

MS-100 Weather Station Quick-start Guide

57-6040 Rev L

Station Serial Number**Cell Phone IMEI****Initial SIM Card****Your Weather Station Phone Number**

Cell Phone Note

Weather Stations include an embedded cell phone. Weather stations shipped to US domestic customers are typically shipped with an activated cell phone and provisioned account. In these cases, no action is required.

For customers outside the US, stations are shipped without cell phone service. Users will need to acquire a provisioned SIM card one from a local cell phone network with 3G (GSM/HSPA) or 4G (LTE) service.

Typical usage requires 10 MB (megabytes) of data per month and approximately 100 SMS (text messages). Some users may require more SMS.

The cell phone modules require a microSIM (3FF) card.

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Manufacturer

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I.0 MS-100 INTRODUCTION

1.1 Scope

This document is an abbreviated description of station setup and configuration. Refer to the detailed sections in this manual or to sensor documents for further information.

The information contained in this manual is advisory only. Users are responsible for their own safety and the installation requirements for their application.

Dyacon meteorological (met) stations are based on a control unit, or data logger, that acts as the “brains” of the weather station. All sensors, power, and I/O devices connect to the control module (CM).

CM-1 is a component of MS-100 series weather stations with several pre-configured version: MS-120, MS-130, MS-135, MS-140, and MS-150. These stations differ principally by the sensors that are pre-configured with the control module. Users may add, remove, or replace sensors as their needs change.

This manual briefly covers site selection, station assembly, and general operation of CM-1. Detailed information is provided in the respective product manuals.

Users should download the CM-1 Weather Station Control Module manual from Dyacon.com. The manual is located in the documents section of the weather stations or controller page.

Videos are also available demonstrating the assembly and configuration tasks.

2.0 CONFIGURATION DATA FORM

Collecting the following information will help during configuration of the weather station controller.

Parameter	Value	Notes
Station ID		User-defined text field used to identify the station in text messages and log files.
Logging Interval	1, 2, 5, 10, 15, 20, 30, 60 min	10 min log interval = 10 months of data.
Station Altitude*	meters	
DyaconLive↓	1, 2, 5, 10, 15, 20, 30, 60 min	10 min interval recommended.
Weather Underground ID**		
Weather Underground Password		
Weather Underground Rate	10, 15, 20, 30, 60 min	
Email To**		
Email From		
Email User Name		
Email Server		
Email Password		
Email Port	2525	MS-100 series does not use SSL/TLS
FTP User**		
FTP Server		
FTP Password		
Service Cell		Service Technician cell phone number to which service alerts will be sent. (This can only be configured with a text message.)

*Absolute air pressure is normalized to mean sea level. Altitude is required for this calculation. Leave at zero (0) for absolute air pressure reported to Weather Underground and SMS text messages.

↓ DyaconLive is a webportal for Dyacon weather stations that charts measurement data and operational parameters of the weather station. Contact Dyacon for your unique login.

** Feature implementation not required. See the respective section for more information on the feature.

Users may find it convenient to configure the controller on the bench before placing it in the field. To do so, merely plug in the battery and operate the unit without sensors attached. Everything but, Set North, can be done on the bench.

3.0 MECHANICAL SETUP AND INSTALLATION

3.1 Required Tools

Installation tools depends on the mounting location. For purposes of this manual, it is assumed that CM-1 will be used with Dyacon MS-100 weather stations and mounted on Dyacon Tripod-1.

Control Module

8 mm (5/16 inch) socket for band clamps

Phillips #2 driver for Control Module cover

0.10" to 0.13" (2.5 mm to 3.5 mm) wide slotted driver (**included with control module**) for screw terminals

Tripod

5 mm (3/16 inch) nut driver (**included with tripod**) or open-end wrench for guy cable clips.

8 mm (5/16 inch) open-end wrench for turnbuckle lock nuts.

Hammer for stakes or tools appropriate for other mounting method, as required.

WSD-1

Phillips #2 driver to attach wind vane and pole set screw

TPH-1

8 mm (5/16 inch) socket or slotted driver for band clamps

Crossover

8 mm (5/16 inch) socket or slotted driver for band clamps

Solar Panel Bracket

8 mm (5/16 inch) socket or slotted driver for band clamps

Rain Gauge

8 mm (5/16 inch) socket or slotted driver for band clamps on bracket

Depending on the rain gauge,

- Large, gray or black body, 8 inch orifice, Hyquest
 - 4 mm (5/32 inch) hex wrench (**included with gauge**) to remove rain gauge top.
 - 13 mm (9/16 inch) open-end wrench or adjustable wrench for leveling screws.
- Small, white body, 6 inch orifice
 - 8 mm (5/16 inch) socket

Other

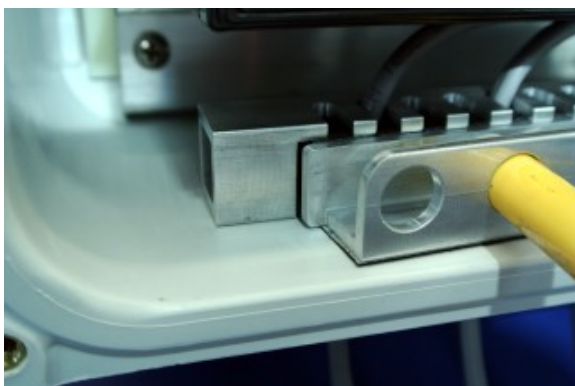
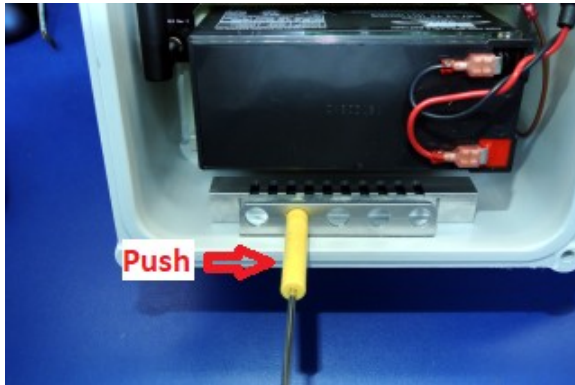
Wire cutters for electrical cable prep and cable ties

Wire stripper for 24 AWG to 22 AWG wire

3.2 EZ Cable Clamp

Dyacon EZ Cable Lock™ is a high-density cable pass-through system that allows for cables to be inserted into an enclosure with the connector attached. Up to 10 cables can be installed.

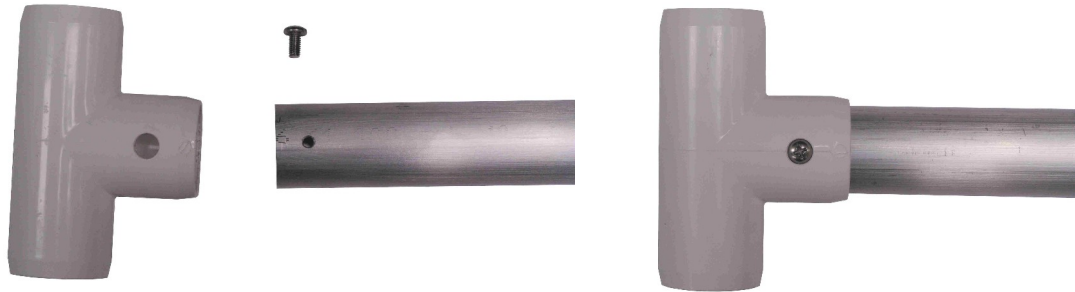
The cable clamp also provides some strain relief. User can add cable ties around the cable for additional strain relief.



3.3 TPH Support Pipe Assembly

The horizontal pipe that is used to support the TPH (Temp-Pressure-Humidity) sensor and radiation shield may be shipped with the passive aspiration Tee in a disassembled state.

The following instructions describe the assembly of the PVC Tee to the pipe.



1. The Tee may be separate from the pipe.
2. Remove the screw.
3. Slip the Tee over the pipe and replace the screw.



3.4 Initial Tripod Assembly

The following is a summarized setup procedure. Videos are available at Dyacon.com or on the Dyacon YouTube channel.

1. Erect Dyacon Tripod-1 **with only one mast segment in place**. This is typically the as-shipped condition.
2. Loop guy cables over top of mast.



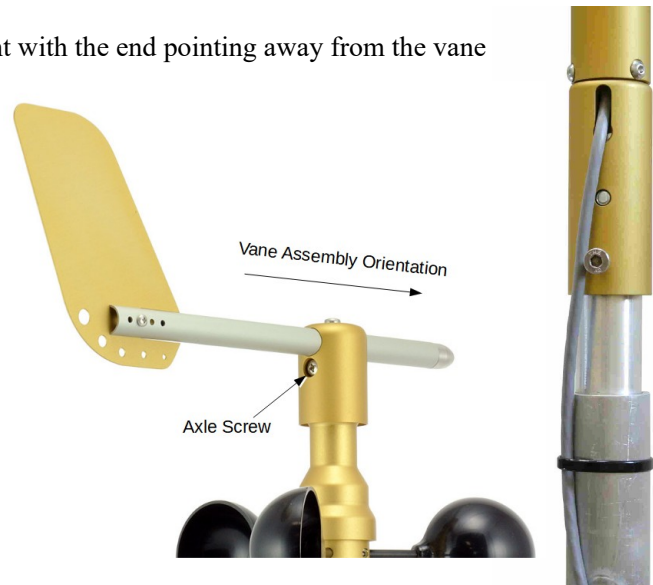
3.5 Initial Wind Sensor Assembly

3.5.1 WSD-1

1. Remove the Vane axis screw.
2. Insert the vane and counter weight with the end pointing away from the vane axle screw hole.
3. Insert and tighten the axis screw.
By default, the sensor mounting screw faces south.
4. Attach WSD-1 to top of mast.

Orientation does not matter. The North alignment position will be set electronically in a later step.

Do NOT raise the mast until after North is set.



3.5.2 UA-1

The orientation of the UA-1 must be set by physically orienting the body of the anemometer.

1. Slide the mounting adapter over the pipe.
2. Align the body of the wind sensors to orient north.

For convenience, an alignment hole is provided. When a rod is inserted, it points south. When aligning the anemometer, users will stand on the south side of the anemometer looking north.

The alignment hole is sized to accept a large drinking straw.

3. Tighten the band clamp using the slotted screw driver or nut driver.



3.6 Attach Equipment to Tripod

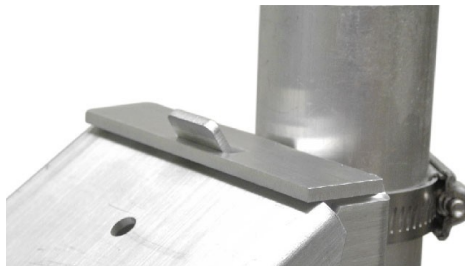
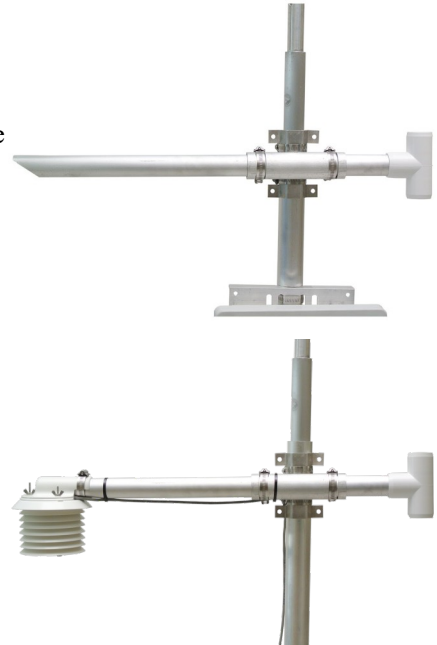
1. If not already installed, attach crossover to the top of the center mounting pipe (tripod hub) and secure with two band clamps.

The solar module mounting bracket can be secured on the opposite side of the pipe with the same band clamps as used for the crossover. The solar module bracket should be positioned toward the south, if in the northern hemisphere or toward the north if in the southern hemisphere.

2. Attach CM-1 enclosure below the crossover using two band clamps.
3. Insert pipe into horizontal fitting of the crossover and tighten with two band clamps.
4. Fit TPH-1 onto end of horizontal pipe and tighten band clamp.
5. Attach solar sensor (optional sensor) to bracket the top of the radiation shield using two of the wing nuts.

The cable leaving the solar sensor should be directed to the north.

6. Seat solar panel onto mounting bracket with the tab inserted into the top slot.



3.7 Rain Gauge Installation

1. If using RGTB-6 or -7, bury rain gauge pipe.
2. Mount rain gauge to top of pipe.



3. If using RGTB-525, it can be mounted to a leg, the mast, or crossarm of the tripod. It can also be mounted to a separate post.



4. Remove the top of the rain gauge to access the bullseye bubble for leveling.
5. **Remove the rubber band securing the tipping mechanism.**

3.8 Connect Sensors

1. Open the control module by loosening the two front cover screws.
2. Feed each sensor cable through cable lock and attach to respective terminals.
3. Plug in the battery connector to the control module connector. (For cable-powered systems, attach 7 VDC to 24 VDC to the Battery connector.)
4. Attached the solar module to the solar power input.
5. **Set North position on the wind vane before raising mast.** (See instructions below.)
6. Attach cable ties to WSD-1 while raising the tripod mast to full height. Place one cable tie every 3 ft (1 m).
7. Bundle excess cable on the outside of the enclosure.
8. Secure cables with cable ties so that they route adjacent to the tripod structure.
9. Configure weather station controller as required, such as setting the name and elevation.

3.9 Set Vane North Position for WSD-1 (Not UA-1)

Do not set North electronically a UA-1 is installed. The north position of UA-1 must be set by rotating the body of the device and lock it with the band clamp. See section 3.5.2 above or UA-1 manual.

Press **Select** will enable Setup mode.

Press ▼ (Down) until Wind Dir is seen.



```
>Setup Wind Dir
```

Press **Select** to enter the Set New North configuration.



```
>Set New North
```

Manually hold or tape the vane in the desired position (magnetic or grid north, depending the application).

Press **Select** to set the position as 0 degrees.



```
North Set
```

Continue holding the vane in the north position to validate the setting.

The display will show “North Set” momentarily, then return to the configuration page.



```
>Set New North  
Clear Setting
```

Pressing **Cancel** twice will exit Setup mode and return to Acquisition mode.

By paging down one position, users will see the direction. The wind direction should show a value near 0 or 360 deg.

Acquisition page after setting north.



```
1.2 m/s @ 0.1 deg  
Gust: 0.0 st: 0
```


4.0 WIRE CONNECTIONS

CM-1 utilizes pluggable terminal blocks. These connectors may be unplugged from the circuit board and wired in a convenient position using a slotted screw driver.

4.1 Wire Stripping and Mounting

Wires should be **stripped to about 7 mm (0.25 inch)**.

Care should be taken to ensure that there are no loose strands when inserting wires.

Screw terminals should be firmly tightened and checked as part of a routine maintenance program.

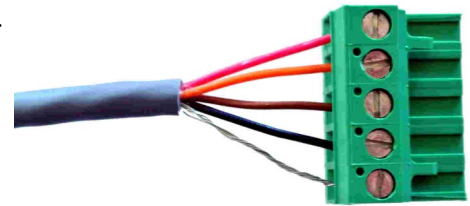


Image 4.1: Wired for Dyacon Control Module



Image 4.2: Typical Installation

4.2 Modbus Expansion Options

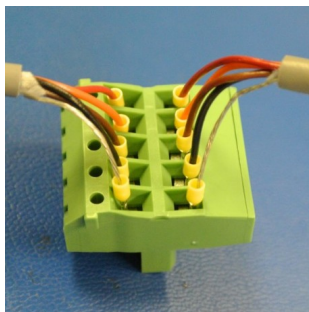
There are several additional sensors for Dyacon weather stations. Modbus sensors, such as LD-1 (discontinued), SMAC-24, and GT-1 that will connect to the same ports as the WSD-1 and TPH-1.

Dual-row Terminal Block

If only one additional Modbus sensor is required, the sensor can be connected using a double-row pluggable terminal block.

In the following images LD-1 is wired in parallel with wind sensor WSD-1.

LD-1 may be wired in parallel with either TPH-1 or WSD-1 sensors.



Junction Box

Alternatively, Dyacon Modbus Junction Box (MJB) can be used.

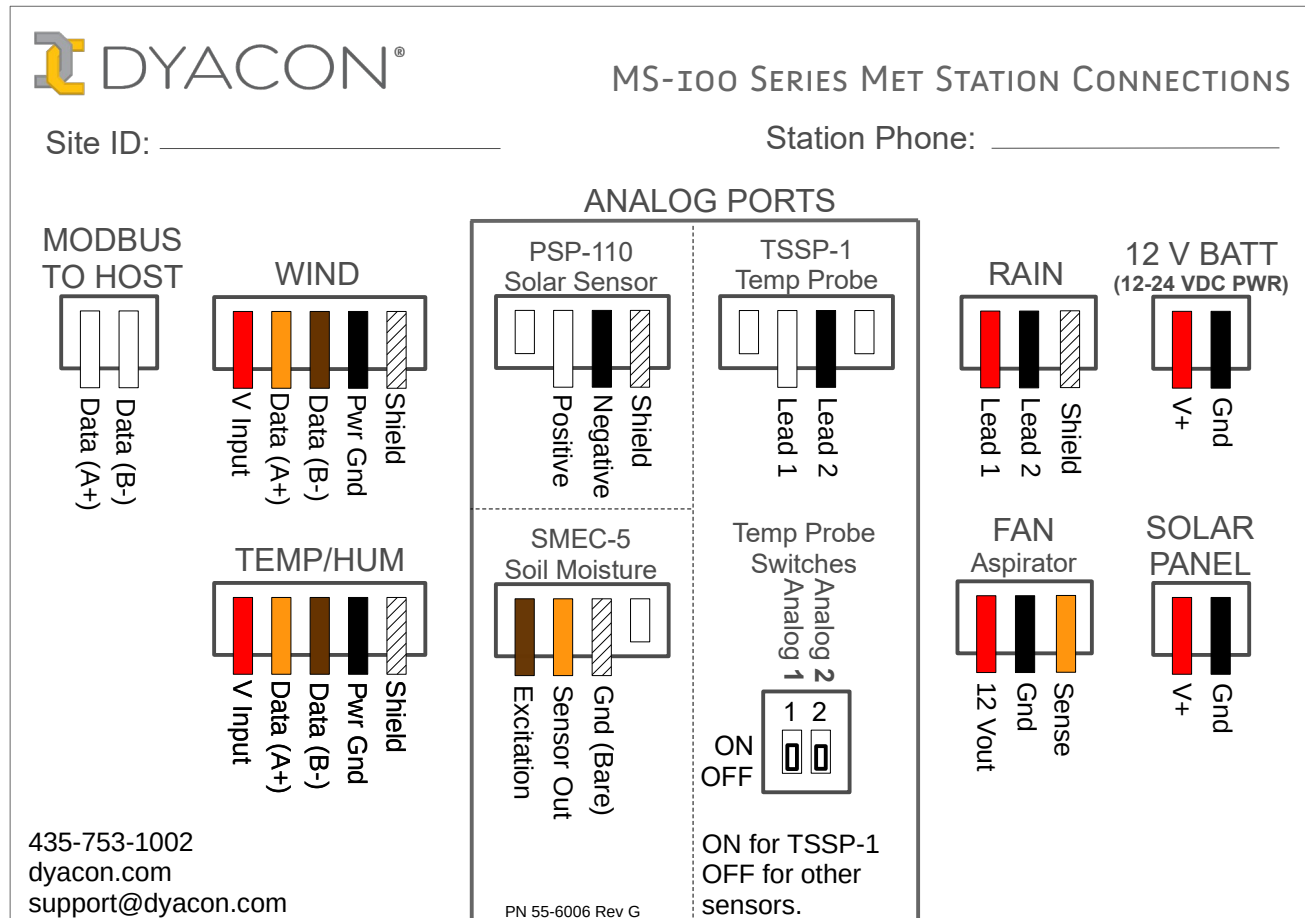
The junction box allows five Modbus sensors to be connected to one of the Modbus sensor ports.

The Junction Box can also be used for when WSD-1 and TPH-1 are mounted remotely from the CM-1 control module. By terminating the two sensors in the junction box, a single cable can be run to CM-1.



4.3 Connection Diagram

A diagram similar to the following is attached to the inside of the CM-1 enclosure. The diagram shows common sensors that may be supplied as part of MS-100 series weather stations. This diagram may be reproduced should the version in the station become damaged.



5.0 CONTROLLER CONFIGURATION

5.1 General Settings

Controller configuration may be done using one of three different methods. The CM-1 manual contains detailed instructions for each.

CM Utility	A Windows application. The PC is connected to the USB port on CM-1
Local User Interface	The controller contains an LCD and four buttons.
SMS	SMS text message command may be sent from a cell phone or online services such as Google Voice.

CM Utility is the easiest method.

4. Set the station ID or name that will be transmitted in text messages and log files.
5. Assign analog port functions to pre-configured sensor options.
6. Set measurement units for wind, temperature, and pressure.
7. Set the north position of wind vane before raising the mast.
8. Set the station elevation in meters.
9. Enable logging and set the interval.
10. Enable DyaconLive and set the interval.
11. If desired, set WeatherUnderground ID and password.
12. Enable WeatherUnderground.
13. Set email and FTP parameters as required.
14. Enable automatic email or FTP of log file under log settings.

All of the above settings, **except North Setting**, may be done through SMS text messages, if a cell phone module is installed and provisioned.

5.2 Set Cell Phone Network

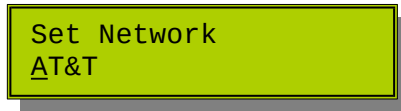
MS-100 weather stations sold to US locations use an LTE cell phone module that can operate on either Verizon or AT&T networks. Typically, this feature is configured by Dyacon during initial configuration.

```
>Network: Verizon
Num:
```

Press **Select** to enter network selection options.

```
Set Network
Verizon
```

Press the ▲ (Up) and ▼ (Down) buttons to select network.



Press **Select** to save the setting.

Global LTE

Beginning with firmware version 235, Dyacon CM-1 supported a cell phone module capable of supporting world-wide LTE networks.

Units configured with the WW module will show the following networks:

- AT&T
- Verizon
- Telus
- Bell
- Global

Users that provide their own SIM will need to select a compatible network.

After changing the network, hard reset CM-1 by removing both solar and battery power.

5.3 Set Service Cell Phone Number

The Service Cell phone number is the phone number to which operational alerts and alarms will be sent.

Setting Description	Code	Setting Values	Notes and Examples
Service Tech Cell Phone Number	SC	1 {Phone Number}	set a5 sc 15551234567 get sc

Configure the service cell phone number by sending the following using a text message. (Substitute the desired cell phone number for the x's.)

```
set a5 sc 1xxxxxxxxx
```

6.0 SMS TEXT MESSAGE COMMANDS AND REPORTS

If installed, the embedded cell phone allows users to request condition reports using an SMS text message.

Several text message reports may be requested using any mobile phone, no smart phone required, and no apps to install.

Text is not case sensitive, sending a 'c' is equivalent to 'C'.

Due to length limitations of SMS text messages, reports may be split into two separate messages, depending on the cell phone carrier and phone used.

Cell phone network propagation delays, network load, and other circumstances may cause some messages to be delayed, but usually responses are received within 30 seconds.

Other reports and full descriptions are provided in the SMS Reports section of this manual.

6.1 Test Dyacon Live Connection

DyaconLive (DyaconLive.com or Dyacon.net) is a weather station portal designed specifically for Dyacon weather stations.

The data connection can be tested using the Setup DyaconLive menu and selecting Test Connection.

Alternatively, a text message command can be used.

SMS Test: **Test dy**

SMS Response:

Testing Dyacon connection

Dyacon upload successful

This test sends an instrument data report to the DyaconLive server. It will be immediately visible on the weather station page.

6.2 Current Condition Report

Basic condition information that will fit in one SMS text message of 160 characters.

SMS Text: **C** or **c**

SMS Response:

```
Current Conditions
Red Cliff
2:00 pm Nov 5 14
1.6 m/s 239.9 deg WSW
Gust 0
14.5 C, 0.3 C
38.4% RH
875.0 mbar Steady
Rain: 0.00 in, 0.00 in/hr
```

6.3 Extended Condition Report

Extended information for analog sensors and calculated values is added to the basic condition report. This message requires two SMS text messages.

SMS Text: **X** or **x**

SMS Response:

```
Extended Conditions
U10
4:43 pm Aug 31 15
9.2 mph 134.9 deg SE
Gust 0
83.7 F, 31.1 F
Heat Index: None
15.0% RH
29.89 inHg
Steady 4:43 PM

– Second Message –

Wet-bulb 53.6 F
Rain: 0.00 in, 0.00 in/hr
Solar: 523 W/m^2
```

6.4 Aviation Reports

6.4.1 METAR

Weather information for aviation applications utilizes a format defined by the International Civil Aviation Organization. The format is compact, but familiar to pilots.

SMS Text: **M** or **m**

SMS Response:

```
*** Advisory ***
METAR Your Station
```

```
141818Z Auto 320006KT 02/02 A2976 RMK AO1 SLP047 Est CB001  
DA043=
```

6.4.2 Simplified Aviation Report

The Simplified Aviation report contains the same weather information as METAR but in a more conventional plain language format.

SMS Text: **A** or **a**

SMS Response:

```
Av Advisory  
My Runway  
1113 HRS 1838 UTC  
330 03KT  
32 F DP 28F  
Alt 30.32 inHg Steady  
EstClouds 900FT AGL  
DA 3,400 FT
```

6.5 Heat Stress Report

Heat stress on people in an environment is a factor of dry-air temperature, humidity, and incident radiation, such as from the sun. The following report contains Humidex (Canadian), Heat Index (US), and Wet-bulb Globe Temperature (if installed). If the combination of temperature and humidity do not yield a value, “None” will be displayed.

SMS Text: **H** or **h**

SMS Response:

```
Heat Stress  
MyStation  
1:52 pm Jun 13 17  
35.2 C  
75.9% RH  
Humidex: 53 C  
Heat Index: 55 C
```

6.6 Test Weather Underground

Rather than waiting for the next automatic report interval, Weather Underground settings may be tested by sending the following command.

SMS Text: **Test wu**

SMS Response:

```
Testing Weather Underground connection  
Weather Underground upload successful
```

A data set will be transmitted to the Weather Underground station ID that has been configured. This data point should be visible on the Weather Underground portal.

If an error message is displayed, record the number and contact Dyacon.

6.7 Email and FTP Test

The email and FTP settings can be check by sending the following command. The station will attempt to send a test message to the configured email or FTP server. An error will be displayed on the controller if the configuration is incorrect of no configuration values have been saved.

SMS Text: **Test data**

SMS Response:

Testing Data Upload

Check your email or FTP server for messages or files sent to the configured server.

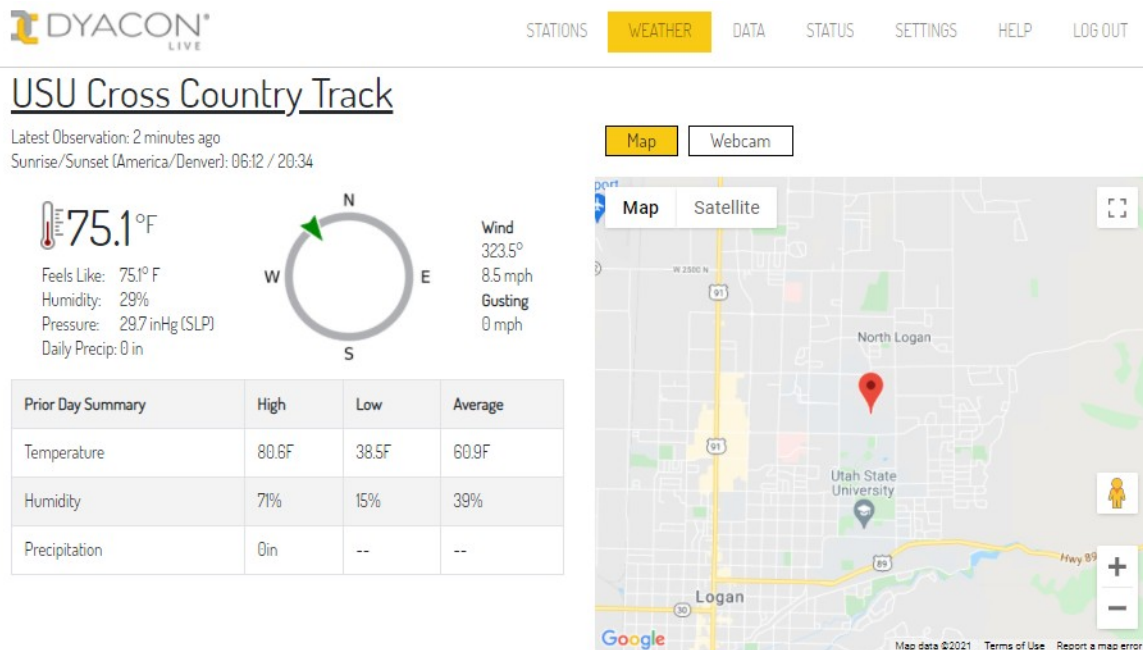
7.0 DYACONLIVE

Data from both cell phone and Wi-Fi weather stations is transmitted to DyaconLive.com (dyacon.net).

The web portal has a standard weather view and two different aviation views. The mode is selected by the Admin or Manager of the weather station web portal.

The following is the standard view.

New users will receive an Administrator invitation by email. If you are the purchaser of the weather station and have not received this email, contact Dyacon.

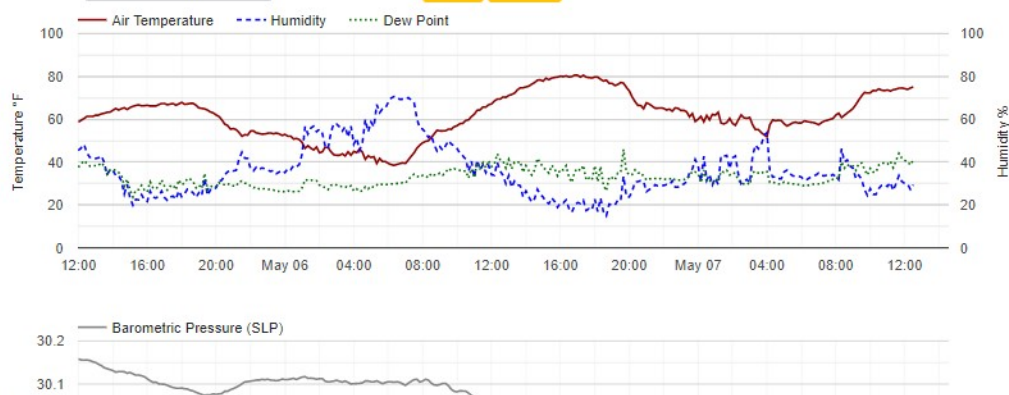


National Weather Service Short Term Forecast

Isolated showers and thunderstorms after 3pm. Mostly sunny. High near 77, with temperatures falling to around 75 in the afternoon. West southwest wind around 14 mph. Chance of precipitation is 20%.

Seven Day Forecast

Set End Date: 2021-05-07 ☐ Two Day ☒ Week



7.1 Setup DyaconLive

DyaconLive (dyacon.net) is a weather station web portal designed and programmed by Dyacon staff.

7.1.1 DyaconLive User Registration

DyaconLive is access controlled. Users must contact Dyacon (support@dyacon.com) to create an admin user account.

7.1.2 DyaconLive Configuration

DyaconLive can be enabled or disabled and the update rate specified.



```
>Setup DyaconLive
Rate: Off
```

Pressing **Select** will enable configuration of DyaconLive settings.



```
>Update Rate: Off
Test Connection
```

7.1.3 DyaconLive Report Interval

Press **Select** to edit the on/off status and set reporting interval.



```
Set Update Rate
10_
```

Use the ▲ (Up) and ▼ (Down) buttons to turn the feature on at the desired interval, 1, min, 2 min, 5 min, 10 min, 15 min, 20 min, 30 min, or 1 hr. Longer intervals may be helpful at reducing system power and data usage.

A 10 min interval is recommended.

Press **Select** to save.

7.1.4 DyaconLive Test

To initiate a test of the DyaconLive connection.

Use the ▲ (Up) and ▼ (Down) buttons to select the Test Connection option.



```
Update Rate: Off
>Test Connection
```

Press **Select**.

The display will exit Setup mode and return to the home screen and show the progress of the test packet transmission.



Home Sig 14 17:33:51
Dyacon Connecting



Home Sig 14 17:33:51
Dyacon Sending



Home Sig 14 17:33:52
Dyacon Complete

An error message may show if the test is unsuccessful. Contact Dyacon if the error is not obvious.

8.0 SITE SELECTION

8.1 General Principles

If you are following this guide sequentially, you have probably placed your weather station in the wrong location. However, the real geeks will read this before staking their tripod to the ground and can now pat themselves on the back.

Weather station placement is dependent upon the role it will play. A weather station intended to monitor an outdoor storage facility will be placed differently than one intended for meteorological, aviation, or agricultural purposes.

Wind

While the World Meteorological Organization (WMO) specifies a height of 10 m, many installations do not require this height.

Shrubs, trees, terrain, and structures will cause turbulent conditions that will affect the measured wind speed and direction. Depending on the application, it may or may not be desirable to measure this condition.

The wind sensor should be positioned at a height above the ground that captures the wind exposure of the critical asset. For example, agricultural growers may choose to place the wind sensor at a height that represents the crop exposure.

Aviation applications have unique requirements, see the Airport Siting section.

Air Temperature

Installers should recognize that radiant or reflected energy sources will affect the temperature sensor. Buildings, roofs, ground surface, vegetation, and water ways will affect the measured temperature.

The WMO standard for temperature and humidity measurements is 2 m above the ground surface.

Similar to wind, the temperature sensor should be placed to capture the conditions of the desired asset.

Locations that must measure still air while exposed to the sun or other radiating sources may benefit from Dyacon's aspirator option. The aspirator is available as an upgrade kit.

Soil and Liquid

Soil temperature and soil moisture probes are placed at the desired depth for the purpose. Measurements of seed germination characteristics would require different depths than irrigation monitoring or seepage detection.

Dyacon's stainless steel temperature probe may be used for liquid submersion and surface contact applications, such as evaporation ponds, watering troughs, and surface temperature.

Insolation

Solar sensors are typically positioned to capture unimpeded sunlight. This type of placement may be appropriate for modeling solar power generation. However, other application may require sensor placement within a shaded area, such as within the canopy of a crop.

8.2 Weather Station Siting

8.2.1 Instrumentation Considerations

The following are general guidelines.

Wind sensor height: 10 m

Temperature and humidity sensor height: 2 m

Distance from nearby structures: Distance to structure ≥ 10 times the structure height

Roof-top mounting is not recommended due to significant temperature and wind effects from the structure and reflected heat.

8.2.2 Solar Power Considerations

MS-100 stations may be powered by 10 W solar panels. This input capacity is sufficient where full sun exposure is available during the day. Installations that have high wireless demand and are shaded for part of the day may require a second solar panel.

8.2.3 Cable Considerations

CM-1 may be used with a cabled connection. The differential signal (RS-485) used by the Modbus port allows for very long cable runs. Low-capacitance cable, such as CAT-5 can be used in excess of 1000 ft (900 m). The Modbus baud rate may be lowered to achieve even longer cable lengths or overcome cable characteristics.

8.2.4 Wireless (Cell Phone) Considerations

MS-130, MS-140, and MS-150 weather stations have an embedded cellular phone transceiver.

Ideally, the cell phone tower must be in direct line-of-sight of the weather station.

The control module contains an antenna with better gain characteristics than the typical handset. The station may operate reliably even in locations where handsets may not have an adequate signal.

The control module home screen shows the cell phone signal strength. A signal level above 5 is desirable.

The mounting mast and other obstructions may reduce the signal strength in some conditions. If the signal strength is low or varies by more than 5, the control module may be rotated on the mounting mast for maximum signal strength.

If this technique is inadequate, contact Dyacon for further instructions.

8.3 Airport Siting

Dyacon weather stations are for ADVISORY INFORMATION ONLY, they are not FAA certified as ASOS or AWOS systems.

The information given here is for installer consideration only. Installers should consult appropriate experts and authorities as necessary.

Ideally, the weather station wind sensor would be mounted on a 30 ft tower, positioned within a clear circle of 1000 ft in diameter the center of which is offset from the center of the field by 500 ft to 1000 ft. (See the diagram below.)

Rural and private airports may not have sufficient area to meet this ideal, especially if a 30 ft rigid tower is used. For small aircraft (<12,500 lbs), a setback from the centerline of the runway of 125 ft plus 7 times the height of the wind sensor structure should be considered a minimum.

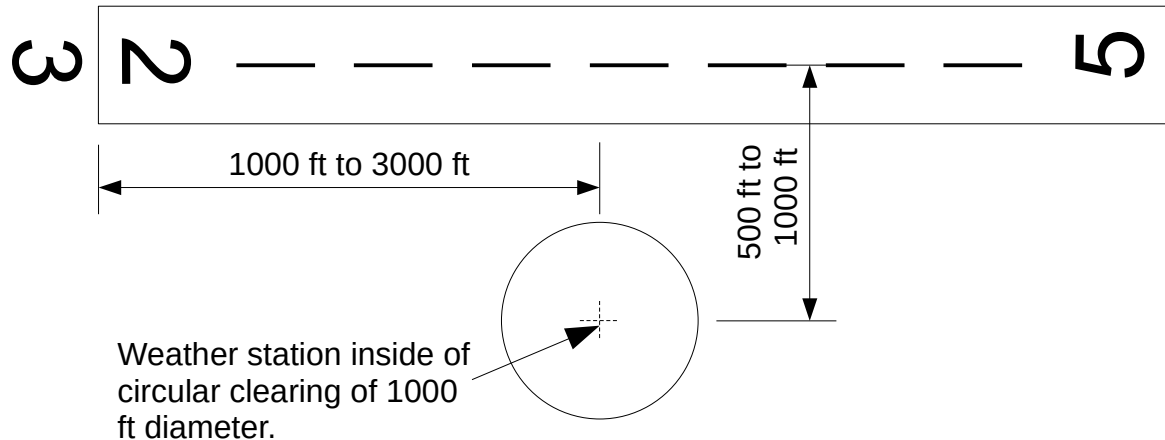
If the Dyacon 7-segment tripod is used, the weather station would be placed at mid-field at least 244 feet from the runway centerline. ($7 \times 17 \text{ ft} + 125 \text{ ft} = 244$)

Airport owners should use their best judgment of prevailing wind directions, nearby obstructions, and surface characteristics to position the station for best indication of surface conditions while observing setback guidelines.

The Dyacon tripod would be considered “frangible” in that it would be knocked over if struck by an aircraft.

Visual or Non-precision Runway Diagram

Ideal weather station placement. (FAA Order 6560.20B, Siting Criteria For Automated Weather Observing Systems(AWOS), 7/20/98. Also, see ICAO Doc 9837 AN/454, Fig. 3-1)



Manual on Automatic Meteorological Observing Systems at Aerodromes (ICAO Doc 9837 AN/454) states:

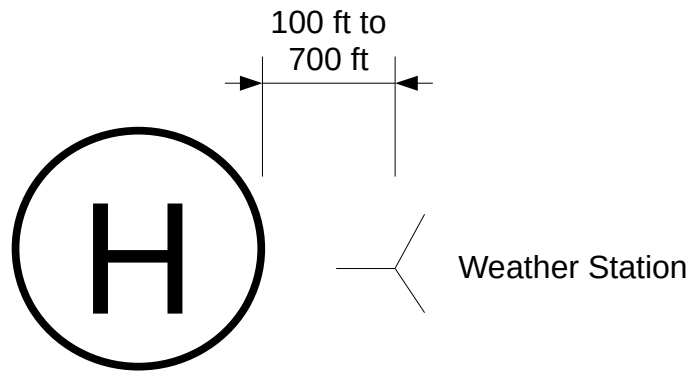
3.6.1 Measurements cannot of course be taken on the runway, and it is important to follow the obstacle clearance rules in Annex 14 — Aerodromes, Volume I, Chapter 8, and the Airport Services Manual (Doc 9137), Part 6. The minimum distance of a 10-m frangible mast in relation to the runway centre line is 90 m. The mast must be placed in this zone only if absolutely necessary; in most circumstances, a 10-m mast should be at least 220 m from the runway centre line. These criteria are shown in more detail in Figure 3-1.

The Dyacon tripod is less than the 10-m mast referenced above and may be placed closer to the runway.

Non-airport Heliport Siting

The location of the station should be outside of hover and taxi operations. For medium-weight helicopters, 100 ft separation from the landing site may be adequate to avoid affects to the weather sensors from rotor downwash and dust.

Ideal weather station placement. (FAA Order 6560.20B, Siting Criteria For Automated Weather Observing Systems(AWOS), 7/20/98)



9.0 DOCUMENT REVISION HISTORY

Rev	Description	Author	Date
A	Initial release.	E. Bodrero	20 May 2016
B	Added section 3.1.3, Set Vane North Position. 7.3 – Added ICAO reference information.	E. Bodrero	16 Jun 2016
C	3.1.1 – Added 13 mm wrench to rain gauge tools. 3.1.2 – Add step to remove rain gauge rubber band. 6.4 – Add Heat Stress	E. Bodrero	13 Feb 2017
D	4.1 – Added LD-1 connection with double-row terminal block.	E. Bodrero	11 May 2017
E	5.1.2 – Added Service Cell information	E. Bodrero	20 Jun 2017
F	3.1.2 – Added additional instruction on vane installation, including image.	J. Little	02 Jan 2018
G	2.0 – Added DyaconLive information and expanded Weather Underground information 4.1.1 – Added images and additional description	E. Bodrero	03 Mar 2018
H	3.0 – Multiple changes to content and structure. Updated images. Added Tee assembly instructions. 4.11 – Changed content. 4.2 – Updated connection label. 6.1 – Added DyaconLive test.	E. Bodrero	14 Oct 2019
I	Update and restructure.	E. Bodrero	07 May 2021
J	3.4 – Updated tripod guyline images. 3.5 – Updated WSD images. 3.6 – Added solar bracket tab image. 4.3 – Updated connection label image 5.2 – Inserted new Set Cell Phone Network	E. Bodrero	05 Apr 2023
K	3.5 – Added 3.5.1 and 3.5.2 section for WSD and UA mounting instructions.	E. Bodrero	06 Apr 2023
L	Preface – Add system label headings. Update cell phone network information 3.2 – Added EZ Cable Lock images. 6.4.2 – Inserted Simplified Aviation Report. 7.1.4 – Corrected LCD to show “Home...” General reformatting and updating of content.	E. Bodrero	02 Aug 2023