

## ZÖLLNER Sound Signal Direction Detector SRD 414 Elephant Ears®

- Sound Signal Reception System -

BSH/49/40 P/96

design similar to drawing SP 14036-4 and print SW 97e

The signals received are indicated optically and acoustically in the vessel's wheel house. This way it is possible to perceive a foreign signal even with the bridge closed and to define its approximate direction.

### **Application:**

On all vessels with closed navigation bridge as well as  
on all vessels with high security standard (especially with reduced crew).

The ZÖLLNER Sound Signal Direction Detector places the watch-keeping officer in the position to perceive sound signals of foreign vessels inside the navigation bridge and also to define their approximate direction using an optic display. This especially clearly arranged display optically shows the direction of the signal received. With just one look the watch-keeping officer is informed in the same way as on a regular lookout (Colregs 1972, Annex III, Rule 5), or even better, as hearing errors are excluded.

The four-quadrant direction display directly shows the mate the signals received e.g. "forward of the beam". With this information the mate can react immediately in accordance with the Colregs 1972, Annex III, Rule 19 (e).

### **Rules and Certificate:**

Performance standards for sound reception systems according to:

SOLAS, Chapter V, Regulation 25 Nav. 41 WP 5

STCW 1978 IMO 1993 Regulation II/1 and Resolution 1.3 + 23b + 26

IACS Reg. 1992 - N1 Part B 1.5

ISO Standard 8468

BSH Certificates: Baumusterprüfungs- und Zulassungszeugnis Nr. BSH/49/40P/96

The system consists of the following components:

#### 1. 4 pcs. Signal Receiver 414

resting on rubber-metal bearings  
signal receivers (section microphones)  
drawing SP 4980-4

#### **installation on bord:**

with greatest possible distance to sound emitters  
(e.g. exhaust gas pipes or ventilation)

##### 1.1 signal receiver I (section microphone I) - "ahead"

leading edge of the wheel house, beneath or above the wheel house window

##### 1.2 signal receiver II (section microphone II) - "starboard"

within or beneath the starboard wing

##### 1.3 signal receiver III (section microphone III) - "port"

installation as described for "starboard"

##### 1.4 signal receiver IV (section microphone IV) - "stern"

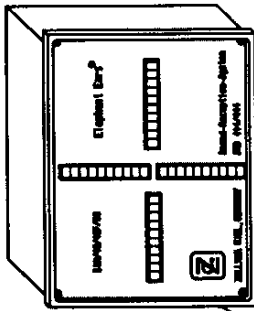
installation on the stern of the vessel with perceiving direction  
to astern, e.g. on poop deck or A-deck with greatest possible  
distance to exhaust pipes, ventilation and propeller noise (water surface)

The signal receivers must be positioned before a rear wall of sufficient size to make sure that the reverse sound is screened off.

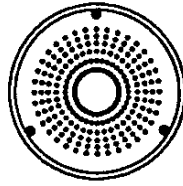
2. 1 pc. Indoor Loudspeaker SRD06S  
design similar to drawing SP 4999-4  
installation on the bridge in viewing direction of the mate  
(Please consult ZÖLLNER GMBH if in doubt concerning the installation.)
3. 1 pc. Direction Display SRD 414  
design similar to drawing SP 14062-4  
built-in panel, with 4 x 10 LED display  
(with afterglow device)  
dimensions: 192 mm wide, 144 mm high acc. to DIN 43700  
installation in viewing direction of mate
4. 1 pc. Central Control Unit ZSE 414  
design similar to drawing SP 4982-4  
four-quadrant amplifier unit with  
  
ZETFON amplifiers with bandpass filter  
under special consideration of the limit frequencies stipulated in  
the Colregs 1972, Annex III, and also based on practical trials on  
board carried out by the BSH (Ministry of Transport, Department Sea)  
in accordance with the IMO-MSC Guidelines (Resolution A.694/17)  
  
final amplifier with automatic regulation SPR  
for automatic sound level adjustment  
and memory functions for the LED display (item 3)  
  
interruptor contact  
for connection to the existing fog signal  
and maneuver signal  
  
two potential inputs  
for main voltage 230 V AC and for connection to the  
ZÖLLNER Signal Automaton  
  
two potential inputs  
for emergency release 24 V DC possibly available on  
board (horn I/horn II)
5. 1 pc. Built-In Control  
design similar to drawing SP 14046-4  
with combined on/off switch  
and volume control potentiometer for loudspeaker  
dimensions: 96 x 72 mm acc. to DIN 43700
6. In case of cable lengths exceeding 100 m  
between signal receiver and central control unit:  
additional amplifier unit for each signal receiver  
design similar to drawing SP 14138-4  
The dimensions of this unit are 122 x 122 x 80 mm.
7. Screened cables are required for connection of described system.  
These cables do not belong to the ZÖLLNER scope of supply.



Richtungsdisplay  
Direction Display  
SP 14062 -4

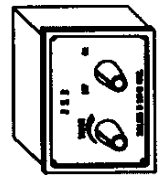


Lautsprecher  
Loudspeaker  
SP 4999 -4

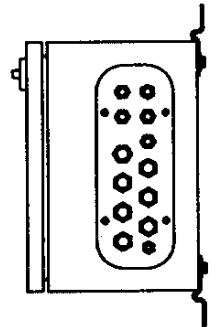


Signal Aufnehmer  
Signal Receiver  
SP 4980 -4

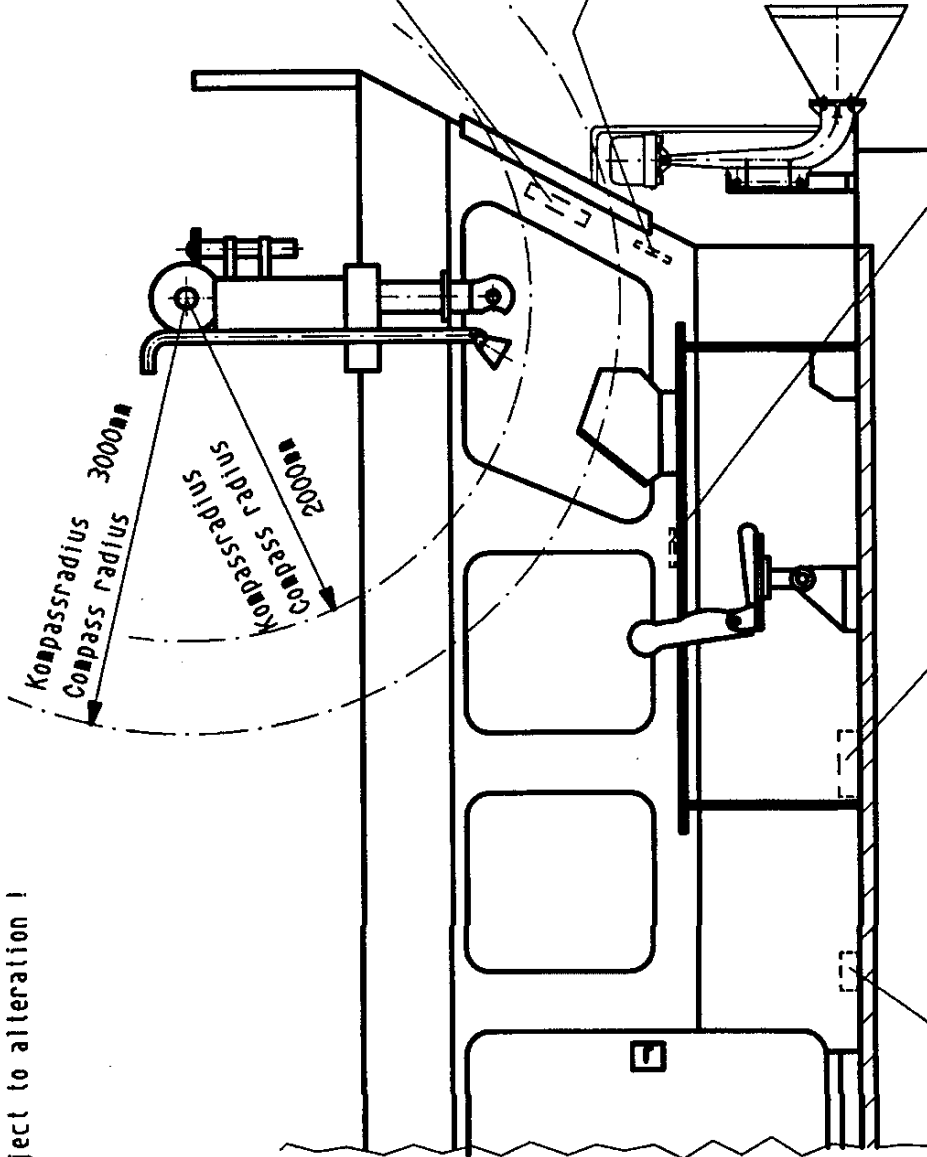
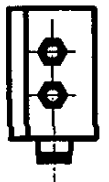
Bedienelement  
Operating Unit  
SP 14046 -4



Zentral-Steuer u. Verstärkereinheit  
Central-Control a. Amplifier Unit  
SP 4982 -4



\* Vorverstärker  
Pre-Amplifier  
SP 14138 -4



Kompassradius 3000mm  
Compass radius

Kompassradius 2000mm  
Compass radius

Alle Änderungen vorbehalten!  
Subject to alteration!

\* Erforderlich bei einem Abstand über 100m zwischen einem Signal-Aufnehmer und Zentral-Steuer u. Verstärkereinheit!  
Required if distance of more than 100m between one Signal Receiver and Central-Control a. Amplifier Unit!



Signal Aufnehmer  
Signal Receiver

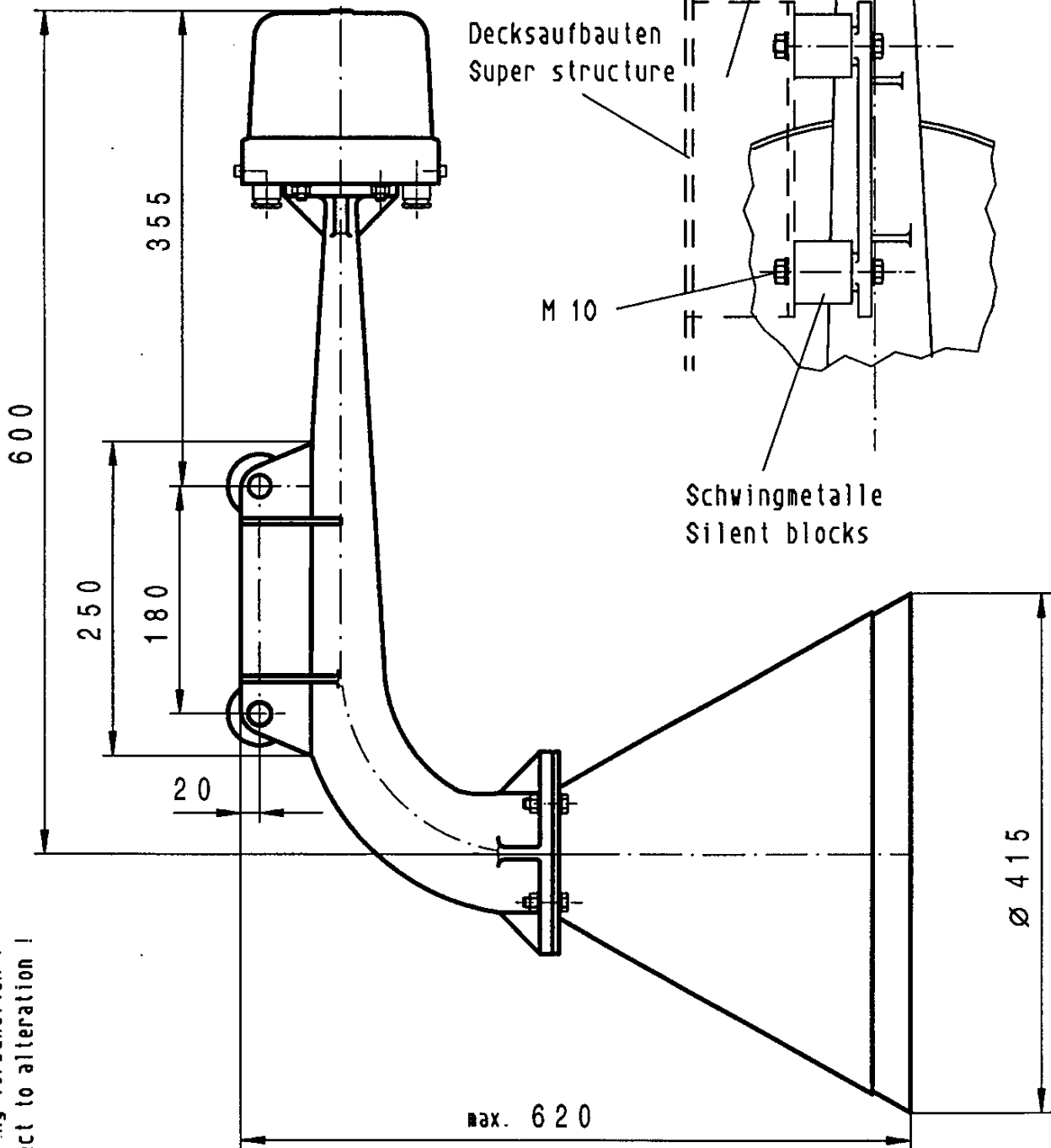
SRD 414  
SRD 444

SP  
4980 -4

Anbauvorschlag  
Proposal for installation

4 Einheiten je 90° versetzt.  
4 units each staggered by 90°.

keine Zöllner Lieferung  
not Zöllner delivery



Änderung vorbehalten!  
Subject to alteration!



Vorverstärker  
Pre-Amplifier

SRD 414  
SRD 444

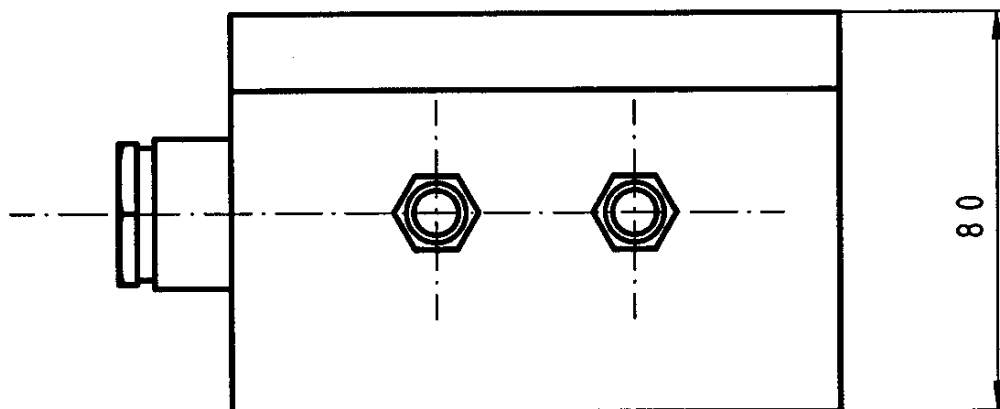
SP  
14138-4

Erforderlich bei einem Abstand über 100m zwischen einem Signal-Aufnehmer und Zentral-Steuer u. Verstärkereinheit!

Required if distance of more than 100m between one Signal Receiver and Central-Control a. Amplifier Unit!

Einbau so nahe wie möglich am Signalaufnehmer (Mikrofon)

installation as close as possible to The signal receivers (microphones)

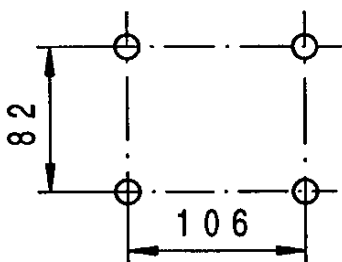


122

122

Anderung vorbehalten!  
Subject to alteration!

M24x1.5



PG 9

Schutzart: IP 65  
protection type: IP 65

02.06.98 Sch.  
21.12.95 Sch.

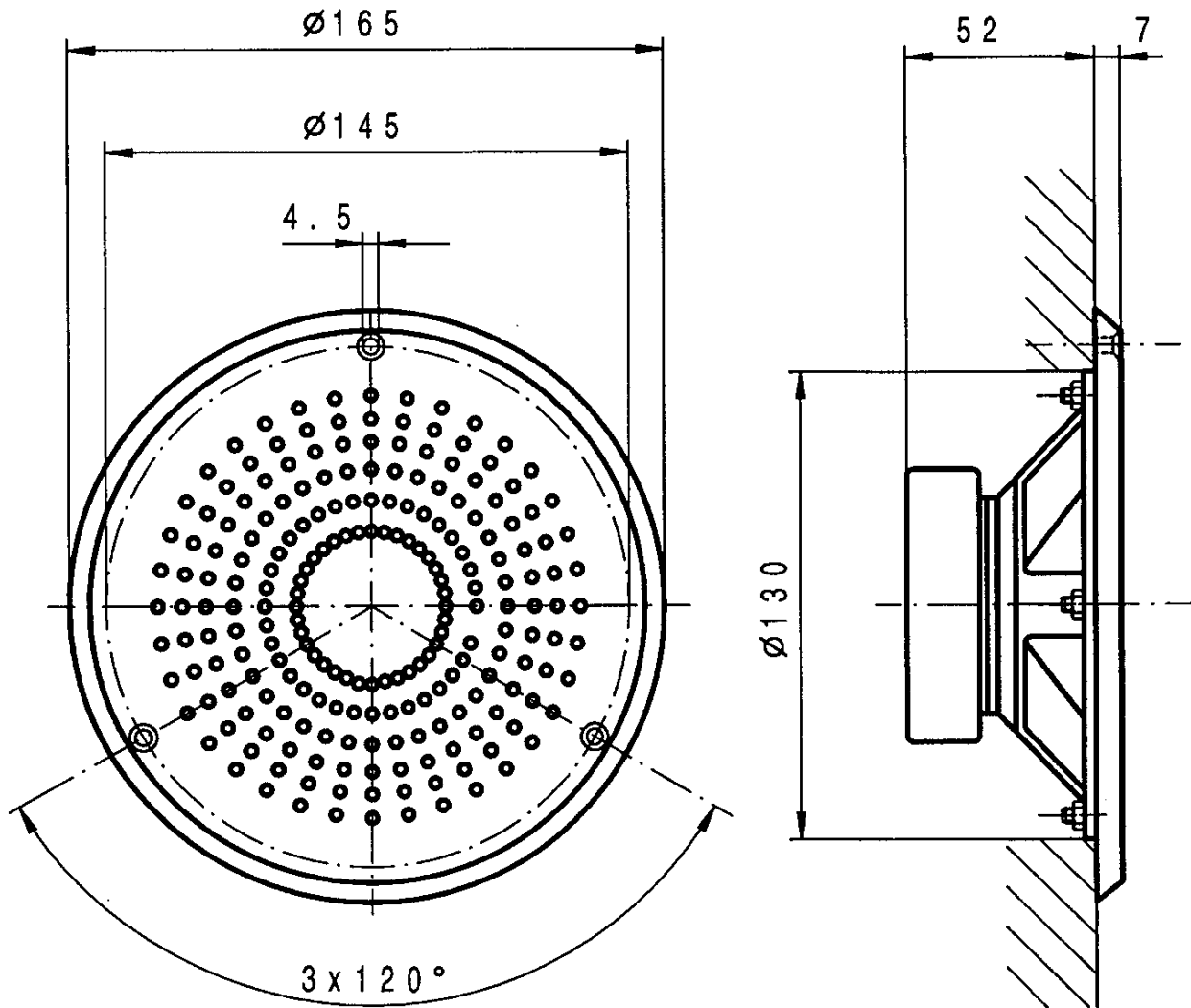
ZÖLLNER ♦ KIEL



Einbaulautsprecher  
Built-In Loudspeaker

SRD 222  
SRD 414/444

SP  
4999-4



Belastbarkeit : 6 W  
Loadable :

Impedanz : 8 Ohm  
Impedence :

Gewicht : 0,630 kg  
Weight :

Änderung vorbehalten !  
Subject to alteration !

21.12.95 Sch.

ZÖLLNER ♦ KIEL



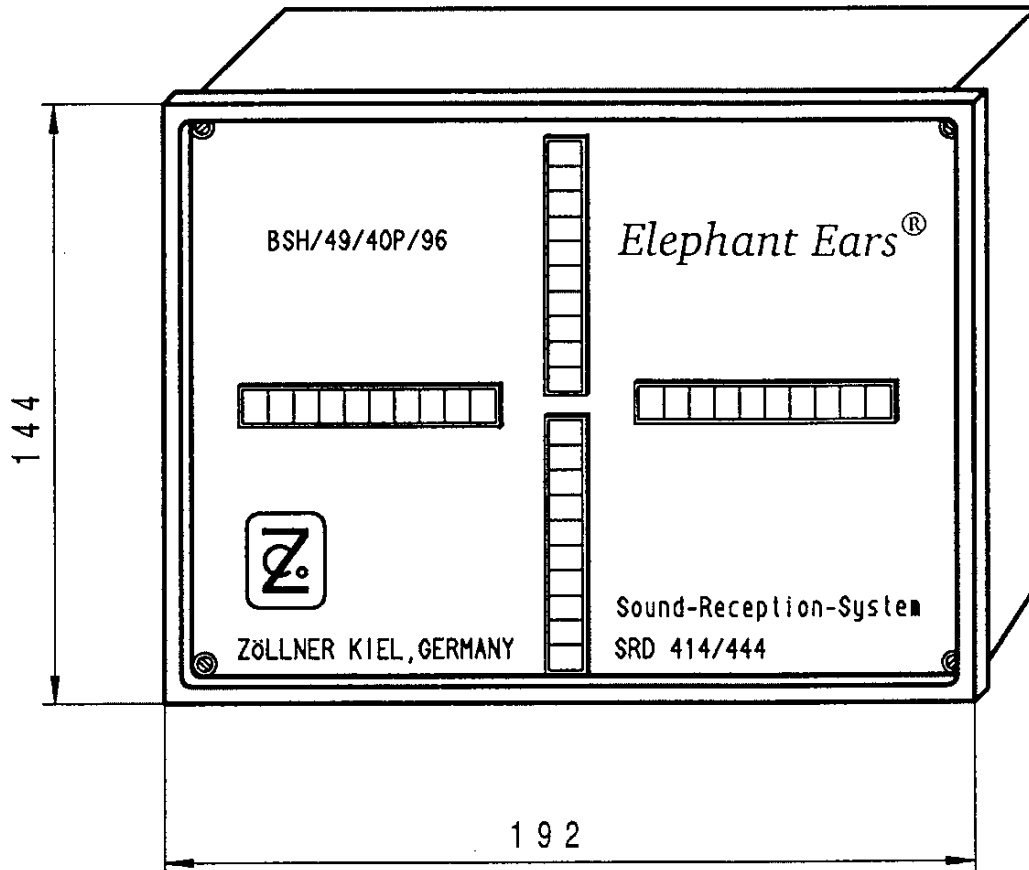
Richtungsdisplay  
Direction Display

SRD 414

SP

SRD 444

14062-4



Einbauöffnung : 186x138 mm DIN 43700  
Hole for installation :

Einbautiefe : 110 mm  
Installation depth :

Anderung vorbehalten !  
Subject to alteration !

21.12.95 Sch.  
24.05.96 Sch.

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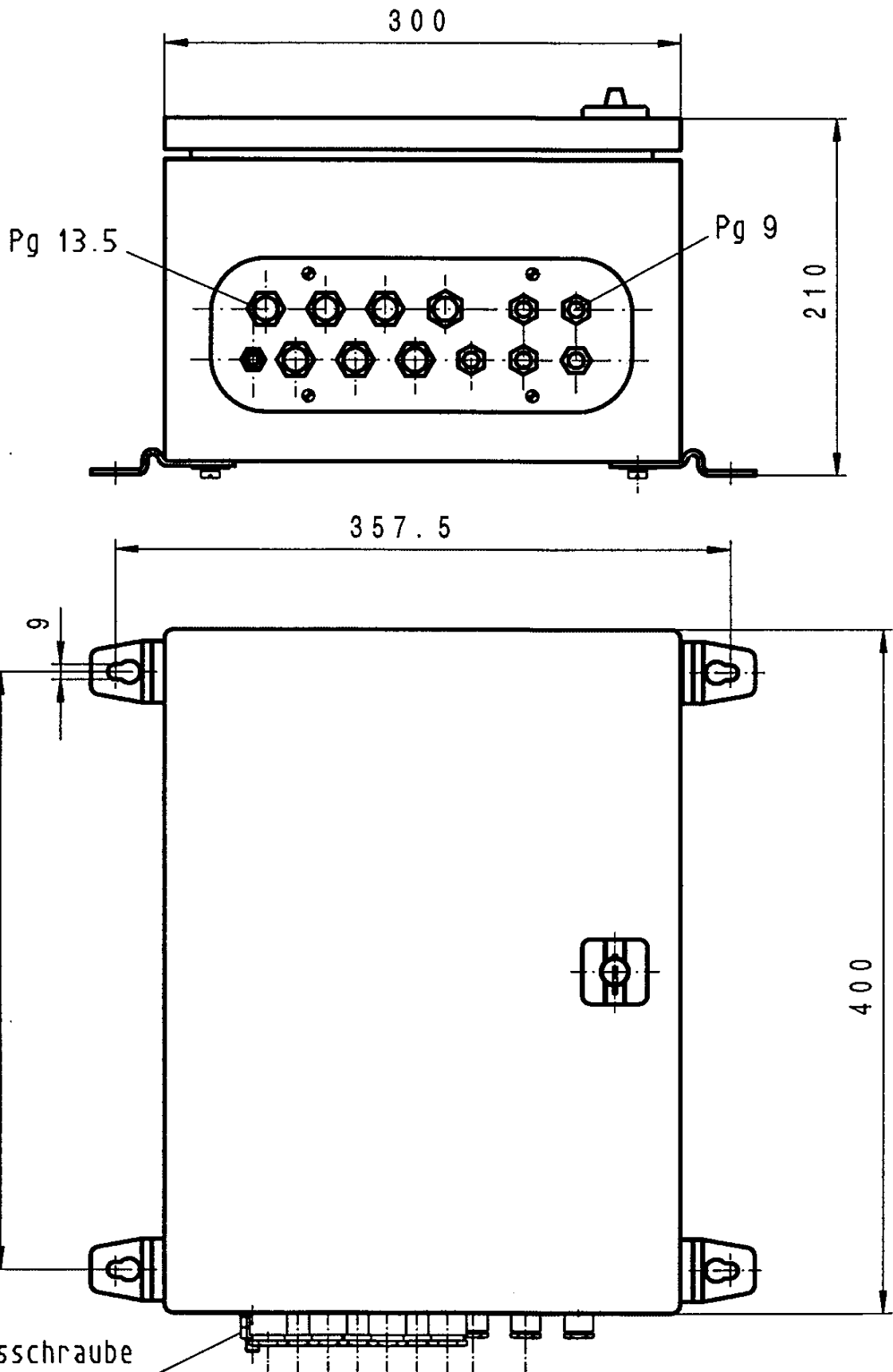
Zentral-Steuer und Verstärkereinheit  
Central-Control and Amplifier Unit

SRD 414

SRD 444

SP

4982-4



Änderung vorbehalten!  
Subject to alteration!

Erdungsschraube  
Earthing screw  
M 8

21.12.95 Sch.

ZÖLLNER • KIEL

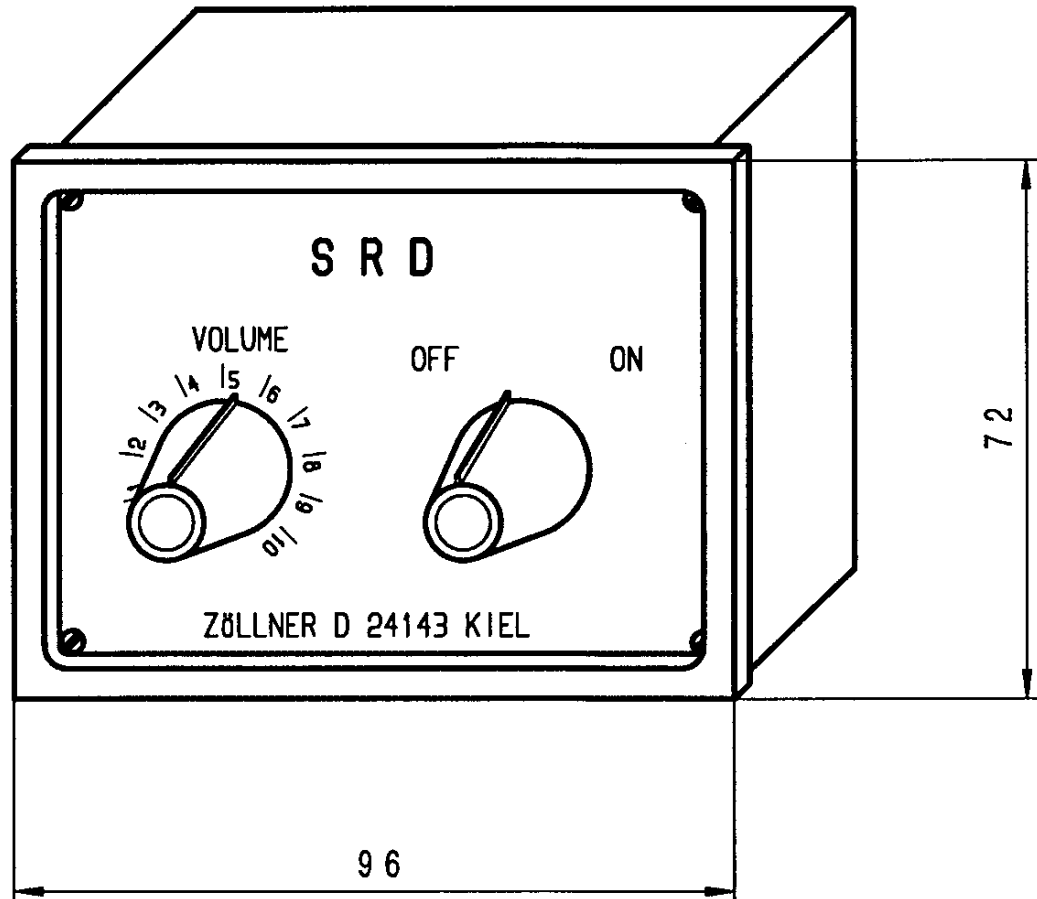




Bedieneinheit  
Operating Unit

SRD 414  
SRD 444

SP  
14046-4



Einbauöffnung : 92 x 68 mm DIN 43700  
Hole for installation :

Einbautiefe : 110 mm  
Installation depth :

Anderung vorbehalten !  
Subject to alteration !

07.07.99 Sbg.  
04.02.99 Sbg.

ZÖLLNER • KIEL

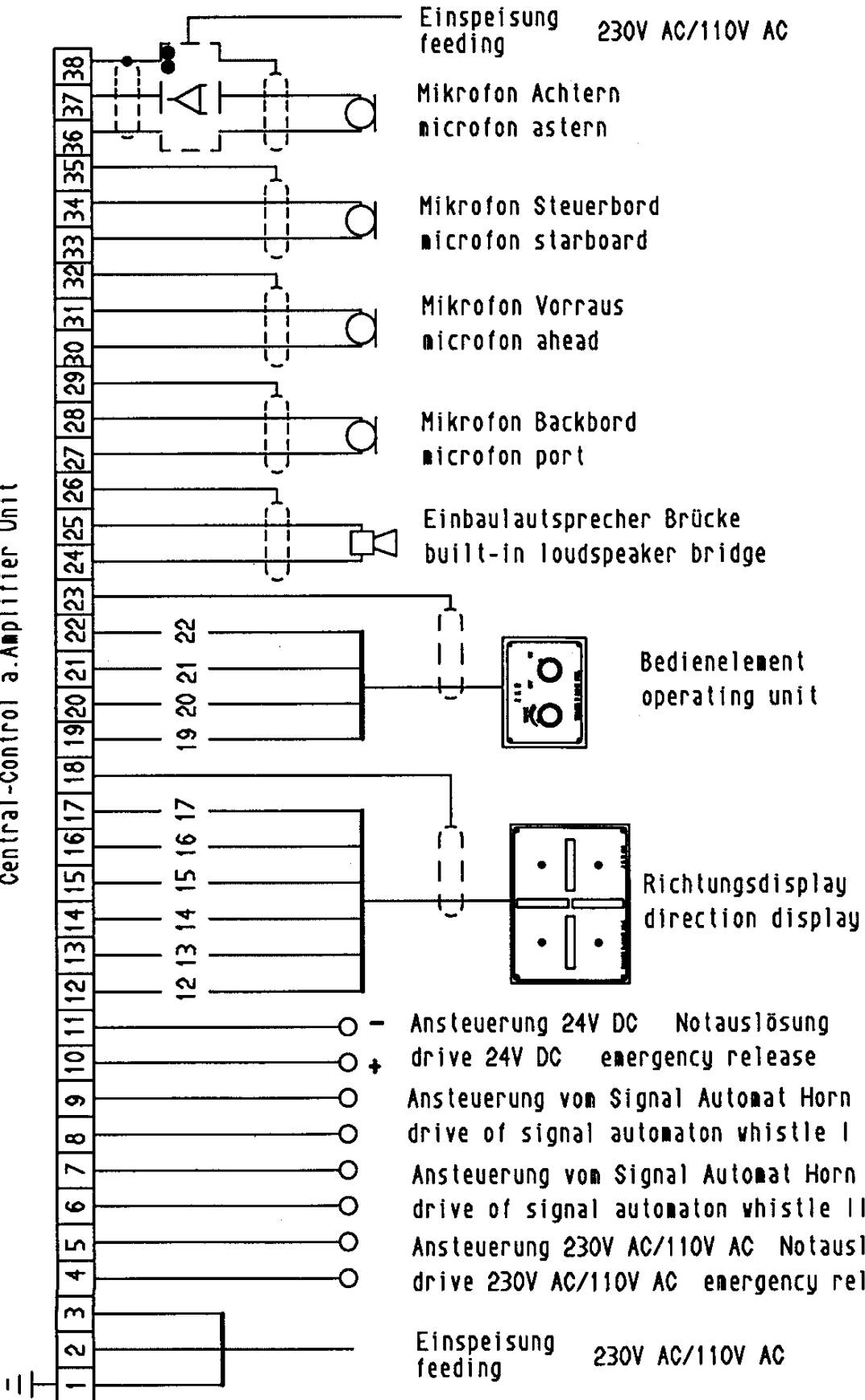


Anschlussplan Signal-Richtungs Detektor  
 Connection Diagram Sound Signal Direction Detector

**SRD 414**  
 230V AC  
 110V AC

● Bei Kabellängen über 100m ist ein Mikrofonvorverstärker erforderlich !  
 For cables over 100m in length, a microfon amplifier is required !

Zentral-Steuer u. Verstärkereinheit  
 Central-Control a. Amplifier Unit



Die Abschirmungen dürfen keine Verbindung mit dem Schiffskörper haben!  
 The screenings may not in any case be connected with the hull !

Änderung vorbehalten ! Ersatz für Zeichnung v. 16320-4 !  
 Subject to alteration ! Replacement for drawing 01.16320-4 !

19.09.97 Sch.  
 03.08.98 Sch.

**ZÖLLNER • KIEL**

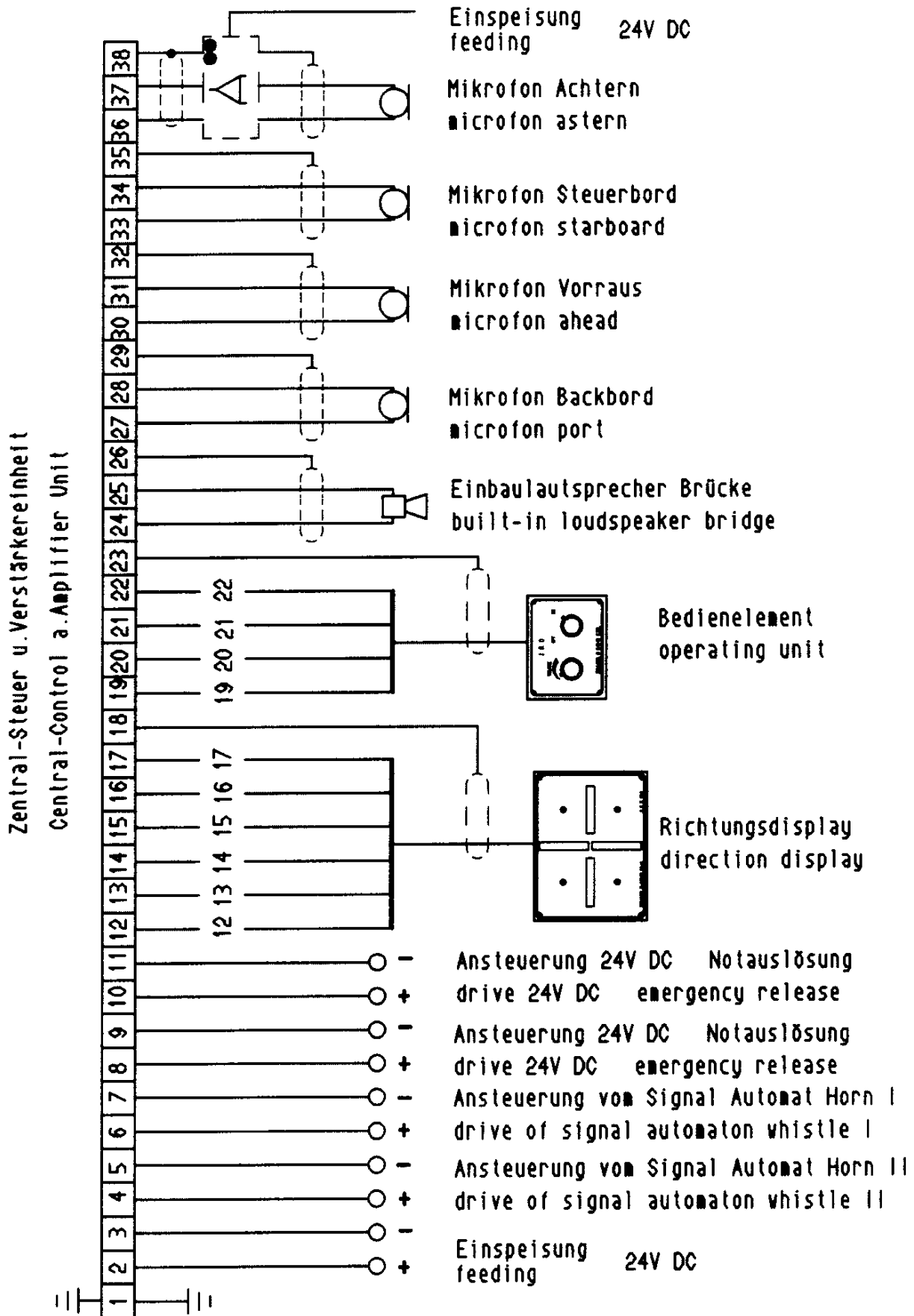
01.616530-4



Anschlussplan Signal-Richtungs Detektor  
 Connection Diagram Sound Signal Direction Detector

SRD 414  
 24V DC

● Bei Kabellängen über 100m ist ein Mikrofonvorverstärker erforderlich !  
 For cables over 100m in length, a microfon amplifier is required !



Die Abschirmungen dürfen keine Verbindung mit dem Schiffskörper haben!  
 The screenings may not in any case be connected with the hull !

Änderung vorbehalten ! Ersatz für Zeichnung 0.16396-4 !  
 Subject to alteration ! Replacement for drawing 01.16396-4 !

19.09.97 Sch.  
 19.02.98 Sch.

ZÖLLNER • KIEL

01.616531-4