

- **Automatic variation of the output power up to a maximum power of 25W as a function of background noise.**
- **Manual preset of the minimum output power with a range of 5mW to 2.5W (in the absence of noise) in conformity with the site dimensions.**
- **Preset of the output volume to background noise ratio**
- **Weatherproof protection IP65**

The weatherproof horn loudspeaker XPR11/24-48 made of die cast aluminium with an IP rating of 65 according to the standard IEC529, contains internally a power amplifier and a noise detector that memorises the background noise level.

During the transmission of signals the acoustic transducer, that is the electromechanical unit, functions as a speaker, while in the absence of signals, functions as a microphone and transmits the environments noise signals to the detection and memorisation circuit.

Dip switches are arranged for adjusting the volume levels and are accessible by means of suitable weatherproof inlet protected by a loss proof plug.

At every dip switch setting there is a corresponding value of the output power in the absence of background noise (P_{no}) that varies from 5mW to 2.5W.

An increase in the background noise results in a parallel increase in the output power.

This takes place automatically, starting from the value P_{no} , on the basis of the level of background noise detected and memorised during the break between signals.

This exposition is illustrated in figure 1 and the values assume a case of background noise emission consisting of gaussian white noise.

The gradient of the curve may be changed by specifying the noise gain of the amplifier by the use of a dip switch with a variation of 7.5dB.

The amplifier is placed in a weatherproof casing (IP65) and is suitable for outdoor use.

The magnetodynamic unit permits an excellent frequency response (in the range 350Hz to 10000Hz) and an operating power of 25W.

The horn is equipped with one fixing brackets and a hindrance device that avoids changes in the chosen inclination in cases of impacts or vibrations.

The power amplifier, utilizing special components chosen to support high temperatures is placed internally the loudspeaker at the back.

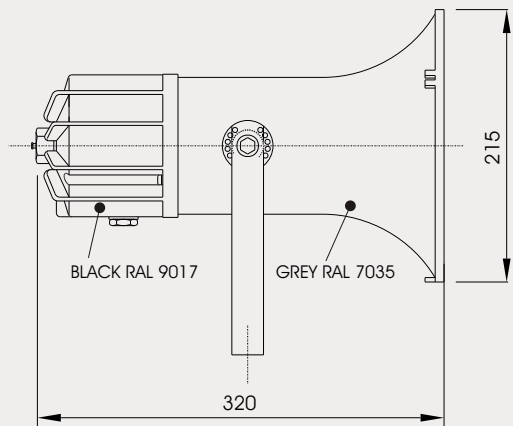
This circuit is patent protected. The amplifier is equipped with protection against transients in both the power supply and the audio inputs.

The audio inputs are of a high impedance balanced

XPR11/24-48

WEATHERPROOF AMPLIFIED LOUDSPEAKER
 AUTOMATICALLY CONTROLLED BY AMBIENT
 NOISE

AC8410/0905



differential type with galvanic separation having a transformer between the line and the actual amplifier.

Moreover all the electrical parts (inputs, outputs and power supply) are insulated from the external metallic parts.

An active filter with a tuned band in function of the volume blocks high levels values that would otherwise damage the mobile equipment due to the presence of low frequencies at high energy. Instead at low values the band is broadened thus permitting an excellent sound quality reproduction, especially in a medium dimension ambient.

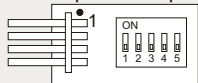
The amplifier has a circuit that helps to avoid transients on the speaker when it is switched on or off.

Furthermore there is a total thermal protection with an automatically timed reconnection circuit and a protection for the internal circuits utilising a blade type rapid fuse.

AMPLIFIER ELECTRICAL SPECIFICATIONS

Amplifier class "D"
 Range of the rated power supply from 24 a 48Vdc
 Operating limits from 24V-15% to 48V +20% (20.8+57.6Vdc)
 Consumption quiescence, Vpower=24V ≤55mA
 quiescence, Vpower=48V ≤30mA
 at the nominal power, Vpower=24V ≤1.4A
 at the nominal power, Vpower=48V ≤0.7A
 Nominal sensitivity 0dB (0.775Vrms)±0.2dB
 Nominal input impedance ≥10kohm
 Signal-to-noise ratio ≥80dB
 Bandwidth at nominal power, -1dB 400Hz + >10kHz
 at nominal power, -3dB 300Hz + >10kHz
 Nominal output Power, rms, continuous (f=300+10kHz).....25W
 Maximum distortion at rated power and band
 with Vpower=24V ≤1.98%
 with Vpower=48V ≤1.4%
 Climatic operating conditions in range of nominal voltages
 (continuous sinusoidal mode, Pmax)
 standard -25°C + +65°C
 in option -40°C + +65°C
 Protection against differential mode impulses
 in the power supply and signal inputs 2kV - 1.2/50µs

Dip-switch for regulation of power output



Regulation of the minimum power in the absence of noise

SW3	SW4	SW5	out power	Slp dBA @1m
OFF	OFF	OFF	25W	120
ON	OFF	OFF	2,5W	110
OFF	ON	OFF	1,25W	107
ON	ON	OFF	0,63W	104
OFF	OFF	ON	0,31W	101
ON	OFF	ON	0,08W	95
OFF	ON	ON	0,03W	89
ON	ON	ON	0,005W	83

Regulation of the noise gain of the amplifier

SW1	SW2	relative Gain
OFF	OFF	0 (default)
ON	OFF	+3dB
OFF	ON	+6dB
ON	ON	+7,5dB

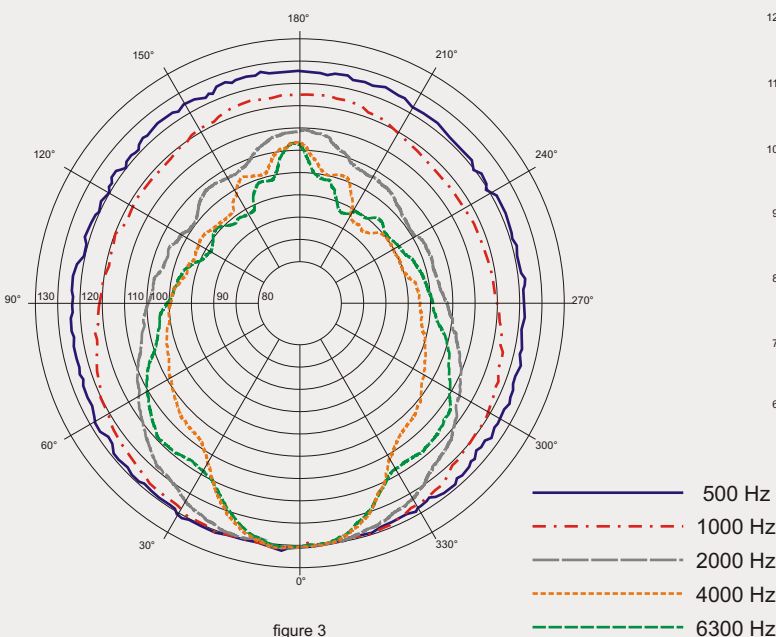


figure 3
POLAR DIAGRAM OF RADIATION

SPEAKER SPECIFICATIONS

Operating Power 25W
 Maximum Power 30W
 Impedance 8ohm
 Frequency response and amplitude (see figure 2)
 Polar radiation diagrams (see figure 3)
 Acoustic pressure at 1m
 (measurements done with white noise) ≥120dBA
 Dielectric rigidity between the
 mobile coil and the external metallic parts 1kVrms
 International Protection rating 65

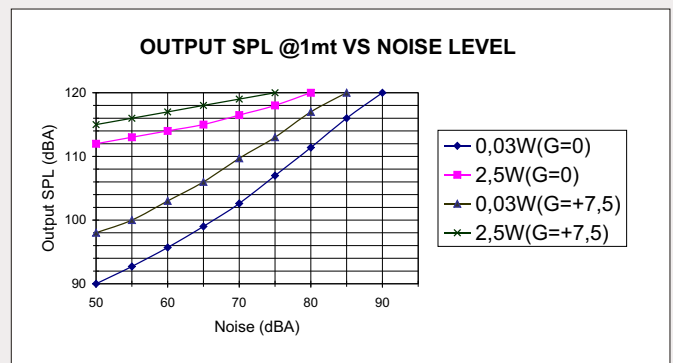


figure 1
ADAPTATION CURVES OF THE ACOUSTIC PRESSURE WITH VARIATION OF BACKGROUND NOISE
presentation of the step in curves for two levels of power in the absence of noise (0,03W e 2,5W) and with two adjustments in the noise gain of the amplifier (default 0dB or maximum +7,5dB)

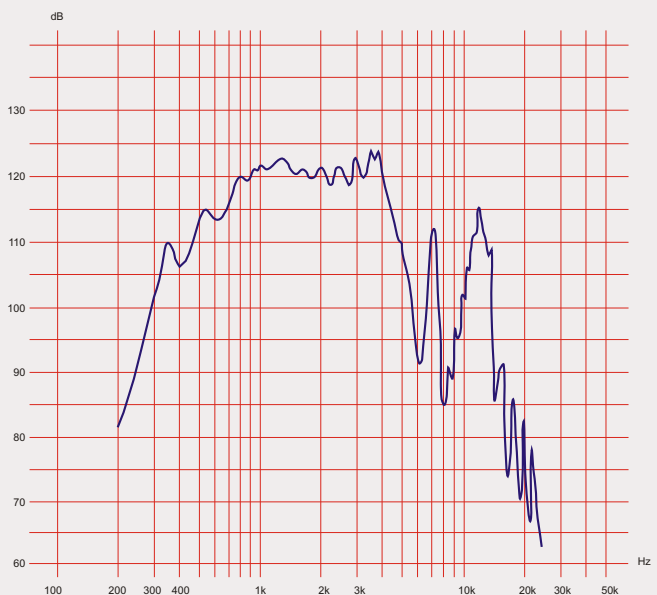


figure 2
GRAPH OF AMPLITUDE AND FREQUENCY RESPONSE
measured at the nominal power on axis at a distance of 1 m from the loudspeaker cone

Description	Type	Code
Weatherproof amplified self-regulated loudspeaker	XPR11/24-48	7327323
Optional kit for jack connections, with 2 input sockets		7327327

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