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# Automatic SYNOP Stations

## Satellite and RF Telemetry Stations for Meteorology and Hydrology

Delairco's SYNOP Stations are designed to automatically collect synoptic data and transmit SYNOP and SPECI messages in WMO formats. The messages are transmitted via geostationary satellite, RF telemetry, or land-line modem to a central computer or national network system. The stations can operate in a fully autonomous mode without human intervention. If an observer is present, the station can be connected to Delairco's *Weather Advisor* software for local entry of routine measurements. The SYNOP Station is the ideal field system for implementing a national meteorological and hydrological network.

The SYNOP Station is based on Delairco's MicroDCP, an advanced data acquisition platform. The MicroDCP acquires data from attached sensors, checks the quality of the data, then processes the data, constructs the appropriate message, and transmits the message at the specified time or upon request. The typical configuration measures wind, temperature, humidity, pressure, precipitation, and solar radiation. Additional sensors can be added to measure evaporation, soil moisture and temperature, diffuse and net radiation, clouds, visibility, precipitation type, and other parameters.

The station automatically assembles the SYNOP and SPECI messages according to your regional and national requirements. Message templates can be modified if there is a change in WMO formats, or if you require different types of reports for your network.



Autonomous SYNOP Station with geostationary satellite transmitter and solar electric power supply.

Data messages can be transmitted by satellite, RF telemetry, or land-lines. Your station can be set up to transmit to GOES, GMS, or METEOSAT geostationary satellites, or to any modern communications satellite orbiting in your region. If your network requires RF communications, then a UHF, VHF, HF, or microwave transceiver can be ordered with your station. The least expensive transmission method is by land-line, with either a telephone modem or limited distance modem.

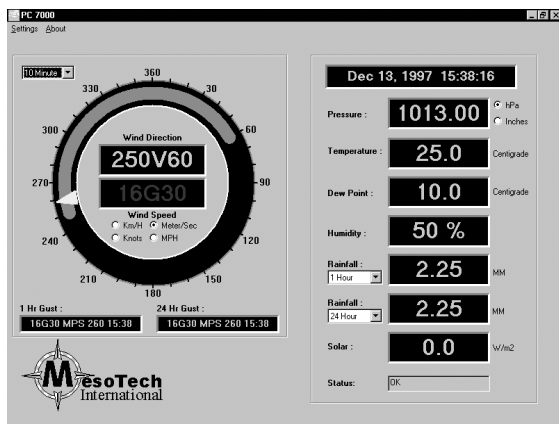
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# Delairco

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The SYNOP Station can be ordered with either an AC/DC power supply or a solar electric generator. The AC/DC power supply operates on any international power from 90 to 260 VAC, 50/60 Hz. A battery backup UPS can be ordered. The solar electric generator is a self-contained unit with solar panels, charging regulator, battery, battery shelter, and support structure. Delairco can assemble a solar subsystem that will service the power required by your station with the energy available at your specific site.

Delairco's *Weather Advisor* software can be used to monitor real-time data and augment the routine reports generated by the SYNOP Station. This software is the ideal companion for any station employing the MicroDCP for data collection. The software runs on a MS Windows 95/98/NT/2000 computer connected to the local MicroDCP. It will display data in a graphical format, log data and reports, and forward data and messages to your central computer network.



Main display page from PC7000 *Weather Advisor* software running on a MS Windows computer.



MicroDCP, digital barometer, and satellite transmitter in stainless weatherproof

### Technical Specifications and Options

- Processor: Delairco's MicroDCP
- Sensor types: Unlimited number per station  
Analog and serial digital (including SDI-12)  
Unlimited number of sensors per station
- Typical sensors: Wind speed and direction, air temperature, relative humidity, dew point temperature, atmospheric pressure, ground temperature, soil moisture, precipitation amount and type, evaporation, water level, sunlight duration, solar radiation, cloud height, visibility, others
- Sensors per MicroDCP: 10 analog type, 3 pulse type, 4 serial type, 1 8-bit parallel type, and one SDI-12 port.  
Channel multiplexer available for expansion
- Reports: SYNOP, SPECI standard, others as options
- Recording: Analog or digital chart recorder (8 channels)  
Line printer or page printer
- Alarms: High/Low, 2 drivers, 8 digital I/O
- Communications: GOES, GMS, METEOSAT satellites  
VHF, UHF, HF line-of-sight telemetry  
Microwave and Inmarsat C, D+, nM  
Telephone and limited distance modems
- Tower: Portable tripods, pole masts, structural towers, and cyclone towers.
- Power: AC power supply 90 to 260 VAC, 50/60 Hz.  
Battery backup UPS.  
Solar electric generator
- Operation: -40 to +60 °C ambient temperature range  
100% relative humidity, weatherproof
- Maintenance: Built-in tests with maintenance port
- Display: Digital panels, VDU terminals
- Analysis: Delairco's *Weather Advisor Software*