

Power Amplifier Nor280

Applications

- Sound insulation measurements
- Reverberation time measurements
- Absorption coefficient measurements



Features

- Specially designed for Building Acoustic measurements
- Lightweight and rugged construction
- Self contained noise generator
- 500 Wrms output power
- Emits 120 dB sound power level in the 50 - 5000 Hz frequency range when used with Norsonic dodecahedron loudspeakers types Nor275 or Nor276
- Wireless remote control of noise generator (optional)
- Equalization network to optimise acoustic output from speaker
- Balanced signal input for low noise and limited cross talk problems



Our aim is to take the latest technology available to help our customers complete their measurements faster but without loss of precision. With the Nor280 we have again met this objective. This power amplifier is the 4th generation of specially designed units for building acoustic measurements from Norsonic. It is less than half the size and weight, but twice as powerful as its predecessors; it replaces the Nor260 as the preferred amplifier to drive the Norsonic range of full and hemi-dodecahedron instrumentation loudspeakers.

Unique design

The ISO 140 Building Acoustics Standards place heavy demands on loudspeakers and as such many may be destroyed if traditional PA power amplifiers are used to drive them. These amplifiers are normally very powerful and designed to give a flat frequency response covering a much wider frequency range than the speaker system can handle. Feeding these systems with broadband pink or red/white noise may destroy the speaker; the low frequency content of the noise causes the speaker cone to move with much higher amplitude than its design limits. Hence, the speaker coil or the cone itself may be destroyed. In addition a lot of energy is wasted in the low frequency area below 15Hz.

To overcome this problem, and to optimise the power where it is needed, a unique built in equalization network compensates for the falling frequency response of the speaker system in both the low and high frequency areas. This also ensures that the 5 dB requirement between neighbour frequency bands are met when used in combination with the Nor275 or Nor276 loudspeakers. A part of the equalization network is a high pass filter that removes low frequency signals that lie below the required frequency range for building acoustic measurements and a low pass filter that removes all frequencies above 12kHz. This feature protects the speakers from distortion and concentrates power into the frequency bands where it is needed.

Powerful

The class D amplifier construction ensures low weight, high power output and low heat dissipation. The amplifier delivers up to 500 W_{RMS} into a 4 ohm load and an output current of up to 35 Amp!

Protection circuits

Both the input and output of the amplifier are short circuit protected and an automatic system will guard against overheating and too high signal voltage on the input. The built in cooling fan is normally not running. Only at high room temperatures or prolonged use of the amplifier at full power will the fan switch on. It will however, immediately switch off when the input signal goes off; this feature makes the unit well suited to reverberation measurements in areas of low background noise.

Specifications

Output: Short-circuit and over-temperature protected

Output connector: Speakon NL4MP

Output power:

500 W_{RMS} into 4ohm

250 W_{RMS} into 8ohm

THD+N < 0.1%

The built-in LP and HP filters ensure that the output power matches the Norsonic Nor275 and Nor276 series of dodecahedron loudspeaker

Peak power: >1 kW_{PEAK} into 4ohm

Output current: Maximum 35 A

Input: Balanced input to avoid ground loops and cross talk to signal cables

Input connector: XLR

Input sensitivity: 1.0 V_{RMS}

Input impedance: 10 $k\Omega$ //220 pF

Dimensions: (D x W x H) 275 x 110 x 246 [mm],
11 x 4,3 x 9,7 [inch]

Weight: 3,5 kg

Temperature: -20 to +35 °C

Rel. Humidity: 0-90%

Enclosure class: IP20

Mains: 220 VAC ($\pm 10\%$) or 110 VAC ($\pm 10\%$)

Fuse: T 3,15A (220 V), T 6A (110 V)

EMC and Safety Standards: EN55103-1, EN55103-2, IEC61340-5 part 1&2, IEC61010, FCC part 15b part 1&2

Accessories incl.: Mains cable, Output connector

Optional accessories:

Nor1494/5: Cable (5m) for connecting Nor275 or Nor276 to Power Amplifier Nor280.

Nor1494/01: Opt. 1 : Special length; add/subtract per metre (maximum length is 25m).

Ordering info: Option 1: Wireless on/off remote control (must be specified when ordering)

CE Conformity: EMC compliance according to EN50081-1 and EN50082-1, Safety according to EN61010-1-1993 and Machine directive 89/392

Noise generation

The internal noise generator features both Pink, White and Red/White noise excitation signals. The noise or line signal can be attenuated in 5 dB steps to -35dB. By adding option 1, you may switch on/off the signal remotely and wireless from another room. The balanced line input ensures minimum cross talk and induced noise when using long signal cables.