

SECTION 23 05 19

METERS AND GAUGES FOR HVAC PIPING

This document is intended to note the Owners Design Requirements (ODR) for the titled specification section. Design professional to review and integrate ODR into the project's technical specifications. This ODR document should not be viewed as a standalone technical specification.

PART 1 - GENERAL REQUIREMENTS

N/A

PART 2 - PRODUCTS AND MATERIALS

♦ MANUFACTURERS

- Thermometer Wells to be the same as for thermometers.

♦ THERMOMETERS, GENERAL

- Accuracy: Plus or minus 1 percent of range span or plus or minus one scale division to maximum of 1.5 percent of range span.
- Scale range: Temperature ranges for services listed as follows:
 - Hot Water: 30 to 240 deg with 2-degree scale divisions
 - Chilled Water: 0 to 100 deg F with 2-degree scale divisions.

♦ Glass tube industrial THERMOMETERS

- Case: Die cast, aluminum finished, in baked epoxy enamel, glass front, spring secured, 9 inches long.
- Adjustable Joint: Finished to match case, 180-degree adjustment in vertical plane, 360-degree adjustment in horizontal plane, with locking device.
- Tube: Non-red color reading, non-toxic organic spirit-filled glass tube, magnifying lens.
- Scale: Satin-faced, nonreflective aluminum, with permanently etched markings.
- Stem: Copper-plated steel, aluminum or brass, for separable socket, length to suit installation.

♦ THERMOMETER WELLS

- Thermometer Wells: Brass or stainless steel, pressure rated to match piping system design pressure; with 2-inch extension for insulated piping and threaded cap nut with chain permanently fastened to well and cap.

♦ PRESSURE GAUGES

- Case: Glass lens, 4-inches diameter.
- Connector: Brass, 1/4-inch NPS.
- Scale range: Temperature ranges for services listed as follows:
 - Hot Water: 0 to 160 psi, rated for 180 deg F
 - Chilled Water: 0 to 160 psi.
- Accuracy: Plus or minus 1 percent of range span.

♦ PRESSURE GAUGE ACCESSORIES

- Syphon: 1/4-inch NPS straight coil constructed of brass tubing with threads on each end.
- Snubber: 1/4-inch NPS brass bushing with corrosion-resistant porous metal disc. Disc material shall be suitable for fluid served and rated pressure.

PART 3 - EXECUTION

♦ THERMOMETERS INSTALLATION

- Install in the following locations and elsewhere as indicated:
 - At inlet and outlet of each hydronic coil in air-handling units and built-up central systems.

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- Thermometer Wells: Install in piping tee where thermometers are indicated, in vertical position. Fill well with oil or graphite and secure cap.
- ♦ **INSTALLATION OF PRESSURE GAUGES**
 - Install in the following locations, and elsewhere as indicated:
 - Provide liquid-filled gauge at suction and discharge of each pump.
 - At discharge of each pressure-reducing valve.
 - At inlet and outlet of each hydronic coil in air-handling units and built-up central systems.

END OF SECTION