

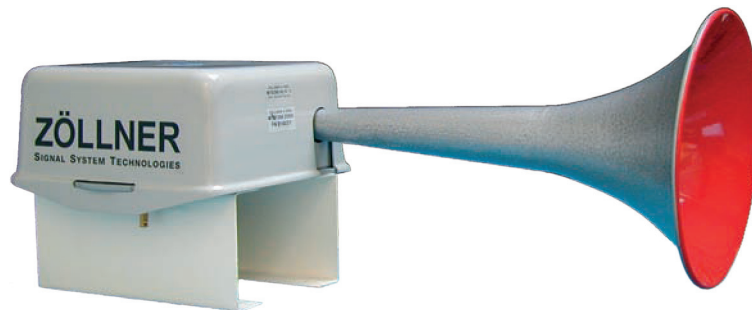
## MAKROFON M75F/260-370 ZVE(E)(H)

### General Features

The ZÖLLNER MAKROFON M75F 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 M75F will operate on air pressures between 6 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 (M75F/260), 75 m but less than 200 min length
  - vessels of class III (M75F/370 and M75F/260), 20 m but less than 75 m in length
  - land alarm, i.e. bunker stations, oil refineries, airports, power plants, factories
- compressed air requirement: 6-40 bar free, dry air (carbonic acid etc. may also be used)
- system voltage: AC 1phase or 24 V DC



### Sound Characteristics

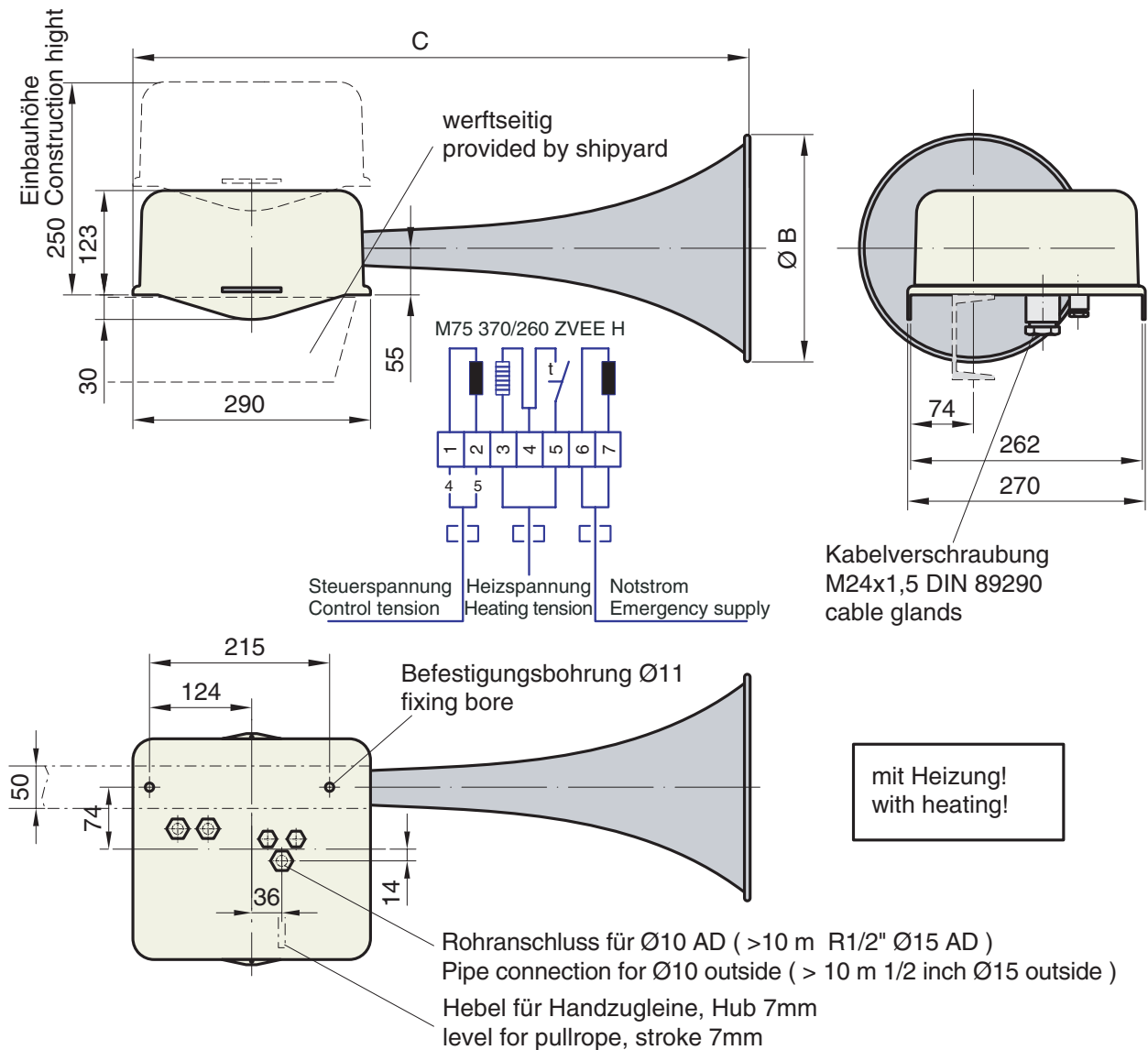
- broad frequency spectrum with many higher harmonics
- signals with strong overtones for best penetration of background noise level  
*Even when a background noise covers the actual basic frequency the residual tone forms a parent frequency in the human hearing. Two or three harmonics are sufficient for the hearing to perceive the basic frequency.*
- sound frequency of 260/370 Hz very advantageously ranks in the lower admissible range (class II 130-350 Hz class III 250-700 Hz)
- sound pressure level (M75F/260):  
138 dB in 1/3<sup>rd</sup>-octave band level at 1 m distance  
(M75F/370):  
132 dB in 1/3<sup>rd</sup>-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 F3) preceding the Makrofon operating valve. Supply pipe must be free from any dirt particles and moisture.



type	ship length [m]	fundamental frequency [Hz]	sound intensity at 1m		air pressure [bar]	air consumption free, dry air l/sec	air pipe connection [mm]	system voltage	heating [W]	dimensions [mm]		approx weight [kg]	type approval BSH(DHI) no.
			dB Terz	min. IMO 1/3rd octave						B	C		
M75/370	20-<75	370	132	130						380	560	8	49/04P/78
M75/260	75-<200	260	138	130	6-40	8-12	10x1	AC 1phase or 24 V DC	100	550	730	8	49/04P/03/82
	20-<75												