Zephyr™ XM and RH-ASX Quick Start Guide

The Zephyr XM is a highly accurate, handheld micromanometer and datalogger. Zephyr XM has auto-zeroing, auto-ranging differential pressure sensors and a barometric pressure sensor built-in.

To connect an **RH-ASX Temperature and Humidity probe** (with or without the ACC-RH-HDLA handle shown at left), attach it to the 7-pin connector at the bottom left of the Zephyr XM. Align the small red orientation marks on the connector with the orientation mark on the socket and insert the connector.

To connect an **AS-201 or AS-202A hotwire air velocity probe** to the Zephyr XM, align the red dot on the probe's male 8-pin Lemo connector (red cable strain relief) with the notch on the 8-pin Lemo socket on the top of the meter and insert the connector. Power is supplied to the hotwire probe when the Zephyr XM is powered on. (There are also (2) AA alkaline batteries in the hotwire probe handle to self-power AS-201 or AS-202A.) The meter will automatically search for probe connections, and the Air Speed and Temperature values will display within the Internal probe box in Live view. See **Using a PITOT Tube with the Zephyr XM** below for instructions on connecting the PIT-504-KIT.

POWERING

Zephyr XM is powered on by pressing the power button on the front of the unit. To power off, navigate to the Quick Access Tiles by pressing the Quick Access Dropdown at the top of the screen. Press the power symbol and the press **Power Off** to confirm. (Alternatively, press the menu symbol in the top left corner. Tap on **Settings** and select **Power Off**.)

The Zephyr XM is powered and charged with the included external AC power adapter. Plug the power adapter into wall power and then plug the 12V DC barrel connector into the bottom left socket of the Zephyr XM. The power adapter comes with interchangeable plugs for 100/240VAC, 50-60Hz US, EU, UK, AU plug standards.

When charging, the AC charge indicator LED will appear red, and turn green when fully charged. The typical recharge time is 4 hours. The battery charge status can be found by navigating to the menu, pressing Settings and then About. Press OK to return to the Live view.

AUTO ZEROING

Zephyr XM will automatically zero itself periodically to maintain low-range accuracy. The Auto-Zero feature is enabled by default to operate every 2 minutes.

When auto-zeroing, the Zephyr XM will make a clicking noise indicating the zeroing valve is activated and the readings will temporarily lock. The zeroing only takes 1-2 seconds and readings continue immediately after the zeroing valve disengages.

AIR VELOCITY/VOLUME FLOW

Air Velocity calculations may be added to the display if you are using an AS-201 or AS-202A Hotwire Air speed probe or if you have a meter equipped with Differential Pressure and are using a Pitot Tube such as the PIT-504 kit (see Pitot section below).

When using an AS-201 or AS-202A Hotwire Air Speed probe with the Zephyr XM, Air Speed and Temperature will be displayed with barometric pressure under the heading Internal. Tap **Air Speed** on the Zephyr XM screen to view the available display units (m/s, ft/min, ft/s). Select the desired unit and tap **Confirm**. Repeat for Temperature if necessary (ºF, ºC, ºK).

To add calculated Volume Flow readings to the display and logged data files, press the menu symbol in the top left corner. Tap on **Probe** and select **Volume Flow**. Enter the Height and Width (H x W) or Diameter of the Duct using the pencil icon. If your Air Speed probe measures Air Speed in ft/s or ft/m, Imperial units (inches) will be displayed, and Volume Flow will be displayed in CFM. If your Air Speed probe is measuring in m/s, Metric units (mm) will be displayed, and you can choose between l/s and m3/h for Volume Flow.

Stnd and **Actual** refer to which atmospheric pressure and temperature values are used to calculate the Volume Flow. Select **Stnd** to use 1013.15 mbar and 20 ºC/ 68 ºF. Select Actual to use the barometric pressure sensor installed in the Zephyr and Temperature from an RH-ASX or the built in temperature from the AS-201/202A Hotwire Airspeed Probe.

NOTE: If both AS-201/202A and RH-ASX sensors are installed, preference is given to the RH-ASX Temperature Sensor.

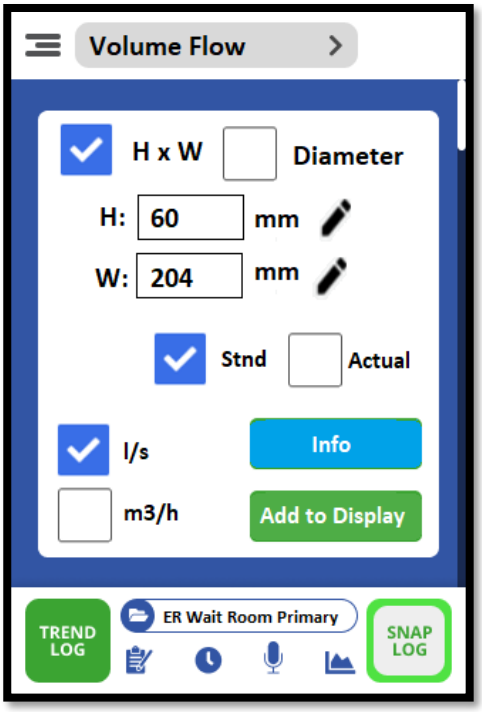
AS-201

AS-202A

Use the **Add Reading** button to close the window and add Volume Flow to the display.

To remove Volume Flow from the display, return to the main menu, tap **Probe**, select **Volume Flow** and select **Remove**.

To modify the values used to calculate Volume Flow, you must REMOVE and RE-ADD the Volume Flow reading.



Using a PITOT Tube with the Zephyr XM

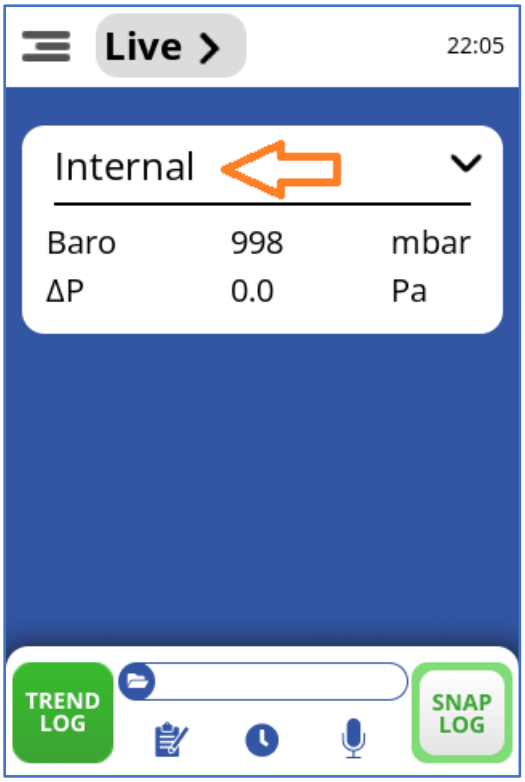
The optional extendable PIT-504 Pitot Tube kit may be used to add Air Speed readings derived from differential pressure to the Zephyr XM meter for display and datalogging. Use the supplied tubing and connect the tubing to the proper port.

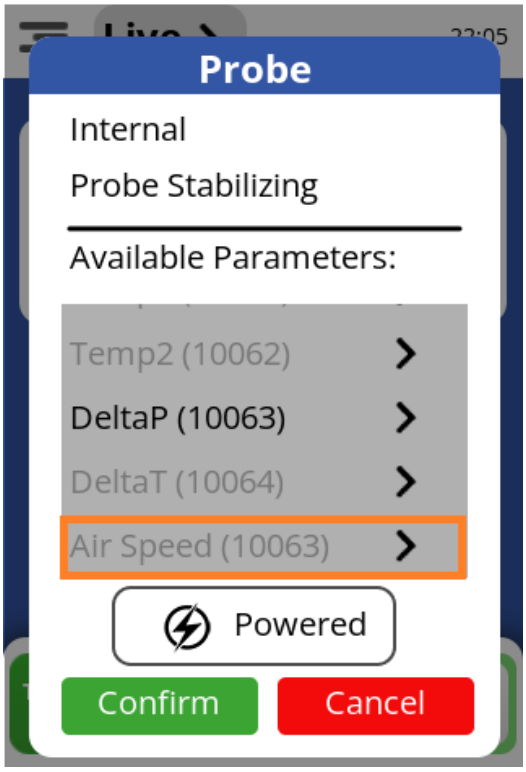
Video instructions* may be found here: https://graywolfsensing.com/graywolf-videos/

**The videos refer to an older meter, but the connections are the same.*

Once the tubes are connected and **ΔP** is displayed on the LIVE READINGS screen of the Zephyr XM, tap on the **INTERNAL** Probe label.

Scroll to the **Air Speed** reading at the end of the list of Available Parameters and Tap to open the options menu.

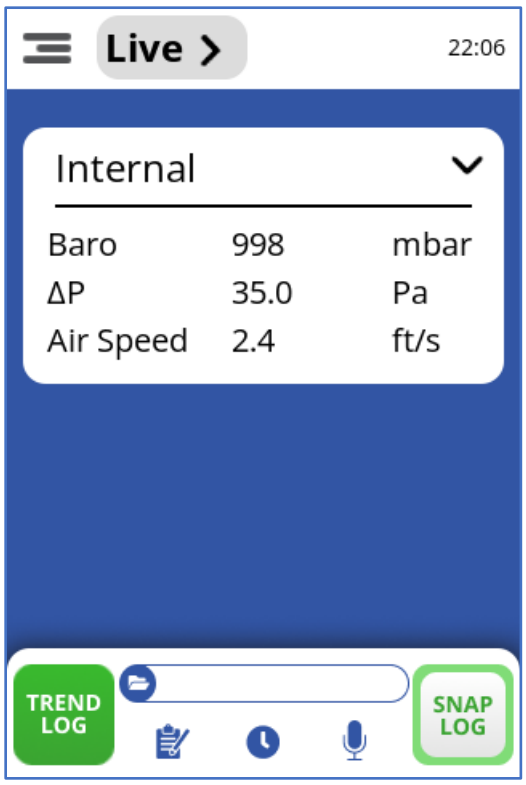


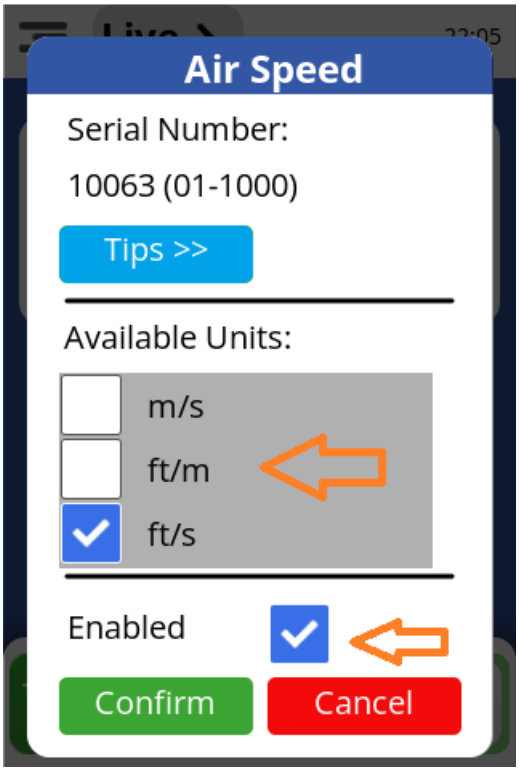


From the Options Menu, make sure **ENABLED i**s checked and the desired units are selected.

Air Speed readings will be added to the display and will be available for datalogging.

To remove the Air Speed from the display or to change units, click on Air Speed on the live display and uncheck the Enabled box or change units.





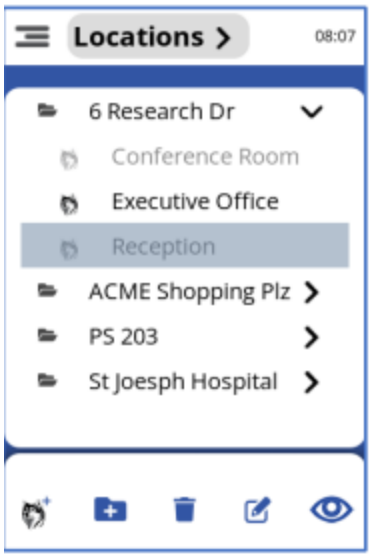
NOTE: The attachment of the pitot tubing to the correct +/- ports on the Zephyr XM is important. If the Air Speed readings are pinned at zero and you have positive air flow or if the **ΔP** reading is negative, you have connected the tubes to the wrong ports.

Changing the Pitot Constant

The Pitot Tube constant is calibrated for the PIT-504 Kit. If you are using an alternative Pitot tube or have been advised to enter a different constant, you will need to enter it in the Service Panel. To access the Service Panel, please contact GrayWolf Technical Support.

CREATING LOCATION FILES

Zephyr XM has built-in trend logging functionality for recording readings from all connected devices at once and saving to a single data file. These data files, called **Locations**, can be organized on the device with the use of folders, called **Sites**. The following symbols cannot be used in Site/Location naming:
. $ * “ ‘ : / ? ~ • < > | \



Select or create a Location where data will be saved. The Location Review screen is accessible from the Live view by pressing the Location Review icon at the bottom of the screen, or through the Quick Access Tiles by pressing the Quick Access Dropdown at the top of the screen and then pressing the Location icon.

On the Location Review screen, example Sites (folders) and Locations (data files) illustrate the organizational structure. Sites can be expanded to view the contents by pressing the dropdown arrow at the end of the name.

To create a new Site, press the new Site icon (folder with + inside). The Zephyr XM will prompt you to create a Top-Level Site. Select **Yes** if you plan to nest subsites or multiple locations within the primary Site. Using the virtual keyboard, enter a Site name and press **Confirm**. To nest a subsite within an existing Site, first select and highlight the existing Site name and select the Site icon to create the subsite. Independent or Top-Level Sites can also be created which are not nested within another folder. To create an independent Site, tap in the BLANK area (so nothing is highlighted) and use the new Site icon.

To create a new Location within a Site, highlight the Site it should be created to, press the new Location icon (wolf head), enter a location name and then press **Confirm**. To create an independent location, tap in the BLANK area (so nothing is highlighted) and use the new Location icon. Location files display in gray text if empty and black text if the file contains data.

LOGGING DATA

The built-in logger in the Zephyr XM can be accessed directly from the Live view by pressing the TREND LOG or SNAP LOG buttons. Alternatively, access the main menu, tap **Log**, then Start Log (for trend logs) or Snap Shot Log (for instantaneous, user-controlled logging).

TREND LOG: From the Start Log screen, tap the Location field at the top. When the Locations view opens, select and highlight the desired Location file. Once a Location is selected, press the **OK** button at the top right to return to the logger configuration screen.

Press the plus (+) and minus (-) symbols for minutes and seconds to set the desired log interval. The range is 1x/second to a maximum of 99 minutes and 59 seconds. The check box **Enable Averaging** controls if data is averaged over the log interval or instantaneous readings are saved to the location file. For example, if the Trend Log interval is 1-minute, readings are averaged in a sliding buffer for 1 minute up until a reading is stored. Instantaneous readings are the current live readings, saved to the Trend Log un-averaged.

Once the location is chosen and log settings are configured, press **Start Log**. If a log file that already contains data is selected a Warning screen will appear, asking to either **Append** to existing data, **Overwrite** any existing data, or **Cancel** the new log. A Log Status screen will confirm the log in progress.

To stop the Log, press the now red TREND LOG button, or go to the main menu, Tap **Log** and select **Stop Log**.. In the top right corner of the screen, the Log Running symbol or the Log Error symbol will display to indicate the status of the logger. Press the Time in the top right corner to display the log status.

SNAP LOG: A Snap log is a single instantaneous recording of the live readings to a Location file. To start, select the target Location file, press the SNAP LOG button or go to the main menu, Tap **Log** and select **Snap Shot Log**.

EXPORTING LOGGED DATA

To export data to your PC, first install GrayWolf's **WolfSense PC** software on your Windows 8/10/11 Laptop/Desktop/Tablet PC if not previously done. WolfSense PC is free to all GrayWolf customers. Register and download from the GrayWolf Customer Portal at https://graywolfsensing.com/portal

Use the supplied AD-USBC-A-1M (USB-C to USB-A data cable) and connect the USB-C end to the top of the meter and the USB-A end to the PC.

NOTE: Zephyr XM connects as a USB drive to your computer. If prompted, do not format the drive, or risk losing all data on the unit. It is okay to scan and repair the drive if prompted, but first safely eject Zephyr XM, power cycle and attempt connection again.

On the Zephyr XM, tap the Quick Access Dropdown at the top of the screen. Press the Transfer icon (opposing arrows) to put the Zephyr XM in Data Transfer mode. This will safely terminate any active logs to allow for data transfer.

Once connected, open WolfSense PC and select the **Download from GrayWolf Meter**. WolfSense PC will automatically find the logged data files on the Zephyr XM where they can be transferred or opened for review.

After the data transfer is complete, safely eject the Zephyr XM from the PC and disconnect the USB connection cable.

Questions? Contact salesteam@graywolfsensing.com or tech_support@graywolfsensing.com