

July 31, 1999

CABLE FREE WEATHER STATION MODEL: WMR918 USER'S MANUAL

SECTION 1 INTRODUCTION

Congratulations on your purchasing the WMR918 Cable Free Weather Station. An all-purpose easy-to-use system, the WMR918 lets you monitor the following weather elements:

- Air temperature
- Relative humidity
- Barometric pressure
- Wind speed and direction
- Rainfall

The WMR918 is also equipped with:

- RF calendar clock with daily alarm
- Weather forecast within __ to __ km (20- to 30-mile) radius
- Weather alarms
- Memory for maximum and minimum readings
- Simple, touch-screen operation

STANDARD PACKAGE

The original WMR918 comes complete with the following:

- Main unit
- Anemometer
- Thermo-hygrometer
- Rain guage
- Baro-thermo-hygro sensor

The following sensor is also optional for your own purpose

- Thermo-hygro sensor
- Thermo sensor

Contact an authorized dealer for these optional items.

The anemometer, thermo-hygrometer and rain guage are powered by separate solar transmitters.

The WMR918 can support up to six different remote instruments and an optional data logger. Contact an authorized dealer for optional items.

July 31, 1999

RF DATA LOGGER (OPTIONAL)

You can obtain a DL918 RF Data Logger to receive data from individual sensors. It can be used as a standalone device to store data up to one month or be connected to a computer via RS232C connection.

SECTION 2 INSTALLATION

The WMR918 operates at 433MHz. No wire installation is required among units.

The WMR918 has an effective range of 100 meters. Position the units within the range and be sure the transmission path is clear of interference and obstacles.

Note the anemometer, therm-hygrometer and rain gauge should be installed outdoors and in locations that best measure the weather elements the instruments are designed for.

[Illustration: an artist's perception]

THE ANEMOMETER

The anemometer measures wind speed and direction. It should be placed outdoors. To install it,

1. Mount the anemometer and its solar transmitter safely in place. Be sure the anemometer faces south. [Illustration]
2. Align the marks on the shaft of the wind vane. [Illustration]
The wind speed and direction window on the main unit should read 180 if the main unit is installed.

You can also insert 2 alkaline UM3 or AA-sized batteries into the solar transmitter for backup purpose.

THE THERMO-HYGROMETER

The thermo-hygrometer measures outdoor temperature and humidity. It should be placed outdoors.

To install it, mount the thermo-hygrometer and its solar transmitter safely in place. [Illustration]

You can also insert 2 alkaline UM3 or AA-sized batteries into the solar transmitter for backup purpose.

July 31, 1999

THE RAIN GUAGE

The rain guage measures the rate of rainfall. It should be placed outdoors.

To install it, mount the rain guage and its solar transmitter safely in place.
[Illustration]

You can also insert 2 alkaline UM3 or AA-sized batteries into the solar tansmitter for backup purpose.

THE BARO-THERMO-HYGRO SENSOR

The baro-thermo-hygro sensor measures the atmospheric pressure, temperature and humidity. It should be placed indoors.

The sensor uses 4 UM4 or AAA-sized batteries. To install it,

1. Insert alkaline batteries accordingly. [Illustration]
2. Mount the unit where you want to monitor the readings. [Illustration]

THE MAIN UNIT

The main unit gives you all the readings and controls. It should be placed indoors.

The main unit uses eight UM3 or AA-sized batteries. To install it,

1. Position the main unit and other units within effective range (100 meters).
2. Insert alkaline batteries. [Illustration]
3. Mount the main unit safely in place.
4. Press the RESET button on the main unit to initiate operation.

The main unit will start searching for signals for about a minute. Upon successful reception, the readings will be displayed. The main unit will update the readings at 30-second intervals.

The main unit has a power jack and RS232 connector for you to connect an optional power adapter and hook up to a computer. These optional units are not required for the normal operation of the system.

LOW BATTERY WARNING

There are low-battery indicators for the main unit, rain guage, baro-thermo-hygrometer, thermo-hygro sensor and thermo sensor. Replace the batteries immediately when the respective indicator lights up.

July 31, 1999

SECTION 3 OPERATION

THE MAIN UNIT

[Illustration: close-up of display]

Labels

- WEATHER FORECAST AND BAROMETRIC READING WINDOW
- INDOOR TEMPERATURE WINDOW
- INDOOR HUMIDITY WINDOW
- INDOOR/OUTDOOR TEMPERATURE WINDOW
- INDOOR/OUTDOOR HUMIDITY WINDOW
- RAINFALL WINDOW
- RF CALENDAR CLOCK AND DAILY ALARM WINDOW
- WIND SPEED AND DIRECTION WINDOW
- CHANNEL BUTTON
- MEMORY BUTTON
- ALARM BUTTON
- SET BUTTON
- UNIT BUTTON
- ALARM ON/OFF BUTTON
- UP BUTTON
- DOWN BUTTON
- RESET BUTTON

THE CALENDAR CLOCK

The calendar clock is radio-controlled. It automatically synchronizes its current time and date when it is brought within an approximate 1500km radius of the radio signal generated from Frankfurt, Germany (DCF77).

You can also set the calendar clock manually. To do so,

1. Press the RF calendar clock and alarm window.
2. Press and hold SET.
3. Use UP and DOWN to enter the desired value.
4. Press SET.
5. Repeat from Step 3 to finish all the settings for the clock, calendar, display formats, alarm clock and display language of the day-of-the-week. You can choose English, French, German, Italian or Spanish.
6. Press SET to confirm.

July 31, 1999

To change between the clock and the calendar,

1. Press the RF calendar clock and alarm window.
2. Press UP or DOWN.

THE DAILY ALARM

Once set, the alarm clock will be activated automatically and the alarm indicator will light up. When an alarm goes off, press any button to stop it. The alarm is still active and will go off again the next day.

To deactivate the function,

1. Press the RF calendar clock and alarm window.
2. Press ALARM ON/OFF. The alarm indicator will disappear.

ABOUT RADIO RECEPTION

Whenever the WMR918 is brought within range of the radio signal, its radio-control mechanism will override all manual settings.

The radio reception indicator will blink. A complete reception generally takes two to 10 minutes, depending on the strength of the radio signal.

The indicator will stop blinking when the reception is complete. The strength of reception for the last full hour will be shown:

[Illustration: STRONG, WEAK, NO SIGNAL, RECEIVING]

To disable the radio reception function,

1. Press the RF clock, calendar and alarm window.
2. Press and hold DOWN to turn off the radio reception indicator.

To enable the function again,

1. Press the RF clock, calendar and alarm window.
2. Press and hold UP to turn on the radio reception indicator.

WEATHER FORECAST

The weather forecast is automatically displayed in the weather forecast and barometric reading window.

There are four readings for the forecast: sunny, slightly cloudy, cloudy and rainy.

[Illustration]

July 31, 1999

INDOOR BAROMETRIC READING

The atmospheric pressure reading is displayed in the weather forecast and barometric reading window.

The pressure reading can be displayed in mb, hPa, inHg or mmHg. To select the display unit,

1. Press the weather forecast and barometric reading window.
2. Press UNIT.
3. Press UP or DOWN for the desired unit.
4. Press UNIT to confirm.

The pressure history for the past 24 hours is displayed in a six-column bar chart.

To display the pressure reading for a particular hour within the past 24 hours,

1. Press the weather forecast and barometric reading window.
2. Press MEMORY.
3. Press UP or DOWN for the desired hour.

To set the sea-level pressure,

1. Press the weather forecast and barometric reading window.
2. Press and hold SET.
3. Press UP or DOWN for the desired setting.
4. Press SET to confirm.

INDOOR TEMPERATURE

The current indoor temperature, taken by the indoor baro-thermo-hygro sensor, is displayed on the indoor temperature window. It can be displayed in degree Centigrade (C) or Fahrenheit (F). To select the display unit,

1. Press the indoor temperature window.
2. Press UNIT.
3. Press UP or DOWN for the desired unit.
4. Press UNIT to confirm.

July 31, 1999

To display the maximum and minimum recorded temperatures,

1. Press the indoor temperature window.
2. Press MEMORY.
3. Press UP or DOWN.

To clear the memory,

1. Press the indoor temperature window.
2. Press and hold MEMORY.

INDOOR HUMIDITY

The current indoor relative humidity, taken by the indoor baro-thermo-hygro sensor, is displayed on the indoor hygrometer window. To display the maximum and minimum humidity in record,

1. Press the indoor humidity window.
2. Press MEMORY.
3. Press UP or DOWN.

To clear the memory,

1. Press the indoor humidity window.
2. Press and hold MEMORY.

INDOOR/OUTDOOR TEMPERATURE

The temperature readings taken by the outdoor thermo-hygrometer and separate thermo and thermo-hygro sensors are displayed on the indoor/outdoor temperature window.

As this window can display up to four different sets of data, specify the instrument or channel you want to read. To do so,

1. Press the indoor/outdoor temperature window.
2. Press CHANNEL to go from the outdoor reading taken by the thermo-hygrometer to those taken by separate sensors (Channel 1, 2 or 3).

July 31, 1999

The temperatures can be displayed in degree Centigrade (C) or Fahrenheit (F). To select the display unit,

1. Press the indoor/outdoor temperature window.
2. Press CHANNEL for the desired instrument or channel.
3. Press UNIT.
4. Press UP or DOWN for the desired unit.
5. Press UNIT to confirm.

To display the maximum and minimum recorded temperatures,

1. Press the indoor/outdoor temperature window.
2. Press CHANNEL for the desired instrument or channel.
3. Press MEMORY.
4. Press UP or DOWN.

To clear the memory,

1. Press the indoor temperature window.
2. Press CHANNEL for the desired instrument or channel.
3. Press and hold MEMORY.

INDOOR/OUTDOOR HUMIDITY

The relative humidity readings taken by the outdoor thermo-hygrometer and separate thermo-hygro sensors are displayed on the indoor/outdoor humidity window.

As this window can display up to four different sets of data, specify the instrument or channel you want to read. To do so,

1. Press the indoor/outdoor humidity window.
2. Press CHANNEL to go from the outdoor reading taken by the thermo-hygrometer to those taken by separate sensors (Channel 1, 2 or 3).

To display the maximum and minimum recorded humidity,

1. Press the indoor/outdoor humidity window.
2. Press CHANNEL for the desired instrument or channel.
3. Press MEMORY.
4. Press UP or DOWN.

To clear the memory,

1. Press the indoor humidity window.
2. Press CHANNEL for the desired instrument or channel.
3. Press and hold MEMORY.

July 31, 1999

RAINFALL

The rainfall can be displayed in mm/hr or in/hr. To select the display unit,

1. Press the rainfall window.
2. Press UNIT.
3. Press UP or DOWN for the desired setting.
4. Press UNIT to confirm.

Generally the total rainfall from the last cleared date will be displayed. To display the previous day's rainfall,

1. Press the rainfall window.
2. Press DOWN.

To clear the total rainfall,

1. Press the rainfall window.
2. Press and hold MEMORY.

WIND SPEED AND DIRECTION

The wind speed and direction are displayed in the wind speed and direction window.

The wind speed can be displayed in m/s, kph, mph or knots. To select the display unit,

1. Press the wind speed and direction window.
2. Press UNIT.
3. Press UP or DOWN for the desired unit.
4. Press UNIT to confirm.

To display the maximum speed for gust wind in record,

1. Press the wind speed and direction window.
2. Press MEMORY.

To clear the record,

1. Press the wind speed and direction window.
2. Press and hold MEMORY.

As for the wind direction, it is displayed in a digital compass with bearing readouts.

July 31, 1999

WEATHER ALARMS

Weather alarms are used to alert you to certain weather conditions. Once activated, the alarm will go off when a certain reading is met.

You can set alarms for:

- Indoor and outdoor high temperatures
- Indoor and outdoor low temperatures
- Indoor and outdoor dew point approaching
- Indoor and outdoor high humidity
- Indoor and outdoor low humidity
- High rainfall
- Pressure drop
- Gust wind
- Wind chill

To set a weather alarm,

1. Press the window containing the weather element you want to set.
2. Press ALARM. The current alarm setting will be displayed.
3. Press and hold SET.
4. Press UP or DOWN for the desired setting.
5. Press SET.

The weather alarm is activated once set. When a weather alarm goes off, press any button to stop the alarm. The alarm is still active until deactivate the function. To do so,

1. Press the window containing the weather element you want to set.
2. Press ALARM.
3. Press ALARM ON/OFF to deactivate the function.

To turn on the function again, simply follow the same procedure and press ALARM ON/OFF.

To setTo activate/deactivate
ALARM, SET, ALARM ON/OFF

DISCONNECTED SIGNALS

If without obvious reason the display for the main unit goes blank, press and hold CHANNEL to enforce an immediate search.

July 31, 1999

If that fails, check:

- The remote rain collector is still in place.
- The batteries of the main unit and rain collector are still good. Replace them if necessary.
- The transmission is within range and path is clear of obstacles and interference. Shorten the distance if necessary.

Then press and hold CHANNEL again.

THE RESET BUTTON

This button is only used when the system is operating in an unfavorable way or malfunctioning. Use a blunt stylus to hold down the button. The main unit will start searching for signals again.

PRECAUTIONS

- Read the user's manual thoroughly.
- Do not subject the units to extreme force, shock, dust, temperature or weather conditions.
- Do not tamper with the units' internal components.
- Do not mix fresh and old batteries, or batteries of different specifications.

NOTE ON COMPLIANCE

This product complies to standards and specifications of BZT, FCC and article number 334 of PTT.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

July 31, 1999

- Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- Consult the dealer or an experienced radio/TV technician for help.