Norsonic

Enivronmental monitoring

Outdoor microphone Nor1217

Environmental monitoring

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for semi-permanent installations

The Outdoor Microphone Nor1217 is a high quality measurement microphones for all-weather conditions, designed for semi-permanent applications requiring low power. The Nor1217 uses the standard preamplifier and microphone from the sound level meter, making it a very cost effective solution.

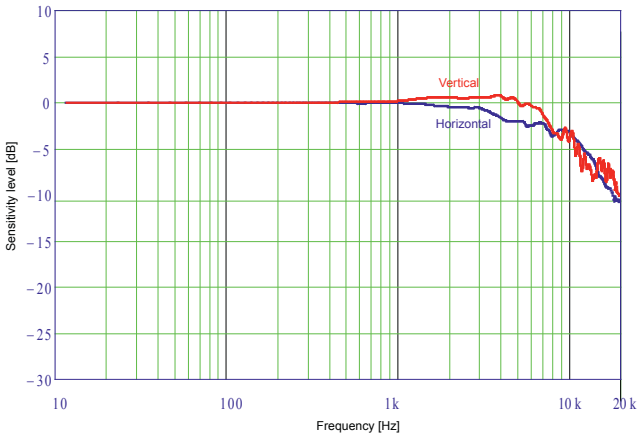
The Nor1217 is designed for use with the Nor140, Nor145 and Nor150 Sound Analyser. The instrument allows a direct connection via Nor1408A, a standard Lemo 7 pin microphone cable supplied in various lengths. There is no need for extra adapter box or power supplies. The Nor140, Nor145 and Nor150 have selectable frequency correction for both community and airport applications. The instruments also supports the Sys-Check verification.

The Nor1217 supports different microphone capsules. The Nor1225, Nor1227 and Nor1239. The Nor1225 is an external polarised free field microphone having a nominal sensitivity of 50mV/Pa. This capsule is normally supplied with the Nor140 and Nor150 sound analysers. Nor145 is supplied with Nor1227 or Nor1239.

The Nor1227 and Nor1239 are pre-polarised versions and acoustically similar to the Nor1225. External polarised microphones is sensitive to drop in the polarisation voltage. Such drop may occur in high humidity environment after some years of use when the equipment may be contaminated. Contamination in combination with high humidity may cause leakage of the 200V polarisation voltage needed for the Nor1225. Hence, pre-polarised microphones is normally a better choice in high humidityenvironment since they are self-polarised and is not dependent on external polarisation voltage.

Frequency response

The Nor1217 satisfies IEC 61672 Class 1 requirements and related national standards when used with Nor140, Nor145 or Nor150. These instruments applies a frequency correction to the measured noise signal when the Nor1217 and the vertical or horizontal noise incidence criteria is selected in the instruments transducer selection menu.



Key Features

Outdoor microphone for community and aircraft noise.

Fulfils IEC 60651, IEC 61672 class 1 and ANSI S1.4 type 1 when used with Nor140, Nor145 or Nor150 sound level meters.

Protection class IP 55 (dust and water).

Easy to calibrate with a normal ½" sound calibrator.

Microphone verification by SysCheck facility.

Low self noise – typically below 17 dB, A-weighted.

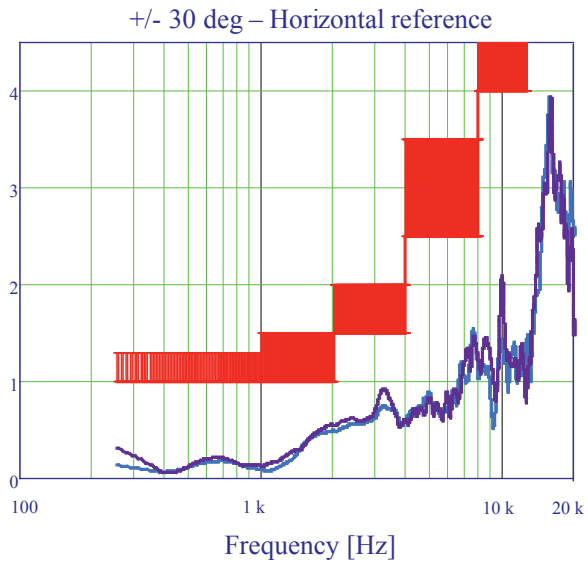
Low cost. use microphone and pream-plifier supplied with Nor140, Nor145 or Nor150 sound level meters.

Directly powered and supported by Nor140, Nor145 and Nor150 (built in selectable frequency correction networks, heater supply and SysCheck signal generator).

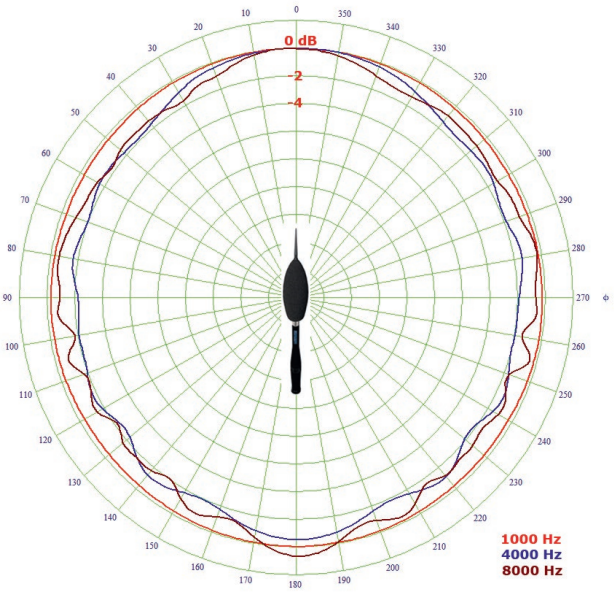
Delivered with individually calibration certification.

Type approved by PTB, Germany.

Directional response



Maximum deviations from an ideal circular response within ±30 degree from a horizontal reference axis as a function of frequency (blue curves) and the tolerance limits as specified in IEC 61672, class 1 (red).



Directional response in a verticfal plane.

Calibration

The Outdoor Microphone may be calibrated with a normal sound cali-brator suitable for ½” working standard microphones (WS2) without the need for extra accessories. Access to the microphone cartridge is easily gained by dismounting the upper part of the microphone.

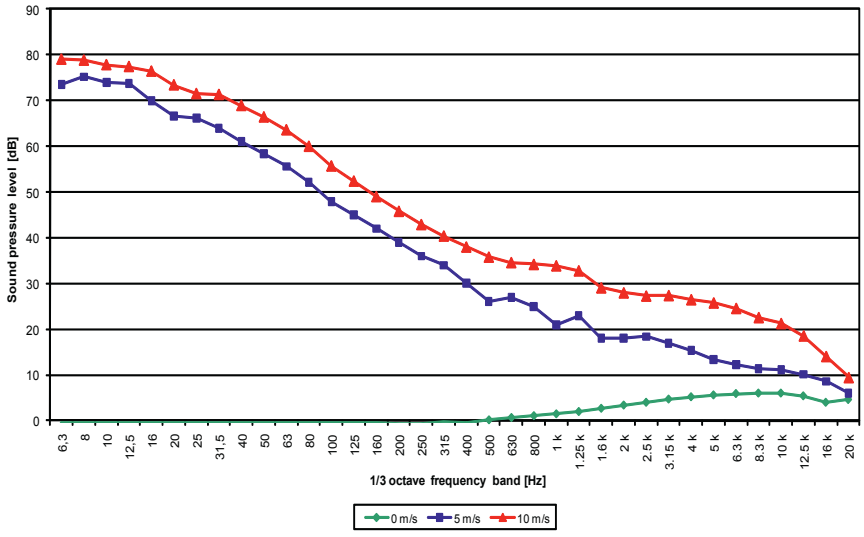
The base is made of an electrical insulating material. The microphone body will be fully insulated from the mounting mast thereby reducing pick-up of electrical hum and noise.

By removing the upper part, the outdoor micro-phone may be calibrated as an ordinary ½” micro-phone.

Wind induced noise

Compared to a standard measurement micro-phone, the Outdoor Microphone Nor1217 improves the measurement accuracy by reducing the wind noise and by improving the directional response for sound from different directions.

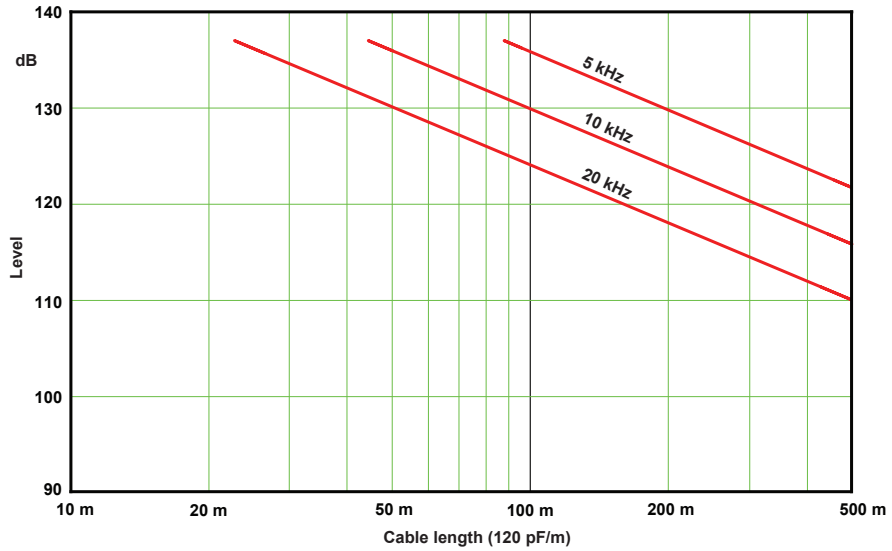
The diagram shows the typical noise floor for different wind speeds. The noise is typically 20 dB less than an unprotected microphone.

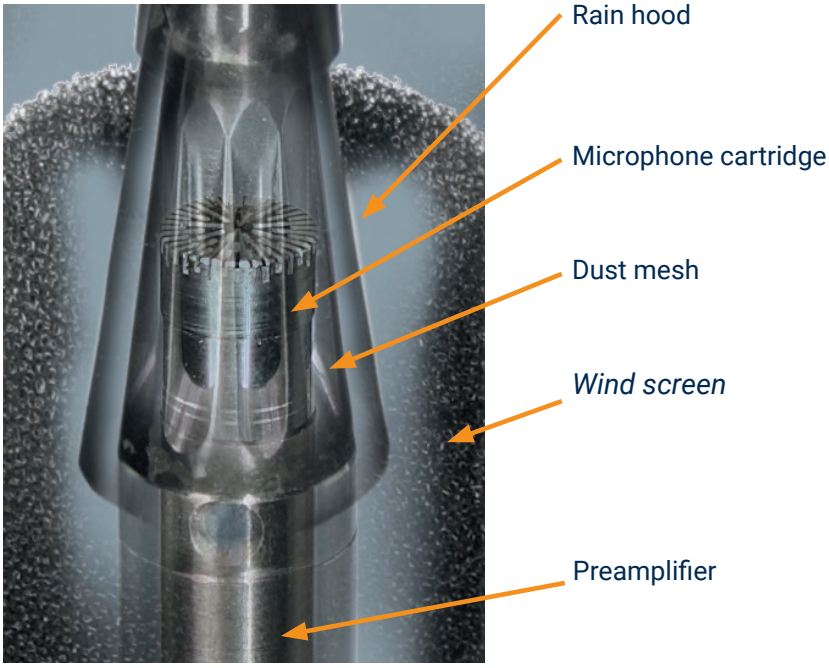


A 200 mm wind shield Nor4576 may be added to further reduce the wind induced noise, as required by some applications and standards. Frequency correction for the combination of the original windshield with the 200 mm added is supported by the Nor140/145/150.

Nor4576 windscrenn

The figure below shows the maximum level as function of cable length and frequency. 20 kHz corresponds to the bandwidth of the microphone system with the normal microphones Nor1225, Nor1227 and Nor1239.



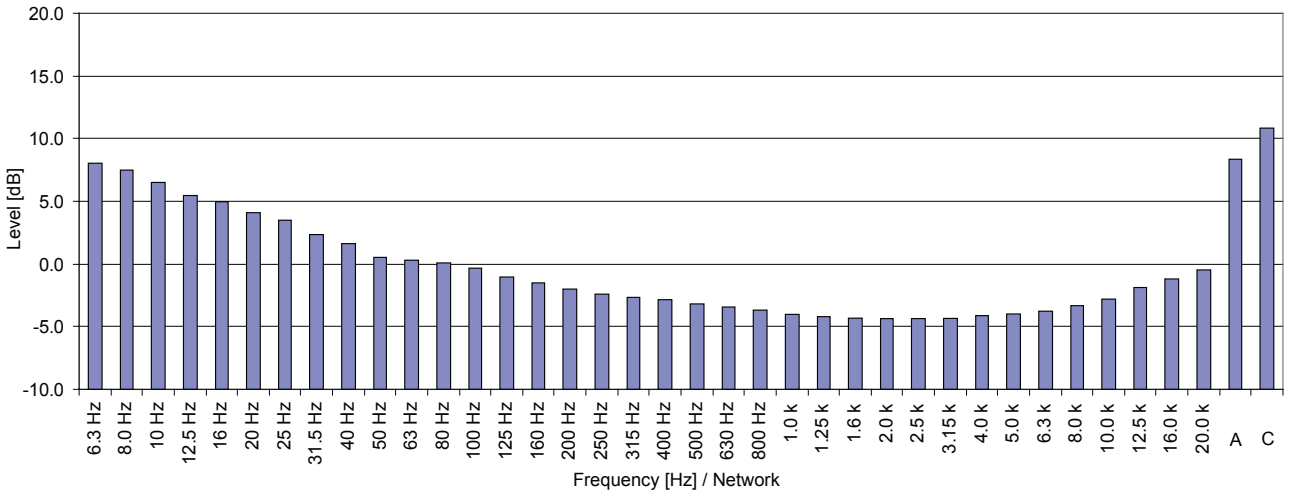


The microphone cartridge is protected by dust mesh, rain hood and windscreen to obtain Ingress Protection Category IP55 according to IEC 60529.

SysCheck verification

For verification of proper operation, the microphone is equipped with a system check facility (SysCheck), where an electrical signal applied on one of the terminals are returned after passing through the complete signal chain, thus verifying proper operation of the microphone cartridge, preamplifier and microphone cable. It is a robust and simple method for verifying a microphone system.

Syscheck is suppported by all Norsonic instruments desinge to be used with Nor1216.



Typical self noise of the microphone system when the microphone is substituted by a capacitor with similar capacitance as the microphone. Note that the acoustical self-noise for a real microphone will be higher due to thermal noise in the microphone cartridge.

Accessories and spare parts

Windshield upper part	Nor4529
Assembled upper part w/windscreen	Nor4560
Microphone	Nor1225, Nor1227 or Nor1239
Microphone preamplifier	Nor1209A
Sounc calibrator	Nor1255 or Nor1256
Microphone cable	Nor1408A standard lengths 5, 10, 1, 20, 30 and 50 m - other lenghts on request
Extra wind protection	200 mm windshield Nor4576

Technical Specifications

Acoustic performance	IEC 60651, IEC 61672 class 1 and ANSI S1.4 type 1 (frequency correction applied) with a suitable instrument (Nor140/Nor145/Nor150)
Max. sound pressure level	>140 dB peak dependent on supply voltage
Microphone cartridges	Nor1225, Nor1227 or Nor1239 1/2" Free-field (50 mV/Pa) **Use of special microphones** Other microphones than the standard microphones supplied with the sound level meter may be used to measure high sound pressure levels or low frequency noise levels. Consult Norsonic for further information.
Polarization voltage	0 V (Nor1227 or Nor1239), 200 V (Nor1225)
Inherent noise	< 17 dB A-weighted
Reference direction	Vertical or horizontal dependent on the applied frequency correction
Ingress protection category	IP55 according to IEC 60529
Supply voltage	±14 volt to ±60 volt
Current consumption	1,5 mA
Connector	7 pin Lemo type 1B male
Temperature range	-40 °C to +85 °C
Height	395 mm / 15.5" without tripod adaptor
Diameter	Approx 80 mm / 3.1" (with windshield)
Weight	Approx 300 g with preamp microphone
Mounting thread	3/8" UNC

Ordering information

Nor1217	Outdoor microphone for community and aircraft noise. Excluding preamplifier and microphone.
Nor1209/1227	Microphone set; Nor1209 preamplifier and Nor1227 microphone
Nor1209/1239	Microphone set; Nor1209 preamplifier and Nor1239 microphone

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