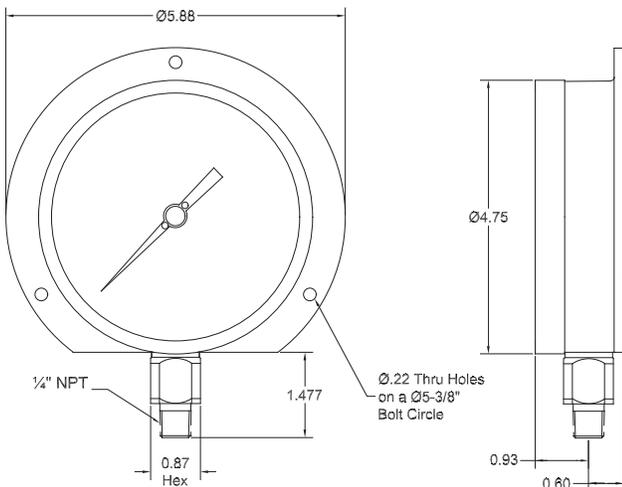


P4509LX

### Standard Ranges

PSI Range Specifications				Dual Scale Codes		
Code	Range	Fig.	Div.	psi/ kPa	psi/ Bar	psi/ FtH <sub>2</sub> O
001	30" Hg-0	5	0.2	001K	001B	001F
002	30" Hg-0-15 psi	10/5	0.5/0.2	002K	002B	002F
003	30" Hg-0-30 psi	10/5	1/0.5	003K	003B	003F
004	30" Hg-0-60 psi	10/10	1/1	004K	004B	004F
005	30" Hg-0-100 psi	30/10	2/1	005K	005B	005F
006	30" Hg-0-150 psi	30/25	5/2	006K	006B	006F
008	30" Hg-0-300 psi	30/50	5/2	008K	008B	008F
02	0-15 psi	3	0.1	02K	02B	02F
03	0-30 psi	5	0.2	03K	03B	03F
04	0-60 psi	10	0.5	04K	04B	04F
05	0-100 psi	10	1	05K	05B	05F
06	0-160 psi	20	2	06K	06B	06F
07	0-200 psi	20	2	07K	07B	07F
08	0-300 psi	50	2	08K	08B	08F
09	0-400 psi	50	5	09K	09B	09F
10	0-600 psi	100	5	10K	10B	10F
11	0-1000 psi	100	10	11K	11B	11F

### Dimensions (in.)



### Options

- Blow-Out Disc
- Silicone Dampening
- Maximum -Registering Pointer

### To Order

**P4509LX**

Model Number

**05**

Range Code

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# CONTRACTOR'S GAUGE

±1% Accuracy

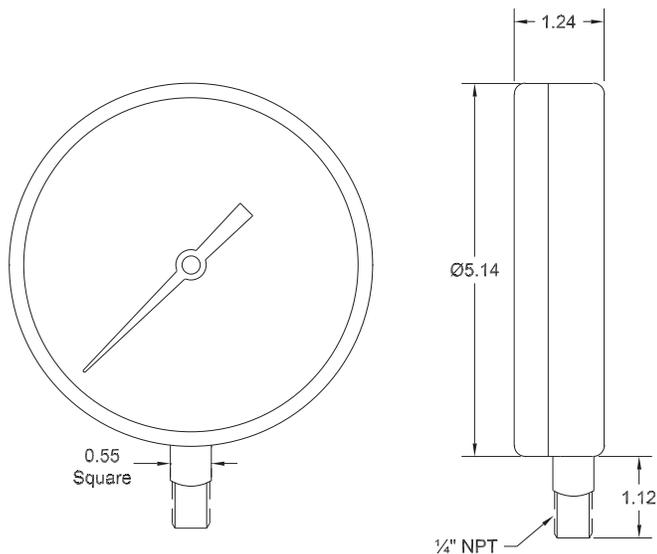
## 4½" Dial - Flangeless Case

The Miljoco P4598L Contractor's Gauge is attractively priced and meets or exceeds the industry accepted standard for the commercial HVAC and building trades. This instrument features a stainless steel case and ring, and uses high-temperature solder joints on the tube and socket, allowing it to be used on process fluids up to 200°F. It is well-suited for service on air, water, glycol solutions, and gas. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

### General Specifications

- CASE:** Brightly finished stainless steel.
- RING:** Stainless steel.
- LENS:** Acrylic.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Aluminum, black, adjustable.
- MOVEMENT:** Brass with precision-milled teeth.
- TUBE & SOCKET:** Phosphor-bronze tube, brass socket.
- CONNECTION:** 1/4" NPT bottom outlet.
- ACCURACY:** ±1% Full Scale (ASME B40.100 Grade 1A).
- PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Dimensions (in.)



### Standard Ranges

PSI Range Specifications				Dual Scale Codes		
Code	Range	Fig.	Div.	psi/ kPa	psi/ Bar	psi/ FtH <sub>2</sub> O
001	30" Hg-0	5	1	001K	001B	001F
002	30" Hg-0-15 psi	10/5	2/1	002K	002B	002F
003	30" Hg-0-30 psi	10/5	2/1	003K	003B	003F
004	30" Hg-0-60 psi	10/10	1/1	004K	004B	004F
005	30" Hg-0-100 psi	30/20	5/2	005K	005B	005F
006	30" Hg-0-150 psi	30/20	5/2	006K	006B	006F
008	30" Hg-0-300 psi	30/50	10/10	008K	008B	008F
02	0-15 psi	2	0.1	02K	02B	02F
03	0-30 psi	5	1	03K	03B	03F
04	0-60 psi	10	1	04K	04B	04F
05	0-100 psi	10	1	05K	05B	05F
06	0-160 psi	20	2	06K	06B	06F
07	0-200 psi	20	2	07K	07B	07F
08	0-300 psi	50	5	08K	08B	08F
09	0-400 psi	50	5	09K	09B	09F
10	0-600 psi	50	10	10K	10B	10F
11	0-1000 psi	100	10	11K	11B	11F

### To Order

**P 4 5 9 8 L**  
Model Number

**0 5**  
Range Code

### Options

- Silicone Dampening

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# CONTRACTOR'S GAUGE

±1% Accuracy

## 4½" Dial - Rear Flange Case

The Miljoco P4509L Contractor's Gauge is attractively priced and meets or exceeds the popularly accepted standard for the commercial HVAC and building trades. This instrument features a surface mount nylon case, and uses high-temperature solder joints on the tube and socket, allowing it to be used on process fluids up to 200°F. It is well-suited for service on air, water, glycol solutions, and gas. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

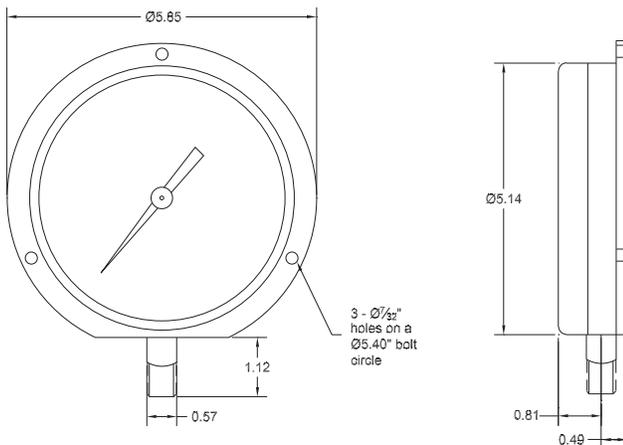
### General Specifications

- CASE:** Black fiber-reinforced nylon with a 3-hole surface-mount rear flange.
- RING:** Stainless steel.
- LENS:** Glass, acrylic optional.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Aluminum, black, adjustable.
- MOVEMENT:** Brass with precision-milled teeth.
- TUBE & SOCKET:** Phosphor-bronze tube, brass socket.
- CONNECTION:** 1/4" NPT bottom outlet.
- ACCURACY:** ±1% Full Scale (ASME B40.100 Grade 1 A).
- PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).



P4509L

### Dimensions (in.)



### Options

- Acrylic Lens (Model P4508L)
- Blow-Out Disc
- Silicone Dampening

### Standard Ranges

PSI Range Specifications				Dual Scale Codes		
Code	Range	Fig.	Div.	psi/ kPa	psi/ Bar	psi/ FtH <sub>2</sub> O
001	30" Hg-0	5	1	001K	001B	001F
002	30" Hg-0-15 psi	10/5	2/1	002K	002B	002F
003	30" Hg-0-30 psi	10/5	2/1	003K	003B	003F
004	30" Hg-0-60 psi	10/10	1/1	004K	004B	004F
005	30" Hg-0-100 psi	30/20	5/2	005K	005B	005F
006	30" Hg-0-150 psi	30/20	5/2	006K	006B	006F
008	30" Hg-0-300 psi	30/50	10/10	008K	008B	008F
02	0-15 psi	2	0.1	02K	02B	02F
03	0-30 psi	5	1	03K	03B	03F
04	0-60 psi	10	1	04K	04B	04F
05	0-100 psi	10	1	05K	05B	05F
06	0-160 psi	20	2	06K	06B	06F
07	0-200 psi	20	2	07K	07B	07F
08	0-300 psi	50	5	08K	08B	08F
09	0-400 psi	50	5	09K	09B	09F
10	0-600 psi	50	10	10K	10B	10F
11	0-1000 psi	100	10	11K	11B	11F

### To Order

**P4509L**

Model Number

**03**

Range Code

Specify Model Number P4508L for acrylic lens.

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# LIQUID FILLED GAUGE

±3-2-3% Accuracy

## 4" Dial - Brass Wetted Parts

The Miljoco Model PLF4098L is rugged & durable and suitable for a wide variety of commercial and general service applications. The stainless steel case is filled with glycerine to protect the internals against vibration and pulsation. This unit is completely weather-proof and excellent for pumps, air compressors, irrigation systems, and other installations suitable for brass process connections. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

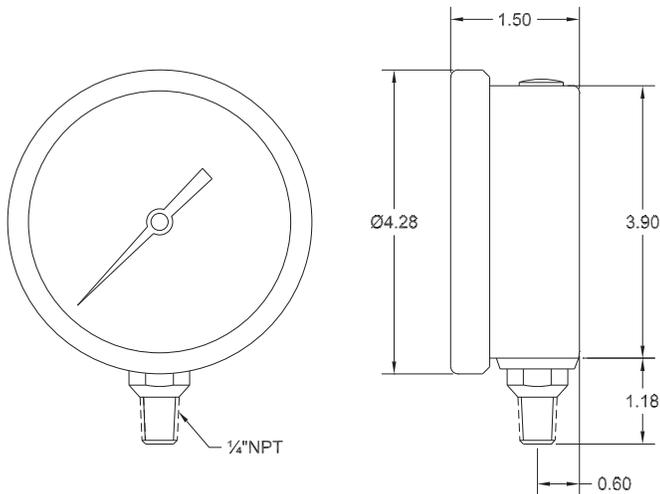
### General Specifications

- CASE:** Stainless steel.
- RING:** Crimped stainless steel.
- LENS:** Acrylic.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Aluminum, black, non-adjustable.
- MOVEMENT:** Brass with precision milled teeth.
- TUBE & SOCKET:** Brass.
- CONNECTION:** 1/4" NPT bottom outlet. Back outlet may be available - consult factory.
- ACCURACY:** ±3-2-3% (ASME B40.100 Grade B).
- PROCESS TEMPERATURE:** 0 to 140°F (-18 to 60°C).
- AMBIENT TEMPERATURE:** 0 to 140°F (-18 to 60°C).



PLF4098L

### Dimensions (in.)



### Standard Ranges

Code	Range	psi		bar	
		Fig.	Div.	Fig.	Div.
001	30" Hg-0 & bar	5	1	0.2	0.02
002	30" Hg-0-15 psi & bar	5	0.5	0.5	0.05
003	30" Hg-0-30 psi & bar	10	1	0.5	0.1
004	30" Hg-0-60 psi & bar	10	2	1	0.1
005	30" Hg-0-100 psi & bar	20	2	1	0.2
006	30" Hg-0-150 psi & bar	25	5	2	0.2
008	30" Hg-0-300 psi & bar	50	10	20	0.5
02	0-15 psi & bar	2.5	0.5	0.2	0.02
03	0-30 psi & bar	5	1	0.5	0.05
04	0-60 psi & bar	10	2	1	0.1
05	0-100 psi & bar	20	2	1	0.2
06	0-160 psi & bar	40	5	2	0.2
07	0-200 psi & bar	50	5	2	0.5
08	0-300 psi & bar	50	10	5	0.5
09	0-400 psi & bar	100	10	4	1
10	0-600 psi & bar	100	20	10	1
11	0-1000 psi & bar	200	20	10	2
19	0-1500 psi & bar	300	20	20	5
12	0-2000 psi & bar	500	50	20	5
13	0-3000 psi & bar	500	100	50	5
14	0-5000 psi & bar	1000	100	50	10

### To Order

**PLF4098L**

Model Number

**08**

Range Code



# LIQUID FILLED GAUGE

±3-2-3% Accuracy

## 2½" Dial - Brass Wetted Parts

The Miljoco Models PLF2598L and PLF2598 are rugged & durable and suited for a wide variety of commercial and general service applications. The stainless steel case is filled with glycerine to protect the internals against vibration and pulsation. This unit is completely weather-proof and excellent for pumps, air compressors, irrigation systems, and other installations suitable for brass process connections. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

### General Specifications

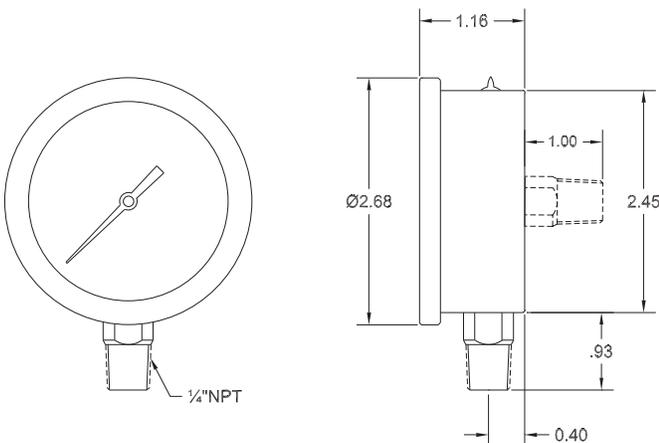
- CASE:** Stainless steel.
- RING:** Crimped stainless steel.
- LENS:** Acrylic.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Aluminum, black, non-adjustable.
- MOVEMENT:** Brass with precision-milled teeth.
- TUBE & SOCKET:** Brass.
- CONNECTION:** See table below.
- ACCURACY:** ±3-2-3% (ASME B40.100 Grade B).
- PROCESS TEMPERATURE:** 0 to 140°F (-18 to 60°C).
- AMBIENT TEMPERATURE:** 0 to 140°F (-18 to 60°C).

### Models

Model	Dial Size	Outlet	Conn.
PLF2598L	2½"	Bottom	1/4" NPT
PLF2598	2½"	Back	1/4" NPT

*Other case styles may be available - consult factory.*

### Dimensions (in.)



PLF2598L

### Standard Ranges

Code	Range	psi		bar	
		Fig.	Div.	Fig.	Div.
001	30" Hg-0 & bar	5	1	0.2	0.02
002	30" Hg-0-15 psi & bar	5	0.5	0.5	0.05
003	30" Hg-0-30 psi & bar	10	1	0.5	0.1
004	30" Hg-0-60 psi & bar	10	2	1	0.1
005	30" Hg-0-100 psi & bar	20	2	1	0.2
006	30" Hg-0-150 psi & bar	25	5	2	0.2
008	30" Hg-0-300 psi & bar	50	10	20	0.5
02	0-15 psi & bar	2.5	0.5	0.2	0.02
03	0-30 psi & bar	5	1	0.5	0.05
04	0-60 psi & bar	10	2	1	0.1
05	0-100 psi & bar	20	2	1	0.2
06	0-160 psi & bar	40	5	2	0.2
07	0-200 psi & bar	50	5	2	0.5
08	0-300 psi & bar	50	10	5	0.5
09	0-400 psi & bar	100	10	4	1
10	0-600 psi & bar	100	20	10	1
11	0-1000 psi & bar	200	20	10	2
19	0-1500 psi & bar	300	20	20	5
12	0-2000 psi & bar	500	50	20	5
13	0-3000 psi & bar	500	100	50	5
14	0-5000 psi & bar	1000	100	50	10

### To Order

**PLF2598L**

Model Number

**04**

Range Code

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# LIQUID FILLED GAUGE

±3-2-3% Accuracy

## 1½" Dial - Brass Wetted Parts

The Miljoco Models PLF1598L and PLF1598 are rugged & durable and suitable for a wide variety of commercial and general service applications. The stainless steel case is filled with glycerine to protect the internals against vibration and pulsation. This unit is completely weather-proof and excellent for pumps, air compressors, irrigation systems, and other installations suitable for brass process connections. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

### General Specifications

- CASE:** Stainless steel.
- RING:** Crimped stainless steel.
- LENS:** Acrylic.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Aluminum, black, non-adjustable.
- MOVEMENT:** Brass with precision-milled teeth.
- TUBE & SOCKET:** Brass.
- CONNECTION:** See table below.
- ACCURACY:** ±3-2-3% (ASME B40.100 Grade B).
- PROCESS TEMPERATURE:** 0 to 140°F (-18 to 60°C).
- AMBIENT TEMPERATURE:** 0 to 140°F (-18 to 60°C).

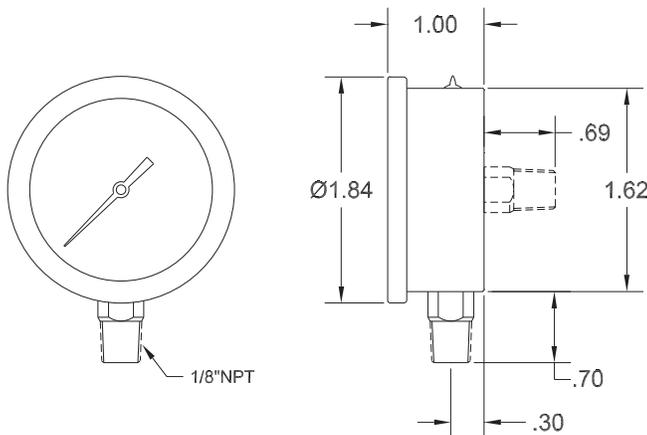


PLF1598

### Models

Model	Dial Size	Outlet	Conn.
PLF1598L	1½"	Bottom	1/8" NPT
PLF1598	1½"	Back	1/8" NPT

### Dimensions (in.)



### Standard Ranges

Code	Range	psi		bar	
		Fig.	Div.	Fig.	Div.
001	30" Hg-0 & bar	5	1	0.2	0.02
003	30" Hg-0-30 psi & bar	10	1	0.5	0.1
005	30" Hg-0-100 psi & bar	20	2	1	0.2
008	30" Hg-0-300 psi & bar	50	10	20	0.5
02	0-15 psi & bar	2.5	0.5	0.2	0.02
03	0-30 psi & bar	5	1	0.5	0.05
04	0-60 psi & bar	10	2	1	0.1
05	0-100 psi & bar	20	2	1	0.2
06	0-160 psi & bar	40	5	2	0.2
07	0-200 psi & bar	50	5	2	0.5
08	0-300 psi & bar	50	10	5	0.5
09	0-400 psi & bar	100	10	4	1
10	0-600 psi & bar	100	20	10	1

\*Some ranges may require minimum order quantities - consult factory.

### To Order

**PLF1598**

Model Number

**04**

Range Code

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# UTILITY GAUGE

±3-2-3% Accuracy

## 1½", 2", 2½", & 3½" - Brass Wetted Parts

This instrument provides value where economy is required and is ideal for general service on air, water, gases, and other light duty process fluids suitable for brass process connections. It features a steel case and is available in dial sizes from 1½" to 3½" covering a broad spectrum of pressure ranges. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

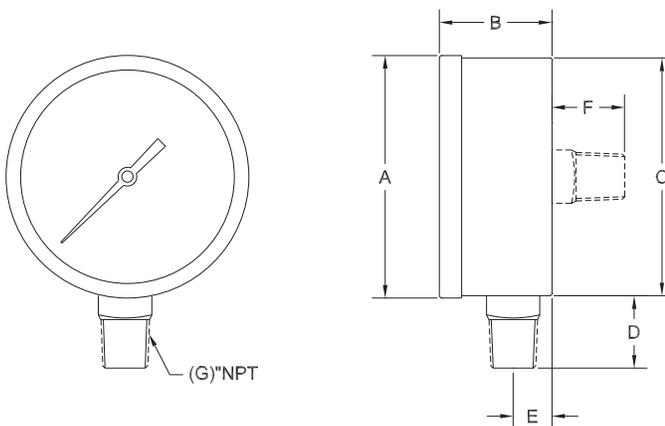
### General Specifications

- CASE:** Drawn steel, black finished.
- RING:** Drawn steel, black finished.
- LENS:** Acrylic.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Black, non-adjustable.
- MOVEMENT:** Brass with precision-milled teeth.
- TUBE & SOCKET:** Brass.
- CONNECTION:** See table below.
- ACCURACY:** ±3-2-3% (ASME B40.100 Grade B).
- PROCESS TEMPERATURE:** -40 to 150°F (-40 to 65°C).
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).



P2508L

### Models & Dimensions (in.)



Model	Dial Size	Outlet	Conn. "G"	A	B	C	D	E	F
P1508L	1½"	Bottom	1/8" NPT	1.65	1.00	1.61	0.63	0.27	0.50
P1508	1½"	Back	1/8" NPT	1.65	1.00	1.61	0.63	0.27	0.50
P2008L	2"	Bottom	1/4" NPT	2.05	1.12	2.00	0.83	0.36	0.70
P2008	2"	Back	1/4" NPT	2.05	1.12	2.00	0.83	0.36	0.70
P2508L	2½"	Bottom	1/4" NPT	2.48	1.15	2.44	0.73	0.36	0.72
P2508	2½"	Back	1/4" NPT	2.48	1.15	2.44	0.73	0.36	0.72
P3508L	3½"	Bottom	1/4" NPT	3.70	1.24	3.65	0.93	0.36	---

### Standard Ranges

Code	Range	psi		bar	
		Fig.	Div.	Fig.	Div.
001	30" Hg-0 & bar	5	1	0.2	0.02
002	30" Hg-0-15 psi & bar	5	0.5	0.5	0.05
003	30" Hg-0-30 psi & bar	10	1	0.5	0.1
004	30" Hg-0-60 psi & bar	10	2	1	0.1
005	30" Hg-0-100 psi & bar	20	2	1	0.2
006	30" Hg-0-150 psi & bar	25	5	2	0.2
008	30" Hg-0-300 psi & bar	50	10	20	0.5
02	0-15 psi & bar	2.5	0.5	0.2	0.02
03	0-30 psi & bar	5	1	0.5	0.05
04	0-60 psi & bar	10	2	1	0.1
05	0-100 psi & bar	20	2	1	0.2
06	0-160 psi & bar	40	5	2	0.2
07	0-200 psi & bar	50	5	2	0.5
08	0-300 psi & bar	50	10	5	0.5
09	0-400 psi & bar	100	10	4	1
10	0-600 psi & bar	100	20	10	1
11	0-1000 psi & bar	200	20	10	2
19	0-1500 psi & bar	300	20	20	5
12	0-2000 psi & bar	500	50	20	5
13	0-3000 psi & bar	500	100	50	5
14	0-5000 psi & bar	1000	100	50	10

### To Order

**P3508L**

Model Number

**07**

Range Code



# SELECT SERVICE GAUGE

±2-1-2% Accuracy

## 2" Dial - Grade A



The Miljoco P20157L is a compact, versatile gauge that is designed to provide accuracy, repeatability and long service life. This gauge is furnished with an attractive, bright chrome-plated case, threaded polycarbonate lens and adjustable pointer. It can be used with any media that it compatible with brass or bronze. This gauge is ideally suited for service on air, water, glycol solutions, and gas. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

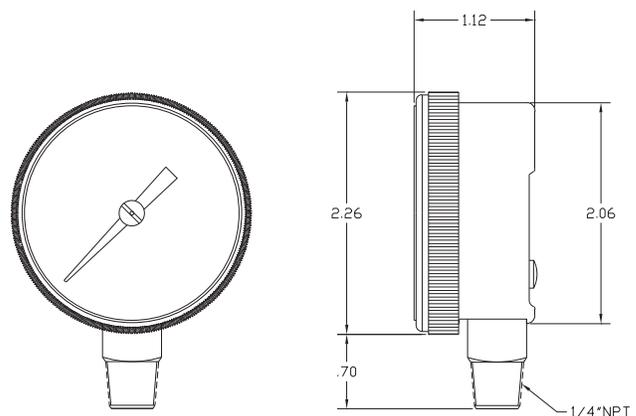
### Standard Ranges

Code	Range	Fig.	Div.
001	30" Hg-0	5	1
02	0-15 psi	2	0.1
03	0-30 psi	5	1
04	0-60 psi	10	1
05	0-100 psi	10	1
06	0-160 psi	20	2
07	0-200 psi	20	2
08	0-300 psi	50	5
09	0-400 psi	50	5
10	0-600 psi	50	10

### General Specifications

**CASE:** Bright chrome-plated steel.  
**LENS:** Threaded with knurled edges.  
**DIAL:** Aluminum, white finished with black markings.  
**POINTER:** Black, adjustable.  
**MOVEMENT:** Brass with precision-milled teeth.  
**TUBE & SOCKET:** Phosphor-bronze tube, brass socket.  
**CONNECTION:** 1/4" NPT brass, bottom outlet.  
**ACCURACY:** ±2-1-2% (ASME B40.100 Grade A).  
**PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).  
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Dimensions (in.)



### To Order

**P20157L**

Model Number

**05**

Range Code

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# PROCESS GAUGE

±1/2% Accuracy

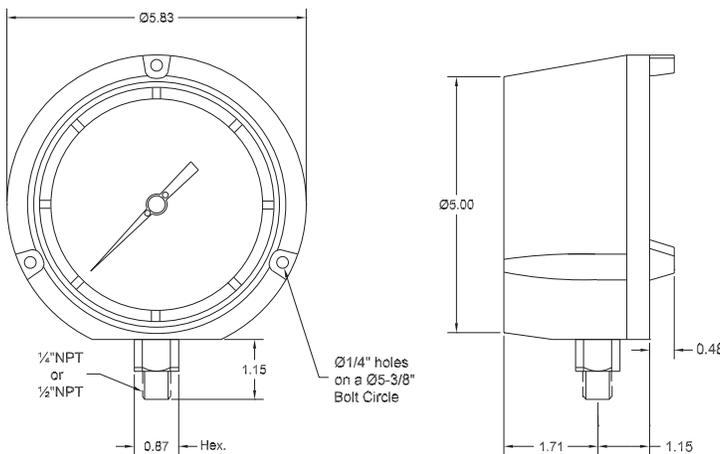
## 4½" Dial - Stainless Steel Wetted Parts - Dry or Liquid Filled

Miljoco Models P4520L & PLF4520L Process Gauges are furnished in a solid-front, turret-style case, molded in hi-impact polypropylene, which is ideally suited for corrosive and difficult environments. The solid-front construction provides added protection for safety considerations and the lens is sealed for weather-proof operation. This gauge can be provided dry or liquid filled. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

### General Specifications

**CASE:** Fiberglass-reinforced black polypropylene.  
**RING:** Fiberglass-reinforced black polypropylene.  
**LENS:** Acrylic.  
**DIAL:** Aluminum, white finished with black markings.  
**POINTER:** Aluminum, black, micro-adjustable.  
**MOVEMENT:** Stainless steel, rotary type.  
**TUBE & SOCKET:** Stainless steel.  
**CONNECTION:** 1/4" NPT bottom outlet, 1/2" NPT optional.  
**ACCURACY:** ±1/2% Full Scale (ASME B40.100 Grade 2A).  
**PROCESS TEMPERATURE:** P4520L: -40 to 250°F (-40 to 120°C), PLF4520L: 0 to 140°F (-18 to 60°C).  
**AMBIENT TEMPERATURE:** P4520L: -40 to 140°F (-40 to 60°C), PLF4520L: 0 to 140°F (-18 to 60°C).

### Dimensions (in.)



### Options

- Glycerine Fill (Model PLF4520L)
- Silicone Fill (Model PSF4520L)
- Brass Wetted Parts
- Monel Wetted Parts
- 1/2" NPT Connection
- Safety Glass Lens
- Stainless Steel Tag

Solid Front,  
Blow Out Back



P4520L

### Standard Ranges

Code	Range	Fig.	Div.
001	30" Hg-0	5	0.2
002	30" Hg-0-15 psi	5/3	0.5/0.2
003	30" Hg-0-30 psi	10/5	1/0.5
004	30" Hg-0-60 psi	10/10	1/1
005	30" Hg-0-100 psi	30/10	2/1
006	30" Hg-0-150 psi	30/20	5/2
008	30" Hg-0-300 psi	30/20	5/2
02	0-15 psi	1	0.1
03	0-30 psi	5	0.2
04	0-60 psi	5	0.5
05	0-100 psi	10	1
06	0-160 psi	20	1
07	0-200 psi	20	2
08	0-300 psi	50	2
09	0-400 psi	50	5
10	0-600 psi	50	5
11	0-1000 psi	100	10
19	0-1500 psi	200	10
12	0-2000 psi	200	20
13	0-3000 psi	500	20
14	0-5000 psi	500	50
15	0-10,000 psi	1000	100

### To Order

**P4520L**

Model Number

**08**

Range Code

Specify Model Number PLF4520L for glycerine fill or PSF4520L for silicone fill.

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com









# INDUSTRIAL GAUGE

±1% Accuracy

## 4" Dial - Brass Wetted Parts - Dry or Liquid Filled

The Miljoco Models P4098LY & PLF4098LY are attractively-priced gauges for applications where the process fluid is compatible with brass wetted components. This industrial gauge features a stainless steel case and can be filled with glycerine or silicone to prolong the life of the internal mechanism when exposed to vibration. It is calibrated to 1% full scale accuracy and is suitable for many industrial processing applications. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

### General Specifications

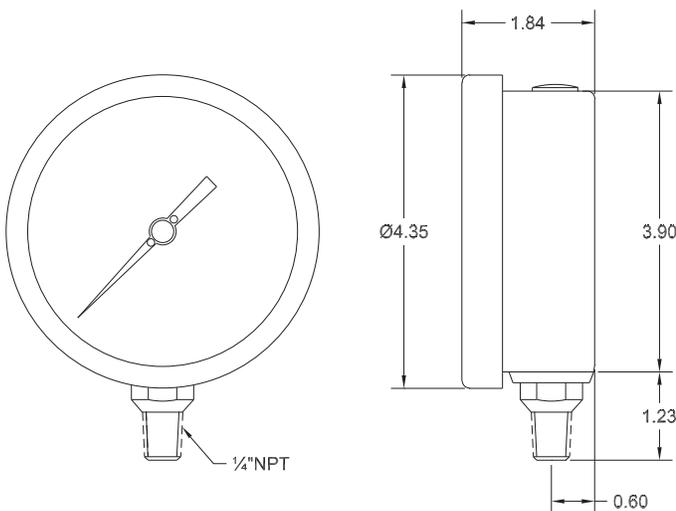
- CASE:** 300 series stainless steel.
- RING:** 300 series stainless steel, bayonet type with gasket.
- LENS:** Polycarbonate.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Aluminum, black, micro-adjustable.
- MOVEMENT:** Brass with precision-milled teeth.
- TUBE & SOCKET:** Brass.
- CONNECTION:** 1/4" NPT bottom outlet.
- ACCURACY:** ±1% Full Scale (ASME B40.100 Grade 1A).
- PROCESS TEMPERATURE:** P4098LY: -40 to 200°F (-40 to 93°C), PLF4098LY: 0 to 140°F (-18 to 60°C).
- AMBIENT TEMPERATURE:** P4098LY: -40 to 140°F (-40 to 60°C), PLF4098LY: 0 to 140°F (-18 to 60°C).

Field  
Liquid-Fillable



P4098LY

### Dimensions (in.)



### Options

- Glass Lens (Model P4099LY)
- Glycerine Fill (Model PLF4098LY)
- Silicone Fill (Model PSF4098LY)

### Standard Ranges

Code	Range	PSI		kPa	
		Fig.	Div.	Fig.	Div.
001	30" Hg-0/-100-0 kPa	5	0.5	10	2
002	30"Hg-0-15 psi / -100-100 kPa	10/5	1/0.5	20	2
003	30"Hg-0-30 psi / -100-200 kPa	10/5	1/0.5	50	5
004	30"Hg-0-60 psi / -100-400 kPa	10/10	2/1	100	10
005	30"Hg-0-100 psi / -100-700 kPa	30/20	2/2	200	10
006	30"Hg-0-150 psi / -100-1000 kPa	30/20	5/2	200	20
008	30"Hg-0-300 psi / -100-2000 kPa	30/50	10/5	500	20
02	0-15 psi / 0-100 kPa	3	0.2	10	2
03	0-30 psi / 0-200 kPa	5	0.5	50	5
04	0-60 psi / 0-400 kPa	10	1	100	10
05	0-100 psi / 0-700 kPa	10	2	100	20
06	0-160 psi / 0-1100 kPa	20	2	200	20
07	0-200 psi / 0-1400 kPa	20	2	200	20
08	0-300 psi / 0-2000 kPa	50	5	500	50
09	0-400 psi / 0-3000 kPa	50	5	500	50
10	0-600 psi / 0-4000 kPa	50	10	1000	50
11	0-1000 psi / 0-7000 kPa	100	20	1000	100

### To Order

**P4098LY 08**  
 Model Number                      Range Code

Specify Model Number **PLF4098LY** for glycerine fill, **PSF4098LY** for silicone fill, or **P4099LY** for glass lens.





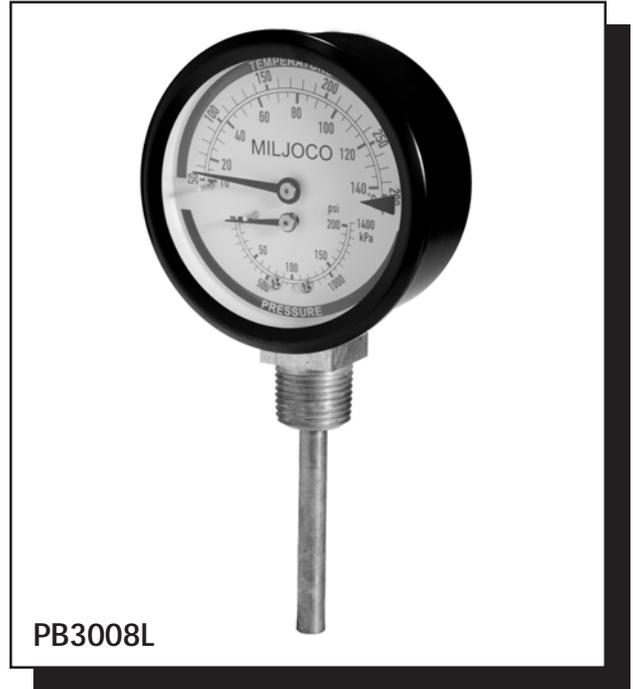
# PRESSURE/TEMPERATURE GAUGE

## Rear or Lower Connection

The Miljoco Models PB3008L & PB3008 dual indicating pressure/temperature gauges, or commonly referred to as "tridicators", combine the value of an individual pressure gauge and thermometer in one instrument. They are the ideal choice for boilers and other hot water applications where space limitations and installation costs are a consideration. These instruments contain both a bourdon tube assembly to indicate pressure, and a bimetal coil assembly to indicate temperature in both Fahrenheit and Celsius. **WARNING: Not suitable for steam service.**

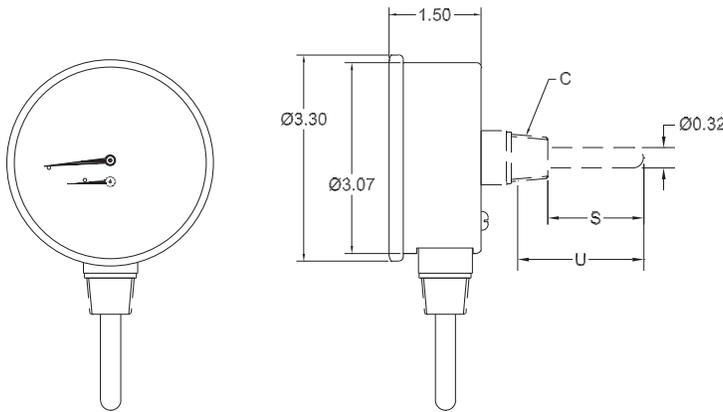
### General Specifications

- CASE:** Drawn steel, black finished.  
**RING:** Crimped drawn steel, black finished.  
**LENS:** Glass.  
**DIAL:** Aluminum, white finished with red temperature and blue pressure markings.  
**POINTERS:** Aluminum, black non-adjustable.  
**MOVEMENT:** Brass.  
**BOURDON TUBE:** Phosphor bronze.  
**CONNECTION:** See table below.  
**STEM:** Brass, Ø 0.320".  
**ACCURACY:** Pressure scale: ±3-2-3%,  
 Temperature scale: ±One scale division.  
**AMBIENT TEMPERATURE:** -40 to 250°F (-40 to 120°C).



PB3008L

### Dimensions (in.)



Model	Outlet	Stem/Connection Size*		U	S
		Code	Size (C)		
PB3008	Back	1-25	¼" NPT	1.32	1.00
		2-25	¼" NPT	3.23	2.98
		2-50	½" NPT	3.00	2.60
		2-25E	¼" NPT w/Ext.	1.32	1.00
PB3008L	Bottom	2-50	½" NPT	2.80	2.36

\*Other stem length and connections available - consult factory.

### Ranges

Code	Pressure Range	Temperature Range	psi Scale		kPa Scale		°F Scale		°C Scale	
			Fig.	Div.	Fig.	Div.	Fig.	Div.	Fig.	Div.
04	0-60 psi/ 0-400 kPa	50 to 290°F/ 10 to 140°C	10	2	100	20	40	5	20	2
21	0-75 psi/ 0-500 kPa	50 to 290°F/ 10 to 140°C	15	2.5	100	20	40	5	20	2
05	0-100 psi/ 0-700 kPa	50 to 290°F/ 10 to 140°C	25	5	250	25	40	5	20	2
07	0-200 psi/ 0-1400 kPa	50 to 290°F/ 10 to 140°C	50	10	500	50	40	5	20	2

### To Order

**PB3008 07 - 2-50**  
 Model Number      Range Code      Stem/Connection Size



# LOW PRESSURE GAUGE

±1.5% Accuracy

## 2½" Diaphragm Gauge

The Miljoco low pressure diaphragm gauge offers the pinnacle in both performance and accuracy for pressure and vacuum applications up to and including 10 psi. Such uses include gas-draft indication, air flow & filtration, leak detection, etc. The LP2507/LP2507L is constructed from a single beryllium-copper diaphragm affixed to a precision-machined brass plate. This advanced design, coupled with a high-precision, milled-teeth brass movement and nickel-silver pinion and bearing surface, provides the user with a low pressure instrument that is without equal.

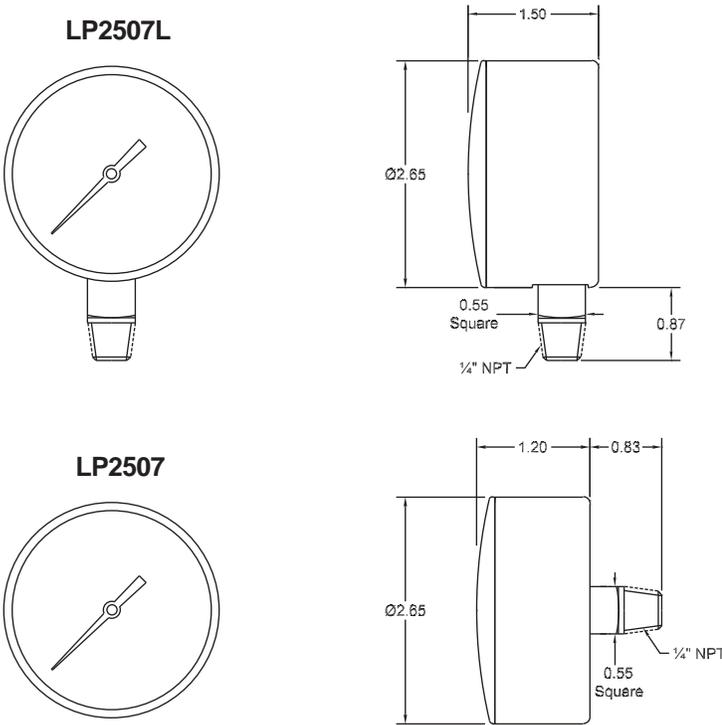
### General Specifications

- CASE:** Drawn steel, black finished.
- LENS:** Polycarbonate, quarter-turn.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Black non-adjustable.
- MOVEMENT:** Brass with precision-milled teeth.
- DIAPHRAGM:** Beryllium copper.
- SOCKET:** Brass.
- CONNECTION:** See table.
- RESTRICTOR:** 0.013" restrictor on ranges over 10" H<sub>2</sub>O.
- ACCURACY:** ±1.5% Full Scale (exceeds ASME B40.100 Grade B). Ranges below 30" H<sub>2</sub>O are 3-1-3%.
- PROCESS TEMPERATURE:** -40 to 160°F (-40 to 70°C).
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).



LP2507L

### Dimensions (in.)



### Models

Model	Dial Size	Outlet	Conn.
LP2507L	2½"	Bottom	1/4" NPT
LP2507	2½"	Back	1/4" NPT

### Standard Ranges

Range	Fig.	Div.	In H <sub>2</sub> O	Oz/in <sub>2</sub>
15-0 Vac.	3	0.5	0210	0217
30-0 Vac.	5	1	0220	xxx
60-0 Vac.	10	2	0240	0247
100-0 Vac.	20	2	0250	0257
160-0 Vac.	40	5	0260	0267
0-10	1	0.2	200	207
0-15	3	0.5	210	217
0-30	5	1	220	xxx
0-35	5	1	xxx	237
0-35" H <sub>2</sub> O/0-20 oz/in <sub>2</sub>	5/1	4/0.5	232	
0-60	10	2	240	247
0-100	20	2	250	257
0-160	40	5	260	267
0-200	40	2	270	xxx
0-3 psi	0.5	0.1	290	
0-5 psi	1	0.1	300	
0-10 psi	2	0.2	310	
30-0-30	10	1	420	

Many other custom ranges available - consult factory.

### To Order

**LP2507L**      **232**  
 Model Number      Range Code

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# LOW PRESSURE GAUGE

±1.5% Accuracy

## 2½" Diaphragm Gauge - U-Clamp Case

The Miljoco low pressure diaphragm gauge offers the pinnacle in both performance and accuracy for pressure and vacuum applications up to and including 10 psi. Such uses include air flow & filtration, leak detection, medical pumps, etc. The LP2567 is constructed from a single beryllium-copper diaphragm affixed to a precision-machined brass plate. This advanced design, coupled with a high-precision, milled-teeth brass movement and nickel-silver pinion and bearing surface, provides the user with a low pressure instrument that is without equal.

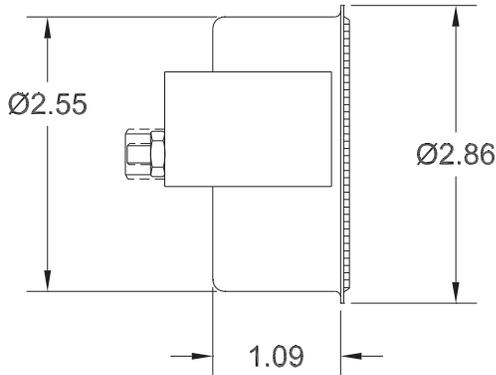
Single Beryllium-Copper Diaphragm



### General Specifications

- CASE:** Brightly-finished 300 series stainless steel.
- LENS:** Polycarbonate, threaded.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Black non-adjustable.
- MOVEMENT:** Brass with precision-milled teeth.
- DIAPHRAGM:** Beryllium copper.
- SOCKET:** Brass.
- CONNECTION:** 1/4" NPT back outlet.
- RESTRICTOR:** 0.013" restrictor on ranges over 10" H<sub>2</sub>O.
- ACCURACY:** ±1.5% Full Scale (exceeds ASME B40.100 Grade B). Ranges below 30" H<sub>2</sub>O are 3-1-3%.
- PROCESS TEMPERATURE:** -40 to 160°F (-40 to 70°C).
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Dimensions (in.)



\*Maximum panel thickness 0.45"

### Standard Ranges

Range	Fig.	Div.	In H <sub>2</sub> O	Oz/In <sup>2</sup>
15-0 Vac.	3	0.5	0210	0217
30-0 Vac.	5	1	0220	xxx
60-0 Vac.	10	2	0240	0247
100-0 Vac.	20	2	0250	0257
160-0 Vac.	40	5	0260	0267
0-10	1	0.2	200	207
0-15	3	0.5	210	217
0-30	5	1	220	xxx
0-35	5	1	xxx	237
0-35" H <sub>2</sub> O/0-20 oz/in <sup>2</sup>	5/1	4/0.5	232	
0-60	10	2	240	247
0-100	20	2	250	257
0-160	40	5	260	267
0-200	40	2	270	xxx
0-3 psi	0.5	0.1	290	
0-5 psi	1	0.1	300	
0-10 psi	2	0.2	310	
30-0-30	10	1	420	

Many other custom ranges available - consult factory.

### To Order

**LP2567**  
Model Number

**210**  
Range Code

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# PANEL MOUNT GAUGE

±2-1-2% Accuracy

## 2", 2½", & 3½" - Front Flange Case

Miljoco offers a variety of panel mounted pressure gauges, matching our line of vapor actuated remote reading panel mounted thermometers. These instruments are rugged, reliable, and accurate for a wide variety of uses such as air compressors, portable chillers, packaged pump sets, etc. Front flanged gauges are designed to be installed in a panel using three screws from the front. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

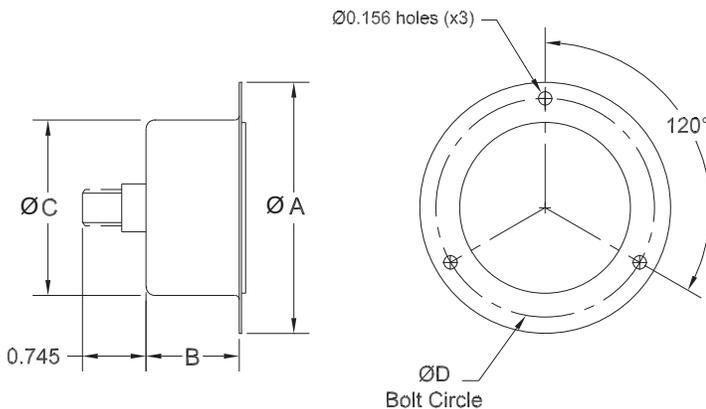
### General Specifications

**CASE:** Brightly-finished 300 series stainless steel.  
**LENS:** Polycarbonate.  
**DIAL:** Aluminum, white finished with black markings.  
**POINTER:** Black, adjustable.  
**MOVEMENT:** Brass with precision-milled teeth.  
**TUBE & SOCKET:** Phosphor-bronze tube, brass socket.  
**CONNECTION:**

1/8" NPT back outlet is standard to 400 psi.  
 1/4" NPT back outlet is standard from 600-1000psi.

**ACCURACY:** ±2-1-2% (ASME B40.100 Grade A).  
**PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).  
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Models & Dimensions (in.)



Model	Dial Size	Case Material	Lens Type	A	B	C	D
P2036	2"	SS	Press-in	2.94	1.09	2.05	2.56
P2036P	2"	ABS	Press-in	2.94	1.09	2.06	2.56
P2037	2"	SS	Threaded	2.94	1.09	2.05	2.56
P2537	2½"	SS	Threaded	3.48	1.09	2.56	3.26
P3537	3½"	SS	Threaded	4.30	1.09	3.50	4.00



### Standard Ranges

Code	Range	Fig.	Div.
001	30" Hg-0	5	1
002	30" Hg-0-15 psi	10/5	2/1
003	30" Hg-0-30 psi	10/5	2/1
004	30" Hg-0-60 psi	10/10	1/1
005	30" Hg-0-100 psi	30/20	5/2
006	30" Hg-0-150 psi	30/20	5/2
008	30" Hg-0-300 psi	30/50	10/10
02	0-15 psi	2	0.1
03	0-30 psi	5	1
04	0-60 psi	10	1
05	0-100 psi	10	1
06	0-160 psi	20	2
07	0-200 psi	20	2
08	0-300 psi	50	5
09	0-400 psi	50	5
10	0-600 psi	50	10
11	0-1000 psi	100	10

### To Order

**P 2 0 3 6**      **0 7**  
 Model Number      Range Code

### Options

- Silicone Dampening
- Ø 0.125" Capillary Connection (specify length)

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# PANEL MOUNT GAUGE

±2-1-2% Accuracy

## 2", 2½", & 3½" - U-Clamp Case

Miljoco offers a variety of panel mounted pressure gauges, matching our line of vapor actuated remote reading panel mounted thermometers. These instruments are rugged, reliable, and accurate for a wide variety of uses such as air compressors, portable chillers, packaged pump sets, etc. U-clamp gauges are designed to be installed in a panel from the rear using a mounting bracket and case studs. **CAUTION:** A coil syphon must be installed on the connection when used on steam applications.

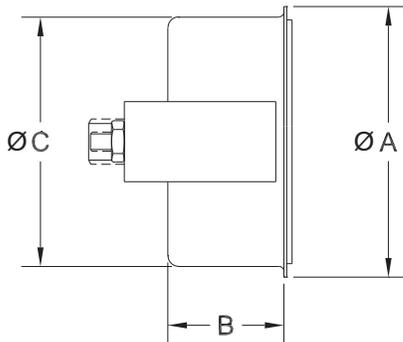
### General Specifications

**CASE:** Brightly-finished 300 series stainless steel.  
**LENS:** Polycarbonate.  
**DIAL:** Aluminum, white finished with black markings.  
**POINTER:** Black, adjustable.  
**MOVEMENT:** Brass with precision-milled teeth.  
**TUBE & SOCKET:** Phosphor-bronze tube, brass socket.  
**CONNECTION:**

1/8" NPT back outlet is standard to 400 psi.  
 1/4" NPT back outlet is standard from 600-1000psi.

**ACCURACY:** ±2-1-2% (ASME B40.100 Grade A).  
**PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).  
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Models & Dimensions (in.)



\*Maximum panel thickness "T"

Model	Dial Size	Case Material	Lens Type	A	B	C	T
P2066	2"	SS	Press-in	2.24	1.09	2.05	.736
P2046	2"	ABS	Press-in	2.24	1.09	2.05	.736
P2067	2"	SS	Threaded	2.24	1.09	2.06	.736
P2567	2½"	SS	Threaded	2.86	1.09	2.56	.736
P3567	3½"	SS	Threaded	3.94	1.09	3.50	.736

**NSF® Service**  
 Many Miljoco gauges are listed by NSF for use in the food service industry. Consult factory for available models and ranges.



P2567

### Standard Ranges

Code	Range	Fig.	Div.
001	30" Hg-0	5	1
002	30" Hg-0-15 psi	10/5	2/1
003	30" Hg-0-30 psi	10/5	2/1
004	30" Hg-0-60 psi	10/10	1/1
005	30" Hg-0-100 psi	30/20	5/2
006	30" Hg-0-150 psi	30/20	5/2
008	30" Hg-0-300 psi	30/50	10/10
02	0-15 psi	2	0.1
03	0-30 psi	5	1
04	0-60 psi	10	1
05	0-100 psi	10	1
06	0-160 psi	20	2
07	0-200 psi	20	2
08	0-300 psi	50	5
09	0-400 psi	50	5
10	0-600 psi	50	10
11	0-1000 psi	100	10

### To Order

**P 2 5 6 7**  
 Model Number

**0 7**  
 Range Code

### Options

- Silicone Dampening
- Ø 0.125" Capillary Connection (specify length)

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# SURFACE MOUNT GAUGE

±2-1-2% Accuracy

## 2", 2½", & 3½" - Rear Flange Case

Miljoco offers a variety of panel mounted pressure gauges, matching our line of vapor actuated remote reading panel mounted thermometers. These instruments are rugged, reliable, and accurate for a wide variety of uses such as air compressors, portable chillers, packaged pump sets, etc. Rear flanged gauges are designed to be installed on a wall or panel using three screws from the front. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

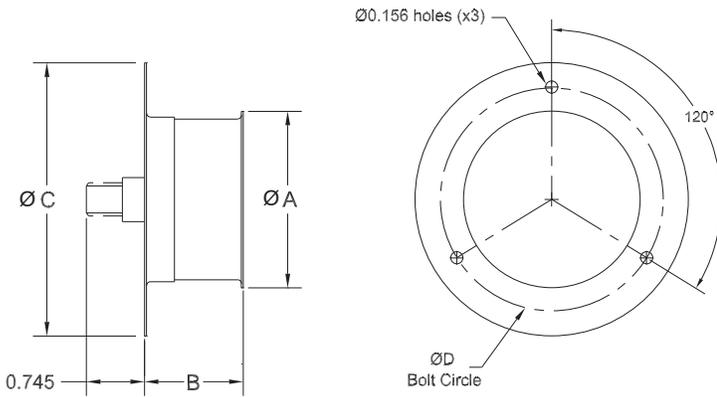
### General Specifications

- CASE:** Brightly-finished 300 series stainless steel.
- LENS:** Polycarbonate.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** Black, adjustable.
- MOVEMENT:** Brass, with precision-milled teeth.
- TUBE & SOCKET:** Phosphor-bronze tube, brass socket.
- CONNECTION:**
  - 1/8" NPT back outlet is standard to 400 psi.
  - 1/4" NPT back outlet is standard from 600-1000psi.
- ACCURACY:** ±2-1-2% (ASME B40.100 Grade A).
- PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).



P35147

### Models & Dimensions (in.)



Model	Dial Size	Case Material	Lens Type	A	B	C	D
P20146	2"	SS	Press-in	2.24	1.09	3.50	3.18
P20147	2"	SS	Threaded	2.24	1.09	3.50	3.18
P25147	2½"	SS	Threaded	2.85	1.25	3.67	3.20
P35147	3½"	SS	Threaded	3.94	1.25	4.87	4.00

### Standard Ranges

Code	Range	Fig.	Div.
001	30" Hg-0	5	1
002	30" Hg-0-15 psi	10/5	2/1
003	30" Hg-0-30 psi	10/5	2/1
004	30" Hg-0-60 psi	10/10	1/1
005	30" Hg-0-100 psi	30/20	5/2
006	30" Hg-0-150 psi	30/20	5/2
008	30" Hg-0-300 psi	30/50	10/10
02	0-15 psi	2	0.1
03	0-30 psi	5	1
04	0-60 psi	10	1
05	0-100 psi	10	1
06	0-160 psi	20	2
07	0-200 psi	20	2
08	0-300 psi	50	5
09	0-400 psi	50	5
10	0-600 psi	50	10
11	0-1000 psi	100	10

### To Order

**P 3 5 1 4 7**  
Model Number

**0 7**  
Range Code

### Options

- Silicone Dampening
- Ø 0.125" Capillary Connection (specify length)





# AMMONIA GAUGE

±1% / 1.6% Accuracy

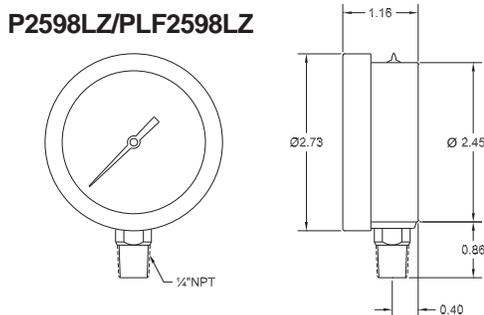
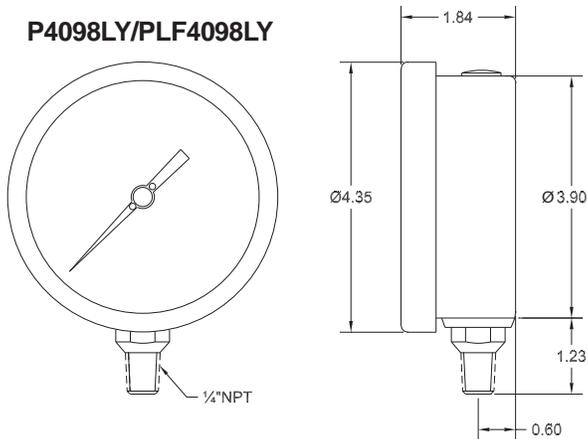
## 2½" & 4" - Stainless Steel Case

This line of ammonia gauges is designed for use with refrigeration ammonia, or any other process media that is compatible with stainless steel. These gauges are hermetically sealed for outdoor use and can be liquid filled for applications exposed to vibration. **CAUTION: When using liquid-filled gauges on applications other than refrigeration ammonia, consult factory for fill fluid recommendation.**

### General Specifications

- CASE:** Stainless steel.
- RING:** Stainless steel, bayonet type with gasket.
- LENS:** Polycarbonate.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** 4": Aluminum, black, micro-adjustable.  
2½": Aluminum, black, non-adjustable.
- MOVEMENT:** Stainless steel, rotary type.
- TUBE & SOCKET:** Stainless steel.
- CONNECTION:** 1/4" NPT bottom outlet.
- ACCURACY:** 4": ±1% (ASME B40.1 Grade 1A). 2½": ±1.6% Full Scale (exceeds ASME B40.100 Grade B).
- PROCESS TEMPERATURE:** DRY: -40 to 250°F (-40 to 93°C), LIQ. FILLED: 0 to 140°F (-18 to 60°C).
- AMBIENT TEMPERATURE:** DRY: -40 to 140°F (-40 to 60°C), LIQ. FILLED: 0 to 140°F (-18 to 60°C).

### Dimensions (in.)



### Models

Model	Dial Size	Filled
P4098LY	4"	Dry
PLF4098LY	4"	Glycerine
P2598LY	2½"	Dry
PLF2598LZ	2½"	Glycerine

### Standard Ranges

Code	Range
006SSA	30" Hg-150 psi & °F
008SSA	30" Hg-300 psi & °F

Other ranges available - consult factory.

### To Order

**P 4 0 9 8 L Y 0 0 8 S S A**  
 Model Number      Range      Stainless Steel      Ammonia Range

Specify Model Number PLF4098LY for glycerine fill.

### Options

- Glycerine Fill



# AMMONIA GAUGE

±1% / 1.6% Accuracy

## Silicone Liquid Filled - 2½" & 4"

This line of ammonia gauges is designed for use with refrigeration ammonia, or any other process media that is compatible with stainless steel. These gauges are hermetically sealed for outdoor use and can be liquid filled for applications exposed to vibration. **CAUTION: When using liquid-filled gauges on applications other than refrigeration ammonia, consult factory for fill fluid recommendation.**

### Models

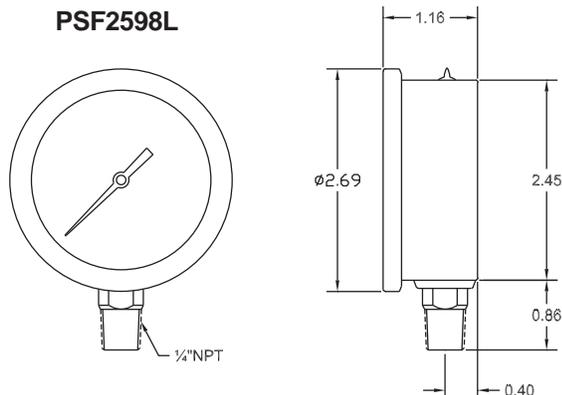
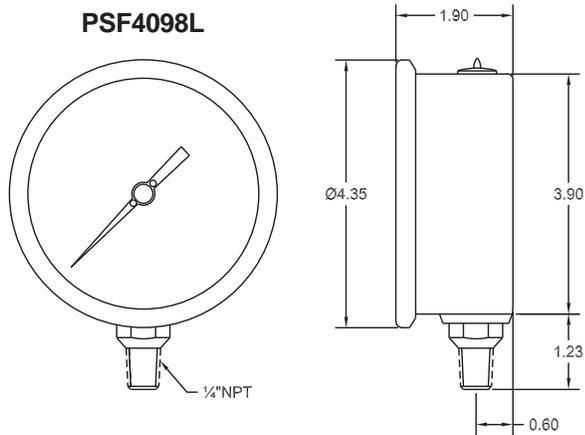
Model	Dial Size	Filled
PSF4098L	4"	Silicone
PSF2598L	2½"	Silicone

### Standard Ranges

Code	Range
006SSA	30" Hg-150 psi & °F
008SSA	30" Hg-300 psi & °F

Other ranges available - consult factory.

### Dimensions (in.)



Silicone Filled



PSF4098L-SSA

### General Specifications

- CASE:** 300 series stainless steel.
- RING:** 300 series stainless steel, crimped.
- LENS:** Polycarbonate.
- DIAL:** Aluminum, white finished with black markings.
- POINTER:** 4": Aluminum, black, micro-adjustable.  
2½": Aluminum, black, non-adjustable.
- MOVEMENT:** Stainless steel, rotary type.
- TUBE & SOCKET:** 316 Stainless steel.
- CONNECTION:** 1/4" NPT bottom outlet.
- ACCURACY:** 4": ±1% (ASME B40.1 Grade 1A). 2½": ±1.6% Full Scale (exceeds ASME B40.100 Grade B).
- PROCESS TEMPERATURE:** DRY: -40 to 200°F (-40 to 93°C), LIQ. FILLED: 0 to 140°F (-18 to 60°C).
- AMBIENT TEMPERATURE:** DRY: -40 to 140°F (-40 to 60°C), LIQ. FILLED: 0 to 140°F (-18 to 60°C).

### To Order

**PSF4098L 008 SS A**  
 Model Number      Range Code      Stainless Steel      Ammonia Range

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# WATER & AIR TEST GAUGES

## Utility Type - 2" Dial

### Water Test Gauge

The Miljoco Water Test Gauge is ideal for testing the plumbing supply pressure of any point within a building. The gauge is furnished with a maximum indicating pointer, which will monitor any pressure surges over a period of time and can be easily reset after use.

### General Specifications

**CASE:** Drawn steel, black finished.

**LENS:** Acrylic.

**DIAL:** Aluminum, white finished with black markings.

**POINTER:** Black.

**MOVEMENT:** Brass with precision-milled teeth.

**TUBE & SOCKET:** Brass

**CONNECTION:** 3/4" Female hose thread with swivel connection.

**ACCURACY:** ±3-2-3% (ASME B40.100 Grade B).

**MAXIMUM INDICATING POINTER:** Red, adjustable by user from exterior.

**PROCESS TEMPERATURE:** 32 to 140°F (0 to 60°C).

**AMBIENT TEMPERATURE:** -40 to 150°F (-40 to 65°C).



### Models

Model	Range	Fig.	Div.
P2008U06HB	0-160 psi	40	2
P2008U08HB	0-300 psi	50	5

### Air Test Gauge

**CASE:** Drawn steel, black finished.

**LENS:** Acrylic.

**DIAL:** Aluminum, white finished with black markings.

**POINTER:** Black.

**MOVEMENT:** Brass with precision-milled teeth.

**TUBE & SOCKET:** Brass

**CONNECTION:** Adapts to 3/4" NPT. Plated housing with bleed port.

**ACCURACY:** ±3-2-3% (ASME B40.100 Grade B).

**PROCESS TEMPERATURE:** 32 to 140°F (0 to 60°C).

**AMBIENT TEMPERATURE:** -40 to 150°F (-40 to 65°C).



### Models

Model	Range	Fig.	Div.
P2008L02ATG	0-15 psi	1	0.1
P2008L03ATG	0-30 psi	5	0.5
P2008L04ATG	0-60 psi	10	1
P2008L05ATG	0-100 psi	20	2

# MAXIMUM INDICATING GAUGES

2½" Stainless Case or 4½" Cast Aluminum Case

## P2598LZSS-M

**CASE:** 300 series stainless steel.  
**RING:** 300 series stainless steel, bayonet type with gasket.  
**LENS:** Acrylic.  
**DIAL:** Aluminum, white finished with black markings.  
**POINTER:** Aluminum, black, non-adjustable.  
**MOVEMENT:** Stainless steel.  
**TUBE & SOCKET:** 316 Stainless steel.  
**CONNECTION:** 1/4" NPT bottom outlet.  
**ACCURACY:** ±1.6% Full Scale (exceeds ASME B40.100 Grade B).  
**PROCESS TEMPERATURE:** -40 to 250°F (-40 to 120°C).  
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

See Page 16 for further product specifications.



## P4509LX-M

**CASE:** Black cast-aluminum with a 3-hole surface-mount rear flange.  
**RING:** Stainless steel.  
**LENS:** Polycarbonate.  
**DIAL:** Aluminum, white finished with black markings.  
**POINTER:** Aluminum, black, micro-adjustable.  
**MOVEMENT:** Stainless steel rotary type.  
**TUBE & SOCKET:** Phosphor-bronze tube, brass socket.  
**CONNECTION:** 1/4" NPT brass, bottom outlet.  
**ACCURACY:** ±1/2% Full Scale (ASME B40.100 Grade 2A).  
**PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).  
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

See Page 3 for further product specifications.



# RECEIVER GAUGE

3 to 15 psi

3½" - Stainless Steel Case or 4½" - Aluminum Case

The Miljoco P4509LX and P3537 Receiver Gauges are designed for use in combination with a pneumatic transmitter to display the corresponding pressure, temperature, flow or other process variable that is being converted into the proportional air pressure signal. The normal pneumatic transmitter range is 3 to 15 psi, with the low end of the variable set at 3 psi, and the high end of the variable set at 15 psi. The dial can be calibrated to any unit of measure required (percent, degrees, psi, square root, etc.). **CAUTION: Maximum pressure is 15 psi.**

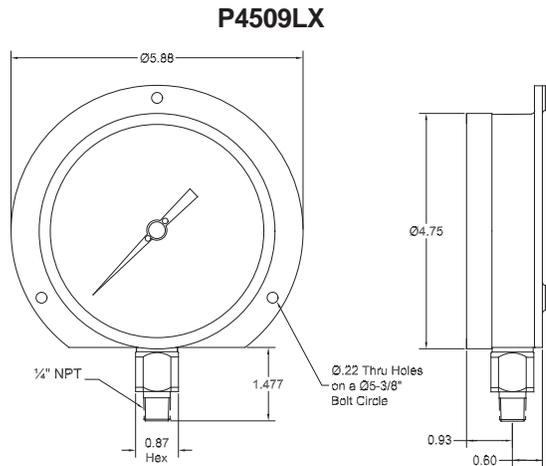


P4509LX

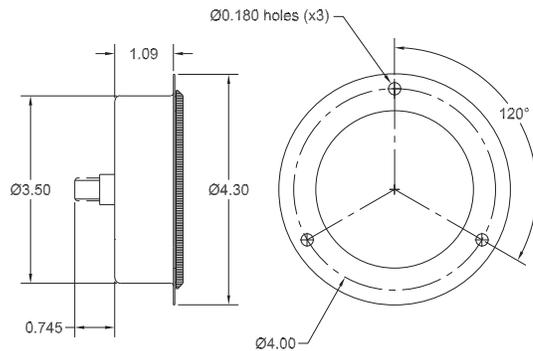
## General Specifications

MODEL	P4509LX	P3537
SIZE	4½"	3½"
CASE	Cast aluminum	Stainless steel
MOUNTING	Surface mount, rear flange	Panel mount, front flange
RING	Stainless steel	None
LENS	Glass	Polycarbonate
DIAL	White aluminum	White aluminum
POINTER	Black aluminum, micro-adjustable	Black aluminum, adjustable
MOVEMENT	Stainless steel	Brass
TUBE	Bronze	Bronze
SOCKET	Brass	Brass
CONNECTION	1/4" NPT lower	1/4" NPT rear
ACCURACY	±½%	±2/1/2%
PROCESS TEMPERATURE	-40 to 200°F (-40 to 93°C)	-40 to 200°F (-40 to 93°C)
AMBIENT TEMPERATURE	-40 to 140°F (-40 to 60°C)	-40 to 140°F (-40 to 60°C)

## Dimensions (in.)



P3537



## Standard Ranges

Code	Range
023	3-15 psi
05L	0-100 (linear)
05P	0-100%
05SR	0-100 sq. root

Other ranges may be available - consult factory.

## To Order

**P4509LX**

Model Number

**REC**

Receiver Scale

**05L**

Range Code

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# ALTITUDE GAUGE

±½% / ±1% Accuracy

## 4½" - Aluminum or Stainless Steel Case

Miljoco Altitude Gauges are ideal for measuring water height in hot-water heating system components such as tanks, reservoirs or stand pipes. They are furnished with dual-scale (psi & feet of water) dials and available in either ½% or 1% accuracy. **CAUTION: A coil syphon must be installed on the connection when used on steam applications.**

### General Specifications

MODEL	P4509LX	P4598L
SIZE	4½"	4½"
CASE	Cast aluminum	Stainless steel
MOUNTING	Surface mount, rear flange	Stem mount, flangeless
RING	Stainless steel	Stainless steel
LENS	Glass	Acrylic
DIAL	White aluminum	White aluminum
POINTER	Black aluminum, micro-adjustable	Black aluminum, adjustable
MOVEMENT	Stainless steel	Brass
TUBE	Bronze	Bronze
SOCKET	Brass	Brass
CONNECTION	1/4" NPT lower	1/4" NPT lower
ACCURACY	±½%	±1%
PROCESS TEMPERATURE	-40 to 200°F (-40 to 93°C)	-40 to 200°F (-40 to 93°C)
AMBIENT TEMPERATURE	-40 to 140°F (-40 to 60°C)	-40 to 140°F (-40 to 60°C)

### Ranges

Code	Range
006F	30" Hg-150 psi / -70-345 ft/H2O
02F	0-15 psi / 0-35 ft/H2O
03F	0-30 psi / 0-70 ft/H2O
04F	0-60 psi / 0-140 ft/H2O
05F	0-100 psi / 0-230 ft/H2O
06F	0-160 psi / 0-370 ft/H2O
07F	0-200 psi / 0-460 ft/H2O
08F	0-300 psi / 0-690 ft/H2O

### To Order

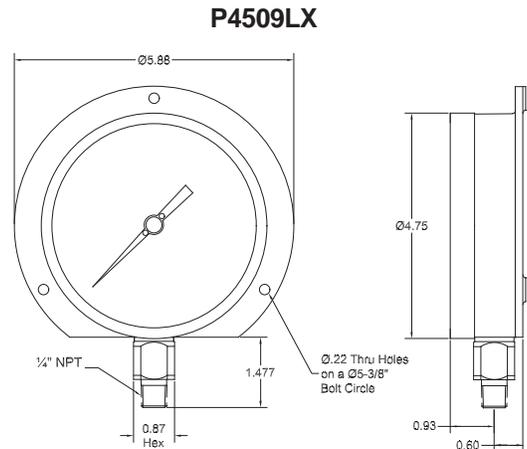
**P4598L**  
Model Number

**05E**  
Range Code

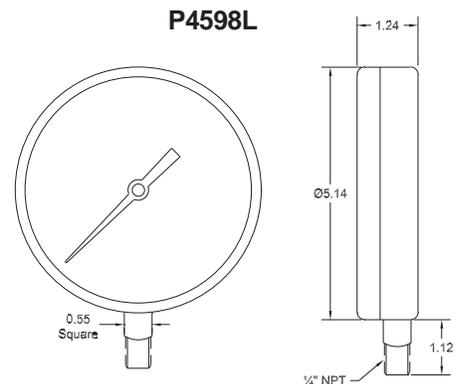


P4509LX

### Dimensions (in.)



P4509LX



P4598L

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com

# SPIRAL TUBE PRESSURE GAUGE

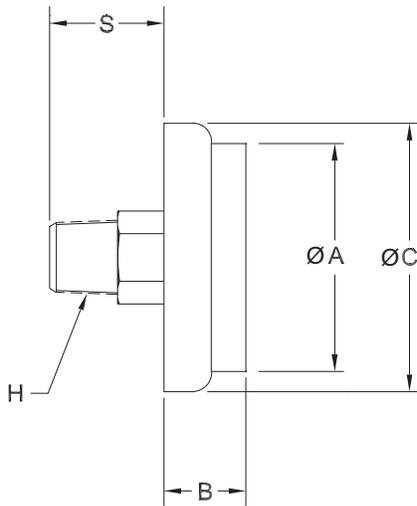
## 1.4" & 1.6" - Direct Drive Type

The Miljoco Spiral Tube Pressure Gauge is the ideal choice for applications that require a lightweight, compact pressure measuring device. This instrument contains a stainless steel bourdon tube assembly housed in a stainless steel case and polycarbonate lens to protect against weather, dust, corrosion, or other environmental factors. The spiral tube design, using an integral pointer and no internal gears or bushings, provides a long and useful gauge life. This product can also be custom-designed to meet almost any specific application requirement.

### General Specifications

- CASE:** Stainless steel, weather-tight.  
**LENS:** Polycarbonate.  
**DIAL:** Aluminum.  
**POINTER:** Stainless steel, yellow painted, integral to bourdon tube.  
**BOURDON TUBE:** Stainless steel spiral.  
**CONNECTION:** Brass or stainless steel, 1/8" NPT or 1/4" NPT back outlet.  
**ACCURACY:** ±2% of midpoint of scale.  
**PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).  
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Models & Dimensions (in.)



Model	Dial Size	A	B	C	H	S
SP1498	1.4"	1.23	0.42	1.42	1/8" NPT	0.60
SP1698	1.6"	1.43	0.44	1.62	1/8" NPT	0.60



### Ranges

Code	Range	Dial Arc.
07	0-200 psi	235°
08	0-300 psi	235°
22	0-700 psi	200°
23	0-1200 psi	180°

### To Order

**SP1498**  
Model Number

**07**  
Range Code

**SS**  
Connection Material

### Options

- Silicone Dampening
- Choke Screw
- 1/4" NPT Connection



# FIRE EXTINGUISHER GAUGE

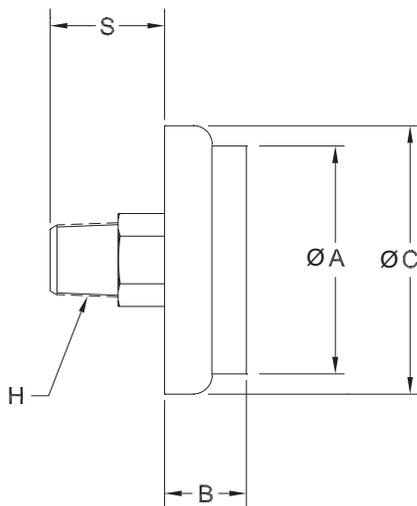
## 1.4" & 1.6" - Direct Drive Type

The Miljoco Fire Extinguisher Gauge is ideally suited for OEM installation on fire extinguishers of various sizes and capacities. This direct-drive, spiral tube gauge is designed for application using dry chemicals, water, A.F.F.F., Halon and Halon alternatives. This instrument contains a stainless steel bourdon tube assembly housed in a stainless steel case with a polycarbonate lens to protect against weather, dust and corrosion. The SP1498 & SP1698 can also be custom designed to meet almost any specific application requirement.

### General Specifications

- CASE:** Stainless steel, weather-tight.
- LENS:** Polycarbonate.
- DIAL:** Aluminum.
- POINTER:** Stainless steel, yellow painted, integral to bourdon tube.
- BOURDON TUBE:** Stainless steel spiral.
- CONNECTION:** Brass or stainless steel, 1/8" NPT or 1/4" NPT back outlet.
- ACCURACY:** ±3.5% of range span in center three-fifths of scale.
- PROCESS TEMPERATURE:** -40 to 200°F (-40 to 93°C).
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).
- LISTING:** UL 299 for Fire Protection Industry.

### Dimensions (in.)



Model	Dial Size	A	B	C	H	S
SP1498	1.4"	1.23	0.42	1.42	1/8" NPT	0.60
SP1698	1.6"	1.43	0.44	1.62	1/8" NPT	0.60

UL 299  
Listed  
for Fire  
Protection  
Industry



SP1498

### Ranges

Code	Charge	Type	Full Span
F07D	100 psi	Disposable	180°
F07	100 psi	Rechargeable	235°
F08	195 psi	Rechargeable	235°

Many other ranges available for water, A.F.F.F., wet chemicals, and Halon - consult factory.

### To Order

**SP1498**  
Model Number

**F07**  
Range Code



# PRESSURE GAUGE ACCESSORIES

## Isolating Valves

### Ball Valves

The Miljoco brass ball valve is an ideal isolating valve between a pressure gauge and the medium being measured. This valve facilitates removal of the gauge for repair or replacement without compromising the piped system. **CAUTION: A coil syphon should be used between ball valve and steam service.**

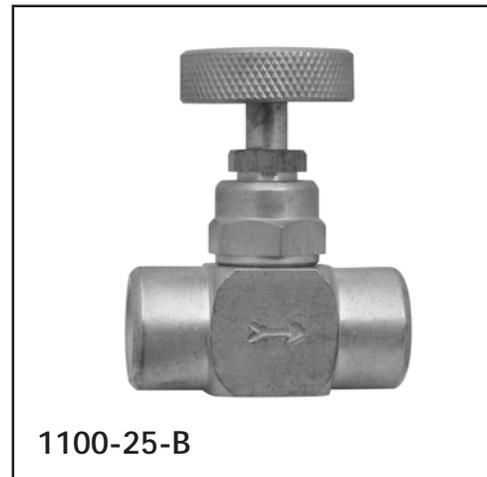
Model	Material	Connection	Maximum Pressure	Maximum Temp.
1050	Brass	1/4" NPT, F x F	300 psi	250°F
1075	Brass	1/4" NPT, M x F	300 psi	250°F



### Needle Valves

Miljoco needle valves are available in brass, steel and 316 stainless steel, and are designed especially for pressure gauge service. The internal design and easy-to-turn handle allows the valve to be opened smoothly and precisely during the start-up process, thus preventing pressure spikes to the instrument. **CAUTION: A coil syphon should be used between needle valve and steam service.**

Model	Material	Connection	Maximum Pressure	Maximum Temp.
1100-25-B	Brass	1/4" NPT, F x F	600 psi	300°F
1100-25-CS	Steel	1/4" NPT, F x F	1000 psi	300°F
1100-25-316	316SS	1/4" NPT, F x F	5000 psi	300°F
1100-50-CS	Steel	1/2" NPT, F x F	3000 psi	300°F
1100-50-316	316SS	1/2" NPT, F x F	5000 psi	300°F



# PRESSURE GAUGE ACCESSORIES

## Snubbers & Syphons

### Pressure Snubbers

Miljoco pressure gauge snubbers are designed to dampen pressure pulsations to prolong gauge life. They have a sintered stainless steel core with no moving parts, and are completely reliable to their maximum pressure rating. They can be piped together in pairs where severe pulsations exist.

Model	Body Material	Conn. Size	Maximum Pressure	Service
1200-25-B-1	Brass	1/4" NPT	1000 psi	Air & Other Gases
1200-25-B-2	Brass	1/4" NPT	1000 psi	Water & Light Oils
1200-25-B-3	Brass	1/4" NPT	1000 psi	Heavy Oils
1200-25-SS-1	303SS	1/4" NPT	2000 psi	Air & Other Gases
1200-25-SS-2	303SS	1/4" NPT	2000 psi	Water & Light Oils
1200-25-SS-3	303SS	1/4" NPT	2000 psi	Heavy Oils
1200-50-B-1	Brass	1/2" NPT	5000 psi	Air & Other Gases
1200-50-B-2	Brass	1/2" NPT	5000 psi	Water & Light Oils
1200-50-B-3	Brass	1/2" NPT	5000 psi	Heavy Oils
1200-50-SS-1	303SS	1/2" NPT	5000 psi	Air & Other Gases
1200-50-SS-2	303SS	1/2" NPT	5000 psi	Water & Light Oils
1200-50-SS-3	303SS	1/2" NPT	5000 psi	Heavy Oils



1200-25-B

#### High Pressure Pulsation Dampener

**MODEL:** 1250-25-B.  
**BODY MATERIAL:** Brass.  
**CONNECTION SIZE:** 1/4" NPT.  
**MAXIMUM PRESSURE:** 5000 psi.  
**OPERATION:** Spiral Helix.

### Coil Syphons

Miljoco coil syphons are required for use with gauges on steam lines, and are designed to form a barrier of water in the coil, preventing steam from attacking the bourdon tube solder joints.

Model	Material	Conn. Size	Maximum Pressure	Maximum Temp.
1300-25-CS	Welded Steel	1/4" NPT	600 psi	750°F
1300-25-B	Seamless Brass	1/4" NPT	250 psi	400°F
1300-25-304	Welded 304SS	1/4" NPT	1000 psi	650°F
1300-25-316	Welded 316SS	1/4" NPT	1000 psi	650°F
1300-50-CS	Welded Steel	1/2" NPT	600 psi	750°F
1300-50-304	Welded 304SS	1/2" NPT	1000 psi	650°F
1300-50-316	Welded 316SS	1/2" NPT	1000 psi	650°F



1300-25-CS



# PRESSURE/TEMPERATURE TESTING

## Test Plugs & Kits

### MEASURING:

Pressure/temperature flow rate.

### SAMPLING:

Retrieve samples without disrupting system.

### BLEEDING:

Bleed air from A/C lines to increase efficiency.

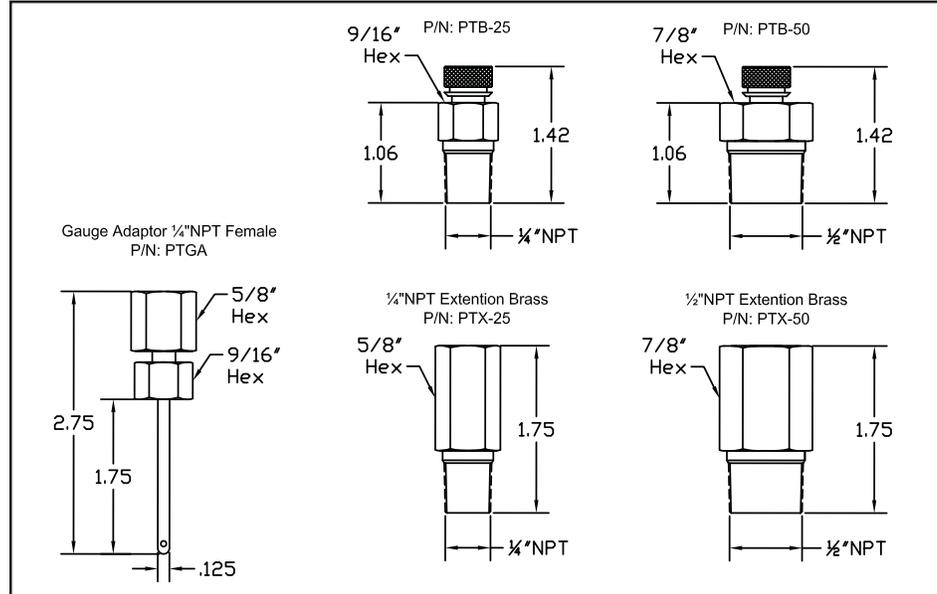
### ECONOMY:

Single set of gauges to test or sample all points.

### EFFICIENCY:

Quickly move from point to point. Fingertip caps provide quick and easy access.

**SECURITY:** Testing equipment is not duplicated nor prone to vandalism, climate extremes or corrosive contaminants.



## Test Kits

Model	Dial Size	Pressure Range
PTK-30-25	2½"	0-30 psi
PTK-30-35	3½"	0-30 psi
PTK-60-25	2½"	0-60 psi
PTK-60-35	3½"	0-60 psi
PTK-100-25	2½"	0-100 psi
PTK-100-35	3½"	0-100 psi
PTK-160-25	2½"	0-160 psi
PTK-160-35	3½"	0-160 psi
PTK-200-25	2½"	0-200 psi
PTK-300-35	3½"	0-200 psi

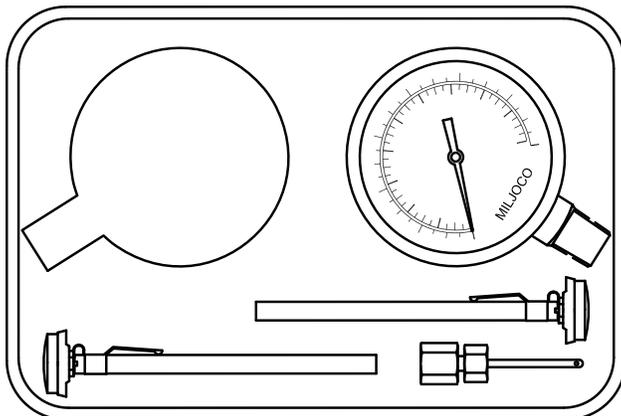
Each test kit consists of: (1) P2508L/P3508L \_\_\_, (1) B1098M82C-5.0, (1) B1098M95C-5.0, (1) PTGA, (1) Convenient Carrying Case

## Test Plugs

Model	Body Material	Conn. Size	Core	Max. Temp.	Max. Pressure
PTB-25	Brass	1/4" NPT	Nordel	350°F (175°C)	1000 psi
PTB-50	Brass	1/2" NPT	Nordel	350°F (175°C)	1000 psi

## Accessories

Model	Description	Material	Conn. Size	Length
PTX-25	Extension	Brass	1/4" NPT	1¾" OAL
PTX-50	Extension	Brass	1/2" NPT	1¾" OAL
PTGA	Gauge Adapter	SS	Ø 0.125	1¾"



## Gauges / Thermometers

Model	Dial Size	Conn.	Stem Length	Range
P2508L03	2½"	¼" NPT	N/A	0-30 psi
P2508L04	2½"	¼" NPT	N/A	0-60 psi
P2508L05	2½"	¼" NPT	N/A	0-100 psi
P2508L06	2½"	¼" NPT	N/A	0-160 psi
P2508L07	2½"	¼" NPT	N/A	0-200 psi
B1098M82C-5.0	1"	N/A	5"	0-220°F
B1098M95C-5.0	1"	N/A	5"	50-500°F



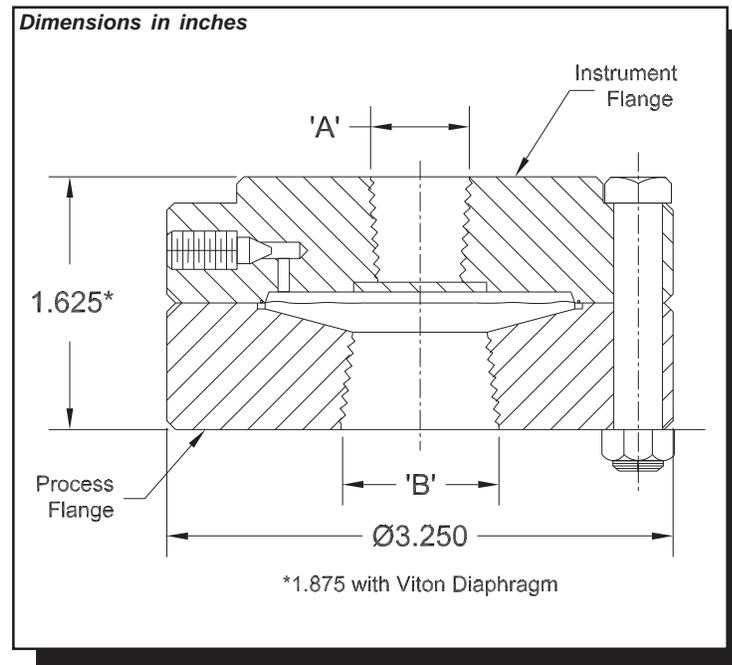
# DIAPHRAGM PROTECTION SEALS

## Pipe Mounted Seals

Miljoco pipe mounted diaphragm protection seals are ideal for use when the process media of a system will corrode, clog, or otherwise damage a pressure gauge or inhibit its operation. A cleanout design is available which allows the seal to be disassembled to remove sludge or hardened build-up. A flushing connection is also available so that the system can be piped for continuous flow to prevent media from hardening or caking.

### Models

Model	Connection	Flushing Connection	Design
DS100	Threaded	None	Non-Cleanout
DS110	Threaded	¼" NPT	Non-Cleanout
DS101	Threaded	None	Cleanout
DS111	Threaded	¼" NPT	Cleanout



### Connections & Materials

Connections			Diaphragm Materials		Process Flange Materials	
Code	Instrument Connection (A)	Process Connection (B)	Code	Material	Code	Material
01	¼" NPT	¼" NPT	F	304 Stainless Steel	C	Steel
02	½" NPT	¼" NPT	G	Hastelloy B	F	304 Stainless Steel
03	¼" NPT	½" NPT	H	Hastelloy C	H	Hastelloy C
04	½" NPT	½" NPT	M	Monel	M	Monel
05	¼" NPT	¾" NPT	S	316 Stainless Steel	S	316 Stainless Steel
06	½" NPT	¾" NPT	T	Teflon	T	Teflon
07	¼" NPT	1" NPT	U	Tantalum		
08	½" NPT	1" NPT	V	Viton		
Instrument Flange is Carbon Steel						
<i>Other styles, sizes, and materials may be available - consult factory.</i>						

### To Order

**DS101**  
Model Number

**01**  
Connection Code

**S**  
Diaphragm  
Material Code

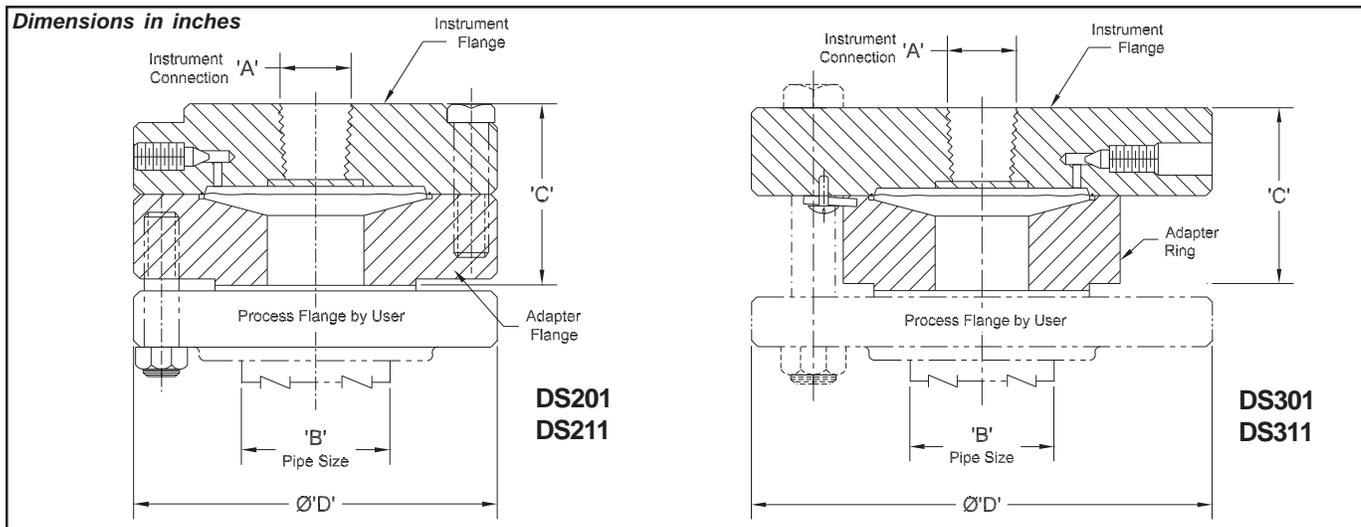
**S**  
Process Flange  
Material Code

200 Elizabeth St. Mt. Clemens, MI 48043

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# DIAPHRAGM PROTECTION SEALS

## Flange Mounted Seals



Miljoco flange mounted diaphragm protection seals are ideal for use when the process media of a system will corrode, clog, or otherwise damage a pressure gauge or inhibit its operation. They incorporate a cleanout design, which allows the seal to be disassembled to remove sludge or hardened build-up. A flushing connection is also available so that the system can be piped for continuous flow to prevent media from hardening or caking.

### Models

Model	Type	Flushing Conn.	Design
DS201	Flanged	None	Cleanout
DS211	Flanged	1/4" NPT	Cleanout
DS301	Flanged	None	Cleanout
DS311	Flanged	1/4" NPT	Cleanout

### Connections & Materials

Models	Connections & Dimensions					Diaphragm Materials		Adapter Flange Materials	
	Code	Instrument Connection (A)	Pipe Size (B)	C	D	Code	Material	Code	Material
DS201 DS211	01	1/4" NPT	1/2" 150# RFF	1.69	3.25	F	304 Stainless Steel	C	Steel
	02	1/2" NPT	1/2" 150# RFF	1.69	3.25	G	Hastelloy B	F	304 Stainless Steel
	03	1/4" NPT	1/2" 300# RFF	1.69	3.50	H	Hastelloy C	H	Hastelloy C
	04	1/2" NPT	1/2" 300# RFF	1.69	3.50	M	Monel	M	Monel
	11	1/4" NPT	3/4" 150# RFF	1.69	3.50	S	316 Stainless Steel	S	316 Stainless Steel
	12	1/2" NPT	3/4" 150# RFF	1.69	3.50	T	Teflon		
DS301 DS311	21	1/4" NPT	1" 150# RFF	1.69	4.25	U	Tantalum		
	22	1/2" NPT	1" 150# RFF	1.69	4.25	V	Viton		
	23	1/4" NPT	1" 300# RFF	1.69	4.75				
	24	1/2" NPT	1" 300# RFF	1.69	4.75				
	41	1/4" NPT	1 1/2" 150# RFF	1.63	5.00				
	42	1/2" NPT	1 1/2" 150# RFF	1.63	5.00				
	43	1/4" NPT	1 1/2" 300# RFF	1.63	6.00				
	44	1/2" NPT	1 1/2" 300# RFF	1.63	6.00				
	51	1/4" NPT	2" 150# RFF	1.63	6.00				
	52	1/2" NPT	2" 150# RFF	1.63	6.00				
	53	1/4" NPT	2" 300# RFF	1.81	6.50				
	54	1/2" NPT	2" 300# RFF	1.81	6.50				
<b>Instrument Flange is Carbon Steel</b>									

*Other styles, sizes, and materials may be available - consult factory.*

### To Order

**DS201**

Model Number

**01**

Connection Code

**S**

Diaphragm Code

**S**

Connection Code

200 Elizabeth St. Mt. Clemens, MI 48043

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# INDUSTRIAL THERMOMETERS

## Product Selection Considerations

**When selecting an industrial thermometer, consideration must be given to the following factors:**

### Warning

Selection of the appropriate instrument is the sole responsibility of the user. Improper application or installation may cause product failure, resulting in personal injury or property damage. Consult ASME B40.200 for further information.

### Measuring Range

The measuring range should be selected so that the system temperature falls at approximately the mid-point of the scale. Care should be exercised to ensure that the instrument is not exposed to temperatures greater than the high end of the measuring range.

### Process Fluid

Miljoco Industrial Thermometers are designed primarily for use in commercial HVAC applications such as hot water, chilled water, and air-ducts. Thermometers specified for use with other process fluids should be provided with a thermowell of the appropriate material to protect the stem of the instrument.

### Ambient Conditions

The ambient temperature should be considered so that the materials of construction are suited to the application. Miljoco Industrial Thermometers are not hermetically sealed and therefore should not be specified when humidity or moisture are of concern.

### Installation Requirements

Miljoco Industrial Thermometers are provided with a 1¼-18 UNF coupling nut for well mounting within a pipeline or tank; or a flange for mounting within an air-duct. The stem should be immersed a minimum of halfway into the pipeline.

### Accuracy Requirements

Miljoco Industrial Thermometers are accurate to within ± one scale division.

### Thermowells

A thermowell of appropriate material compatible with the process fluid should be selected to protect the stem and also allow the thermometer to be removed from the process without shutting down the system. The length should be selected to allow the appropriate immersion into the process fluid. A lagging type thermowell is available to allow for piping insulation. The thermowell should be primed before thermometer installation with a heat transfer medium, such as oil, graphite or paste, to provide optimal accuracy and response time.

## Specification Selections

Miljoco Industrial Thermometers are available in a wide variety of configurations to suit almost any application. For assistance with determining the correct product to suit your application, please contact us with the following information:

**Scale:**     7"     9"     LCD Display

**Temperature Range:** \_\_\_\_\_    **Scale:**     °F only     Dual °F/°C

**Stem Length:**     3½"     6"     6" Air-Duct     Other \_\_\_\_\_

**Lens:**     Glass     Plastic     Solar N/A

**Thermowell:**     Brass     304SS     304SS     Standard     Lagging

**Additional Requirements:** \_\_\_\_\_



# INDUSTRIAL THERMOMETER

## 7" & 9" Adjustable Angle - Spirit Fill

Miljoco liquid-in-glass thermometers are designed for commercial construction & industrial applications such as piping & air ducts. This instrument represents the accepted worldwide engineering standard for industrial thermometers with die cast aluminum case construction for rugged durability. The non-toxic, organic spirit-filled tube provides an accurate and quick response while maintaining environmental safety.

### General Specifications

**CASE:** Precision die cast aluminum, green powder coat finish.

**LENS:** Acrylic to 300°F, glass above 300°F.

**SCALE:** Aluminum with white finish and black markings, v-shaped for optimum readability.

**TUBE:** Non-toxic, blue organic-filled glass tube with magnifying lens front. Bore over the spirit column is filled with nitrogen and the tube is shock mounted to reduce the risk of separation during shipment and use.

**ADJUSTABLE FITTING:** Finished to match the case and locked in place with a screw. Provides 180° adjustment in vertical plane and 360° adjustment in horizontal plane.

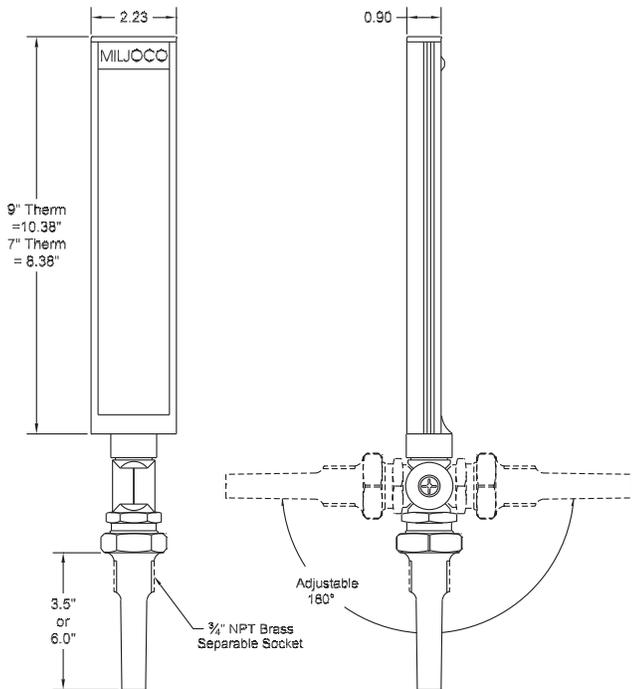
**CONNECTION:** 1-1/4"-18 UNF threaded brass coupling nut.

**STEM:** Aluminum, tapered to fit standard industrial thermowells, packed with heat transfer paste to provide maximum temperature response.

**ACCURACY:** ±1 scale division.

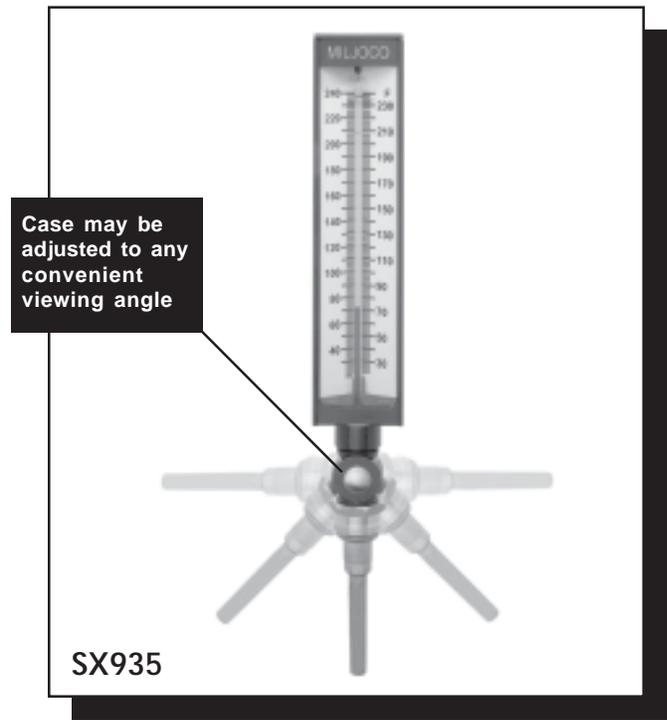
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Dimensions (in.)



### Options

- Glass Lens
- Air-Duct Stem
- Brass Stem
- Stainless Steel Stem



### Models

Model	Scale Size	Stem Length	Model	Scale Size	Stem Length
SX735	7"	3½"	SX935	9"	3½"
SX760	7"	6"	SX960	9"	6"

### Ranges

Code	Range	°F Scale		°C Scale			
		Fig.	Div.	Fig.	Div.		
30	-40 to 110°F	10°	2°	See Dual Scale Ranges Below			
35	0 to 120°F	10°	1°				
75	0 to 160°F	10°	2°				
77	30 to 180°F	10°	2°				
50	30 to 240°F	10°	2°				
60	30 to 300°F	10°	2°				
100	50 to 400°F	25°	5°				
97	50 to 550°F	50°	5°				
31	-40 to 110°F / -40 to 40°C	20°	2°			10°	1°
36	0 to 120°F / -10 to 50°C	20°	1°			10°	1°
76	0 to 160°F / -15 to 70°C	10°	2°	5°	1°		
78	30 to 180°F / 0 to 80°C	10°	2°	5°	1°		
51	30 to 240°F / 0 to 115°C	20°	2°	10°	1°		
61	30 to 300°F / 0 to 150°C	20°	2°	10°	1°		
101	50 to 400°F / 10 to 205°C	50°	5°	10°	2°		
102	50 to 550°F / 10 to 288°C	100°	5°	20°	2°		

### To Order

**S X 9 3 5**  
Model Number

**5 0**  
Range Code

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# INDUSTRIAL THERMOMETER

## Solar Digital

The solar-powered Miljoco CDX9 Series represents the "next generation" in industrial thermometers. The bold, hi-contrast display is easily read from greater distances than the typical glass tube thermometer. The unique, patented\* design includes bi-directional solar panels, allowing the unit to collect light from multiple planes and providing reliable service in even the most dimly lit installations.

The CDX9 Industrial Thermometer is furnished in one standard temperature range (-58 to 302°F & -50 to 150°C) which is switchable in the field. This wide range covers most applications for this type of product, while offering an environmentally-friendly alternative to the commonly specified mercury-in-glass thermometer.

\*Patent No. D488,396

### General Specifications

- CASE:** High impact ABS black plastic.
- STEM:** Aluminum, 3-1/2" or 6".
- CONNECTION:** 1-1/4"-18 UNF brass coupling nut.
- SENSOR:** Glass passivated thermistor.
- RANGE:** -58 to 302°F (-50 to 150°C), field-switchable between °F & °C.
- DISPLAY:** LCD, black character, 0.50" high with gray background.
- ILLUMINANCE:** Bi-directional solar collectors, 35 lux.
- UPDATE TIME:** 10 seconds.
- ACCURACY:** Greater value of 1° or 1% of reading.
- RESOLUTION:** 0.10° from -58 to 199.9°F (-50° to 93°C), 1.0° from 200 to 302°F (94° to 150°C).
- RECALIBRATION:** Internal potentiometer.
- ENVIRONMENTAL CONDITIONS:**
  - Ambient Temperature: -20 to 140°F (-35 to 60°C).
  - Ambient Temperature Error: None.
  - Maximum Humidity: 100%.

### Range

Code	Range
85	-58 to 302°F / -50 to 150°C

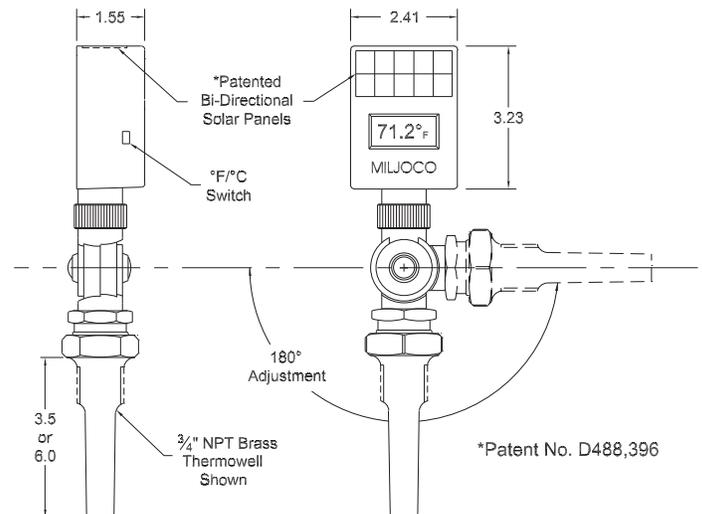
### Options & Accessories

- Air-Duct Stem
- Water-Proof Plastic Cover



### Models & Dimensions (in.)

Model Number	Stem Length	Dimension (in.)			
		A	B	C	U
CDX935	3 1/2"	3.20	7.56	5.75	2.50
CDX960	6"	3.20	10.06	8.25	5.00



### To Order

**CDX935**

Model Number

**85**

Range Code

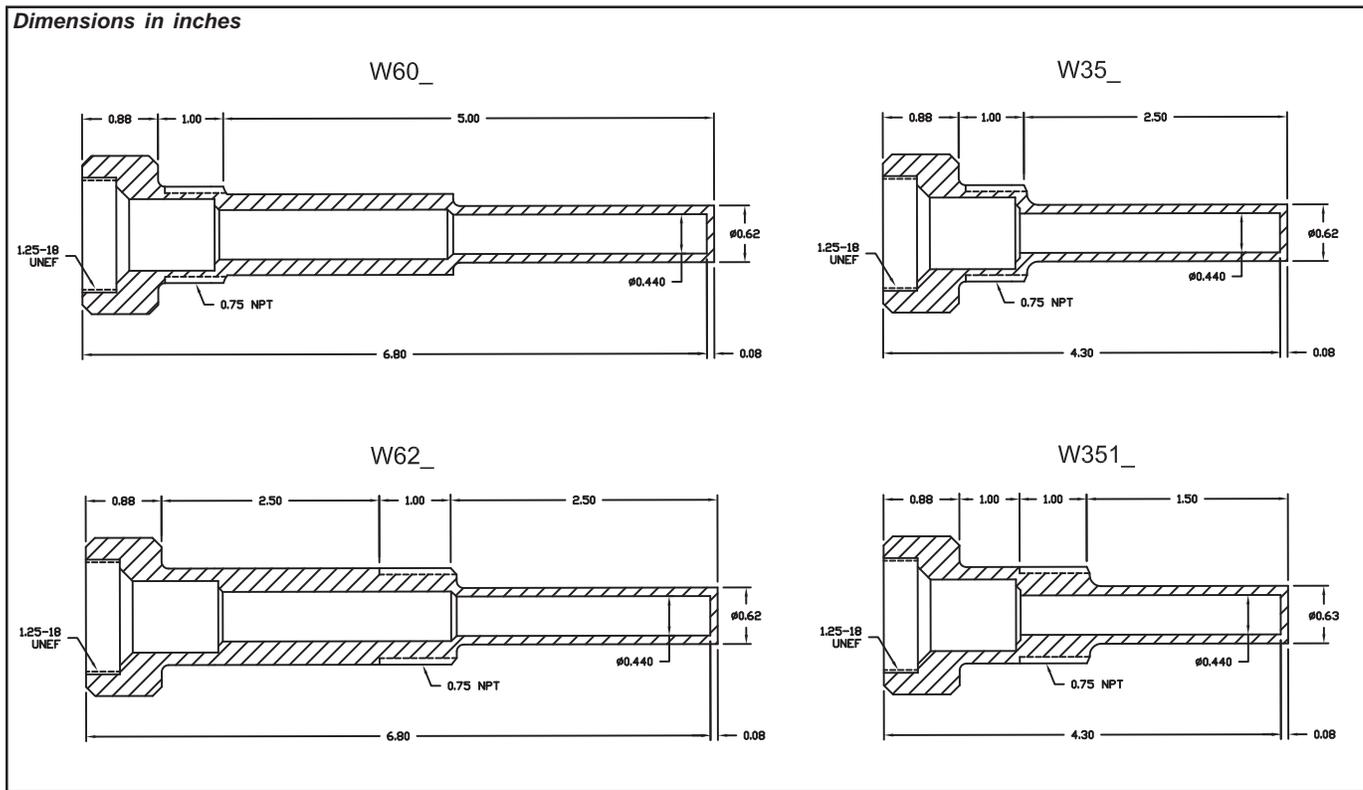
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# INDUSTRIAL THERMOMETER

## Thermowells



These thermowells are designed for use with Miljoco liquid-in-glass and solar industrial thermometers. They are intended to separate and protect the thermometer from the process or media being measured and allow for the removal of the thermometer without shutting down the process. They are readily available in brass, type 304 stainless steel, or type 316 stainless steel construction to suit a wide range of applications. Other materials are available on request - consult factory.

*The thermowell should be primed before thermometer installation with a heat transfer medium such as oil, graphite or paste to provide optimal accuracy and response time.*

### Models & Dimensions (in.)

Stem Length "S"	Process Conn. "A"	Immersion Length "U"	Lagging Ext. "T"	Material		
				Brass	304SS	316SS
3½"	¾" NPT	2.50"	None	W35B	W35304	W35316
3½"	¾" NPT	1.50"	1.00"	W351B	W351304	W351316
6"	¾" NPT	5.00"	None	W60B	W60304	W60316
6"	¾" NPT	2.50"	2.00"	W62B	W62304	W62316

### Pressure/Temperature Ratings

Material	Temperature						
	70°F	200°F	400°F	600°F	800°F	1000°F	1200°F
Brass	1600 psi	1400 psi	300 psi	-	-	-	-
304SS	2300 psi	2000 psi	1800 psi	1800 psi	1700 psi	1500 psi	500 psi
316SS	2300 psi	2300 psi	2100 psi	2000 psi	2000 psi	1700 psi	800 psi



# INDUSTRIAL THERMOMETER

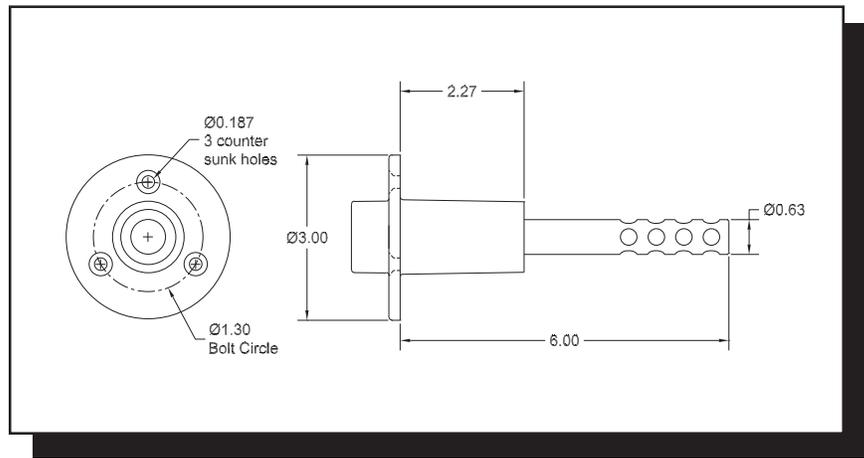
## Options & Accessories

### Air-Duct Stem

Miljoco offers an air-duct stem on both the liquid-in-glass and solar digital thermometers. This stem is designed to provide maximum accuracy and response time for thermometers that are to be installed in ducts and other air-temperature measurement applications.

Model	Scale Size
SX7AD06	7"
SX9AD06	9"
CDX9AD06	Solar

*Refer to pages 34-35 for full dimensional drawings.*



### Optional Features & Accessory Items

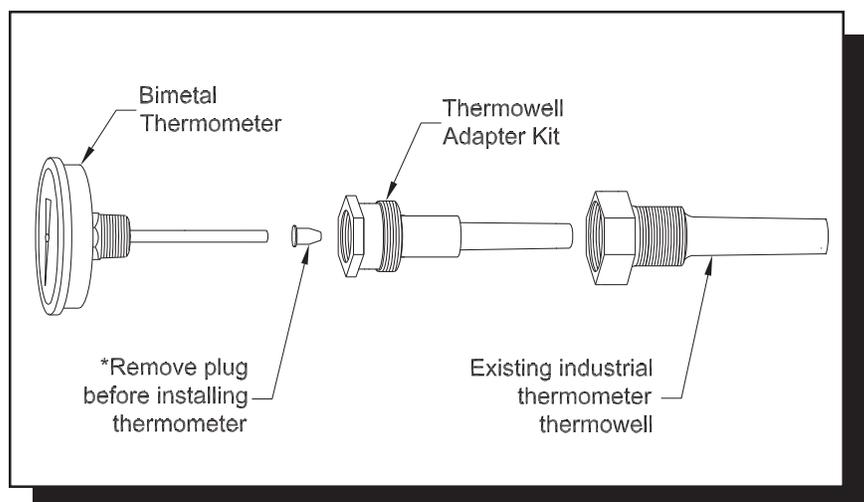
Code	Feature	Description
G	Glass Lens	Double strength glass lens on Models SX7 & SX9.
BS	Brass Stem	Brass stem on Models SX7 & SX9.
SS	Stainless Steel	304 stainless steel stem on Models SX7 & SX9.
46-1	Waterproof Cover	Clear waterproof cover for Model CDX9.

*Specify the optional feature code when ordering. Stainless steel and brass connection bushings are also available for use with optional stainless steel and brass stems - consult factory for details.*

### Thermowell Adapter Kit

This easy-to-use adapter kit is designed to fit precisely within an industrial thermometer well. Simply thread the adapter into the well, remove the plug, and install a Miljoco Bimetal Thermometer of the appropriate stem length. The adapter kit is furnished complete with heat transfer paste to provide the fastest response time of the thermometer.

Model	Industrial Thermowell Number	Bimetal Thermometer Stem Length
BK35	W35_ / W351_	4"
BK60	W60_ / W62_	6"



# CONTRACTOR'S THERMOMETER

## 5" Straight or Angle

This general purpose thermometer features a red reading, non-toxic spirit-filled tube. The 5" scale is easily read against the wide front magnifying glass tubing. Rugged and economical, this industrial thermometer meets most specifications for the general construction industry. Common applications are hot-water boilers, refrigeration lines, light-duty steam service and chillers.

### General Specifications

**CASE:** Rigid gray ABS plastic.

**LENS:** Glass.

**SCALE:** Aluminum with white finish and black markings.

Scale is V-shaped for maximum readability.

**TUBE:** Lens front, red spirit filled, non-toxic.

**STEM:** Brass.

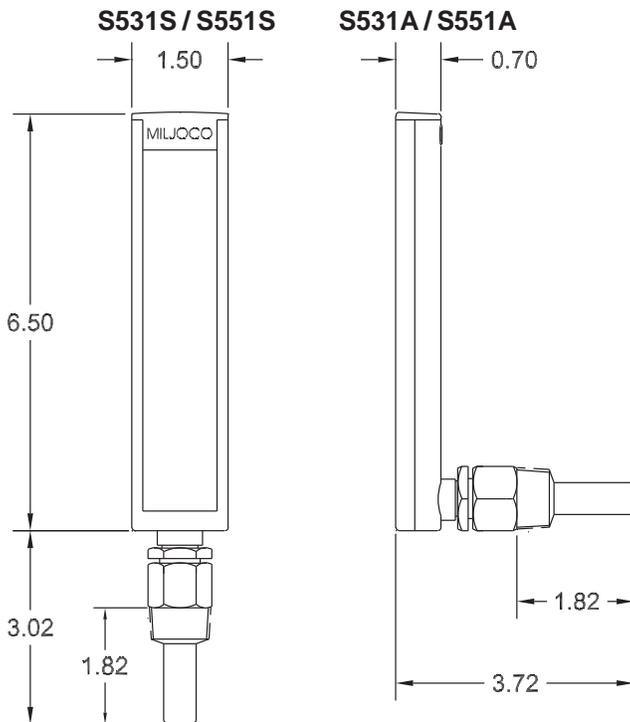
**JAM NUT:** Brass.

**THERMOWELL:** Brass, 1/2" NPT, with 1-1/2" immersion length for pressurized systems.

**ACCURACY:** ±1 scale division.

**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Dimensions (in.)



Thermowell included



S551A

### Models & Ranges

Model	Style	Range	°F Scale		°C Scale	
			Fig.	Div.	Fig.	Div.
S531S	Straight	-40 to 110°F / -40 to 40°C	20°	2°	20°	2°
S551S	Straight	30 to 250°F / 0 to 115°C	50°	5°	50°	5°
S531A	Angle	-40 to 110°F / -40 to 40°C	20°	2°	20°	2°
S551A	Angle	30 to 250°F / 0 to 115°C	50°	5°	50°	5°

### To Order

**S551A**

Model Number



# BIMETAL THERMOMETERS

## Product Selection Considerations

**When selecting a bimetal thermometer, consideration must be given to the following factors:**

### Warning

Selection of the appropriate instrument is the sole responsibility of the user. Improper application or installation may cause product failure, resulting in personal injury or property damage. Consult ASME B40.200 for further information.

### Construction

Miljoco Bimetal Thermometers are furnished with a welded, all-stainless steel stem assembly to ensure reliability. On ranges up to 300°F, the sensing helix is silicone-dampened to ensure smooth operation, accurate readings and excellent readability.

### Measuring Range

The measuring range should be selected so that the system temperature falls at approximately the mid-point of the scale. Care should be exercised to ensure that the instrument is not exposed to temperatures greater than the high end of the measuring range.

### Process Fluid

The composition of the process fluid should be considered to ensure that it is compatible with the wetted parts of the thermometer and/or thermowell. All thermometers specified for use with corrosive or caustic fluids, or those contained under pressure, should be installed in a thermowell of the appropriate material to protect the stem of the instrument.

### Ambient Conditions

The ambient temperature should be considered so that the materials of construction are suited to the application.

Miljoco Bimetal Thermometers are hermetically sealed and are the ideal choice for use in environments where humidity or moisture are of concern.

### Installation Requirements

Miljoco 3" & 5" dial size Bimetal Thermometers are provided with a 1/2" NPT connection for well mounting within a pipeline or tank. Miljoco 2" dial size Thermometers are furnished with a 1/4" NPT connection. The stem should be immersed a minimum of halfway into the pipeline. Flange mounting is also available for air ducts.

### Accuracy Requirements

All Miljoco Bimetal Thermometers are accurate to within  $\pm$  one scale division.

### Thermowells

A thermowell of appropriate material compatible with the process fluid should be selected to protect the stem and also allow the thermometer to be removed from the process without shutting down the system. The length should be selected to allow the appropriate immersion into the process fluid. A lagging type thermowell is available to allow for piping insulation.

### Liquid Fill

A silicone filled case (available on B5099A, B3099A) should be considered on applications where vibration is present. The fill fluid will assist in dampening the internals of the thermometer to improve readability and help prolong the life of the instrument.

## Specification Selections

Miljoco Bimetal Thermometers are available in a wide variety of configurations to suit almost any application. For assistance with determining the correct product to suit your application, please contact us with the following information:

Dial Size:  1"  2"  2½"  3"  5"

Temperature Range: \_\_\_\_\_ Scale:  Dual °F/°C  °F only  °C only

Connection Size:  None  1/4" NPT  1/2" NPT  Other \_\_\_\_\_

Connection Location:  Rear  Lower  Adjustable Angle  Other \_\_\_\_\_

Stem Length:  2½"  4"  6"  9"  12"  Other \_\_\_\_\_

Lens:  Glass  Plastic  Other \_\_\_\_\_

Recalibrator:  None  External Recalibrator

Liquid Fill:  None  Silicone Oil  Other \_\_\_\_\_

Thermowell:  Brass  304SS  304SS  ½" NPT  ¾" NPT  Standard  Lagging

Additional Requirements: \_\_\_\_\_



# BIMETAL THERMOMETER

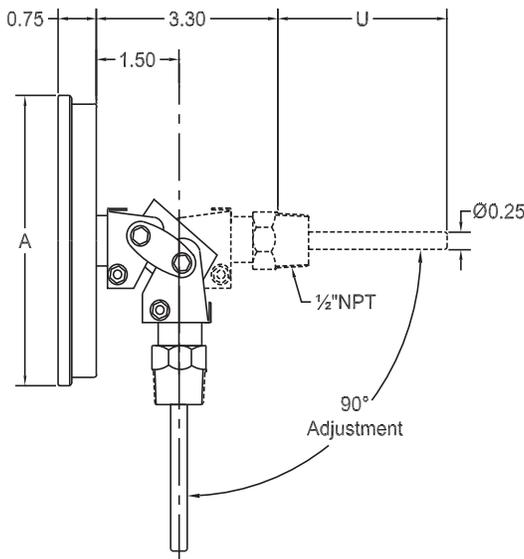
## 3" or 5" Adjustable Angle

Miljoco adjustable angle bimetal thermometers are a favorite for their versatility. The construction industry values this instrument, where on-the-job piping requires reading the instrument from a variety of angles. The connection can be rotated 360° and the face can be angled 180° for the user's convenience. These instruments are designed to withstand vibration and other rugged abuse. The hermetically-sealed, stainless steel case prevents moisture from entering into the instrument and fogging the lens, thus allowing the operator to obtain clear, accurate readings.

### General Specifications

- CASE & RING:** Hermetically sealed 300 series stainless steel.
- ADJUSTABLE BRACKET:** 300 series stainless steel.
- LENS:** Double strength glass standard, with polycarbonate (250°F maximum range) optional.
- DIAL:** Anti-parallax, aluminum with white finish and black markings.
- POINTER:** Black.
- RECALIBRATOR:** External recalibrator on rear of case.
- CONNECTION:** 300 series stainless steel, 1/2" NPT.
- STEM:** 300 series stainless steel, Ø 0.250".
- ACCURACY:** ±1% full range (ASME B40.3 Grade A).
- AMBIENT TEMPERATURE:** -40 to 250°F (-40 to 120°C).

### Models & Dimensions (in.)



Model	Dial Size	Lens	A	B	C	D
B3099A	3"	Glass	3.18	0.625	1.60	3.50
B3098A	3"	Polycarb.	3.18	0.625	1.60	3.50
B5099A	5"	Glass	5.14	0.685	1.60	3.50
B5098A	5"	Polycarb.	5.14	0.685	1.60	3.50



### Ranges

Range Code	Range	°F Scale		°C Scale	
		Fig.	Div.	Fig.	Div.
39	-40 to 160°F / -40 to 70°C	20°	2°	10°	1°
43	25 to 125°F / -5 to 50°C	10°	1°	5°	.5°
54	0 to 250°F / -20 to 120°C	50°	2°	20°	2°
63	50 to 300°F / 10 to 150°C	50°	2°	20°	2°
94	50 to 500°F / 10 to 260°C	50°	2°	20°	2°
65	150 to 750°F / 50 to 400°C	100°	10°	50°	5°
59	200 to 1000°F / 100 to 530°C	100°	10°	50°	5°

*Other ranges may be available - consult factory.*

### Stem Lengths

Stem Length "U" (in.)					
Code	2	4	6	9	12
Dim.	2.50	4.00	6.00	9.00	12.00

*Other stem lengths available - consult factory.*

### To Order

**B5099A**      **43** - **6**  
 Model Number      Range      Stem  
                                  Code      Length

### Options

- Polycarbonate Lens (Model B5098A or B3098A)
- Silicone Fill (Model BSF5099A or BSF3099A)



# BIMETAL THERMOMETER

## 3" Lower Connection

Miljoco lower connected bimetal thermometers are ideal for applications requiring a compact dial and fixed lower connection. These tamper-proof instruments are an excellent choice when an external recalibrator or pointer adjustment are not required. The hermetically-sealed, stainless steel case prevents moisture from entering into the instrument and fogging the lens, thus allowing the operator to obtain clear, accurate readings.

### General Specifications

**CASE & RING:** Hermetically sealed 300 series stainless steel.

**LENS:** Double strength glass standard, with polycarbonate (250°F maximum range) optional.

**DIAL:** Anti-parallax, aluminum with white finish and black markings.

**POINTER:** Black.

**RECALIBRATOR:** None.

**CONNECTION:** 300 series stainless steel, 1/2" NPT.

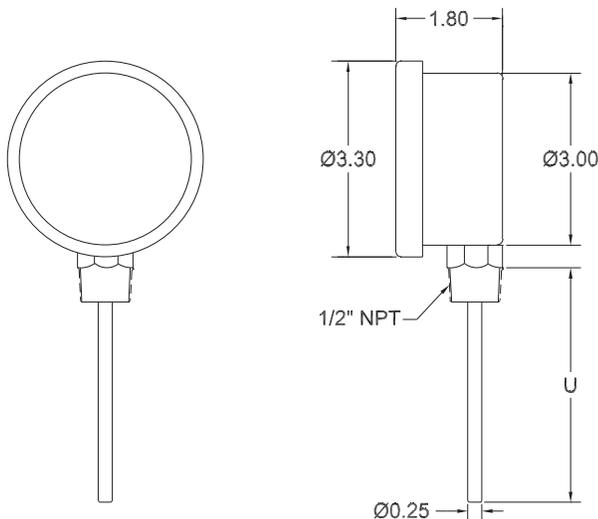
**STEM:** 300 series stainless steel, Ø 0.250".

**ACCURACY:** ±1% full range (ASME B40.3 Grade A).

**AMBIENT TEMPERATURE:** -40 to 250°F (-40 to 120°C).



### Dimensions (in.)



### Ranges

Range Code	Range	°F Scale		°C Scale	
		Fig.	Div.	Fig.	Div.
39	-40 to 160°F / -40 to 70°C	20°	2°	10°	1°
43	25 to 125°F / -5 to 50°C	10°	1°	5°	.5°
54	0 to 250°F / -20 to 120°C	50°	2°	20°	2°
63	50 to 300°F / 10 to 150°C	50°	2°	20°	2°
94	50 to 500°F / 10 to 260°C	50°	2°	20°	2°
65	150 to 750°F / 50 to 400°C	100°	10°	50°	5°
59	200 to 1000°F / 100 to 530°C	100°	10°	50°	5°

Other ranges may be available - consult factory.

### Stem Lengths

Stem Length "U" (in.)					
Code	2	4	6	9	12
Dim.	2.50	4.00	6.00	9.00	12.00

Other stem lengths available - consult factory.

### To Order

**B 3 0 9 9 L**    **9 4**    -    **2**  
 Model Number            Range Code            Stem Length

### Options

Polycarbonate Lens (Model B3098L)



# BIMETAL THERMOMETER

## 3" or 5" Rear Connection

Miljoco rear connected bimetal thermometers are economic and ideal for applications that can accept a fixed back connection. These instruments are provided with an external recalibrator on the rear of the case, for easy temperature adjustment. The hermetically-sealed, stainless steel case prevents moisture from entering into the instrument and fogging the lens, thus allowing the operator to obtain clear, accurate readings.

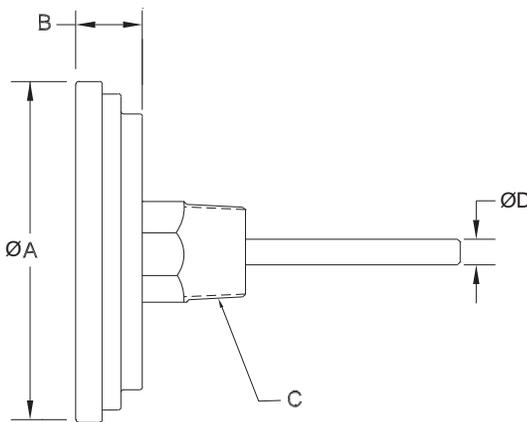
### General Specifications

- CASE & RING:** Hermetically sealed 300 series stainless steel.
- LENS:** Double strength glass standard, with polycarbonate (250°F maximum range) optional.
- DIAL:** Aluminum with white finish and black markings.
- POINTER:** Black.
- RECALIBRATOR:** Furnished standard with external recalibrator on rear of case.
- CONNECTION:** 300 series stainless steel, 1/2" NPT.
- STEM:** 300 series stainless steel, Ø 0.250".
- ACCURACY:** ±1% full range (ASME B40.3 Grade A).
- AMBIENT TEMPERATURE:** -40 to 250°F (-40 to 120°C).



B3099

### Models & Dimensions (in.)



Model	Dial Size	Lens	A	B	C	D
B3099	3"	Glass	3.18	0.625	½" NPT	0.250
B3098	3"	Polycarb.	3.18	0.625	½" NPT	0.250
B5099	5"	Glass	5.14	0.685	½" NPT	0.250
B5098	5"	Polycarb.	5.14	0.685	½" NPT	0.250

### Ranges

Range Code	Range	°F Scale		°C Scale	
		Fig.	Div.	Fig.	Div.
39	-40 to 160°F / -40 to 70°C	20°	2°	10°	1°
43	25 to 125°F / -5 to 50°C	10°	1°	5°	.5°
54	0 to 250°F / -20 to 120°C	50°	2°	20°	2°
63	50 to 300°F / 10 to 150°C	50°	2°	20°	2°
94	50 to 500°F / 10 to 260°C	50°	2°	20°	2°
65	150 to 750°F / 50 to 400°C	100°	10°	50°	5°
59	200 to 1000°F / 100 to 530°C	100°	10°	50°	5°

*Other ranges may be available - consult factory.*

### Stem Lengths

Stem Length "U" (in.)					
Code	2	4	6	9	12
Dim.	2.50	4.00	6.00	9.00	12.00

*Other stem lengths available - consult factory.*

### To Order

**B 3 0 9 9**      **5 4** - **4**  
 Model Number      Range      Stem  
                                  Code      Length

### Options

- Polycarbonate Lens (Model B3098, B5098)



# SOLAR DIGITAL THERMOMETER

## 3" Adjustable Angle

The Miljoco CD3099A is operated by solar power with an auxiliary battery back-up to allow the display to function continuously, even in low light levels. It has a bright and easy to read LCD display. This thermometer has a sealed case and can be switched in the field from °F to °C through the access port on the rear of the case. It is an excellent choice for a variety of applications, including industrial processing, food processing and commercial HVAC.

### General Specifications

**CASE & RING:** Hermetically sealed 300 series stainless steel.

**LENS:** Polycarbonate.

**STEM:** 300 series stainless steel, Ø 0.250".

**CONNECTION:** 300 series stainless steel, 1/2" NPT.

**SENSOR:** Glass passivated thermistor.

**RANGE:** -58 to 302°F (-50 to 150°C), field-switchable between °F & °C.

**DISPLAY:** LCD, black character, 0.50" high with gray background.

**ILLUMINANCE:** Solar collector, 100 lux, with battery backup for continuous service.

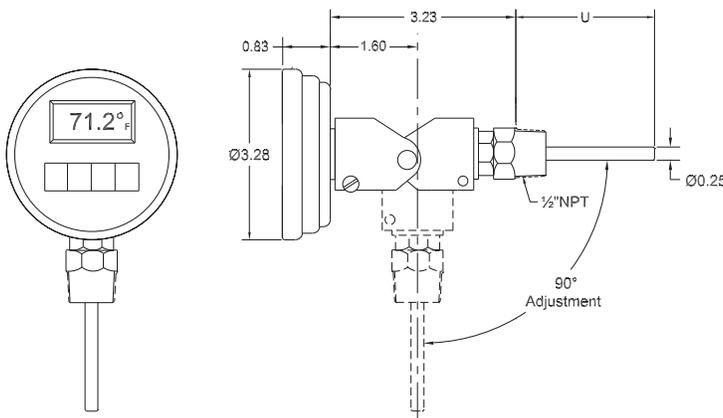
**UPDATE TIME:** 10 seconds.

**ACCURACY:** Greater value of 2°F (1°C) or 1% of reading.

**RESOLUTION:** 0.1°F or °C.

**AMBIENT TEMPERATURE:** -40 to 250°F (-40 to 120°C).

### Dimensions (in.)



### Range

Range Code	Range
85	-58 to 302°F / -50 to 150°C

*Other ranges may be available - consult factory.*

### Stem Lengths

Code	Stem Length "U" (in.)			
	4	6	9	12
Dim.	4.00	6.00	9.00	12.00

*Other stem lengths available - consult factory.*

### To Order

**CD3098A**      **85** - **6**  
 Model Number      Range Code      Stem Length



# BIMETAL THERMOMETER

## 2" Rear Connection

Miljoco 2" Rear Connected Bimetal Thermometers feature a compact design and economical price. These tamper-proof instruments are an excellent choice when an external recalibrator or pointer adjustment are not required. The hermetically-sealed, stainless steel case prevents moisture from entering into the instrument and fogging the lens, thus allowing the operator to obtain clear, accurate readings.

### General Specifications

- CASE & RING:** Hermetically sealed 300 series stainless steel.
- LENS:** Double strength glass standard, with polycarbonate (250°F maximum range) optional.
- DIAL:** Aluminum with white finish and black markings.
- POINTER:** Black.
- RECALIBRATOR:** None.
- CONNECTION:** 300 series stainless steel, 1/4" NPT.
- STEM:** 300 series stainless steel, Ø 0.250".
- ACCURACY:** ±1% full range (ASME B40.3 Grade A).
- AMBIENT TEMPERATURE:** -40 to 250°F (-40 to 120°C).

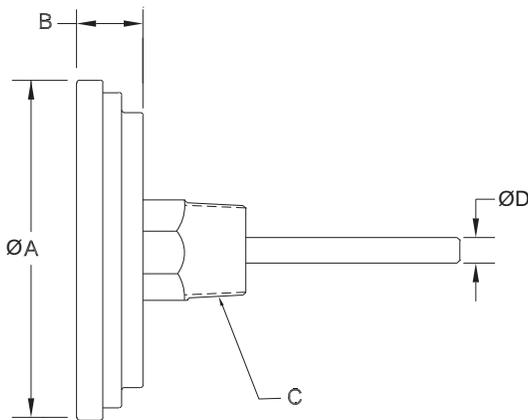
#### NSF® Service

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



B2098

### Models & Dimensions (in.)



Model	Dial Size	Lens	A	B	C	D
B2099	2"	Glass	2.15	0.675	1/4" NPT	0.250
B2098	2"	Polycarb.	2.15	0.675	1/4" NPT	0.250

### Ranges

Range Code	Range	°F Scale		°C Scale	
		Fig.	Div.	Fig.	Div.
39	-40 to 160°F / -40 to 70°C	20°	2°	10°	1°
43	25 to 125°F / -5 to 50°C	10°	1°	5°	.5°
54	0 to 250°F / -20 to 120°C	50°	2°	20°	2°
63	50 to 300°F / 10 to 150°C	50°	2°	20°	2°
94	50 to 500°F / 10 to 260°C	50°	2°	20°	2°
65	150 to 750°F / 50 to 400°C	100°	10°	50°	5°
59	200 to 1000°F / 100 to 530°C	100°	10°	50°	5°

Other ranges may be available - consult factory.

### Stem Lengths

Stem Length "U" (in.)					
Code	2	4	6	9	12
Dim.	2.50	4.00	6.00	9.00	12.00

Other stem lengths available - consult factory.

### To Order

**B 2 0 9 8**      **5 4**      -      **2**  
 Model Number      Range      Stem  
                                  Code      Length

### Options

- Glass Lens (Model B2099)

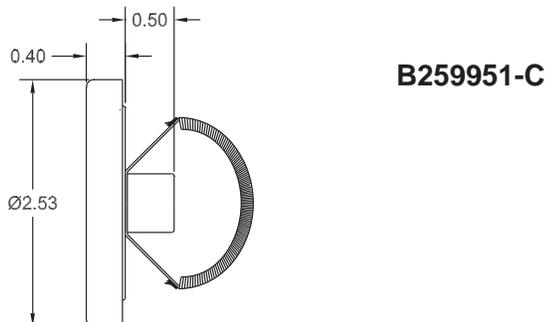
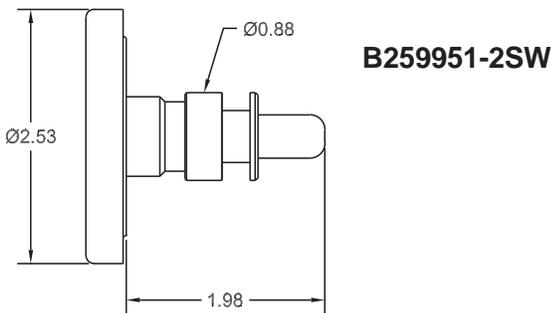
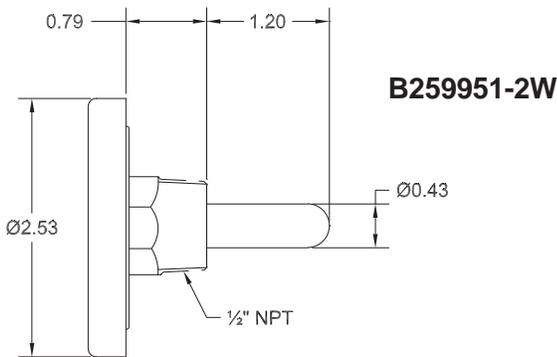


# HOT WATER THERMOMETER

## Bimetal Type - 2½" Dial

The Miljoco Hot Water Thermometer represents a good value for installations where temperature accuracy is less critical and there are no corrosive elements in the environment or process media. This thermometer simply press-fits into the brass thermowell that is provided. A clamp-on version is also available for mounting directly onto a small diameter pipe to eliminate the need for a piping tee. Typical installations are heating coils, hydronic radiant in-floor systems, outdoor wood-burning furnaces, etc.

### Dimensions (in.)



Thermowell included



**B259951-2W**

### Range

Range	°F Scale		°C Scale	
	Fig.	Div.	Fig.	Div.
30 to 250°F / 0 to 120°C	50°	5°	20°	2°

### General Specifications

**CASE:** Zinc plated brass.

**RING:** Chrome plated brass.

**LENS:** Glass.

**DIAL:** Aluminum, white finished with black and red markings.

**POINTER:** Black.

**RECALIBRATOR:** External reset on tip of stem.

**STEM:** Brass

**MOUNTING:**

**B259951-2W:** Brass thermowell, 1/2" NPT

**B259951-2SW:** Brass thermowell, sweat conn.

**B259951-C:** Flexible steel mounting spring

**ACCURACY:** ±5°F & ±2°C.

**AMBIENT TEMPERATURE:** -40 to 250°F  
(-40 to 120°C).



# POCKET TEST THERMOMETER

## Bimetal Type - 1" Dial - 5" Stem

Miljoco Pocket Test Thermometers are ideal for use as test instruments in the HVAC, plumbing, refrigeration, and appliance repair industries. These thermometers are furnished with a durable plastic carrying case and pocket clip. They are also available with either a domed or magnifying lens and can be recalibrated easily in the field. Various ranges are NSF® listed for use in the food service industry.

### General Specifications

**CASE:** Hermetically sealed 300 series stainless steel.

**LENS:** Acrylic.

**DIAL:** Aluminum, white finished with black markings.

**POINTER:** Red.

**RECALIBRATOR:** External adjusting hex nut or recalibrator lug on rear of case.

**STEM:** 300 series stainless steel, Ø 0.150".

**ACCURACY:** ±2% full range.

**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).



### Models

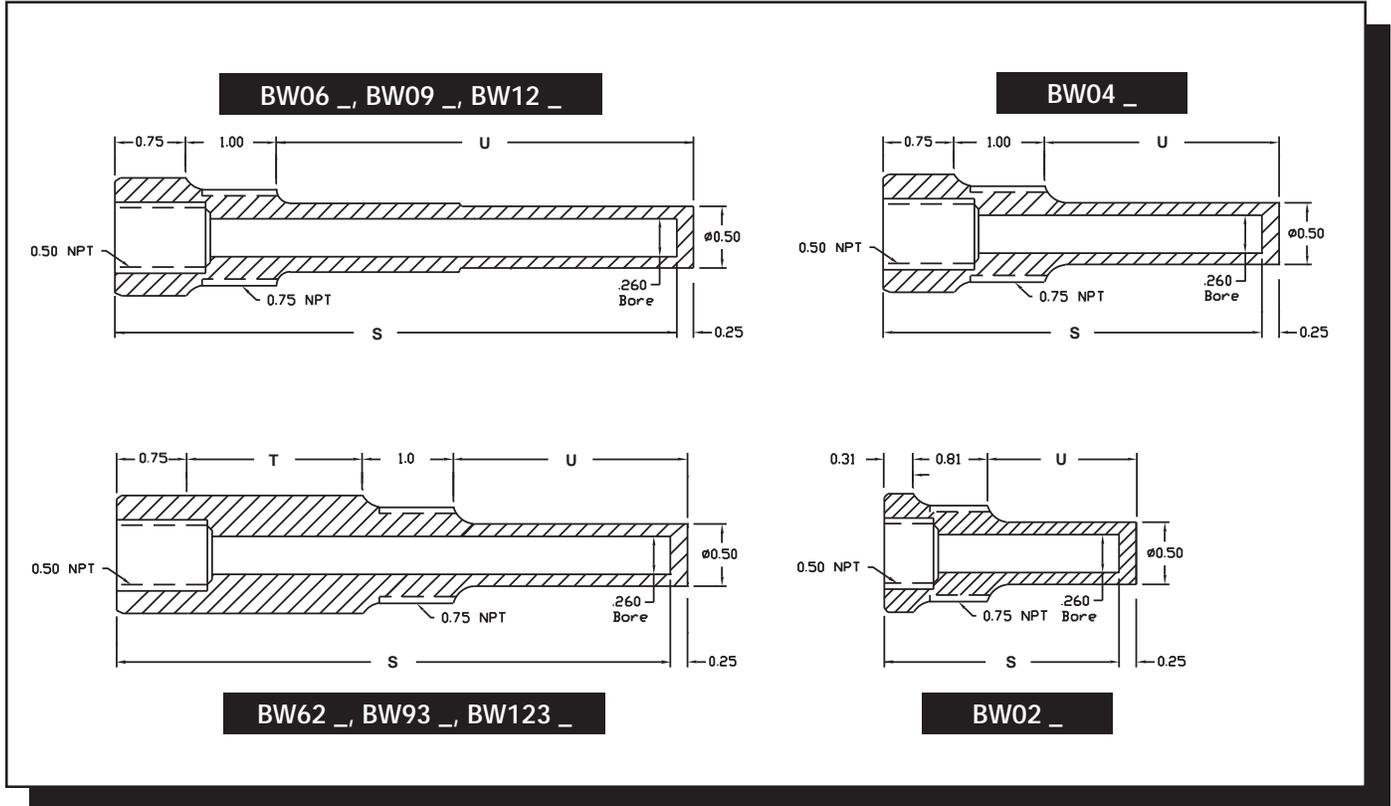
Model	Range	Dial Size	Stem Length	Lens Type	Adjustment Type
B1098M90C-5.0	-40 to 160°F	1"	5"	Magnifying	Recalibrator Lug
B1098M82C-5.0	0 to 220°F*	1"	5"	Magnifying	Recalibrator Lug
B1098M43C-5.0	25 to 125°F*	1"	5"	Magnifying	Recalibrator Lug
B1098M95C-5.0	50 to 500°F	1"	5"	Magnifying	Recalibrator Lug
B1098M28C-5.0	0 to 100°C	1"	5"	Magnifying	Recalibrator Lug
B1098M42C-5.0	-40 to 70°C	1"	5"	Magnifying	Recalibrator Lug
B1098D90A-5.0	-40 to 160°F	1"	5"	Domed	Hex Nut
B1098D82A-5.0	0 to 220°F*	1"	5"	Domed	Hex Nut
B1098D43A-5.0	25 to 125°F*	1"	5"	Domed	Hex Nut
B1098D95A-5.0	50 to 500°F	1"	5"	Domed	Hex Nut
B1098D28A-5.0	0 to 100°C	1"	5"	Domed	Hex Nut
B1098D42A-5.0	-40 to 70°C	1"	5"	Domed	Hex Nut

\*NSF® listed range.



# BIMETAL THERMOMETER

## Thermowells & Mounting Flanges



These thermowells are designed for use with Miljoco 3" & 5" Bimetal Thermometers. They are intended to separate the thermometer from the process or media being measured to allow for removal of the thermometer and protection of the thermometer stem from corrosive media. They are readily available in brass, 304 stainless, or 316 stainless steel construction to suit a wide range of applications. Other materials and designs are available on request - consult factory.

*The thermowell should be primed before thermometer installation with a heat transfer medium such as oil, graphite or paste to provide optimal accuracy and response time.*

### Models & Dimensions (in.)

Stem Length "S"	Process Conn. "A"	Immersion Length "U"	Lagging Ext. "T"	Material		
				Brass	304SS	316SS
2-1/2"	3/4" NPT	1.63"	None	BW02B	BW02304	BW02316
4"	3/4" NPT	2.50"	None	BW04B	BW04304	BW04316
6"	3/4" NPT	4.50"	None	BW06B	BW06304	BW06316
6"	3/4" NPT	2.50"	2.00"	BW62B	BW62304	BW62316
9"	3/4" NPT	7.50"	None	BW09B	BW09304	BW09316
9"	3/4" NPT	4.50"	3.00"	BW93B	BW93304	BW93316
12"	3/4" NPT	10.50"	None	BW12B	BW12304	BW12316
12"	3/4" NPT	7.50"	3.00"	BW123B	BW123304	BW123316

Other stem lengths, connection sizes, and materials are available - consult factory.

### Duct Mounting Flange

Model	Description	Material	Conn.
65-10	3-Hole Mounting Flange	Zinc-Plated Cast Iron	1/2" NPT

### Pressure/Temperature Ratings

Material	Temperature						
	70°F	200°F	400°F	600°F	800°F	1000°F	1200°F
Brass	5000 psi	4200 psi	1000 psi	-	-	-	-
304SS	7000 psi	6200 psi	5600 psi	5400 psi	5200 psi	4500 psi	1650 psi
316SS	7000 psi	7000 psi	6400 psi	6200 psi	6100 psi	5100 psi	2500 psi



# VAPOR ACTUATED DIAL THERMOMETERS

## Product Selection Considerations

*When selecting a dial thermometer, consideration must be given to the following factors:*

### Warning

Selection of the appropriate instrument is the sole responsibility of the user. Improper application or installation may cause product failure, resulting in personal injury or property damage. Consult ASME B40.200 for further information.

### Measuring Range

Being vapor actuated, Miljoco Dial Thermometers feature a progressively graduated scale, and therefore, the range should be selected so that the working temperature falls into the upper two-thirds of the range. A wide array of ranges from -40°F to 450°F are available to suit almost any application requirement.

### Process Fluid

The composition of the process fluid should be considered to ensure that it is compatible with the wetted parts of the thermometer and/or thermowell. All thermometers specified for use with corrosive or caustic fluids, or those contained under pressure, should be installed in a thermowell of the appropriate material to protect the stem of the instrument.

### Ambient Conditions

The ambient temperature should be considered so that the materials of construction are suited to the application. Optional sealed cases, lens o-rings, and/or weepholes should be considered to help prevent fogging of the lens when humidity or moisture are concern.

### Installation Requirements

The mounting style required (direct, surface or panel) and outlet location (bottom or back) should be considered to ensure the thermometer will suit the application requirements. A variety of tube systems and connections are offered, however, other specialized types may be available – consult factory. CAUTION: The sensing bulb and case should be installed at a similar height to maintain the designed accuracy of the thermometer. If the sensing bulb must be mounted at a different height than the case (especially over long capillary tubing runs), please advise the factory when ordering.

### Accuracy Requirements

The accuracy requirement of the application should be considered to ensure safety and efficiency for the operators and users of the process system.

### NSF® Service

Many Miljoco Dial Thermometers are listed by NSF® for use in the food service industry. When this listing requirement is specified, a smooth, nickel-plated copper sensing bulb and capillary tubing are furnished, along with dial face imprinting or case labeling. Consult factory for available models, ranges and configurations.

## Specification Selections

Miljoco Dial Thermometers are available in a wide variety of configurations to suit almost any application. For assistance with determining the correct product to suit your application, please contact us with the following information:

**Dial Size:**  1½"  2"  2½"  3½"  4"  4½"  6"  12"

**Temperature Range:** \_\_\_\_\_ **Scale:**  Dual °F/°C  °F only  °C only

**Mounting Method:**  Front Flange  U-Clamp  Rear Flange  Adjustable  Direct Mount

**Connection:**  Plain Bulb  1/2" NPT Union  1/2" NPT Union with Extension

**Capillary Material:**  Tin Plated Copper  Smooth Copper  Bronze Braided  
 Smooth Stainless Steel  Stainless Steel Armor

**Case Material:**  Stainless Steel  Aluminum  Plastic  Other \_\_\_\_\_

**Lens:**  Glass  Press-In Plastic  Threaded Plastic  Other \_\_\_\_\_

**Mounting Method:**  Lower  Back  Rear Flange  Front Flange  U-Clamp

**Liquid Fill:**  None-Dry  Glycerine  Silicone Oil  Other \_\_\_\_\_

**Additional Requirements:** \_\_\_\_\_



# DIAL THERMOMETER

Remote Reading

## Flush Mount - Front Flange Case - 2", 2½", 3½" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments are ideal for obtaining readings from remote locations. Being vapor actuated, they are not subject to any ambient temperature variations along the tube system and give excellent readings both above and below ambient. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F. Front flange thermometers are designed to be installed in a panel using three screws from the front.

### NSF® Service

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.

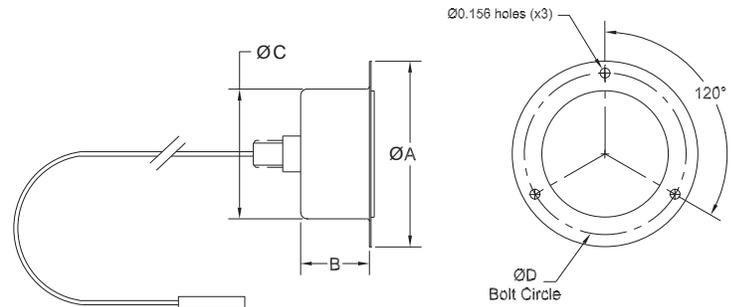


V2036

### General Specifications

- CASE:** 300 series stainless steel.
- LENS:** Polycarbonate, press-in (2" only) or threaded.
- DIAL:** Aluminum with white finish and black markings.
- POINTER:** Black, adjustable.
- MOVEMENT:** Brass with precision gearing.
- BOURDON TUBE:** Phosphor bronze.
- ACCURACY:** ±One scale division.
- TUBE SYSTEM:**
  - CAPILLARY TUBING: 60" tin-plated copper (std.).
  - CONNECTION: Plain.
  - SENSING BULB: Nickel-plated copper bulb, Ø 7/16".
- Other tube systems and capillary lengths available - see page 62.*
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Models & Dimensions (in.)



### To Order

Select a **Model Number**, then see **Page 64** for temperature range and tube system selections.

### Options

- Tubing Strain Relief
- Silicone Dampening
- Over Range Protection
- Case Sealant
- Weephole
- Lens O-Ring

Model	Dial Size	Case Mat'l	Outlet	Lens	A	B	C	D
V2036	2"	SS	Rear	Press-in	2.94	1.09	2.06	2.56
V2036P	2"	ABS	Rear	Press-in	2.94	1.09	2.06	2.56
V2037	2"	SS	Rear	Threaded	2.94	1.09	2.06	2.56
V2036L	2"	SS	Lower	Press-in	2.94	1.09	2.06	2.56
V2037L	2"	SS	Lower	Threaded	2.94	1.09	2.06	2.56
V2537	2½"	SS	Rear	Threaded	3.48	1.09	2.56	3.20
V2537L	2½"	SS	Lower	Threaded	3.48	1.09	2.56	3.20
V3537	3½"	SS	Rear	Threaded	4.30	1.09	3.50	4.00
V3537L	3½"	SS	Lower	Threaded	4.30	1.09	3.50	4.00



# DIAL THERMOMETER

Remote Reading

## Flush Mount - U-Clamp Case - 2", 2½", 3½" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments are ideal for obtaining readings from remote locations. Being vapor actuated, they are not subject to any ambient temperature variations along the tube system and give excellent readings both above and below ambient. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F. This series is designed for flush panel-mounting and is furnished with a u-clamp for this service.

### NSF® Service

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



V2567

## General Specifications

**CASE:** 300 series stainless steel or ABS plastic in gray. Other colors available.

**U-CLAMP:** CRS zinc plated.

**LENS:** Polycarbonate, press-in or threaded.

**DIAL:** Aluminum with white finish and black markings.

**POINTER:** Black, adjustable.

**MOVEMENT:** Brass with precision gearing.

**BOURDON TUBE:** Phosphor bronze.

**ACCURACY:** ±One scale division.

### TUBE SYSTEM:

**CAPILLARY TUBING:** 60" tin-plated copper (std.).

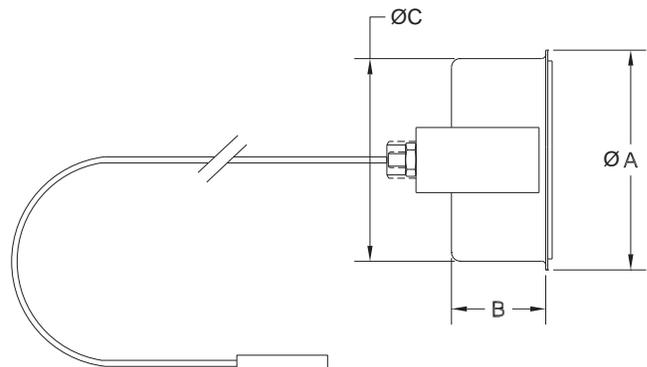
**CONNECTION:** Plain.

**SENSING BULB:** Nickel-plated copper bulb, Ø 7/16".

*Other tube systems and capillary lengths available - see page 62.*

**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

## Models & Dimensions (in.)



\*Maximum panel thickness 0.736".

## To Order

Select a **Model Number**, then see **Page 64** for temperature range and tube system selections.

## Options

- Tubing Strain Relief
- Case Sealant
- Silicone Dampening
- Weephole
- Over Range Protection
- Lens O-Ring

Model	Dial Size	Case Mat'l	Outlet	Lens	A	B	C
V2066	2"	SS	Rear	Press-in	2.24	1.09	2.06
V2046	2"	ABS	Rear	Press-in	2.24	1.09	2.06
V2067	2"	SS	Rear	Threaded	2.24	1.09	2.06
V2066L	2"	SS	Lower	Press-in	2.24	1.09	2.06
V2046L	2"	SS	Lower	Press-in	2.24	1.09	2.06
V2067L	2"	SS	Lower	Threaded	2.24	1.09	2.06
V2567	2½"	SS	Rear	Threaded	2.86	1.09	2.56
V2567L	2½"	SS	Lower	Threaded	2.86	1.09	2.56
V3567	3½"	SS	Rear	Threaded	3.94	1.09	3.50
V3567L	3½"	SS	Lower	Threaded	3.94	1.09	3.50



# DIAL THERMOMETER

Remote Reading

## Flush Mount - Waterproof U-Clamp Case - 2", 2½" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments are ideal for obtaining readings from remote locations. Being vapor actuated, they are not subject to any ambient temperature variations along the tube system and give excellent readings both above and below ambient. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F. This series is designed for flush panel-mounting and is furnished with a u-clamp for this service. In addition, they are water-proof and may be easily cleaned.

### General Specifications

**CASE:** Waterproof, 300 series stainless steel.

**U-CLAMP:** CRS zinc plated.

**RING:** 300 series stainless steel, with gasket seal.

**LENS:** Glass.

**DIAL:** Aluminum with white finish and black markings.

**POINTER:** Black, adjustable.

**MOVEMENT:** Brass with precision gearing.

**BOURDON TUBE:** Phosphor bronze.

**ACCURACY:** ±One scale division.

**TUBE SYSTEM:**

CAPILLARY TUBING: 60" tin-plated copper (std.).

CONNECTION: Plain.

SENSING BULB: Nickel-plated copper bulb, Ø 7/16".

*Other tube systems and capillary lengths available - see page 62.*

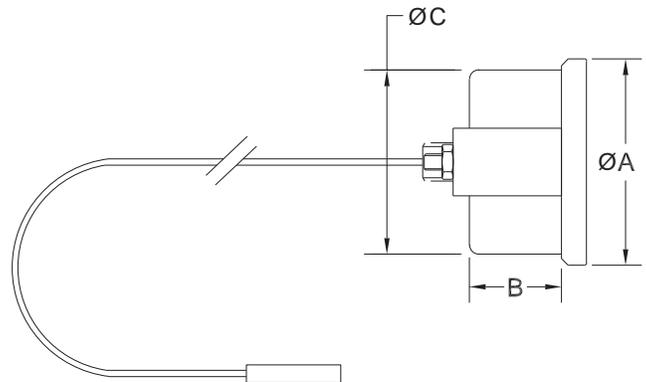
**AMBIENT TEMPERATURE:** -40 to 180°F (-40 to 82°C).

**NSF® Service**

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



### Models & Dimensions (in.)



\*Maximum panel thickness 0.736".

Model	Dial Size	Case Mat'l	Outlet	Lens	A	B	C
V2069	2"	SS	Rear	Glass	2.30	1.02	2.04
V2569	2½"	SS	Rear	Glass	2.90	1.02	2.55

### To Order

Select a **Model Number**, then see **Page 64** for temperature range and tube system selections.

### Options

- Tubing Strain Relief
- Case Sealant
- Silicone Dampening
- Weephole
- Over Range Protection



# DIAL THERMOMETER

Remote Reading

## Surface Mount - Rear Flange Case - 2", 2½", 3½" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments, ideal for obtaining readings from remote locations. Being vapor actuated, they are not subject to any ambient temperature variations along the tube system and give excellent readings both above and below ambient. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F. This series is furnished with a three-hole rear flange for surface mounting.

### General Specifications

- CASE:** 300 series stainless steel.  
**LENS:** Polycarbonate, press-in or threaded.  
**DIAL:** Aluminum with white finish and black markings.  
**POINTER:** Black, adjustable.  
**MOVEMENT:** Brass with precision gearing.  
**BOURDON TUBE:** Phosphor bronze.  
**ACCURACY:** ±One scale division.  
**TUBE SYSTEM:**  
 CAPILLARY TUBING: 60" tin-plated copper (std.).  
 CONNECTION: Plain.  
 SENSING BULB: Nickel-plated copper bulb, Ø 7/16".  
*Other tube systems and capillary lengths available - see page 62.*  
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### To Order

Select a **Model Number**, then see **Page 64** for temperature range and tube system selections.

### Options

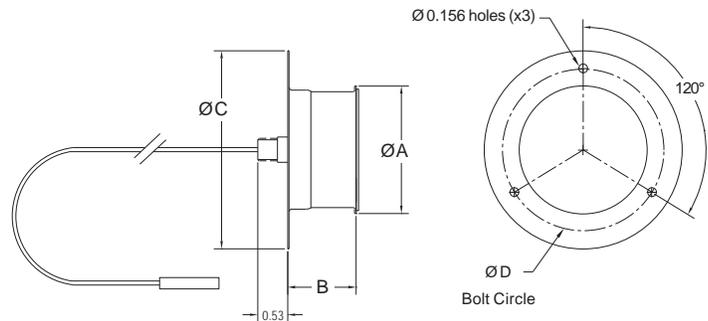
- Tubing Strain Relief
- Case Sealant
- Silicone Dampening
- Weephole
- Over Range Protection
- Lens O-Ring

**NSF® Service**  
 Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



V35147

### Models & Dimensions (in.)



Model	Dial Size	Case Mat'l	Outlet	Lens	A	B	C	D
V20146	2"	SS	Rear	Press-in	2.24	1.09	3.50	3.18
V20147	2"	SS	Rear	Threaded	2.24	1.09	3.50	3.18
V25147	2½"	SS	Rear	Threaded	2.85	1.09	3.67	3.20
V35147	3½"	SS	Rear	Threaded	3.94	1.25	4.87	4.20
V35147L	3½"	SS	Lower	Threaded	3.94	1.25	4.87	4.20



# DIAL THERMOMETER

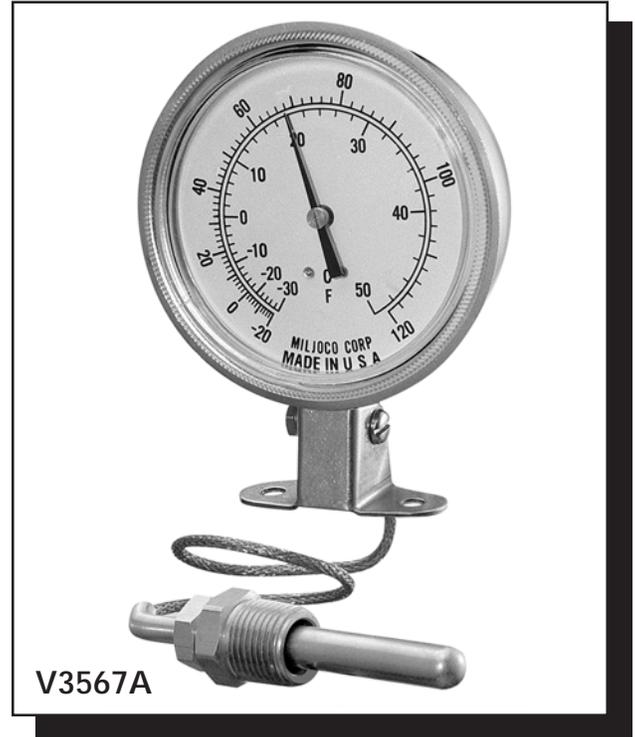
Remote Reading

## Adjustable Bracket Mount - 3½" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments are ideal for obtaining readings from remote locations. This series features an adjustable bracket which allows the operator to easily change the viewing angle of the instrument face on a vertical plane. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F.

### General Specifications

- CASE:** 300 series stainless steel.  
**ADJUSTABLE BRACKET:** 300 series stainless steel.  
**LENS:** Polycarbonate, press-in or threaded.  
**DIAL:** Aluminum with white finish and black markings.  
**POINTER:** Black, adjustable.  
**MOVEMENT:** Brass with precision gearing.  
**BOURDON TUBE:** Phosphor bronze.  
**ACCURACY:** ±One scale division.  
**TUBE SYSTEM:**  
 CAPILLARY TUBING: 60" tin-plated copper (std.).  
 CONNECTION: Plain.  
 SENSING BULB: Nickel-plated copper bulb, Ø 7/16".  
*Other tube systems and capillary lengths available - see page 62.*  
**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).



V3567A

### Models & Dimensions (in.)

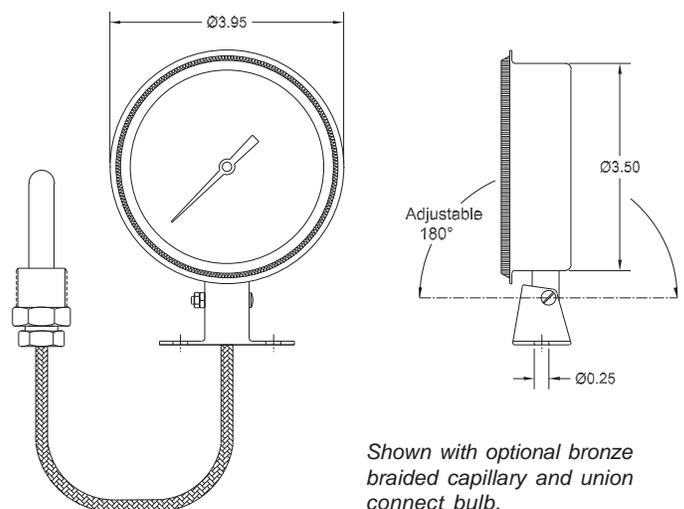
Model	Dial Size	Case Material	Outlet	Lens Type
V3567A	3½"	SS	Lower	Threaded

### To Order

Select a **Model Number**, then see **Page 64** for temperature range and tube system selections.

### Options

- |  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> Tubing Strain Relief  | <input type="checkbox"/> Case Sealant |
| <input type="checkbox"/> Silicone Dampening    | <input type="checkbox"/> Weephole     |
| <input type="checkbox"/> Over Range Protection | <input type="checkbox"/> Lens O-Ring  |



# DIAL THERMOMETER

Direct Mount

## Adjustable Stem Mount - 3½", 4½" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. This series features an adjustable stem mounting bracket which allows the user to adjust the viewing angle of the dial face up or down, and around for easy reading. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F.

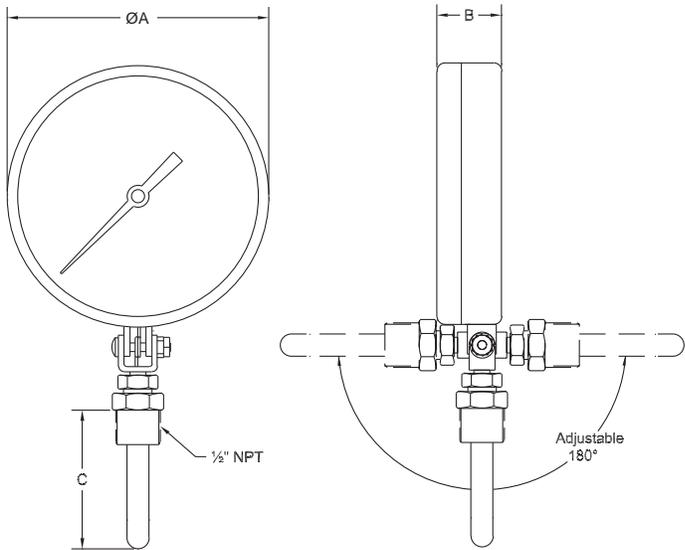
### General Specifications

- CASE:** Brightly finished stainless steel.
- RING:** Stainless steel.
- LENS:** See table below.
- DIAL:** Aluminum with white finish and black markings.
- POINTER:** Black, adjustable.
- MOVEMENT:** Brass with precision gearing.
- BOURDON TUBE:** Phosphor bronze.
- ACCURACY:** ±One scale division.
- CONNECTION:** 1/2" NPT brass union hub.
- SENSING BULB:** Nickel-plated copper bulb, Ø 7/16" x 2½". Longer bulbs available - consult factory.
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).



V4598AC

### Dimensions (in.)



### Models

Model	Dial Size	Case Material	Conn.	Lens Type
V3567AC	3½"	SS	½" NPT	Threaded polycarb.
V4598AC	4½"	SS	½" NPT	Acrylic with SS Ring

### To Order

Select a **Model Number**, then see **Page 64** for temperature range selections.

### Options

- Silicone Dampening
- Weep hole
- Over Range Protection

Model	Dial Size	A	B	C*
V3567AC	3½"	3.94	1.09	2.50
V4598AC	4½"	5.14	1.24	2.50

\*Standard length, longer bulb lengths may be available, consult factory.



# DIAL THERMOMETER

Remote Reading

## Surface Mount - Rear Flange Case - 4½" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments are ideal for obtaining readings from remote locations. Being vapor actuated, they are not subject to any ambient temperature variations along the tube system and give excellent readings both above and below ambient. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F. This series is furnished with a three-hole rear flange for surface mounting.

### General Specifications

**CASE:** Black glass filled nylon.

**RING:** Stainless steel.

**LENS:** Glass.

**DIAL:** Aluminum with white finish and black markings.

**POINTER:** Black, adjustable.

**MOVEMENT:** Brass with precision gearing.

**BOURDON TUBE:** Phosphor bronze.

**ACCURACY:** ±One scale division.

**TUBE SYSTEM:**

CAPILLARY TUBING: 60" tin-plated copper (std.).

CONNECTION: Plain.

SENSING BULB: Nickel-plated copper bulb, Ø 7/16".

*Other tube systems and capillary lengths available - see page 62.*

**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

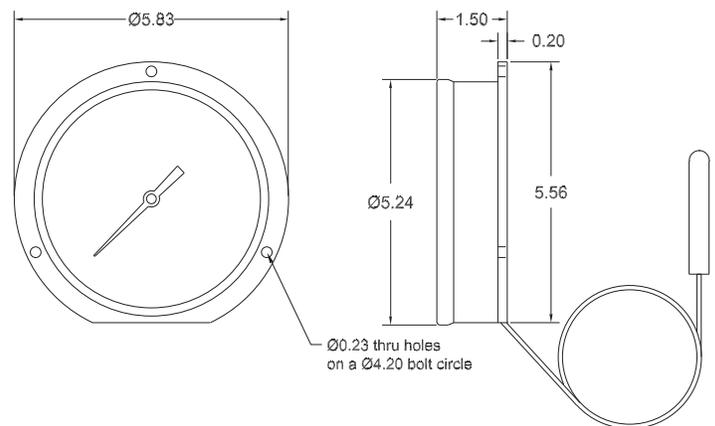


V4509A

### Models

Model	Dial Size	Case Material	Outlet	Case Style
V4509A	4½"	Nylon	Adjustable	Rear Flange

### Dimensions (in.)



### To Order

Select a **Model Number**, then see **Page 64** for temperature range and tube system selections.

### Options

- Tubing Strain Relief
- Silicone Dampening
- Over Range Protection
- Weephole



# DIAL THERMOMETER

Remote Reading

## Front Flange & Rear Flange Case - 4" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments are ideal for obtaining readings from remote locations. Being vapor actuated, they are not subject to any ambient temperature variations along the tube system and give excellent readings both above and below ambient. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F. This series is furnished with a three-hole front flange for panel mounting or a three-hole rear flange for surface mounting.

### General Specifications

- CASE:** 300 series stainless steel.  
**RING:** 300 series stainless steel, threaded.  
**LENS:** Glass.  
**DIAL:** Aluminum with white finish and black markings.  
**POINTER:** Black, adjustable.  
**MOVEMENT:** Brass with precision gearing.  
**BOURDON TUBE:** Phosphor bronze.  
**ACCURACY:** ±One scale division.  
**TUBE SYSTEM:**  
 CAPILLARY TUBING: 60" tin-plated copper (std.).  
 CONNECTION: Plain.  
 SENSING BULB: Nickel-plated copper bulb, Ø 7/16".  
*Other tube systems and capillary lengths available - see page 62.*  
**AMBIENT TEMPERATURE:** -40 to 200°F (-40 to 93°C).

### Models

Model	Dial Size	Case Material	Outlet	Case Style
V4039	4"	SS	Rear	Front Flange
V4039L	4"	SS	Lower	Front Flange
V40149	4"	SS	Rear	Rear Flange
V40149L	4"	SS	Lower	Rear Flange

### To Order

Select a **Model Number**, then see **Page 64** for temperature range and tube system selections.

### Options

- Tubing Strain Relief
- Case Sealant
- Silicone Dampening
- Weephole
- Over Range Protection

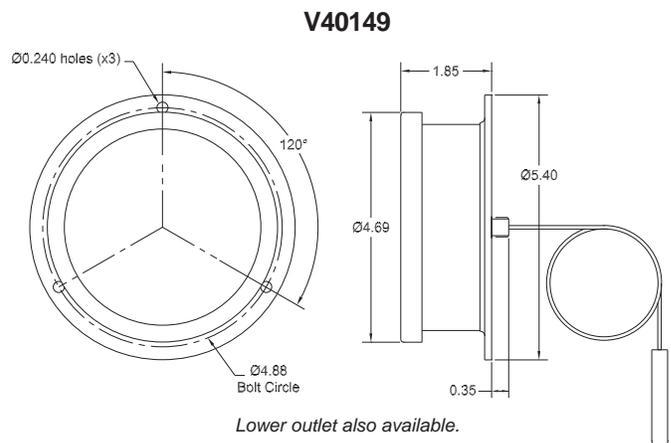
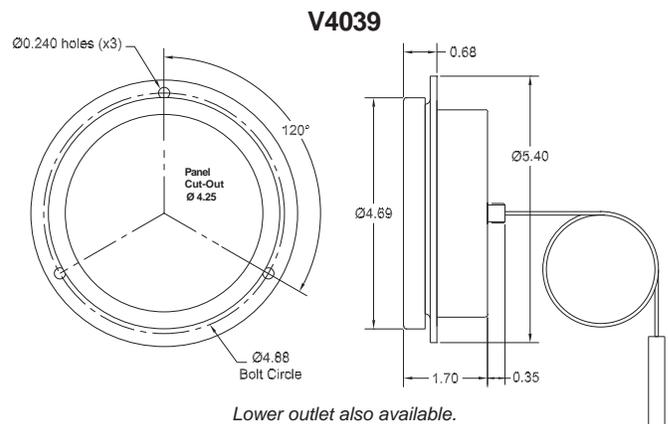
#### NSF® Service

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



V4039

### Dimensions (in.)



200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# DIAL THERMOMETER

Remote Reading

## Hinged Ring - Front Flange Case - 4½", 6" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments are ideal for obtaining readings from remote locations. Being vapor actuated, they are not subject to any ambient temperature variations along the tube system and give excellent readings both above and below ambient. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F. Front flange thermometers are designed to be installed in a panel using three screws from the front of the case under the ring.

### General Specifications

**CASE:** Cast aluminum, black finished.

**RING:** Cast aluminum, black finished, hinged type.

**LENS:** Glass.

**DIAL:** Aluminum with white finish and black markings.

**POINTER:** Black, adjustable.

**MOVEMENT:** Brass with precision gearing.

**BOURDON TUBE:** Phosphor bronze.

**ACCURACY:** ±One scale division.

**TUBE SYSTEM:**

CAPILLARY TUBING: 60" tin-plated copper (std.).

CONNECTION: Plain.

SENSING BULB: Nickel-plated copper bulb, Ø 7/16".

*Other tube systems and capillary lengths available - see page 62.*

**AMBIENT TEMPERATURE:** -40 to 200°F (-40 to 93°C).



### Models

Model	Dial Size	Case Material	Outlet	Case Style
V4529	4½"	Cast Aluminum	Rear	Hinged Ring
V6029	6"	Cast Aluminum	Rear	Hinged Ring

### Dimensions (in.)

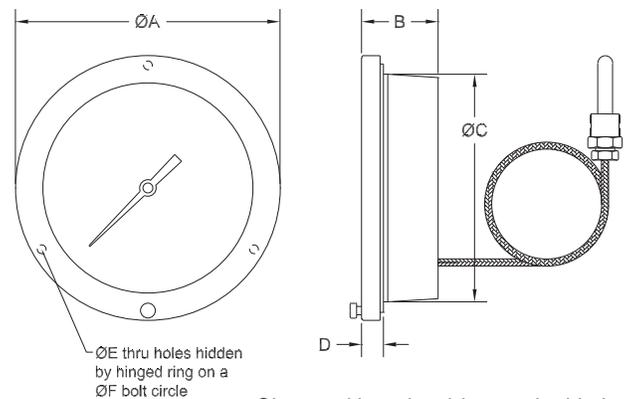
Model	Dial Size	A	B	C	D	E	F
V4529	4½"	6.10	1.55	4.77	0.625	0.156	5.36
V6029	6"	7.57	1.50	6.33	0.625	0.200	7.00

### To Order

Select a **Model Number**, then see **Page 644** for temperature range and tube system selections.

### Options

- Tubing Strain Relief
- Silicone Dampening
- Over Range Protection
- Case Sealant
- Weephole



Shown with optional bronze braided capillary and union connect bulb.



# DIAL THERMOMETER

Remote Reading

## Surface Mount - Rear Flange Case - 6" Dial Size

Miljoco vapor dial thermometers are manufactured to the highest standards for a wide range of uses and may be fitted into almost any temperature reading application. These instruments are ideal for obtaining readings from remote locations. Being vapor actuated, they are not subject to any ambient temperature variations along the tube system and give excellent readings both above and below ambient. Vapor instruments have progressive graduations and are best read in the upper two-thirds of the range. Many ranges are available between -40°F and 450°F. This series is furnished with a three-hole rear flange for surface mounting.

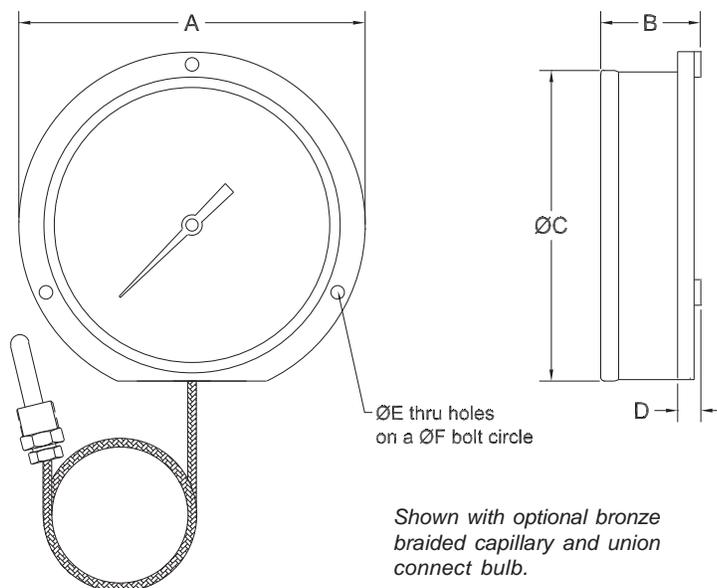
### General Specifications

- CASE:** Cast aluminum, black finished.  
**RING:** Stainless Steel.  
**LENS:** Glass.  
**DIAL:** Aluminum with white finish and black markings.  
**POINTER:** Black, adjustable.  
**MOVEMENT:** Brass with precision gearing.  
**BOURDON TUBE:** Phosphor bronze.  
**ACCURACY:** ±One scale division.  
**TUBE SYSTEM:**  
 CAPILLARY TUBING: 60" tin-plated copper (std.).  
 CONNECTION: Plain.  
 SENSING BULB: Nickel-plated copper bulb, Ø 7/16".  
*Other tube systems and capillary lengths available - see page 62.*  
**AMBIENT TEMPERATURE:** -40 to 200°F (-40 to 93°C).



V60149

### Dimensions (in.)



### Models

Model	Dial Size	Case Material	Outlet	Case Style
V60149	6"	Cast Aluminum	Rear	Rear Flange
V60149L	6"	Cast Aluminum	Lower	Rear Flange

### To Order

Select a **Model Number**, then see **Page 64** for temperature range and tube system selections.

### Options

- Tubing Strain Relief
- Case Sealant
- Silicone Dampening
- Weephole
- Over Range Protection

Model	Dial Size	A	B	C	D	E	F
V60149	6"	7.63	2.17	6.25	0.735	0.270	7.00
V60149L	6"	7.63	2.17	6.25	0.735	0.270	7.00

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## Cabinet & Superheat Types

### Frozen Food Cabinet Thermometer

This accurate instrument is provided with a hanging bracket for ease of installation in refrigerated cabinets. It is furnished in a bright chrome-plated case with a threaded polycarbonate lens and adjustable pointer. The dial face has large characters on a progressive scale for ease-of-reading in critical zones.

Model	Dial Size	Range	Tube System
V20157L2102C	2"	-40 to 65 °F/C	48" Nickel Plated
V25157L2102C	2½"	-40 to 65 °F/C	48" Nickel Plated



### Superheat Thermometer

This compact thermometer is provided in a small, two-inch brass hanging type case with a threaded, unbreakable polycarbonate lens, which is ideal for the serviceman's kit. It is furnished with an adjustable pointer, 12" of armored tubing and a small (1/4" x 2") sensing bulb. A velcro strap is also provided to hold the bulb to the compressor inlet and outlet tubing.

Model	Dial Size	Range	Tube System
V20177L20SH	2"	-40 to 65 °F	48" Bronze Braided
V20177L20SHK*	2"	-40 to 65 °F	48" Bronze Braided

*\*Kit includes two thermometers in a plastic carrying case for checking both inlet and outlet temperatures at the same time.*



# DIAL THERMOMETERS

## To Order

**V 3 5 6 7 A**

Model Number

**5 0**

Range  
Code

**1 4**

Tube  
System  
Code

-

**6 0**

Capillary  
Length in Inches  
(omit if direct mount)

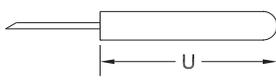
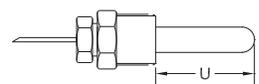
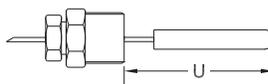
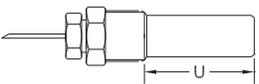
Specify Model Number from preceding pages, followed by Range and Tube System Codes from the tables below, followed by capillary length in inches.

## Standard Ranges

Code	Range	°F		°C		Code	Range	°F		°C	
		Fig.	Div.	Fig.	Div.			Fig.	Div.	Fig.	Div.
22	-40 to 20°C	-	-	10	1	72	0 to 180°F	20	2	-	-
20	-40 to 65°F	-	-	10	2	73	0 to 180°F/C	20	2	20	2
21	-40 to 65°F/C	10	2	10	1	80	20 to 220°F	10	2	-	-
16	20 to 80°F	10	1	-	-	81	20 to 220°F/C	10	2	10	2
25	20 to 80°F/C	10	1	5	1	50	30 to 240°F	20	2	-	-
19	0 to 100°F	10	2	-	-	51	30 to 240°F/C	20	2	10	2
29	0 to 100°F/C	10	2	10	2	53	0 to 250°F	20	2	-	-
28	0 to 100°C	-	-	10	2	54	0 to 250°F/C	20	2	10	2
30	-40 to 110°F	20	2	-	-	56	50 to 250°F	20	2	-	-
31	-40 to 110°F/C	20	2	10	2	57	50 to 250°F/C	10	2	10	2
32	-20 to 120°F	20	2	-	-	60	30 to 300°F	10	1	-	-
33	-20 to 120°F/C	20	2	10	2	61	30 to 300°F/C	10	1	10	2
46	20 to 130°F	10	2	-	-	64	100 to 350°F	20	5	-	-
48	20 to 130°F/C	10	2	10	1	66	100 to 350°F/C	20	5	20	5
67	-40 to 150°F	10	2	-	-	70	200 to 450°F	20	2	-	-
49	0 to 150°F	20	2	-	-	71	200 to 450°F/C	20	2	20	2

Many ranges are NSF<sup>®</sup> listed for use in the food service industry. Special ranges, colors, logos and custom artwork is also available at nominal charge. Vapor thermometers have progressive graduations and are best read in the upper two-thirds of the scale. Care should be used to select a range that will locate the working temperature in this area. Other ranges are also available, consult factory.

## Tube Systems

Type	Code	Capillary Tubing Material	Connection or Well Material	Sensing Bulb Material
 Plain Connection*	02	Tin Plated Copper	-	Nickel Plated Copper
	03	PVC Coated Copper	-	Nickel Plated Copper
	04	Bronze Braided Copper	-	Nickel Plated Copper
	05	Smooth 316SS	-	316SS
	08	Armored 316SS	-	316SS
 1/2" NPT Union Connection*	12	Tin Plated Copper	Brass	Nickel Plated Copper
	13	PVC Coated Copper	Brass	Nickel Plated Copper
	14	Bronze Braided Copper	Brass	Nickel Plated Copper
	15	Smooth 316SS	316SS	316SS
	18	Armored 316SS	316SS	316SS
 1/2" NPT Union Conn. with Extension*	32	Tin Plated Copper	Brass	Nickel Plated Copper
	33	PVC Coated Copper	Brass	Nickel Plated Copper
	34	Bronze Braided Copper	Brass	Nickel Plated Copper
	35	Smooth 316SS	316SS	316SS
	38	Armored 316SS	316SS	316SS
 1/2" NPT Thermowell*	22	Tin Plated Copper	Brass	Nickel Plated Copper
	23	PVC Coated Copper	Brass	Nickel Plated Copper
	24	Bronze Braided Copper	Brass	Nickel Plated Copper
	25	Smooth 316SS	316SS	316SS
	28	Armored 316SS	316SS	316SS

\*See table on Page 63 for Sensing Bulb Dimensions.



# DIAL THERMOMETERS

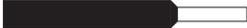
## Bulbs, Tubing, and Optional Features

### Sensing Bulb Dimensions

Range	Tube System Length	Bulb Diameter	Bulb Length	Notes
-40 to 65°F, -40 to 65°F/C	All	0.250"	2.0"	<i>For systems over 1200", consult factory. Bulb lengths of 4½" &amp; 6" may be available on shorter systems, consult factory.</i>
All Others	Up to 120"	0.438"	2.5"	
	121" to 600"	0.438"	4.5"	
	601" to 1200"	0.438"	6.0"	

### Capillary Tubing

The following connecting tubing types are used on vapor actuated dial thermometers in conjunction with the tube systems listed on the previous pages:

Type	Capillary Tubing Material
 Copper	Smooth Ø 0.062 tin plated copper capillary. This small diameter tubing can be easily formed without kinking or breaking. It is the material of choice in the food service industry and meets the requirements of NSF.
 PVC Covered	Smooth Ø 0.150 PVC covered Ø 0.062 copper capillary. This rugged, dielectric material is the ideal choice when the application requires bundling with other tubing, cable, or wiring. It meets the requirements of NSF and is the material of choice for commercial dishwashing and warewashing equipment.
 Bronze Braided	Bronze braided Ø 0.150 armor over Ø 0.062 copper capillary. This material is extremely durable, yet flexible, making it an excellent choice for applications where the capillary tubing will be exposed to extreme conditions. It can be ordered with nickel plating for use in food zones applications.
 316 Stainless Steel	Smooth Ø 0.062 type 316 stainless steel capillary. This small diameter tubing is flexible and provides chemical and corrosion resistance. It is an excellent choice for industrial processing or other applications where the capillary will be exposed to caustic or corrosive materials.
 316SS with 316SS Armor	Type 316 stainless steel Ø 0.250 interlocking armor over Ø 0.062 type 316 stainless steel capillary. This material is extremely rugged but has limited flexibility. It offers maximum protection against caustic or corrosive materials, and is ideal for applications where the tubing will be exposed to rough handling.

### Optional Features

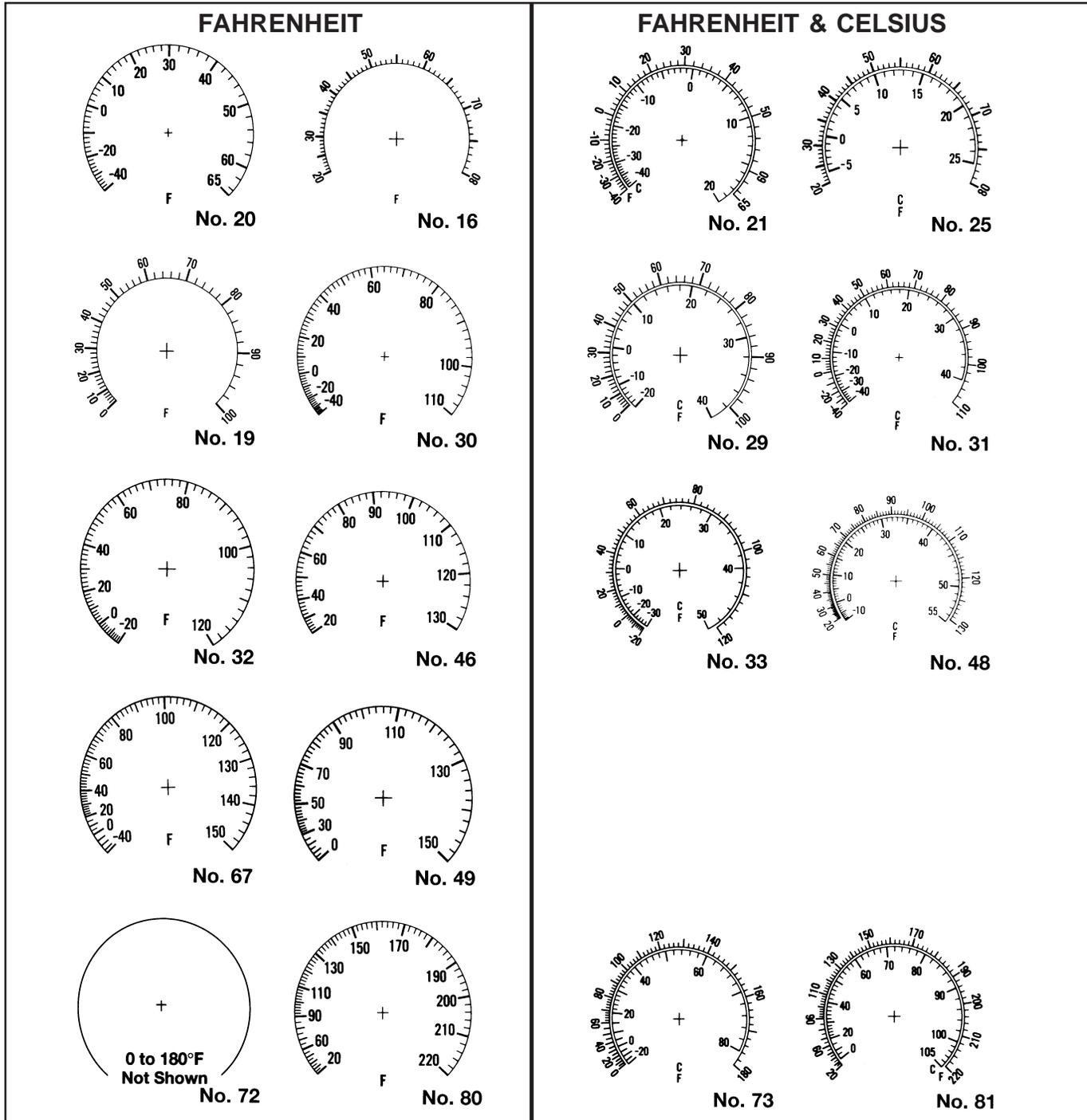
Code	Feature	Description
HS	Strain Relief at Case	Plastic boot installed at the case end of the capillary tubing to provide additional protection.
TS	Strain Relief at Bulb	Stainless steel round wire at the bulb end of the capillary tubing to provide additional protection.
SD	Silicone Dampening	Silicone grease applied to the movement mechanism to reduce wear in applications in which the instrument will be exposed to vibration.
WP	Lens O-Ring	O-ring seal installed on the lens (threaded type only) to help prevent moisture from entering the case from the front.
RTV	Case Sealant	RTV sealant applied around the rear connection opening to help prevent moisture from entering the rear of the case. Also prevents cold air from refrigeration equipment from entering the case and causing the lens to fog or frost.
WH	Weep Hole	Drain hole to allow drainage of the case in situations where moisture may collect in the bottom of the case. Useful in outdoor applications.
OR	Over Range Protection	The instrument should only be used within the range indicated on the dial. However, below-ambient ranges (e.g., -40 to 65°F) will be exposed to over ranging during shipment and storage. These instruments are furnished standard with over range protection. Additionally, many cross-ambient and above-ambient ranges can be provided with optional over range protection - <b>consult factory when requesting this feature.</b>

Specify the optional feature code when ordering.



# DIAL THERMOMETERS

## Standard Dial Faces



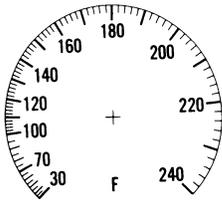
Standard ranges between  $-40^{\circ}\text{F}$  and  $450^{\circ}\text{F}$  are offered in single and dual scales. Many are NSF<sup>®</sup> listed for use in food service applications. Vapor actuated thermometers have progressive graduations and are best read in the upper two-thirds of the measuring range, therefore, care should be exercised to select a range that will locate the working temperature in this area. Other ranges and special dials may be available - consult factory.



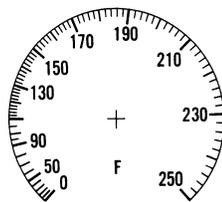
# DIAL THERMOMETERS

## Standard Dial Faces

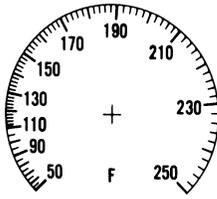
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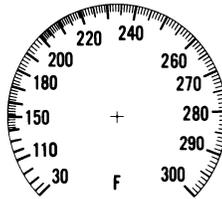
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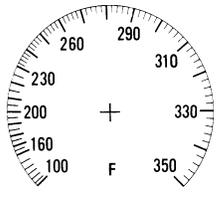
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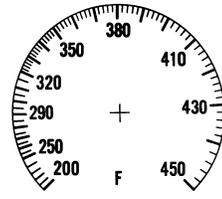
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No. 60

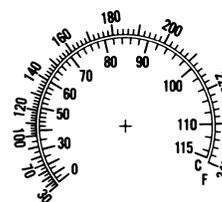


No. 64

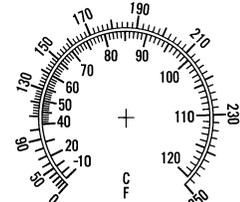


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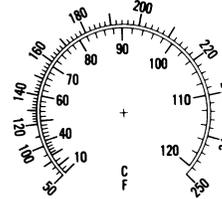
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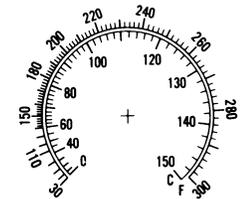
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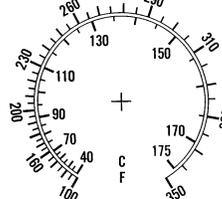
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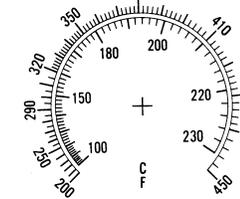
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No. 61

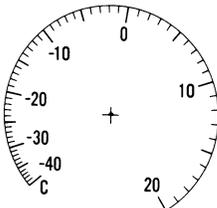


No. 66

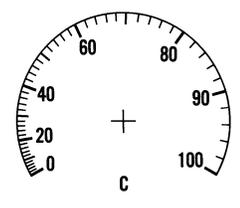


No. 71

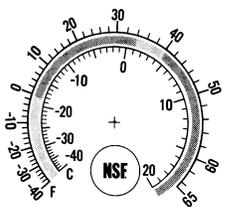
### CELSIUS



No. 22

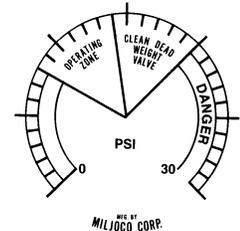


No. 28



### SPECIAL DIALS ARE AVAILABLE

- Multi Color Printing
- Customer Name
- Service Markings
- Operating Colors Bands, Red for Hot, Blue for Cold, etc.

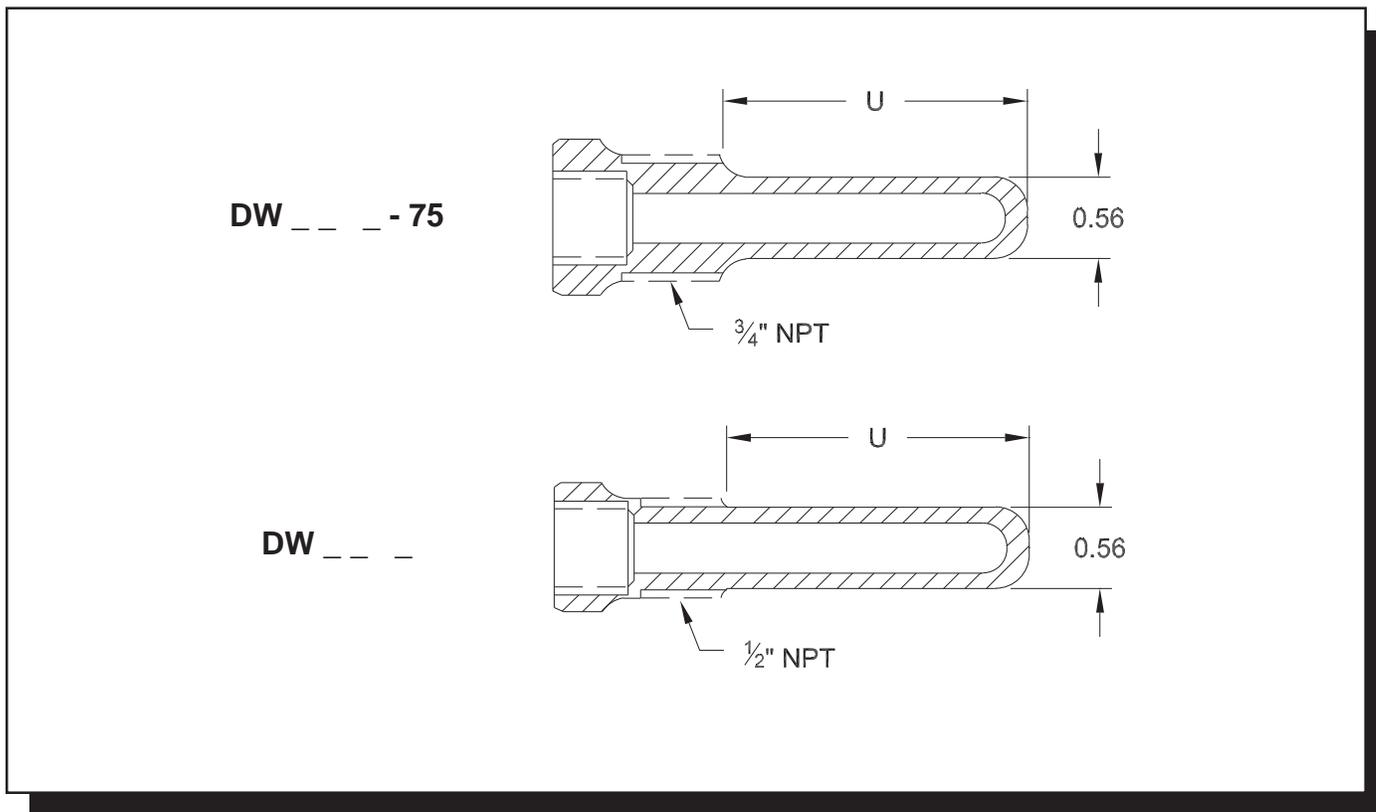


Standard ranges between  $-40^{\circ}\text{F}$  and  $450^{\circ}\text{F}$  are offered in single and dual scales. Many are NSF® listed for use in food service applications. Vapor actuated thermometers have progressive graduations and are best read in the upper two-thirds of the measuring range, therefore, care should be exercised to select a range that will locate the working temperature in this area. Other ranges and special dials may be available - consult factory.



# DIAL THERMOMETER

## Thermowells



These thermowells are designed for use with Miljoco vapor-actuated dial thermometers. They are intended to separate the thermometer from the process or media being measured, which allows for removal of the thermometer and protects of the thermometer stem from corrosive media. They are readily available in brass or 316 stainless steel construction to suit a wide range of applications. Other materials are available on request - consult factory.

### Models & Dimensions (in.)

Process Connection	Immersion Length "U"	Material	
		Brass	316SS
1/2" NPT	2.25"	DW25B	DW25316
3/4" NPT	2.25"	DW25B-75	DW25316-75
1/2" NPT	4.25"	DW40B	DW40316
3/4" NPT	4.25"	DW40B-75	DW40316-75
1/2" NPT	6.25"	DW60B	DW60316
3/4" NPT	6.25"	DW60B-75	DW60316-75

*The thermowell should be primed before thermometer installation with a heat transfer medium such as oil, graphite or paste to provide optimal accuracy and response time.*

### Pressure/Temperature Ratings

Material	Temperature (°F)					
	70°F	200°F	400°F	600°F	800°F	1000°F
Brass	1200 psi	1000 psi	200 psi	-	-	-
316SS	2100 psi	2000 psi	1900 psi	1700 psi	1600 psi	1400 psi



# REFRIGERATION THERMOMETER

Bimetal Type

## 2" Rear Connection - Plastic Rear Flange Case

The plastic case, 2" Bimetal thermometer is a less expensive alternative to the stainless steel case and has a rear flange case for surface mounting. The Bimetal thermometer is designed to withstand vibration and other abuse a thermometer may experience. This instrument has a shallow case depth, which is ideal for space conservation. Common applications are food coolers, floral cases, hot food holding cases, & air ducts.

### NSF® Service

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



B20146

### General Specifications

**CASE:** ABS, black or white, with surface mounting rear flange.

**LENS:** Polycarbonate.

**DIAL:** Aluminum, black or white finish standard.

Other colors available as special order.

**POINTER:** Black or white, non-adjustable.

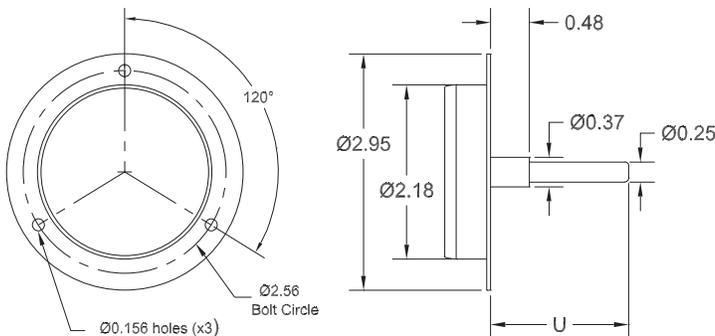
**CONNECTION:** Plain.

**STEM:** 300 series stainless steel, Ø 0.250".

**ACCURACY:** ±One scale division.

**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Stem Lengths & Dimensions (in.)



Stem Length "U" (in.)		
Code	2	4
Dim.	1.74	3.97

Other stem lengths available - consult factory.

### Ranges

Range Code	Range	°F Scale		°C Scale	
		Fig.	Div.	Fig.	Div.
31	-40 to 110°F / -40 to 40°C	10°	2°	10°	1°
50	30 to 240°F	20°	2°	-	-

### To Order

**B 2 0 1 4 6**

Model Number

**3 1 - 2**

Range Code

Stem Length

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# DRUM THERMOMETER

Remote Reading

## Horizontal or Vertical - Flush Mount

Miljoco drum thermometers are excellent in applications where space does not allow for a large dial thermometer. They are available in both vertical and horizontal configurations and can be flush mounted by snapping into a panel with case clips. They feature large numerals on a rotating drum for easy readability and, being solid liquid filled, have a linear scale.

### General Specifications

**CASE:** ABS plastic, black (standard) or white (optional).

**LENS:** Clear polycarbonate.

**SCALE:** ABS plastic drum 1/2" high, white with black markings (standard) or black drum with white markings (optional). Also available unmarked with color bands.

**BOURDON TUBE:** Phosphor bronze, solid liquid filled with direct drive to the drum.

**ACCURACY:** ±One scale division.

**CONNECTING TUBING:** 60" PVC tubing, Ø 0.125 (standard). Maximum tubing length is 15 feet.

**BULB:** Plain, tin-plated brass. Size varies with range. Maximum size is .375 O.D. x 1.5" long.

**TEMPERATURE COMPENSATOR:** With solid liquid filled

instruments, the entire unit is temperature sensitive, including the bulb, connecting tubing and instrument itself. A bimetal case compensator is supplied to correct any error effect on the case, but care must be exercised to avoid exposing the tubing to temperatures vastly different than the sensing bulb.

**AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

### Models & Bulbs

Model	Style	Code	Bulb	Capillary
L2546V	Vertical	03	Tin-plated Brass	PVC
L2546H	Horizontal	03	Tin-plated Brass	PVC

### Ranges

Range Code	Range	°F Scale		°C Scale	
		Fig.	Div.	Fig.	Div.
91	-40 to 140°F / -40 to 60°C	20°	2°	20°	1°
45	50 to 250°F / 10 to 120°C	20°	2°	20°	1°

### To Order

**L 2 5 4 6 V**    **9 1**    **0 3**    -    **6 0**  
 Model Number      Range Code      Bulb Code      Stem Length

#### NSF® Service

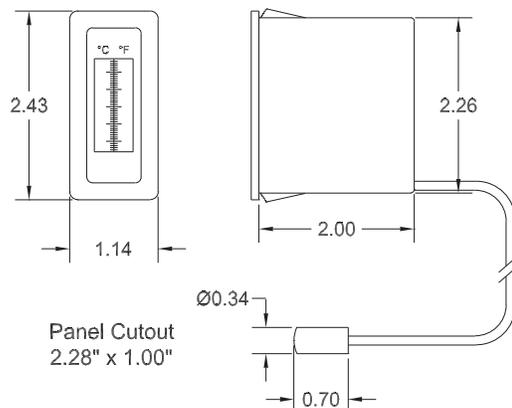
Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



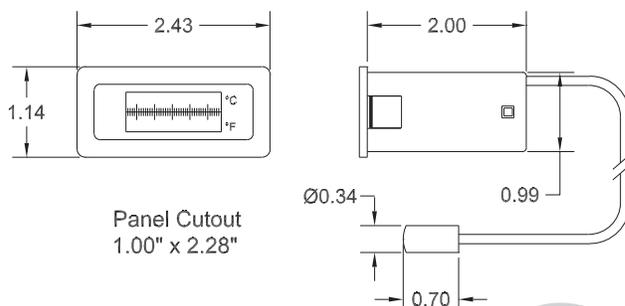
L2546H

### Dimensions (in.)

L2546V



L2546H



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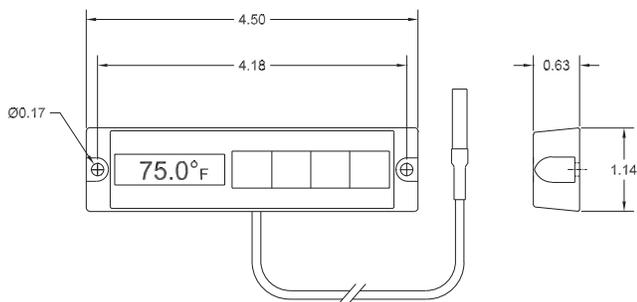
## Surface Mount

This popular hi-tech solar-powered thermometer makes an attractive remote reading instrument for surface mounting. It is ideal for refrigerators and freezers to address the need for indicating the temperature of stored food and other perishables. It features a battery back-up system, which enables the instrument to operate in low light levels.

### General Specifications

- CASE:** ABS plastic, black (standard) or white (optional)  
Surface mounts with two screws from the front.
- FRONT PANEL:** Black polycarbonate.
- DISPLAY:** LCD, black character, 0.375" high with gray background.
- UPDATE TIME:** 10 seconds.
- ILLUMINANCE:** Solar collector, 50 lux, with battery backup for continuous service.
- SENSOR:** Glass passivated thermistor.
- CONNECTION:** Plain.
- SENSOR LEAD:** 60" black PVC. Other lengths available - consult factory.
- BULB (SENSOR):** Nickel-plated brass, Ø 0.225".
- ACCURACY:** ±2°F or 1°C.
- RESOLUTION:** 0.1°F or °C.
- RECALIBRATION:** Internal potentiometer, maximum adjustment ±8°F.
- AMBIENT TEMPERATURE:** -10 to 140°F (-40 to 60°C).

### Dimensions (in.)



#### NSF® Service

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



CD1046

### Range

Code	Range
84	-58 to 158°F / -50 to 70°C

### Case Color

Code	Color
B	Black
W	White

### To Order

**CD1046**   **84** - **60**   **B**  
 Model Number   Range   Sensor Lead Length   Case Color



# SOLAR DIGITAL THERMOMETER

Remote Reading

## Flush Mount - Front Flange Case - 2" Case Size

Miljoco solar-powered thermometers are designed to operate in varying light conditions. The temperature display will indicate using only solar power in light levels greater than 100 lux, but will continue to function below 100 lux with its battery backup system. This system is designed to last 3 to 4 years under normal conditions, after which the display will continue to function above 100 lux. These front flange thermometers are designed to be installed in a panel using three screws from the front.

These thermometers are ideal for applications such as refrigeration equipment, chilled systems, NSF® listed equipment, spas and control panels. They will display in either Fahrenheit or Celsius scale, which may be switched from the rear of the case. Sensing leads may be furnished up to 10 feet long.

**NSF® Service**  
 Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



### General Specifications

- CASE MATERIAL:** 300 Series Stainless Steel
- LENS:** Threaded acrylic.
- DISPLAY:** LCD, black characters, 0.375" high with gray background.
- UPDATE TIME:** 10 seconds.
- RESOLUTION:** 0.1°F or °C.
- ACCURACY:** ± 2°F.
- CONNECTION:** Plain.
- SENSOR LEAD:** Code 03 - 48" black PVC.  
 Other lengths available - consult factory.
- SENSOR:** Nickel plated brass, Ø 0.225".
- POWER:** Solar, 100 Lux minimum light level.
- AMBIENT TEMPERATURE:** -10 to 140°F (-40 to 60°C).

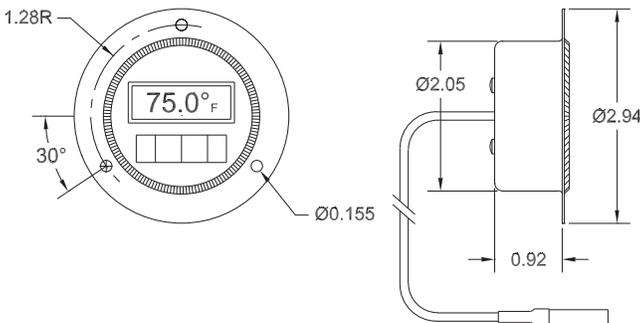
### Ranges

Code	Range
84	-58 to 158°F / -50 to 70°C
85	-58 to 302°F / -50 to 150°C

### Sensor Lead

Code	Type
03	Black PVC Covered

### Dimensions (in.)



### To Order

**CD2036**    **84**    **03** - **48**  
 Model Number    Range Lead    Sensor Code    Sensor Lead Length (inches)



# SOLAR DIGITAL THERMOMETER

Remote Reading

## Flush Mount - U-Clamp Case - 2" Case Size

Miljoco solar-powered thermometers are designed to operate in varying light conditions. The temperature display will indicate using only solar power in light levels greater than 100 lux, but will continue to function below 100 lux with its battery backup system. This system is designed to last 3 to 4 years under normal conditions, after which the display will continue to function above 100 lux. This thermometer is designed for flush panel-mounting and is furnished with a u-clamp for this service.

These instruments are ideal for applications such as refrigeration equipment, chilled systems, NSF® listed equipment, spas and control panels. They will display in either Fahrenheit or Celsius scale, which may be switched from the rear of the case. Sensing leads may be furnished up to 10 feet long.

### NSF® Service

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



CD2066

## General Specifications

**CASE MATERIAL:** 300 Series Stainless Steel

**LENS:** Threaded acrylic.

**DISPLAY:** LCD, black characters, 0.375" high with gray background.

**UPDATE TIME:** 10 seconds.

**RESOLUTION:** 0.1°F or °C.

**ACCURACY:** ± 2°F.

**CONNECTION:** Plain.

**SENSOR LEAD:** Code 03 - 48" black PVC.

Other lengths available - consult factory.

**SENSOR:** Nickel plated brass, Ø 0.225".

**POWER:** Solar, 100 Lux minimum light level.

**AMBIENT TEMPERATURE:** -10 to 140°F (-40 to 60°C).

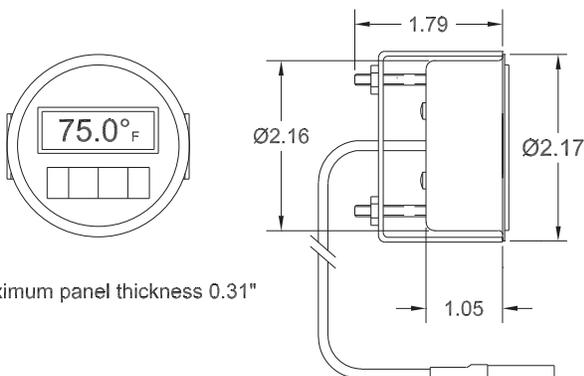
## Ranges

Code	Range
84	-58 to 158°F / -50 to 70°C
85	-58 to 302°F / -50 to 150°C

## Sensor Lead

Code	Type
03	Black PVC Covered

## Dimensions (in.)



\*Maximum panel thickness 0.31"

## To Order

**CD2066**   **84**   **03** - **48**  
 Model Number   Range Lead   Sensor Code   Sensor Lead Length (inches)

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 www.miljoco.com



# SOLAR DIGITAL THERMOMETER

Remote Reading

## Surface Mount - Rear Flange Case - 2" Case Size

Miljoco solar-powered thermometers are designed to operate in varying light conditions. The temperature display will indicate using only solar power in light levels greater than 100 lux, but will continue to function below 100 lux with its battery backup system. This system is designed to last 3 to 4 years under normal conditions, after which the display will continue to function above 100 lux. This thermometer is furnished with a three-hole rear flange for surface mounting.

These instruments are ideal for applications such as refrigeration equipment, chilled systems, NSF® listed equipment, spas and control panels. They will display in either Fahrenheit or Celsius scale, which may be switched from the rear of the case. Sensing leads may be furnished up to 10 feet long.

**NSF® Service**  
 Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



### General Specifications

- CASE MATERIAL:** 300 Series Stainless Steel
- LENS:** Threaded acrylic.
- DISPLAY:** LCD, black characters, 0.375" high with gray background.
- UPDATE TIME:** 10 seconds.
- RESOLUTION:** 0.1°F or °C.
- ACCURACY:** ± 2°F.
- CONNECTION:** Plain.
- SENSOR LEAD:** Code 03 - 48" black PVC.  
 Other lengths available - consult factory.
- SENSOR:** Nickel plated brass, Ø 0.225".
- POWER:** Solar, 100 Lux minimum light level.
- AMBIENT TEMPERATURE:** -10 to 140°F (-40 to 60°C).

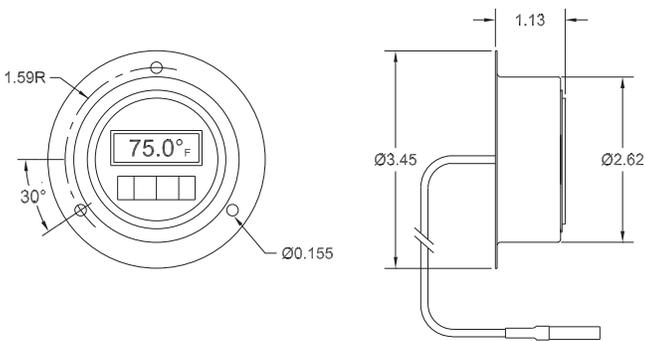
### Ranges

Code	Range
84	-58 to 158°F / -50 to 70°C
85	-58 to 302°F / -50 to 150°C

### Sensor Lead

Code	Type
03	Black PVC Covered

### Dimensions (in.)



### To Order

**CD20146**    **84**    **03** - **48**  
 Model Number    Range Lead    Sensor Code    Sensor Lead Length (inches)



## Flush or Surface Mount

The Miljoco Series ED175 features an extra large, brightly-lit display that is easily readable from long distances. The case is compact and attractive, and can be surface or flush mounted. This thermometer is ideal for multiple module installations in control packages or special engineering projects, and is the most popular style used in the food service equipment industry. This thermometer works well in both hot food and refrigeration applications and will operate on 12 VAC or 12 VDC. Other voltages are available.

### NSF® Service

Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



ED175

## General Specifications

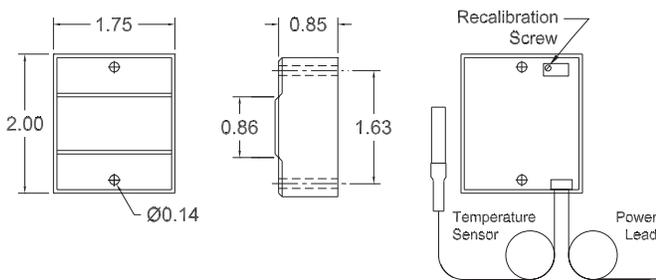
- CASE MATERIAL:** Dark red acrylic.
- DISPLAY:** High intensity red LED, 0.56" high.
- UPDATE TIME:** 4 seconds.
- RESOLUTION:** 1°F.
- ACCURACY:** ± 2°F.
- RECALIBRATION:** Adjustment screw accessed from rear of case.
- CONNECTION:** Plain sensor standard, consult table for other choices.
- SENSOR LEAD:** PVC coated wire soldered directly to the instrument at the rear of the case. 96" lead length standard. Other lengths available up to 1000 feet.
- SENSOR:** Thermistor type, furnished standard plain with nickel-plated copper bulb. See table for other types.
- POWER:** 12 VAC or 12 VDC. Optional transformer (110 VAC to 12 VAC) sold separately.

## Ranges

Code	Range
96	-40 to 120°F
56	50 to 250°F
86	-40 to 50°C
87	10 to 120°C
91*	-40 to 120°F / -40 to 50°C
57*	50 to 250°F / 10 to 120°C

*Shipped from factory as °F, with one-time cut wire to °C.*

## Dimensions (in.)



## Sensors

Code	Sensor Material	Sensor Length	Lead Material	Lead Length	Conn. Type
02	Ni-plated Cu	1¾"	PVC	96"	Plain
03	PVC	1"	PVC	96"	Plain
13	Brass	2½"	PVC	96"	½" NPT
15	SS	2½"	PVC	96"	½" NPT

## To Order

**ED175** **96** **03** - **96**  
 Model Number      Range Code      Sensor Code      Sensor Lead Length (inches)

## Accessories

Model	Description
161-115	Transformer, 115VAC to 12VAC
115-205	Stainless Steel Flush Mounting Plate

# LED DIGITAL THERMOMETER

Remote Reading

## 2" Case Size - Flush Mount - U-Clamp Case

The Miljoco Series ED2046 features an extra large, brightly-lit display that is easily readable from long distances. The case is designed to be installed into an existing 2" dial thermometer panel cut-out, which makes this thermometer an excellent choice for equipment upgrades or retro-fits. This thermometer works well in both hot food and refrigeration applications and will operate on 12 VAC or 12 VDC. Other voltages are available.

### General Specifications

- CASE MATERIAL:** Dark red acrylic.
- DISPLAY:** High intensity red LED, .56" high.
- UPDATE TIME:** 4 seconds.
- RESOLUTION:** 1°F.
- ACCURACY:** ± 2°F.
- RECALIBRATION:** Furnished standard with an adjusting screw accessed from rear of case.
- CONNECTION:** Furnished standard plain, consult factory for other requirements.
- SENSOR LEAD:** Furnished standard with 96" of Ø 5/32", black PVC covered wire, soldered directly to the instrument at the rear of the case. Longer lengths available up to 1000 feet.
- SENSOR:** Thermistor type, furnished standard plain with nickel-plated copper bulb. See table for other types
- POWER:** 12 VAC or 12 VDC. Optional transformer (110 VAC to 12 VAC) sold separately.
- AMBIENT TEMPERATURE:** -40 to 140°F (-40 to 60°C).

**NSF® Service**  
 Many Miljoco thermometers are listed by NSF® for use in the food service industry. Consult factory for available models and ranges.



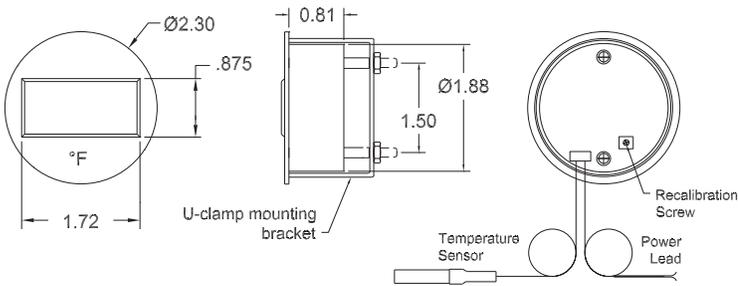
ED2046

### Ranges

Code	Range
85	50 to 250°F
87	10 to 120°C
57*	50 to 250°F / 10 to 120°C

*\*Shipped from factory as °F, with one-time cut wire to °C.*

### Dimensions (in.)



### Sensors

Code	Sensor Material	Sensor Length	Lead Material	Lead Length	Conn. Type
02	Ni-plated Cu	1¾"	PVC	96"	Plain
13	Brass	2½"	PVC	96"	½" NPT
15	SS	2½"	PVC	96"	½" NPT

### To Order

**ED2046**   **57**   **02**   -   **96**  
 Model Number   Range Code   Sensor Code   Sensor Lead Length (inches)

### Accessories

Model	Description
161-115	Transformer, 115VAC to 12VAC
115-106	Stainless Steel Flush Mounting Plate



# FOOD SAFETY THERMOMETERS

## Pocket Test Type



### Pocket Thermometer with Magnifying Lens



- Stainless Steel Case
- 1" White Dial with Black Markings
- 5" Long Stem, Ø 0.150"
- Red Pointer
- Recalibrator Lug
- White Plastic Sheath
- NSF® Listed

#### Models

Model	Range
B1098M90C-5.0	-40 to 160°F
B1098M82C-5.0	0 to 220°F*
B1098M43C-5.0	25 to 125°F*
B1098M95C-5.0	50 to 500°F
B1098M28C-5.0	0 to 100°C
B1098M42C-5.0	-40 to 70°C

\*NSF® listed range.

### Pocket Thermometer with Domed Lens

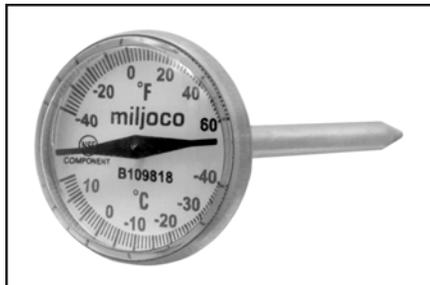
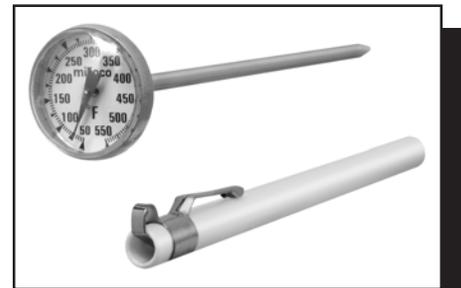


- Stainless Steel Case
- 1" White Dial with Black Markings
- 5" Long Stem, Ø 0.150"
- Red Pointer
- Recalibrator Hex Nut
- White Plastic Sheath
- NSF® Listed

#### Models

Model	Range
B1098D90A-5.0	-40 to 160°F
B1098D82A-5.0	0 to 220°F*
B1098D43A-5.0	25 to 125°F*
B1098D95A-5.0	50 to 500°F
B1098D28A-5.0	0 to 100°C
B1098D42A-5.0	-40 to 70°C

\*NSF® listed range.



### Refrigerator Case Thermometer



- Stainless Steel Case
- 1" White Dial with Black Markings
- Ø 0.150" Stem with 1/4-28 Connection
- Installation Nut
- Red Pointer
- Recalibrator Hex Nut
- NSF® Listed

#### Models

Model	Stem Length
B1098D18D-2.5	2½"
B1098D18D-3.5	3½"
B1098D18D-5.0	5"

#### Accessory

- #65-11 2-Hole Mounting Flange

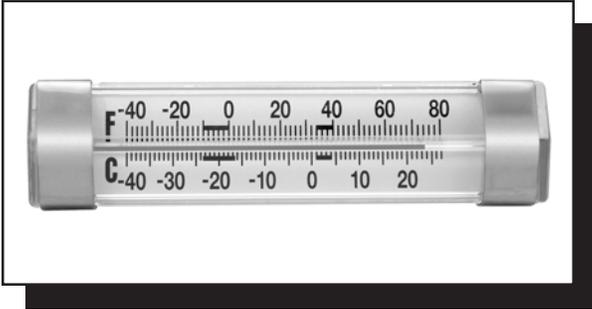
### CD109885 Digital Pocket Test Thermometer

- 1¼" Brown Plastic Case
- 5" Long Stem, Ø 0.150"
- Switchable Between F/C
- On/Off Switch
- 58 to 302°F & -50 to 150°C



# FOOD SAFETY THERMOMETERS

## Refrigerator / Freezer

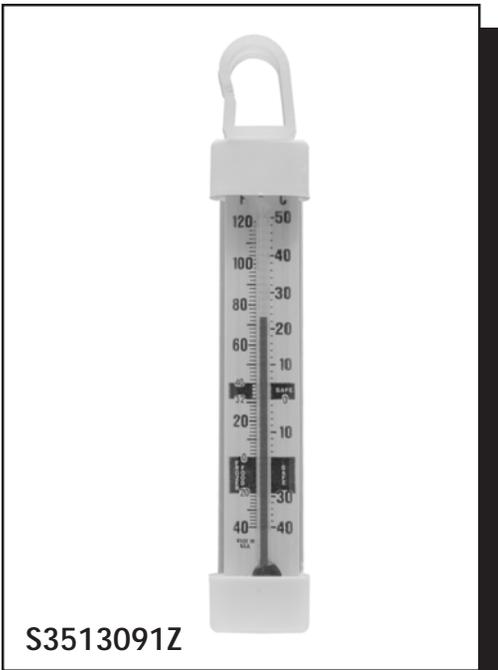


### Model S501323 Horizontal Refrigerator/Freezer Thermometer

- 5" Acrylic Case
- Magnifying Lens
- Red, Non-Toxic Spirit Fill
- Hanging, Standing, or Screwed Mounting
- 40 to 80°F (-40 to 27°C)

### Model B259817 Refrigerator/Freezer Thermometer

- Stainless Steel Case
- Glass Lens
- Two-Way Stand or Hang Design
- 20 to 80°F (-30 to 30°C)
- Zoned Scale for Recommended Temperatures



S3513091Z

### Economy Spirit Thermometer



- 3½" Polycarbonate Case
- Non-Toxic, Red Spirit Fill
- 40 to 120°F (-40 to 50°C)
- NSF® Listed

#### Models

Standard Scale	Safe-Zone* Scale	NSF® Model Number	Mounting	Reading
S3513091	S3513091Z	B9122	Hanging	Vertical
S3511091	S3511091Z	B9122	Single Screw Bracket	Vertical
S3519091	S3519091Z	B9121	Single Snap Bracket	Vertical
S3512091	S3512091Z	B9121	Double Screw Bracket	Vertical
S3518091	S3518091Z	B9121	Double Snap Bracket	Vertical
S350091M	S350091ZM	B9121	Magnetic Back	Vertical
S350091T	S350091ZT	B9121	Stick-On Back	Vertical
S3512092	S3512092Z	B9121	Double Screw Bracket	Horizontal
S3518092	S3518092Z	B9121	Double Snap Bracket	Horizontal
S350092PT	S350092ZPT	B9121	Price Tag Molding	Horizontal
S350092M	S350092ZM	B9121	Magnetic Back	Horizontal
S350092T	S350092ZT	B9121	Stick-On Back	Horizontal

\*The Safe-Zone Scale includes blue zones indicating the safe storage temperatures for refrigerated and frozen food.



# FOOD SAFETY THERMOMETERS

## Refrigerator / Freezer Vapor Thermometers



### Stainless Steel Front Flange Case



- 2" or 2½" Dial
- Polycarbonate Lens
- Nickel Plated Bulb & Capillary
- 40 to 65°F (-40 to 20°C)
- °F & °C Dial with Color Zones

#### Models

Model	Dial Size	Capillary Length
V2036-29	2"	9"
V2036-248	2"	48"
V2036-2240	2"	240"
V2537-248	2½"	48"

### Stainless Steel U-Clamp Case



- 2" Dial
- Polycarbonate Lens
- Nickel Plated Bulb & Capillary
- 40 to 65°F (-40 to 20°C)
- °F & °C Dial with Color Zones

#### Models

Model	Dial Size	Capillary Length
V2066-29	2"	9"
V2066-248	2"	48"
V2066-2240	2"	240"



### Stainless Steel Rear Flange Case

- 2" Dial
- Polycarbonate Lens
- Nickel Plated Bulb & Capillary
- 40 to 65°F (-40 to 20°C)
- °F & °C Dial with Color Zones

#### Models

Model	Dial Size	Capillary Length
V20146-29	2"	9"
V20146-248	2"	48"
V20146-2240	2"	240"
V25147-248	2½"	48"

### Stainless Steel Cabinet Case

- 2" Dial
- Polycarbonate Lens
- Nickel Plated Bulb & Capillary
- 40 to 65°F (-40 to 20°C)
- °F & °C Dial with Color Zones

#### Models

Model	Dial Size	Capillary Length
V20157L-248	2"	48"
V25157L-248	2½"	48"



For other ranges, dial sizes, and configurations, see pages 52-67.



# FOOD SAFETY THERMOMETERS

## Cooking / Hot Food Holding



### Model B259893 Oven Thermometer

- Stainless Steel Case
- Heat-Resistant Glass Lens
- Two-Way Stand or Hang Design
- 100 to 600°F (50 to 300°C)

### Model B1098M82C-5.0 Meat Thermometer

- Stainless Steel Case
- 1" White Dial with Black Markings
- 5" Long Stem, Ø 0.150"
- Red Pointer
- Recalibrator Lug
- White Plastic Sheath
- 0 to 220°F
- NSF® Listed



### Model S4512073 Economy Hot-Food Holding Thermometer

- 4½" Case Length
- Clear Polycarbonate Case
- Red, Non-Toxic Spirit Fill
- Screwed Bracket Mounting
- 100 to 200°F (40 to 90°C)
- NSF® Listed (#B9123)



### Vapor Dial Hot Food Holding Thermometer

- 2" Dial
- Stainless Steel Front Flange Case
- Polycarbonate Lens
- Nickel Plated Bulb & Capillary
- 30 to 240°F (0 to 115°C)
- NSF® Listed



#### Models

Model	Dial Size	Capillary Length
V2036-59	2"	9"
V2036-548	2"	48"
V2036-5240	2"	240"
V2537-548	2½"	48"

For other ranges, dial sizes, and configurations, see pages 52-67.



# FOOD SAFETY THERMOMETERS

## Specialty Types

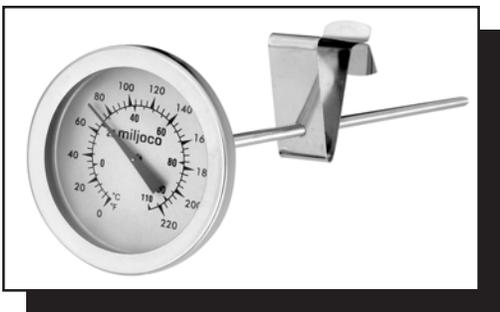
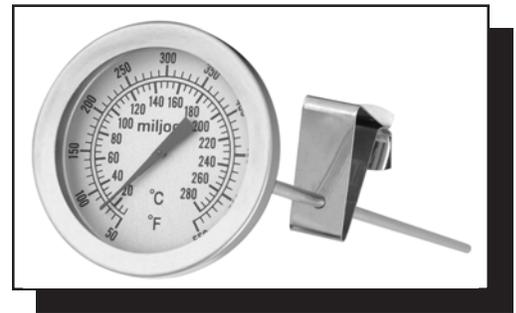


### Model B209999-9P Candy/Jelly Thermometer

- Stainless Steel Case
- 2" Silver Dial with Black Markings
- 9" Long Stem, Ø 0.150"
- Red Pointer
- Adjustable Pan Clip
- 50 to 400°F (10 to 200°C)

### Model B209997-12P Deep Fry Thermometer

- Stainless Steel Case
- 2" Silver Dial with Black Markings
- 12" Long Stem, Ø 0.150"
- Red Pointer
- Adjustable Pan Clip
- 50 to 550°F



### Model B209982-9P Brewing/Cheesemaking Thermometer

- Stainless Steel Case
- 2" Silver Dial with Black Markings
- 9" Long Stem, Ø 0.150"
- Red Pointer
- Adjustable Pan Clip
- 0 to 220°F (18 to 105°C)

### Model B1098M82C-5P Espresso & Cappuccino Frothing Thermometer

- Stainless Steel Case
- 1" White Dial with Black Markings
- 5" Long Stem, Ø 0.150"
- Red Pointer
- Recalibrator Lug
- Adjustable Pan Clip
- 0 to 220°F (18 to 105°C)
- NSF® Listed



# CONVERSION TABLES

## Temperature & Pressure

### Temperature Conversion

Convert Degrees F to Degrees C								Convert Degrees C to Degrees F			
°F	°C	°F	°C	°F	°C	°F	°C	°C	°F	°C	°F
-60	-51.1	210	98.9	480	248.9	750	398.9	-50	-58	250	482
-50	-45.6	220	104.4	490	254.4	760	404.4	-40	-40	260	500
-40	-40.0	230	110.0	500	260.0	770	410.0	-30	-22	270	518
-30	-34.4	240	115.6	510	265.6	780	415.6	-20	-4	280	536
-20	-28.9	250	121.1	520	271.1	790	421.1	-10	14	290	554
-10	-23.3	260	126.7	530	276.7	800	426.7	0	32	300	572
0	-17.8	270	132.2	540	282.2	810	432.2	10	50	310	590
10	-12.2	280	137.8	550	287.8	820	437.8	20	68	320	608
20	-6.7	290	143.3	560	293.3	830	443.3	30	86	330	626
30	-1.1	300	148.9	570	298.9	840	448.9	40	104	340	644
40	4.4	310	154.4	580	304.4	850	454.4	50	122	350	662
50	10.0	320	160.0	590	310.0	860	460.0	60	140	360	680
60	15.6	330	165.6	600	315.6	870	465.6	70	158	370	698
70	21.1	340	171.1	610	321.1	880	471.1	80	176	380	716
80	26.7	350	176.7	620	326.7	890	476.7	90	194	390	734
90	32.2	360	182.2	630	332.2	900	482.2	100	212	400	752
100	37.8	370	187.8	640	337.8	910	487.8	110	230	410	770
110	43.3	380	193.3	650	343.3	920	493.3	120	248	420	788
120	48.9	390	198.9	660	348.9	930	498.9	130	266	430	806
130	54.4	400	204.4	670	354.4	940	504.4	140	284	440	824
140	60.0	410	210.0	680	360.0	950	510.0	150	302	450	842
150	65.6	420	215.6	690	365.6	960	515.6	160	320	460	860
160	71.1	430	221.1	700	371.1	970	521.1	170	338	470	878
170	76.7	440	226.7	710	376.7	980	526.7	180	356	480	896
180	82.2	450	232.2	720	382.2	990	532.2	190	374	490	914
190	87.8	460	237.8	730	387.8	1000	537.8	200	392	500	932
200	93.3	470	243.3	740	393.3	1010	543.3	210	410	510	950
								220	428	520	968
								230	446	530	986
								240	464	540	1004

$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$   
 $^{\circ}\text{C} = 0.5555 (^{\circ}\text{F} - 32)$

### Pressure Conversion

To / From	psi	in H2O	mm H2O	oz/in2	mBar	Bar	mm Hg (Torr)	in Hg	kgf/cm2	kPa	ft H2O	Atm
psi	1	27.71	703.8	16	68.95	0.0689	51.715	2.036	0.0704	6.895	2.307	0.0681
in H2O	0.0361	1	25.4	0.5775	2.488	0.00249	1.866	0.0735	0.00254	0.249	0.08332	0.00246
mm H2O	0.001421	0.0394	1	0.0227	0.098	0.000098	0.0735	0.00289	0.0001	0.0098	0.00328	0.000097
oz/in2	0.0625	1.732	43.986	1	4.31	0.00431	3.232	0.1273	0.0044	0.431	0.1442	0.00425
mBar	0.0145	0.4012	10.21	0.2321	1	0.001	0.75	0.0295	0.00102	0.1	0.03346	0.000987
Bar	14.504	401.9	10,210	232.1	1000	1	750	401.9	1.02	100	33.483	0.987
mm Hg	0.01934	0.0394	13.61	0.31	1.333	0.01333	1	0.0394	0.00136	0.1333	0.0446	0.001316
in Hg	0.4912	13.61	345.7	7.858	33.86	0.0339	25.4	1	0.0345	3.386	1.133	0.03342
kgf/cm2	14.22	394.1	100,010	227.6	980.7	0.981	735.6	28.96	1	98.07	32.809	0.968
kPa	0.14504	4.019	102.07	2.321	10	0.01	7.5	0.295	0.0102	1	0.3346	0.00987
ft H2O	0.4335	12	304.8	6.9362	29.8898	0.0299	22.4192	0.88265	0.03047	2.989	1	0.02949
Atm	14.7	407.2	10,343	235.1	1013	1.013	760	29.92	1.033	101.3	33.8995	1

**To Use:** Find the units you are converting **FROM** in the left column. Find the units you are converting **TO** in the top row. Multiply the number of units **FROM** by the **MULTIPLIER** in the box intersecting the **FROM** row and **TO** column as shown:

$$\text{FROM Units} \times \text{MULTIPLIER} = \text{TO Units}$$

Temperature and pressure conversion programs available at [www.miljoco.com](http://www.miljoco.com).

200 Elizabeth St. Mt. Clemens, MI 48043

Ph: 888.888.1498 Fax: 586.777.7891 [www.miljoco.com](http://www.miljoco.com)



# SAMPLE PRODUCT SPECIFICATIONS

## Thermometers & Gauges

### Product Guide Specification

#### THERMOMETERS & GAUGES

\*\*\*\*\*  
Specifier Notes: This section covers Miljoco Corporation thermometers and pressure gauges suitable for application in commercial HVAC systems. Consult Miljoco for assistance in editing this section for specific applications.  
\*\*\*\*\*

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Thermometers.
- B. Pressure gauges.

##### 1.2 RELATED SECTIONS

\*\*\*\*\*  
Specifier Notes: Edit the following list as required for the project. List other sections with work directly related to meters and gauges.  
\*\*\*\*\*

- A. Section 220519 Thermometers and Gauges for Domestic Water Piping
- B. Section 230519 Thermometers and Gauges for Mechanical, HVAC and Steam Piping

##### 1.3 REFERENCES

- A. ASTM E1-03a - Standard Specification for ASTM Liquid-in-Glass Thermometers.
- B. ASTM E77-98 (2003) - Standard Test Method for Inspection and Verification of Thermometers.
- C. ASME B40.200 - 2001 - Thermometers, Direct Reading and Remote Reading.
- D. ASME B40.100 - 1998 - Pressure Gauges and Gauge Attachments.

##### 1.4 SUBMITTALS

- A. Comply with requirements of Section 01330 - Submittal Procedures.
- B. Product Data: Include scale range and manufacturer's rating for each product specified.
- C. Shop Drawings: Include schedule indicating manufacturer's number, scale range, fittings, and location for each meter and gauge.

##### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer and material.
- B. Storage: Store materials in an indoor area, protected from damage and in accordance with manufacturer's instructions.
- C. Handling: Handle products in accordance with manufacturer's instructions. Protect materials and finished during handling and installation to prevent damage.

#### PART 2 PRODUCTS

##### 2.1 LIQUID-IN-GLASS THERMOMETER - **\*\*MOST TYPICALLY SPECIFIED\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation.
  - 2. Other approved equal.
- B. Case: Precision die-cast aluminum with powder-coat finish, 9-inches long.
- C. Tube: Non-toxic, blue-reading organic filled, with magnifying lens front.
- D. Scale: V-shaped aluminum with white finish and black markings.
- E. Window: Acrylic.
- F. Connector: Adjustable type, 180° in vertical plane, 360° in horizontal plane, with locking device, finished to match case.
- G. Stem: Die-cast aluminum for thermowell installation and of length to suit installation.
- H. Accuracy: Plus or minus one percent of range or plus or minus one scale division.



# SAMPLE PRODUCT SPECIFICATIONS

## Thermometers & Gauges, cont'd

### 2.2 DUCT-TYPE, LIQUID-IN-GLASS THERMOMETER - **\*\*MOST TYPICALLY SPECIFIED FOR AIR-DUCTS\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Case: Precision die-cast aluminum with powder-coat finish, 9-inches long.
- C. Tube: Non-toxic, blue-reading organic filled, with magnifying lens front.
- D. Scale: V-shaped aluminum with white finish and black markings.
- E. Window: Acrylic.
- F. Connector: Adjustable type, 180° in vertical plane, 360° in horizontal plane, with locking device, finished to match case.
- G. Stem: Perforated aluminum with flange fitting for attachment to duct.
- H. Accuracy: Plus or minus one percent of range or plus or minus one scale division.

### 2.3 SOLAR DIGITAL THERMOMETER - **\*\*CURRENT TREND FOR TYPICAL SPECIFICATION\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation.
  - 2. Other approved equal.
- B. Case: High-impact black ABS plastic.
- C. Display: LCD, gray background, 1/2-inch high black characters.
- D. Display Update: 6 times per minute.
- E. Illuminance: Bi-directional solar collectors, 35 lux.
- F. Sensor: Glass passivated thermistor.
- G. Connector: Adjustable type, 180° in vertical plane, 360° in horizontal plane, with locking device, molded to match case.
- H. Stem: Die-cast aluminum for thermowell installation and of length to suit installation.
- I. Accuracy: Greater value of one degree or one percent of reading.

### 2.4 DIRECT-MOUNTING, VAPOR-ACTUATED DIAL THERMOMETER - **\*\*FASTEST RESPONDING\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Case: Drawn stainless steel, brightly finished, 4-1/2 inch diameter.
- C. Element: Phosphor bronze bourdon tube type, with brass connector.
- D. Movement: Brass with precision milled teeth.
- E. Dial: Aluminum with white finish and black markings.
- F. Pointer: Adjustable type, aluminum with black finish.
- G. Window: Shatter-proof acrylic.
- H. Ring: Stainless steel, brightly finished.
- I. Connector: Adjustable type, 180-degrees in vertical plane, with locking device.
- J. Thermal System: Vapor-actuated, with thermowell connection and copper sensing bulb of length to suit application.
- K. Accuracy: Plus or minus one scale division.

### 2.5 REMOTE-MOUNTING, VAPOR-ACTUATED DIAL THERMOMETER - **\*\*WHERE REMOTE READING IS REQUIRED\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Case: Black glass-filled nylon, 4-1/2 inch diameter.
- C. Element: Phosphor bronze bourdon tube type, with brass connector.
- D. Movement: Brass with precision milled teeth.
- E. Dial: Aluminum with white finish and black markings.
- F. Pointer: Adjustable type, aluminum with black finish.
- G. Window: Clear glass.
- H. Ring: Stainless steel, brightly finished.
- I. Thermal System: Vapor-actuated, copper capillary with protective bronze-braided armor, thermowell connection and copper sensing bulb of length to suit application.
- J. Accuracy: Plus or minus one scale division.



# SAMPLE SPECIFICATIONS

## Thermometers & Gauges, cont'd

### 2.6 BIMETALLIC-ACTUATED DIAL THERMOMETER - **\*\*HERMETICALLY SEALED FOR OUTDOOR USE\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Case: Stainless steel, 5-inch diameter.
- C. Element: Bimetal coil helix with silicone dampening on ranges up to 300 deg F.
- D. Dial: Aluminum with white finish and black markings.
- E. Pointer: Aluminum with black finish.
- F. Recalibrator: Recalibrator screw on rear of case.
- G. Window: Clear glass.
- H. Ring: Stainless steel.
- I. Connector: Adjustable angle type with 1/2" NPT thermowell connection.
- J. Stem: 0.250" O.D., of length to suit application.
- K. Accuracy: Plus or minus one percent of range.

### 2.7 THERMOWELLS

\*\*\*\*\*  
Specifier Notes: Thermowells not required for duct-type thermometers.  
\*\*\*\*\*

- A. Manufacturers (Same as manufacturer of thermometer being used):
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Description: Pressure-tight, socket-type metal fitting for insertion into piping and of type, diameter, connection length to hold thermometer.
- C. Material: To suit the process media.

\*\*\*\*\*  
Specifier Notes: Edit or delete the following sections for product as required by the project.  
\*\*\*\*\*

### 2.8 DIRECT-MOUNT, DIAL-TYPE PRESSURE GAUGE, 1/2% ACCURACY - **\*\*PREMIUM GAUGE FOR LASTING RELIABILITY\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Case: Dry type, cast aluminum with surface mounting flange, black finished, 4-1/2-inch diameter.
- C. Pressure Element Assembly: Phosphor-bronze bourdon tube.
- D. Pressure Connection: Brass, 1/4" NPT, bottom-outlet type.
- E. Movement: Stainless steel rotary type.
- F. Dial: Aluminum with white finish and black markings.
- G. Pointer: Micro-adjustable type, aluminum with black finish.
- H. Window: Clear glass.
- I. Ring: Stainless steel.
- J. Accuracy: Plus or minus one-half percent of entire range (conforms to ASME B40.100, Grade 2A).

### 2.9 DIRECT-MOUNT, DIAL-TYPE PRESSURE GAUGE, 1% ACCURACY - **\*\*TYPICALLY SPECIFIED COMMERCIAL GAUGE\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Case: Dry-type, drawn stainless steel, brightly finished, 4-1/2 inch diameter.
- C. Pressure Element Assembly: Phosphor-bronze bourdon tube.
- D. Pressure Connection: Brass, 1/4" NPT, bottom-outlet type.
- E. Movement: Brass with precision milled teeth.
- F. Dial: Aluminum with white finish and black markings.
- G. Pointer: Adjustable type, aluminum with black finish.
- H. Window: Shatter-proof acrylic.
- I. Ring: Stainless steel.
- J. Accuracy: Plus or minus one percent of entire range (conforms to ASME B40.100, Grade 1A).



# SAMPLE SPECIFICATIONS

## Thermometers & Gauges, cont'd

### 2.10 DIRECT-MOUNT, DIAL-TYPE PRESSURE GAUGE, LIQUID-FILLED CASE - **\*\*HERMETICALLY SEALED FOR OUTDOOR USE\*\***

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Case: Glycerine-filled type, stainless steel, 4-inch diameter.
- C. Pressure Element Assembly: Brass bourdon tube.
- D. Pressure Connection: Brass, 1/4" NPT, bottom-outlet type.
- E. Movement: Brass with precision milled teeth.
- F. Dial: Aluminum with white finish and black markings.
- G. Pointer: Aluminum with black finish.
- H. Window: Clear glass.
- I. Ring: Stainless steel, bayonet type.
- J. Accuracy: Plus or minus one percent of entire range (conforms to ASME B40.100, Grade 1A).

### 2.11 PRESSURE GAUGE FITTINGS

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.

\*\*\*\*\*  
Specifier Notes: Edit the following list as required for the project.  
\*\*\*\*\*

- B. Valves: 1/4" NPT, brass needle type.
- C. Syphons: 1/4" NPT, coil of steel tubing with threaded ends.
- D. Snubbers: 1/4" NPT brass bushing with porous stainless steel disc suitable for system fluid and working pressure.

### 2.12 TEST PLUGS

- A. Manufacturers:
  - 1. Miljoco Corporation
  - 2. Other approved equal.
- B. Body: Brass body plug in 1/4" or 1/2" NPT fitting of length to extend beyond insulation.
- C. Pressure Rating: 500 psig minimum
- D. Core: Self-sealing valve, suitable for inserting 1/8-inch O.D. probe from dial-type thermometer or pressure gage.
- E. Core Material: Minus 30 to plus 275 deg F, ethylene-propylene-diene terpolymer rubber.
- F. Test Plug Cap: Gasketed and threaded cap, of same material as plug.
- G. Test Kit: Pressure gauge and adapter with probe, two bimetal dial thermometers, and protective carrying case.
  - 1. Pressure and Temperature Ranges: Approximately two time the system's operating conditions.

## PART 3 EXECUTION

### 3.1 METER AND GAGE INSTALLATION

- A. Install Thermometers, gauges, and accessories according to manufacturer's written instructions for applications where used.

### 3.2 THERMOMETER INSTALLATION

- A. Install liquid-in-glass, direct-mounted vapor-actuated, or bimetallic-actuated thermometers in the following locations:

\*\*\*\*\*  
Specifier Notes: Edit, add or delete the following list as required for the project.  
\*\*\*\*\*

- 1. Inlet and outlet of each hydronic zone.
- 2. Inlet and outlet of each hydronic boiler and chiller.
- 3. Inlet and outlet of each hydronic coil in air-handling units and built-up central systems.
- 4. Inlet and outlet of each hydronic heat exchanger.
- 5. Inlet and outlet of each hydronic heat-recovery tank.
- 6. Inlet and outlet of each thermal-storage tank.
- 7. Outside-air, return-air, and mixed-air ducts.



# SAMPLE SPECIFICATIONS

## Thermometers & Gauges, cont'd

B. Provide the following temperature ranges for liquid-in-glass thermometers:

\*\*\*\*\*  
Specifier Notes: Edit the following list as required for the project.  
\*\*\*\*\*

1. Domestic Hot Water: 30 to 240 deg F, with 2-deg scale divisions (0 to 115 deg C, with 1-deg scale divisions).
2. Domestic Cold Water: 0 to 120 deg F, with 1-deg scale divisions (-10 to 50 deg C, with 1-deg scale divisions).
3. Heating Hot Water: 30 to 300 deg F, with 2-deg scale divisions (0 to 150 deg C, with 1-deg scale divisions).
4. Condenser Water: 0 to 160 deg F, with 2-deg scale divisions (-15 to 70 deg C, with 1-deg scale divisions).
5. Chilled Water: 0 to 120 deg F, with 1-deg scale divisions (-10 to 50 deg C, with 1-deg scale divisions).
6. Steam & Condensate: 30 to 300 deg F, with 2-deg scale divisions (0 to 150 deg C, with 1-deg scale divisions).
7. Air Ducts: -40 to 110 deg F, with 2-deg scale divisions (-40 to 40 deg C, with 1-deg scale divisions).

B. Provide the following temperature ranges for solar digital thermometers:

1. All locations: -58 to 302 deg F, with tenth-deg resolution (-50 to 150 deg C, with tenth-deg resolution).

C. Provide the following temperature ranges for direct-mounted vapor-actuated thermometers:

\*\*\*\*\*  
Specifier Notes: Edit the following list as required for the project.  
\*\*\*\*\*

1. Domestic Hot Water: 30 to 240 deg F, with 2-deg scale divisions (0 to 115 deg C, with 1-deg scale divisions).
2. Domestic Cold Water: 20 to 80 deg F, with 1-deg scale divisions (-5 to 25 deg C, with 1-deg scale divisions).
3. Heating Hot Water: 30 to 300 deg F, with 1-deg scale divisions (0 to 150 deg C, with 2-deg scale divisions).
4. Condenser Water: -40 to 110 deg F, with 2-deg scale divisions (-40 to 40 deg C, with 2-deg scale divisions).
5. Chilled Water: -40 to 110 deg F, with 2-deg scale divisions (-40 to 40 deg C, with 2-deg scale divisions).
6. Steam & Condensate: 30 to 300 deg F, with 1-deg scale divisions (0 to 150 deg C, with 2-deg scale divisions).
7. Air Ducts: -40 to 110 deg F, with 2-deg scale divisions (-40 to 40 deg C, with 2-deg scale divisions).

D. Provide the following temperature ranges for bimetallic-actuated thermometers:

\*\*\*\*\*  
Specifier Notes: Edit the following list as required for the project.  
\*\*\*\*\*

1. Domestic Hot Water: 0 to 250 deg F, with 2-deg scale divisions (-20 to 120 deg C, with 1-deg scale divisions).
2. Domestic Cold Water: 25 to 125 deg F, with 1-deg scale divisions (-5 to 50 deg C, with 1/2-deg scale divisions).
3. Heating Hot Water: 50 to 500 deg F, with 2-deg scale divisions (10 to 260 deg C, with 2-deg scale divisions).
4. Condenser Water: -40 to 160 deg F, with 2-deg scale divisions (-40 to 70 deg C, with 1-deg scale divisions).
5. Chilled Water: -40 to 160 deg F, with 2-deg scale divisions (-40 to 70 deg C, with 1-deg scale divisions).
6. Steam & Condensate: 50 to 500 deg F, with 2-deg scale divisions (10 to 260 deg C, with 2-deg scale divisions).
7. Air Ducts: -40 to 160 deg F, with 2-deg scale divisions (-40 to 70 deg C, with 1-deg scale divisions).

### 3.3 PRESSURE GAUGE INSTALLATION

- A. Install pressure gauges in piping tees at most-readable position.
- B. Install dry-type pressure gauges in the following locations:
  1. Discharge of each pressure-reducing valve.
  2. Building water-service entrance.
  3. Chilled-water and condenser-water inlets and outlets of chillers.
- C. Install liquid-filled-type pressure gauges at suction and discharge of each pump.
- D. Install pressure-gauge needle valve and snubber in piping to pressure gauges.
  1. Exception: Install syphon instead of snubber in piping to steam pressure gauges.
- E. Provide pressure ranges equal to approximately two-times the system pressure.

**END OF SECTION**

*A copy of this specification is available in electronic format at [www.miljoco.com](http://www.miljoco.com).*



# BOURDON TUBE PRESSURE GAUGES

## Installation, Operation & Maintenance Instructions

### Selection Criteria

1. Selection of the proper gauge would include consideration to materials of construction which should be selected to provide maximum safety, performance & value with consideration to the temperature and corrosiveness of both the ambient environment and the media being measured. **CAUTION: Any gauge used on steam systems must have a coil syphon installed between the gauge and the process steam. Failure to do so will increase the risk of personal injury to the system operator.**
2. The pressure gauge range should be selected so that the working pressure is stated as close to 50% of scale as possible. This generally optimizes the accuracy of the gauge, while generally protecting the bourdon tube from exposure to pressures beyond the maximum range of scale.
3. Gauge should be installed at a location as free from vibration as possible. Where this is impossible, gauge selection should be made to prolong life & enhance readability, such as a grease dampened movement or liquid filled case.
4. Gauge should be installed at location as free from pulsation as possible. Where this is impossible, a pulsation-reducing accessory such as a filter snubber should be installed at the gauge to prolong gauge life & enhance readability.

### Installation & Operation

1. Select the proper sized wrench tool so as to fit the metal flat adjacent the pipe threads on the socket of the gauge. NEVER screw gauge into place using the case as a handle or knob.
2. A properly installed gauge will always be accompanied by a local positive shutoff valve at the gauge to allow for the removal and service or replacement of the gauge.
3. Treat the pipe threads with appropriate material to suit application such as teflon thread tape or pipe sealant compatible with the media being measured.
4. Carefully thread the gauge into place with the scale reading as near to vertical as possible, ideally within 15° of the vertical axis, considering gauge visibility and a leak free seal.
5. When installing a panel mounted gauge, ensure that there are no undue forces of stress, tension, or torsion on the gauge fitting.

### Maintenance

1. Generally, a properly installed gauge should require no mechanical maintenance. If there is a clear indication of erroneous readings, the gauge should be removed and recalibrated by a professional instrument service technician.
2. Keep the environment in which the gauge is operating as clean as possible. Contamination of the movement can occur and adversely affect a gauge's performance. Replace any broken lens or case as necessary on the gauge to avoid foreign matter contaminating the gauge internals.
3. If cleaning of gauge internals is necessary, use fast-evaporating solution to remove dirt & debris from movement and linkages.



# LOW PRESSURE DIAPHRAGM GAUGES

## Installation, Operation & Maintenance Instructions

### Selection Criteria

1. Selection of the proper gauge would include consideration to materials of construction which should be selected to provide maximum safety, performance & value with consideration to the temperature and corrosiveness of both the ambient environment and the media being measured. **CAUTION: These gauges should not be used on steam applications or on any process media that is caustic or harmful to copper or copper-alloys.**
2. The pressure gauge range should be selected so that the working pressure is stated as close to 50% of scale as possible. This generally optimizes the accuracy of the gauge, while protecting the diaphragm from exposure to pressures beyond the maximum range of scale.
3. Gauge should be installed at a location as free from vibration as possible.
4. Gauge should be installed at location as free from pulsation as possible. Where this is impossible, a pulsation-reducing accessory such as a filter snubber should be installed at the gauge to prolong gauge life & enhance readability.

### Installation & Operation

1. Select the proper sized wrench tool so as to fit the metal flat adjacent the pipe threads on the socket of the gauge. NEVER screw gauge into place using the case as a handle or knob.
2. A properly installed gauge will always be accompanied by a local positive shutoff valve at the gauge to allow for the removal and service or replacement of the gauge.
3. Treat the pipe threads with appropriate material to suit application such as teflon thread tape or pipe sealant compatible with the media being measured.
4. Carefully thread the gauge into place with the scale reading as near to vertical as possible, ideally within 15° of the vertical axis, considering gauge visibility and a leak free seal.
5. When installing a panel mounted gauge, ensure that there are no undue forces of stress, tension, or torsion on the gauge fitting.

### Maintenance

1. Generally, a properly installed gauge should require no mechanical maintenance. If there is a clear indication of erroneous readings, the gauge should be removed and recalibrated by a professional instrument service technician.
2. Keep the environment in which the gauge is operating as clean as possible. Contamination of the movement can occur and adversely affect a gauge's performance. Replace any broken lens or case as necessary on the gauge to avoid foreign matter contaminating the gauge internals.
3. If cleaning of gauge internals is necessary, use fast-evaporating solution to remove dirt & debris from movement and linkages.



# INDUSTRIAL THERMOMETERS

## Installation, Operation & Maintenance Instructions

### Installation & Operation

Miljoco Industrial Thermometers should always be installed in a separable socket or test well to help protect the stem against fluid erosion, corrosion or other hazards. Do **NOT** install the thermometer directly into a pressurized hydronic HVAC system or process media. The well should first be primed with a heat transfer medium, such as oil, graphite or paste, to provide optimal accuracy and response time.

All Miljoco thermometers are factory-calibrated to the stated accuracy. However, the instrument may be subjected to mishandling during transportation, therefore accuracy should always be verified against a known standard before installation. The thermometer should be installed at a location as free from vibration as possible in order to avoid the potential for fluid separation within the tube, rendering the instrument inaccurate.

1. Select the proper-sized wrench tool so as to fit the metal flat adjacent the pipe threads on the separable socket.
2. Treat the pipe threads with appropriate sealant material to suit application.
3. Insert the thermometer stem into the socket and thread the brass swivel coupling nut on thermometer into the internal threads on the socket to secure stem.
4. Carefully loosen the angle adjustment screw only enough to allow the teeth on the joint fitting to disengage. Do **NOT** remove this screw. Adjust the readout scale to the desired viewing angle as near to vertical as possible, and retighten the angle adjustment screw.

### Maintenance

Generally, a properly installed thermometer should require no mechanical maintenance. If there is a clear indication of erroneous readings, the unit should be removed and forwarded for inspection by a professional instrument service technician.

### Re-Uniting a Separated Column

Occasionally, mishandling of the thermometer during transportation will result in a separated fluid column within the tube, causing the unit to give an inaccurate reading. The column can usually be reunited by following the steps listed below.

1. Remove the thermometer from the application and slowly heat the stem while keeping the unit in a vertical position.
2. Observe the upward movement of the fluid until the separation point approaches the expansion chamber at the top of the tube.
3. When the separation reaches the chamber, tap the thermometer to expel any trapped gas upward beyond the fluid into the expansion chamber and remove from the heat source. **Warning:** Do not expose the stem to a temperature more than 20°F above the high end of the scale, or the instrument may suffer irreparable damage. If above prescribed action does not reunite the column, return the thermometer to the factory under the conditions of the limited warranty.

### WARNING

Miljoco industrial thermometers are currently supplied with a non-toxic, spirit-filled tube. However, if you have a mercury-filled thermometer that becomes damaged, it should be treated as a hazardous material and disposed of in a manner consistent with environmental regulations of the appropriate governing jurisdictions.



# BIMETAL THERMOMETERS

## Installation, Operation & Maintenance Instructions

### Installation & Operation

1. Wherever possible, a Miljoco Bimetal Thermometer should be installed in a thermowell to help protect the stem against fluid erosion, corrosion or other hazards. **NEVER** install the thermometer directly into a pressurized application. The thermowell should first be primed with a heat transfer medium, such as oil, graphite or paste, to provide optimal accuracy and response time.
2. All Miljoco thermometers are factory-calibrated to the stated accuracy. However, the instrument may be subjected to mishandling during transportation, therefore accuracy should always be verified against a known standard before installation. The thermometer should be installed at a location as free from vibration as possible in order to avoid the potential excessive wear of the internal mechanisms.
3. When choosing an installation location, always ensure that the bottom portion (approximately 2") of the stem will be exposed to the media to be measured. Select the proper sized wrench tool so as to fit the metal flat adjacent the pipe threads on the hex connection. **NEVER** screw the thermometer into place using the case as a handle or knob. Carefully thread the thermometer into the apparatus or thermowell until tight, then thread further until the dial face is in the desired reading position.

### Adjustable Angle Thermometers

The dial face of these thermometers can be adjusted to the most desirable reading. The stem should only be adjusted when necessary to ensure maximum thermometer life.

#### Adjusting the Stem

Before installing the thermometer, set the stem to the desired viewing angle by the following:

1. Slightly loosen the single bracket screw until the adjusting bracket mechanism pivots freely.
2. While holding the case and stem, pivot adjusting bracket until the proper viewing angle has been achieved.
3. Tighten the bracket screw to "lock" the adjusting bracket mechanism into place.

### Maintenance

Generally, a properly installed thermometer should require no mechanical maintenance. If there is a clear indication of erroneous readings or mechanical malfunction, the unit should be removed and forwarded for inspection by a professional instrument service technician.



# VAPOR ACTUATED DIAL THERMOMETERS

## Installation, Operation & Maintenance Instructions

### Installation & Operation

1. Wherever possible (except for air-temperature measurement applications), a Miljoco Vapor Actuated Dial Thermometer should be installed in a thermowell to help protect the bulb against fluid erosion, corrosion or other hazards. **NEVER** install the bulb directly into a pressurized application. The thermowell should first be primed with a heat transfer medium, such as oil, graphite or paste, to provide optimal accuracy and response time.
2. All Miljoco thermometers are factory-calibrated to the stated accuracy. However, the instrument may be subjected to mishandling during transportation, therefore accuracy should always be verified against a known standard before installation. The thermometer should be installed at a location as free from vibration as possible in order to avoid the potential excessive wear of the internal mechanisms.
3. When choosing an installation location, always ensure that the sensing bulb and case are installed at a similar height to maintain the designed accuracy of the thermometer. If the sensing bulb must be mounted at a different height than the case (especially over long capillary runs), please advise the factory when ordering. The sensing bulb should always be completely immersed into the measured media to ensure accurate readings.

### Maintenance

Generally, a properly installed thermometer should require no mechanical maintenance. If there is a clear indication of erroneous readings or mechanical malfunction, the unit should be removed and forwarded for inspection by a professional instrument service technician.

### Resetting the Pointer

All Miljoco Vapor Actuated Dial thermometers are factory-calibrated before shipment to be accurate within  $\pm$  one scale division. However, the instrument may be subjected to mishandling during transportation, therefore accuracy should always be verified against a known standard before installation. To verify accuracy, follow the steps outline below:

1. Remove the lens to expose the pointer by unthreading counterclockwise (threaded lens) or by carefully prying (press-in lens) the lens away from the case using the molded slots.
2. Check the accuracy by inserting the sensing bulb into an agitated bath of melting ice and water (32°F, 0°C @ sea level) or boiling water (212°F, 100°C @ sea level).



**If the temperature reads high...**

*Fig. A*

Stabilize the pointer by placing a finger next to the left side of the wide end. Insert a screwdriver into the slot in the pointer hub and carefully turn the hub clockwise until the desired setting is reached.



**If the temperature reads low...**

*Fig. B*

Stabilize the pointer by placing a finger next to the right side of the wide end. Insert a screwdriver into the slot in the pointer hub and carefully turn the hub counter-clockwise until the desired setting is reached.



# LED DIGITAL THERMOMETERS

## Installation, Operation & Maintenance Instructions

The Miljoco ED175 & ED2046 LED Digital Thermometers are designed to provide a large, brightly lit temperature display for use on food service cabinets, both hot and cold, and is widely used in this industry. Flush mounted units are very popular and smart in appearance with only a 7/8" x 1-3/4" display lens showing through the stainless steel refrigerator/freezer cabinet. These units are NSF® listed and power transformers are UL® recognized.

### Installation & Operation

#### INSTALLING THE INSTRUMENT INDICATOR HOUSING:

This unit is designed to be wither surface mounted or flush mounted. When flush mounting, cut a hole 0.875" high and 1.75" wide to allow the raised lens front display to penetrate through the sheet metal panel. The housing may be installed with two screws through the 0.140" dia. holes (spaced 1.625" apart), or by applying glue or double-sided tape on the recessed portion of the instrument face.

#### TEMPERATURE SENSOR:

The thermistor type sensor is enclosed in a black PVC jacket 0.250" OD x 1" long and should be located in an area where there is maximum circulation, representing the most critical and true temperature of the device being monitored. Other types of sensor protectors are available for liquid immersion, pressure vessels, etc. See general catalog for complete specifications.

#### TEMPERATURE SENSOR CONNECTING LEADS:

The standard lead is furnished as 96" long, but it may be supplied in longer lengths up to 1000 feet. The lead is PVC covered and should be secured along the length by wire clamps. Leads may be extended in the field (up to 20' additional) by cutting the lead in the middle and splicing in a new two-conductor wire #22 gauge. Calibration should be checked after extending the lead.

#### POWER REQUIREMENTS AND WIRING:

Each thermometer is provided with two leads, 24" long; one black and one red which should be connected to a 12VAC/DC power supply. If a 12 volt supply is not available, use Miljoco Transformer No. A61-115 connected to 120VAC which in turn will provide 120 VAC to the instrument. Normally, one instrument is installed per transformer, however two instruments (maximum) can be installed per transformer, if required. The instrument draws 125mA at 120VAC. Other transformers are also available for 220VAC and other non-standard voltages and cycles - consult factory. **CAUTION:** Before power-up, ensure the transformer is wired with the black and white leads connected to the primary voltage supply source (i.e. 120VAC). If the transformer is wired backwards, the transformer and instrument will be immediately damaged.

#### STARTUP:

Ensure the instrument is not subjected to voltages higher than 15 volts, as the unit will be damaged, rendering it useless. With proper power supplied, the indicator should display the correct temperature or the process. Each instrument is factory-calibrated to the stated accuracy. If the process temperature is not within the range limits of the instrument, the indicator will display HI or LOW.

#### ADJUSTING THE READING:

To verify the accuracy of the instrument, place the temperature sensor in a vessel filled with melting crushed ice and water to provide a verification standard of 32°F (0°C). Vigorously stir the bath and wait at least two minutes before reading. The indicator should read 32°F, ± 2°F (1°C). If recalibration is required, look at the rear of the case, near the top. Some units have the recalibration screw sealed shut, depending on how the unit was originally ordered. If the recalibration screw is accessible, turn it clockwise to decrease and counter-clockwise to increase the reading.

### Caution

Some units are furnished with a time-delay indicator feature for certain applications where opening the refrigerator door will cause a temporary higher reading. This will delay the change in the true reading of the indicator on temperature rise of the refrigerator. The length of the delay is determined by the equipment manufacturer, but in most cases, will not exceed four minutes. For example: The indicator reads 38°F; the door is opened briefly and the temperature rises to 44°F for a moment, but with the delay feature, the indicator will still read 38°F. Once the door closes, the temperature again drops to 38°, and the indicator reads the same. However, if the door remains open or mechanical failure occurs, after four minutes, the indicator will read the actual case temperature. If this feature is included, the unit will be affixed with a label indicating the amount of time delay. Note: This feature does not apply to descending temperatures; therefore; if the temperature is dropping, this feature will not delay or affect the reading. This feature can also be included for units installed in hot-food cabinets and works in reverse.



# NOTES



# NOTES



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