XP13/24-48

AMPLIFIED
EXPLOSION PROOF LOUDSPEAKER

DS 7327416EN - Rev.1704

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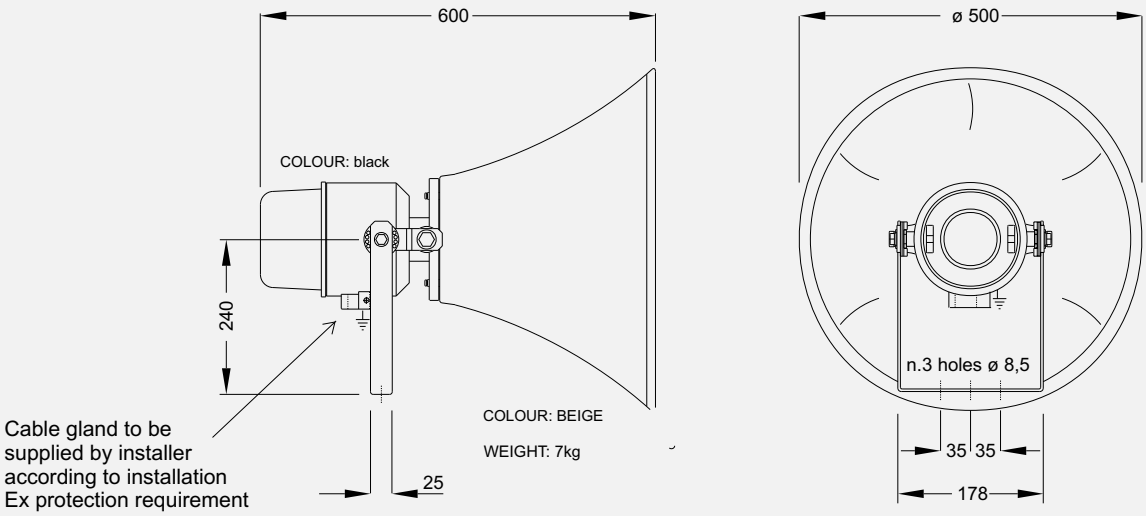
- **Internal Amplifier power 25W**
- **Processed in die cast light alloy**
- **Adjustable Output Power**
- **Weatherproof protection IP66**
- **Processed as Explosion Proof ATEX**
  II 2G Ex d IIB+H2 T6/T5 Gb
  II 2G Ex d IIC T6/T5 Gb
  II 2D Ex tb IIIC T85°C/T100°C Db IP66
- **Power supply 24 to 48Vdc**

The explosion proof horn loudspeaker XP13/24-48, made of die cast aluminium is certified in accordance with ATEX standards, it has an IP rating of 66 in accordance to the standard IEC529 and incorporates an internal power amplifier. Volume is adjustable by means of a dip switch which is accessible by unscrewing the rear end. The amplifier is placed in an explosive proof housing with weatherproof protection (IP66) and is equally suitable for outdoor use.
The magnetodynamic unit permits excellent frequency response (in the range 350Hz to 10.000Hz) and an operating power of 25W (40W maximum). The horn is fitted with fixing brackets and a hindrance device that blocks changes to the selected inclination in cases of impacts or vibrations. The power amplifier is placed inside the back of the speaker unit and utilises special components capable of supporting high temperatures. Its circuit is covered by a patent.
The amplifier is equipped with protection against transients of both the power supply and audio inputs. The audio inputs are a high impedance balanced differential type which use a transformer as a galvanic separation between the power line and the actual amplifier. Furthermore all the electrical parts (inputs, outputs and power supply) are insulated from the external metallic parts. A particular active filter with a variable bandwidth in function of the volume levels blocks high levels that would otherwise damage the mobile equipment in the presence of high energy at low frequencies.
Rather, at low levels the bandwidth is broadened thus ensuring excellent sound quality reproduction, especially in a medium dimension ambient. The amplifier is made of a circuit that helps avoid transients on the speaker when switched on or off. Furthermore there is total thermal protection with an automatically timed reactivation circuit and protection of the internal circuits is effected by the use of blade type rapid fuses.



SPECIFICATIONS OF ELECTRICAL AMPLIFIER

Amplifier .....Switching in Class “D”

Range of the nominal power supply.....24VDC to 48VDC

Operating limits .....24VDC -15% to 48VDC +20% (20.8 ÷ 57.6VDC)

Consumption
at quiescence, Vps = 24VDC.....⩽45mA
at quiescence, Vps = 48VDC.....⩽25mA
at the nominal power, Vps = 24VDC.....⩽1.4A
at the nominal power, Vps = 48VDC.....⩽0.7A

Nominal sensibility.....0dB (0.775Vrms) ± 0.2dB

Nominal input impedance .....⩾10kohm

Signal to noise ratio.....⩾90dB

Bandwidth
at nominal power, -1dB .....400Hz to ⩾10kHz
at nominal power, -3dB .....300Hz to ⩾10kHz

Output power nominal, rms, dc (f=400 to 10kHz) 25W

Maximum distortion at nominal power and band
with Vps = 24VDC.....⩽1.95%
with Vps = 48VDC.....⩽1.4%

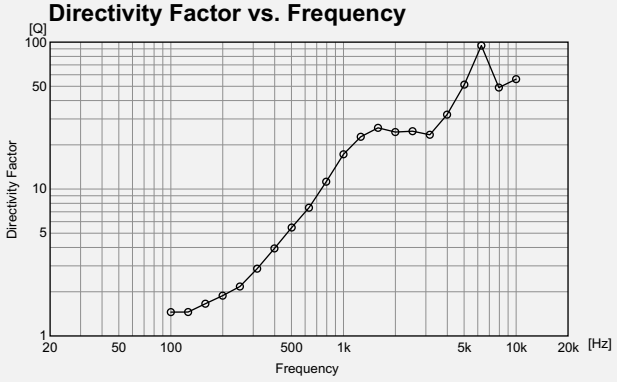
Climatic operating conditions in range of nominal voltages
(continous sinusoidal mode, Pmax) .....- 40°C to + 60°C
Protection against differential mode impulses
in the power supply and signal inputs.....2kV - 1,2/50µs

ACOUSTIC TRANSDUCER SPECIFICATIONS

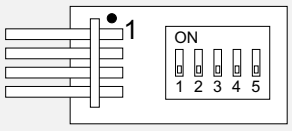
Operating Power.....25W
Maximum Power.....40W
Impedance at 1kHz 8ohm
Amplitude and frequency response.....(see figure 2)
Polar radiation diagram.....(see figure 3)
Maximum power acoustic pressure at 1 m .....⩾112dBspl
Dielectric rigidity between the mobile coil and metal parts 1kVrms
Grade of Mechanical protection IP66
Explosion proof grade ATEX:

II 2G Ex D IIB + H2 T6/T5 Gb
II 2G Ex D IIC T6/T5 Gb
II 2D Ex tb IIIC T85°C/T100°C Db IP66

Directivity Factor vs. Frequency



Dip-switch for setting output power



SW1	SW2	SW3	SW4	SW5	OUT POWER
OFF	OFF	OFF	OFF	NOT USED	25W
ON	OFF	OFF	OFF		18W
OFF	ON	OFF	OFF		12,5W
ON	ON	OFF	OFF		10W
OFF	OFF	ON	OFF		6W
ON	OFF	ON	OFF		4,7W
OFF	ON	ON	OFF		4,2W
ON	ON	ON	OFF		3,4W
OFF	OFF	OFF	ON		1,63W
ON	OFF	OFF	ON		1,5W
OFF	ON	OFF	ON		1,31W
ON	ON	OFF	ON		1,2W
OFF	OFF	ON	ON		1W
ON	OFF	ON	ON		900mW
OFF	ON	ON	ON		830mW
ON	ON	ON	ON		760mW

Frequency Response (1W/1m)

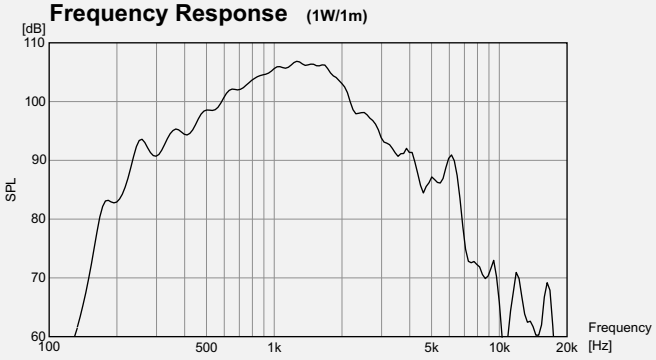
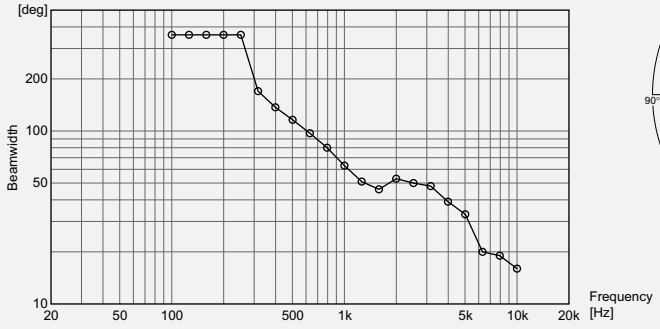


figure 2
AMPLITUDE-FREQUENCY RESPONSE DIAGRAM
Measurement of the nominal power taken on the speaker axis 1 meter from the speaker cone

Beamwidth vs. Frequency

(-6dB down point)



Polar Response

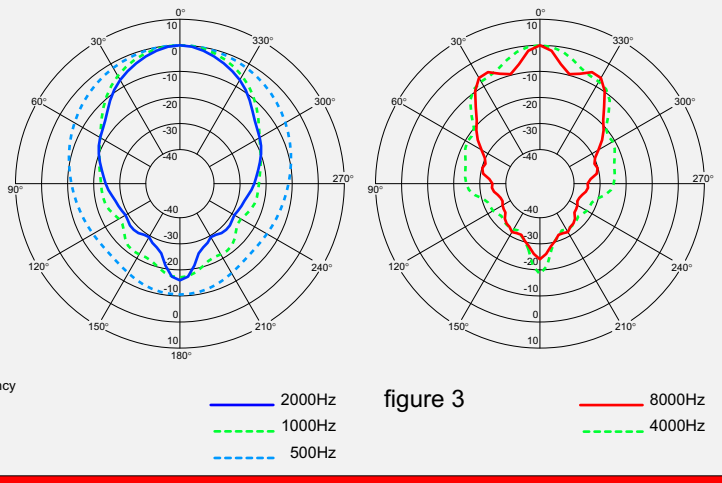


figure 3

Description	Type	Code
Explosion proof amplified loudspeaker	XP13/24-48	7327416