



allweatherinc

The 9620 Series Compact Weather Stations

Overview

The 9620 Series Compact Weather Stations are low-cost, light-weight weather stations for the acquisition of a variety of measurement data. Uses range from environmental data logging to road traffic management and more. The portable design of the 9620 Series makes them ideal for a variety of unique applications while providing the same level of accuracy and dependability that you get with AWI's modular sensor systems.

The 9620 series provides a range of weather stations with varying sensor combinations to fit your needs and your budget.

Any 9620 weather station can be incorporated into a larger system using AWI's Model 1190 Data Collection Platform.

Accuracy by Design

The 9620 series measures air temperature by way of a highly accurate NTC-resistor while humidity is measured using a capacitive humidity sensor. In order to keep the effects of external influences (such as solar radiation) as low as possible, these sensors are located in a ventilated housing with radiation protection. This allows for highly accurate measurements during high radiation conditions.

These two measurements allow for the calculation of additional variables such as dew point, absolute humidity, and mixing ratio. Absolute pressure is measured by



- Precipitation
- Wind Direction
- Wind Speed
- Air Temperature
- Relative Humidity
- Air Pressure
- Compass
- Solar Radiation

way of a built-in sensor (MEMS). The relative air pressure referenced to sea level is calculated using the barometric formula with the aid of the local altitude, which is user-configurable.

The 9620 series uses time-tested radar technology to measure precipitation. The precipitation sensor works with a 24 GHz Doppler radar, which measures the drop speed and calculates precipitation quantity and type by correlating drop size and speed.

The gathered values of air temperature, humidity, and air pressure allow the 9620 series to calculate air density.

The Ultrasonic Wind Sensor built into all 9620 series weather stations, uses 4 ultrasound sensors which take cyclical measurement in all directions. The resulting wind speed and direction are calculated from the measured run-time sound differential.

The integrated electronic compass can be used to check the north/south adjustment of the sensor housing for wind direction measurement. The compass is also used to calculate the compass corrected wind direction.

The precipitation sensor and wind meter are heated for operation in winter.

SENSORS

SPECIFICATIONS

| Parameter | Specification |
|--------------------------|---|
| Temperature | |
| Principle | NTC |
| Measuring Range | -50°C to +60°C |
| Accuracy | ±0.2° C (-20° C ... +50° C) Otherwise ±0.5° C (> -30° C) |
| Relative Humidity | |
| Principle | Capacitive |
| Measuring Range | 0 - 100% RH |
| Accuracy | ±2% RH |
| Air Pressure | |
| Principle | MEMS Capacitive |
| Measuring Range | 300 - 1200 hPa |
| Accuracy | ±1.5 hPa |
| Wind Speed | |
| Principle | Ultrasonic |
| Measuring Range | 0 - 60 m/s |
| Accuracy | ±0.3 m/s or ±3% |
| Wind Direction | |
| Principle | Ultrasonic |
| Measuring Range | 0 - 359.9° |
| Accuracy | ±3° |

| Parameter | Specification |
|--------------------------------|--|
| Precipitation Intensity | |
| Resolution | 0.01 mm |
| Measuring Range | Drop Size 0.3 - 0.5 mm |
| Reproducibility | Typ. >90% |
| Precipitation Type | Rain/Snow |
| General Specifications | |
| Heating | 40 VA at 24 VDC |
| Protection Type Housing | IP66 |
| Interface | RS-485, 2 wire, half-duplex |
| Operating Power Consumption | 24 NDC ±10% <4 VA (without heating) |
| Operating Humidity | 0 - 100% RH |
| Operating Temp. Range | -50°C to +60°C |

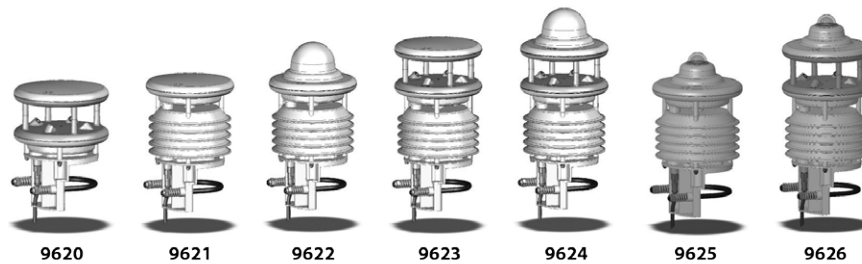
DIMENSIONS & WEIGHTS*

| | |
|------------|---------------------|
| Dimensions | 150 mm D x 345 mm H |
| Weight | 2.2 Kg |

*Dimensions & weights vary by model.

ORDERING INFORMATION

| Sensors | Model Numbers | | | | | | |
|----------------------|---------------|------|------|------|------|------|------|
| | 9620 | 9621 | 9622 | 9623 | 9624 | 9625 | 9626 |
| Temp/Humidity | | X | X | X | X | X | X |
| Pressure | | X | X | X | X | X | X |
| Precipitation | | | X | | X | | |
| Wind Speed/Direction | X | | | X | X | | X |
| Compass | X | | | X | X | | |
| Radiation | | | | | | X | X |



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