

MAKROFON M125/130b-160b ZVE(E)(H)

General Features

The ZÖLLNER MAKROFON M125 is a diaphragm sound transmitter operating on compressed air. The signal is released by an electromagnet or manually using a hand pull-rope. To avoid the costly laying of a pull-rope, a second electromagnet for emergency voltage can be provided. A thermostat controlled anti-condensation heating keeps the sound horn and the operating valve free from condensed water and thus from ice. Typically the MAKROFON M125 will operate on air pressures between 7 and 40 bar. For electric release and operation of the heating a connection to AC 1phase or 24 V DC power supply is required.

Essentials

- full compliance with the Colregs 1972 Annex III
- type approved by all wellknown international authorities and classification societies
- application:
 - vessels of class II, 75 m but less than 200 m in length
 - land alarm, i.e. bunker stations, oil refineries, airports, power plants, factories
- compressed air requirement: 7-40 bar free, dry air (carbonic acid etc. may also be used)
- system voltage: AC 1phase or 24 V DC



Sound Characteristics

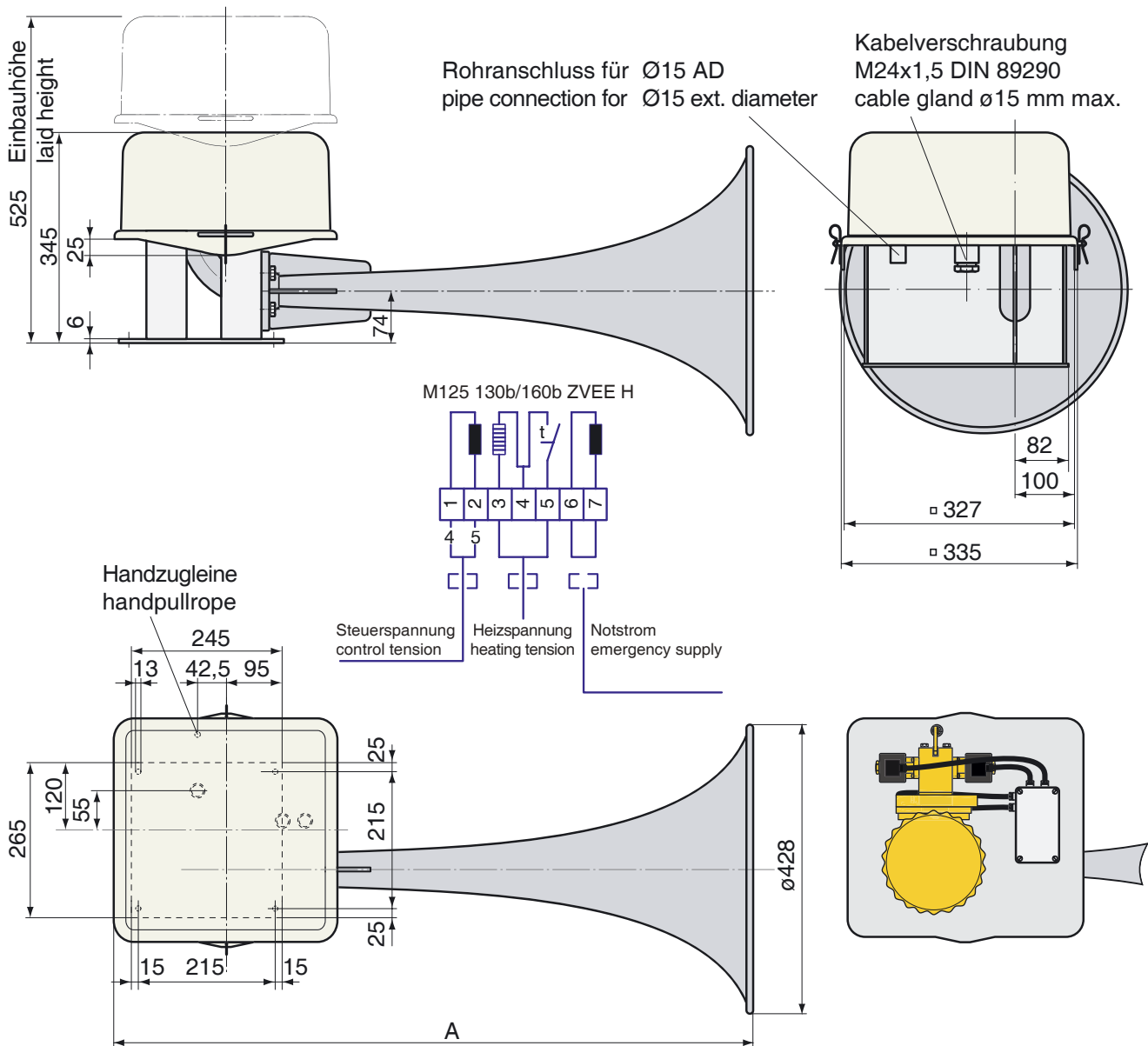
- broad frequency spectrum with many higher harmonics
- signals with strong overtones for best penetration of background noise level
Even when a background noise covers the actual basic frequency the residual tone forms a parent frequency in the human hearing. Two or three harmonics are sufficient for the hearing to perceive the basic frequency.
- sound frequency of 130/160 Hz very advantageously ranks in the lower admissible range (130-350 Hz)
- sound pressure level 138 dB in 1/3rd-octave band level at 1 m distance

Advantages

- *decades of experience*
- best material and workmanship - made in Germany
- *entirely made of best non-corrosion, seawater-resistant materials*
- *sound horn made of sheet-aluminum (not plastic!)*
- *simple but matured design, almost maintenance-free*
- *easy exchange of all parts with onboard tools*
- *easy installation*
- *relatively low weight*

Positioning and installation

- Positioning as high as practicable on the vessel to reduce interception of the emitted sound by obstructions and to avoid hearing damage risk to the personnel.
- *The sound pressure level of a vessel's own signal at listening posts must not exceed 110 dB(A).*
- Installation - compressed air supply pipe preferably of copper with a filter (type F2) preceding the Makrofon operating valve. Supply pipe must be free from any dirt particles and moisture.



type	ship length [m]	fundamental frequency	sound intensity at 1m		air pressure	air consumption free, dry air l/sec	air pipe connection	cable gland [mm]	system voltage	heating [W]	dimensions A [mm]	approx weight [kg]	type approval BSH(DHI) no.
			dB Terz	min. IMO 1/3rd octave									
M125/160	75-<200	160 Hz	140	138	6-40 bar	20-30	15x1,5	ø15 max.	AC 1phase or 24 V DC	100	890	30	4615/6020394/09
M125/130		130 Hz	139	138							1090	30	4615/6021099/09