

# Weather terms glossary

## Absolute Humidity

---

A type of humidity that considers the mass of water vapor present per unit volume of space. Also considered as the density of the water vapor. It is usually expressed in grams per cubic meter.

## Altimeter

---

An instrument used to determine the altitude of an object with respect to a fixed level. The type normally used by meteorologists measures the altitude with respect to sea level pressure.

## Altitude

---

Height above Mean Sea Level ("MSL"). Temperature compensated pressure (barometric) altimeter requires accurate reference barometric pressure to produce maximum absolute accuracy.

## Anemometer

---

An instrument which measures wind or air speed. They can be used for monitoring weather conditions, or they may also be used to measure air flow such as in air-conditioning applications

## Barometric Pressure

---

The pressure exerted by the atmosphere at a given point. Its measurement can be expressed in several ways. One is in millibars. Another is in inches or millimeters of mercury (Hg). Also known as atmospheric pressure.

## Cold Front

---

The leading edge of an advancing cold air mass that is underrunning and displacing the warmer air in its path. Generally, with the passage of a cold front, the temperature and humidity decrease, the pressure rises, and the wind shifts. Precipitation is generally at and/or behind the front, and with a fast-moving system, a squall line may develop ahead of the front. See occluded front and warm front.

## Condensation

---

The process by which water vapor undergoes a change in state from a gas to a liquid. It is the opposite physical process of evaporation

## Delta-T

---

The difference between the Dry-bulb and the Wet-bulb temperature.

## Dew Point

---

The dew point is the temperature at which dew would form assuming all other conditions remained the same. The dew point is a function of the air temperature and humidity. The dew point temperature can never be higher than the air temperature. If the dew point temp and air temp are the same, then the humidity must be 100%.

Okay, that's fine, but what does it really mean? The dew point is a very good measure of comfort. If the dew point is high, the temperature and humidity must also be high, and you are probably sweating profusely even while standing still. If the dew point is low, then either the temperature or humidity or both are very low, and you are feeling quite comfortable. This is a better gauge for comfort than temperature or humidity alone. It could be quite warm but very dry (low dew point) and you would feel comfortable. It could also be very humid but cool or cold (low dew point) and you would feel comfortable. The temperature to which air must be cooled at a constant pressure to become saturated.

## Dry Bulb Thermometer

---

A thermometer used to measure the ambient temperature. The temperature recorded is considered identical to air temperature. One of the two thermometers that make up a psychrometer.

## Evapotranspiration

---

The amount of water transferred from the earth to the atmosphere due to the combined effects of evaporation and transpiration. Transpiration is the process by which plants release water vapor into the air.

## Heat Index

---

The combination of air temperature and humidity that gives a description of how the temperature feels. This is not the actual air temperature.

## Psychrometer

---

An instrument used to measure water vapor content of the atmosphere. It consists of two thermometers, a wet bulb and dry bulb. May also be referred to as a sling psychrometer.

## Rain

---

Precipitation of liquid water drops greater than 0.5 mm in diameter.

## Relative Humidity

---

A type of humidity that considers the ratio of the actual vapor pressure of the air to the saturation vapor pressure. It is usually expressed in percentage.

## Shower

---

Precipitation from a convective cloud that is characterized by its sudden beginning and ending, changes in intensity, and rapid changes in the appearance of the sky.

## Solar Radiation

---

The electromagnetic radiation emitted by the sun. Solar radiation sensors actually measure incident solar radiation or solar irradiance, which is the amount of radiant power per unit area that flows across or onto a surface.

## Station Pressure

---

Station Pressure is the actual barometric pressure at the reporting station. Sea-level pressure is the station pressure adjusted for the elevation of the station using a standard formula, and the difference between them will be a constant percentage for each station. The only time they will both be the same is when the station is at sea level, in which case they will \*always\* be the same.

## Temperature

---

The measure of molecular motion or the degree of heat of a substance. It is measured on an arbitrary scale from absolute zero, where the molecules theoretically stop moving. It is also the degree of hotness or coldness. In surface observations, it refers primarily to the free air or ambient temperature close to the surface of the earth.

## Warm Front

---

The leading edge of an advancing warm air mass that is replacing a retreating relatively colder air mass. Generally, with the passage of a warm front, the temperature and humidity increase, the pressure rises, and although the wind shifts, it is not as pronounced as with a cold frontal passage. Precipitation, in the form of rain, snow, or drizzle, is generally found ahead of the surface front, as well as convective showers and thunderstorms. Fog is common in the cold air ahead of the front. Although clearing usually occurs after passage, some conditions may produce fog in the warm air. See occluded front and cold front.

## Wet Bulb Thermometer

---

A thermometer used to measure the lowest temperature in the ambient atmosphere in its natural state by evaporating water from a wet muslin- covered bulb of a thermometer. The wet bulb temperature is used to compute dew point and relative humidity. One of the two thermometers that make up a psychrometer.

## Wind

---

Air that flows in relation to the earth's surface, generally horizontally. There are four areas of wind that are measured: direction, speed, character (gusts and squalls), and shifts. Surface winds are measured by wind vanes and anemometers, while upper level winds are detected through pilot balloons, rawin, or aircraft reports.

## Wind Chill Index

---

The calculation of temperature that takes into consideration the effects of wind and temperature on the human body. Describes the average loss of body heat and how the temperature feels. This is not the actual air temperature. For an example, check out the wind chill chart.

## Wind Direction

---

The direction from which the wind is blowing. For example, an easterly wind is blowing from the east, not toward the east. It is reported with reference to true north, or 360 degrees on the compass, and expressed to the nearest 10 degrees, or to one of the 16 points of the compass (N, NE, etc.)

## Wind Speed

---

The rate of the motion of the air on a unit of time. It can be measured in a number of ways. The most common measurement units are m/s (Meters per Second), ft/m (Feet per Minute), km/h (Kilometers per Hour), kt (Knots), B (Beaufort Force) and mph (miles per hour).