

THERMOMETERS AND PRESSURE GAUGES - PIPING SYSTEMS

1. GENERAL

1.1 Section Includes

- .1 Materials and installation for thermometers and pressure gauges in piping systems.

1.2 Related Sections

- .1 Section 23 05 53.01 - Mechanical Identification.

1.3 References

- .1 American Society of Mechanical Engineers (ASME).
 - .1 ASME B40.100-05(R2010), Pressure Gauges and Gauge Attachments.
 - .2 ASME B40.200-08, Thermometers, Direct Reading and Remote Reading.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-14.4-M88, Thermometers, Liquid-in-Glass, Self Indicating, Commercial/Industrial Type.
 - .2 CAN/CGSB-14.5-M88, Thermometers, Bimetallic, Self-Indicating, Commercial/Industrial Type.

1.4 Submittals

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit shop drawings and product data.
- .3 Submit manufacturer's product data for following items:
 - .1 Thermometers.
 - .2 Pressure gauges.
 - .3 Stop cocks.
 - .4 Syphons.
 - .5 Wells.

2. PRODUCTS

2.1 General

- .1 Design point to be at mid point of scale or range.
- .2 Ranges: as indicated.

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2.2 Temperature Gauges

- .1 Round, 125 mm (5") diameter, adjustable (90°) angle bimetal dial type thermometers, each accurate to within 1% of full scale and complete with a hermetically sealed stainless steel case with stainless steel ring, dampened bimetal coil, calibration adjustment screw, white aluminum dual scale dial with black and blue markings and a range such that the working temperature of the system is the approximate mid-point of the scale, black aluminum pointer, double strength glass window, 12 mm (½") NPT Connection with 6.4 mm (¼") diameter stainless steel stem, and a suitable thermowell.
- .2 Range
 - .1 Condenser - Water 0-100°C
 - .2 Chilled Water – 0-50°C
- .3 Standard of acceptance:
 - .1 H.O. Trerice Co. B85600 Series
 - .2 Weiss Instruments Model 5VBM25
 - .3 Ashcroft #50EI60E-040-0/250

2.3 Thermometer Wells

- .1 Copper pipe: copper or bronze.
- .2 Steel pipe: brass.

2.4 Pressure Gauges

- .1 Adjustable, glycerine filled, 150 mm (6") diameter, each accurate to within 1% of scale range and complete with a type 304 stainless steel case with relief valve and polished stainless steel bayonet, stainless steel rotary movement with stainless steel bushings and socket, a clear acrylic window, a dual scale white dial with a scale range such that the working pressure of the system is at the approximate mid-point of the scale, and black pointer.
- .2 Range
 - .1 Sub-basement 0-7 Bar
 - .2 7th Floor 0-2 Bar
- .3 Standard of acceptable:
 - .1 H. O. Trerice Co. No. 700 Series
 - .2 Weiss Instruments Model LF6S-2
 - .3 Ashcroft #6-1009-SWL-04L-0-690 kPa (0-100 PSI)

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- .4 **Pressure Gauge Accessories & Additional Requirements:** Accessories and additional requirements are as follows:
- .1 each pressure gauge is to be equipped with a bronze ball valve
 - .2 each pressure gauge for piping and equipment with normal everyday flow is to be equipped with a brass pressure snubber
 - .3 each pressure gauge for steam piping or equipment is to be equipped with a steel coil syphon
 - .4 pressure gauges in fire protection piping must be ULC listed and labelled
 - .5 pressure gauges in medical gas piping systems are to conform to CSA Z305.3 and are to be identified with the name of the service it is provided for as well as "USE NO OIL"

3. EXECUTION

3.1 General

- .1 Install so they can be easily read from floor or platform. If this cannot be accomplished, install remote reading units.
- .2 Install between equipment and first fitting or valve.

3.2 Thermometers

- .1 Install in wells on piping. Provide heat conductive material inside well.
- .2 Install in locations as indicated:
- .3 Use extensions where thermometers are installed through insulation.

3.3 Pressure Gauges

- .1 Install in following locations:
 - .1 As indicated
- .2 Install gauge cocks for balancing purposes.
- .3 Use extensions where pressure gauges are installed through insulation.

3.4 Nameplates

- .1 Install engraved lamicoïd nameplates as specified in Section 23 05 53.01 - Mechanical Identification identifying medium.

END OF SECTION