

# The Model 011 Weather Station

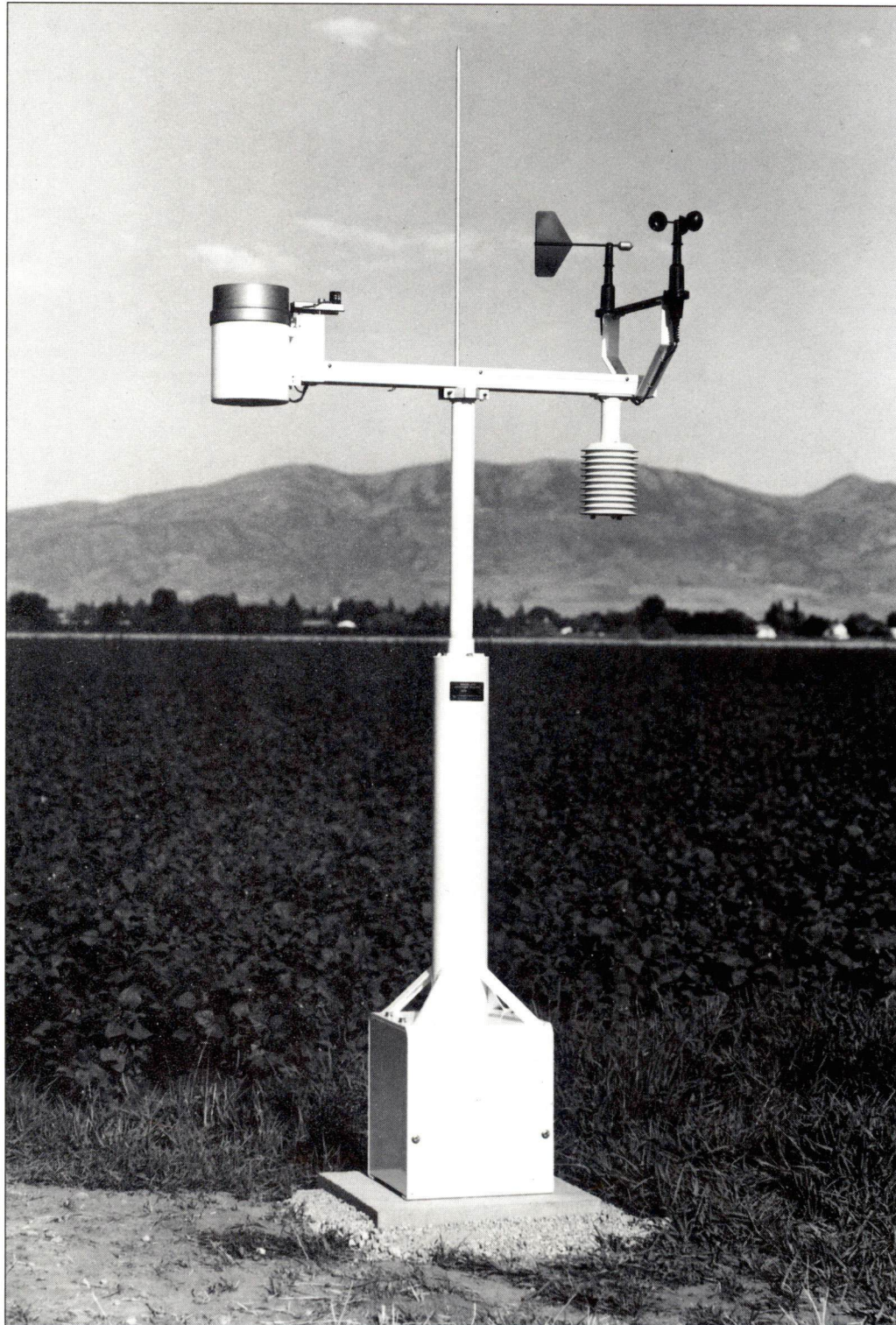
## for the GOSSYM-COMAX Cotton Management System

The 011 Weather Station is designed for use with the GOSSYM-COMAX Cotton Management System developed by the USDA-ARS Crop Simulation Research Unit. The 011 Weather Station measures air temperature, solar radiation, rainfall, wind speed and direction\* for input into the GOSSYM simulation model and COMAX expert system. Processed data from the station is retrieved via phone or fixed wire by an IBM-PC/AT computer. Output from COMAX provides recommendations concerning irrigation, nitrogen, and defoliation management.

*The design of the 011 weather station is optimized for use in cotton farming:*

- *Installation requirements are minimized through a modular design, prewired sensors, and a standard program.*
- *The system is powered for up to one year by a standard automotive battery.*
- *The electronic components are protected from rainfall, dust, chemicals, wind, insects and rodents by a sealed canister.*
- *Output from the station is formatted for direct input into the GOSSYM-COMAX model.*
- *Minimal maintenance is required.*

\*Wind direction is not required by the GOSSYM model but the sensor is included as a standard item. Relative humidity and soil temperature sensors are available as options.



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## Assembly

For ease of assembly, the 011 Weather Station is composed of three basic subassemblies (shown at right):

- mast and crossarm with sensors
- sealed electronics canister and power supply pedestal
- pre-installed concrete pad with associated hardware

## Data Outputs

The 011 Weather Station measures all sensors every ten seconds then calculates and outputs the following:

### Hourly Outputs

- Day of Year
- Time (hr:min)
- Average Temperature (F)
- Total Solar Radiation
- Total Rainfall (inches)
- Total Wind Run (miles)

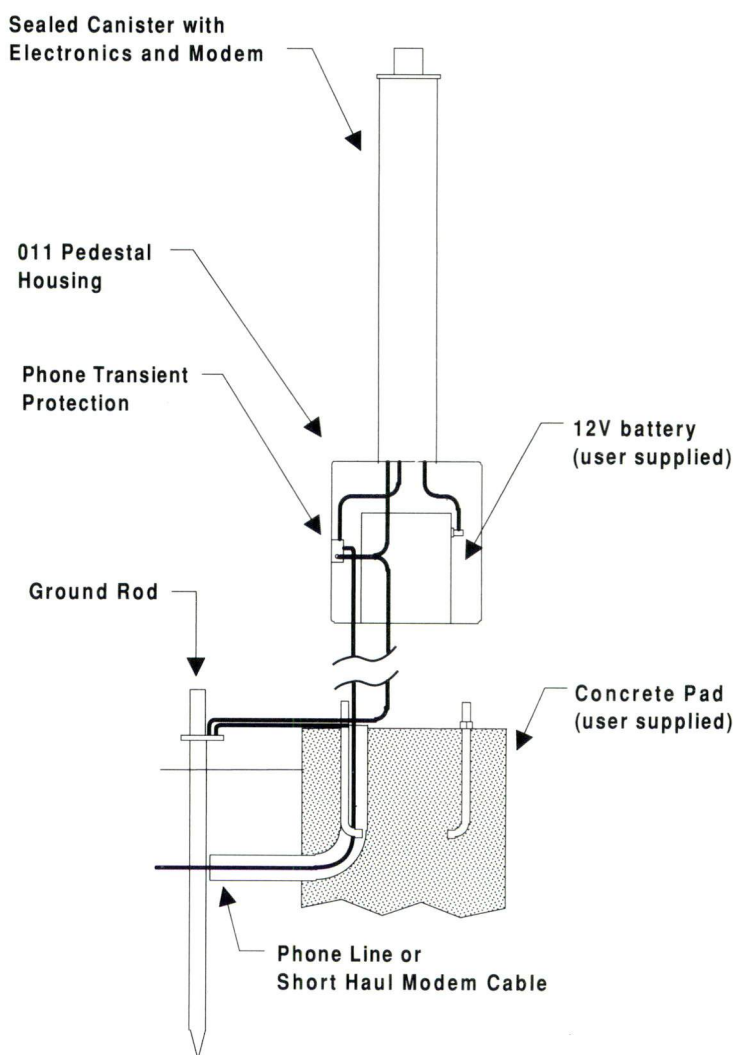
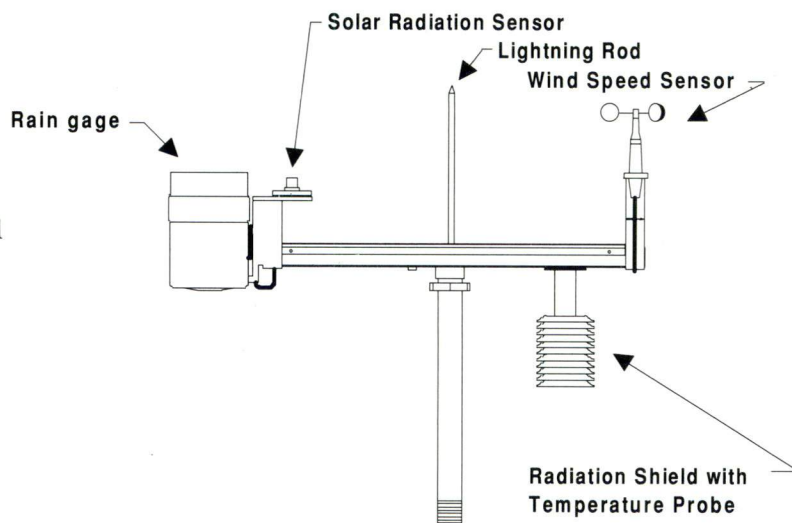
### Daily Outputs

- Day of Year
- Time (hr:min)
- Station ID Number
- Battery Voltage
- Maximum Temperature
- Minimum Temperature
- Total Solar Radiation
- Total Rainfall (inches)
- Total Wind Run (miles)
- Minimum Canister Temperature (F)
- Maximum Canister Temperature (F)
- Maximum Canister Moisture
- Program Signature

## Additional Information

Although the 011 weather station is primarily used in conjunction with the GOSSYM-COMAX model, information derived from the station can be used to maintain climatological records, verify meteorological conditions for pesticide application, or monitor real-time weather conditions. Specific questions regarding operation of the GOSSYM-COMAX model should be directed to:

GOSSYM-COMAX Information Unit (GCIU)  
102 Mississippi Technology Center  
Starkville, Mississippi 39759  
(601) 323-3392



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