

# **TURBOWIN+ USER MANUAL:**

## **PART 3**

### **INSTRUMENT INTEGRATION & AUTOMATED OUTPUT OPTIONS**

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## Introduction

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1. These instructions refer to the interfacing of digital instruments with **TurboWin+** (hereafter referred to as **TW+**) This manual also describes the automated output functionality built into the software.
2. Turbowin+ is capable of interfacing with a variety of different instruments including some Automatic Weather Stations (AWS), barometers, temperature/humidity sensors and GPS units.
3. TW+ can interface with up to 2 meteorological instruments and a GPS unit simultaneously.
4. Please note that a USB hub can be used to increase the number of available USB ports on the PC.
5. Instrument integration enables automated generation of weather reports, plotting of time series graphs and a reduction in operator error compared to manual entry of measurements from an instrument into the electronic logbook software.

## Compatible Instruments

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1. TW+ version 4.0 is compatible with the following instruments:
  - **Barometers**
    - Mintaka Duo USB
    - Mintaka Star USB
    - Mintaka Star Wifi
    - Vaisala PTB220 serial
    - Vaisala PTB330 serial
  - **Automatic Weather Stations**
    - EUCAWS AWS serial
    - OMC-140 AWS LAN
    - OMC-140 AWS serial
    - Mintaka StarX Wifi
  - **Temperature/humidity Sensors**
    - Vaisala HMP155 USB
  - **Global Positioning Systems**
    - Various GPS (NMEA 0183)

## Connecting an Instrument

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1. Before connecting your instrument, please check that it is compatible with your version of Turbowin+ (see previous section).

2. If the device is compatible, you will then need to check the serial port settings of the instrument:
  - Baud rate
  - Data bits
  - Stop nits
  - Parity
  - Flow control
3. These serial port settings will need to be configured in TW+ to allow communication between the instrument and the software. Refer to the relevant instrument user manuals for details of how to check the serial port settings.
4. From the menu bar, select **Maintenance >> Serial/USB/LAN device settings (Figure 1)**. Enter the administrator password (see Annex 1) to login.

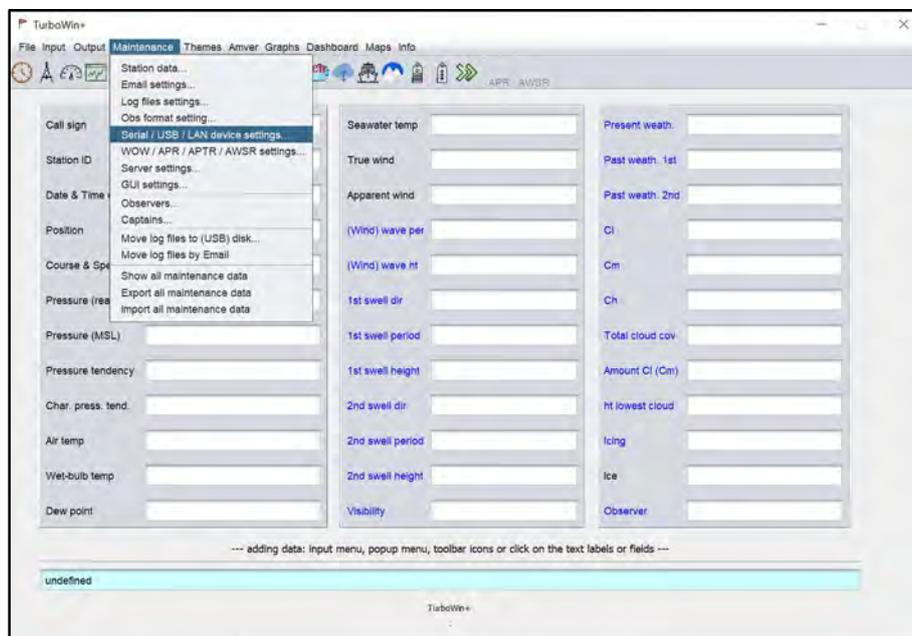


Figure 1: Serial/USB/LAN device settings

5. The window shown in **Figure 2** will be displayed.

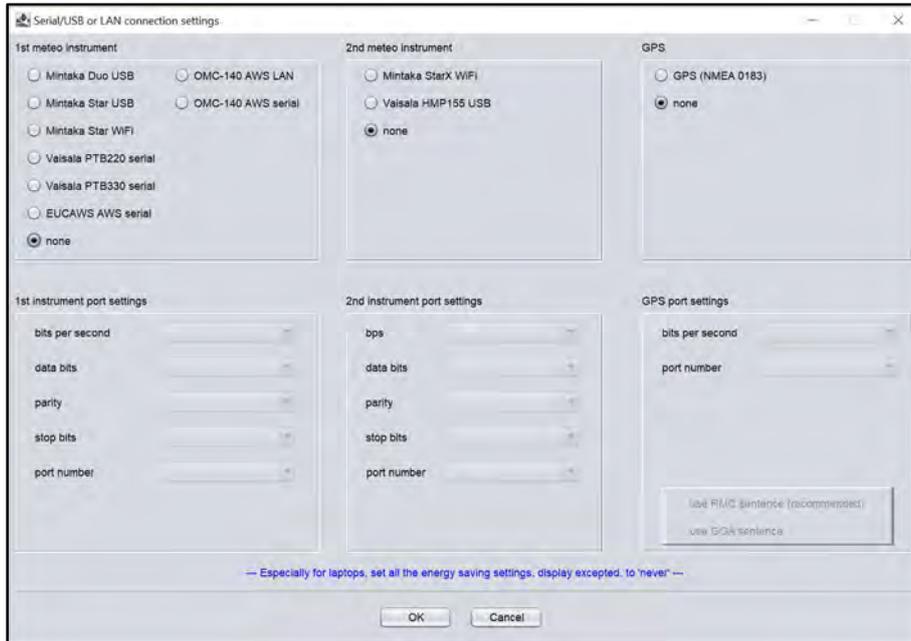


Figure 2: Serial settings window

6. In this window you will be able to select up to two instruments as well as a GPS unit.
7. Select the relevant instrument by clicking on the corresponding radio button.
8. Each instrument will have different port setting requirements which will become active once the instrument has been selected.
9. Configure the required port settings from the drop-down lists with the corresponding serial port settings for your instrument. See example configuration in Figure 3 for a system including PTB330 barometer, HMP155 temperature/humidity probe and GPS unit.



Figure 3: Example serial port settings

10. To ensure continuous communication between the computer and attached instruments, be sure to set all computer power saving settings to 'Never' (See example in Figure 4).

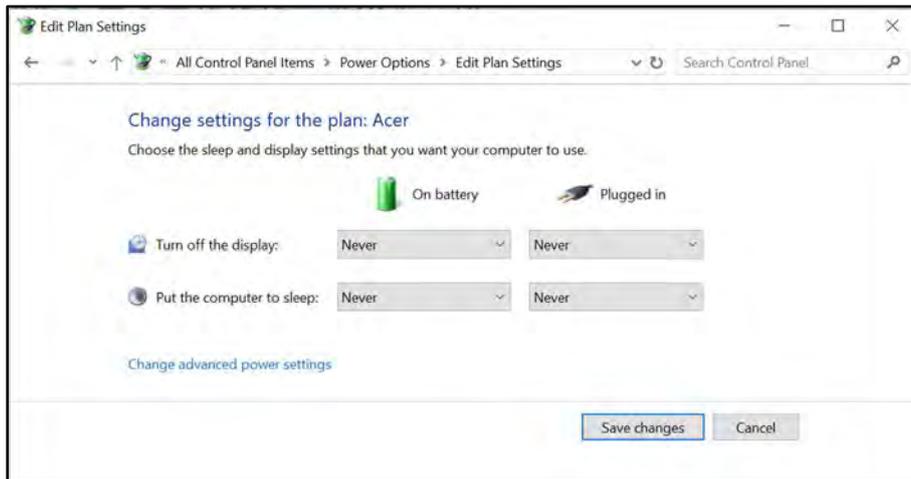


Figure 4: Power Options set to 'Never' (example from Windows 10 laptop)

11. Once configured you will be prompted to restart TW+ for changes to take effect (Figure 5).

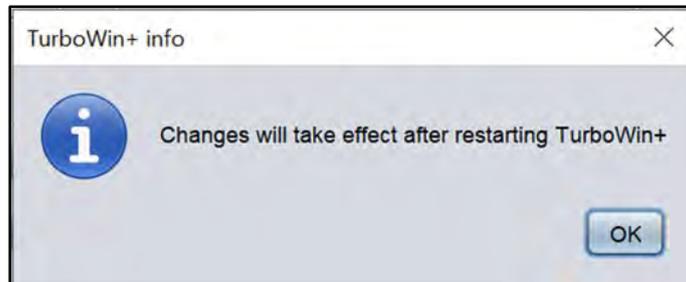


Figure 5: Changes will take effect after restarting Turbowin+

12. Upon re-opening TW+, the software will search for the connected instruments.

## Automated Reports (WOW/APR/APTR/AWS)

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1. Turbowin+ has built-in functionality to automatically transmit weather observations at set intervals.
2. Automated reporting requires a GPS, plus at least one integrated sensor or Automatic Weather Station (AWS).
3. TW+ can also push weather observation to the Weather Observations Website (WOW).
4. To activate automated reporting, go to the menu bar and select **Maintenance >> WOW / APR / APTR / AWSR settings** (Figure 6). Enter the administrator password (see Annex 1) to login.

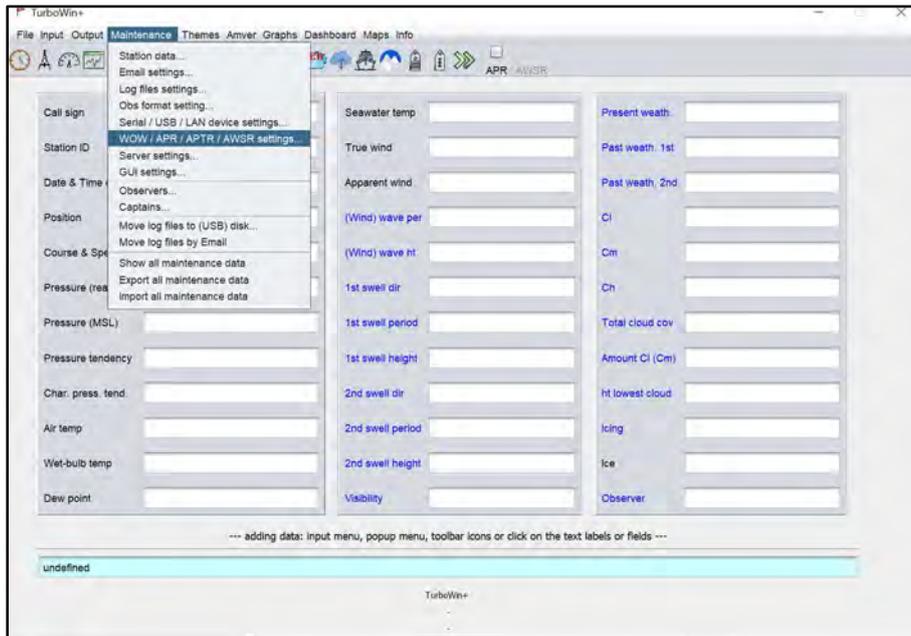


Figure 6: WOW/APR/APTR/AWSR Settings

- The settings window will open (Figure 7) to allow you to select your preferred reporting type, reporting interval and output method.

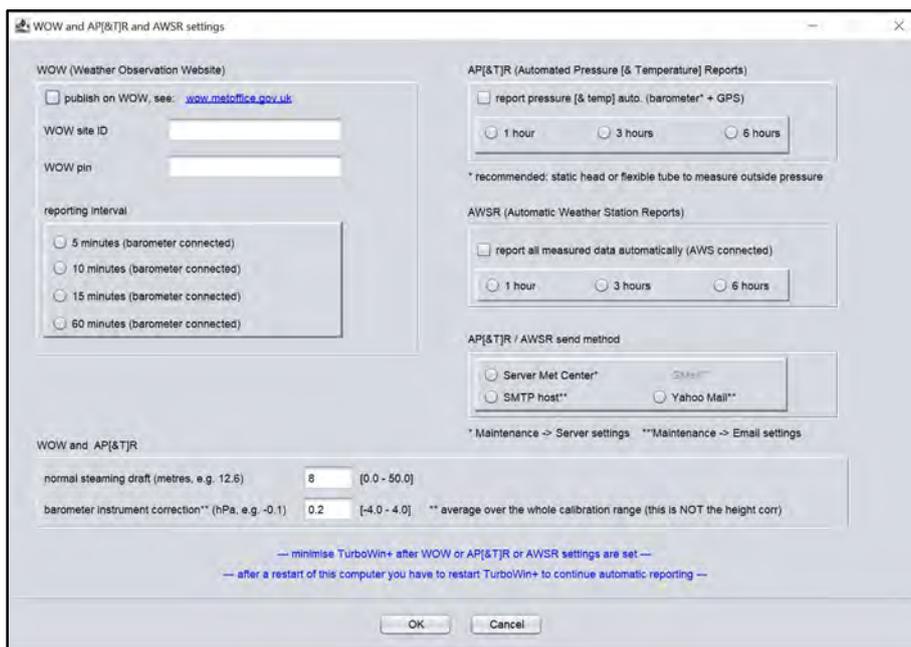


Figure 7: Automated reporting configuration settings

- Some additional metadata is required for WOW and APTR reporting. Enter the **normal steaming draft** and **barometer instrument correction** in the relevant fields at the bottom of the page.
- Select the desired reporting interval for APTR or AWSR by clicking on the relevant radio button (1 hour, 3 hours or 6 hours).
- The available output methods (server or email) will depend on what has previously been configured in TW+ (see Turbowin+ User Manual, Part 2). Select the relevant radio button for the preferred send method.
- To use the WOW function, please enter your WOW Site ID and WOW pin and select the desired reporting interval by clicking on the relevant radio button.

10. Once the desired settings have been configured, click **OK**. TW+ can be minimised and left to run in the background, or alternatively you can complement the automated reports with manual/visual elements in the 20 minutes prior to a scheduled transmission.