LOAD FORECASTING WEATHER STATION

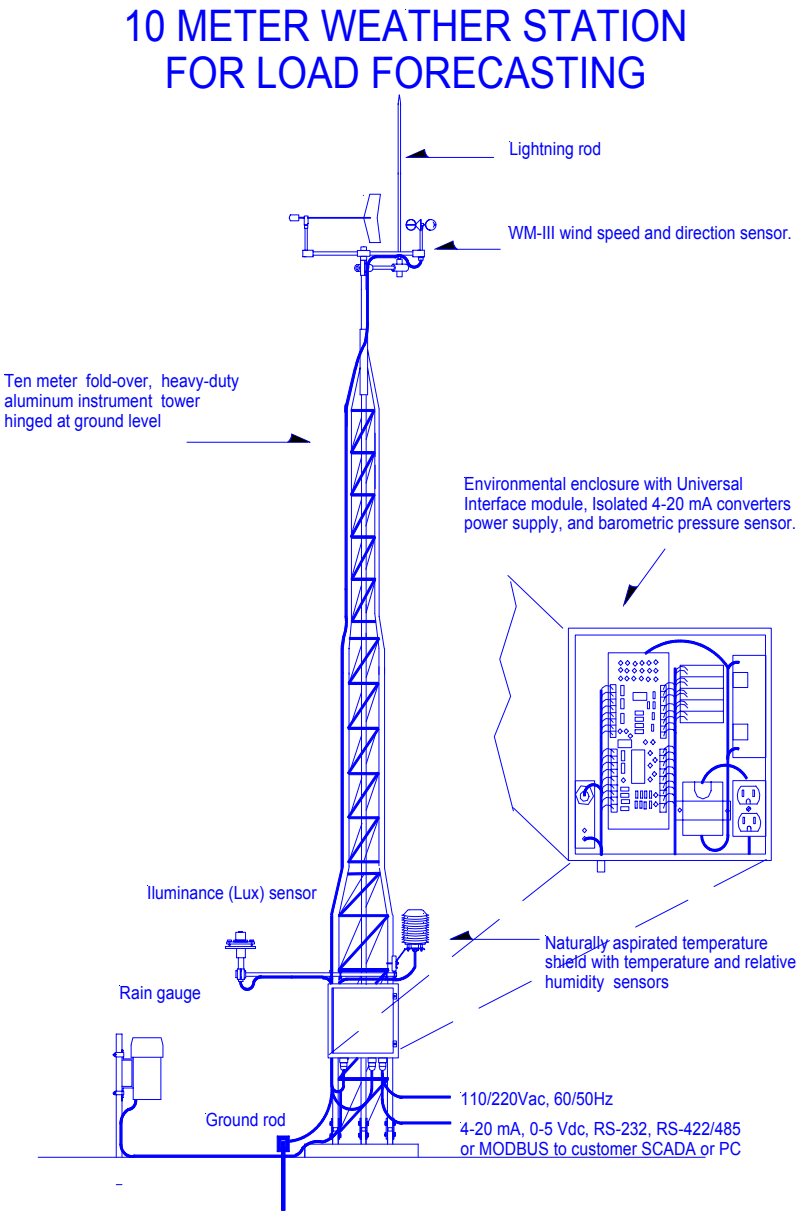
FEATURES

- **Complete Integrated System**
- **Reliable, Proven Sensors**
- **Current Loop Output to DCS**
- **Optional MODBUS protocol**
- **Low Power CMOS Design**

The weather has a major impact on electric utilities and their requirements for electric power generation. Utilities base their daily generation on a load forecast of power demand in the regions they serve. A load forecast predicts the power demand based on the time of day, season, and weather. The load demand is most sensitive to ambient temperatures followed by dew point temperatures, cloud amounts, precipitation, and winds.

Electric generation companies are no longer regulated by state utility commissions, and are trying to lower their generation costs by increasing operating efficiencies and system reliability. By knowing the weather in their service territories with greater accuracy and geographic resolution, electric generators will be able to use these data to optimize their generation mix and manpower requirements.

Climatronics' Load Forecasting Weather Station is designed to provide the electric generation company with all the data they need about the weather. The system uses reliable and accurate sensors to measure the weather variables of interest. The sensors are connected to the Universal Interface Module (UIM), which is housed in a weatherproof enclosure. The UIM supplies excitation signals to the sensors and converts the sensor output signals to proportional linear voltages which are then converted to isolated 4-20 mA current loop signals.



ORDERING INFORMATION

The basic Load Forecasting Weather System consists of the following items:

1	1	102083-G0-H0	WM-IIIA WIND SPEED/DIRECTION SENSOR
2	1	102090	TEMPERATURE SENSOR ASSEMBLY
3	1	102445	HUMIDITY PROBE ASSEMBLY
4	1	102080	MULTI-PLATE RADIATION SHIELD
5	1	100508-G0	PRECIPITATION GAUGE, 6-INCH
6	1	102483	ILLUMINATION SENSOR ASSEMBLY
7	1	101096-G1	RADIATION SENSOR MOUNT
8	1	101069	TOWER BOOM
9	1	100609-50	WM-III WIND CABLE
10	1	102087-50	TEMPERATURE CABLE
11	1	102447-50	HUMIDITY CABLE
12	50	M3226	CABLE, DATA, PRECIPITATION
13	1	102321-50	SOLAR RADIATION CABLE
14	1	101779-G1	PREWIRED JUNCTION BOX
15	1	7841	TRIPLE NOTCH MOUNTING BRACKET
16	1	102278	UNIVERSAL INTERFACE MODULE (UIM)
17	1	102278G0	ANALOG OUTPUT OPTION FOR UIM
18	3	Q501-2B04	TWO CHANNEL, TWO WIRE TRANSMITTER
19	1	G408-0001	DC INPUT SIGNAL CONDITIONER (FOR ILLUMINATION SENSOR)
20	1	101996-G1	POWER SUPPLY
21	2	101904	SIGNAL LINE SURGE PROTECTOR
24	1	415	AC SURGE PROTECTOR (115V)
25	1	C33HD-G0-H2	TOWER, HEAVY DUTY 33ft w/MOUNT
26	1	100924-G0-30	FULL HEIGHT GROUNDING KIT
27	1	ENGR.CHARGE	SYSTEM INTEGRATION & DOCUMENTATION
28	1	MANUAL-N/C	SYSTEM MANUAL - NO CHARGE

The data will be will be output from the Load Forecasting Weather System with the following engineering units:

Wind Speed:	0 - 125 mph
Wind Direction:	0° – 360°
Air Temperature:	-25° to +125°F
Relative Humidity:	0 – 100 percent
Precipitation Accumulation:	0.01-in increments
Illumination:	0 - 200 kLux

The equipment list includes a ten-meter tower and lightning grounding kit to mount the instruments of the Load Forecasting Weather Station. These can be provided by the customer.

Climatronics has developed and is producing a sonic anemometer of novel design that can replace traditional cup anemometers and wind vanes. We call this sensor the Sonimometer™. This sensor can replace the Wind Mark III wind speed and direction sensor that is included in the equipment list above.

The Sonimometer™ brings to the meteorological sensor user several advantages over both mechanical and other solid-state sensors. With no moving parts, it requires no periodic maintenance, lowering the user's life-cycle costs. Our unique design means that it can tolerate a build-up of dirt, dust, snow, or other foreign matter in the sensing volume without measurement degradation. The design also improves accuracy since there are no 'arms' supporting the transducers to move, vibrate, or to provide roosts for birds. The digital output of the Sonimometer™ also means that there will be no conversion (A-D) or line-loss errors. Our low power consumption makes the Sonimometer™ ideal for remote, battery-powered monitoring stations.

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