

# BATTERY OPERATED POWER AMPLIFIER **Nor282**



- Specially designed for building acoustic and room acoustic measurements.
- Battery operated.
- Graphical user defined equalizer to optimise acoustic output from speaker.
- WiFi for easy connect for Norsonic measuring equipment.
- Compact, lightweight and rugged construction.
- Self contained noise generator.
- Emits 120 dB sound power level in the 50 - 5000 Hz frequency range when used with Norsonic dodecahedron loudspeakers types Nor275 or Nor276.
- Wireless Noise on/off hand switch.

Our aim is to take the latest technology available to help our customers complete their measurements faster but without loss of precision. With the Nor282 we have removed the need for signal and mains cable and added a graphical equalizer.

### Battery powered amplifier

The power amplifier ensures you get the maximum sound pressure level out of the Norsonic range of speakers. The built-in battery has an operating time of up to 90minutes @ full power. Switching between mains and battery operation is seamless. Batteries are charged once mains is applied.

### WiFi

Nor282 can be connected to a wifi network or be set as an access point. The latter is useful for field application where you can establish a 1:1 connection to a Nor145, Nor150 or Nor850. From the instrument or the 850 software you take full control of the power amplifiers signal generator, equalizer and output level.

### Remote hand-switch

For use with other instruments and easy use a wireless remote hand-switch is available to turn on/off the noise signal.

### Graphical equalizer

Thanks to the large color display and the graphical equalizer it is easy to adapt the speaker's frequency response to the room response to fulfill the requirements for difference between adjacent 1/3 octave bands as per ISO 10140-5 and ISO 16283-1.

Fixed spectrum adaption is made for the Norsonic range of speakers which easily can be adjusted to optimize the spectrum to the room response. Additionally, three user defined spectrum may be configured.

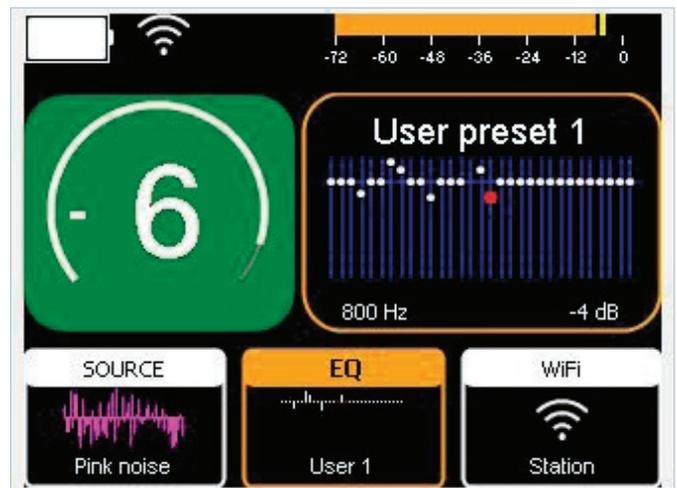
A low and high pass filter is added to prevent the speakers from frequency content outside the desired frequency range for BA testing to prevent the noise signal causing the speaker cone to move with higher amplitude outside its design limits and wasted energy in the low frequency area. The wasted energy is turned into heat which changes the speaker's sensitivity resulting in wrong measurement result, especially if single channel measurements are conducted.

For special use, all filtering can be turned off.

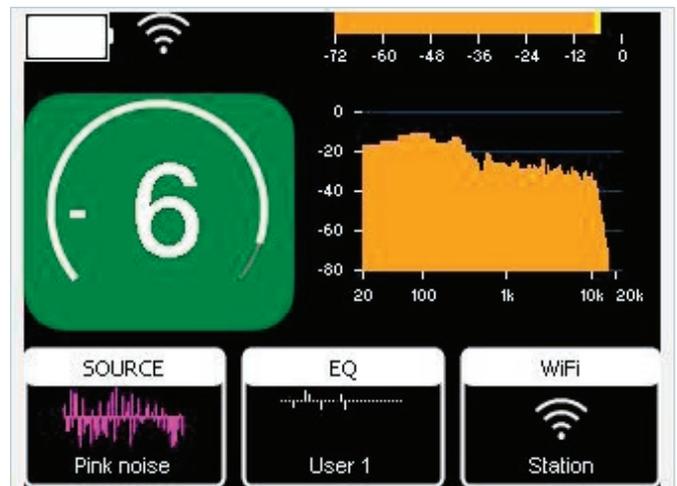
The output signal including the equalized spectrum shaping is displayed in real time on the color display including a separate bargraph on the top of the spectrum indicating the overall noise level.



Predefined spectrum shape for Norsonic speakers



User defined spectrum shape



Electrical output signal is shown as live FFT spectrum

## Noise types

The built-in signal generator features White, Pink, Brown, 1/3 and 1/1 band pass filtered noise, Sinewave and STIPA. In addition is swept sine supported if the unit is connected to Nor850. Additionally, any signal may be connected to the signal input connector.

The signal generator signals are also available on a standard BNC connector for optional connection to other equipment.

## Other useful features

The output attenuator can be set to any level between 0 and -70dB. Unlike many other amplifiers on the market, the output attenuator is well protected from accidentally change. The attenuator is controlled by a rotary switch with well-defined steps. The step ratio may be user preset to 1, 3, 5, 6 or 10 dB.

The Nor282 is protected against defective / short circuited speakers and cables, overvoltage and overtemperatures. A built in two speed fan turns automatically off when the output signal is turned off, ensuring no interference when performing reverberation time measurements.

## Specifications

**Output power:** >120dB Lw if connected to a Nor276

**Protection:** Short-circuit and over-temperature protected

**Output connector:** Speakon NL4MP

**Input connector:** BNC

**Input sensitivity:** 1.0Vrms OK

**Input impedance:** 47 k $\Omega$ //220pF

**Equalizer:** +6 to -24dB (1dB step) in 1/3 octave bands from 20Hz-20kHz

**Noise types:** Pink, White, Brown, 1/1 and 1/3 octave BP noise, Sine, Stipa and external via BNC or Wifi) Swept sine is supported from Nor850

**Wi-Fi:** 802.11b/g/n - 2.4Ghz band ex channel 13. Supports Infrastructure and Access Point

### Temperature range

**(Operating):** -10 to +35 °C

**(Storage):** -10 to +50 °C

**(Charging):** 5 -40 °C Charging is aborted if outside temp range

**Humidity:** (Operating, Storage and Charge); 20-90% Non-condensing

**Enclosure class:** IP20

**Weight:** 5.1kg

**Dimensions:** (DxWxH); 240 x 120x 256 (mm)

**Mains:** 90-250Vac 40-60Hz

**Battery operating time:** 90 minutes at full power when connected to Nor276 Dodecahedron speaker

**Battery type:** 48V LiFePO<sub>4</sub>, (Lithium Iron Phosphate)

**Capacity:** 288 Wh

**Recharge time:** 2.5 h

### CE conformity standards:

EMC EN-55032-2015+A11+A1-2020 EN-55035-2017+A11-2020 EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4

Radio spectrum efficiency EN 300 328 V2.2.2

Safety and health EN 62368-1 :2014+A11 :2017 IEC 62311:2007 / EN 62311:2008, EN 61010-1:2010/A1 2019

Nor282 Power Amplifier actual size

