

For vessels with DC board voltage

1 ZÖLLNER ZETFON 400/310 DC for 24 V DC

- for a) seagoing vessels with a length of 20 to 75 m
in accordance with the Colregs 1972, Annex III, 1 (a, b, c, d)
approval No. DHI 49/26 P/83
- b) inland vessels with a length of 20 m or more
according to the Inland Navigation Rules (BinSchUO)
Navigation Range 2, approval No. DHI 49/03

according to print SW 49 e

fundamental frequency: 310 Hz

intensity in 1/3rd octave band at 1 metre: more than 130 dB

power supply: 24 V DC

maximum input: 360 Watt

maximum current: 16 Amps

comprising:

a) 1 ZETFON 400/310

aluminum diaphragm casing with electro-magnetic moving system
and stainless steel diaphragm 200 Ø

robust cast aluminum console with terminal box and cable glands,
cover and sound horn

installation site: as high as practicable on the fore mast in order to
reduce interception of the emitted sound by obstructions and also
to minimize disturbance of personnel

approx. net weight 19.5 kg

b) 1 Control and Amplifier Unit ZP 5-400/310

electronic sound generator and amplifier with protection against
cross-connection of terminals

installed in a weather-proof vibration-resistant steel casing

installation site: under deck close to fore mast

approx. net weight 6.4 kg

c) Extra charge for Heating Device

ready installed, with thermostat, 24 V DC, 30 Watt

ZÖLLNERA Member of the **AVL** Group
SOUND SIGNAL EQUIPMENTP.O. BOX 6540 · D-24126 KIEL
ZUR FÄHRE 1 · D-24143 KIEL (GERMANY)
TELEPHONE: 0431/7027-113
TELEFAX: 0431/7027-202**ZETFON 400/310 DC**
for direct current 24 V
DHI/49/26 P/83
length of vessel 20 up to 75 m**General Information**

The **ZETFON-Equipment 400/310 AC** has been type approved by the BSH Hamburg (Federal Marine and Hydrographic Department) and by numerous foreign authorities, such as the DOT London (Department of Transport). It is in accordance with the **International Regulations for Preventing Collisions at Sea, IMO 1972**. Type approval tests comprised vibration, climatic, salt spray, electrical and functional tests.

The electric signal equipment consists of a ZETFON 400/310 and a control and amplifier unit. The ZETFON is provided with an aluminium diaphragm casing with electro-magnetic moving system and stainless steel diaphragm and a robust cast aluminium console with terminal box. The aluminium sound horn bent by 90° enables optimum drainage of flood, spray, ice and condensation water.

The ZETFON produces a wide range of frequencies with many higher harmonics. Higher amplitudes of the harmonics make a penetration of the normal background noise level on board possible, when the actual fundamental frequency has already been covered.

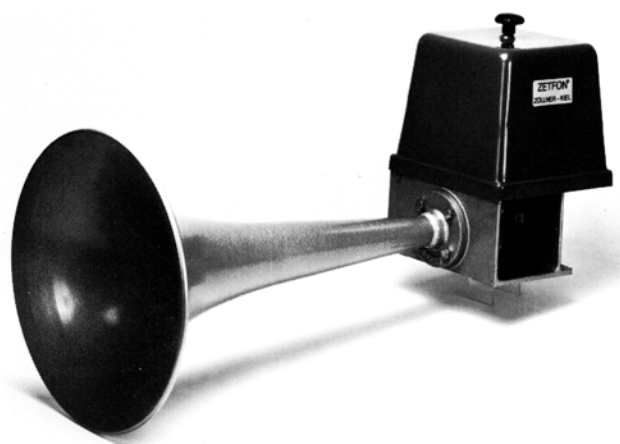
With **direct current 24 V (DC) as power supply**, the control and amplifier unit ZP5-400/310 DC is delivered. This unit consists of an electronic sound generator and an amplifier with protection against cross-connection of terminals. It is installed in a weather-proof, vibration-resistant steel casing. Installation site: under deck close to fore mast.

The input sounding is **only 360 Watt**.

The ZETFON is also available with a thermostat regulated body heating 24 V 30 W. This is especially recommended for use in cold areas with temperatures below 0° C. An additional 2-core cable is necessary.

Marine Applications according to IMO 1972
Ships of 20 m but less than 75 m in length

According to IMO 1972 — Annex III — Technical Details of Sound Signal Appliances — the fundamental frequency of whistles on vessels of a.m. length shall be 250 - 700 Hz. The frequency of our ZETFON 400/310 AC very advantageously ranks in the lower admissible range.

**Positioning and Installation of the ZETFON**

According to the regulations (IMO 1972, Annex III 1.e) the ZETFON shall be positioned as high as practicable on a vessel in order to reduce interception of the emitted sound by obstructions and also to minimize hearing damage risk to the personnel. "The sound pressure level of the vessel's own signal at listening posts shall not exceed 110 dB (A) and so far as practicable should not exceed 100 dB (A)."

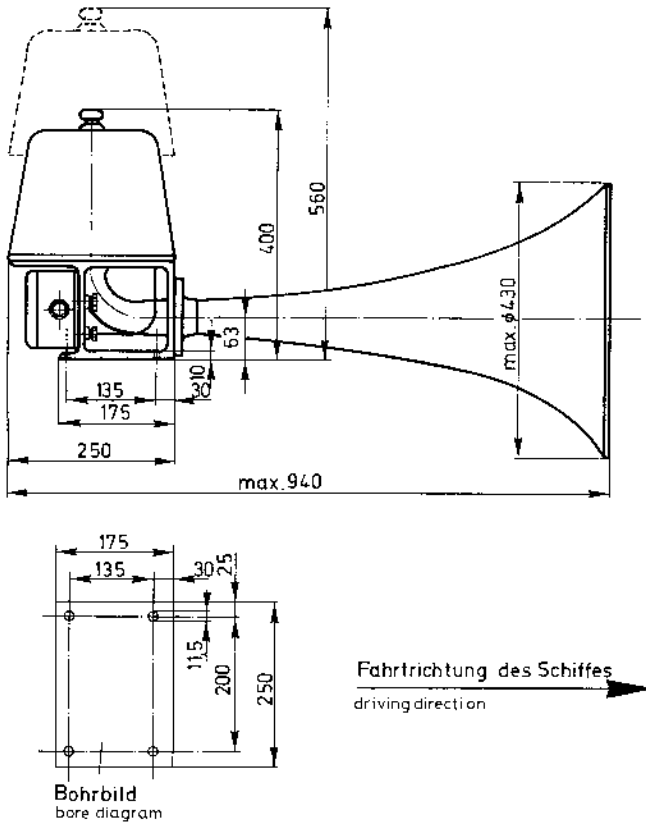
Technical data

Sound pressure level	131 dB/1/3 rd-octave band/1 metre
Sound frequency	310 Hz
Voltage	24 V DC +20 % —10 %
Max. input (sounding)	360 W
Heating power	30 W
Weight of ZETFON	19.7 kg
Weight of control and amplifier unit	6.4 kg

ZETFON400/310DC

Schalt-und Verstärkereinheit ZP5-400/310

control and amplifier unit

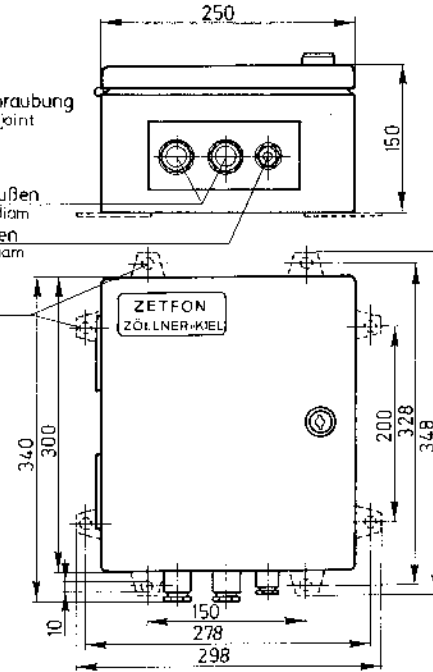


Kabelverschraubung
cables screw joint

DIN 89280

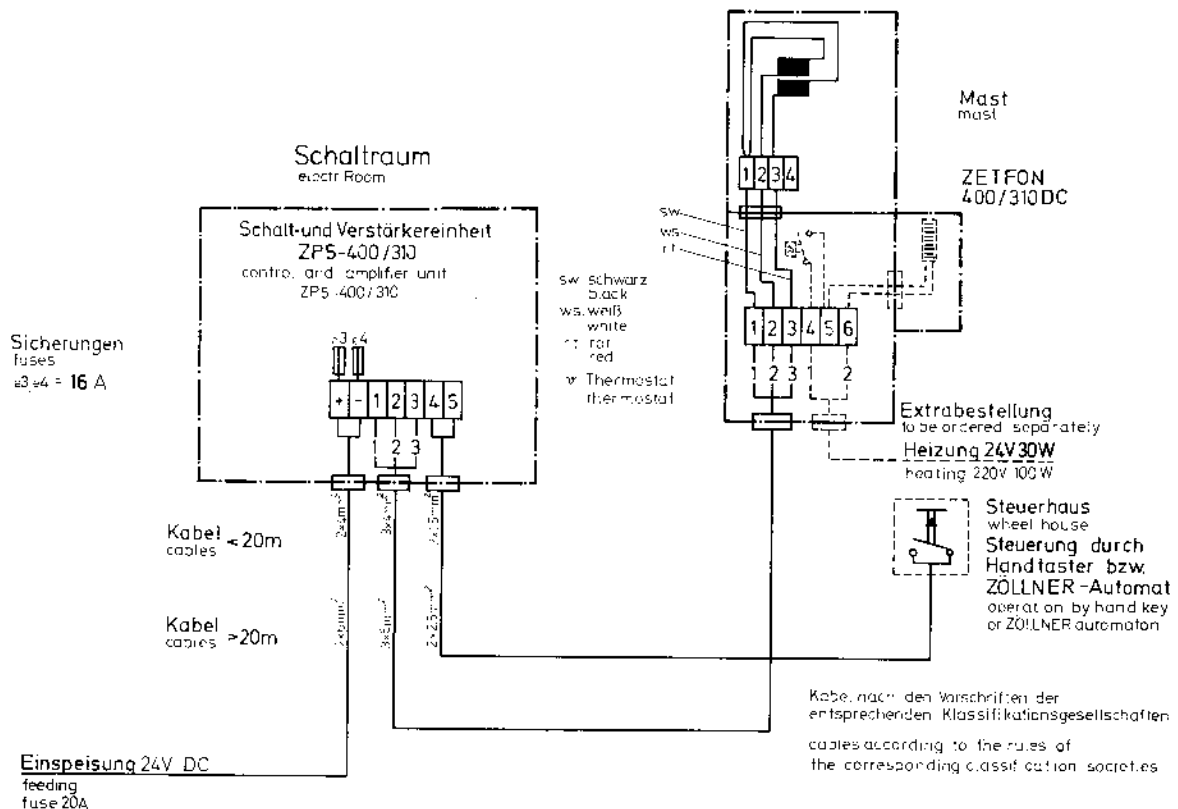
für ϕ 18,8 außen
for ϕ 18,8 ext. diam
für ϕ 15 außen
for ϕ 15 ext. diam

wahlweise
alternatively



Kabelplan für ZETFON-Anlage 400/310DC

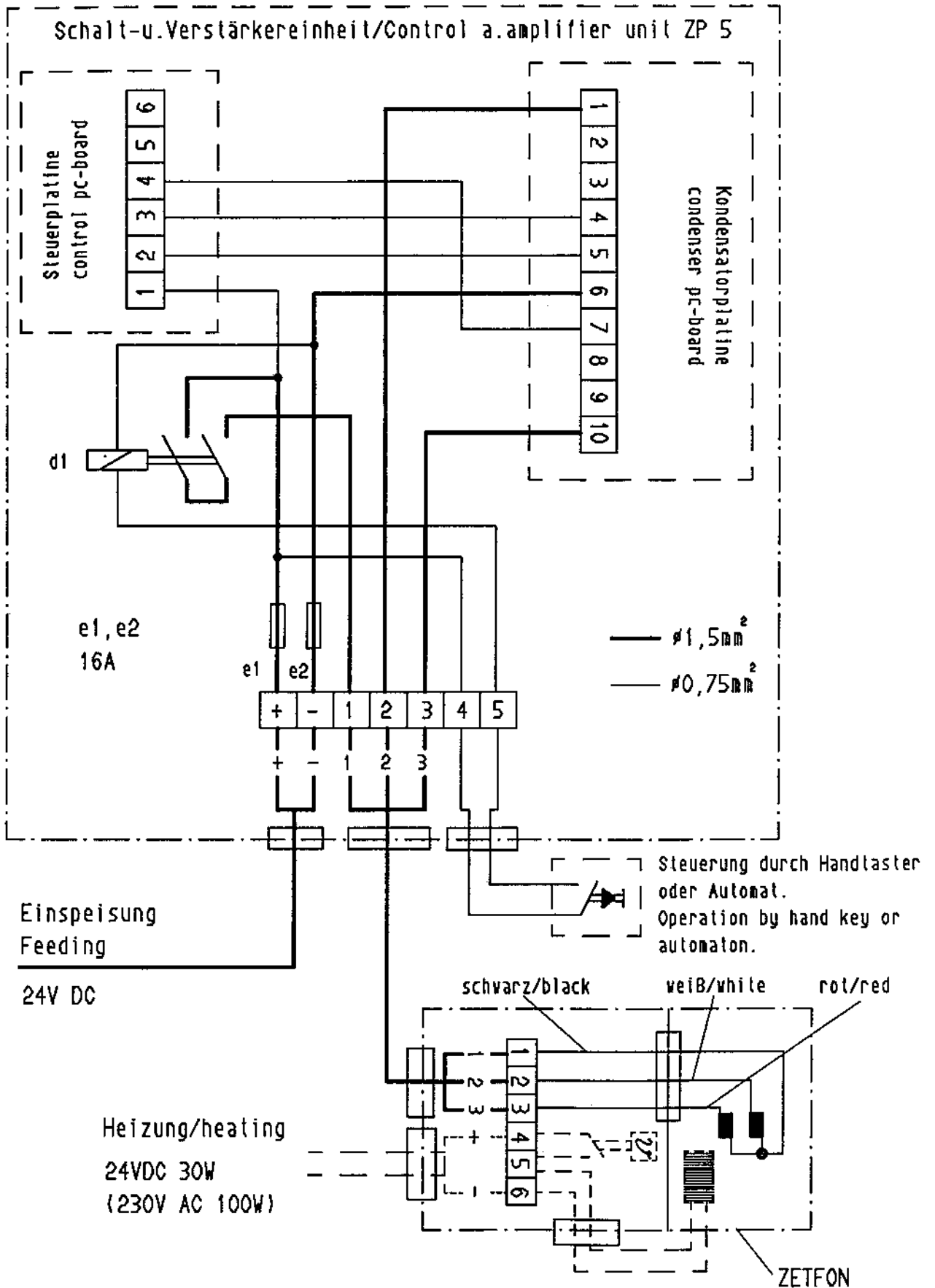
wiring diagram for ZETFON-Equipment





Anschlussplan
Connection diagram

ZETFON 400/310 DC



Änderung vorbehalten!
Subject to alteration!