

Zenitel Marine



Amplifier System

Type VMA

User & Technical Manual

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1 Introduction

1.1 About this document

This system description is intended to give relevant information on the system features, available equipment, typical configurations, simplified wiring and technical data for the concept.

1.2 About this concept

The VMA-system is a very flexible system with several configuration-options, and it will always be necessary with additional documents. Please see documents prepared in accordance with the project specification.

2 System build-up and description

The VMA- system is designed as a sub amplifier-unit for intercommunication system,, specially for type ACM or ASA, all versions. But the system can also be used as a stand alone system without zone selection

The VMA-system is a simple and very flexible system and meet (together with the main system) necessary specifications for public address, loud hailing and alarm configurations.

3 System functions and priorities

3.1 Public address function basic.

Call distribution is made from ACM or ASA stations. Audio signal from ACM or ASA to the VMA-unit. 1 to 4 zones depending on VMA-type.

3.2 Public-address function with PA/mic. Panels.

All-call distribution is made from one of the PA/Mic.panels (Emergency) to the VMA loudspeaker network.The Call distribution will also be distributed to ACM or ASA stations. Up to 4 microphone panels with 4 priority options.

3.3 Loudhailer function (VMA-2,3,4,5)

The loudhailer function is independent of the ACM or ASA system.

Call distribution is made from one or two independent PA/Mic.panels

3.4 Alarm and mute of alarm function

Alarm signal is from two alarm generators EE1 (one alarm), or EE3 (three alarms) and can be distributed / started from alarm panel AC3 or any separate contact set.

The system can also be delivered with back up generators.

The automatic mute function consist of two contact set, both in function at same time.

The first contact set mute external alarm system, and the second mute internal alarm on the loudspeaker network when using emergency PA/Mic.panel.

4 System units

| | |
|-------|--|
| VMA-1 | 19" 8U amplifier rack with 1 power amplifier and up to 4 speaker zones. |
| VMA-2 | 19" 12U amplifier rack with 2 power amplifier and up to 4 speaker zones. |
| VMA-3 | 19" 16U amplifier rack with 3 power amplifier and up to 8 speaker zones. |
| VMA-4 | 19" 20U amplifier rack with 4 power amplifier and up to 8 speaker zones. |
| VMA-5 | 19" 24U amplifier rack with 5 power amplifier and up to 8 speaker zones. |

VMA-1 Basic

Normal call distribution is made from ACM or ASA stations.

VMA-2,3,4,5 Basic

Normal call distribution is made from ACM or ASA stations, hailer distribution from PA/Mic.panel.

VMA-1 Mic/Al

Normal call distribution is made from ACM or ASA stations, emergency call distribution by PA/Mic.panels. Alarm and alarm mute functions.

VMA-2,3,4,5 Mic/Al

Normal call distribution is made from ACM or ASA stations, emergency call distribution by PA/Mic.panels and hailer distribution by separate PA/Mic.panels. Alarm and alarm mute functions.

| | |
|---------|--|
| VMP-603 | PA/Mic. panel with gooseneck microphone and preamplifier. |
| VMT-603 | PA/Mic. panel with handheld microphone and preamplifier WP |
| SP-111 | PA/Mic. panel with gooseneck microphone and preamplifier. |

| | |
|---------|----------------------|
| VML-15T | Loudspeaker 15W 100V |
|---------|----------------------|

5 Installation, cabling and configurations.

5.1 General

For proper installation and operation of the VMA system we recommend to read this section thoroughly together with installation drawings in this manual and the project drawings.

Make sure that all mounting and cabling are correct before switching on.

5.2 Mounting

The VMA unit should be located near the main system ACM or ASA

The construction is for floor mounting in a normal and ventilated indoor environment with a temperature of 0 - 55⁰ C. We recommend shock absorbers.

See datasheets and dimension drawings for further details.

It is equipped with plugable screw terminals on PCB for signal cables max.2,5mm² and screw terminals with switch for 24V DC and 230V AC connection. (110V AC)

5.3 Cable requirements

All signal cables have to be approved ship-cables with twisted pair min. 2 x 0,75mm² and outer screen

The screens must be interconnected in junction boxes and grounded in a common point in the central unit only. Power cable have to be approved ship cable.

Power cable is depending on number of amplifiers and type.

Note! Proper grounding is essential for reliable operation.

5.4 Power supply requirements.

24V DC Current consumption depending on type and number of power amplifiers.
VMA-60 7A, VMA-120 9A, VMA-250 23A.

230V AC Current consumption depending on type and number of power amplifiers
VMA-60 0,8A, VMA-120 1,2A, VMA-250 3A.

System power supply should be wired and fused independently from other systems.

5.5 Zone configuration

Strapping on terminal block X13A – 13F, X14 can set any zone loudspeaker configuration.

Note! This configuration-setting is done in accordance with the project requirement in our workshop before shipment.

6 Technical data / drawings and submanuals

6.1 Datasheets & Lay out drawings

| | | |
|------------------------|------------------------|-------------------|
| VMA-1..... | Datasheet | VMA-1_ds rev.00 |
| VMA-2..... | Datasheet | VMA-2_ds rev.00 |
| VMA-3..... | Datasheet | VMA-3_ds rev.00 |
| VMA-4..... | Datasheet | VMA-4_ds rev.00 |
| VMA-5..... | Datasheet | VMA-5_ds rev.00 |
| VMA-60 (amplifier).... | Datasheet | VMA-60_ds rev.00 |
| VMA-120 (amplifier) .. | Datasheet | VMA-120_ds rev.00 |
| VMA-250 (amplifier) .. | Datasheet | VMA-250_ds rev.00 |
| VMP-603 | Datasheet | VMP-603_ds rev.00 |
| VMT-603 | Datasheet | VMT-603_ds rev.00 |
| SP-111 | Datasheet | SP-111_ds rev.00 |
| VML-15T..... | Datasheet | VML-15T_ds rev.00 |
| VMA-1..... | Lay out..... | VMA-1 |
| VMA-2..... | Lay out..... | VMA-2 |
| VMA-3..... | Lay out..... | VMA-3 |
| VMA-4..... | Lay out..... | VMA-4 |
| 19" 8U (VMA-1)..... | Mounting details | Pa202010 |
| 19" 12U (VMA-2)..... | Mounting details | Pa202020 |
| 19" 16U (VMA-3)..... | Mounting details | Pa202030 |
| 19" 20U (VMA-4)..... | Mounting details | Pa202040 |
| 19" 24U (VMA-5)..... | Mounting details | Pa202050 |

6.2 Examples of cable connection diagram

| | |
|---------------------------------|----------------------------|
| VMA-1basic..... | VMA-1BASIC_cc rev.00 |
| VMA-1mic/alarm EE3 | VMA-1MIC.ALARM_cc01 rev.00 |
| VMA-1mic/alarm EE1 | VMA-1MIC.ALARM_cc02 rev.00 |
| VMA-2basic..... | VMA-2BASIC_cc01 rev.00 |
| VMA-2basic w/hailer .. | VMA-2BASIC_cc02 rev.00 |
| VMA-2mic/alarm EE3 | VMA-2MIC.ALARM_cc01 rev.00 |
| VMA-2mic/alarm EE1 | VMA-2MIC.ALARM_cc02 rev.00 |
| VMA-2mic/alarm EE3 /hailer..... | VMA-2MIC.ALARM_cc03 rev.00 |
| VMA-2mic/alarm EE1 /hailer..... | VMA-2MIC.ALARM_cc04 rev.00 |
| VMA-3basic..... | VMA-3BASIC_cc01 rev.00 |
| VMA-3basic w/hailer .. | VMA-3BASIC_cc02 rev.00 |
| VMA-3mic/alarm EE3 | VMA-3MIC.ALARM_cc01 rev.00 |
| VMA-3mic/alarm EE1 | VMA-3MIC.ALARM_cc02 rev.00 |
| VMA-3mic/alarm EE3 /hailer..... | VMA-3MIC.ALARM_cc03 rev.00 |
| VMA-3mic/alarm EE1 /hailer..... | VMA-3MIC.ALARM_cc04 rev.00 |
| VMA-4basic..... | VMA-4BASIC_cc01 rev.00 |
| VMA-4basic w/hailer .. | VMA-4BASIC_cc02 rev.00 |
| VMA-4mic/alarm EE3 | VMA-4MIC.ALARM_cc01 rev.00 |
| VMA-4mic/alarm EE1 | VMA-4MIC.ALARM_cc02 rev.00 |
| VMA-4mic/alarm EE3 /hailer..... | VMA-4MIC.ALARM_cc03 rev.00 |
| VMA-4mic/alarm EE1 /hailer..... | VMA-4MIC.ALARM_cc04 rev.00 |
| VMA-5basic..... | VMA-5BASIC_cc rev.00 |
| VMA-5mic/alarm EE3 /hailer..... | VMA-5MIC.ALARM_cc01 rev.00 |
| VMA-5mic/alarm EE1 /hailer..... | VMA-5MIC.ALARM_cc02 rev.00 |

6.3 Wiring diagrams

| | |
|-------------------|-----------------|
| VMA-1/basic2..... | VMA-1BA rev.00 |
| VMA-2/basic2..... | VMA-2BA rev.00 |
| VMA-3/basic4..... | VMA-3BA rev.00 |
| VMA-4/basic4..... | VMA-4BA rev.00 |
| VMA-mic2..... | MIC-2 rev.00 |
| VMA-mic4..... | MIC-4 rev.00 |
| VMA-mic 2/al..... | MIC-2AL rev.00 |
| VMA-mic 2/al..... | MIC-2AL1 rev.00 |
| VMA-mic 4/al..... | MIC-4AL rev.00 |
| VMA-mic 4/al..... | MIC-4AL1 rev.00 |

6.4 Sub ,manuals

| | | |
|----------------------|-------------------------------|------------------------------|
| VMA-60/120/250 | Installation instruction..... | Doc.no.A100K10070 ver. 01.00 |
|----------------------|-------------------------------|------------------------------|

7 The ZENITEL Marine group

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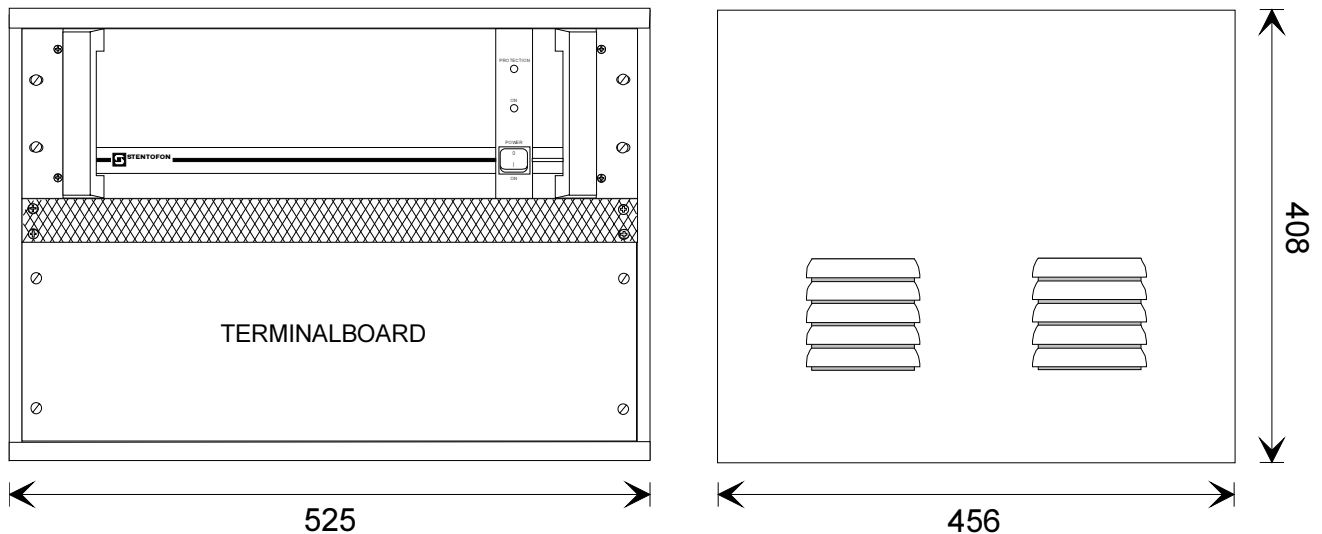
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Opatija - Croatia

Amplifier System VMA



Marine



Article No: VMA-1

Description:

VMA-1

- Combined 19" 8 U amplifier rack for hailer system and for ACM or ASA system
- 1x power amplifier
- 4x speaker zones

Options:

1 or 3 alarm inputs
Backup alarm generator, 1 or 3 inputs
2x microphone inputs
Automatic mute of alarm/ PA
VMA-60 poweramplifier
VMA-120 poweramplifier
VMA-250 poweramplifier

Technical data:

| | |
|-----------------------------|--|
| Color: | Black |
| Material: | Painted steel |
| Dimensions (w x h x d): | 525 x 408 x 456 mm |
| Mounting: | Floor w/ 4 x 6 mm bolts. Shock absorbers recommended. |
| Weight exclusive amplifier: | Approx. 21,5 kg |

Accessories:

| | |
|---------|--------------------|
| VMP-603 | P.A. panel |
| VMT-603 | P.A. panel WP |
| SP-111 | Mic. control panel |

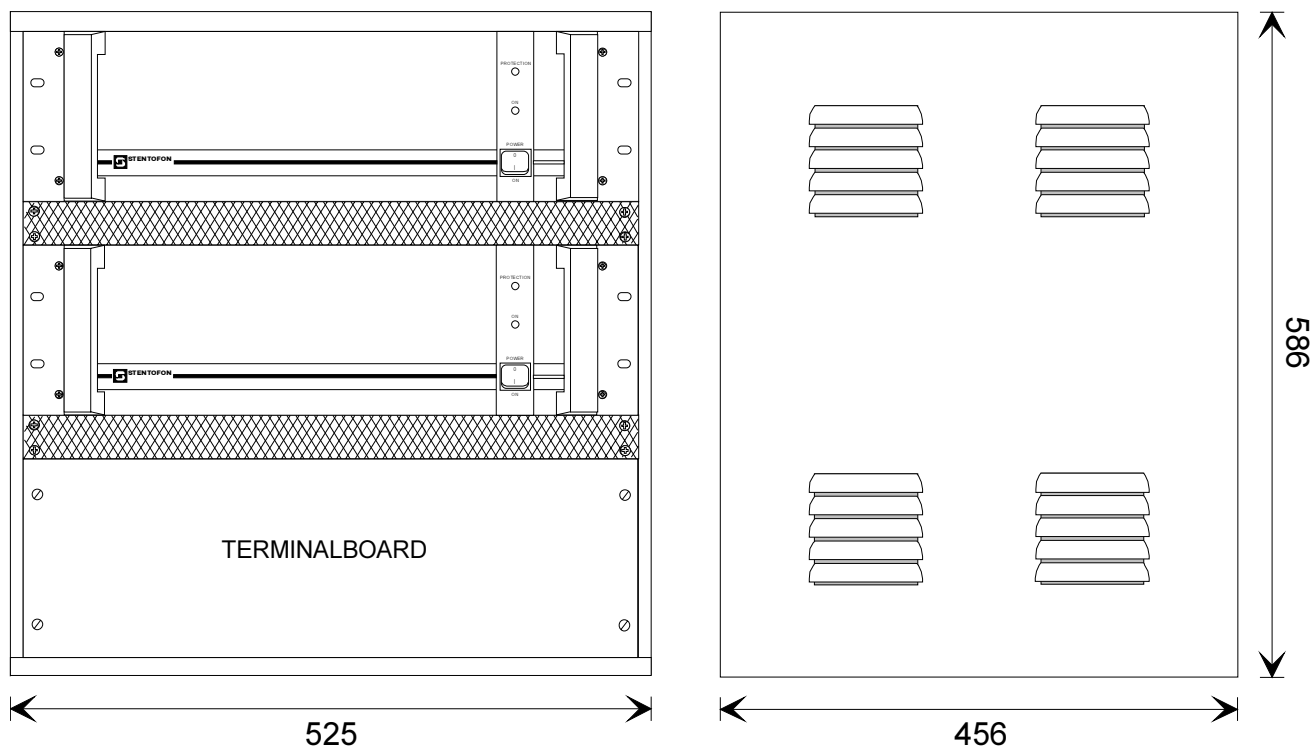
For further data:

Technical data for VMA-60/ -120/ -250, and P.A./ microphone panels (See separate datasheets)

Amplifier System VMA



Marine



Article No: VMA-2

Description:

VMA-2

- Combined 19" 12 U amplifier rack for hailer system and for ACM or ASA system
- 2x power amplifiers
- 4x speaker zones

Options:

1 or 3 alarm inputs main
Backup alarm generator, 1 or 3 inputs
2x microphone inputs
Automatic mute of alarm/ PA
VMA-60 poweramplifier
VMA-120 poweramplifier
VMA-250 poweramplifier

Technical data:

| | |
|-----------------------------|--|
| Color: | Black |
| Material: | Painted steel |
| Dimensions (w x h x d): | 525 x 586 x 456 mm |
| Mounting: | Floor w/ 4 x 6 mm bolts. Shock absorbers recommended. |
| Weight exclusive amplifier: | Approx. 23,5 kg |

Accessories:

| | |
|---------|--------------------|
| VMP-603 | P.A. panel |
| VMT-603 | P.A. panel WP |
| SP-111 | Mic. control panel |

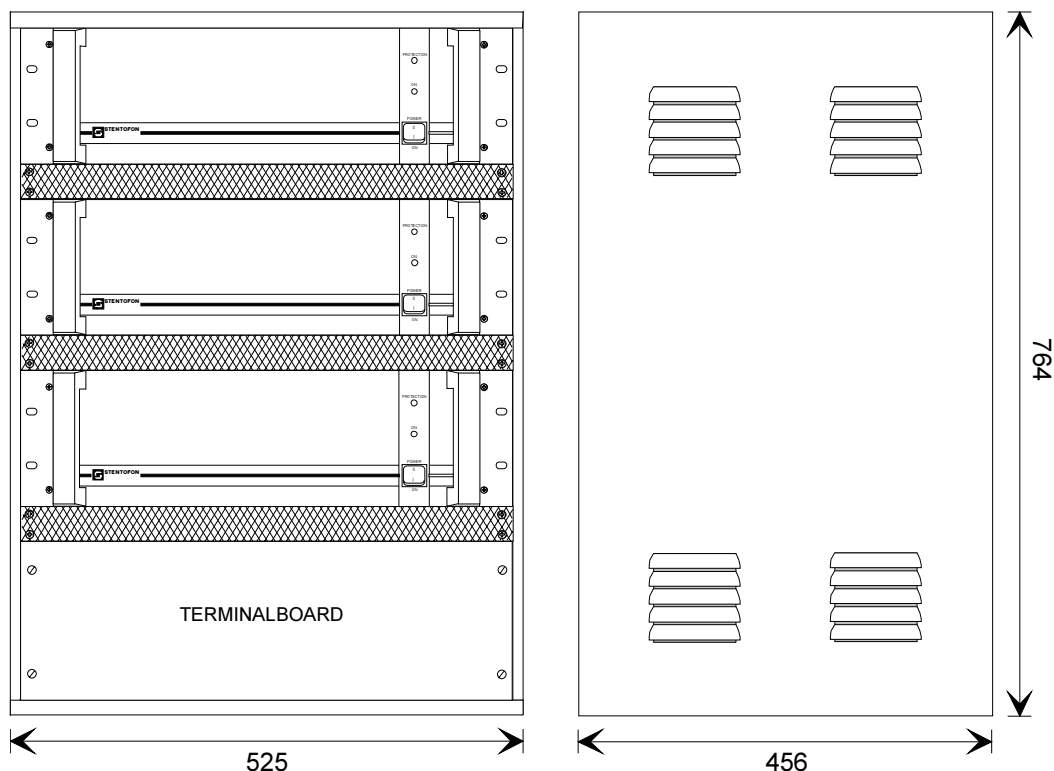
For further data:

Technical data for VMA-60/ -120/ -250, and P.A./ microphone panels (See separate datasheets)

Amplifier System VMA



Marine



Article No: VMA-3

Description:

VMA-3

- Combined 19" 16 U amplifier rack for hailer system and for ACM or ASA system
- 3x power amplifiers
- 4x speaker zones (can be set up to 8)

Options:

1 or 3 alarm inputs main
Backup alarm generator, 1 or 3 inputs
Up to 4x microphone inputs
Automatic mute of alarm/ PA
VMA-60 poweramplifier
VMA-120 poweramplifier
VMA-250 poweramplifier

Technical data:

| | |
|-----------------------------|--|
| Color: | Black |
| Material: | Painted steel |
| Dimensions (w x h x d): | 525 x 764 x 456 mm |
| Mounting: | Floor w/ 4 x 6 mm bolts. Shock absorbers recommended. |
| Weight exclusive amplifier: | Approx. 27,5 kg |

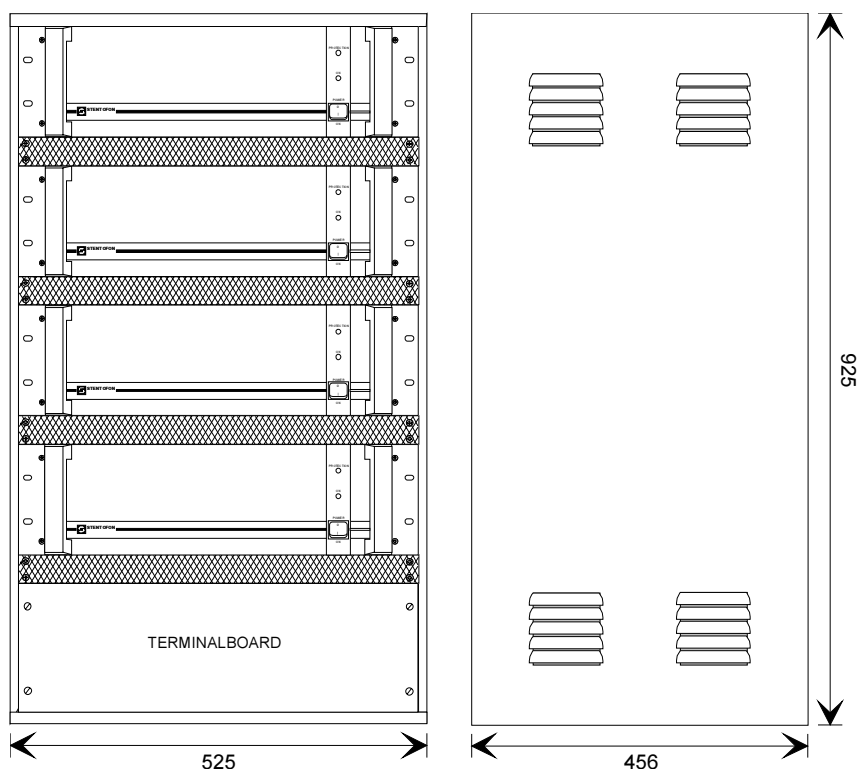
Accessories:

| | |
|---------|--------------------|
| VMP-603 | P.A. panel |
| VMT-603 | P.A. panel WP |
| SP-111 | Mic. control panel |

For further data:

Technical data for VMA-60/ -120/ -250, and P.A./ microphone panels (See separate datasheets)

Amplifier System VMA



Article No: VMA-4

Description:

VMA-4

- Combined 19" 20 U amplifier rack for hailer system and for ACM or ASA system
- 4x power amplifiers
- 4x speaker zones (can be set up to 8)

Options:

1 or 3 alarm inputs main
Backup alarm generator, 1 or 3 inputs
Up to 4x microphone inputs
Automatic mute of alarm/ PA
VMA-60 poweramplifier
VMA-120 poweramplifier
VMA-250 poweramplifier

Technical data:

| | |
|-----------------------------|--|
| Color: | Black |
| Material: | Painted steel |
| Dimensions (w x h x d): | 525 x 925 x 456 mm |
| Mounting: | Floor w/ 4 x 6 mm bolts. Shock absorbers recommended. |
| Weight exclusive amplifier: | Approx. 32,5 kg |

Accessories:

| | |
|---------|--------------------|
| VMP-603 | P.A. panel |
| VMT-603 | P.A. panel WP |
| SP-111 | Mic. control panel |

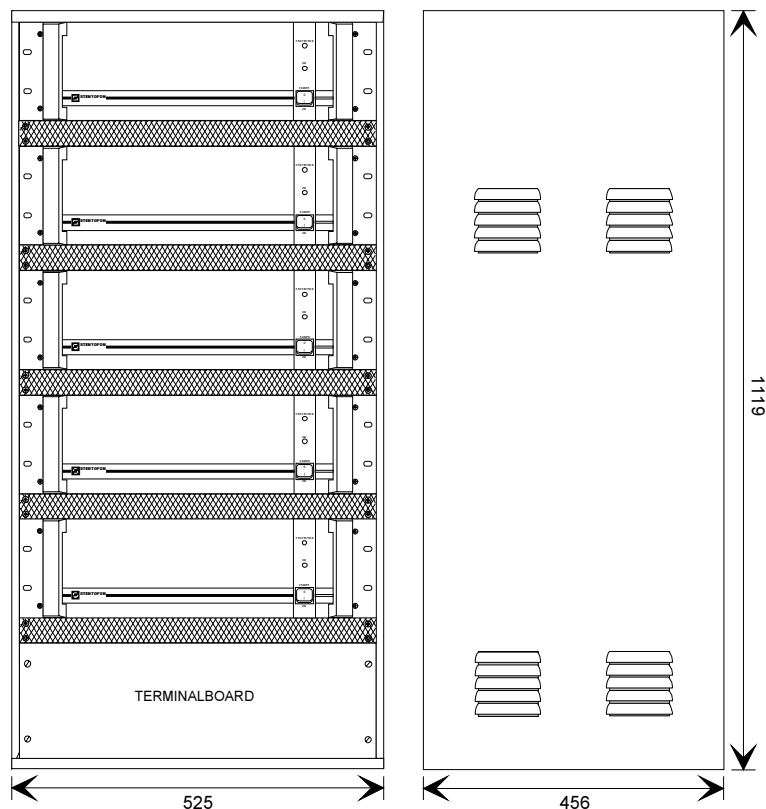
For further data:

Technical data for VMA-60/ -120/ -250, and P.A./ microphone panels (See separate datasheets)

Amplifier System VMA

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Marine



Article No: VMA-5

Description:

- Includes two separate systems in 19" 24 U amplifier rack for combined use for hailer system and for ACM or ASA system
- 5x power amplifiers total

Systems:

| | | |
|-----------|---|-------------------|
| System 1: | 4x power amplifiers | { same as VMA-4 } |
| | 4x speaker zones (can be set up to 8) | |
| System 2: | 1x power amplifier | { same as VMA-1 } |
| | 4x speaker zones | |

Options:

1 or 3 alarm inputs main
Backup alarm generator, 1 or 3 inputs
Up to 4x microphone inputs
Automatic mute of alarm/ PA
VMA-60 poweramplifier
VMA-120 poweramplifier
VMA-250 poweramplifier

Technical data:

| | |
|-----------------------------|--|
| Color: | Black |
| Material: | Painted steel |
| Dimensions (w x h x d): | 525 x 1119 x 456 mm |
| Mounting: | Floor w/ 4 x 6 mm bolts. Shock absorbers recommended. |
| Weight exclusive amplifier: | Approx. 32,5 kg |

Accessories:

| | |
|---------|--------------------|
| VMP-603 | P.A. panel |
| VMT-603 | P.A. panel WP |
| SP-111 | Mic. control panel |

For further data:

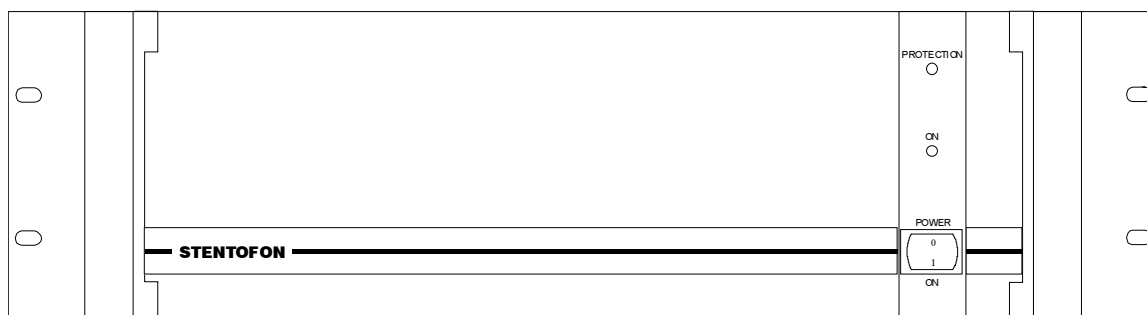
Technical data for VMA-60/ -120/ -250, and P.A./ microphone panels (See separate datasheets)

Slave Power Amplifiers

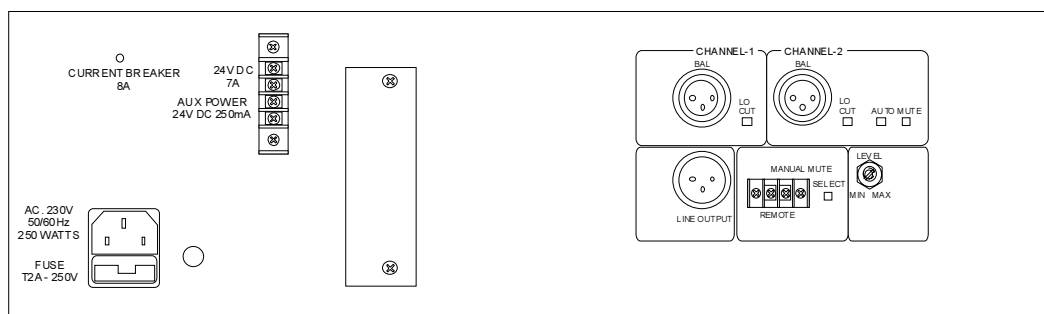


Marine

FRONT



REAR



Article No:
VMA-60

Description:

VMA-60

- The series of slave amplifier is designed for years of trouble free services in a variety of commercial and industrial sound systems. The VMA-series incorporate many useful features. The inputs are transformer isolated and set to operate in balanced mode. A low cut switch provides protection for horn speakers. Signal muting can be done either manually or automatically (voice operated). Auto-mute mode muting level can be switched between -20dB and -40dB. There is also an auxiliary power of 24V DC/ 250mA available on the back panel to drive other external

Technical data:

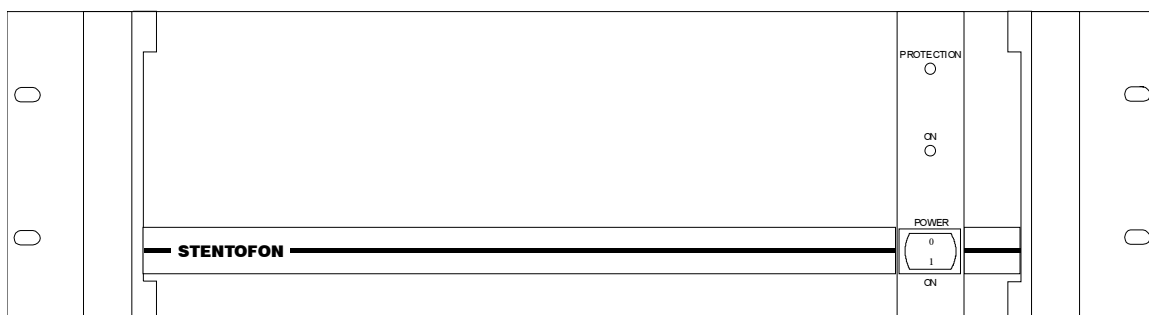
| | |
|--------------------|----------------------------|
| Manufacturer: | STENTOFON |
| Type/art.no.: | 2806 |
| Operation volt.: | 230V AC 50-60Hz/ 24V DC |
| Aux pwr output: | 24V DC, 250mA |
| Rated current: | 0.8A at 230V AC (90mA) |
| Rated current: | 7A at 24V DC (150mA) |
| Outputs: | 60W - 100V / 50V / 4 ohm |
| Distortion: | 2% at 120W RMS |
| Line output: | 600 ohm 1V balanced |
| Inputs (bal): | 2 channels, 20kOhm line |
| Input sensitivity: | 775mV for rated pwr output |
| Freq. response: | 60 - 15KHz |
| Temp. range: | -10 to +60°C |
| Humidity. range: | 10% - 85% RH |
| Dimensions: | W=19" H=3HU D=308mm |
| Weight: | 10,5kg (shipping weight) |

Slave Power Amplifiers

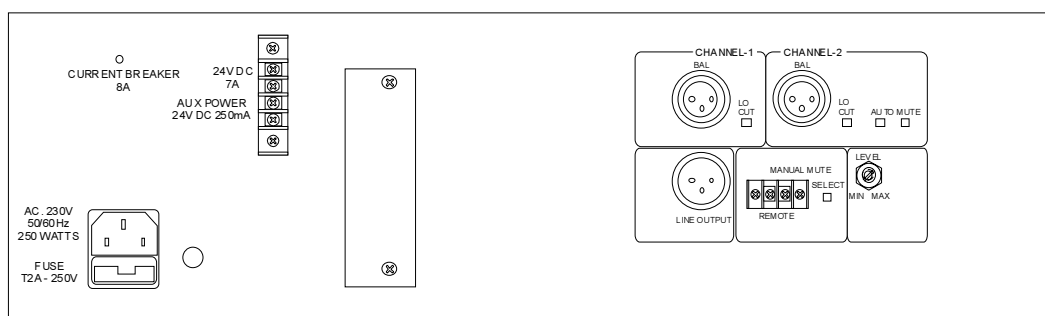


Marine

FRONT



REAR



Article No:
VMA-120

Description:

VMA-120

- The series of slave amplifier is designed for years of trouble free services in a variety of commercial and industrial sound systems. The VMA-series incorporate many useful features. The inputs are transformer isolated and set to operate in balanced mode. A low cut switch provides protection for horn speakers. Signal muting can be done either manually or automatically (voice operated). Auto-mute mode muting level can be switched between -20dB and -40dB. There is also an auxiliary power of 24V DC/ 250mA available on the back panel to drive other external equipment. The VMA amplifiers can operate from a 24V DC power source.

Technical data:

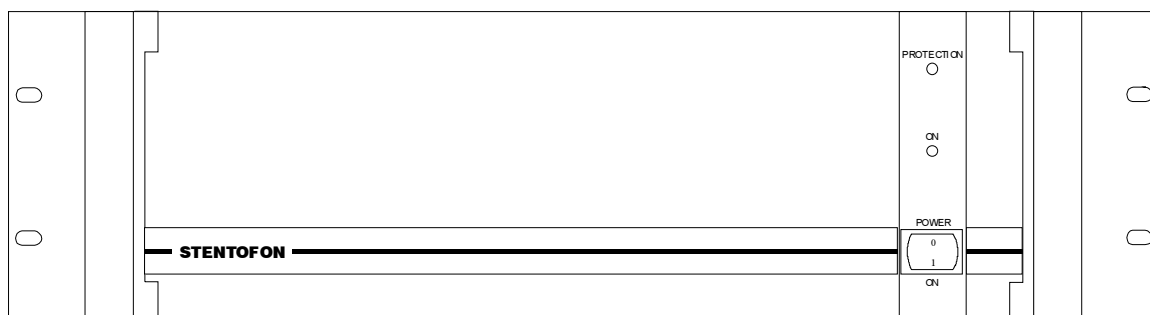
| | |
|--------------------|----------------------------|
| Manufacturer: | STENTOFON |
| Type/art.no.: | 2812 |
| Operation volt.: | 230V AC 50-60Hz/ 24V DC |
| Aux pwr output: | 24V DC, 250mA |
| Rated current: | 1.2A at 230V AC (100mA) |
| Rated current: | 9A at 24V DC (150mA) |
| Outputs: | 120W - 100V / 50V / 4 ohm |
| Distortion: | 2% at 120W RMS |
| Line output: | 600 ohm 1V balanced |
| Inputs (bal): | 2 channels, 20kOhm line |
| Input sensitivity: | 775mV for rated pwr output |
| Freq. response: | 60 – 15KHz |
| Temp. range: | -10 to +60°C |
| Humidity. range: | 10% - 85% RH |
| Dimensions: | W=19" H=3HU D=308mm |
| Weight: | 17kg (shipping weight) |

Slave Power Amplifiers

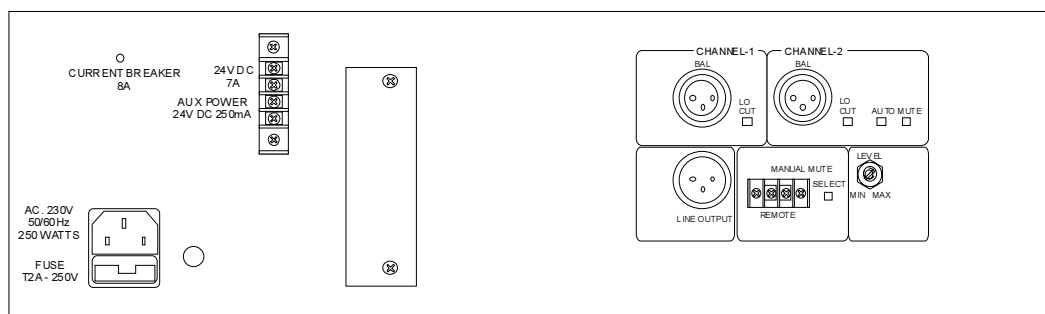


Marine

FRONT



REAR



Article No:
VMA-250

Description:

VMA-250

- The series of slave amplifier is designed for years of trouble free services in a variety of commercial and industrial sound systems. The VMA-series incorporate many useful features. The inputs are transformer isolated and set to operate in balanced mode. A low cut switch provides protection for horn speakers. Signal muting can be done either manually or automatically (voice operated). Auto-mute mode muting level can be switched between -20dB and -40dB. There is also an auxiliary power of 24V DC/250mA available on the back panel to drive other external equipment. The VMA amplifiers can operate from a 24V DC power source.

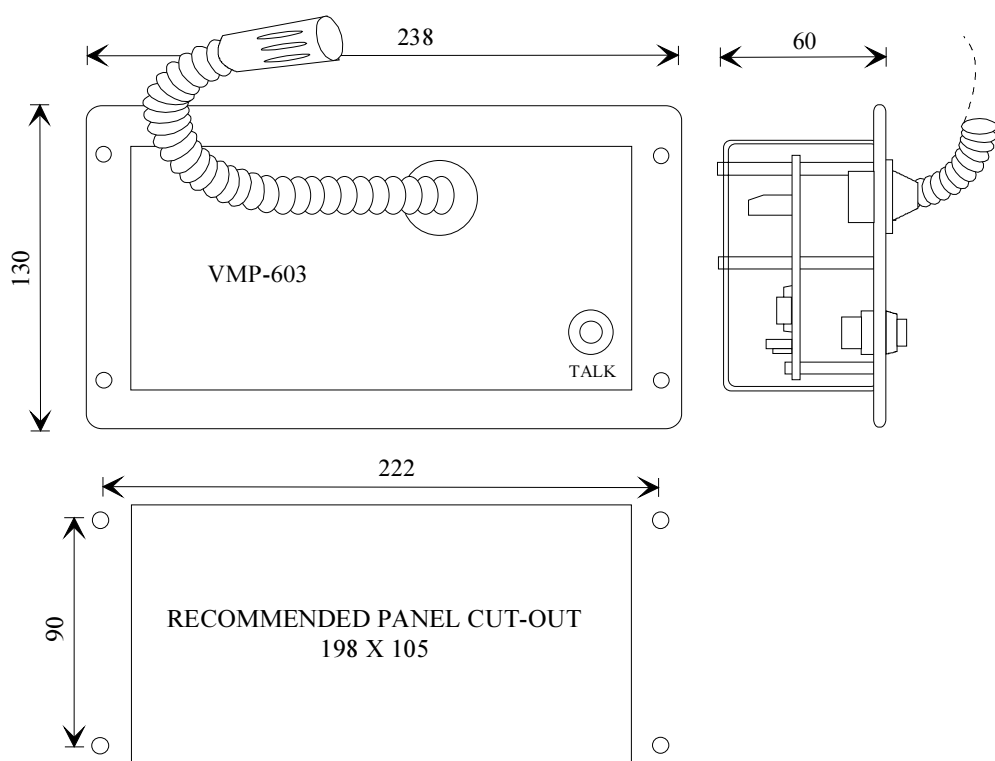
Technical data:

| | |
|--------------------|----------------------------|
| Manufacturer: | STENTOFON |
| Type/art.no.: | 2825 |
| Operation volt.: | 230V AC 50-60Hz / 24V DC |
| Aux pwr output: | 24V DC, 250mA |
| Rated current: | 3A at 230V AC (175mA) |
| Rated current: | 23A at 24V DC (220mA) |
| Outputs: | 250W - 100V / 50V / 4 ohm |
| Distortion: | 2% at 120W RMS |
| Line output: | 600 ohm 1V balanced |
| Inputs (bal): | 2 channels, 20kOhm line |
| Input sensitivity: | 775mV for rated pwr output |
| Freq. response: | 60 - 15KHz |
| Temp. range: | -10 to +60°C |
| Humidity. range: | 10% - 85% RH |
| Dimensions: | W=19" H=3HU D=308mm |
| Weight: | 21,5kg (shipping weight) |

ACM System - Stations



Marine



Article No: VMP-603

Description:

VMP-603:

- PA panel for interruption of Alarm signals for Emergency messages
- For flush mounting in consoles

Technical data:

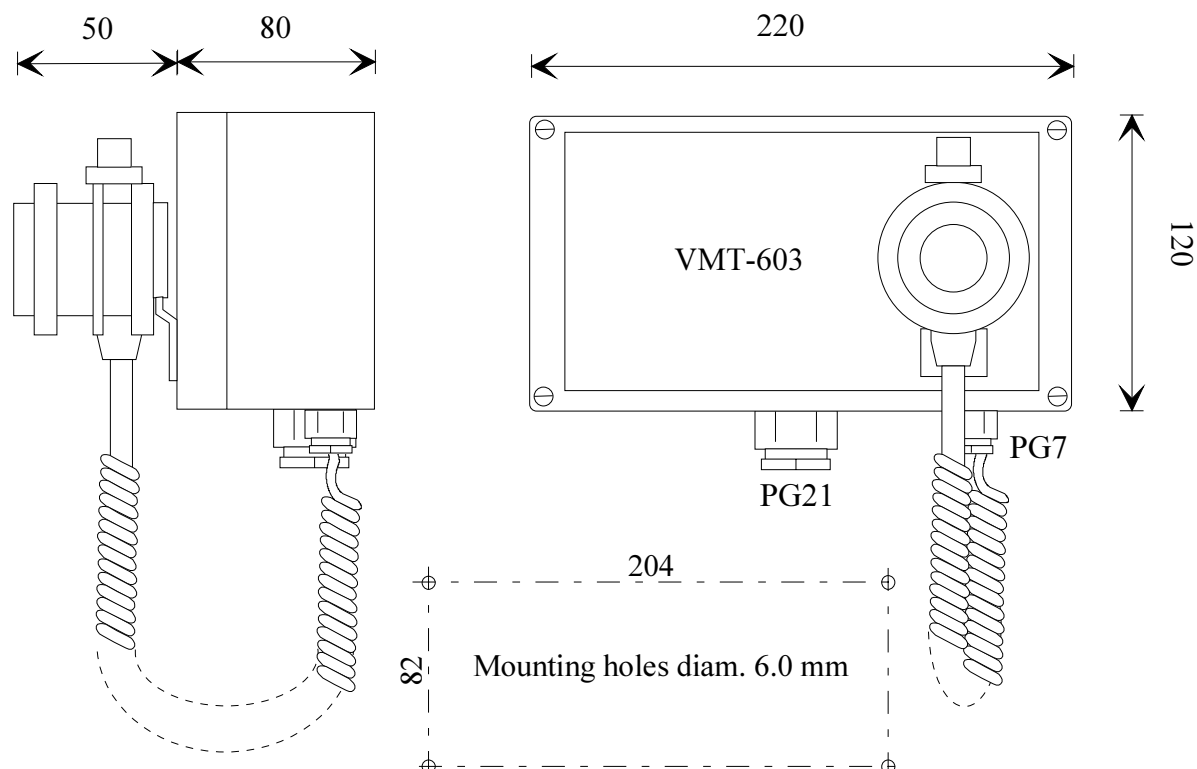
| | |
|-----------------|-----------------------|
| Gooseneck mic.: | 400 mm (total length) |
| Connection: | Screw terminals |
| Colour: | Black |
| IP rating | IP-44 |
| Dimensions: | see drw. above |
| Weight: | 0,8 kg |



ACM System - Stations

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Marine



Article No: VMT-603

Description:

VMT-603:

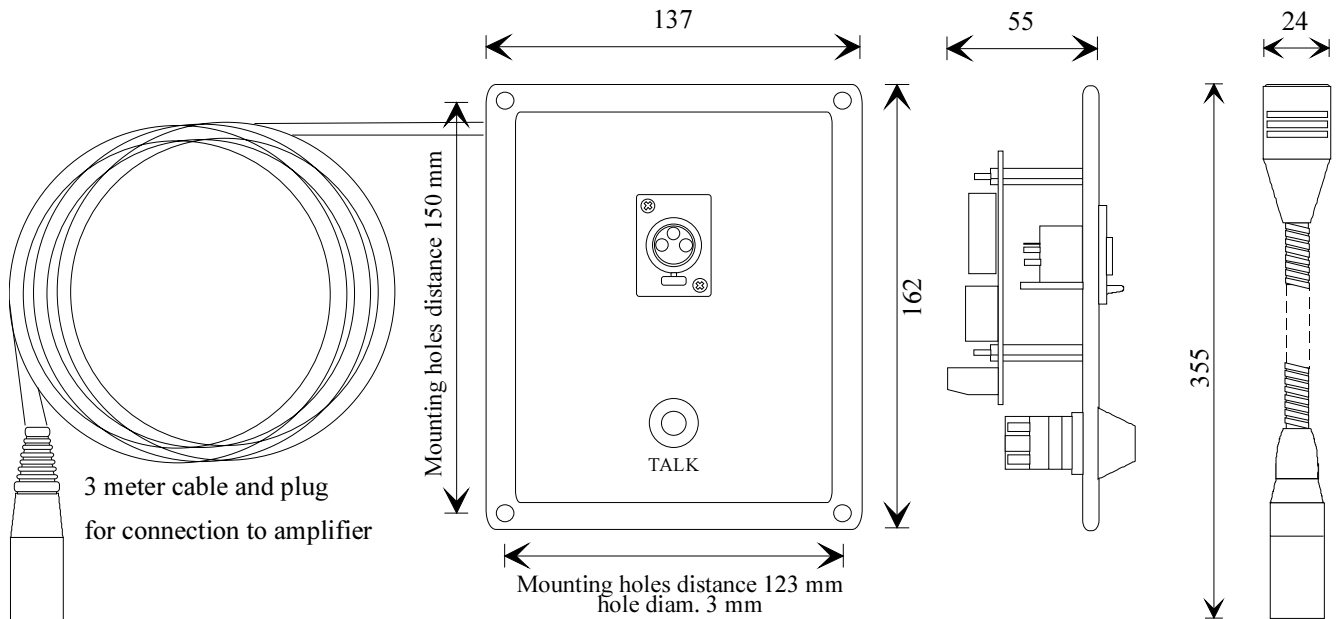
- W/t PA station for interruption of Alarm signals for Emergency messages
- For wall mounting at muster or embarkment stations

Technical data:

| | |
|----------------|--------------------------|
| Handheld mic.: | 62A0005 |
| Connection: | Internal screw terminals |
| Housing: | ROSE Box |
| Colour: | Grey box / Black sign |
| IP rating | IP-65 |
| Dimensions: | see drw. above |
| Weight: | 1,4 kg |



VMT-603_ds.rev.00 2001.07.16



Article No: SP-111

Description:

SP-111

- A one line, one way Public Address panel w/socket for gooseneck microphone.
- Gooseneck microphone: article no. 44021
- Built-in pre-amplifier
- Designed to be used together with a 100V line VMA amplifier
- Fixed cable for connection to amplifier
- Flush mounted in consoles.
- A comprehensive range of loudspeakers are available

Technical data:

| | |
|----------------|--------------------------|
| Power supply: | Powered from amplifier |
| Connections: | Screw terminals |
| Colour: | Black |
| IP rating: | IP-44 (in console) |
| Weight: | 0.470 kg w/cable & plug |
| Dimensions: | See dwg. above |
| Panel cut-out: | 90 x 115 mm |
| Gooseneck mic. | 44021 (see data below) |

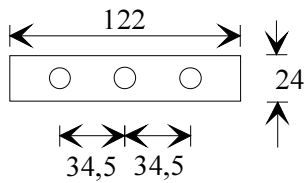
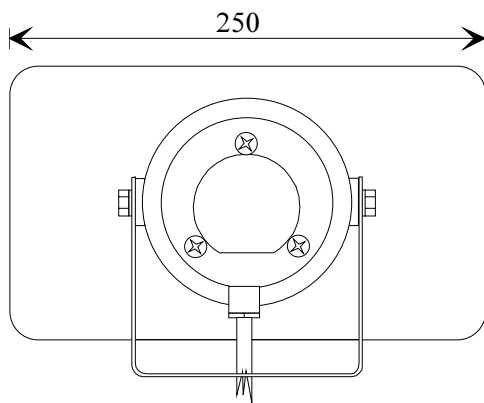
44021

| | |
|----------------|-----------------------|
| Type: | Dynarnic |
| Art.no. : | D43/E |
| Impedance: | 600 ohm |
| Freq.response: | 150 -12.000Hz. |
| Sensitivity: | -80dBV +/-3dB at 1kHz |
| Length: | 355 mm |
| Connection: | 3 pin XLR (male) |
| Colour: | Satin black |
| Material: | Brass |
| Dimensions: | see dwg. above |
| Weight: | 0,1 kg |

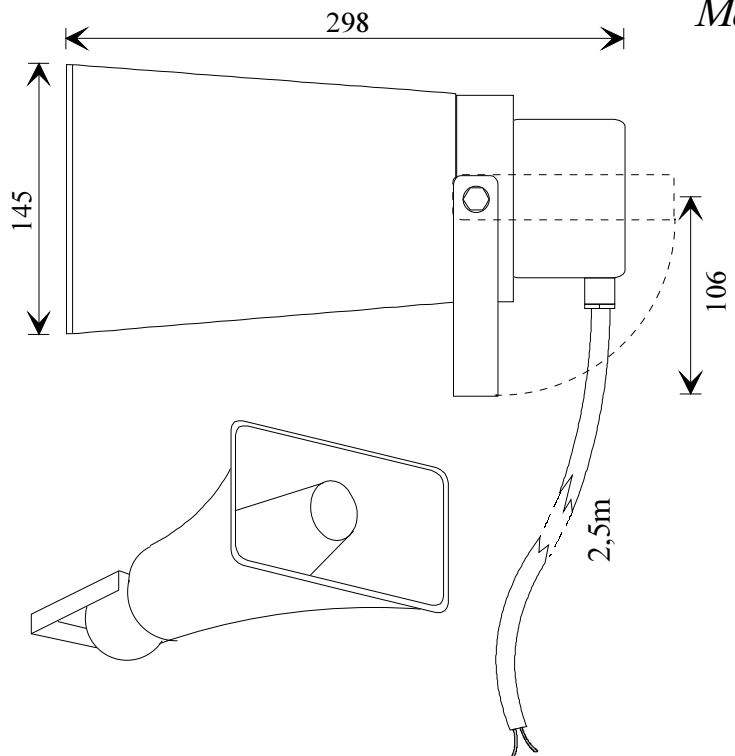
Loudspeakers



Marine



Mounting bracket
Holes: 3 x Ø11.0 mm



Article No: VML-15T

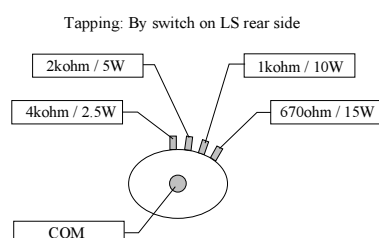
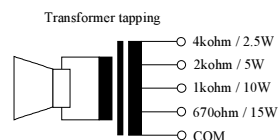
Description:

VML-15T

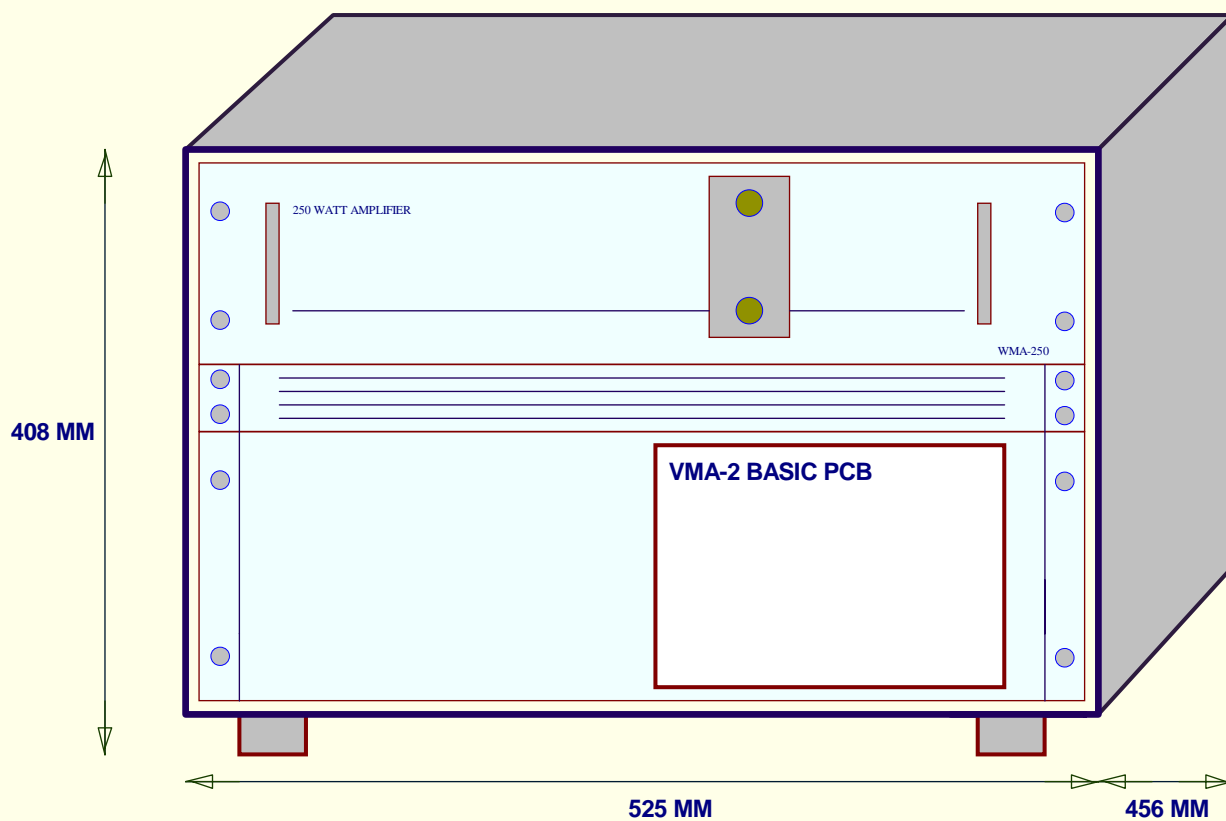
- is a general purpose 15 Watt horn loudspeaker w/transformer for use on deck areas, eng.room etc.
- to be used together with 100V line amplifier

Technical data:

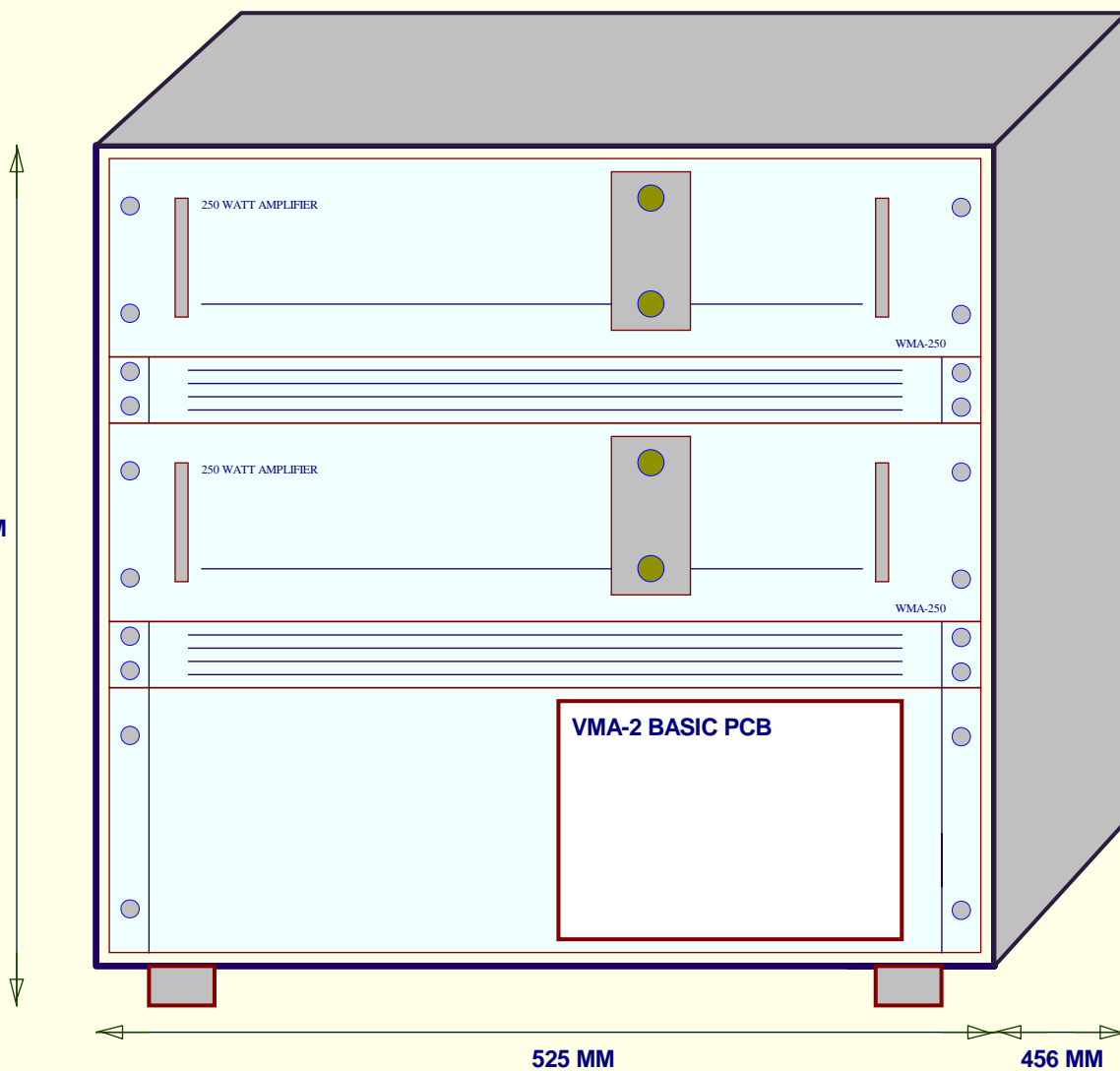
| | |
|----------------|-----------------------------|
| Rated power: | 15 Watt |
| Tranf.tapping: | see drw. below |
| Freq.range: | 275 - 7.000 Hz |
| SPL at 1kHz: | 106dB/1W/1m 118Db/15W/1m |
| Coulor/finish: | Grey |
| Material: | ABS |
| IP: | 65 |
| Dimensions: | see drw. above |
| Weight: | 1,9 kg |
| Mounting: | Bracket (stainless steel) |
| Termination: | Cable 2.5m |



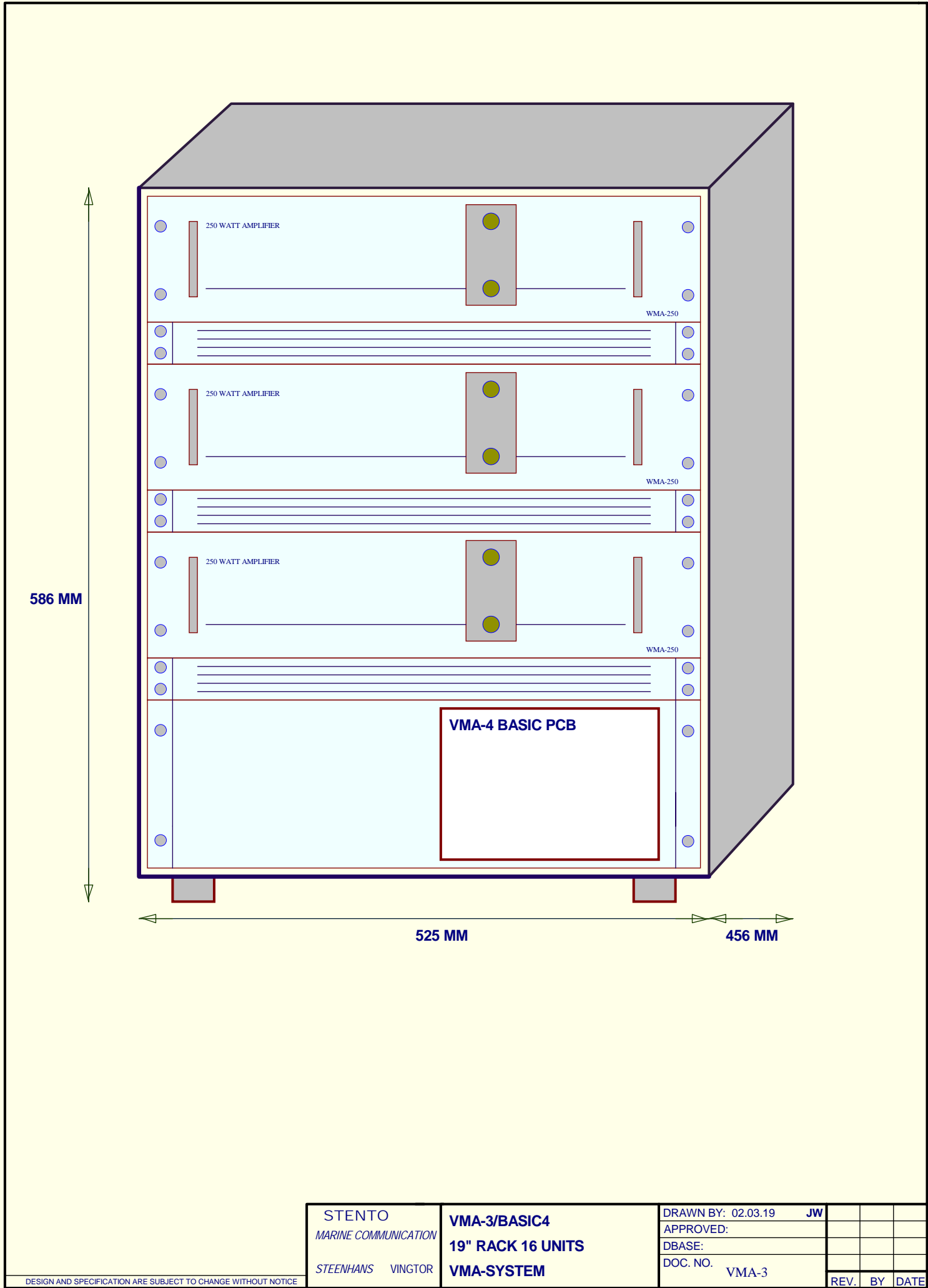
VML-15T_ds.rev.002001.07.16

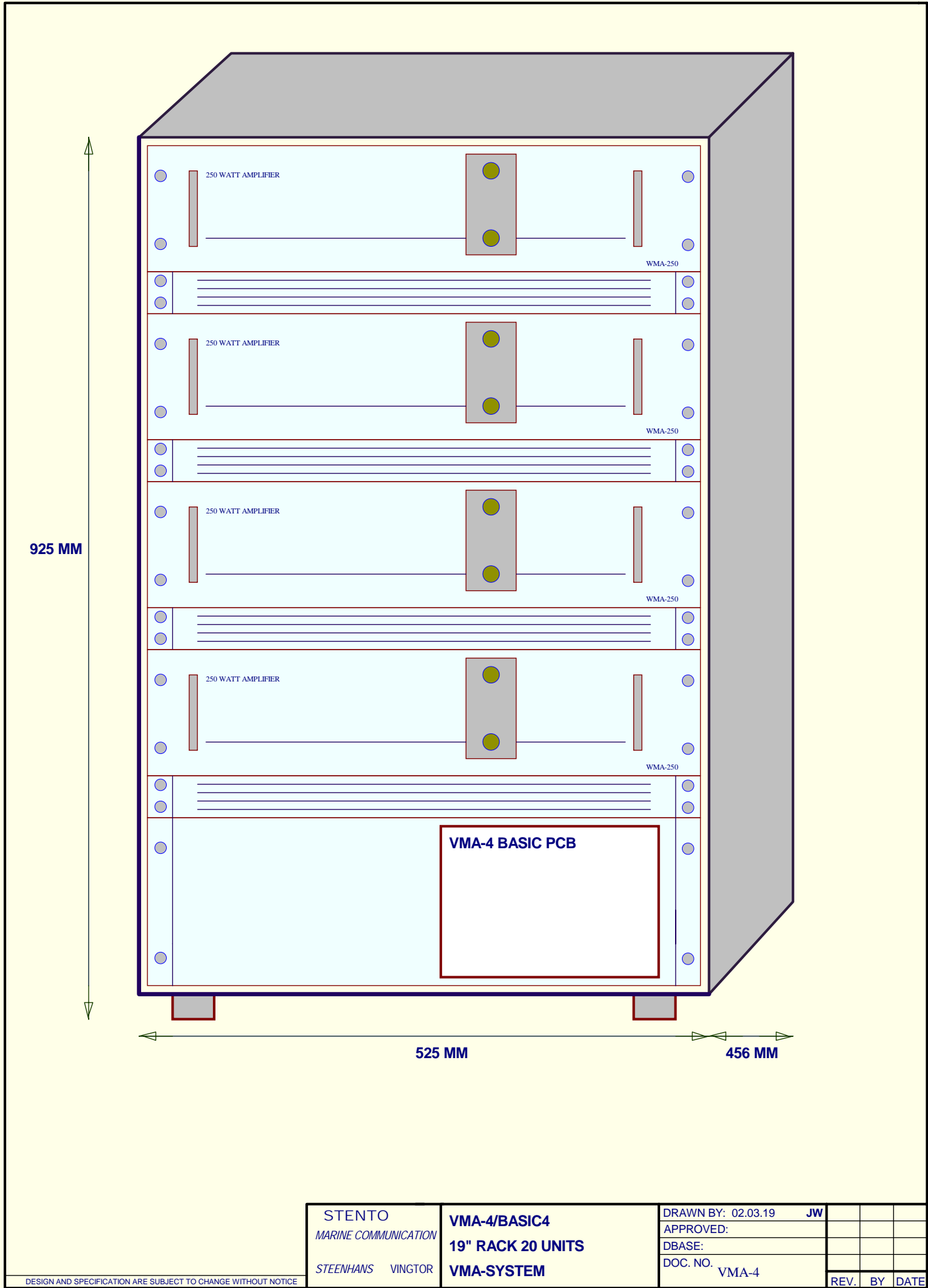


| | | | | | | |
|--|---|--------------------|----|------|----|------|
| <div>STENTO</div> <div>MARINE COMMUNICATION</div> <div>STEENHANS VINGTOR</div> | <div>VMA-1/BASIC2</div> <div>19" RACK 8 UNITS</div> <div>VMA-SYSTEM</div> | DRAWN BY: 02.03.19 | JW | | | |
| | | APPROVED: | | | | |
| | | DBASE: | | | | |
| | | DOC. NO. | | | | |
| | | VMA-1 | | REV. | BY | DATE |

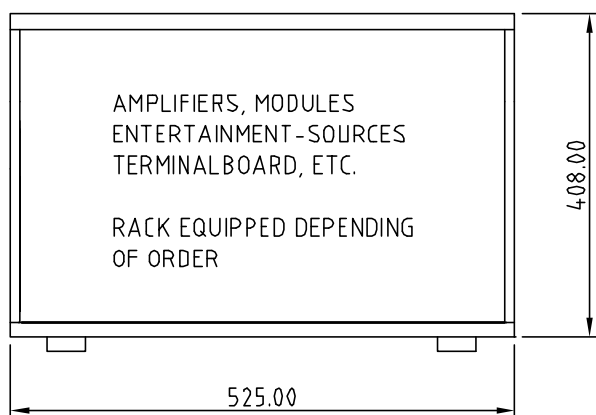


| | | | | | | |
|--|--|--------------------|----|-----|----|------|
| <div>STENTO</div> <div>MARINE COMMUNICATION</div> <div>STEENHANS VINGTOR</div> | <div>VMA-2/BASIC2</div> <div>19" RACK 12 UNITS</div> <div>VMA-SYSTEM</div> | DRAWN BY: 02.03.19 | JW | | | |
| | | APPROVED: | | | | |
| | | DBASE: | | | | |
| | | DOC. NO. | | | | |
| | | VMA-2 | | REV | RY | DATE |

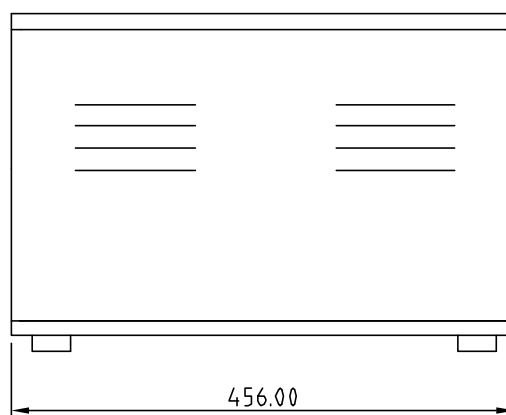




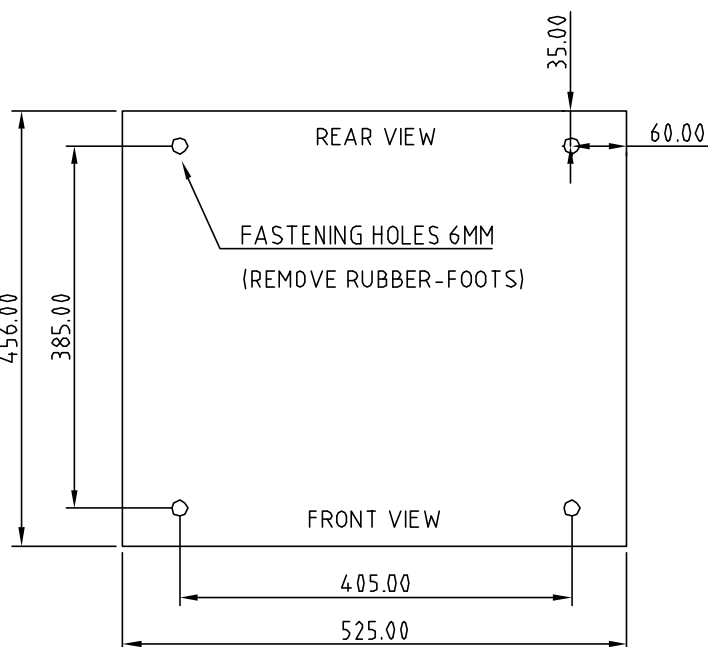
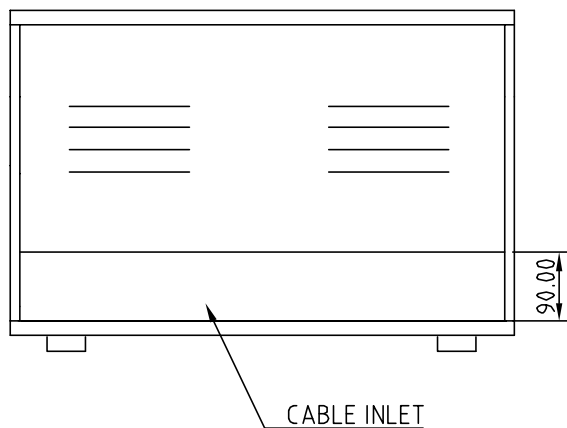
FRONT VIEW



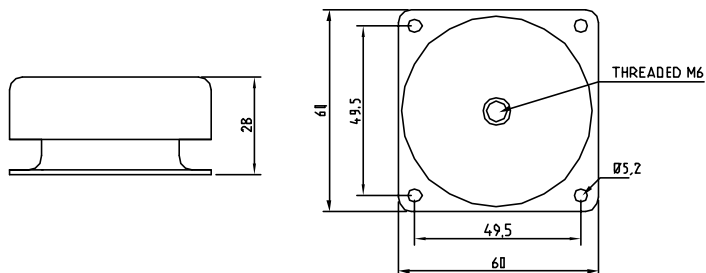
SIDE VIEW



REAR VIEW



SHOCK ABSORBER C1010 (OPTION)



MATERIAL: BLACK-PAINTED STEEL
ALL DIMENSION IN MM

DESIGN AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE

STENTO ASA
Marine Communication
STEENHANS VINGTOR

PUBLIC ADDRESS SYSTEM
SPA-System
8U Rack
Dimension / mounting details.

DRAWN BY: 12.05.99 Sen

APPROVED:

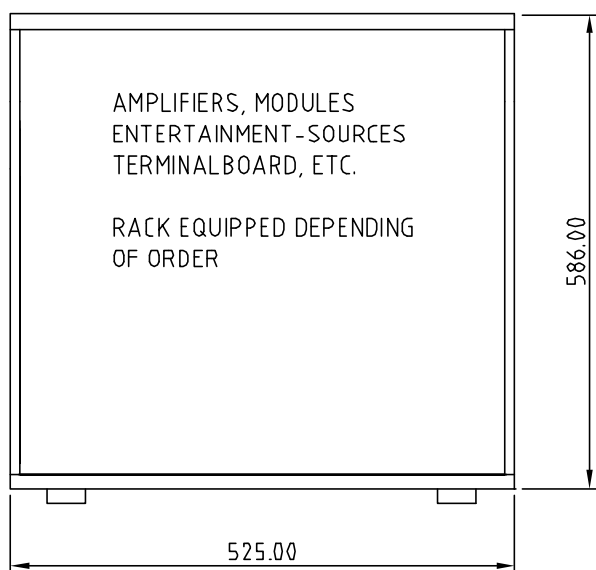
DBASE: S:\.\Pa\2SPA

DOC.NO.

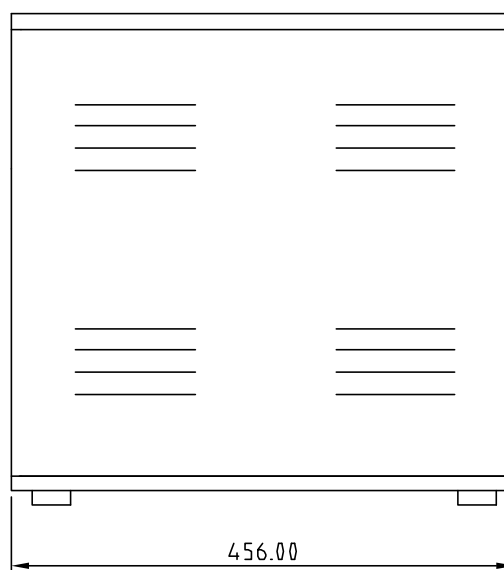
Pa202010

| REV. | BY | DATE |
|------|----|------|
| | | |

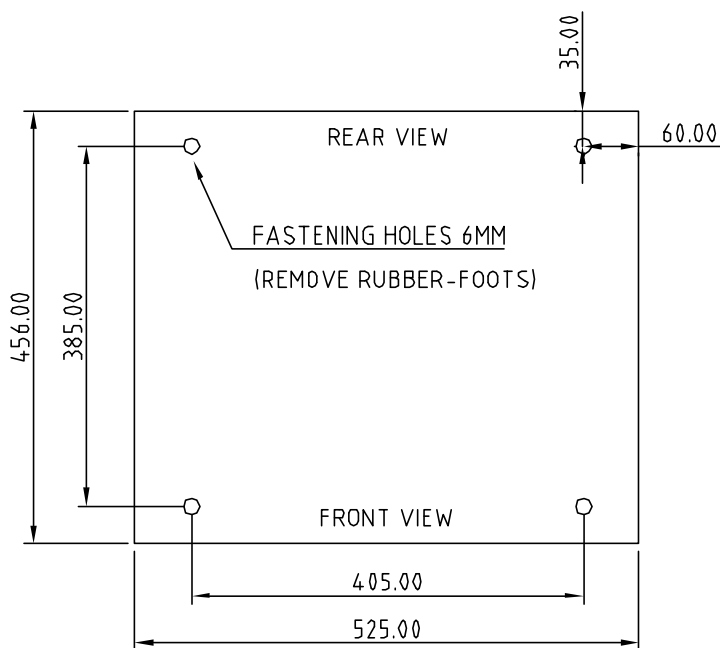
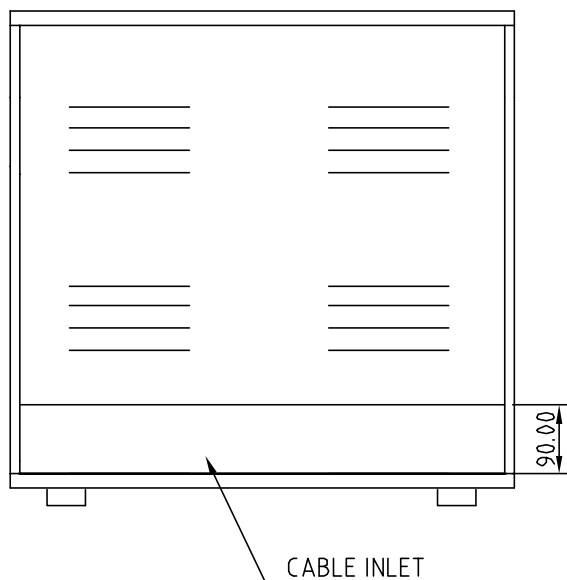
FRONT VIEW



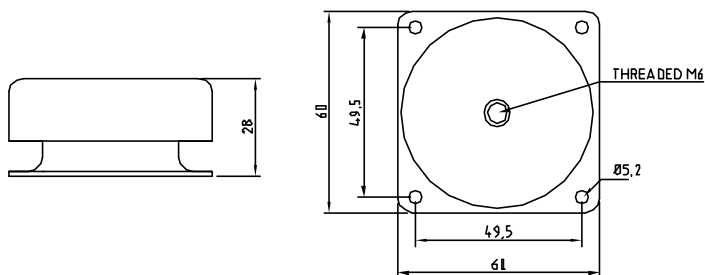
SIDE VIEW



REAR VIEW



SHOCK ABSORBER C1010 (OPTION)



MATERIAL: BLACK-PAINTED STEEL
ALL DIMENSION IN MM

DESIGN AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE

STENTO ASA
Marine Communication
STEENHANS VINGTOR

PUBLIC ADDRESS SYSTEM
SPA-System
12U Rack
Dimension / mounting details.

DRAWN BY: 12.05.99 Sen

APPROVED:

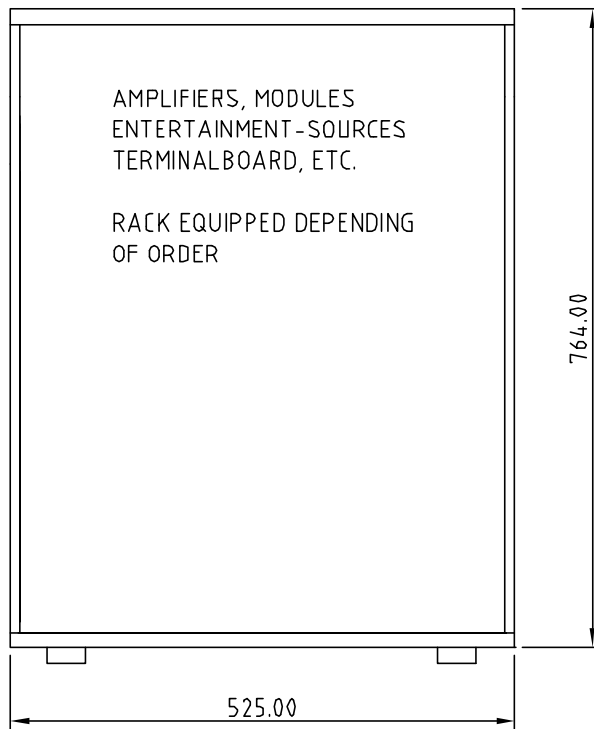
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DOC.NO.

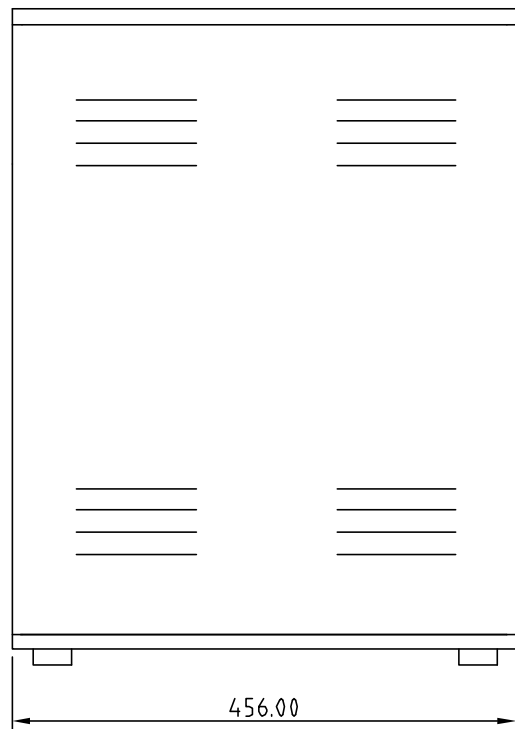
Pa202020

REV. BY DATE

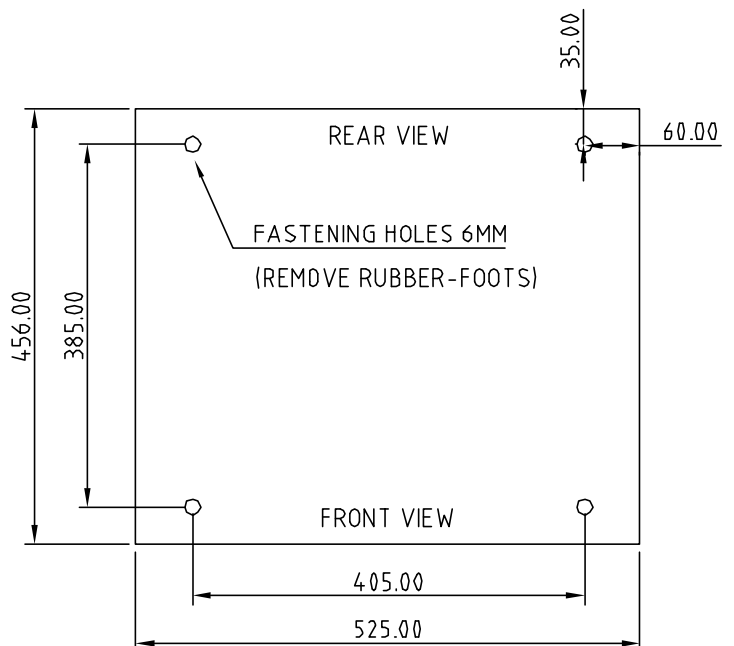
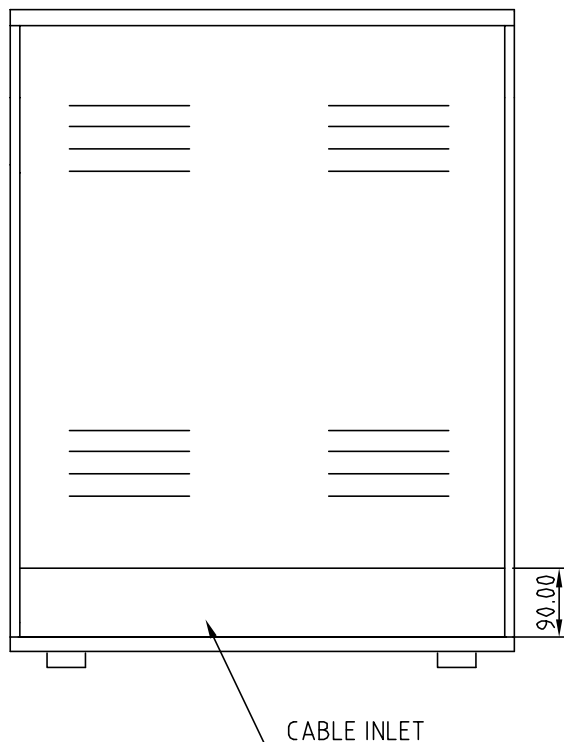
FRONT VIEW



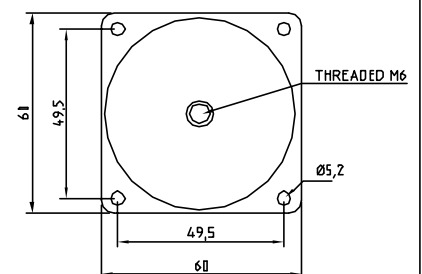
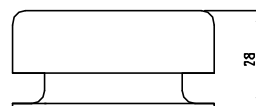
SIDE VIEW



REAR VIEW



SHOCK ABSORBER C1010 (OPTION)



MATERIAL: BLACK-PAINTED STEEL
ALL DIMENSION IN MM

DESIGN AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE

STENTO ASA
Marine Communication
STEENHANS VINGTOR

PUBLIC ADDRESS SYSTEM
SPA-System
16U Rack
Dimension / mounting details.

DRAWN BY: 12.05.99 Sen

APPROVED:

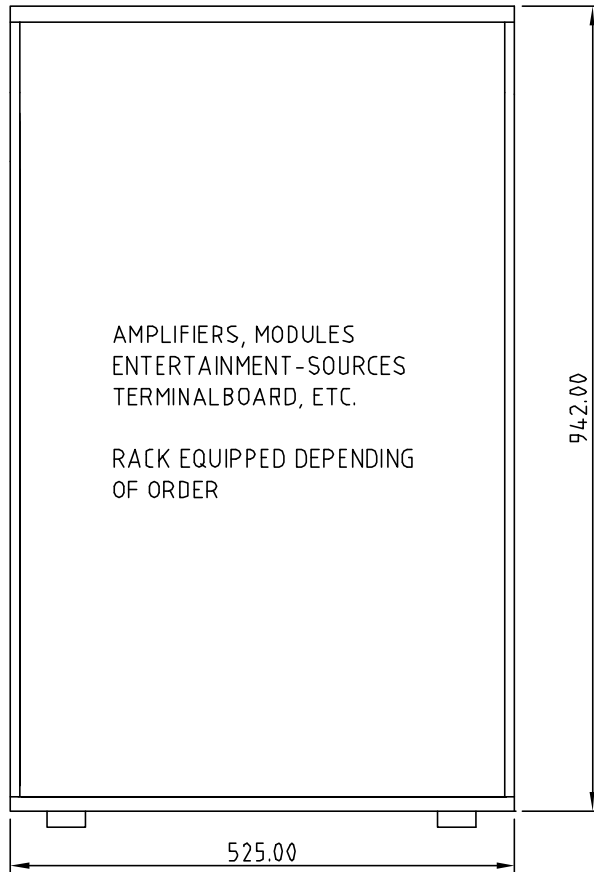
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DOC.NO.

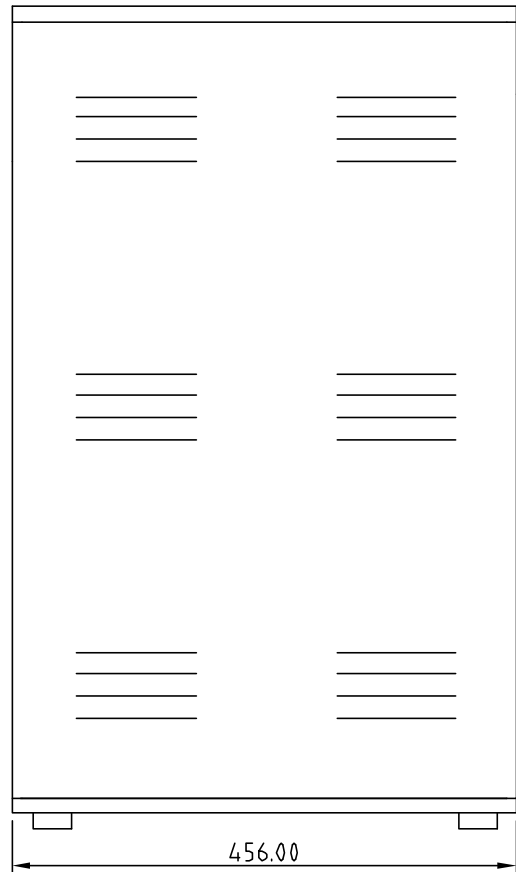
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| REV. | BY | DATE |
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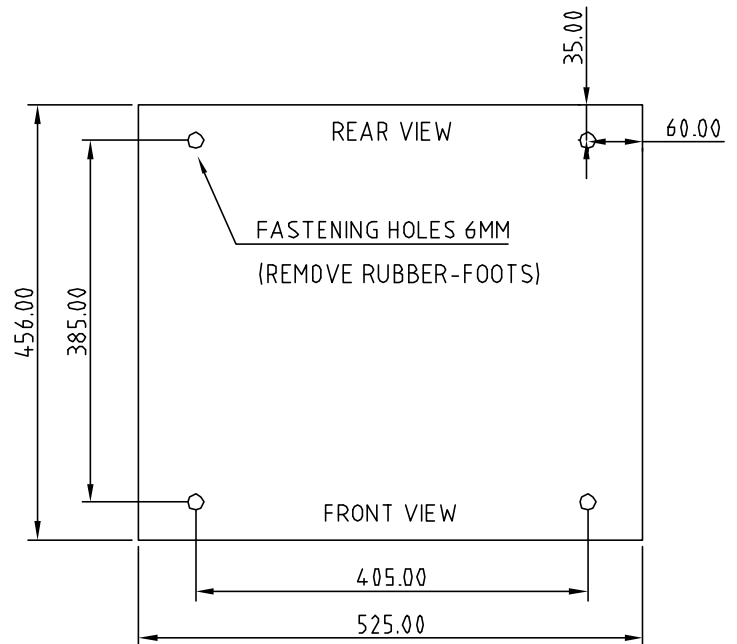
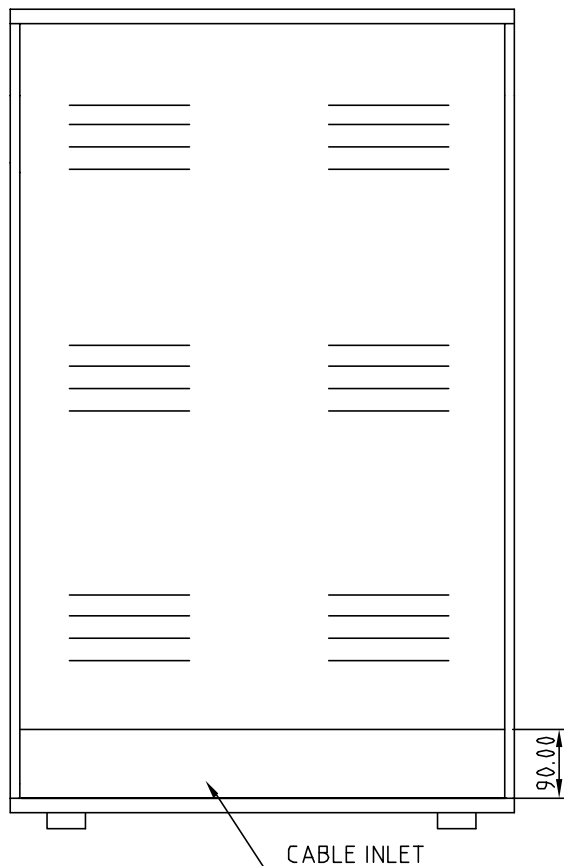
FRONT VIEW



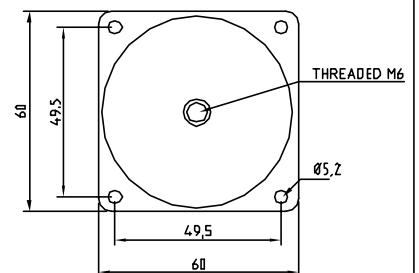
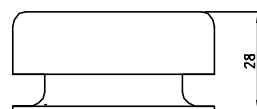
SIDE VIEW



REAR VIEW



SHOCK ABSORBER C1010 (OPTION)



MATERIAL: BLACK-PAINTED STEEL ALL DIMENSION IN MM

DESIGN AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE

STENTO ASA
Marine Communication
STEENHANS VINGTOR

PUBLIC ADDRESS SYSTEM
SPA-System
20U Rack
Dimension / mounting details.

DRAWN BY: 12.05.99 Sen

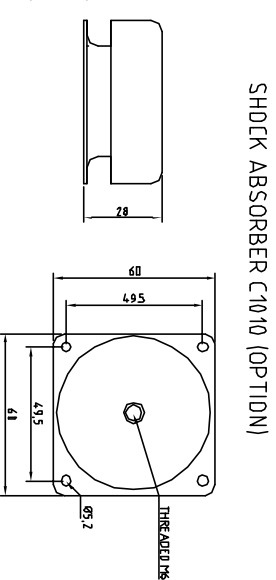
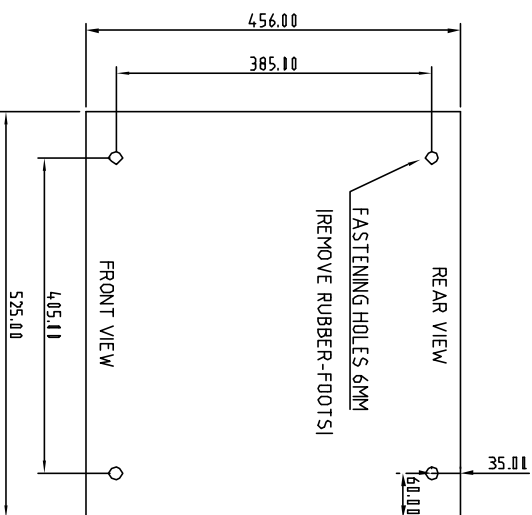
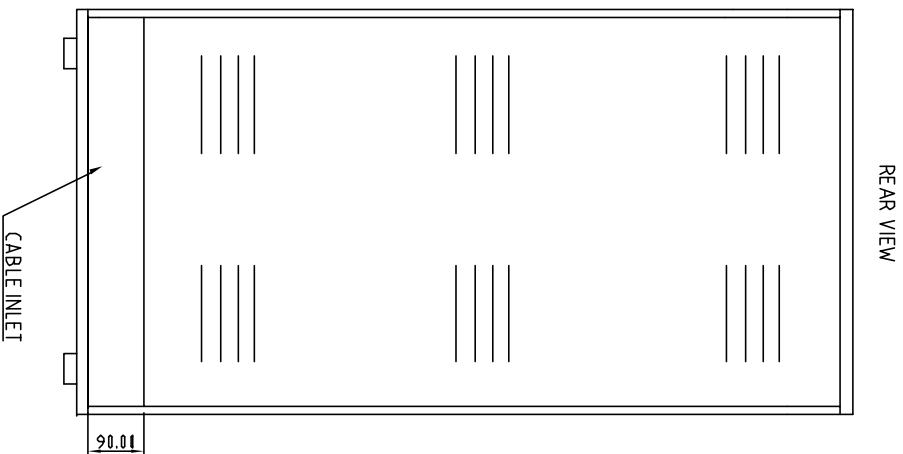
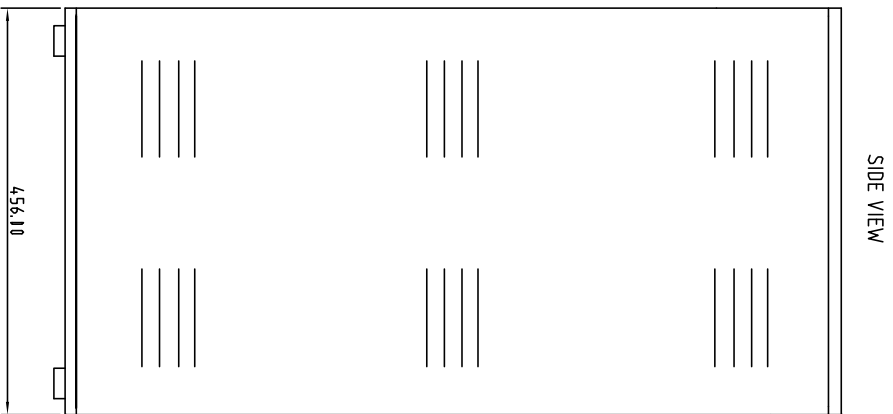
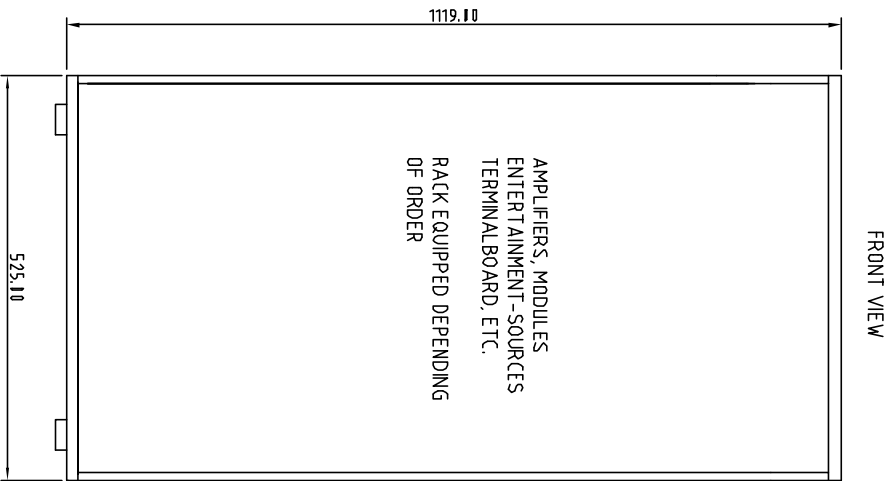
APPROVED:

DBASE: S:\.Pa\2SPA

DOC.NO.

Pa202040

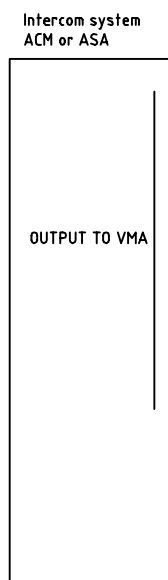
REV. BY DATE



MATERIAL: BLACK-PAINTED STEEL
ALL DIMENSION IN MM

| | | | | | | | | | | |
|--|------------------------------|--|--|--|------------------------|--|-----------|------|----|------|
| STENTO ASA <i>Marine Communication</i> STEENHANS VMOETOR | PUBLIC ADDRESS SYSTEM | | | | DRAWN BY: 12.05.99 San | | | | | |
| | Type SPA | | | | APPROVED: | | | | | |
| | 24U Rack | | | | DBASE: | | S:\PA\spa | | | |
| | Dimension / mounting details | | | | DOC.NR: | | P a202050 | REV. | BY | DATE |

DESIGN AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE



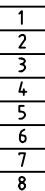
SWITCH 1

SWITCH 2

AUDIO

ZONE IN

X11

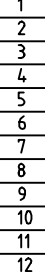


S
0
S
0

SWITCH 1
SWITCH 2

AUDIO IN

X12

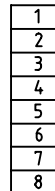


F
F
0

LINE 1

100V SPEAKER LINES

X15



AMP.1

AMP.1

LINE 1 OUT

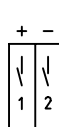
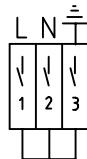
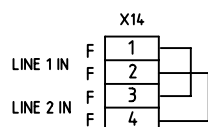
LINE 2 OUT

LINE 3 OUT

LINE 4 OUT

ZONE 1

ZONE 2



24V DC IN

230V AC IN

Note! Signal cable

Use cable 0,75mm twisted pair
with outer screen.

The screens must be interconnected
in junction boxes and grounded

in a common point in the central unit only.

STENTO ASA
Marine Communication

STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-1 BASIC
Cable connection diagram

DRAWN BY: 02.19.03 Sen

APPROVED:

DBASE:

DOC.NO.

VMA-1BASIC__cc

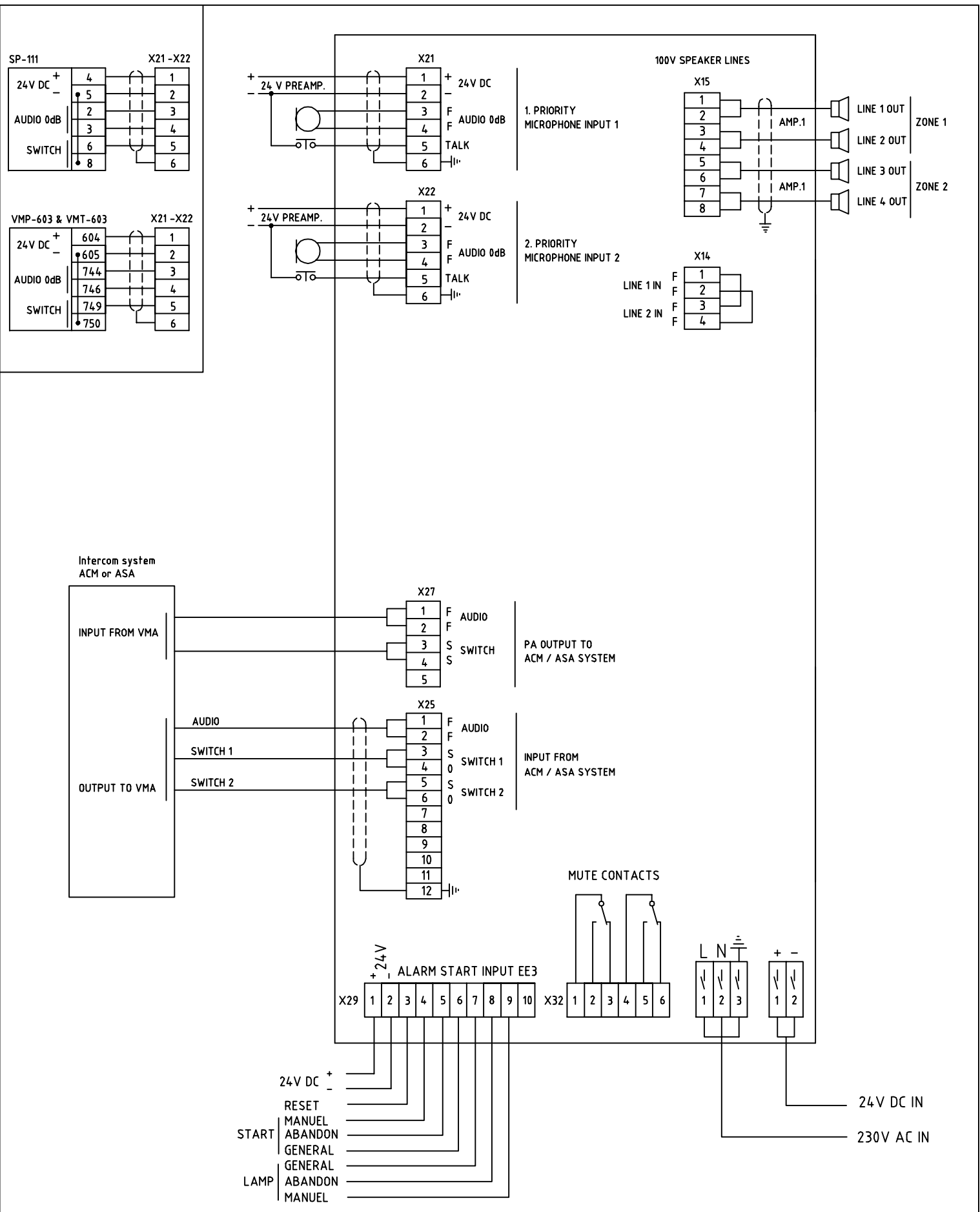
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REV.

BY

DATE

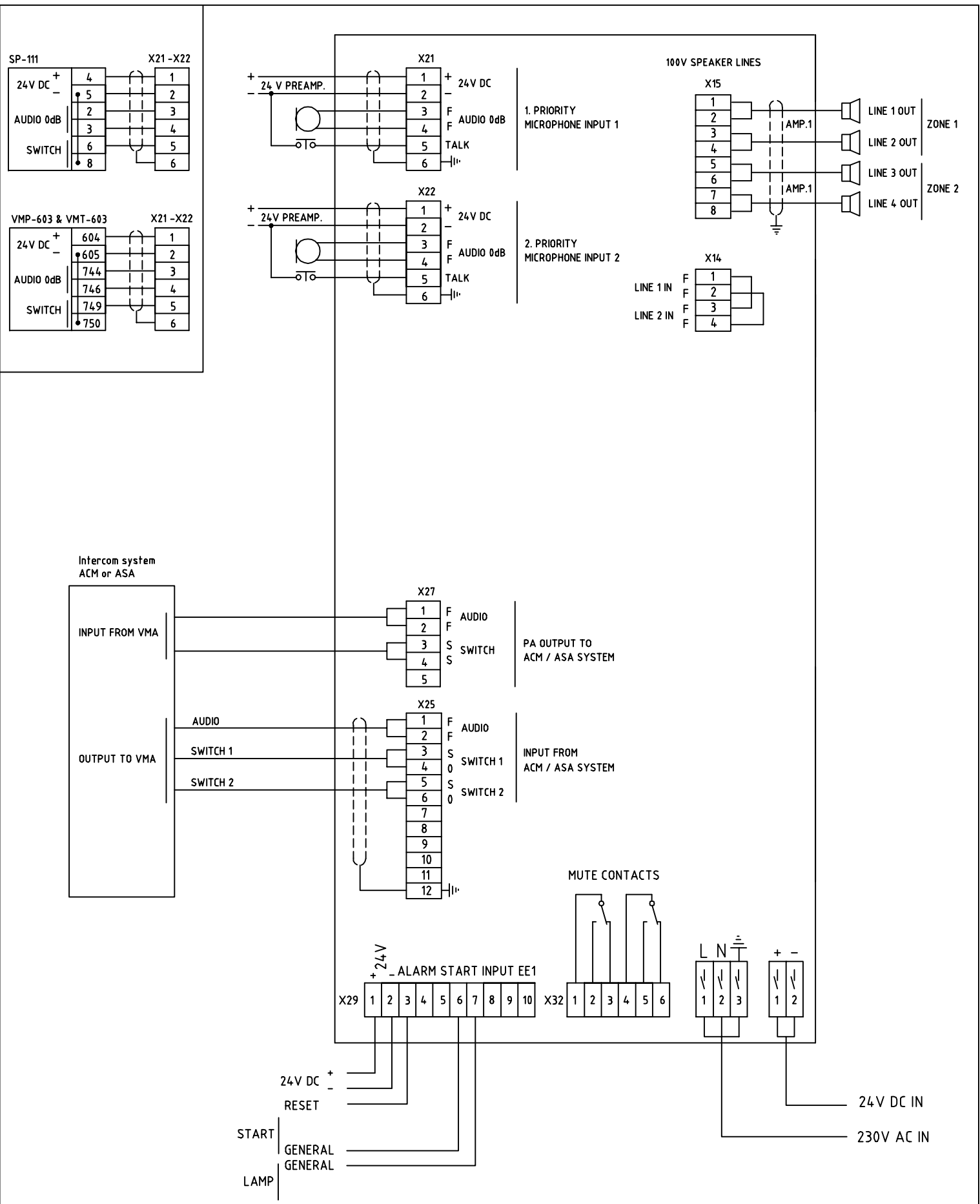
DESIGN AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE



Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE3

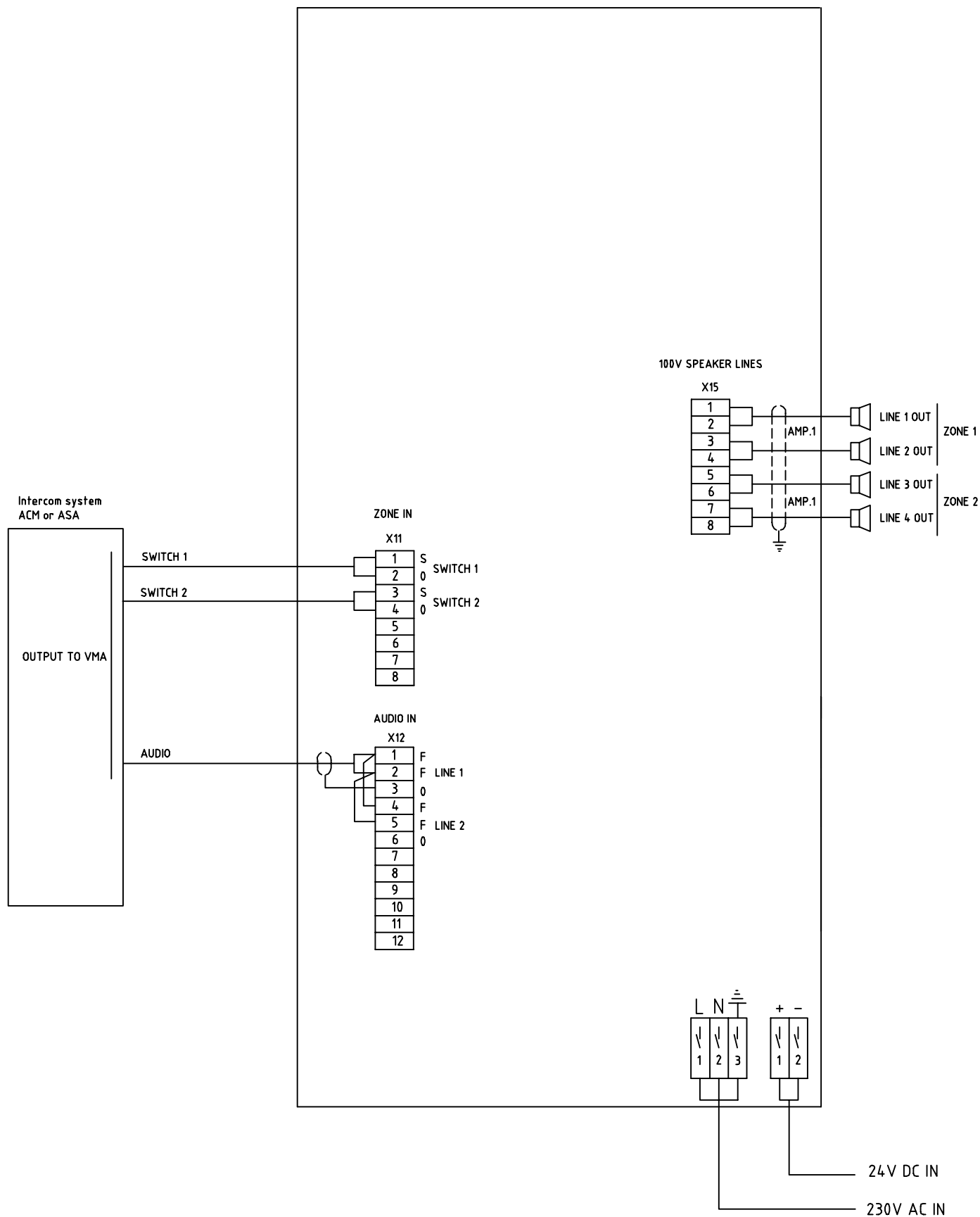
| | | | | | |
|---|--|---------------------------------|----|------|--|
| STENTO ASA <i>Marine Communication</i> STEENHANS VINGTOR | VMA AMPLIFIER SYSTEM VMA-1Mic / Alarm Cable connection diagram Configuration w/ alarm EE3 | DRAWN BY: 02.18.03 Sen | | | |
| | | APPROVED: | | | |
| | | DBASE: | | | |
| | | DOC.NO. VMA-1MIC.ALARM_ cc01 | 00 | | |
| | | REV. | BY | DATE | |



Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE1

| | | | | | |
|---|---|----------------------------------|------|----|------|
| STENTO ASA <i>Marine Communication</i> STEENHANS VINGTOR | VMA AMPLIFIER SYSTEM VMA-1Mic / Alarm Cable connection diagram Configuration w/alarm EE1 | DRAWN BY: 02.18.03 Sen | | | |
| | | APPROVED: | | | |
| | | DBASE: | | | |
| | | DOC.NO. VMA-1MIC.ALARM__ cc02 | 00 | | |
| | | | REV. | BY | DATE |



Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.

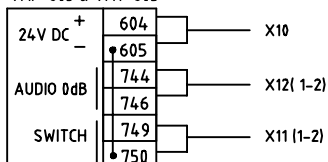
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

STENTO ASA
Marine Communication
STEENHANS VINGTOR

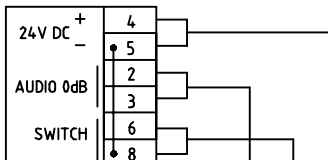
VMA AMPLIFIER SYSTEM
VMA-2 BASIC
Cable connection diagram

| | | | |
|------------------------|------|----|------|
| DRAWN BY: 02.19.03 Sen | | | |
| APPROVED: | | | |
| DBASE: | | | |
| DOC.NO. | 00 | | |
| VMA-2BASIC__cc01 | REV. | BY | DATE |

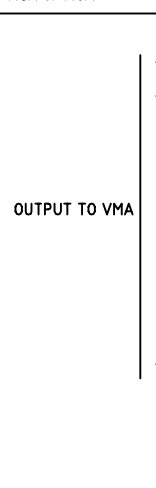
VMP-603 & VMT-603



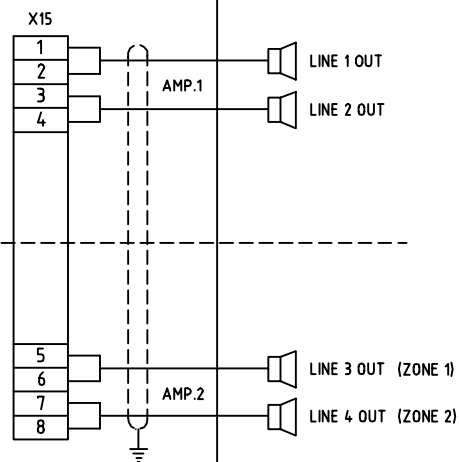
SP-111



Intercom system ACM or ASA

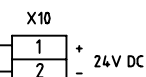


100V SPEAKER LINES

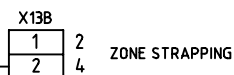
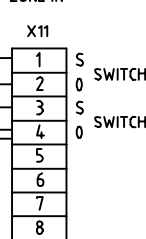


HAILER PART

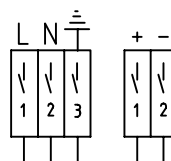
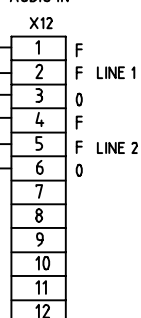
ACM / ASA



ZONE IN



AUDIO IN



24V DC IN

230V AC IN

Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.

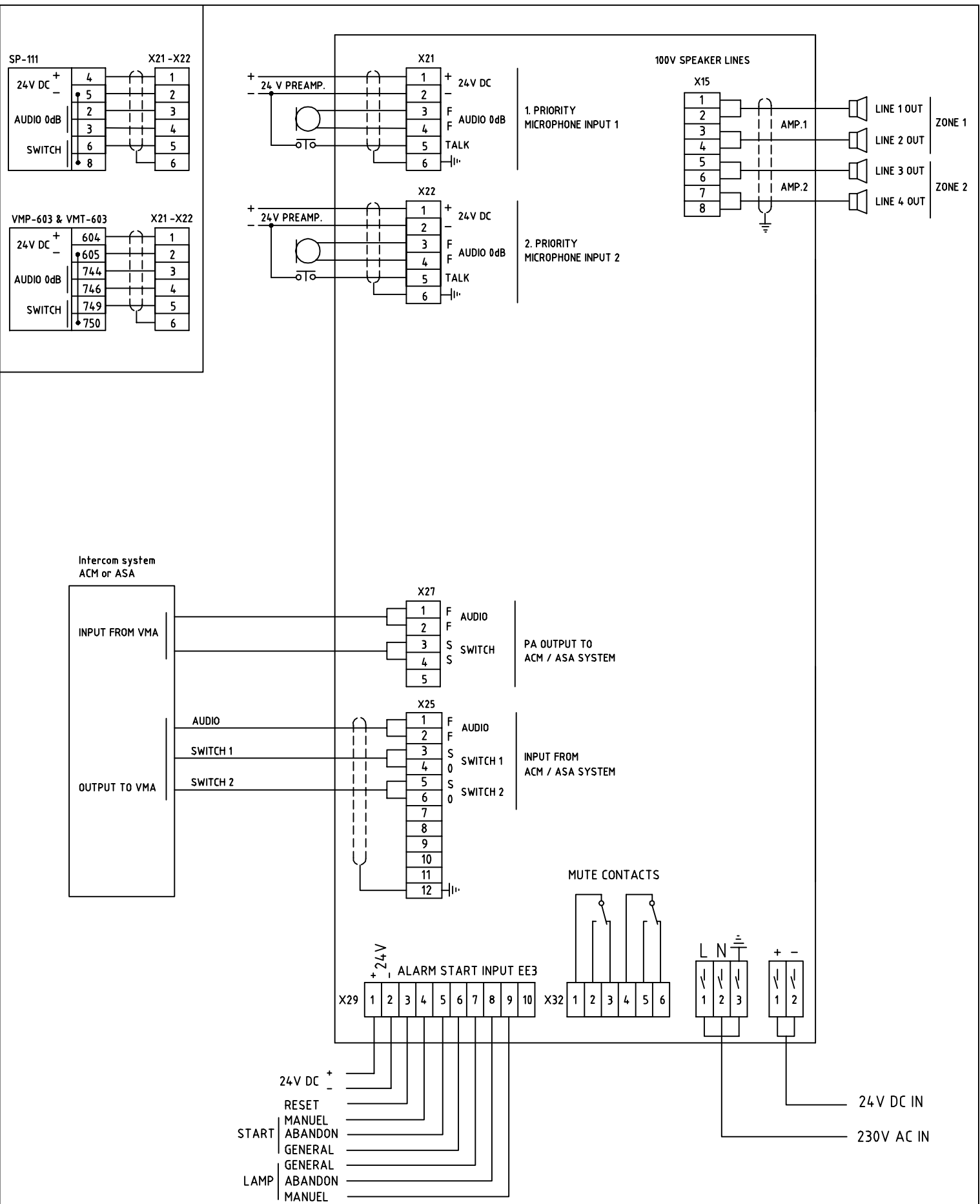
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

STENTO ASA
Marine Communication

STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-2 BASIC
Cable connection diagram
Configuration w/hailer

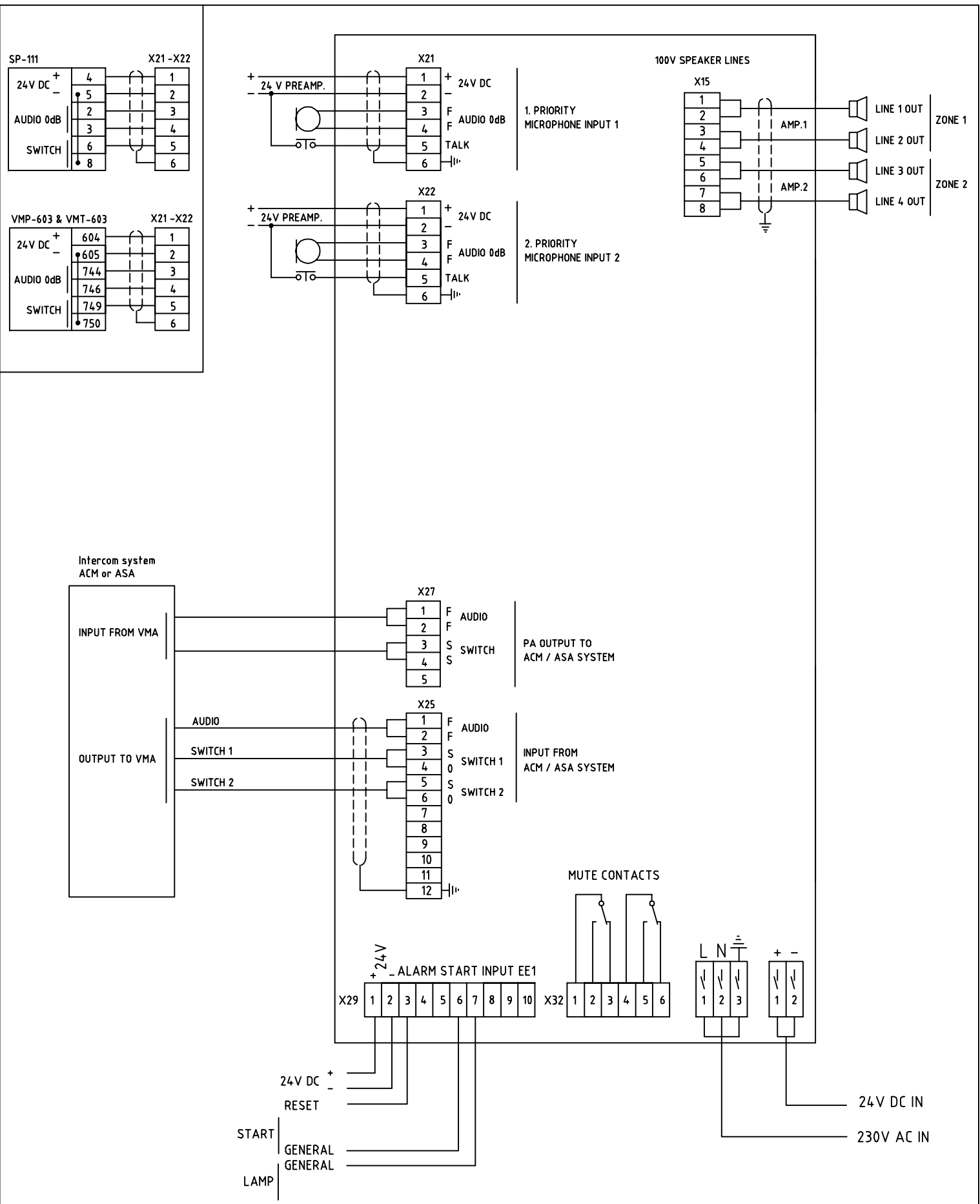
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|------------------------|------|----|------|--|
| DRAWN BY: 02.19.03 Sen | | | | |
| APPROVED: | | | | |
| DBASE: | | | | |
| DOC.NO. | 00 | | | |
| VMA-2BASIC__cc02 | REV. | BY | DATE | |



Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE3

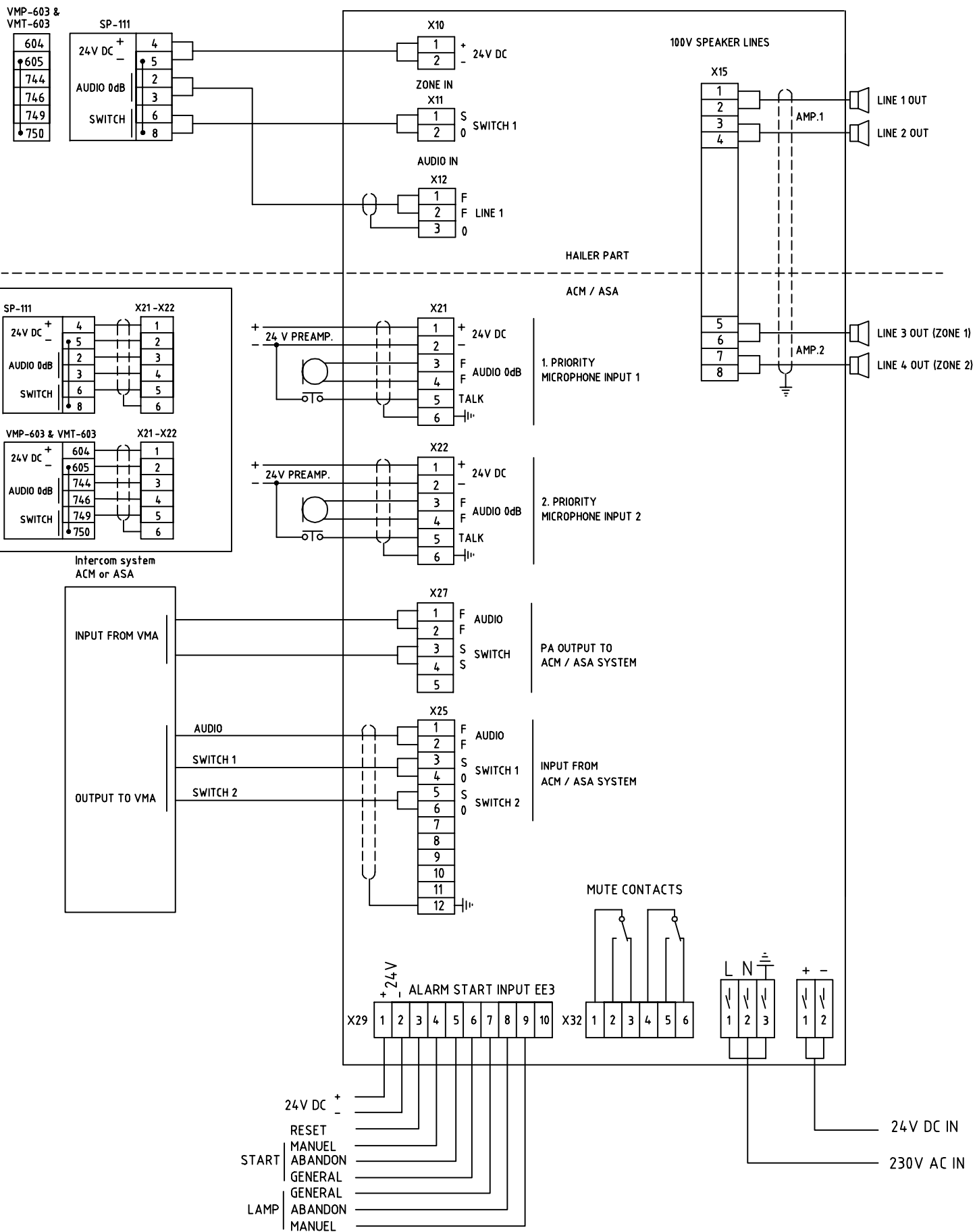
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| STENTO ASA <i>Marine Communication</i> STEENHANS VINGTOR | VMA AMPLIFIER SYSTEM VMA-2 Mic / Alarm Cable connection diagram Configuration w/ alarm EE3 | DRAWN BY: 02.18.03 Sen | | | |
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Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE1

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| STENTO ASA <i>Marine Communication</i> STEENHANS VINGTOR | VMA AMPLIFIER SYSTEM VMA-2 Mic / Alarm Cable connection diagram Configuration w/alarm EE1 | DRAWN BY: 02.18.03 Sen | | | |
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Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.

The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY

OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE3

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Marine Communication

STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-2 Mic / Alarm
Cable connection diagram
Configuration w/ hailer

DRAWN BY: 02.18.03 Sen

APPROVED:

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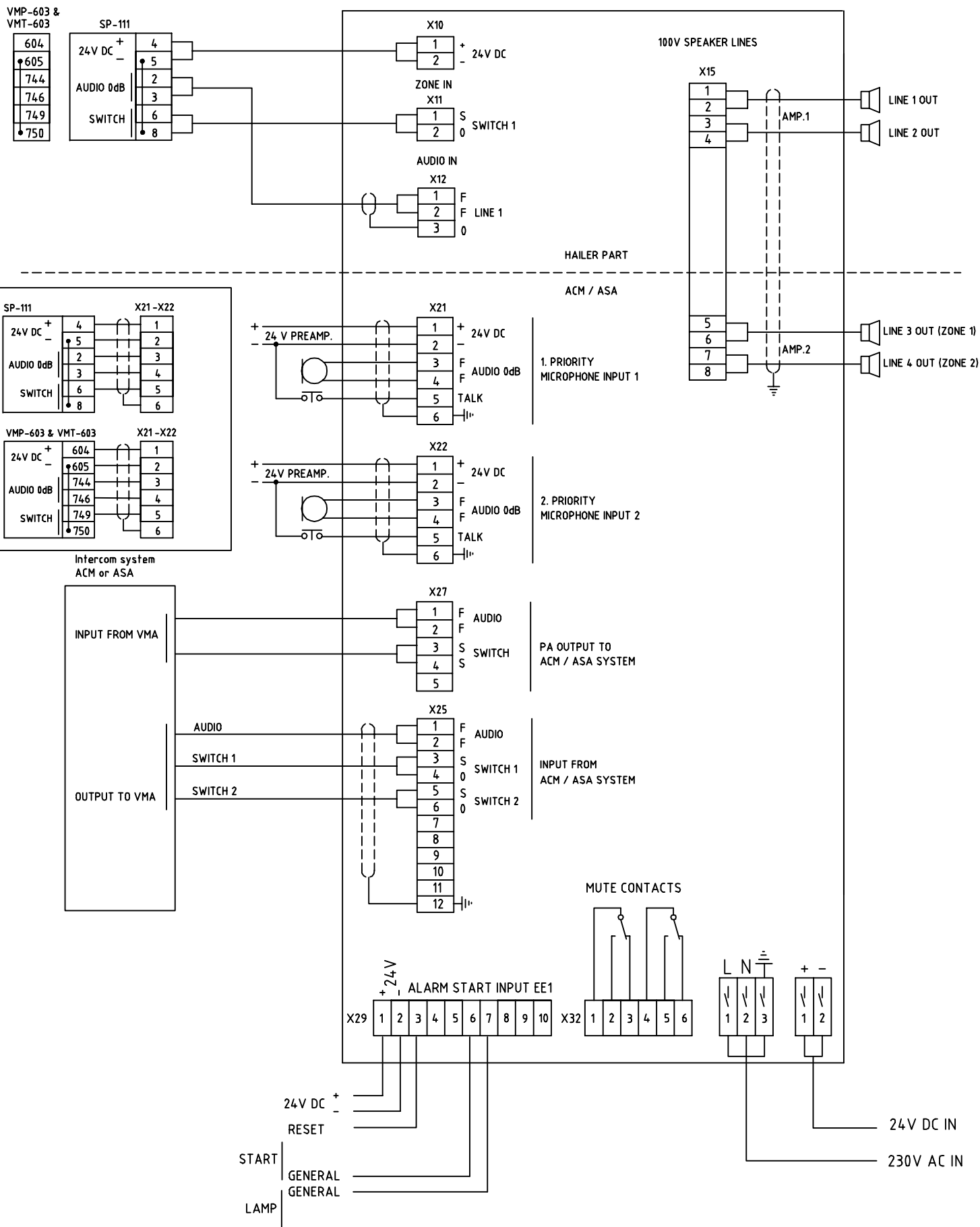
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Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.

The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY

OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE1

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VMA AMPLIFIER SYSTEM
VMA-2 Mic / Alarm
Cable connection diagram
Configuration w/ hailer
and alarm module EE1

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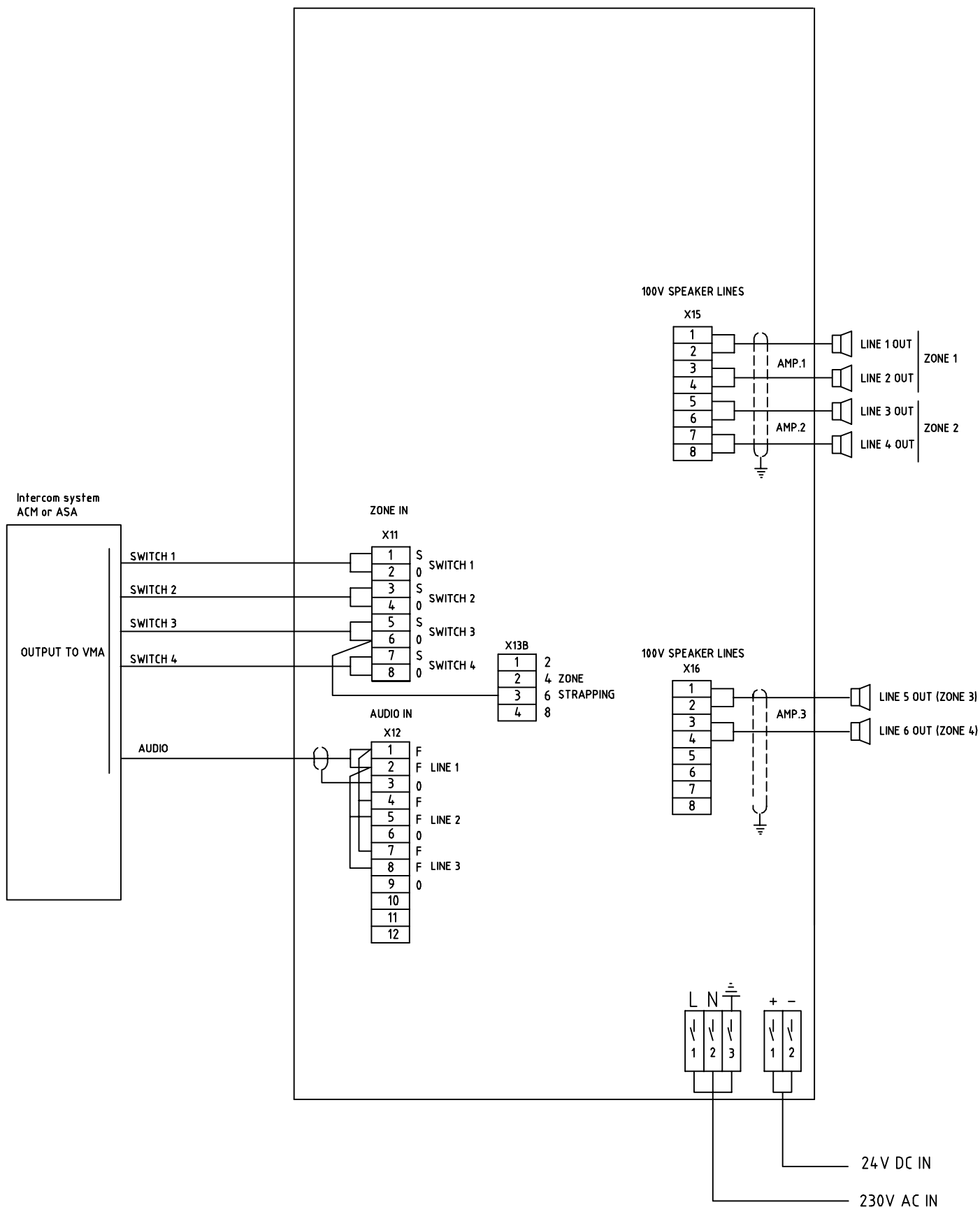
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VMA-2MIC.ALARM_cc04

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Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.

The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

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Marine Communication

STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-3 BASIC
Cable connection diagram

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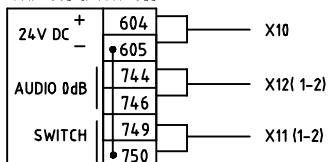
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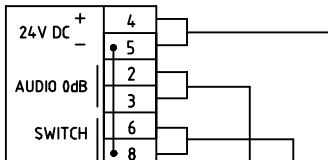
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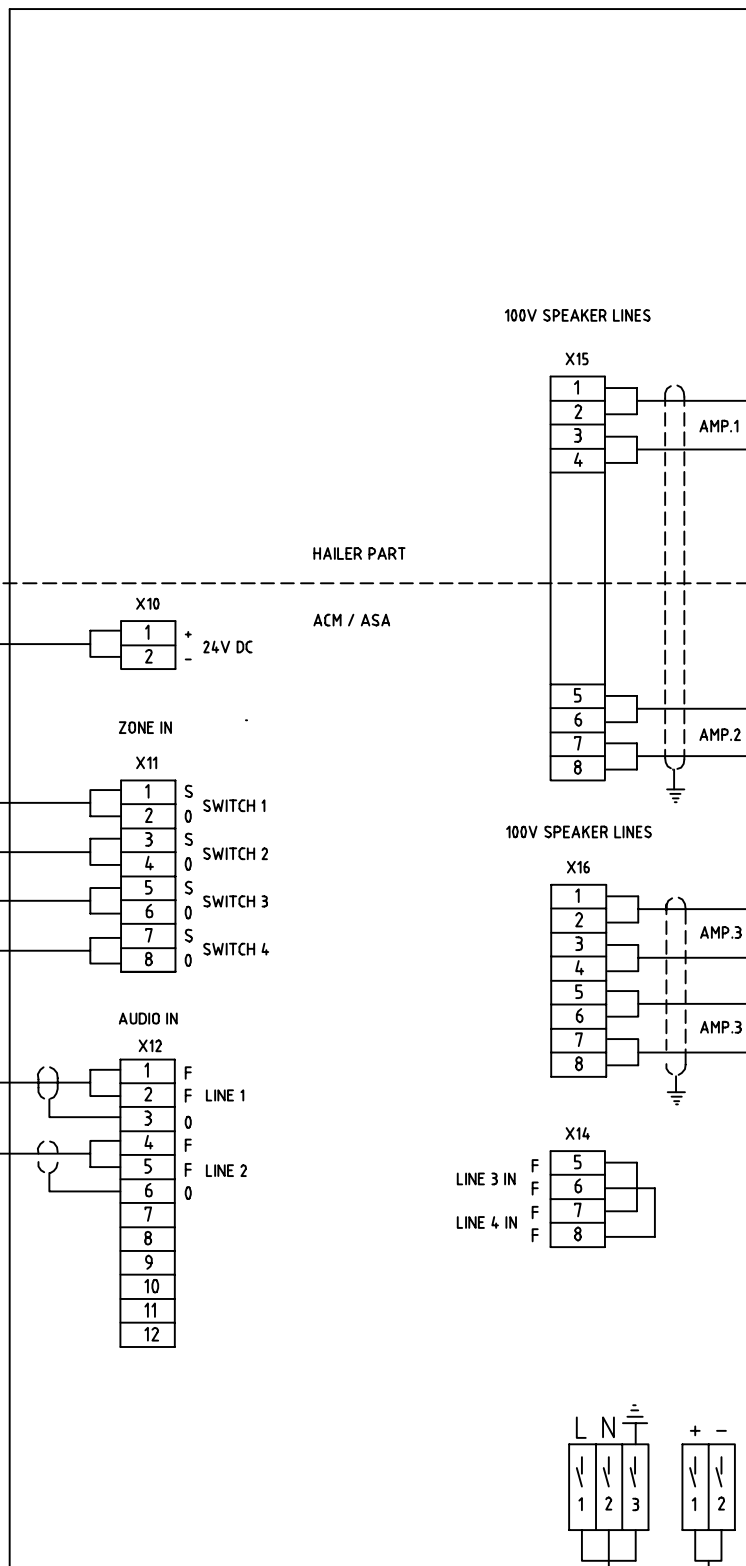
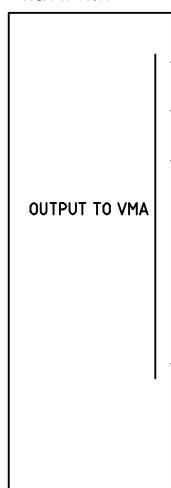
VMP-603 & VMT-603



SP-111



Intercom system ACM or ASA



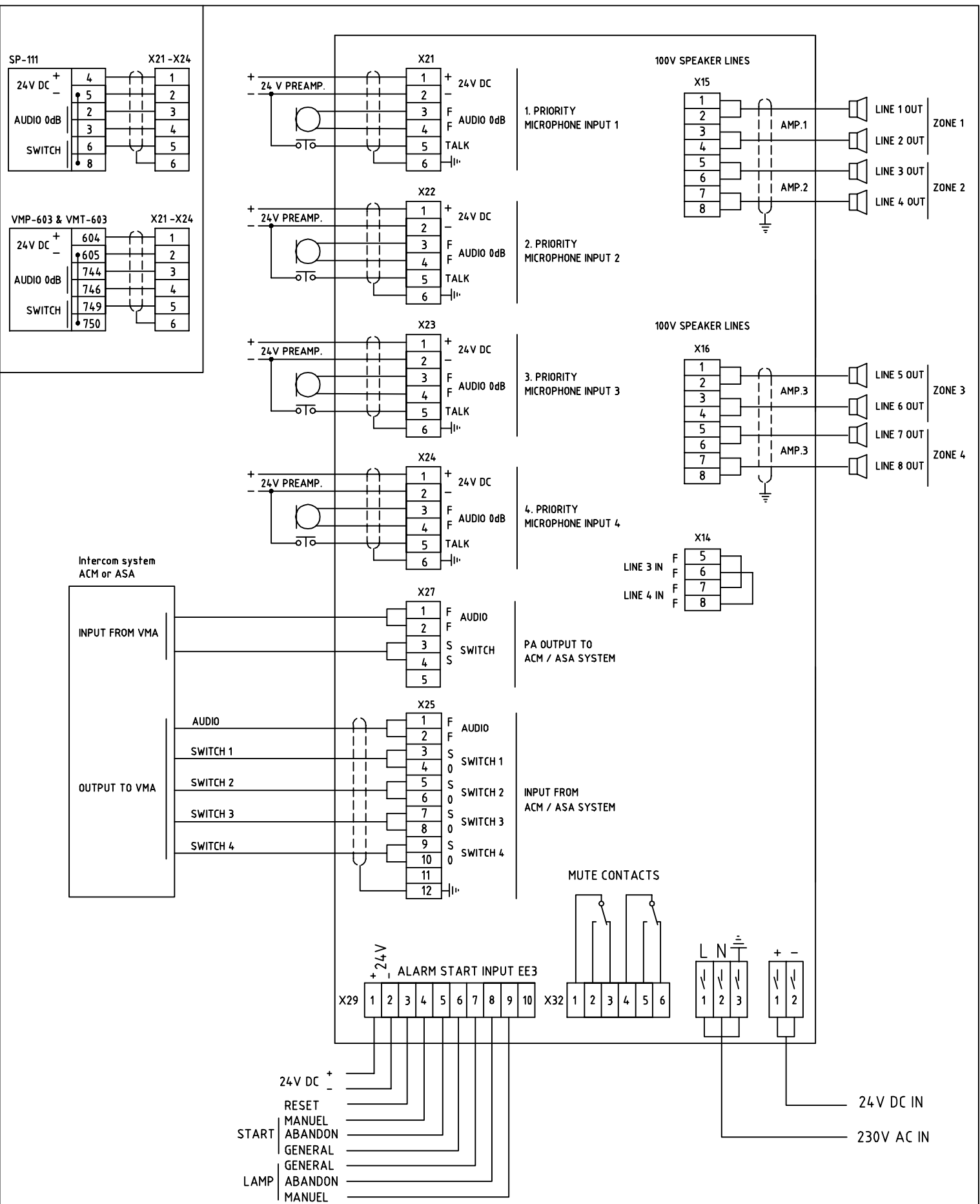
Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

STENTO ASA
Marine Communication
STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-3 BASIC
Cable connection diagram
Configuration w/hailer

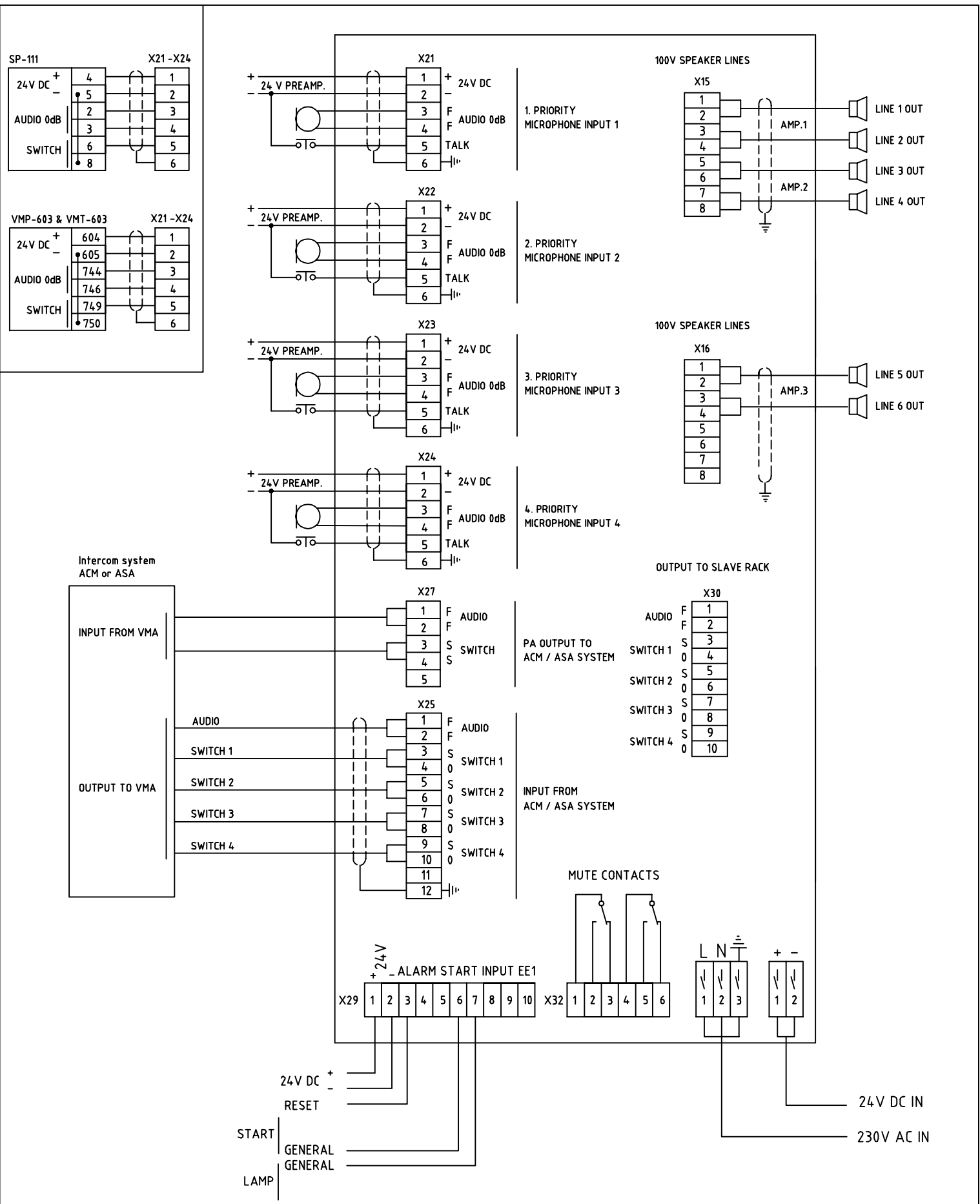
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Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE3

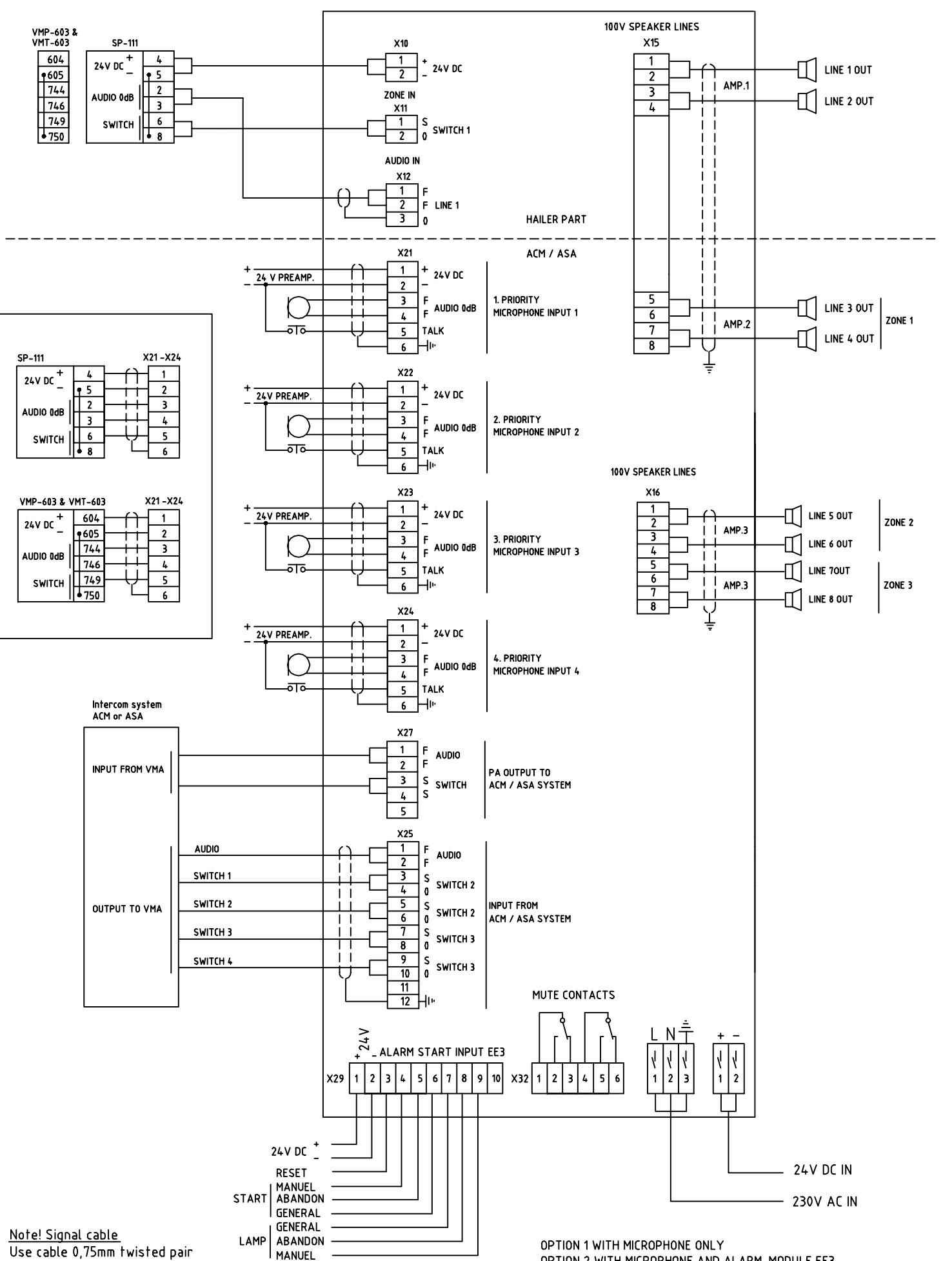
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| | | DESIGN AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE | | | REV. |



Note! Signal cable
 Use cable 0,75mm twisted pair with outer screen.
 The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
 OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE1

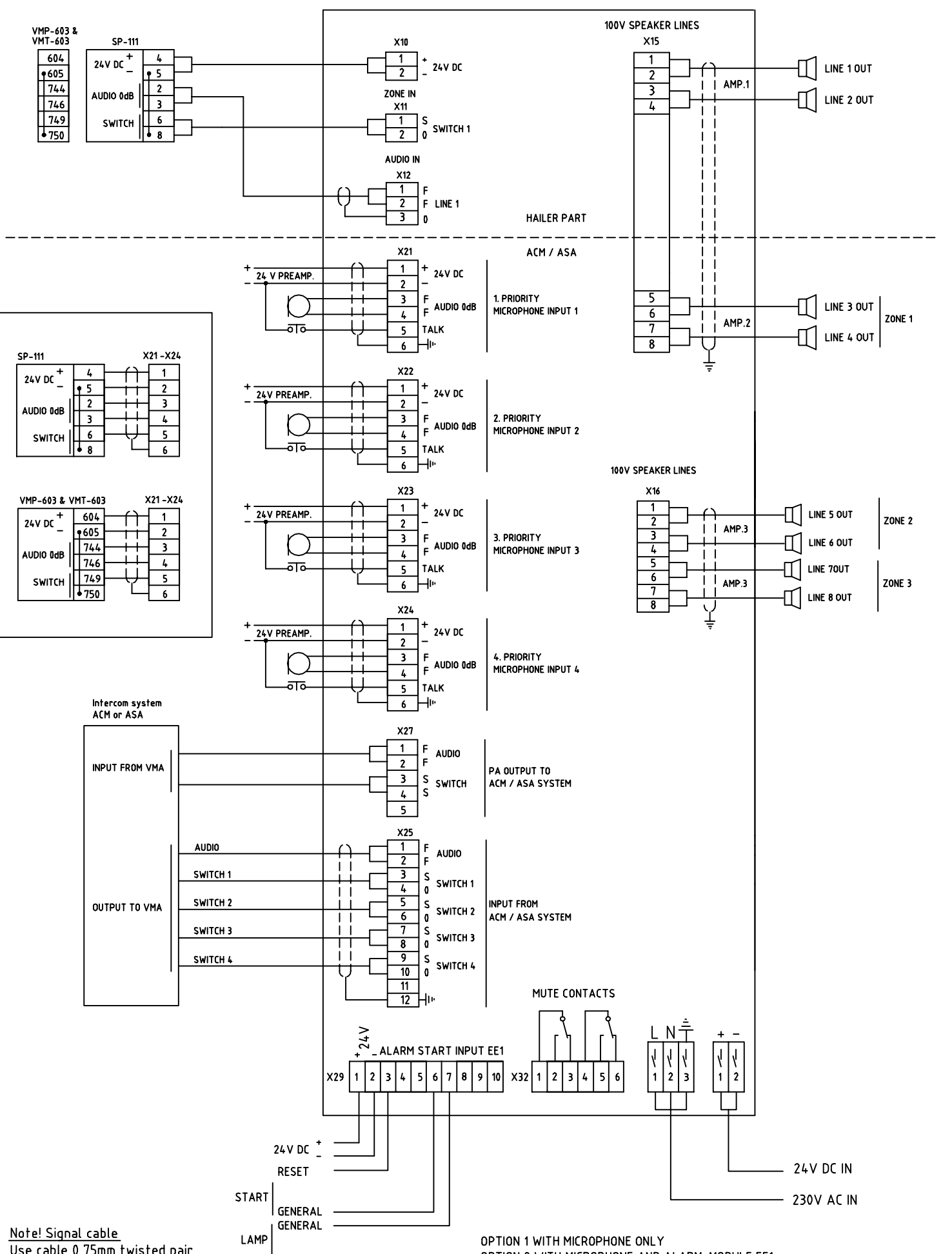
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| | Cable connection diagram | DBASE: | | | |
| | Configuration w/alarm EE1 | DOC.NO. VMA-3MIC.ALARM__cc02 | 00 | | |
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Marine Communication
STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-3 Mic / Alarm
Cable connection diagram
Configuration w/ hailer
and alarm module EE3

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Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.

The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY

OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE1

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VMA AMPLIFIER SYSTEM
VMA-3Mic / Alarm
Cable connection diagram
Configuration w/ hailer
and alarm module EE1

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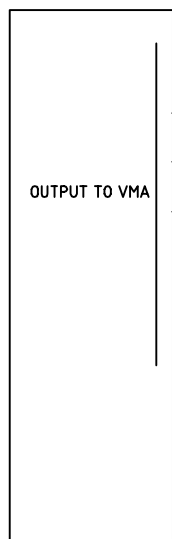
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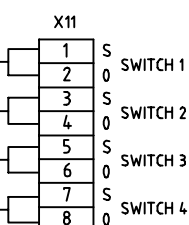
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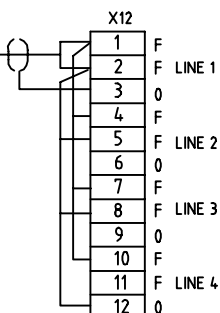
Intercom system
ACM or ASA



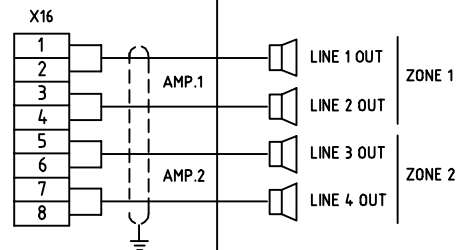
ZONE IN



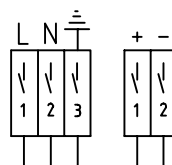
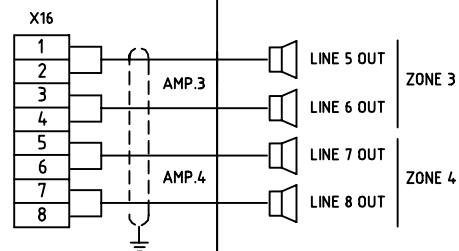
AUDIO IN



100V SPEAKER LINES



100V SPEAKER LINES



24V DC IN

230V AC IN

Note! Signal cable

Use cable 0,75mm twisted pair
with outer screen.

The screens must be interconnected
in junction boxes and grounded
in a common point in the central unit only.

STENTO ASA
Marine Communication

STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-4 BASIC
Cable connection diagram

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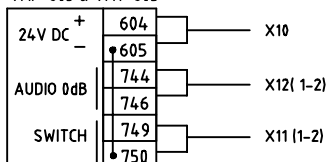
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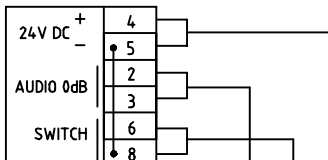
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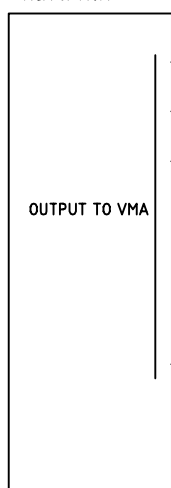
VMP-603 & VMT-603



SP-111



Intercom system ACM or ASA

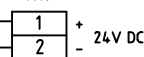


SWITCH 1
SWITCH 2
SWITCH 3

AUDIO

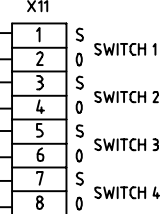
SWITCH

X10



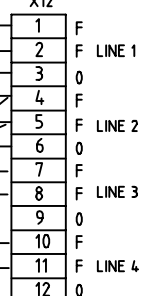
ZONE IN

X11



AUDIO IN

X12

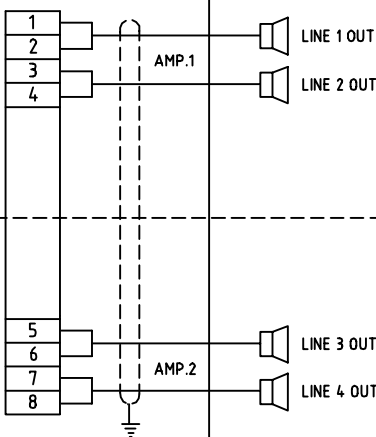


HAILER PART

ACM / ASA

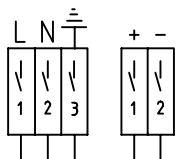
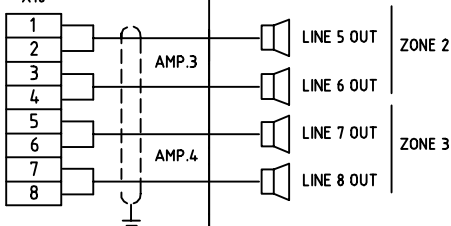
100V SPEAKER LINES

X15



100V SPEAKER LINES

X16



24V DC IN

230V AC IN

Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.

The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

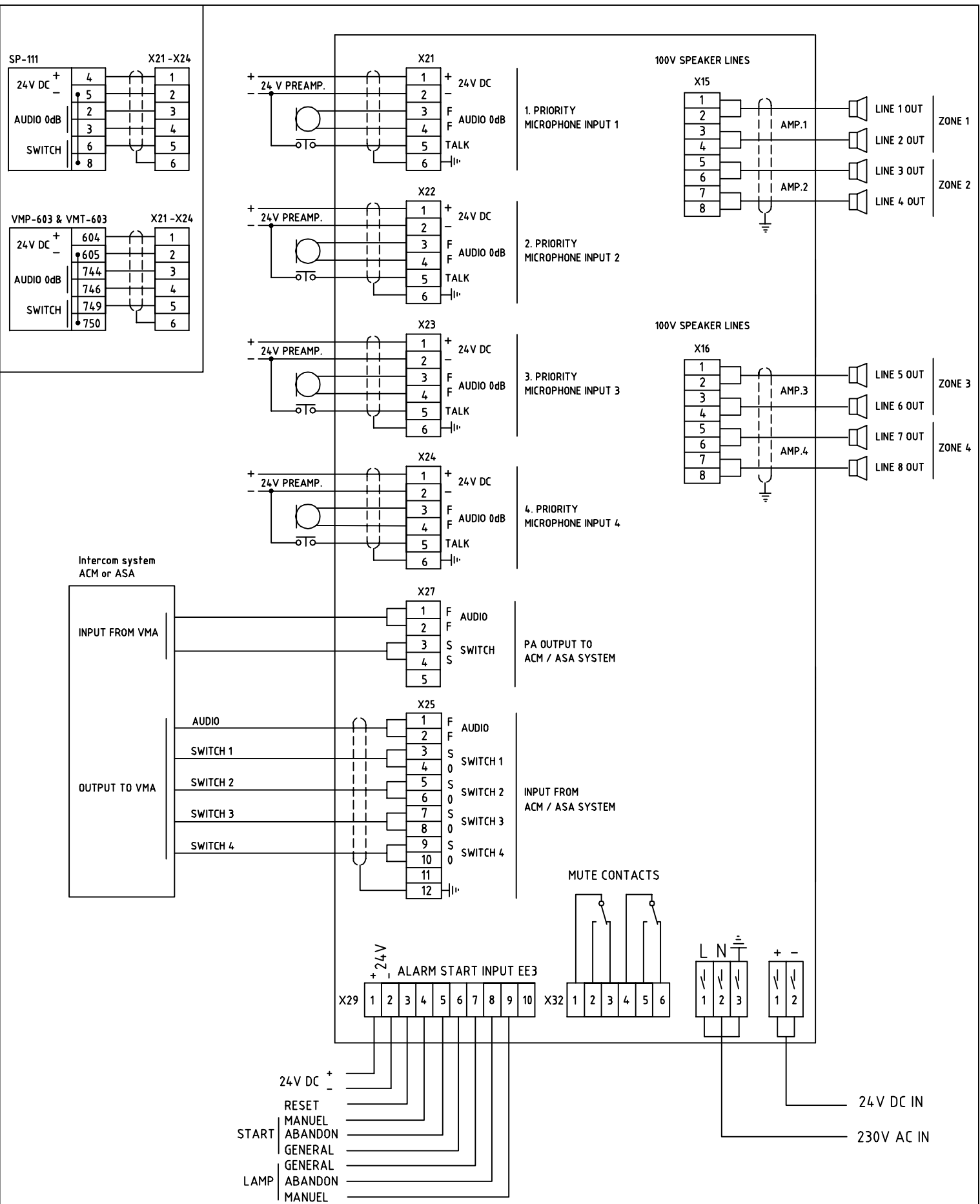
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Marine Communication

STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-4 BASIC
Cable connection diagram
Configuration w/hailer

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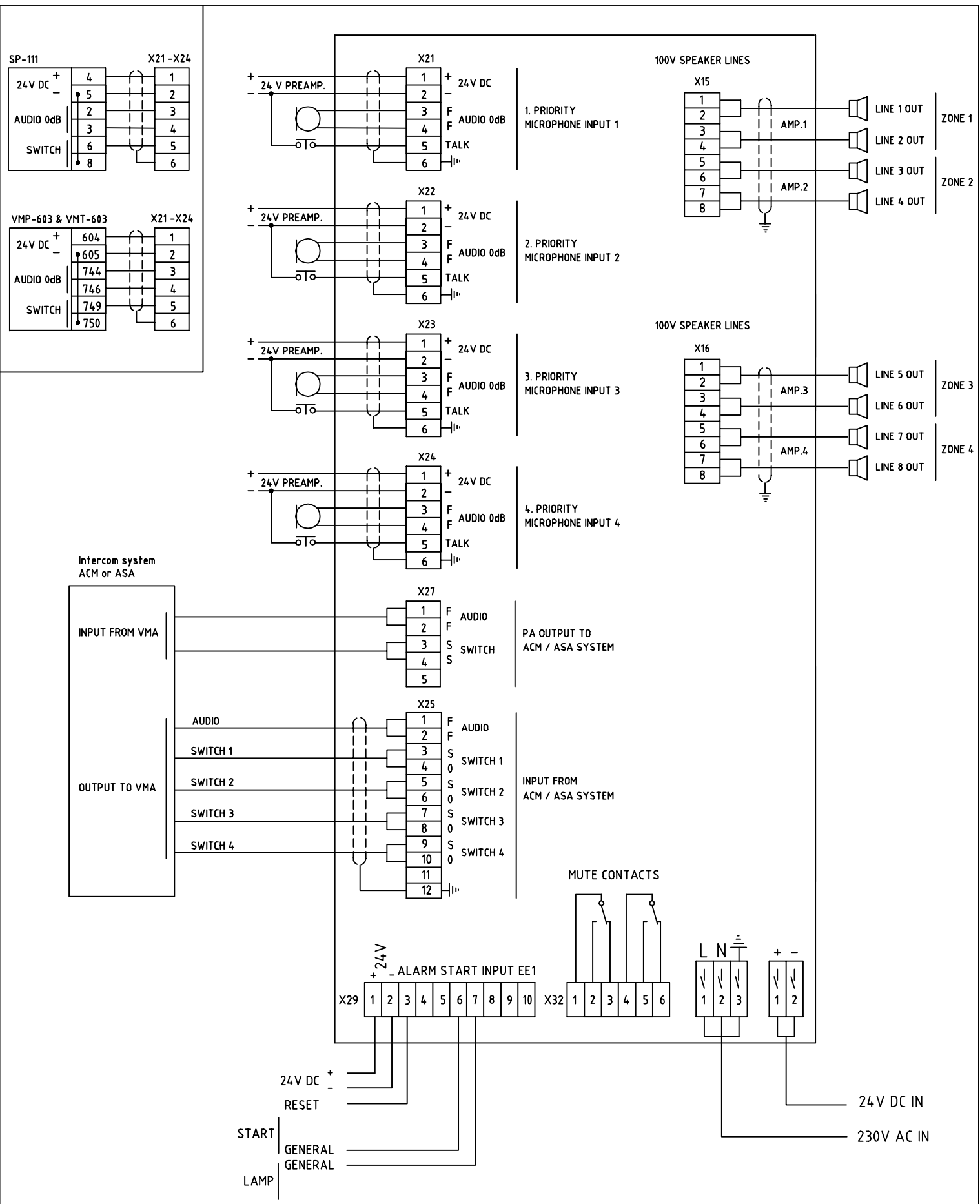
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Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE3

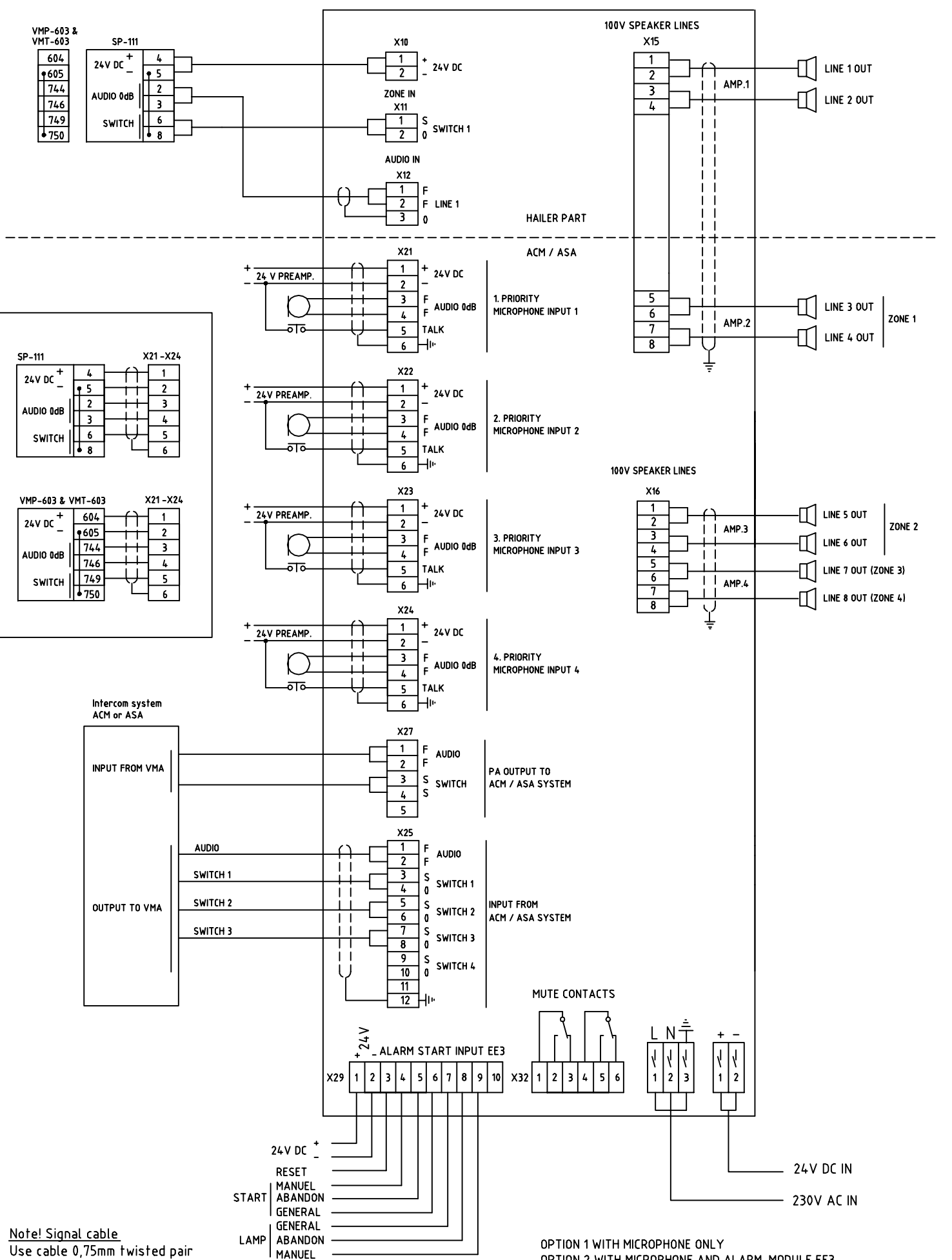
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Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE1

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| STENTO ASA <i>Marine Communication</i> STEENHANS VINGTOR | VMA AMPLIFIER SYSTEM VMA-4 Mic / Alarm Cable connection diagram Configuration w/alarm EE1 | DRAWN BY: 02.18.03 Sen | | | |
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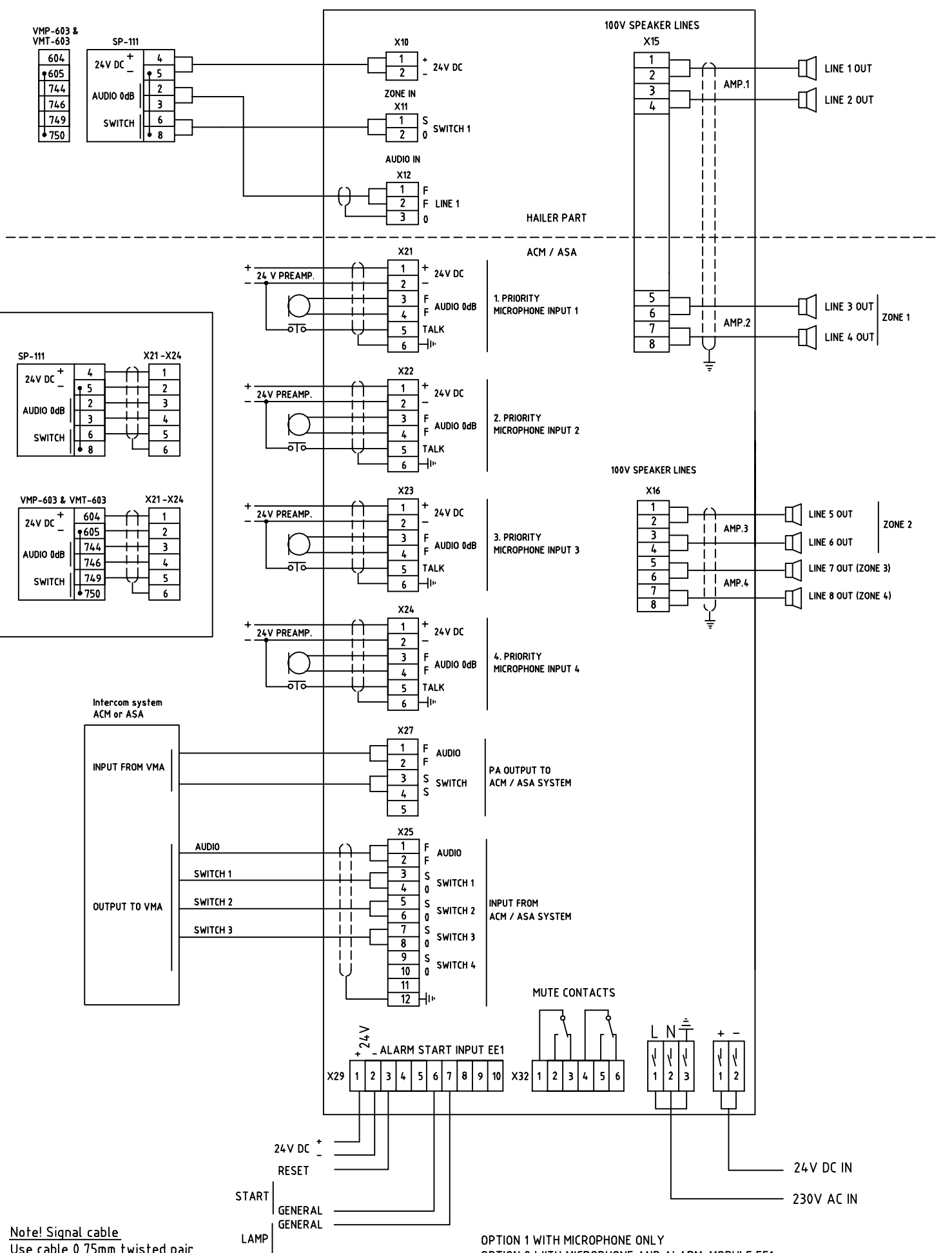
Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

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Marine Communication
STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-4 Mic / Alarm
Cable connection diagram
Configuration w/ hailer
and alarm module EE3

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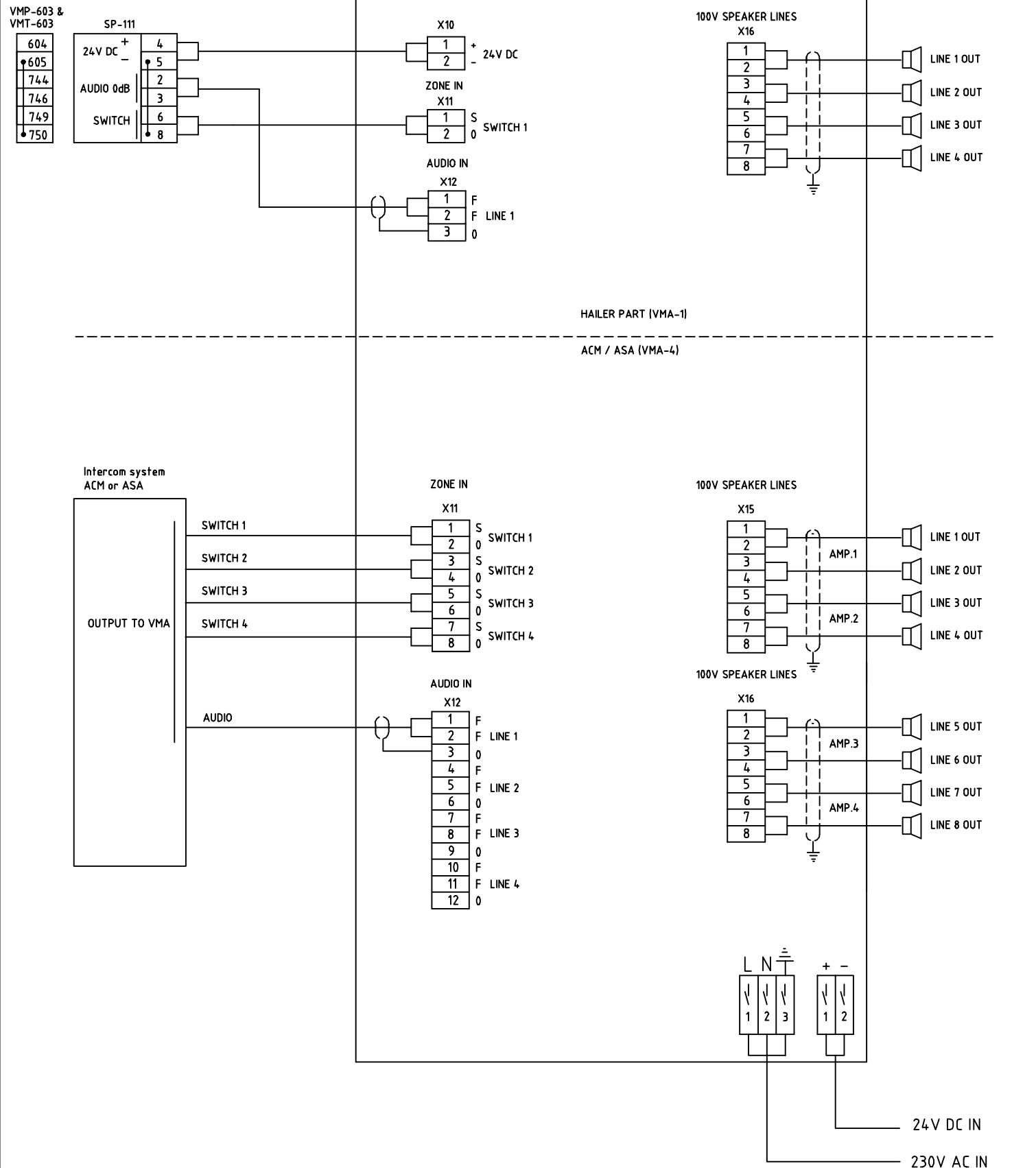
Note! Signal cable
Use cable 0,75mm twisted pair with outer screen.
The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY
OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE1

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Marine Communication
STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
VMA-4 Mic / Alarm
Cable connection diagram
Configuration w/ hailer
and alarm module EE1

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Note! Signal cable

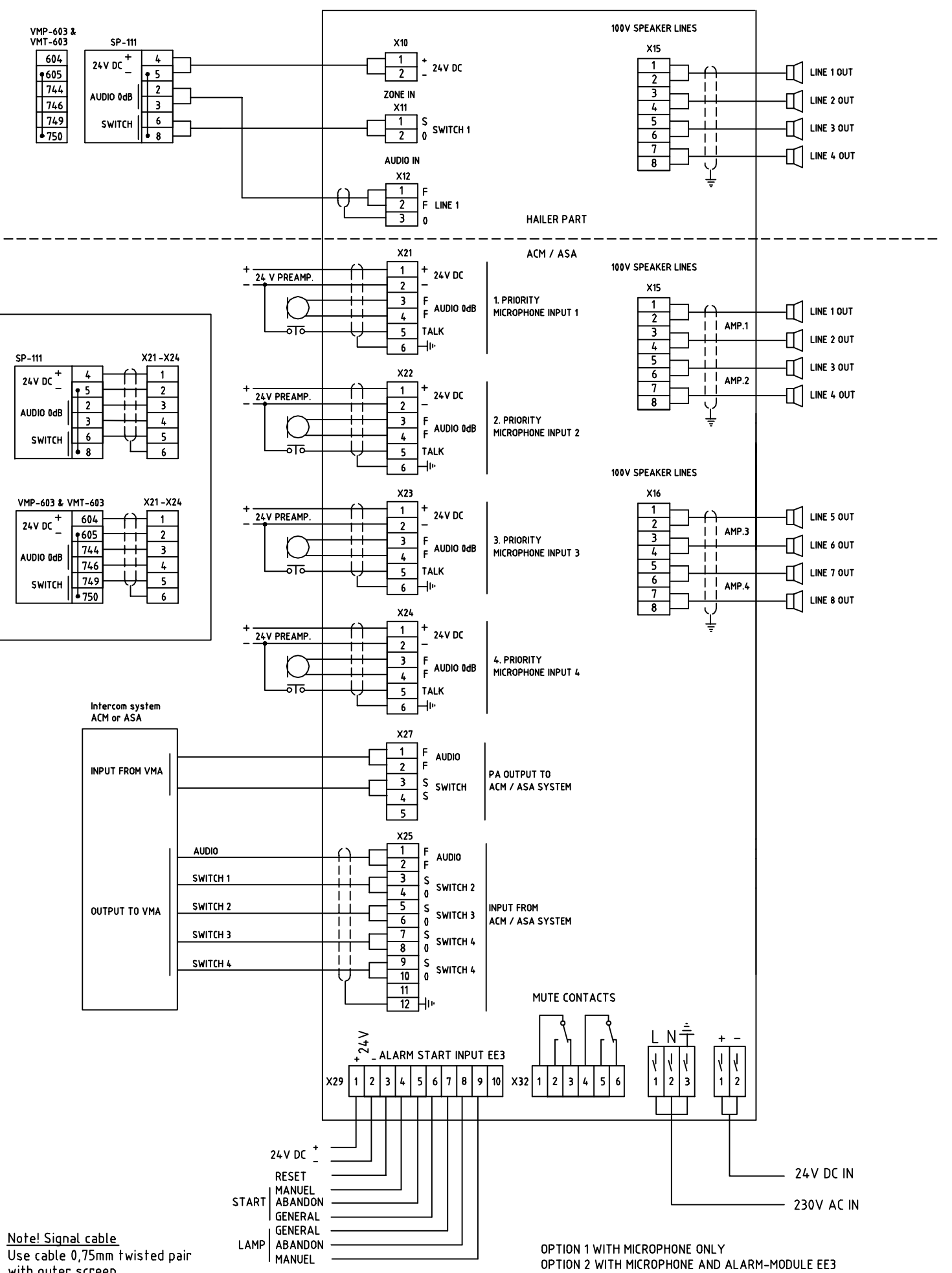
Use cable 0,75mm twisted pair with outer screen.

The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

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VMA AMPLIFIER SYSTEM
VMA-5 BASIC
Cable connection diagram

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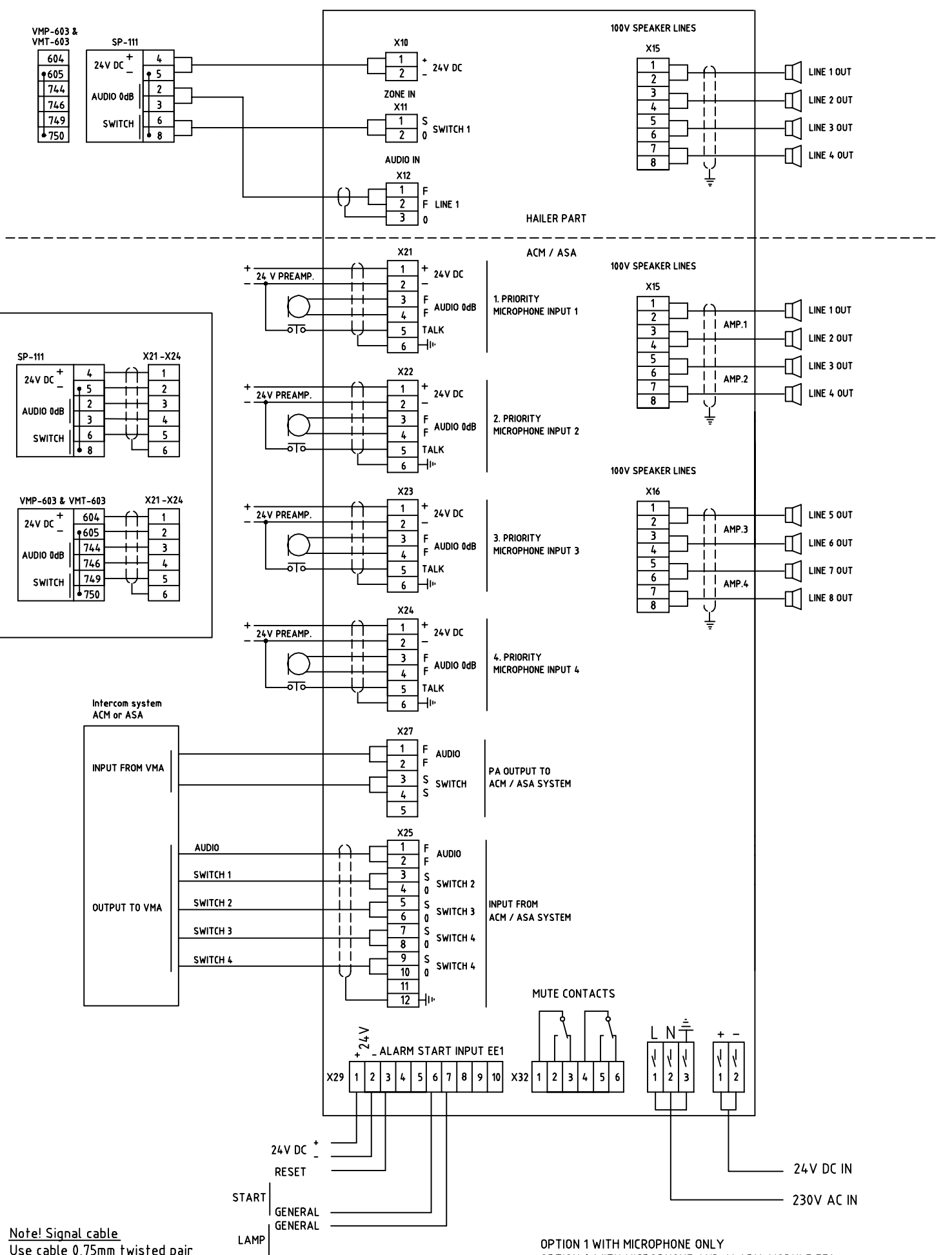


Note! Signal cable
 Use cable 0,75mm twisted pair with outer screen.
 The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

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STEENHANS VINGTOR

VMA AMPLIFIER SYSTEM
 VMA-5 Mic / Alarm
 Cable connection diagram
 Configuration w/ alarm EE3

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Note! Signal cable

Use cable 0,75mm twisted pair with outer screen.

The screens must be interconnected in junction boxes and grounded in a common point in the central unit only.

OPTION 1 WITH MICROPHONE ONLY

OPTION 2 WITH MICROPHONE AND ALARM-MODULE EE1

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VMA AMPLIFIER SYSTEM
VMA-5 Mic / Alarm
Cable connection diagram
Configuration w/ alarm EE1

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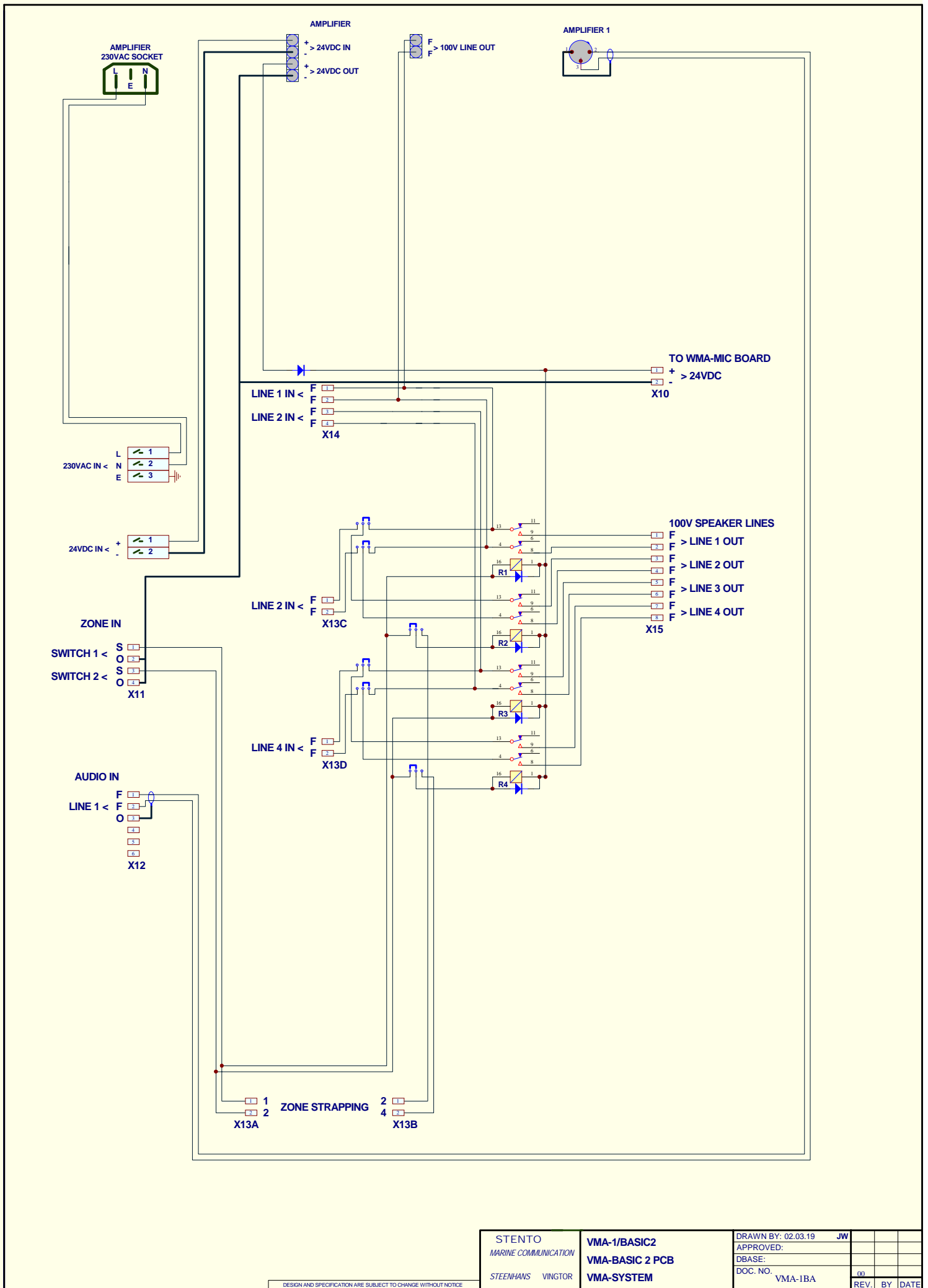
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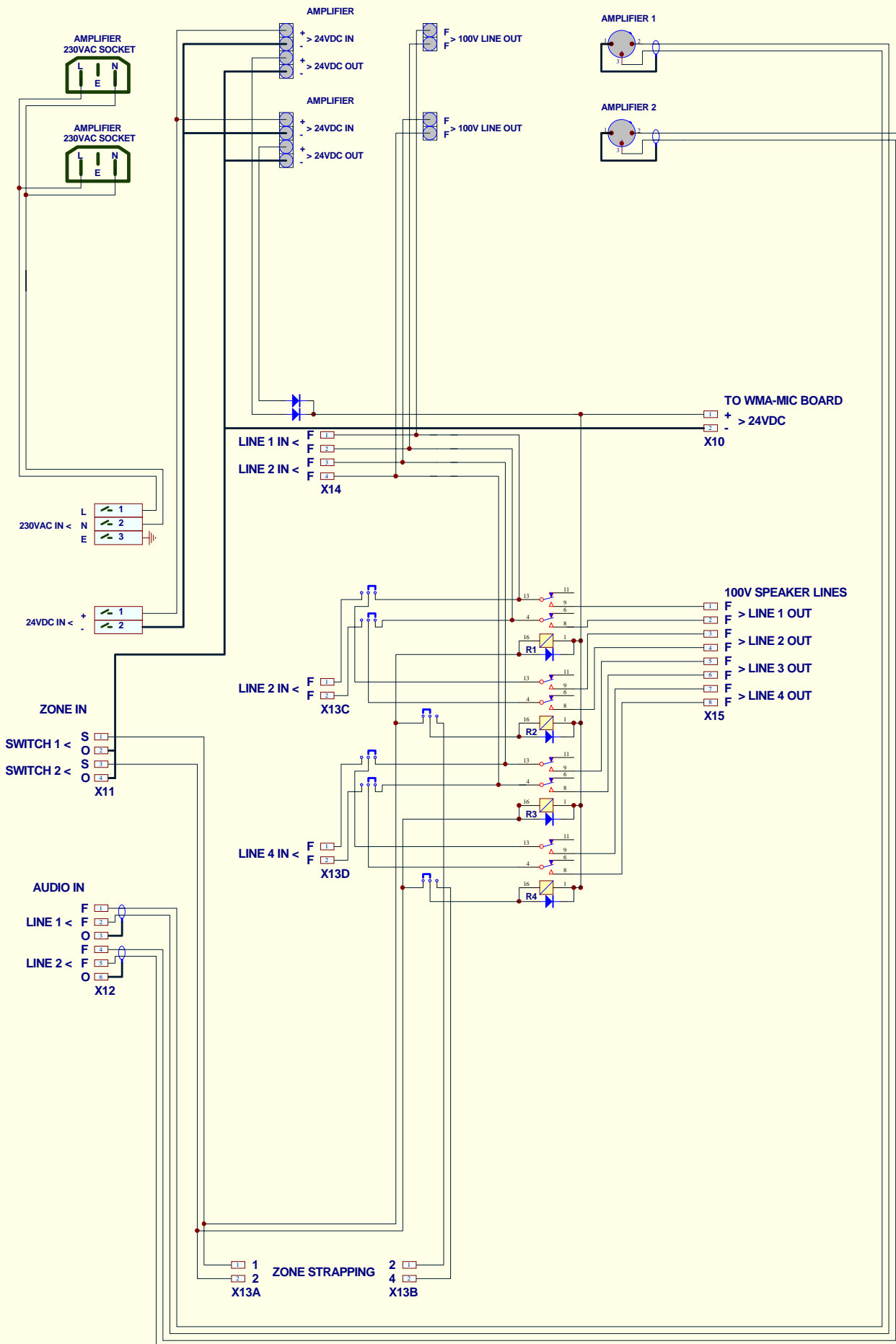
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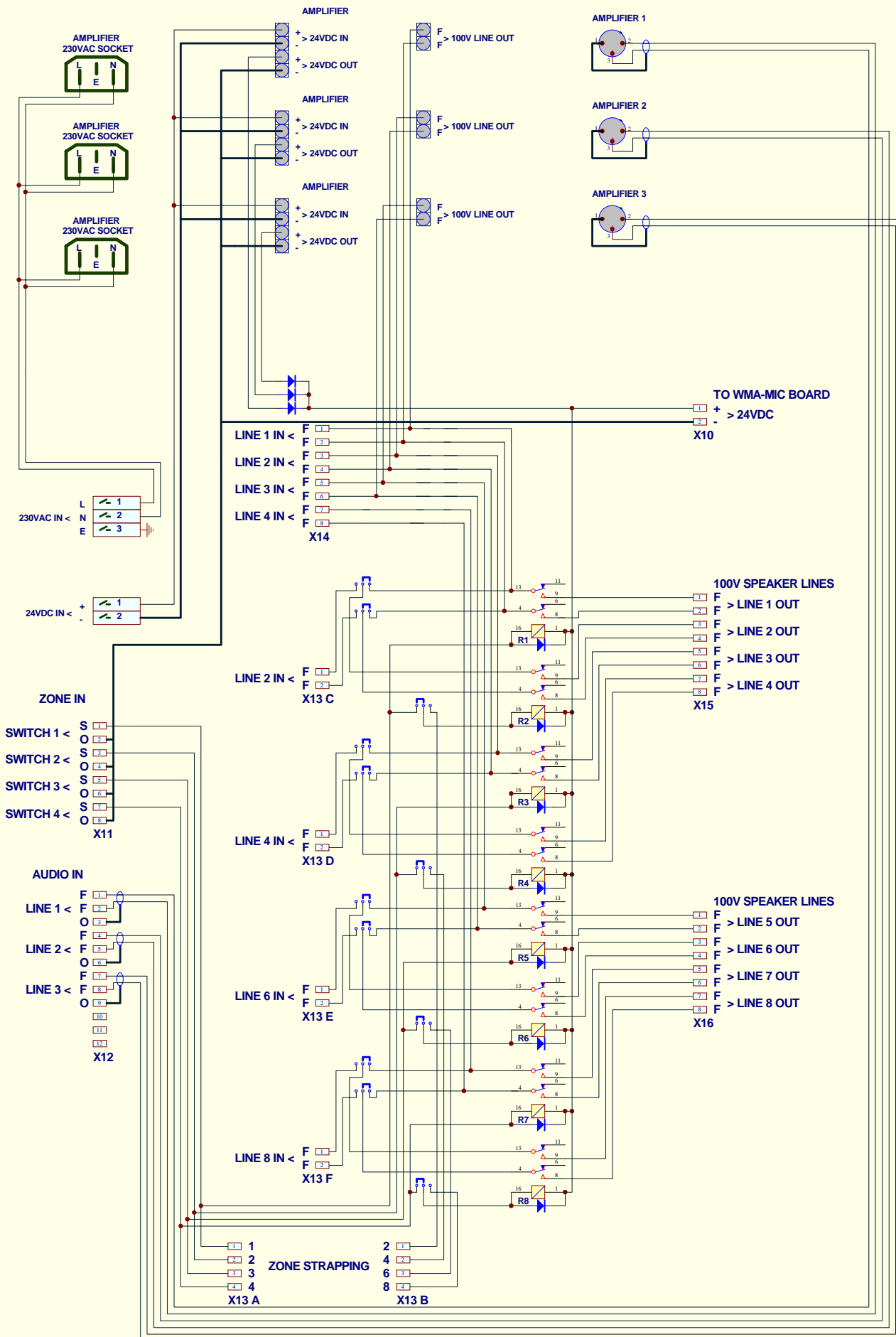
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MARINE COMMUNICATION
STEENHANS VINGTOR

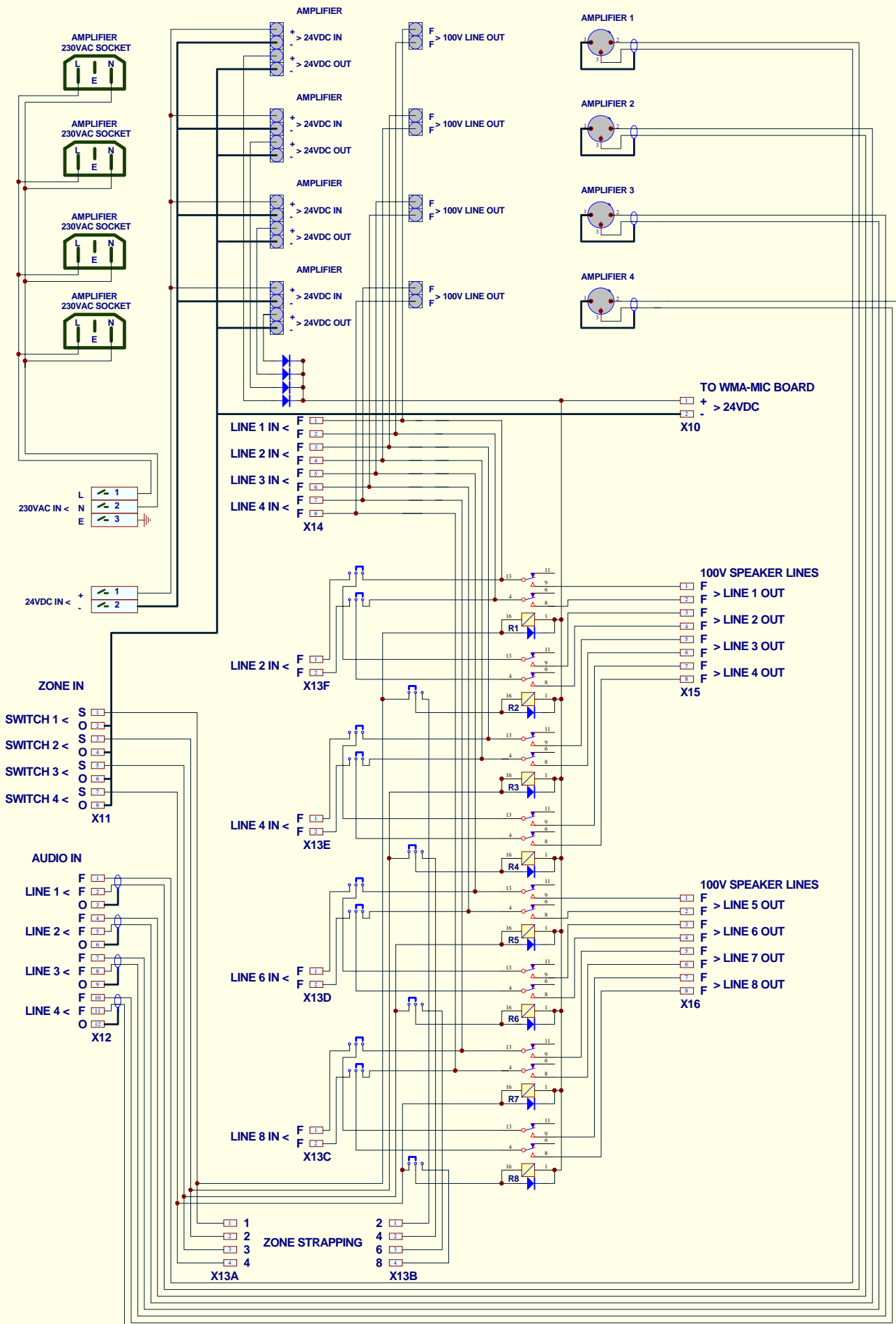
VMA-2/BASIC2
VMA-BASIC 2 PCB
VMA-SYSTEM

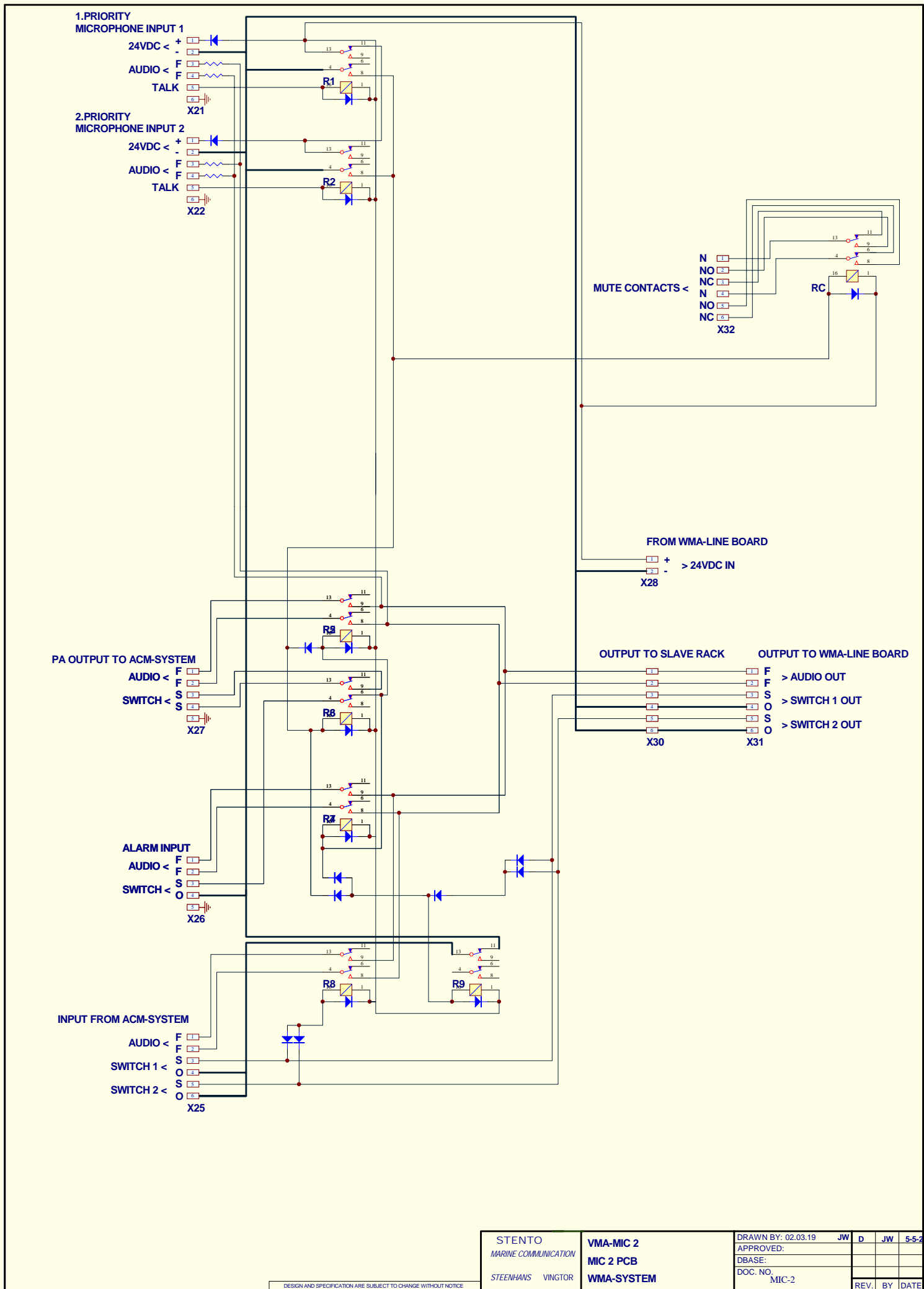
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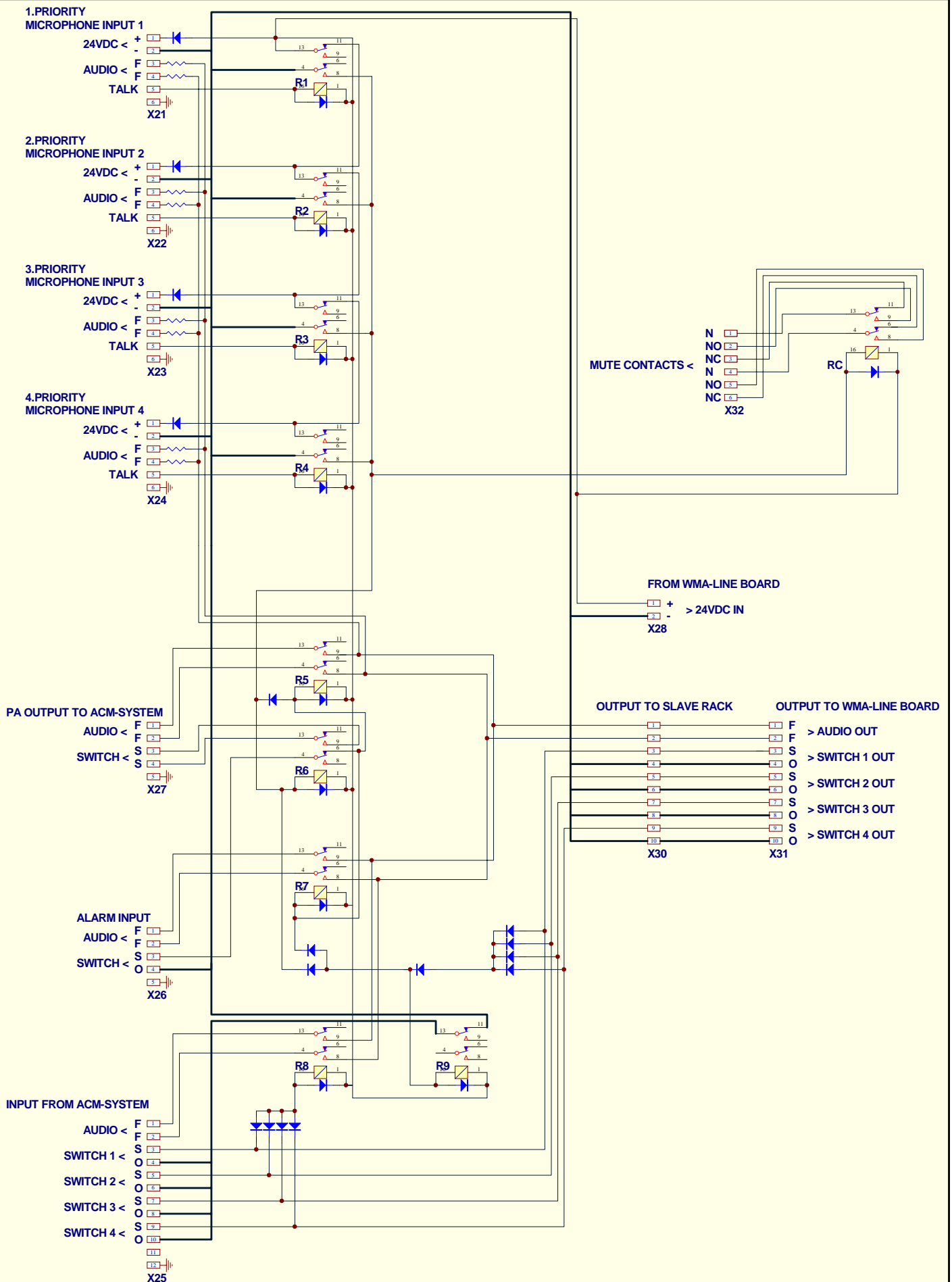
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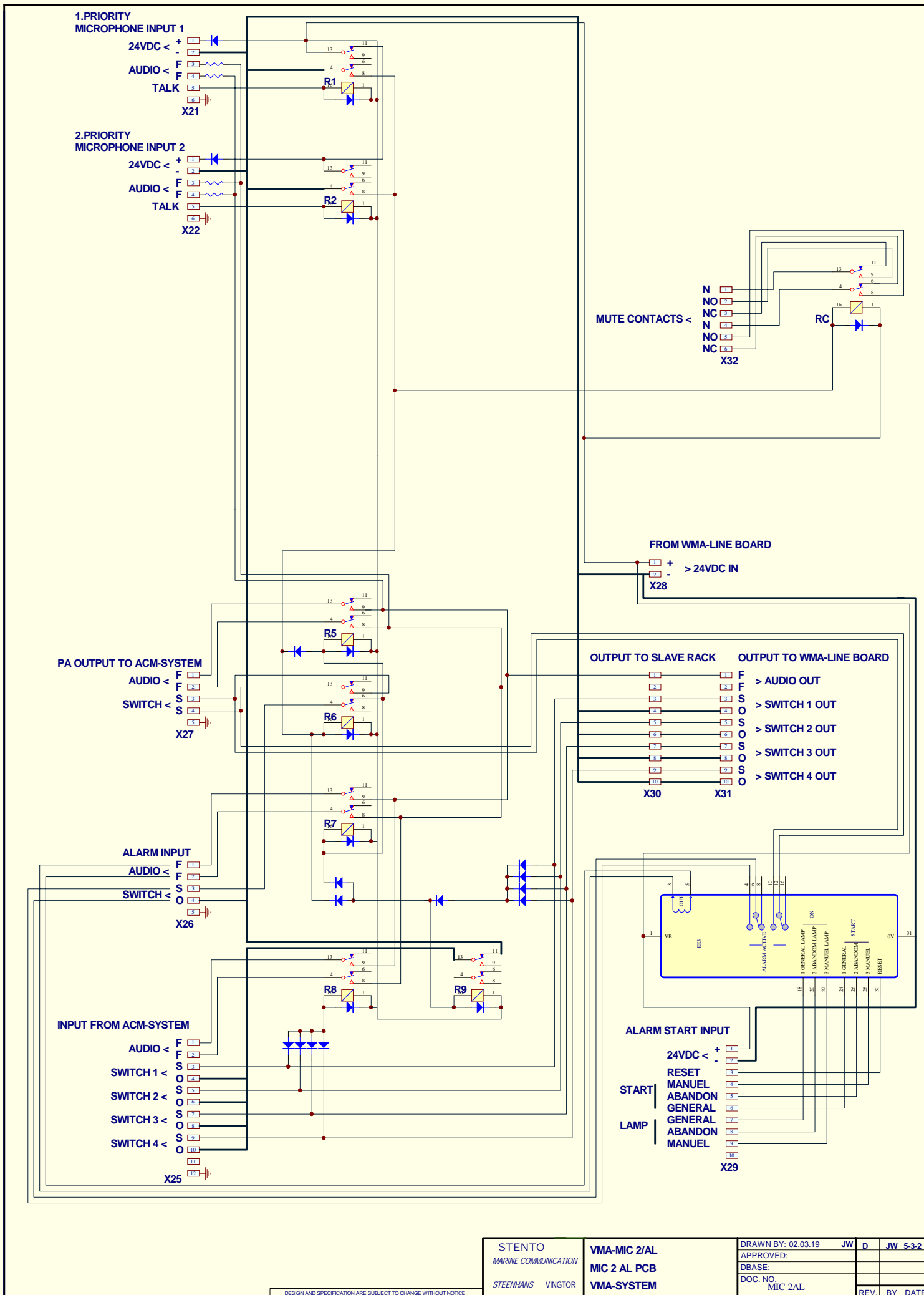
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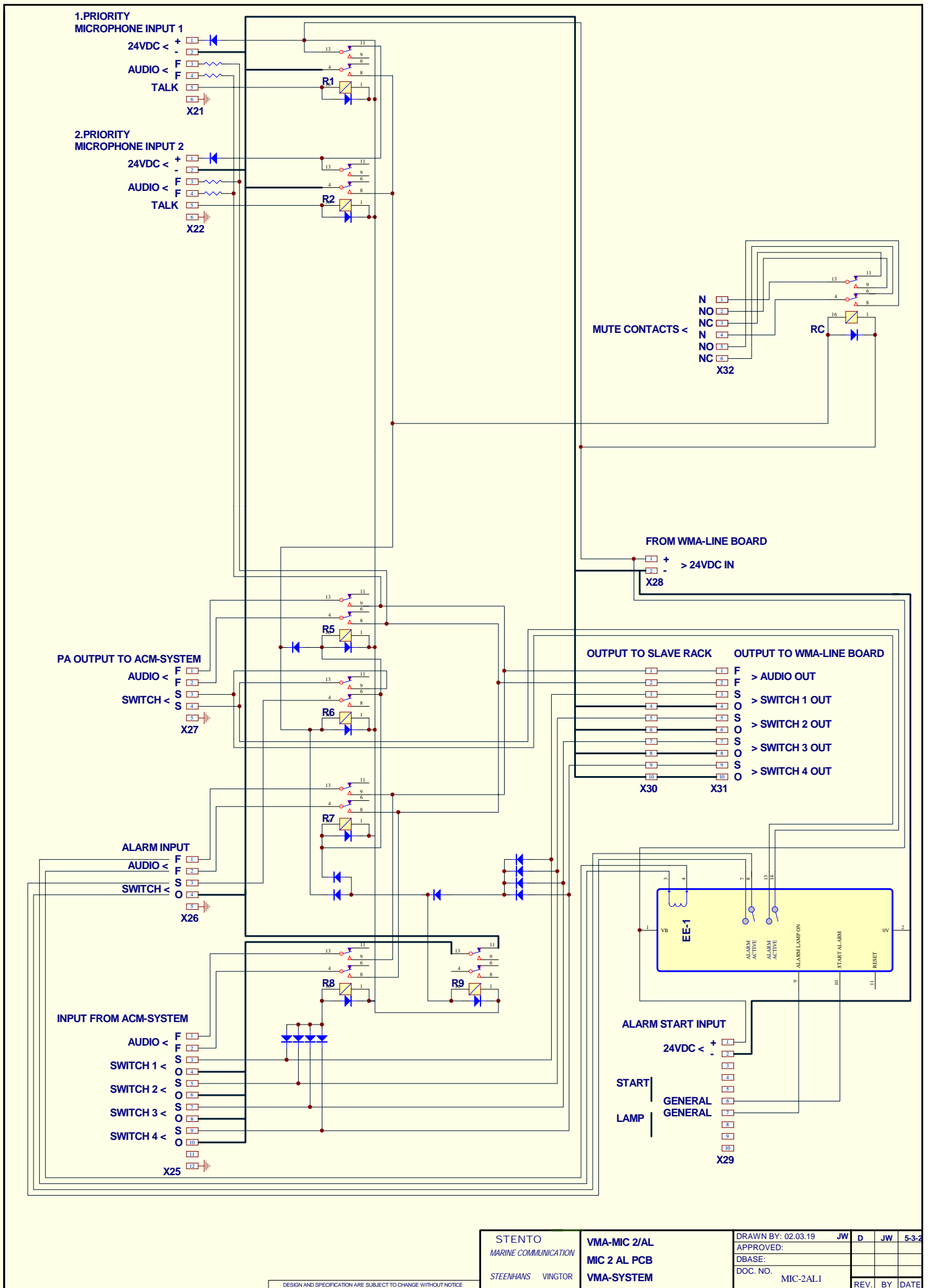




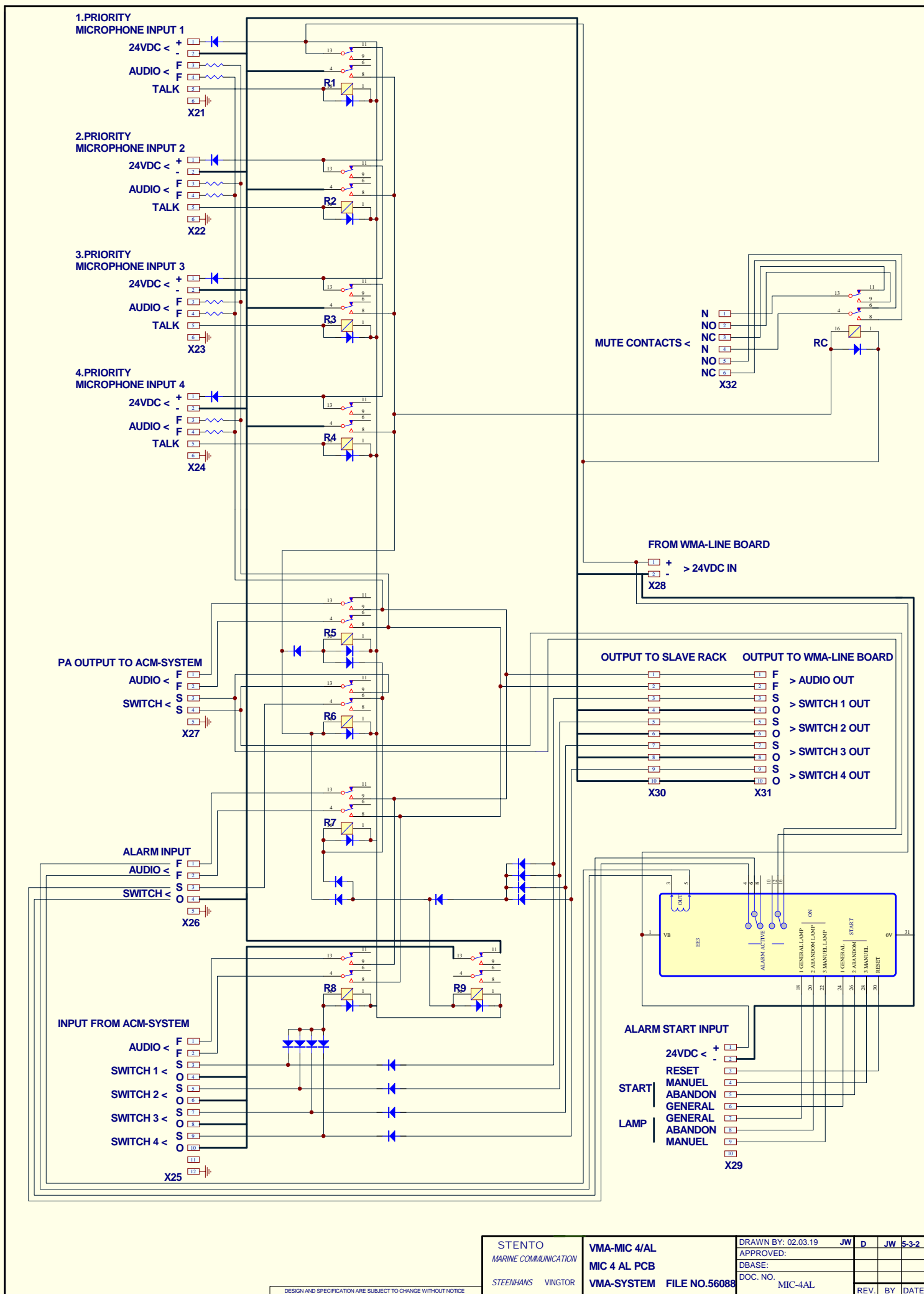


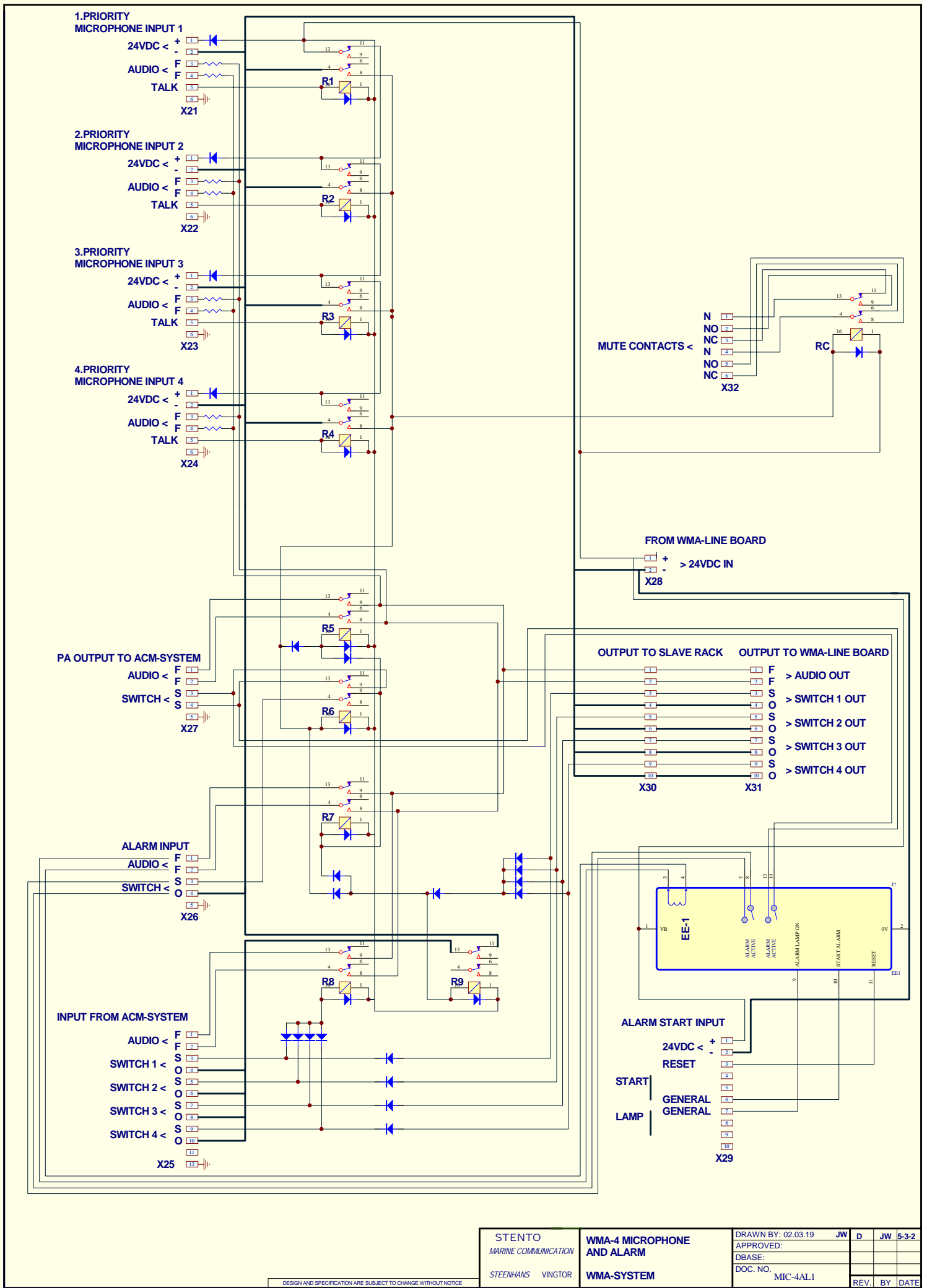






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| STENTO <i>MARINE COMMUNICATION</i> STEENHANS VINGTOR | VMA-MIC 2/AL | DRAWN BY: 02.03.19 JW | | D | JW | 5-3-2 |
| | MIC 2 AL PCB VMA-SYSTEM | APPROVED: | | | | |
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| | | MIC-2AL1 | | REV. | BY | DATE |





STENTO
MARINE COMMUNICATION
STEENHANS VINGTOR

WMA-4 MICROPHONE
AND ALARM
WMA-SYSTEM

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| DOC. NO. | | | | |
| MIC-4AL1 | | | | |
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Public Address System



A100K10070 version 01.00

Installation Instructions Slave Amplifier

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1. Introduction

1.1 About This Manual

This manual describes the function and connections for the following slave amplifiers :

- 2130-242701 60W
- 2130-242801 120W
- 2130-242811 250W

1.2 Liability

STENTOFON AS AND ITS SUBSIDIARIES ASSUME NO RESPONSIBILITY FOR ANY ERRORS THAT MAY APPEAR IN ITS DOCUMENTATION, OR DAMAGES ARISING FROM THE INFORMATION IN IT. NO INFORMATION IN THIS PUBLICATION SHOULD BE REGARDED AS A WARRANTY MADE BY STENTOFON. THIS PUBLICATION MAY BE UPDATED WITHOUT NOTICE. PRODUCT NAMES MENTIONED IN THIS PUBLICATION MAY BE TRADEMARKS. THEY ARE USED ONLY FOR IDENTIFICATION.

1.3 Brief Description

The STENTOFON 2800 series of Slave Amplifier is designed for long term trouble-free service in a variety of commercial and industrial sound systems.

The STENTOFON 2800 amplifiers incorporate many useful features. The inputs are transformer-isolated and set to operate in a balanced mode. A LO-CUT switch provides protection for horn speakers. The constant 50V and 100V connections have a center tap. Signal muting can be either manual or automatic (voice-operated)

For automute mode, you can switch the muting level between -20 dB and -40 dB.

There is also auxiliary power of 24V-250 mA available on the back panel to drive other external equipment.

The 2800 amplifiers can operate from a 24V DC power source.

1.4 Unpacking

The amplifier was thoroughly checked at the factory. Inspect the amplifier, the enclosed parts and the shipping container for signs of improper handling during shipment. If you find any damage, immediately contact the dealer from whom you purchased the unit to make a claim.

2. Installation

The amplifier should be installed where there is adequate ventilation, a moderate temperature, and an AC power outlet with provision for grounding.

- **Desk-Top:**

The amplifier should be placed on a level, open surface. Make sure that nothing restricts the air flow. Do not place the unit on a yielding surface or place objects on or around it.

- **Rack:**

For rack mounting, the amplifier requires a rack with a standard width of 483 mm (19"), and 133 mm (5 1/4") vertical space.

See also the data sheet for each amplifier

A cooling fan is recommended when amplifiers are mounted in an enclosed rack.

Caution

Failure to observe the above precautions could result in overheating that could damage the equipment or create a fire hazard.

2.1 Wiring

WARNING

Do not connect AC power to the amplifier until all the necessary input and output connections have been completed.

Power lines, speaker wires and microphone cables should be kept as far apart as possible. Good practice dictates separate conduits for each type of signal cabling and insulation of the power lines. Shielded, two-conductor cable is required for the microphone.

2.2 Grounding

Caution

Do not disconnect the third wire on the power plug. This wire grounds the amplifier's chassis to prevent a possible shock hazard. If an adapter is used to connect the plug to an ungrounded outlet, make sure that the amplifier's chassis is connected to a proven ground..

In a desktop or other free installation, run a wire from the grounding point to the amplifier's grounding point near to the power connection.

For a rack installation, connect the rack frame to the grounding point.

2.3 Input connections

There are two Line levels input

- Channel-1
- Channel-2.

The inputs are through XLR connectors.

Input signal is connected to pin 2 - positive and pin 3 - negative.

2.4 Output connections

- **Line Out:**

This jack provides a 600 ohm 1 volt unbalanced output that can be used for making recordings or driving slave amplifiers.

2.5 Speaker connections

Caution

Servicing shall be done by qualified personnel only. Disconnect power supply before servicing. Replace terminal cover after servicing.

- **General.**

The 4 and 8 ohm outputs are generally used when the wires running to the speakers are relatively short, and the line loss is less than 0.5 dB.

Most audio- and sound-systems handbooks have tables listing the line loss for each wire size and load impedance.

For the best performance, make sure that the impedance of the total speaker load matches that of the tap being used.

Use serial or parallel speaker arrangements as needed to obtain the proper impedance matching.

The 50V and 100V outputs are for speakers designed for constant voltage lines. Each speaker must have a line-matching transformer, and the speakers must be connected in parallel.

The impedance taps on the primaries of the line-matching transformer indicate how much power will be taken from the line.

You can add speakers as needed until the total wattage absorbed by all of the transformers is equal to the rated power output of the amplifier.

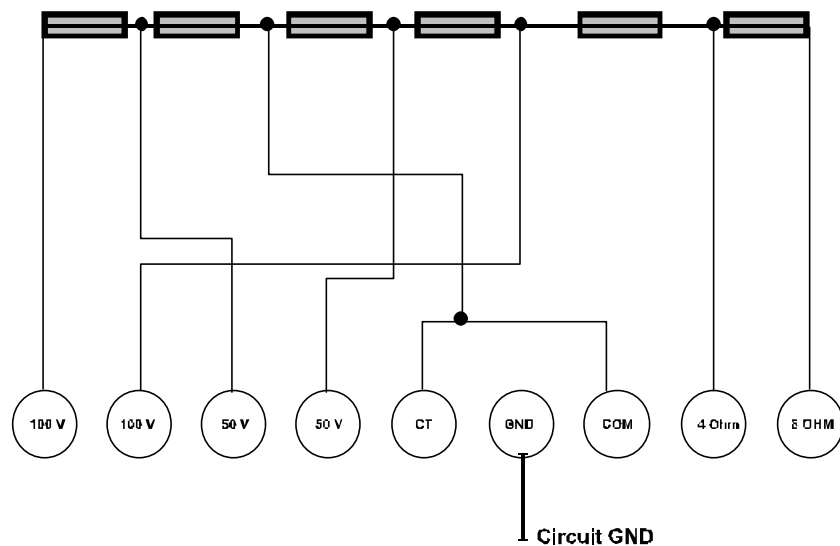
It is a good practice to allow an amplifier a headroom of 10% to 20%.

For a 120W amplifier (2812) the maximum speaker load should be approximately 100W.

The output taps differ significantly between the 2806 and the 2812-2825.

The output connection for the three amplifiers are described below.

2.6 Output Transformer 2806



Note: The CT tap and the COM terminal are wired together internally on the 2806.

The following table summarizes the proper speaker connections to the 2806

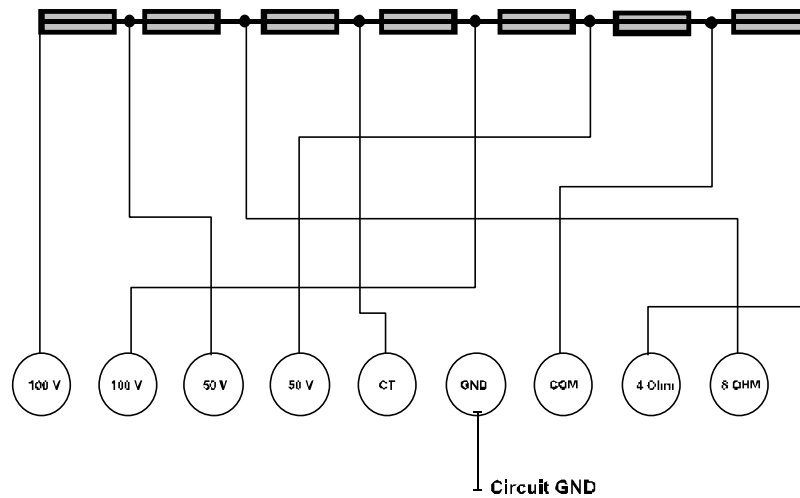
| Output Desired | Amplifier Connections | |
|-----------------|--|-----|
| 100V Balanced | Both 100V taps | * |
| 100V Unbalanced | Both 100V taps, jumper from left "100V" to "GND" | * * |
| 50V Balanced | Both 50V taps | * |
| 50V Unbalanced | Both 50V taps, jumper from left "50V" to "GND" | * * |
| 4 ohm | 4 ohm and COM | |
| 8 ohm | 8 ohm and COM | |

(*) Install the supplied jumper between GND and CT with these connections only if balanced and grounded operation is needed.

(**) *Do NOT install a jumper between GND and CT with the unbalanced 100V and 50V connections.*

IT WILL SHORT-CIRCUIT THE OUTPUT TRANSFORMER.

2.7 Output Transformer 2812 and 2825



Note: The CT tap and the COM terminal are NOT wired together internally on the 2812 and 2825.

The following table summarizes the proper speaker connections to the 2812 and 2825

| Output Desired | Amplifier Connections | |
|-----------------|--|-----|
| 100V Balanced | Both 100V taps | * |
| 100V Unbalanced | Both 100V taps, jumper from left "100V" to "GND" | * * |
| 50V Balanced | Both 50V taps | * |
| 50V Unbalanced | Both 50V taps, jumper from left "50V" to "GND" | * * |
| 4 ohm | 4 ohm and COM | |
| 8 ohm | 8 ohm and COM | |

(*) Install the supplied jumper between GND and CT with these connections only if balanced and grounded operation is needed.

(**) ***Do NOT install a jumper between GND and CT with the unbalanced 100V and 50V connections. IT WILL SHORT-CIRCUIT THE OUTPUT TRANSFORMER.***

2.8 Power connections

- **AC Connections.**

Make sure the Power switch is "OFF".

Then plug the cord into a 230V - 50 Hz three-wire grounded power socket that can provide 250W (2812) or 700W (2825).

- **DC connection.**

The amplifier can be powered by an external battery or other direct current 24 volt source. Normally this is used as a back-up source.

Use appropriately sized cables with spade plugs to terminate the DC power.

NOTE

The amplifier will not recharge the batteries. If this function is desired, obtain an approved charger and follow the manufacturer's instructions.

NOTE

The DC source is not switched OFF by the amplifier's Power switch. If DC power control is a requirement, an external switch or relay should be installed by a qualified service representative.

2.9 Operating the controls

- **Input Level Control**

This control on the back panel is used to adjust the sound to an appropriate level. It should be set so that the maximum possible input signal will not cause the output to “clip”.

This control should be adjusted by the installer and then left alone.

- **“LO-CUT” (Low Frequency Roll-Off) switch**

Release the “LO-CUT” switch to obtain the rated frequency response of the amplifier.

To protect horn speaker systems, depress the switch. This will enable a Hi-pass filter with - 3dB point at 350Hz /6dB/oct.

- **Signal Muting**

Signal muting can be done either manually or automatically (voice operated)

- **Manual Muting**

If you want to set the amplifier to manual mute mode, short the remote contacts on the back panel. Either CH-1 or CH-2 can be selected for muting from the back panel.

- **Automute**

The mute circuit is activated by the presence of a signal at CH-1, which automatically causes the signal coming from CH-2 to be reduced to either -20 dB or -40 dB. To select the level, there is a switch on the rear panel of the amplifier.

In this way the signal from CH-1 can be heard immediately and easily.

To accommodate the brief pauses typical of paging, and to make a smooth transition back to the ongoing audio program after the announcement has been completed, the amplifier gradually increases the CH-2 sound back to its normal level over a period of five to ten seconds.

- **LEDs and Circuit Breakers**

When the amplifier is operating normally, the Power LED glows. Should an overload or a short circuit occur in the speaker lines, the DC (8A-10A or 20A) circuit breaker will trip. To signal this condition, the Power LED will turn off, and the Protection Monitor LED will light.

Should the AC blow, both LEDs will turn off.

If either of these conditions occurs, find out what the problem is and correct it before resetting the circuit breaker or replacing the fuse.

The reset switch for the DC is on the rear panel. To reset, push its stem back in. Should the circuit breaker trip repeatedly, turn off the power switch, unplug the power cord and consult a qualified service engineer.

2.10 Initial tests

Play a program source through CH-1, and check that:

- Level adjustments change the output level

- The signal gets muted in manual mute.

Repeat the above test with the signal at CH-2.

Play program sources through both channels and check that:

- In automute mode, the signal at CH-1 lowers the sound level of channel-1
- Cutting the CH-1 signal causes the sound level from CH-2 to resume its normal level.

2.11 Initial troubleshooting

- Problem: Low volume or distorted sound
 - * Check whether all the input and output connections are properly made and securely fastened
 - * If the problem occurs with both input channels, check the impedance between the amplifier and the speakers.
 - * If the sound is distorted, check whether the speakers are being overdriven. The distortion disappears when the level controls are turned back to a lower setting.
 - * If the problem occurs only with one input channel, try switching the input device to determine whether it is the device or the input channel that is at fault.

- Problem: The amplifier does not operate. The Power and the Protection LED do not light
 - * Make sure that the power cord is plugged in properly, there is power in the outlet and the switch is in the ON position.
 - * Examine the input and output lines for broken connections and obvious shorts among lines and surrounding equipment.
 - * If everything appears in order, try pushing the circuit breaker switch. If the LED at Power ON still fails to light, disconnect the power and contact a qualified service engineer.

2.12 Service information

The service that follows is intend for qualified service technicians.

- **Gaining access to the components**

To remove the cover, unscrew the side screws and lift it off. This will provide access to all the internal components.

- **Testing voltages**

To pinpoint a defective component, refer to the nominal voltages for the amplifier that are marked on the schematic diagram.

- **Removing and replacing transistors**

Transistors are normally long-lived devices that normally should not need replacement. If systematic troubleshooting indicates a problem, however, please observe these precautions when removing and replacing transistors.

Transistors can be damaged by excessive heat, so use a small soldering iron when removing or replacing those with solder connections.

Transistors come with a wide variety of cases and leads. To avoid costly mistakes, make a careful sketch of the lead connections before removing a transistor from a circuit board or tie point.

Before installing a power transistor, obtain an appropriate mica insulator, coat both sides of it with silicone grease, and fit the insulator between the transistor and the heat sink. An alternative is a “silpad”, which does not require silicone grease.

3. Specifications

3.1 Features

Model 2806-2812-2825

- * Versatile output for virtually any system requirements.
- * Built-in transformer-isolated balanced input.
- * Lo-cut switch to protect horn-only systems.
- * Circuit breaker and fuse protection.
- * 230V AC and 24V DC battery operation.
- * 24V DC auxiliary output for preamplifiers.
- * Patch connection for multiple amplifier applications.

3.2 Description

This Stentofon Slave Amplifier is housed in a metal cabinet with a professional low-glare black epoxy finish. The unit is prepared for mounting in a 19" rack.

The unit has two balanced input channels, which are individually equipped with lo-cut switches for horn-only systems.

A VOX-operated priority is available on input channel 1 with automatic muting of the second channel by -20 dB or -40 dB. Both the muting level and the priority on/off settings are easy to select using switches on the rear of the amplifier. In addition, there are switches on the rear panel to enable manual muting.

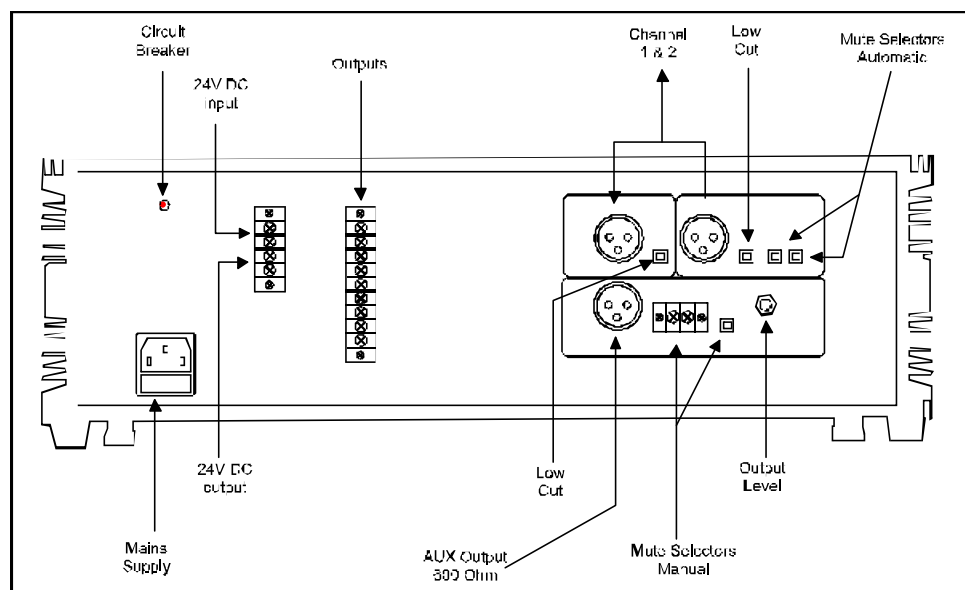
The amplifier has screw connectors for 4 ohm and 8 ohm loudspeakers, and supports both 50V and 100V lines.

The unit is fully protected by a fuse on the power input as well as an overload circuit breaker. The amplifier operates on both 230V AC and 24V DC, allowing battery operation.

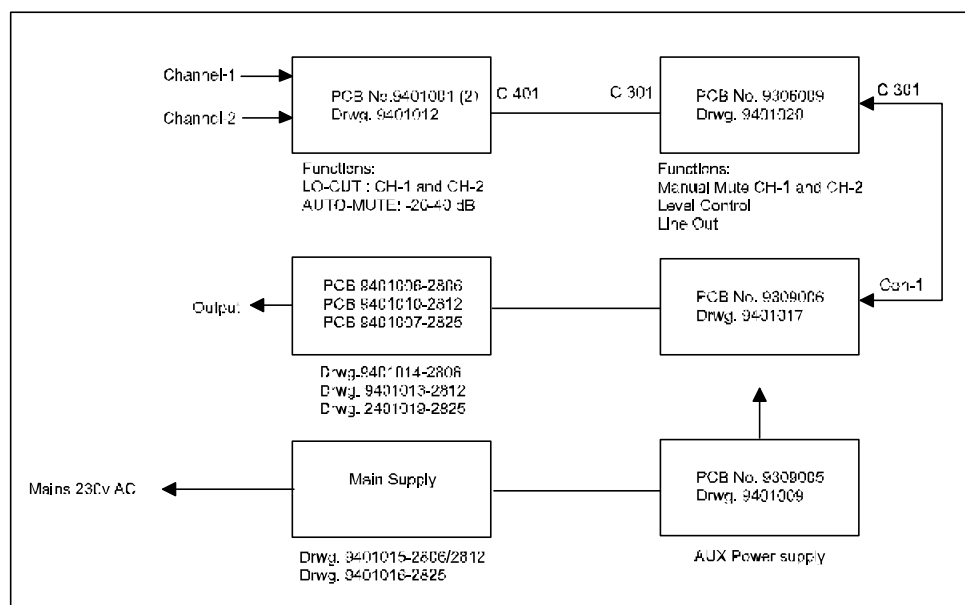
| Order Number | Description | Ship Weight |
|--------------------|-------------------------------------|-------------------|
| 2130-242701 | 60W Slave Amplifier | 10.5 kg / 23 lb |
| 2130-242801 | 120W Slave Amplifier | 17 kg / 37.5 lb |
| 2130 242811 | 250W Slave Amplifier | 21.5 kg / 47 lb |
| Accessories | | |
| 2130 272400 | 15W / 100V Horn Speaker | 1.83 kg / 4 lb |
| 2130 272900 | 15W / 100V Rectangular Horn Speaker | 1.93 kg / 4.25 lb |
| 2130 272600 | 25W / 100V Horn Speaker | 2.20 kg / 4.85 lb |
| 2130 273000 | 25W / 100V Rectangular Horn Speaker | 2.43 kg / 5.36 lb |
| 2130 272700 | 30W / 100V Horn Speaker | 2.40 kg / 5.30 lb |

| | |
|--|---|
| Order Number: | 242701,242801 and 242811 |
| Power Requirement: | AC = 230V / 50-60 Hz DC = 24V (floating) |
| Aux. power output: | 24V DC, 250 mA (floating) |
| Power Consumption 60W Slave | AC = 0.8 Amp, Standby 90 mA DC = 7 Amp, Standby 150 mA |
| Power Consumption 120W Slave | AC = 1.2.8 Amp, Standby 100 mA DC = 9 Amp, Standby 150 mA |
| Power Consumption 250W Slave | AC = 3 Amp, Standby 175 mA DC = 23 Amp, Standby 220 mA |
| Output Power 60W Slave | 60 Watts RMS 2% distortion |
| Output Power 120W Slave | 120 Watts RMS 2% distortion |
| Output Power 250W Slave | 250 Watts RMS 2% distortion |
| Output Regulation: | Less than +2 dB from no load to full load. |
| Available Outputs: 2806-2812 and 2825 | 4 ohm 8 ohm 50V balanced 41.7 ohm 100V balanced 166.66 ohm |
| Line Output: | 600 ohm 1V balanced |
| Frequency Response: | -3 dB 60 Hz to 15 kHz |
| Harmonic Distortion (tone control at "0"): | Less than 2% at 3 dB below rated power output 60 Hz to 15 kHz |
| Inputs (balanced): | 2 channels, 20 kohm Line |
| Input Sensitivity: | 0.775V for rated power output |
| Input Overload: | 3V |
| Noise Level ref. full power : | Level control at minimum -75 dB Level control at maximum -74 dB |
| Mute level - manual: | -70 dB |
| Mute level - automatic: | -20 dB or -40 dB (selectable) |
| Low-cut: | - 3 dB at 350 Hz / 6dB / oct |
| Temperature Range: | -10° C to +60° C +14° F to +140° F |
| Humidity Range: | 10% - 85% RH |
| Dimensions: 60W Slave | 482 mm W x 133 mm H x 275 mm D 19" x 5 1/4" x 10 3/4" |
| Dimensions: 120W Slave | 482 mm W x 133 mm H x 308 mm D 19" x 5 1/4" x 10 3/4" |
| Dimensions: 250W Slave | 482 mm W x 133 mm H x 356 mm D 19" x 5 1/4" x 10 3/4" |
| Finish: | Metal cabinet with black epoxy finish |

3.3 Rear panel



3.4 Schematic, references



4. Reader's Comments

Please help us to improve the quality of our documentation by returning your comments on this manual:

Title: *Public Address System, Installation Instructions Slave Amplifier*

Ref. No.: *A100K10070 version 01.00*

Your information on any inaccuracies or omissions (with page reference):

Please turn the page

Suggestions for improvements

Thank you! We will investigate your comments promptly.

Would you like a written reply? ☐ Yes ☐ No

Name:

Title:

Company:

Address:

Telephone:

Fax:

Date:

SPA-V2

PUBLIC ADDRESS SYSTEM



when communication is critical

FEATURES

- Standalone PA and GA system made for the ship environment
- 19" rack w/screw terminals for ship cable network
- Power Amplifiers, 100 V line with alternative power output of 120, 240 or 400 W
- Provides monitoring of power amplifiers
- 6 zones selection + ALL
- VINGTOR integrated PA/GA solution in combination with VINGTOR ACM
- Input for 3 microphone panels
- AUX / Alarm input
- Input from Talk-Back system
- Input from PABX (preselected zones)
- Mains 230 V AC/24 V DC w/auto switch-over
- Built-in pre-amplifiers
- Wide set of microphone and alarm panels

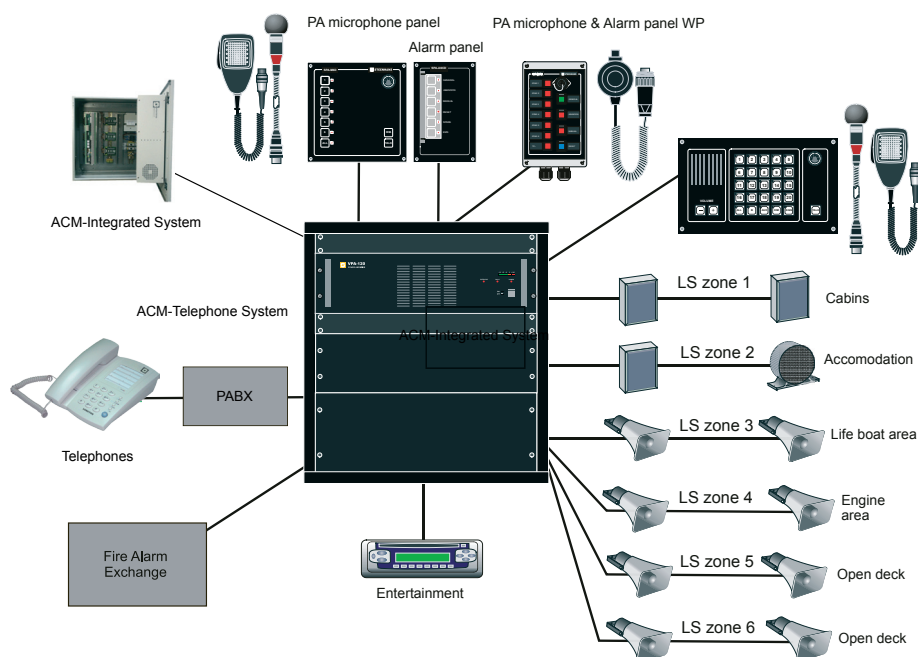
DESCRIPTION

The SPA-V2 system is specially designed to meet the demands for a cost-effective Public Address system for use on board ships. The system is available in different versions and offers a set of standard and optional features which covers the requirements for a marine PA and general alarm systems for all type of ships.

Each SPA rack supports from 120W to 2800W. A system can consist of multiple racks to provide needed capacity. The racks can be provided in the following sizes: 12 HU, 16 HU, 20 HU, 24 HU, 30 HU and 40 HU.

The SPA system supports the VINGTOR integrated PA and GA solution. This solution is type approved for Public Address and general alarm. Together with the VINGTOR ACM, the SPA system are extremely cost efficient where SPA loudspeaker loops are used together with the integrated ACM units to cover areas where PA and GA are required onboard the ship.

At delivery, the rack is equipped and internally wired according to customer specifications.



Type approved

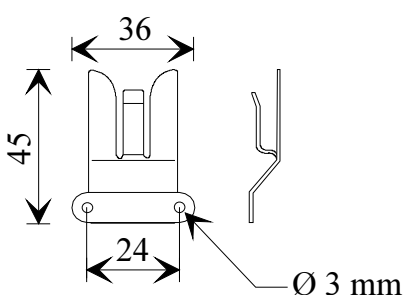
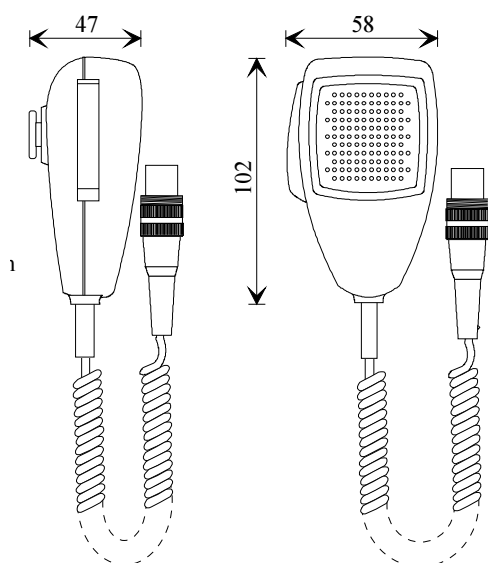
The system is tested according to EN60945, and is type approved by DNV, RMRS and CCS,

SPECIFICATIONS

| Main unit | |
|----------------------|---|
| Rack size (WxHxD) | 525 x 584 x 525 (19" 12HU) |
| Material | Black painted steel |
| Mounting | Floor |
| Voltage input | Mains 230 VAC & 24 VDC (110V AC on req.) |
| Connections | Plugable terminals for max. 2.5mm ² cable |
| Cable requirements | Signal cable 0.75mm ² twisted outer screen |
| Amplifier | VPA-120, VPA-240 AND VPA-400 See separate data sheet |
| Output | 100V -120W -400W |
| Operating temperaure | -20 - +55°C |
| Relative humidity | <95% |
| Safety | EN 60065 |
| Tested according | EN 60945 |
| Optional rack sizes | 19" 12,16, 20,24,30 and 40HU |
| | |
| Field Equipment | See separate data sheets |

SYSTEM UNITS

| ORDER NUMBER | DESCRIPTION | ORDER NUMBER | DESCRIPTION |
|--|--|-------------------------------------|---|
| Central units, Control units & Amplifiers | | Announcement And Alarm Units | |
| SPA-120-V2 | PA main unit, 19" rack, incl. 120w amplifier | SPA-M1H-V2 | PA panel single for all call - flush - w/handheld mic ETC-1 |
| SPA-240-V2 | PA main unit, 19" rack, incl. 240w amplifier | SPA-M1S-V2 | PA panel single for all call - flush - w/gooseneck mic MB-30G |
| SPA-400-V2 | PA main unit, 19" rack, incl. 400w amplifier | SPA-M1H-D | PA panel dual for all call - flush - w/handheld mic ETC-1 |
| VPA-120 | 19" power amplifier 120W/100V - 220V AC/24V DC - 3HU | SPA-M1S-D | PA Panel Dual For All Call - Flush - W/Gooseneck Mic MB-30G |
| VPA-240 | 19" power amplifier 240W/100V - 220V AC/24V DC - 3HU | SPA-M6H-V2 | PA panel single w/6 zones, all call and dimmer - flush - w/handheld mic ETC-1 |
| VPA-400 | 19" power amplifier 400W/100V - 220V AC/24V DC - 3HU | SPA-M6S-V2 | PA panel single w/6 zones, all call and dimmer - flush - w/gooseneck mic MB-30G |
| SPA-SHELF | Shelf for additional equipment for VCR or DVD, 3HU | SPA-M6H-D | PA Panel Dual w/6 Zones, All Call And Dimmer - Flush - w/Handheld Mic ETC-1 |
| SPA-SHELF4 | Shelf w/drawer f/CU-system incl. rack expansion 3HU | SPA-M6S-D | PA panel dual w/6 zones, all call and dimmer - flush - W/gooseneck mic MB-30G |
| SPA-SWITCH-V2 | 6 line input w/ monitor | SPA-M6BOKS | Back box for SPA-M1 and M6 panels when wall mounted |
| SPA-RCD | Radio/CD/player (car type) | SPA-AC6 | Single alarm panel with covered and illuminated alarm start and reset button for indoor use |
| SPA-CAD6 | 6xCD player (car type) | SPA-AC6-D | Dual alarm panel with covered and illuminated alarm start |
| SPA-RCD6 | Radio / 6xCD player (car type) | ACBOKS | Back box for SPA-AC6 panels when wall mounted |
| SPA-PABXR-V2 | PABX recall voice recorder | SPA-W1-V2 | Weatherproof PA-panel for outdoor use |
| SPA-DMG9016 | Digital message recorder | SPA-W1-D | Dual weatherproof PA-panel for outdoor use |
| SPA CHIME-V2 | Chime generator | SPA-W1AR-V2 | Weatherproof PA-and alarm panel for outdoor use |
| SPA-MUL-V2 | SPA- zone control board with 4way entertainment 6 zones | SPA-W1AR-D | Dual weatherproof PA-and alarm panel for outdoor use |
| DR-4524 | Power supply 230 VAC / 24 VDC, 2A | SPA-W6A4-V2 | Weatherproof PA-and alarm panel w/6 zones for outdoor use |
| DRA-24FSA | Power supply 230V AC / 24V DC, 10A | SPA-W6A4-D | Dual weatherproof PA-and alarm panel w/6 zones for outdoor use |
| SPA-TERM-V2 | Terminal board SPA w /2, 5M cable | SPA-DMG | Remote panel for message recorder SPA-DMG9016 |
| SPA-EE3D-V2 | Alarm set for dual system | | |
| SPA-EE3-V2 | Single alarm gen. W/3 alarm tones | | |
| SPA-EMS-V2 | Switching board for emergency pa message | | |
| SPA-AL-REL-V2 | 3 X pot free relay output | | |
| SPA-ENT4-V2 | SPA 4 way entertainment 6 zones | | |
| SPA-VDR-V2 | Output for voice data recorder | | |
| SMIII-PA | PA telephone interface (trunk line needed per PA-line) | | |
| SPA-FAIL | Power failure output relay with potential free contact | | |
| SPA-UPS | Auto switch between 230AC main & emerg./Ups incl. Power fail | | |



Mic. clip-on

Description:**ETC-1**

- * Handheld microphone for use with SPA-M1H and SPA-M4H Standard Microphone Panels

Technical data:

| | |
|----------------|-------------------------------|
| Type : | Dynamic |
| Art.no. : | ETC-1 |
| Impedance: | 200 ohm |
| Freq.response: | 200 - 4500Hz. |
| Sensitivity: | 1 mV/Pa. |
| Polar pattern: | Non directional |
| Switch: | PTT |
| Cable: | 3-wires coiled cord w/ shield |
| Plug: | 5 pole din |
| Accessories: | Hang-up clip |
| Dimensions: | See dwg. beside |
| Weight: | 0,2 kg |

| | |
|--------------|----------------------------|
| Document no. | ETC-1_ds rev.01 2003.01.27 |
| Article no. | ETC-1 |





ETC-1-CH

CHASSIS CONTACT 5-PIN DIN FOR ETC-1-TB WITH 1 M CABLE

- Prepared with screw terminals for connections

SPA-240-V2

MAIN UNIT



when communication is critical

FEATURES

- Input & priorities for 3 microphone panels
- Input from talk-back system
- Input from entertainment system
- PABX Input with zone presets
- 6 zones 100 V signal output
- Input for 2 alarm panels
- 2x Fire alarm input, all call and zone selection (fire crew)
- Alarm mute during PA message

DESCRIPTION

The SPA series public address and general alarm system combines quality and value. The SPA-V2 is an improved second generation system which in first generation version has been installed in thousands of ships around the world. The basic functionality module can support a single, non-redundant system and delivered as a 19" rack which contains main board, minimum one amplifier and optional functions.

Optional functions are:

- Number of microphone and alarm panels
- Dual system, redundancy
- Additional amplifiers
- Alarm generators
- PABX Interface
- Redundant power supply
- Digital message recorder
- Chime generator
- Entertainment
- Output for voice data recording

At delivery, the rack is equipped and internally wired according to customer specifications. The system is tested and passed according to EN60945.

SPECIFICATIONS

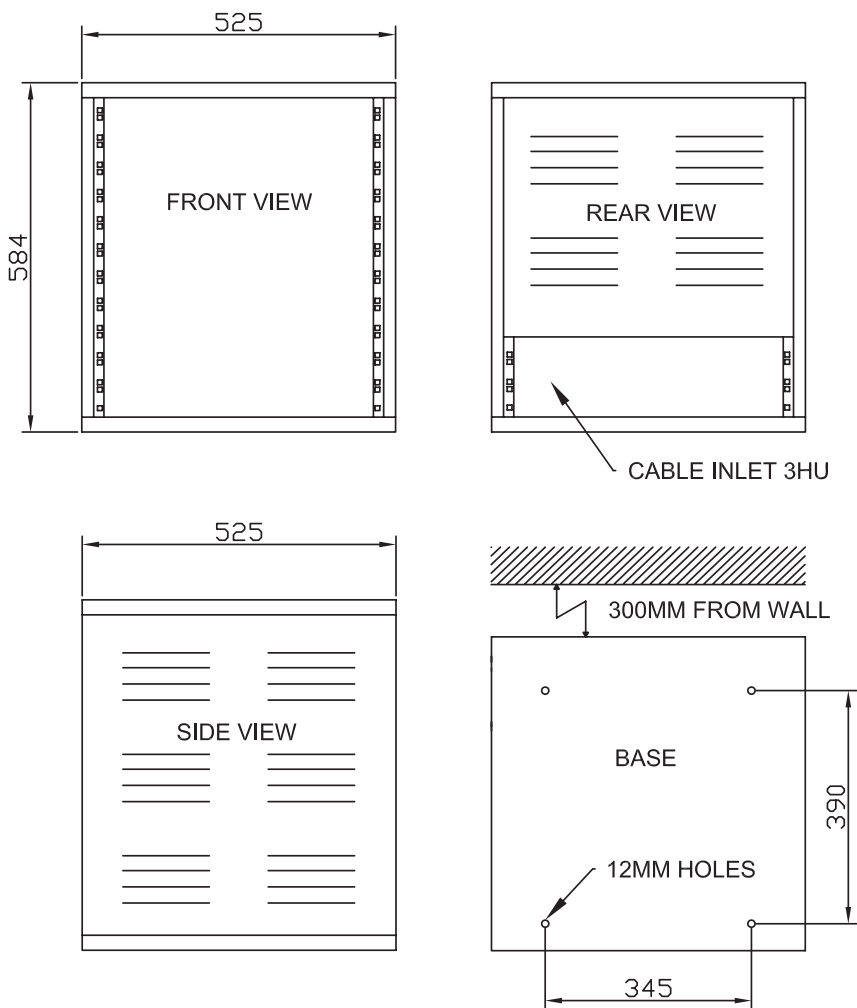
| | |
|-------------------|----------------------------|
| Rack size (WxHxD) | 525 x 584 x 525 (19" 12HU) |
| Material | Black painted steel |
| Mounting | Floor |



| ORDER NUMBER | DESCRIPTION | SHIP WEIGHT |
|--------------|--|-------------|
| SPA-240-V2 | PA Main Unit, 19" Rack, inclusive 240W Amplifier | 45.0 kg |

SPA-240-V2 MAIN UNIT

| | |
|---------------------|---|
| Voltage input | Mains 230 VAC & 24 VDC (110V AC on req.) |
| Connections | Plugable terminals for max. 2.5mm² cable |
| Cable requirements | Signal cable 0.75mm2 twisted outer screen |
| Amplifier | 1x VPA-240, details on separate datasheet |
| Output | 100V -240W |
| Operating tempaure | -20 - +55°C |
| Relative humidity | <95% |
| Safety | EN 60065 |
| Tested according | EN 60945 |
| Optional rack sizes | 19" 12,16, 20,24,30 and 40HU |



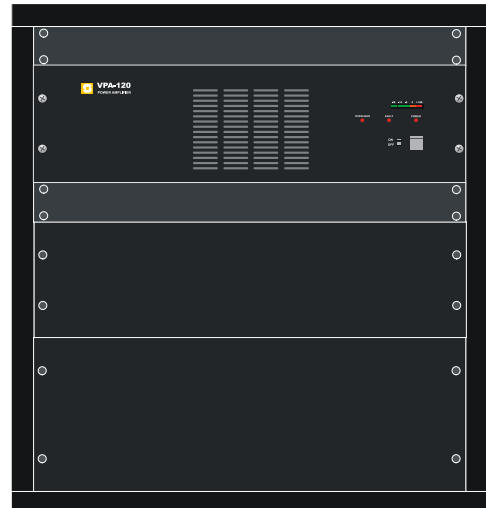
System Datasheet

Public Address & General Alarm System SPA-V2 Main unit SPA-240-V2



Feature

- Input & priorities for 3 microphone panels
- Input from talk-back system
- Input from entertainment system
- PABX Input with zone presets
- 6 zones relay output 100 V for speakers
- Input for 2 alarm panels
- 2x Fire alarm input, all and zone selection (fire crew)
- Alarm mute during PA message



Description

The SPA series public address and general alarm system combines quality and value. The SPA-V2 is an improved second generation system which in first generation version has been installed in thousands of ships around the world. The basic functionality module can support a single, non-redundant system and delivered by use of a 19" rack which contains main board, minimum one amplifier and optional functions.

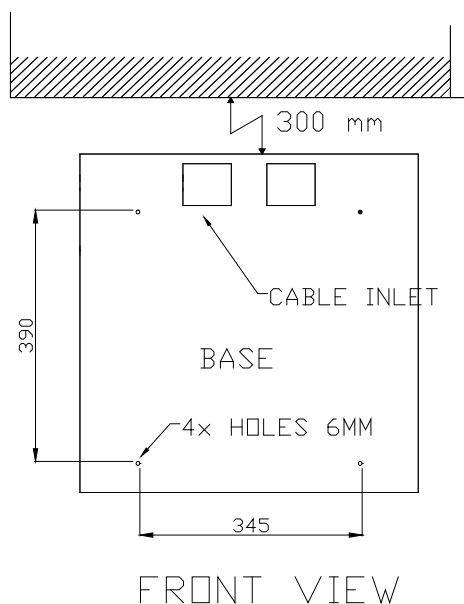
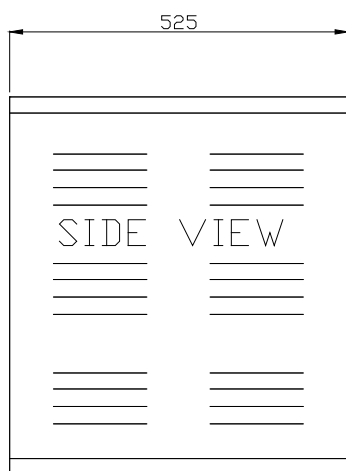
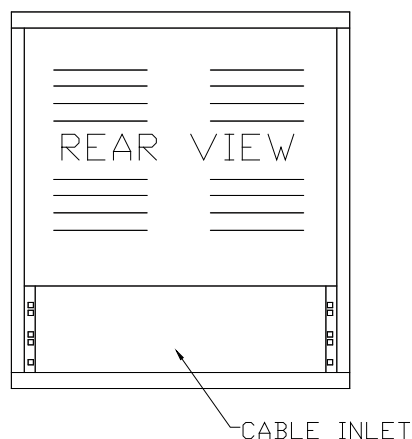
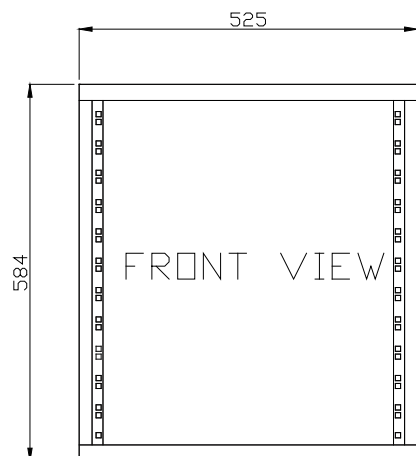
Optional functions are - in addition to a number of panels to operate the system dual function systems (redundancy), additional amplifiers and higher racks, chime generator, entertainment (4 way in 6 zones), CD-player and radio, alarm generators, GA relay outputs, telephone interface, auto switch between 230V AC and emergency UPS (24V), output for voice data recorder, and digital message recorder/recall for pre-recorded message output.

At delivery, the rack is equipped and internally wired according to customer specifications. The system is tested and passed according to EN60945.

Specification

| | |
|----------------------------|---|
| Rack size (WxHxD) | 525 x 584 x 525 (19" 12HU) |
| Material | Black painted steel |
| Mounting | Floor |
| Voltage input | Mains 230 VAC & 24 VDC (110V AC on req.) |
| Connections | Plugable terminals for max. 2.5mm cable |
| Cable requirement | Signal cable 0.75mm ² twisted outer screen |
| Amplifier | 1x VPA-240, details on separate datasheet |
| Output | 100V -240W |
| Operating temp. | -20 - +55°C |
| Relative humidity | <95% |
| Safety | EN 60065 |
| Tested according | EN 60945 |
| Optional rack sizes | 19" 12,16, 20,24,30 and 40HU |

Dimension



System units

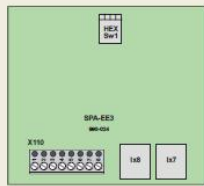
| Order Number | Description |
|--------------|------------------------------|
| SPA-240-V2 | PA Main unit, 19" rack, 240W |

Ship weight
45,5 Kg

SPA-EE3-V2

SINGLE ALARM GEN. W/3 ALARM TONES

- The module has a microprocessor that administrates the alarm tones and set-up the inputs and output
- A selector can set all required configuration of alarm tones
- The module has three start inputs and three outputs for relay or lamps
- Interconnections to main terminal board by RJ45 8pin plug
- Plugable screwterminals for external connections.



Standard settings:

1. Priority: general alarm: 7 short and 1 long tone, 1kHz
2. Priority: abandon ship alarm: Wobbling tone approx. 1 kHz
3. Priority: manual alarm: Continuous tone, 1 kHz

Accessories For SPA Systems

RACK EXPANSION

Product Number

SPA-EXPW

Product Name

RACK EXPANSION

Product Group

Accessories For SPA Systems



SPA-MUL-V2

SPA- ZONE CONTROL BOARD WITH 4WAY ENTERTAINMENT 6 ZONES

- Board for zone distribution when more than one amplifier are used
- Internal or external 24V override
- Configuration settings by jumpers.
- Interconnections to main terminal board by RJ45 8pin plug
- Plugable screwterminals for external connections.

Accessories For SPA Systems

MULTIPURPOSE POTENS. FREE RELAY

Product Number

SPA-REL-V2

Product Name

MULTIPURPOSE POTENS. FREE RELAY CONTACT -
FUNCTION TO BE SPECIFIED

Product Group

Accessories For SPA Systems

POWER AMPLIFIER

120W



when communication is critical

FEATURES

- 120 W power amplifier in a 19" rack cabinet
- 100 V and 8 ohm output
- Dual inputs with priority switching
- Temperature controlled, forced back-to-front ventilation
- 115/230 VAC mains and 24 VDC battery backup
- Pilot tone line monitoring
- 24 VDC / 800 mA power output for external equipment
- Chime signal with on/off switch



DESCRIPTION

The VPA power amplifier is specially designed for marine use. The amplifier has to be installed in 19" rack and occupies 3 HU with addition of a 1 HU ventilation grid.

The amplifier is protected against overload and short circuits. A temperature controlled fan ensure high reliability at high output level and low ventilation noise at lower output levels.

The amplifier operates on 115 or 230 VAC mains with option for automatic switching to 24 VDC battery backup in case of power failure. The amplifier is supervised by a pilot tone to continuously check the signal path, and a fault will be reported by an indicator in front combined with a closing contact for external fault warning.

The amplifier has a built in selectable chime generator activated by a priority switch to give an alert signal in front of a message.

SPECIFICATIONS

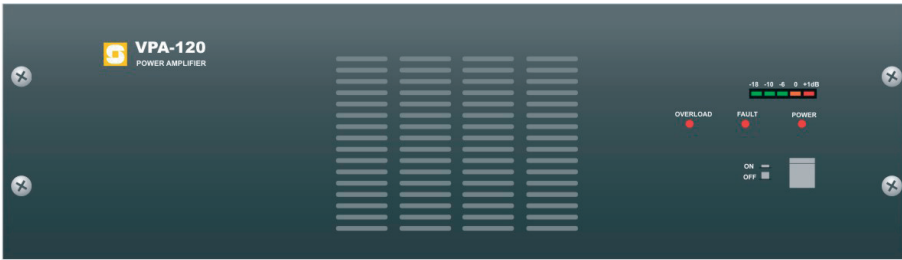
| | |
|-------------------------|---|
| Colour | Black |
| Dimensions (W x H x D) | 482 x 133 x 420 mm |
| Weight | 18.2 kg |
| Power supply | 115/230 VAC $\pm 10\%$, 50/60 Hz, 390 W, 24 VDC $\pm 25\%$ - max 7,5 A |
| Operating temp. | -15 – +55°C |
| Relative humidity | < 95% |
| Output | 100 V, 8 ohm - 120 W |
| Frequency response | 50 Hz – 20 kHz ± 3 dB |
| Distortion | < 1% at 1 kHz |

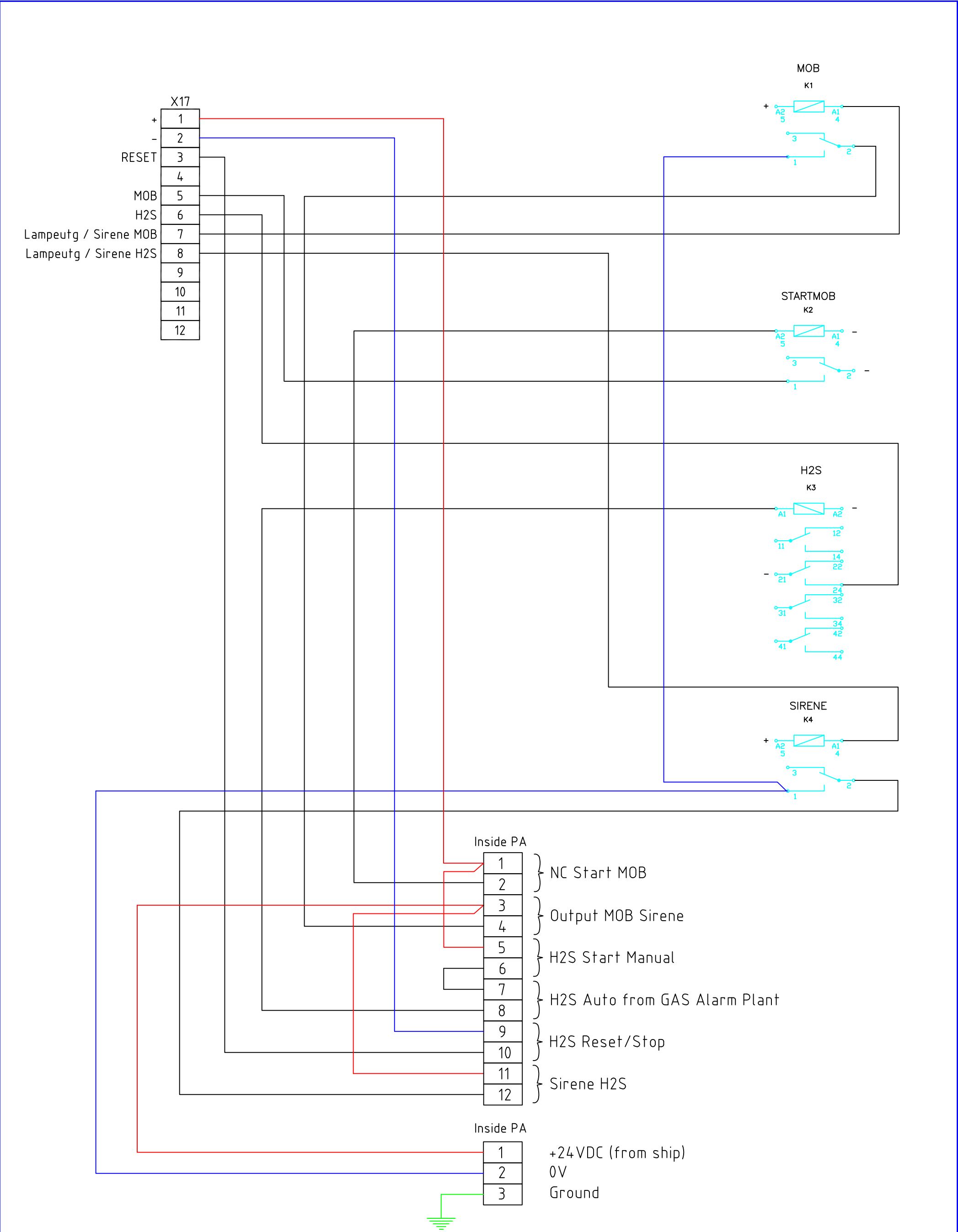
| ORDER NUMBER | DESCRIPTION | SHIP WEIGHT |
|--------------|--|-------------|
| VPA-120 | Power amplifier 120W / 100V 220 VAC / 24 VDC | 18.2 kg |

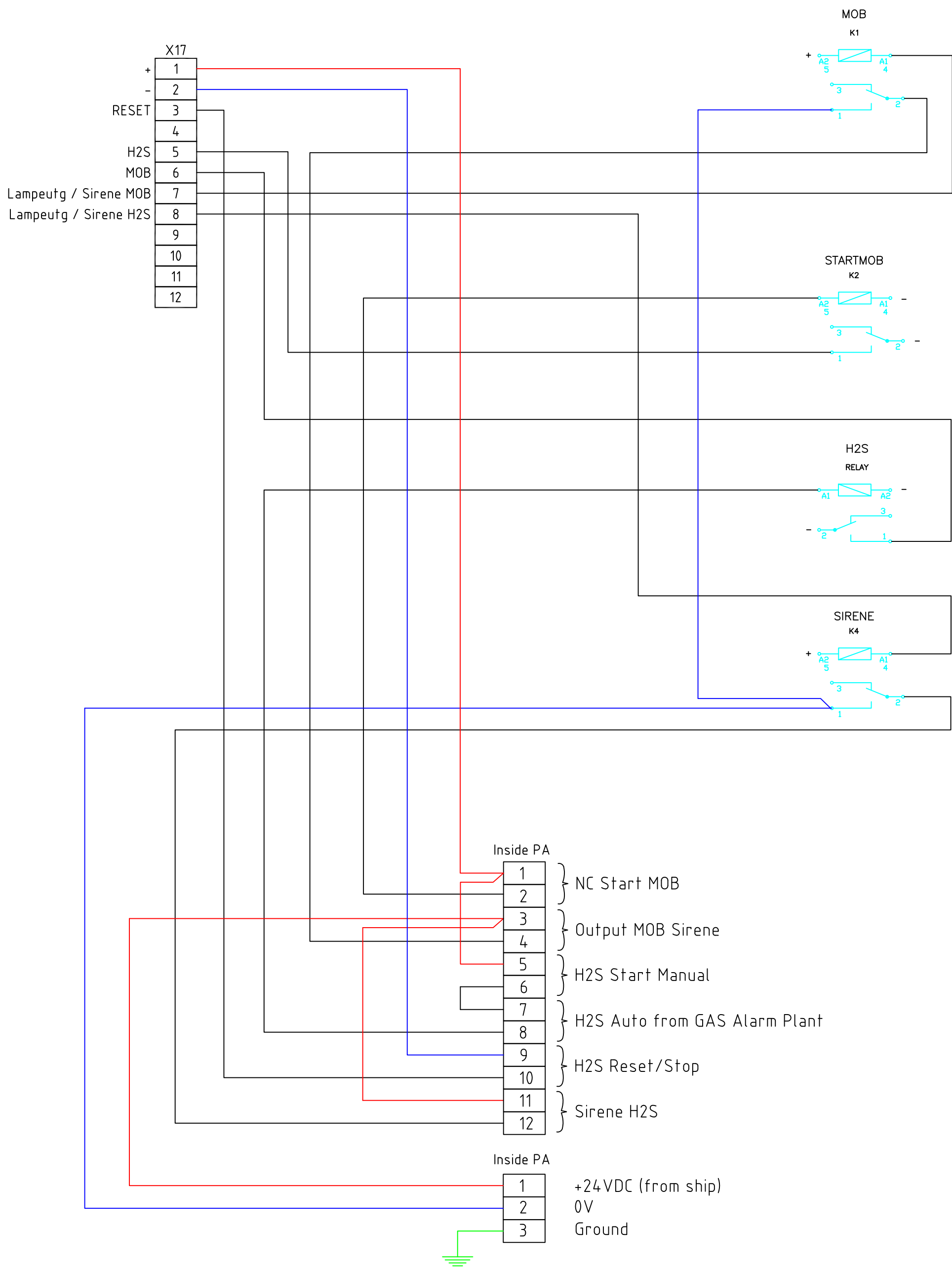
POWER AMPLIFIER 120W

| | |
|---------------------|---|
| Line input | 1 V ±50% in 47 kOhm, balanced |
| Connector | 3-pin XLR |
| Safety | EN 60065 |
| Tested according to | EN 60945, IACS E10, IEC 60533 |
| Connections | Screw terminals |
| LED indicators | VU-meter, Mains power on, Overload, Fault warning |
| Controls | Level controls for Call and BGM inputs, Master volume, Tone adjustment, Chime on/off and volume adjustment, Monitor volume |

OVERVIEW







www.vingtor.com

VINGTOR SPA-240-V2
Internal wiring alarms
Hull: 740
Yard: Braila
Customer: STX Norway Electro AS

| | | | |
|-----------------------------|--------------------|-----------------------|-----------------------|
| Prepared by TF | Date 2010.04.13 | Project no: 209479 | Revision by TH |
| Approved by - | Date - | Sheet 1/1 | Rev.date 2010.05.7 |
| Dwg.no. / File 209479702 | | | Rev. no. 04 |



DET NORSKE VERITAS TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-10738

This Certificate consists of 4 pages

This is to certify that the

Public Address and General Alarm System

848.20

with type designation(s)

SPA-V2

Manufactured by

Zenitel Marine

HORTEN, Norway

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

IMO Resolution A. 830 (19), Code on Alarms and Indicators, 1995

IMO MSC Circ 808

LSA Code VII 7.2

General requirements for electromagnetic compatibility for all electrical and electronic ship's equipment (IMO Res. A.813(19))

Environmental Application:

"Protected" equipment based on IEC60945 edition 4.

Place and date
Høvik, 2008-05-08
for Det Norske Veritas AS

This Certificate is valid until
2012-06-30

Olaf Jansen
Head of Section

Local Office
DNV Sandefjord

Ahmad Naddaf
Surveyor

Holder of certificate

Zenitel Norway AS Avd. Marine

HORTEN, Norway

Product description

Different Variants:

The SPA-V2 system can be configured in different ways. The type approval covers the following variants of the system:

Only PA system: SPA2-xx-P

Notes:

- xx defines the height of the cabinet in HU (Height Units) which could be 12, 16, 20 and 24 for this variant.
- The system contains minimum one approved amplifier.

Integrated PA/GA system for standard vessels: SPA2-xx-GD

Notes:

- xx defines the height of the cabinet in HU (Height Units) which could be 16, 20 and 24 for this variant.
- The system contains minimum two approved amplifiers.

Integrated PA/GA system for passenger vessels: SPA2-xx-GP

Notes:

- xx defines the height of the cabinet in HU (Height Units) which could be 12, 16, 20 and 24 for this variant.
- The system contains minimum two approved amplifiers divided in two separate racks.

Approved Modules and subunits:

| Module/Subunit | Type |
|-----------------------|---|
| Amplifiers | <ul style="list-style-type: none">- Zenitel: VPA-120 (120W), VPA-240 (240W), VPA-400 (400W)- Paso: AW-8121 (120W), AW-8241 (240W), P-8501 (500W) |

| | |
|---|--|
| Microphone panels | SPA-M1S-V2, SPA-M1S-D, SPA-M1H-V2, SPA-M1H-D, |
| Alarm panels | SPA-M6S, SPA-M6S-D, SPA-M6H, SPA-M6H-D |
| Combined alarm and microphone panels | SPA-AC6, SPA-AC6-D |
| Volume Controls (not be used on the Bridge) | SPA-W1-V2, SPA-W1-D, SPA-W1AR-V2, SPA-W1AR-D, SPA-W6A4 and SPA-W6A4-D |
| Function boards | VM5-R, VM15-R, VM50-R, VM15-RD and VM50-RD |
| Power Supply Unit Racks: | SPA-TERM-V2, SPA-CHIME-V2, SPA-EMS-V2, SPA-FAIL, SPA-MUL-V2, SPA-EE3-V2, SPA-EE3D-V2, SPA-AL-REL-V2 AEH80US24 (XP plc) Paso 58xx-D, in which the xx means the height in HU- units. |

Application/Limitation

- 1- Drawings of the system, specifying the number and type of approved amplifiers installed in the system shall be available and attached to the delivered racks.
- 2- Volume Controls should not be used on the Bridge as the EMC characteristics of these units are not tested. The units are passive modules and hence they can be installed outside Bridge without EMC testing.
- 3- The maximum height of units shall be 24 HU.
- 4- When used as PA/GA, the input to the system for Talk Back shall not be used since this have the highest priority.
- 5- Any PA panel which is not used for emergency PA activation shall have a lower priority than GA.

Type Approval documentation

Tests carried out

- IEC60945 Edition 4: 2002.
- Functional tests for compliance with DNV RULES FOR CLASSIFICATION OF SHIPS Pt. 3 Ch. 3 Sec. 10 JANUARY 2008.
- Functional tests for compliance with LSA Code 7.2.1 and 7.2.2
- Functional tests for compliance with PA and GA requirements in IMO A.830 (19).
- Functional tests for compliance with IMO MSC Circ. 808.
- Functional tests for compliance with PA and GA requirements in SOLAS Consolidated Edition 2004.

Marking of product

The system shall be marked with:

- Manufacturers Name: Zenitel Norway AS,
- Type designation: SPA-V2,
- Serial Number of the product, and
- Variant number as specified under product description.

Certificate retention survey

A retention survey is to be carried out upon renewal of this certificate.

The scope of the retention/renewal survey is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

END OF CERTIFICATE

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.