



# Outdoor Microphone System

## for permanent noise monitoring applications

### Nor1210A and Nor1210C

The Outdoor Microphone System Type Nor1210A (vertical incidence) and Nor1210C (horizontal incidence) are for outdoor use whenever trouble-free acoustic measurements and, in particular, community and traffic noise monitoring are required. It complies with IEC 60651 Type 1, IRC 61672-1 Class1 and ANSI S1.4 1983 Type 1 requirements and can be used with any suitable electronic sound or vibration measurement system. It is PTB approved as part of an IEC 60651 Type 1 system.

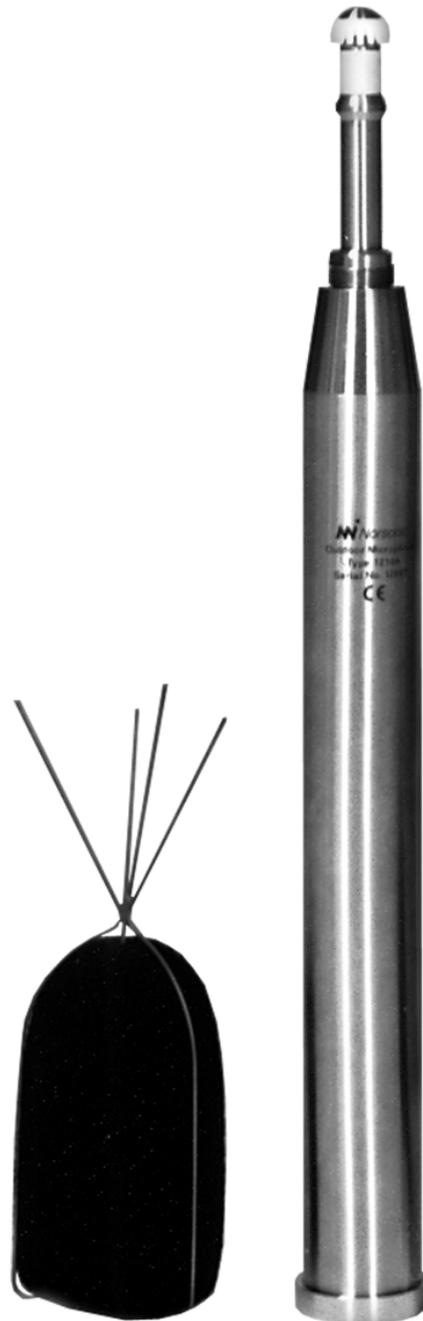
A 1/2-inch precision condenser microphone and thick-film preamplifier ensure maximum stability and performance. Both microphone and casing are made of stainless steel. Precise in-situ calibration checks at 1000 Hz are enabled any time via a built-in electrostatic actuator and test oscillator. The Nor1210 is fitted with anti-bird spikes, a windscreen, and a rain cap which is an integral part of its acoustic omnidirectional characteristics.

The rain cap, which contains the electrostatic actuator, remains in position while calibrating the microphone with a pistonphone.

The large dynamic range of the microphone system is obtained via a twin circuit board with a DC converter for supplying 200 V for microphone polarization as well as a 120 V supply for the preamplifier. The sensitivity of the amplifier can be adjusted by 12 dB and the gain changed by  $\pm 20$  dB (via a pair of circuit-board jumpers) to give optimum signal-to-noise ratio on long cables. The gain is normally set to 0 dB when shipped from the factory.

An A-weighting filter for increased dynamic capability is included in the Nor1210. A circuit-board jumper is used to select either the A-weighting or linear frequency re-

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response. A-weighting or linear response can be specified when ordering, otherwise Lin-weighting will be active on delivery.

The built-in calibration oscillator can be switched on or off by short-circuiting a pin to ground in the output socket of the Nor1210. The electrostatic actuator is factory set to a calibration level of 90 dB re. 20  $\mu$  Pa at 1000 Hz. A calibration level of 94 dB can be specified when ordering.

The electrostatic actuator and microphone assembly is electrically isolated from the casing of the Nor1210; thus eliminating EMC and ground loops.

A silica-gel desiccator is located inside the lower half of the casing and a humidity-indicator window to 0 dB on leaving the factory, for checking the condition of a second desiccator is for checking the condition of a second desiccator is located in the top half.

The internal venting of the Nor1210 is via a capillary tube which terminates under the rain cap, it also carries the calibration-signal connection to the electrostatic actuator. By removing the rain cap (left-hand thread), the connection to the actuator is accessible. With the windscreen removed, the unit can be readily recalibrated using a pistonphone (fitted with Adaptor Nor1470); though rarely necessary since actuator calibration is normally done on a regular basis.

The Pole Adapter has a G 1 1/2-inch thread (ISO 228/1). The Tripod Adapter can be screwed directly to the Pole Adapter. The output connector of the Nor1210 is located under the Pole Adapter and both plug and cable are well protected.

Among the available accessories is a Calibration Control Box Nor512.

## Technical specifications:

Nominal sensitivity:	50 mV/Pa
Frequency response:	IEC 60651 Type 1, IEC61672-1 Class1 and ANSI S1.4-1983 Type 1
Vertical 0° incidence rel. 1000Hz:	(i.e. the vertical incidence for Nor1210A and the horizontal incidence for 1210C)
20 Hz - 80 Hz:	$\pm 1$ dB
80 Hz - 4 kHz:	$\pm 0.7$ dB
4 kHz - 8 kHz:	$\pm 1$ dB
8 kHz - 12 kHz:	$\pm 1.5$ dB
12 Hz - 20 kHz:	+ 1.5 dB, - 5 dB
Dynamic range (upper limit):	> 156 dB SPL (at - 20 dB setting) relative to 20 $\mu$ Pa
Total system-noise level:	A-weighted < 20 dB re. 20 $\mu$ Pa (Optionally 17 dBA) Linear < 23 dB re. 20 $\mu$ Pa
Output impedance:	< 50 $\Omega$
Output current:	> 25 mA
Power supply:	12 - 18 Vdc, 3W
Power consumption:	120 mA at 15 V (180 mA at 15 V with calibrator "on")
Operating-temperature range:	- 40 °C to + 50 °C
Electrostatic actuator level:	90 dB re. 20 $\mu$ Pa at 1000 Hz $\pm 0.2$ dB at 23 °C
Dimensions:	Casing (ext. dia.): 40 mm (1.57 in) Length: 520 mm (20.5 in)
Pole-adapter thread:	50 mm (1.97 in) x G 1 1/2 in ((ISO 228/1)
Weight:	1.3 kg (2.8 lbs)
EMC:	EN50081-1, EN 50082-1
Safety:	EN 61010-1, 1993 portable equipment pollution category 2

### Accessories included:

Complete Windscreen Nor1471  
Spanner kit Nor1473  
Transport Protection Cap  
Plug: LEMO FFA.2S.306CLAC62  
Instruction manual

### Accessories available:

Acoustical calibrator adaptor Nor1470  
Foam Windscreen Nor1472  
Poles and tripods  
Power supply and calibration box Nor512.  
Sound calibrator Nor1251 or Nor1253

Specification subject to change without notice