

# 110-WS-S10

User Manual

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## S10 Portable Weather Station



**S10 Portable Weather Station**  
*With*  
**200-91000 Ultrasonic Anemometer**

**Phone** (530) 823-7185

**Email** [nova@novalynx.com](mailto:nova@novalynx.com) **Website** [www.novalynx.com](http://www.novalynx.com)

## Receiving and Unpacking

Carefully unpack all components and compare to the packing list. Notify NovaLynx Corporation immediately concerning any discrepancy. Inspect equipment to detect any damage that may have occurred during shipment. In the event of damage, any claim for loss must be filed immediately with the carrier by the consignee. Damages to equipment sent via Parcel Post or UPS require the consignee to contact NovaLynx Corporation for instructions.

## Returns

If equipment is to be returned to the factory for any reason, call NovaLynx between 8:00 a.m. and 4:00 p.m. Pacific Time to request a Return Authorization Number (RA#). Include with the returned equipment a description of the problem and the name, address, and daytime phone number of the sender. Carefully pack the equipment to prevent damage or additional damage during the return shipment. Call NovaLynx for packing instructions in the case of delicate or sensitive items. If packing facilities are not available take the equipment to the nearest Post Office, UPS, or other freight service and obtain assistance with the packaging. Please write the RA# on the outside of the box.

## Warranty

NovaLynx Corporation warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from the date of shipment from the factory. NovaLynx Corporation's obligations under this warranty are limited to, at NovaLynx's option: (i) replacing; or (ii) repairing; any product determined to be defective. In no case shall NovaLynx Corporation's liability exceed product's original purchase price. This warranty does not apply to any equipment that has been repaired or altered, except by NovaLynx Corporation, or that has been subjected to misuse, negligence, or accident. It is expressly agreed that this warranty will be in lieu of all warranties of fitness and in lieu of the warranty of merchantability.

## Address

**NovaLynx Corporation**  
**431 Crown Point Circle, Suite 120**  
**Grass Valley, CA 95945-9531 USA**  
**Phone: (530) 823-7185**  
**Email: [nova@novalynx.com](mailto:nova@novalynx.com)**  
**Website: [www.novalynx.com](http://www.novalynx.com)**

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## 1 FORWARD

Thank you for purchasing NovaLynx products. NovaLynx has been designing and manufacturing weather instruments since 1988. NovaLynx represents several well-known brands of quality manufacturers, including Gill Instruments, RM Young, Kipp & Zonen, and Vaisala. It is our hope that our products will meet all your monitoring requirements.

## 2 INTRODUCTION

The **110-WS-S10 Portable Weather Station** combines an easy-to-use logger with your choice of weather instrument in an easy to carry package. The logger stores serial data on a 2GB SD card. After logging, the card is removed and can be uploaded by means of the included memory card reader. The daily .CSV files can be read and analyzed using standard PC software.

The low power requirement of the logger and many of the available sensors make it possible for the unit to run for several days before the battery must be recharged. For longer operation, the included battery charger or an optional solar panel can be connected.

A USB cable is included for monitoring the output of the sensor in real-time (the logger can be collecting data simultaneously). The USB cable also makes it possible to re-configure the sensor, in case any parameters need to be changed.

The **110-WS-25TM-P Tripod** (sold separately) includes the tripod, 6' mast assembly, tie-downs, and a padded carrying bag with shoulder strap. An optional **200-1405-TA Tripod Adapter** is available for mounting the sensor to a surveyor's tripod (not included). With either option, the weather station can be set up where needed within minutes.

This manual will focus on the set-up and operation of the logger, and will not cover all details regarding the sensor. Information on sensor installation, operation, and configuration will be found in the sensor's user manual.

## 3 PRECAUTIONS

**WARNING** – Do not install the system when a lightning storm is likely.

**WARNING** – Do not set up the tripod near power lines to avoid electric shock.

**WARNING** – Make sure there are no buried pipes or electrical lines where the spiral stake is installed.

**CAUTION** – Do not allow the exposed metal end of the USB connector or other metal objects to contact the positive terminal of the battery. Sparks could result, and damage to the electrical equipment could occur.

**NOTICE** – Do not remove the SD card while the logger's green LED is illuminated (Section 6.1).

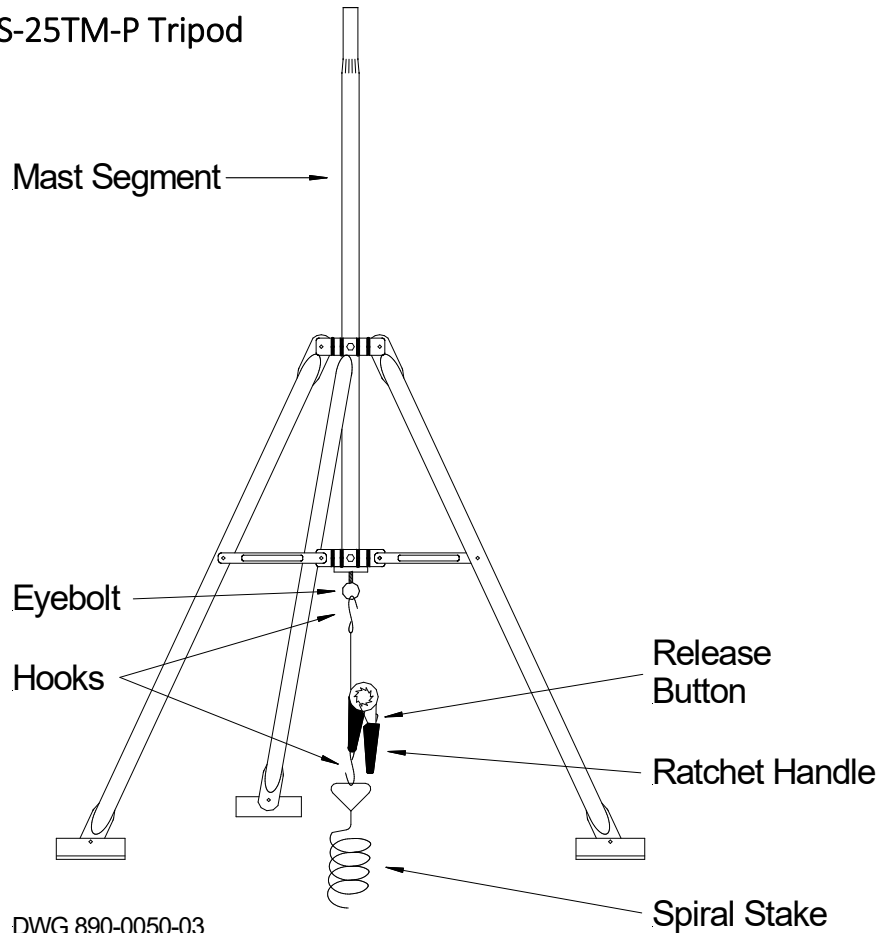
## 4 SPECIFICATIONS

<b>S10 Data Logger</b>	
Connections	Screwless terminals (AWG 22 to 28)
RS232 Input	9600 Baud (default) or selectable from 110 to 115200 Baud
Data Sample	Default: Records only the data between specified start (STX) and end (ETX) Option: May be programmed to log everything (LOG_ALL=Y)
Data Storage	2 GByte (max) removable SD, MMC or MMC mobile card
File System	FAT16 or FAT32 with 8.3 file names. Sector size 512 Bytes
Logging Interval	Default: Log every data sample output by the device/sensor Option: Select logging interval from 1 to 60 seconds
Visual Indicators	Green LED: Ready to record data Red LED: Power on, Writing data to SD card
Audible Indicator	Status alert
Real Time Clock Accuracy	±40 ppm at 25 °C
Clock Battery Backup	CR2032
Power	7 to 30 Vdc, (10mA @ 12Vdc typical)
Temperature Range	Operating: -25 °C to +70 °C   Storage: -40 °C to +70 °C
EMC	CE marked - EMC directive 2004/108/EC FCC/CFR 47: Part 15:2004
<b>110-WS-25TM-P Tripod and Carrying Case (optional)</b>	
Assembled Height	7'-2" (2.18 m)
Construction	Tripod: Galvanized steel, Mast: Aluminum
Tripod Height (unfolded)	32"
Tripod Width (unfolded)	32"
Tripod Weight	7.75 lbs (3.5 kg)
Max mast diameter	Ø1.75" (Ø44 mm)
Leg diameter	Ø1.25" (Ø32 mm)
Mast (2 sections)	Ø1.25" x 3' (Ø32 mm x 0.9 m), Swaged one end
Spiral stake	18" (45 cm), Zinc plated
Ratcheting Tie Down	400 lb (180 kg) capacity
Carrying Case	42" (1 m) Padded nylon case with carrying straps
Overall Weight	12.5 lb (5.7 kg)
<b>200-1405-TA Tripod Adapter (optional)</b>	
Mounting Stub	Ø 1.3" x 0.95" tall (Ø33mm x 24 mm tall)
Internal Thread	5/8"-11 thread
Weight	0.2 lb (91 g)

## 5 SITE SELECTION AND INSTALLATION

Select a level area of bare soil or grass where the spiral stake can be installed. The area must be far enough away from buildings and vegetation that might affect the wind measurements (when installing an anemometer) or other weather parameters (when installing a compact weather station).

## 5.1 Optional 110-WS-25TM-P Tripod



- 1) Select a level area of bare soil or grass where the spiral stake can be installed.
- 2) Screw the stake into the soil until only the handle is exposed.
- 3) Assemble the tripod with ONE mast section and tighten the bolts that hold the mast.  
(NOTE: Check which end of the mast best fits the base of the sensor. Place that end upwards.)
- 4) Center the tripod over the spiral stake and attach the base of the ratchet to the hook that is on the spiral stake.
- 5) Press the release button just above the ratchet handle and raise the handle to open the ratchet to the fullest extent (the handle will be pointing up).
- 6) While holding the release button, pull up on the hook that is attached to the webbing and engage the hook in the eyebolt on the tripod, just below the mast.
- 7) Ratchet the handle back and forth until the tripod is held down securely.
- 8) Lower the ratchet handle to the fully closed position to lock the cam mechanism.
- 9) Open the logger carrying case and carefully remove the sensor.
- 10) Assemble the sensor to the top mast section and secure it with the mounting screws or band.
- 11) If the sensor monitors wind direction, locate the marking that indicates north.
- 12) Fit the upper mast section onto the tripod, making sure the north indicator (if any) faces north.
- 13) Place Velcro straps around the mast and sensor cable to prevent whipping in the wind.

## 5.2 Optional 200-1405-TA Tripod Adapter

If a tripod adapter was ordered at the same time as your logger then it is already assembled to the sensor. If ordered separately it can be attached to the base of the sensor using the clamps or screws provided with the sensor. In the case of WindSonic or MaxiMet sensors, a slotted stub (PN 200-1405-MS-AL-S) is required to allow the cable to exit to the side through a slot.

NovaLynx does not supply the surveyor's tripod, but there are many types available. The important features are stability, a flat top surface for mounting the sensor, and a 5/8"-11 threaded bolt to secure the sensor to the tripod. It is up to the user to ensure the tripod does not tip over and damage the sensor. It may be necessary to sand-bag the legs if strong wind is expected.

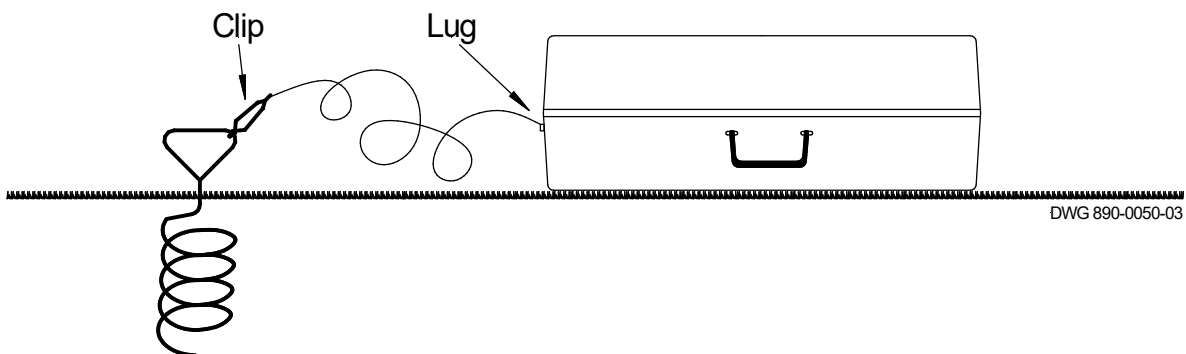
**NOTE:** Re-tighten the adapter's mounting screws whenever needed to prevent damage to your sensor.



## 5.3 Earth Grounding

Earth grounding helps dissipate static that can build up on a sensor due to friction of the air over the body of the sensor. Earth grounding is a simple matter for installations where the spiral stake is used. In locations where the spiral stake is not used another grounding method may be needed, such as installing a ground rod, or connecting to a metal pipe (cold water line) that is in contact with the earth.

- 1) Connect the free end of the grounding wire to the copper lug on the side of the carrying case.
- 2) Connect the clip end of the earth grounding wire to the spiral stake.




DWG 890-0050-03

## 5.4 Charger Connection

The S10 Portable Weather Station can operate for several days before the battery needs to be recharged. If operating for longer periods, the included AC charger can be used to keep the battery fully charged while the logger is operating. However, the charger is not weather-proof, so special precautions need to be taken if the AC charger is used (i.e., protect it from rain/sprinklers). A better solution, if charging is needed while logging, is to install the NovaLynx 110-WS-25SP 10-Watt solar panel (sold separately). Both the AC charger and solar panel are equipped with quick-connect plugs.

**NOTE:** Connect power to the logger BEFORE connecting the charger. When powering down, do the reverse (i.e., unplug the charger, then unplug the battery).

## 6 QUICK START INSTRUCTIONS

- 1) Power on ----- Section 6.1
- 2) Set time and date----- Section 6.2
- 3) Insert SD card----- Section 6.3
- 4) Start recording data ----- Section 6.3
- 5)  -----
- 6) Stop recording data (press purge button) ----- Section 6.3
- 7) Remove card and transfer to PC to view and analyze data ----- Section 6.4

### PURGE BUTTON

- Clock Synchronization
- Stop Recording
- Purge (save buffered data to card)

### CARD SLOT

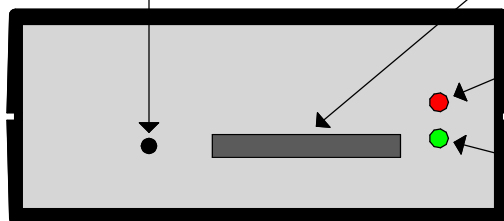
- Insert SD card

### RED LED (Flashes)

- Power on
- Writing data to card

### GREEN LED (Stays on)

- Ready to record data



S-10 FRONT PANEL

DWG 890-0105-01



## 6.1 Power ON / OFF

- To turn the logger ON: Connect the red battery plug to the positive battery terminal.
- To turn the logger OFF:
  - Press the purge button and wait for the LEDs to turn off (data is transferred to the card)
  - Remove the card
  - Disconnect the red battery plug

The logger will operate for several days on the battery alone. Use the voltmeter supplied with the system to check the voltage on the battery, and recharge it before it drops below 11.5 volts. Charging more frequently is recommended, as the float charger will keep the battery fully charged without over-charging. To prevent overheating, remove the charger from the foam pocket while charging.

The AC charger can be connected while collecting data. However, the AC charger must be housed in a weather-tight enclosure, and the circuit powering the charger must be GFCI protected. An optional solar panel is available (NovaLynx 110-WS-25SP) for remote locations where power is not available.

## 6.2 Timekeeping

The S10 logger has an internal battery to maintain the time and date when the power to the unit is switched off. The clock has been factory set to UTC time. When it is necessary to reset the time and date (or switch to a local time zone), please follow the steps below.

To set the time and date for correct stamping of the data records, a file named SETUP.TXT must be created on the SD card. This file is read by the logger when the card is inserted into the logger and the purge button is pressed.

### Create the Setup File

File contents:            WAIT  
                         TIME=hh:mm:ss  
                         DATE=DD/MM/YYYY

- 1) Install the memory card in the memory card reader.
- 2) Plug the memory card reader into a USB port on your Windows computer.
- 3) Use File Explorer to find and open the SETUPOLD(TIME).TXT file that is on the card.
- 4) Change the TIME to some value a few minutes in the future, when you will synchronize the clock.
- 5) Change the DATE parameter to the current date in this format: DD/MM/YYYY
- 6) Choose File / Save As and enter the file name SETUP.TXT then click Save.
- 7) In File Explorer, locate the USB Drive representing the memory card, right-click and select "Eject".  
When Windows indicates it is safe, remove the memory card reader from the computer.

## Synchronize the Clock

- 1) Connect power to the logger.
- 2) Insert the memory card into the logger (fits easily one way only – do not force). Both LEDs will turn on and stay on (the logger is executing the "WAIT" function).
- 3) At the time saved in the SETUP.TXT file, press the button to the left of the card slot. The logger will "Beep" once and both LEDs will turn off. Release the button.
- 4) The red LED may flicker on and off. Once the card has completed its initialization the green LED will come back on and remain on. The logger will begin storing any data received.
- 5) After updating the time and date, the logger renames the file SETUP.TXT to SETUPOLD.TXT to avoid unintentionally repeating the commands next time the unit is switched on or the card re-inserted.

## 6.3 SD Card

The SD card is designed to fit easily into the card slot one way only. Do not bend the card or force it into the slot. The logger is compatible with SD cards up to 2GB capacity but not SDHC cards. MMC and MMC mobile cards up to 2GB capacity are also compatible.

The SD card is used to set the time on the logger's internal clock as well as program logger functions. Once these tasks are done, the card is initialized. The length of time the memory card takes to initialize will depend on the formatting of the card and the amount of data already stored on it. The green LED will then switch on indicating that the unit is 'Ready to Record Data'. The green LED will remain on while the unit is in this state. The red LED will flash briefly every time data is transferred to the card.

It is not necessary to re-program the logger or set the clock each time it is used. Once initialized, simply turn on the logger and insert the memory card to begin logging. *NOTE: if the green light on the logger does not come on within a few seconds after the card is inserted, remove the card, cycle the power to the logger, and re-insert the card.*

To avoid losing data or corrupting the card, never remove the card or disconnect the power supply when the red LED is flashing or blinking. Instead, press the purge button and wait for the LEDs to turn off (buffered data is transferred to the card). There will be an audio signal to indicate that the button has been pressed. The green LED will automatically switch off to indicate that the unit is no longer enabled to record data. Now it is safe to remove the card and/or power down the logger.

When the memory card is full the logger will stop logging data; it will not overwrite files already saved. Files on the card can be copied to your computer and the old data files erased from the card in order to continue using the card. Do not erase the SETUPOLD(TIME).TXT or SETUPOLD(BACKUP).TXT files as you may need to use them again as templates.

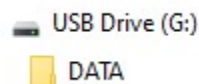
## 6.4 Data Collection and Transfer

Data from the sensor is recognized by the start (STX) and end (ETX) characters on the data packet. The logger inserts the time and date at the start of each data record and stores it temporarily in a buffer (1024 bytes). Data is transferred from the buffer to the SD card in 512 byte packages. The red LED blinks each time data is written to the card.

Aside from the timestamp, which the logger adds to the beginning of a record, the data is recorded exactly as received from the sensor. Unless previously arranged, all sensors will report their default parameters and units (refer to the sensor's user manual).

Most of the sensors that are compatible with the S10 logger are programmable with regard to the parameters they report and the engineering units related to the data. The user will be able to alter the settings on the sensor via the USB cable and software designed for the specific sensor. Make a note of any changes that affect the order in which the data appears in the output string, and the engineering units, so that the data can be interpreted correctly.

To retrieve data from the SD card, place the card in the memory card reader. Connect the reader to your computer's USB port. Windows should recognize the reader as a USB Drive, which will appear in File Explorer (Drive letter may vary):



Double-click on the DATA folder to view data files:



Notice the file name contains the date in YYYYMMDD format. Select the day you want to view and double-click to open. Once the file is open you can insert a couple of rows at the top, and add column headings.

EXAMPLE HEADING:

DATE	TIME	NODE	DIR DEG	SPEED MS	CDIR DEG	CSPEED MS	TOTAL PRECIP MM	PRECIP INTENSITY MM	GPSLOCATION	TIME	VOLT	STATUS	CHECK
(Sample Data)		Q	180	0.06	133	0.21	0	0	+50.763060;-001.540268;+0001.60	2017- 11-02T15:07:27.6	5	4	31

To avoid completely filling the memory card (which would cause logging to stop), periodically copy all the files you want to keep to your computer, then delete the original files from the card.

## MAXIMET GMX240 EXAMPLE:

### 1) Collect Information from the MaxiMet User Manual:

#### GMX240 Factory Default Data String

Items in red relate to the GPS Option Unit.

NODE, DIR, SPEED, CDIR, CSPEED, TOTAL PRECIP, PRECIP INTENSITY, GPSLOCATION, TIME, VOLT, STATUS, CHECK

Q,180,000.06,133,000.21,00000.000,000.000,+50.763060:-001.540268:+0001.60,2017-

11-02T15:07:27.6,+05.0,0004,L 31

Where: Q	STX	-001.540268	GPS Longitude
180	Node Letter	+0001.60	GPS Height location
000.06	Wind Direction	2017-11-02	Date
133	Wind Speed	T15:07:27.6	Time
000.21	Corrected Direction	+05.0	Supply Voltage
0000.000	GPS Corrected Speed	0004	Status
0000.000	Precipitation Total	L	ETX
000.000	Precipitation Intensity	31	Checksum
+50.763060	GPS Latitude		

Notes: <STX> is the Start of String character (ASCII value 2)

<ETX> is the End of String character (ASCII value 3)

Checksum, the 2 digit Hex Checksum sum figure is calculated from the Exc between (and not including) the STX and ETX characters

The default engineering units are listed in the table.

#### MetSet Default Settings

REPORT : NODE DIR SPEED CDIR CSPEED PRECIP PRECIP GPSLOCATION TIME VOLT STATUS CHECK		
PROTOCOL : GILL		POWER : 0
COMMS : RS232		TIME : 2017-11-02T15:07:27
BAUD : 19200		AUTOTIME : ON
NODE : Q	SENSOR COMPASS : ON	TZOFFSET : +00.00
OUTFREQ : 1HZ	COMPASSDEG : +000.0	PUPMSG STATUS : ON
MSGMODE : CONT	SENSOR GPS : ON	PUPMSG REPORT : ON
ASCTERM : CRLF	UNITS GPS : MS	PUPMSG UNITS : ON
ECHO : ON	SENSOR TEMP : ON	MODBUS : RTU
ALIGN : 0	UNITS TEMP : C	MODADDR : 1
SENSOR WIND : ON	SENSOR PRECIP : ON	DATABITS : 8
UNITS WIND : MS	UNITS PRECIP : MM	STOPBITS : 1
NODIR : 0.00		PARITY : NONE
AVGSHORT : 60		MODTERM : 10
AVGLONG : 10		MODICT : 1000

### 2) Create spreadsheet column headings and save the file

DATE	TIME	NODE	DIR DEG	SPEED MS	CDIR DEG	CSPEED MS	TOTAL PRECIP MM	PRECIP INTENSITY MM	GPSLOCATION	TIME	VOLT	STATUS	CHECK
(Sample Data)		Q	180	0.06	133	0.21	0	0	+50.763060:-001.540268:+0001.60	2017-11-02T15:07:27.6	5	4	31

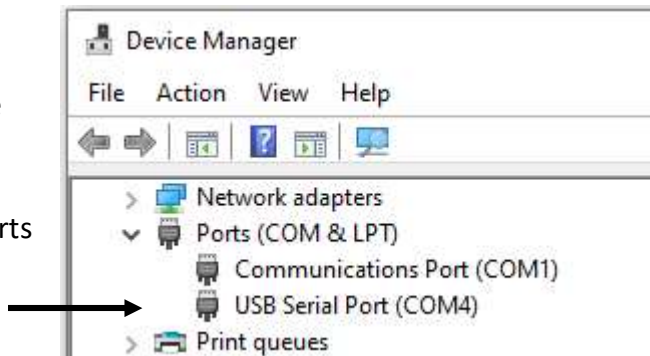
### 3) Each time a new data file is downloaded to your computer, insert rows at the top of the spreadsheet and paste in the column headings.

## 7 USB ADAPTER SETUP

The S10 Portable Weather Station is provided with a USB cable that connects to the sensor. When recognized by Windows, the adapter creates a virtual COM port that can be accessed by a terminal program or the sensor's proprietary software. On most Windows computers, the appropriate driver will be loaded automatically. For other operating systems, drivers may be downloaded here:

<https://ftdichip.com/drivers/vcp-drivers/>

Connect the USB cable to your computer. When the USB adapter is recognized, a COM port is opened. If you are uncertain which one it is, go to the Device Manager on your machine and look for it under "Ports (COM & LPT)". In the example shown here, COM4 is the virtual port.

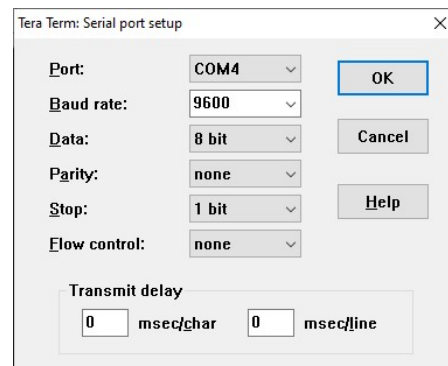
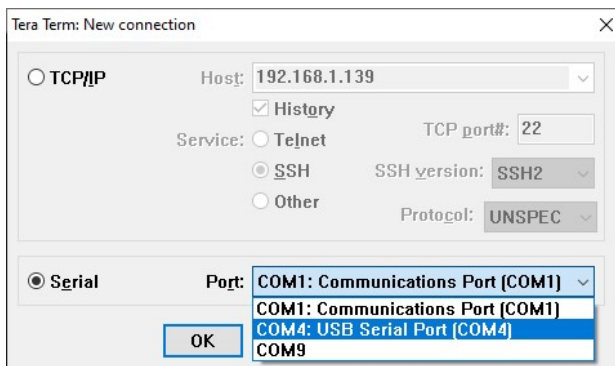


## 8 REAL-TIME MONITORING

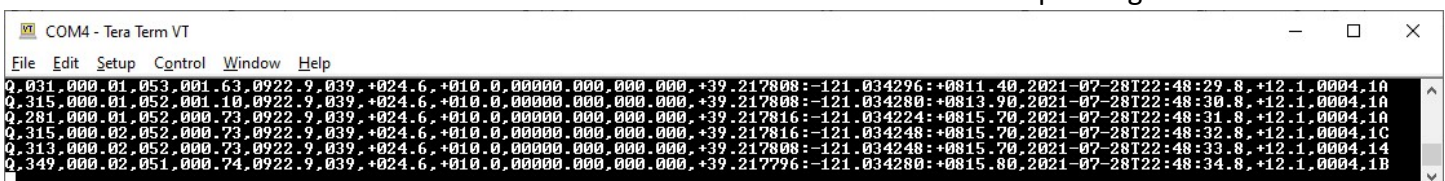
Real-time data can be viewed in a terminal program, such as TeraTerm. This may be useful if graphical software was not provided with the sensor, or if the goal is to verify that the sensor is sending data. TeraTerm is freeware that can be obtained from several sources on the internet.

### 8.1 View in TeraTerm (All Sensors)

1. Connect the USB cable to your computer and turn on the logger.
2. Launch TeraTerm.exe
3. Select the correct COM port (COM4 in this example). Click "OK"
4. Verify the Serial port setup. Click "OK"



5. Wait for data to come in. The sensor determines how often a new report is generated.

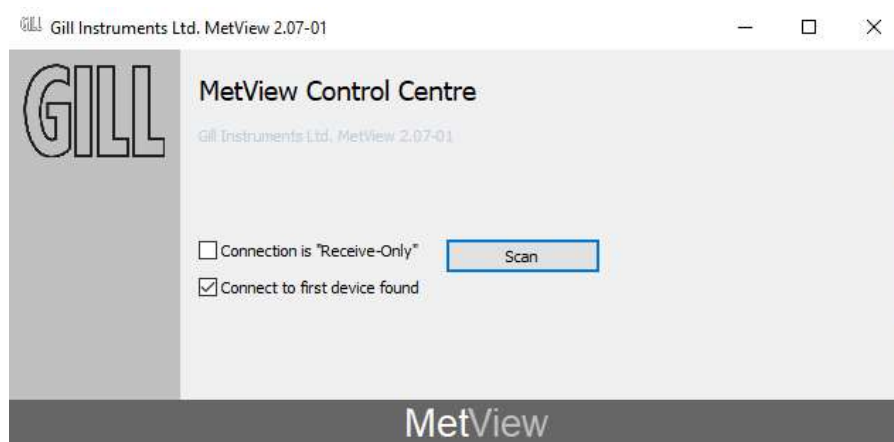


## 8.2 View in MetView (MaxiMet Compact Weather Stations)

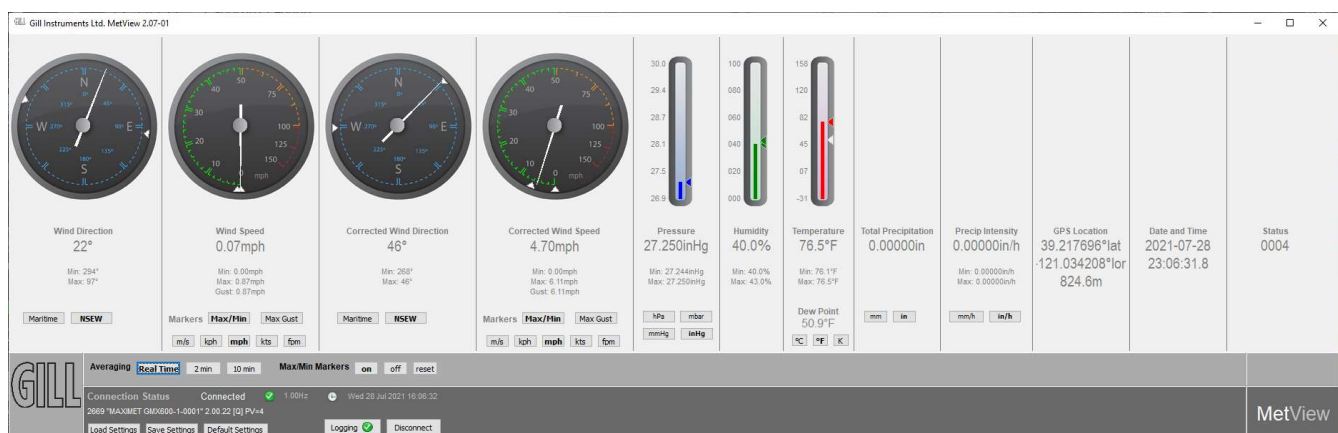
MaxiMet sensors may be monitored using MetView software. Download here:

<http://gillinstruments.com/main/software.html>

1. Begin by removing the SD card from the logger. (When MetView starts, a lot of communications occur to let MetView know how to display the data. If the card were installed, these messages would be logged.)
  - a. If the logger is operating, press the purge button to save the buffer contents to the memory card, then remove the SD card from the logger. Disconnect power from the logger.
  - b. If the logger is powered down, remove the SD card.
2. Connect the USB cable to your computer. Connect power to the logger. Launch MetView.
3. Mark the "Connect to first device found" checkbox, then click "Scan"



4. The MetView dashboard will display the sensor data.



5. After MetView is loaded and the display is indicating data, the SD card can be inserted to log the data. *NOTE: MetView software can also log data, but this function is independent of the logging performed by the S10 logger.*



### 8.3 View in WindView (WindSonic Ultrasonic Anemometers)

The WindSonic Series of sensors may be monitored using WindView software. Download here:

<http://gillinstruments.com/main/software.html>

- 1) Enter a name for the sensor (if desired)
- 2) Select the output format (default shown)
- 3) Set the COM port
- 4) Enter the Baud (9600)
- 5) Parity = None
- 6) Click "Connect"
- 7) In the next window, select one of the four displays shown below:

Connect new anemometer

Anemometer

Name: Anemometer 1

Output Format: GILL\_POLAR\_TWO\_AXIS

The user must select this option to match the anemometer's current serial output format

Comm Port Settings

Port: COM4

Baud Rate: 9600

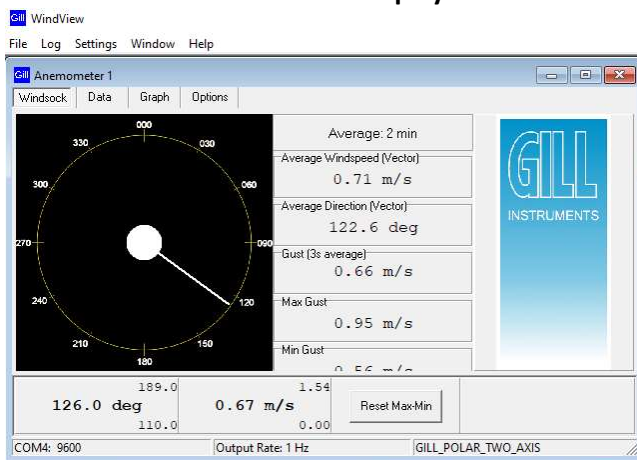
Auto Find

Parity: NONE

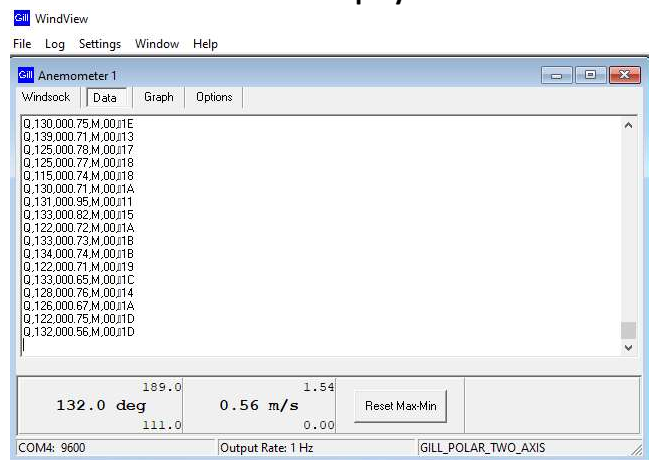
Connect

Cancel

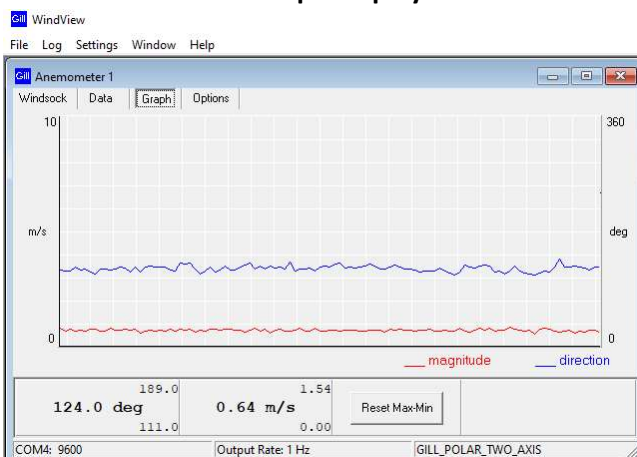
Windsock Display



Data Display



Graph Display



Options

WindView

File Log Settings Window Help

Anemometer 1

Windsock Data Graph Options

Settings

Name: Anemometer 1

Anemometer Output Format: GILL\_POLAR\_TWO\_AXIS

The user must select this option to match the anemometer's current serial output format

121.0 deg

0.80 m/s

Reset Max-Min

COM4: 9600

Output Rate: 1 Hz

GILL\_POLAR\_TWO\_AXIS

## 9 BATTERY CHARGING

A voltmeter is provided to check the battery. Test the battery voltage while the logger is operating. For best results recharge the battery after each use, but certainly before it falls below 11.5 volts, as the life of the battery may be shortened otherwise. In general, more frequent recharging is recommended.

1. Remove the memory card from the logger.
2. Connect the RED lead to the BATTERY.
3. Lift the charger out of its foam pocket and make sure the quick-connect plug is connected. **NOTE:** *The quick connect can remain connected during logger operation as it will not discharge the battery.*
4. Connect the AC plug of the charger to a duplex receptacle. Leave the charger outside of the foam pocket while charging, otherwise it might overheat.
5. Observe the LED on the charger body. **Red** indicates the battery is being charged, **Green** indicates the battery is fully charged.

If necessary the charger can be connected while doing a long-term logging session; however, precautions must be taken as the charger is not rated for out-door use and must be protected from the weather.

## 10 CLOCK BATTERY REPLACEMENT

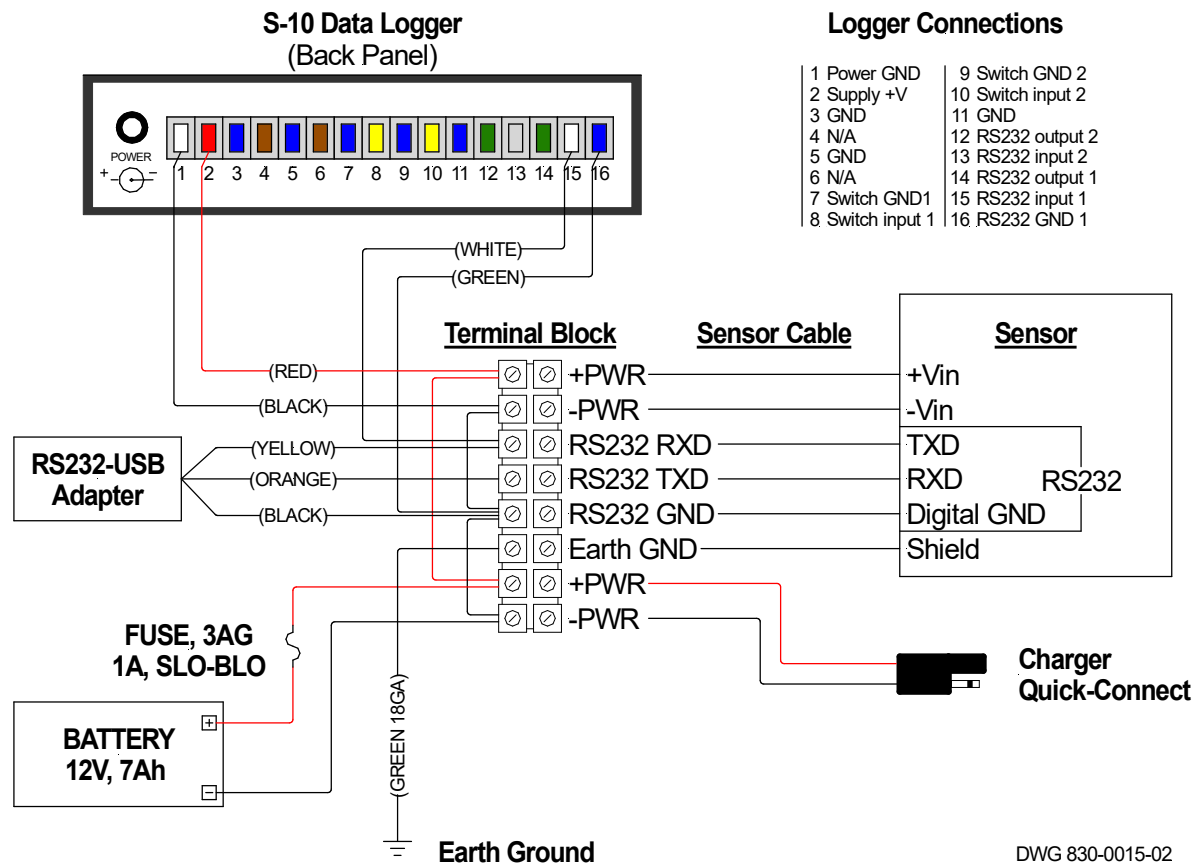
The S10 Logger has an internal battery to maintain the time and date when the power to the unit is switched off. Replace the battery if the clock no longer maintains the correct time when the logger power is disconnected. The logger requires one CR2032 Lithium 3 volt battery.

1. Disconnect power to the S10 Logger by unplugging the red terminal wire from the 12V battery.
2. Carefully lift the logger out of the foam to expose the bottom shell of the logger enclosure.
3. Remove the two screws that hold the shell together, and lift the bottom shell off.
4. Slide the old battery out and dispose of properly.
5. Install the new battery with the positive side uppermost.
6. Replace the cover and install the screws.
7. Refer to Section 6.2 (Timekeeping) for instructions on setting the clock time.





11 WIRING DIAGRAM



SENSOR CONNECTION CHART

Sensor Cable	Terminal Block (behind foam insert)	WindSonic (Opt 1) 9-Way Connector		MaxiMet 9-Way Connector		ResponseONE™ Junction Box
Green	RS232 GND	1	DGND	1	DGND	REF
Black	-PWR	2	-V	3	-V	-PWR
Red	+PWR	3	+V	2	+V	+PWR
White	RS232 RXD	5	TxD	5	TxD	TX.B
Brown	RS232 TXD	7	RxD	7	RxD	RX.A
Silver	Earth GND	-	Shield	-	Shield	Shield

## 12 LOGGER SETTINGS

The pre-programmed logger settings are included in the SETUPOLD(BACKUP).TXT file on the memory card. To restore or change settings on the logger, copy the file and re-name the copy as SETUP.TXT. Make any changes required in order to prepare it to configure the logger. A few of the adjustable settings are discussed below; additional information is available in the logger's user manual.

The 110-WS-S10 Data Logger is pre-programmed to receive and store data from one sensor, using the start (STX) and end (ETX) characters to identify each record. The default condition is to record every message the sensor generates.

The number of messages a sensor generates for a given time interval depends on the sensor's own configuration. This rate may be too fast (resulting in data files that are large), or too slow, not providing enough detail. Check the sensor manual for information on setting the output of the sensor to a rate that is suitable for your application. If the sensor is providing too much data and cannot be adjusted to a suitable speed, the S10 logger can be programmed to ignore some messages and only log messages that arrive at a specified interval (range 0 to 60 seconds). In the SETUP.TXT file:

RATE=R

- R = **0** to **60**
- R should be set to a value greater than the sensor output interval or 0
- If R = 0, every sample received by the S10 logger will be recorded

The S10 logger creates a new file each day for storing data. If preferred, all data may be set to record to one continuous log file. In the SETUP.TXT file:

SINGLEFILE=F

- F = **Y** or **N**
- If F = **Y**, data is stored in a single log file
- If F = **N**, data is stored in daily files

If required for formatting the logged data, a line break may be added at the end of each recorded data set. In the SETUP.TXT file:

NEWLINE=L

- L = **Y** or **N**
- If L = **Y**, the characters <CR><LF> are appended
- If L = **N**, nothing is appended

The baud rate is selectable to match the connected device. In the SETUP.TXT file:

BAUD=B

Where B is the baud rate. Valid baud rates are 115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200, 300 and 110 bits per second.

The date and time-stamping of data may be switched off. In the SETUP.TXT file:

TIMESTAMP=T

- T = **Y** or **N**
- If T = **Y**, the date and time stamp will be pre-pended on the data sample.
- If T = **N**, data will not be date & time stamped

The following table lists the NovaLynx Settings that were loaded to make the logger compatible with the selected sensor. The RESET Defaults will result if the RESET command line is included in the SETUP.TXT file.

RESET Defaults	NovaLynx Settings	Variance
	WAIT	
	TIME=11:30:00	Time of Programming
	DATE=27/07/2021	Date of Programming
STX=2	STX=2	Unchanged
ETX=10	ETX=13	
SENTENCE2=N	SENTENCE2=N	Unchanged
STX2=2	STX2=2	Unchanged
ETX2=10	ETX2=10	Unchanged
LOGSTX=N	LOGSTX=N	Unchanged
LOGETX=Y	LOGETX=Y	Unchanged
LOGSTX2=N	LOGSTX2=N	Unchanged
LOGETX2=Y	LOGETX2=Y	Unchanged
SEPARATOR=N	SEPARATOR=N	Unchanged
NEWLINE=N	NEWLINE=N	Unchanged
TIMEOUT=0	TIMEOUT=0	Unchanged
RX2=N	RX2=N	Unchanged
BAUD=9600	BAUD=9600	Unchanged
PARITY=N,8	PARITY=N,8	Unchanged
RATE=0	RATE=0	Unchanged
SINGLEFILE=N	SINGLEFILE=N	Unchanged
FILE=20.CSV	FILE=20.CSV	Unchanged
TIMESTAMP=Y	TIMESTAMP=Y	Unchanged
LOG_ALL=N	LOG_ALL=N	Unchanged
OUTPUT=N	OUTPUT=N	Unchanged
HANDSHAKE=N	HANDSHAKE=N	Unchanged
RESPONSE="Q"	RESPONSE="Q"	Unchanged
RAW=N	RAW=N	Unchanged
SWITCH=N	SWITCH=N	Unchanged
STARTUP=N	STARTUP=N	Unchanged
RX_INV=N	RX_INV=N	Unchanged
PRIFIX=".."	PREFIX=	
TRIGGER=	TRIGGER=	Unchanged

## 13 SENSOR OPTIONS

### WindSonic 2-Axis Anemometer

IP66 Polycarbonate construction. With connector. No cable.

200-1405-PK-021	WindSonic60: Wind speed (0-60 m/s), wind direction. Option 1 Output (RS232), No compass, Black
200-1405-PK-068	WindSonic60: Wind speed (0-60 m/s), wind direction. Option 1 Output (RS232), No compass, White
200-1405-PK-400	WindSonic75: Wind speed (0-75 m/s), wind direction. Option 1 Output (RS232), No compass, Black



### ResponseONE™ Ultrasonic Anemometer

IP66, Junction box, No cable.

200-91000	Wind speed (0-70 m/s), wind direction. No compass, White
200-91000B	Wind speed (0-70 m/s), wind direction. No compass, Black
200-91500	Wind speed (0-70 m/s), wind direction. With compass, White
200-91500B	Wind speed (0-70 m/s), wind direction. With compass, Black



### ResponseONE™ Weather Transmitter

IP66, Junction box, No cable.

100-92000	Wind speed (0-70 m/s), wind direction, temperature, humidity, pressure. No compass, White
100-92500	Wind speed (0-70 m/s), wind direction, temperature, humidity, pressure. With compass, White



### MaxiMet Compact Weather Station

IP66 Polycarbonate construction, white. With connector. No cable.

100-GMX200	Wind speed (0-60 m/s), wind direction. With compass
100-GMX200-GPS	Wind speed (0-60 m/s), wind direction. With compass & GPS
100-GMX240	Wind speed (0-60 m/s), wind direction, precipitation (optical method). With compass
100-GMX240-GPS	Wind speed (0-60 m/s), wind direction, precipitation (optical method). With compass & GPS
100-GMX300	Temperature, humidity, pressure. No compass, No GPS
100-GMX301	Temperature, humidity, pressure, solar radiation (W/m2). No compass, No GPS
100-GMX400	Temperature, humidity, pressure, precipitation (optical method). No compass, No GPS
100-GMX500	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure. With compass
100-GMX500-GPS	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure. With compass & GPS
100-GMX501	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure, solar radiation (W/m2). With compass
100-GMX501-GPS	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure, solar radiation (W/m2). With compass & GPS
100-GMX550*	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure, precipitation ready. With compass
100-GMX550-GPS*	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure, precipitation ready. With compass & GPS
100-GMX551*	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure, solar radiation (W/m2), precipitation ready. With compass
100-GMX551-GPS*	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure, solar radiation (W/m2), precipitation ready. With compass & GPS
100-GMX600	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure, precipitation (optical method). With compass
100-GMX600-GPS	Wind speed (0-60 m/s), wind direction, temperature, humidity, pressure, precipitation (optical method). With compass & GPS

\*Optional Rain Gauge for GMX550 & GMX551 (Carrying case not included)

100-1957-PK-069	MM - Sensor, Kaylx Tipping Bucket Rain Gauge
100-1957-10-066	MM - Cable, Tipping Bucket Rain Gauge, 20m (65 feet)



MaxiMet - GMX 501

