

Low-Pressure (80 - 150 psig) Frost Point Indicator

The Model 5250 Low-Pressure Frost Point Indicator (LPFP) is a self-contained instrument, designed to sample the moisture content of a low-pressure (1 to 150 psig) stream of air or another gas. The LPFP is designed for manual, intermittent use.

The moisture content of a gas can be expressed by its "dew point" or "frost point" temperature; that is, the temperature to which the gas must be cooled to cause condensation of moisture as dew (above 32° F) or frost (below 32° F). The LPFP chills a mirror surface and passes a sample of the gas to be checked over this mirror. The operator observes the mirror and notes the mirror temperature at which dew or frost forms on it. This is the dew point or frost point of the sample.

The unit requires 115 VAC electrical power and a source of compressed air or nitrogen at 80 to 150 psig. The chilling of the mirror is accomplished by using the energy stored in the compressed gas itself by means of Joule-Thompson or adiabatic expansion. Consequently, separate operating and sample gas ports are provided for situations when the sample gas is at less than 80 psig. Electrical power is used only to operate the digital temperature indicator that displays the mirror temperature.

The LPFP may be used in several ways:

- to determine the actual frost point or dew point temperature of a gas over the frost point or dew point range of 50° F to -50° F,
- to measure temperature via up to three external sensors in the range of 150° F to -150° F,
- to measure pressure from an external source in the range of 1 to 150 psig, or
- as a go/no-go indicator - by allowing it to cool to a threshold temperature and observing whether or not dew or frost appears.

Specifications:

Manufactured in accordance with Military Specification MIL-I-24144 (listed on QPL 24144).

Operation: Manual.

Duty: Intermittent.

Operating Pressure: Sample Gas: 1 - 150 psig.
Coolant Gas: 80 - 150 psig.

Gas Flow Rate: Sample Gas: 0 to 5 scfm.
Coolant Gas: 6 scfm at 80 psig

Frost Point Range: -50° to 50° F



Accuracy: ± 5° F.

Power Requirements: 115 VAC, 60 Hz, single-phase, 10 milliamps approximately.

Ambient Temperature: 41° to 122° F.

Dimensions: 10 in wide x 10 in deep x 12 in high.

Weight: 24 lb. (31 lb crated).

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