

# WEATHER STATION FIELD GUIDE



# Brüel & Kjær



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# OVERVIEW



Weather Station Kit MM-0316-A (left) measures wind speed and direction and MM-0256-A (right) adds ambient temperature, ambient humidity, ambient pressure and rainfall measurement.

Weather conditions affect the propagation of sound. Particularly wind speed and direction must be taken into account when measuring noise outdoors. Most standards for the measurement of environmental noise specify allowed ranges of wind speed and direction. Brüel & Kjær's Weather Station Kits (based on Vaisala WINDCAP Ultrasonic Wind Sensor WMT52 and Weather Transmitter WTX520, respectively) capture wind speed and direction data simultaneously with noise parameters directly on the analyzer.

Post-processing is provided by Measurement Partner Suite BZ-5503.

Check applicable standards for specific setup height, distance, etc.

**NOTE:** Safety related issues such as the height /stability of the weather station and analyzer mounting are not addressed in this guide.

This guide illustrates the setup of Weather Station Kits MM-0316-A and MM-0256-A and general accessories for adding weather data to environmental noise measurements.

- 1) Check case contents and assess needed accessories for appropriate mounting method.  
(Included and Optional Accessories, p. 2)
- 2) Mount weather station.  
(Mounting, p. 3)
- 3) Connect to hand-held analyzer.  
(Connection, p. 7)
- 4) Hand-held analyzer setup and system operation check.  
(System Setup and Check, p. 8)
- 5) Post-processing using Measurement Partner Suite BZ-5503.  
(Post-processing, p. 10)

## INCLUDED AND OPTIONAL ACCESSORIES



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### Included with the Weather Station Kit

- |                                     |   |
|-------------------------------------|---|
| 1) KE-4334                          | Carrying Case   |
| 2) BR-1779                          | Field Guide and Weather Station User's Guide (under field guide)  |
| 3) MM-0256-002<br>or<br>MM-0316-002 | 6-Parameter Weather Station and Mounting Kit<br>or<br>2-Parameter Weather Station and Mounting Kit (insert) |
| 4) UA-1707-A                        | Tripod Adaptor  |
| 5) ZH-0698                          | Weather Station USB Adaptor   |
| 6) DB-4364                          | Pole Adaptor (for 1" pole or speaker tripod)  |
| 7) QX-1171                          | 2.5 mm Hex Wrench   |
| 8) QX-0016                          | Flat-head Screwdriver   |
| 9) AO-0657                          | USB Adaptor Cable   |
| 10) AO-0659                         | Cable M12 8-pin (F) to Lemo 1-B 8-pin (M), 10 m (33.3 ft)   |

### Optional Accessories (not Included)

- AO-0751-D-200 Extension Cable (20 m)
- UA-0801 Tripod (lightweight, for use with tripod adaptor)
- UA-0587 Tripod (heavy duty, for use with tripod adaptor)

Speaker tripods (not supplied by Brüel & Kjær), which can be used with the pole adaptor

**NOTE:** Speaker tripod suppliers may be able to provide other useful accessories for mounting the weather station or analyzer.

# MOUNTING

## Mounting Kit

The mounting kit can be used to save time and wear when, for example, you will be mounting and dismounting the weather station repeatedly at a particular location. If you will be mounting the weather station on the tripod adaptor or pole adaptor for a long period, the mounting kit is not necessary.

Except where specifically stated, all mounting instructions use the mounting kit.



### Attach the Mounting Kit to the Tripod Adaptor, Pole Adaptor or Pole

- 1) Use the 2.5 mm hex wrench to loosen the retaining screw on the sleeve of the mounting kit.
- 2) Unless you are placing the adaptor on a 3/4" pole, remove the 3/4" pole adaptor sleeve from the mounting kit.

**NOTE:** *If using the adaptor, ensure that the gap in the adaptor does not line up with the retaining screw.*

- 3) Place the mounting kit on the end of the adaptor or pole.
- 4) Tighten the retaining screw, slightly. You may loosen the screw again soon for northerly orientation.

**NOTE:** *Do not overtighten the retaining screw, particularly on the tripod adaptor, you may damage the adaptor.*



## Mounting the Weather Station on a Tripod

- 1) Remove the tripod's head, if present.
- 2) Unscrew and remove the tripod adaptor base and screw it onto the tripod.
- 3) Thread Cable AO-0659 through the body of the adaptor and mounting kit. Screw the adaptor body back on the adaptor base.

**NOTE:** Ensure that the cable runs through the slot at the base of the adaptor.

- 4) Connect the cable to the weather station.
- 5) Place the flanges on the mounting kit into the slots in the weather station and turn clockwise until it snaps into place.

## Align to North

Align the weather station using a compass and the NORTH arrow on the bottom of the weather station by: a) turning the tripod, or b) loosening the mounting kit retaining screw (2.5 mm hex wrench), turning the mounting kit then retightening the retaining screw.





## Mounting the Weather Station on a Speaker Tripod – Using the Pole Adaptor

- 1) Remove the endcap from the tripod stem.
- 2) Thread Cable AO-0659 through the body of the adaptor and mounting kit, then slide the adaptor onto the tripod stem.

**NOTE:** Ensure that the cable runs through the slot at the base of the adaptor .

- 3) Tighten the pole adaptor retaining screw using the screwdriver.
- 4) Connect the cable to the weather station.
- 5) Place the flanges on the mounting kit into the slots in the weather station and turn clockwise until it snaps into place.

## Align to North

Align the weather station using a compass and the NORTH arrow on the bottom of the weather station by: a) turning the tripod, or b) loosening the mounting kit retaining screw (2.5 mm hex wrench), turning the mounting kit then retightening the retaining screw.





1a



1b



2



3



4

## Mounting the Weather Station on a Pole

- 1) Place the pole adaptor or mounting kit (appropriate to pole diameter) onto the pole:
  - If you are using the pole adaptor: thread Cable AO-0659 through the body of the adaptor and mounting kit (1a) or thread the cable through the pole, adaptor and mounting kit (1b).
  - If you are only using the mounting kit, you must thread Cable AO-0659 through the pole and mounting kit (1b).

**NOTE:** Ensure that the cable runs through the slot at the base of the adaptor.

- 2) Tighten the pole adaptor or mounting kit retaining screw using the screwdriver.
- 3) Connect the cable to the weather station.
- 4) Place the flanges on the mounting kit into the slots in the weather station and turn clockwise until it snaps into place.

## Align to North

Align the weather station using a compass and the NORTH arrow on the bottom of the weather station by: a) turning the tripod, or b) loosening the mounting kit retaining screw (2.5 mm hex wrench), turning the mounting kit then retightening the retaining screw.





## CONNECTING USB ADAPTOR ZH-0698



### Using a Tripod

- 1) Mount the hand-held analyzer on its tripod.
- 2) Strap the USB adaptor to the tripod with the Velcro band.
- 3) Connect the cable from the weather station to the USB adaptor.
- 4) Connect the USB adaptor to the analyzer's USB standard A socket for G4 analyzers (shown) or USB mini B socket for G1–3 (Adaptor Cable AO-0657).

The weather station will function automatically while connected to the analyzer. To check system operation and additional setup information see the next section: **System Setup and Check.**

### Weather Protection

USB Adaptor ZH-0698 and the hand-held analyzer can be protected inside All-weather Case Type 3535-A. Please refer to Product Data BP 2251.



**NOTE:** For more information on analyzer storage and mounting, see *User Manual for Hand-held Analyzer Types 2250 and 2270 (BE 1713)* or *User Manual for 2250 Light (BE 1766)*.

# SYSTEM SETUP AND CHECK

## System Setup

The weather station communicates automatically with the analyzer without any operator setup of the weather station.

When the weather station connects, this message will display for about 2 seconds.



When the weather station disconnects, this message will display for about 2 seconds.



For information concerning weather parameter settings on the analyzer, see *User Manual for Hand-held Analyzer Types 2250 and 2270 (BE 1713)* or *User Manual for 2250 Light (BE 1766)*.

**NOTE:** Wind Speed and Wind Direction data are updated at a 1 s interval and will normally update on screen every few seconds (even though they are exponentially averaged with an averaging time of 5 s).

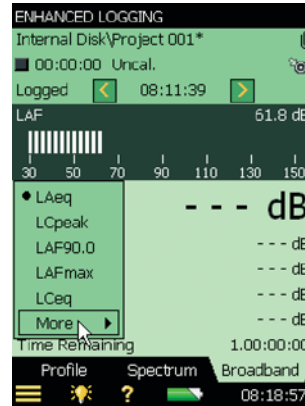
## System Check

To confirm that the system is working, open the template you will use (Enhanced Logging template is shown), tap the *Broadband* tab then:

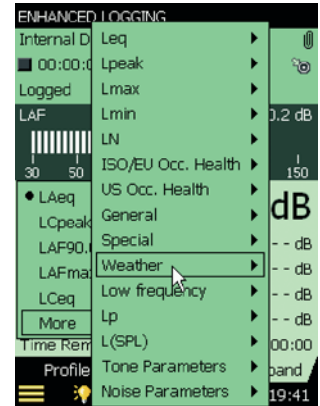
Tap a parameter.



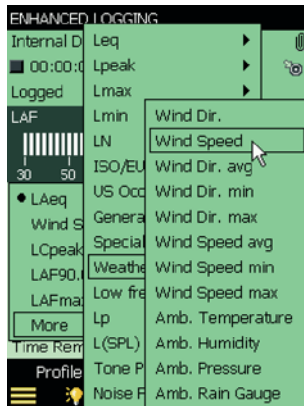
Tap *More*.



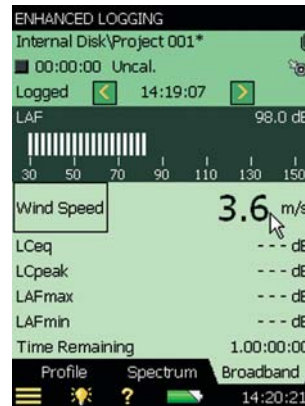
Tap *Weather*.



Tap *Wind Speed*.



Wind speed values will be displayed on screen circa 8 seconds after the weather station is connected.



If there is a connection problem, dashes will be displayed on screen.



**NOTE:** MM-0256-A: Data are shown for all weather parameters. MM-0316: Data are shown only for wind parameters.

# POST-PROCESSING



## Measurement Partner Suite BZ-5503

Back in the office download your noise and wind data to Measurement Partner Suite for post-processing.

All weather parameters as measured on the instrument can be seen in Measurement Partner Suite, and you can even display wind speed and direction on the same graph as your noise profile.

If wind data has been logged, use the Report and marker wizard in Logging Module BZ-5503-A-012 to select the time intervals in the logging profile that you need to make an assessment of noise. Otherwise make your assessment based on the total values for wind speed and direction.

For more information, please refer to the Measurement Partner Suite BZ-5503 Online Help and Product Data (BP 2430).

# SPECIFICATIONS

## Setup and Specifications

Please refer to the analyzer user manuals and included weather station user's guide.

## Dimensions

Case	345 x 265 x 165 mm
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Configuration: Type 2250, weather station, speaker tripod and pole adaptor.





Configuration: Type 2250, weather station, Outdoor Microphone Type 4952, tripod and tripod adaptor



Configuration: Type 2250, weather station, ,All-weather Case Type 3535-A speaker tripod and pole adaptor





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