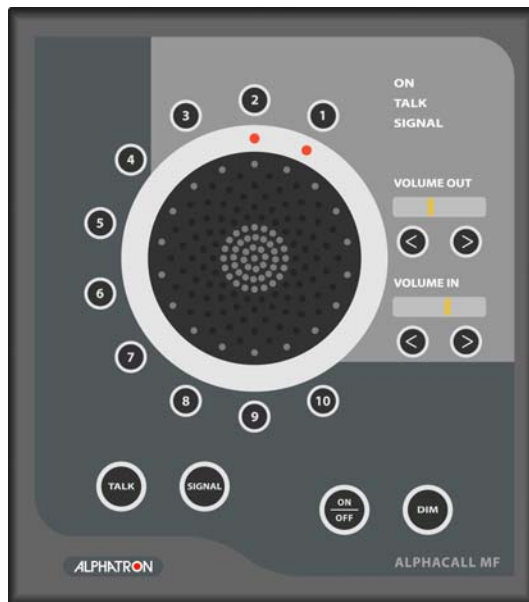


ALPHACALL MF

Installation & operations manual



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Table of contents:

1	VERSION CONTROL	4
2	INTRODUCTION.....	5
2.1	Options.....	5
3	INSTALLATION.....	6
3.1	Materials supplied	6
3.2	Installing the ALPHACALL MF	7
3.2.1	Flush mounting the ALPHACALL MF.....	7
3.2.2	ALPHACALL MF surface mounted	9
3.3	Connecting the ALPHACALL MF	10
3.3.1	Terminating the cables.....	11
3.3.2	Connecting the power supply.....	12
3.3.3	Connecting the microphone and the foot switch	12
3.3.4	Connecting the substations.....	13
3.3.5	Connecting the external speaker	13
3.3.6	Connecting the external signalling device.....	14
4	OPERATING THE ALPHACALL MF	15
4.1	Buttons.....	15
4.1.1	Switching the ALPHACALL MF on/off.....	15
4.1.2	Dimming the ALPHACALL MF	15
4.1.3	Setting the ALPHACALL MF outgoing and incoming volume	15
4.1.4	(De)selecting the substations.....	15
4.1.5	Answering a call from one of the substations.....	16
4.1.6	Giving a call signal.....	16
4.1.7	Making a call.....	16
4.1.8	Calling several substations simultaneously.....	16
4.1.9	Setting the colour of the backlight.....	16
5	TROUBLESHOOTING	17
6	TECHNICAL SPECIFICATIONS	17
7	TECHNICAL SUPPORT	17
8	ALPHATRON Dealers (Authorized)	18
9	Appendix 1: Mounting frame	19
10	Appendix 2: Instrument dimensions.....	20
	Appendix 3: Complete connection diagram.....	21
11	NOTES:	22



Important!

Do not make changes to the instrument in whatever way without the written approval of ALPHATRON MARINE, otherwise the guarantee will lapse.

Please read the manual thoroughly before installing and/or using the instrument.

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1 VERSION CONTROL

Revision number	Description	Date
V1.0	document drawn up	03/06/08



2 INTRODUCTION

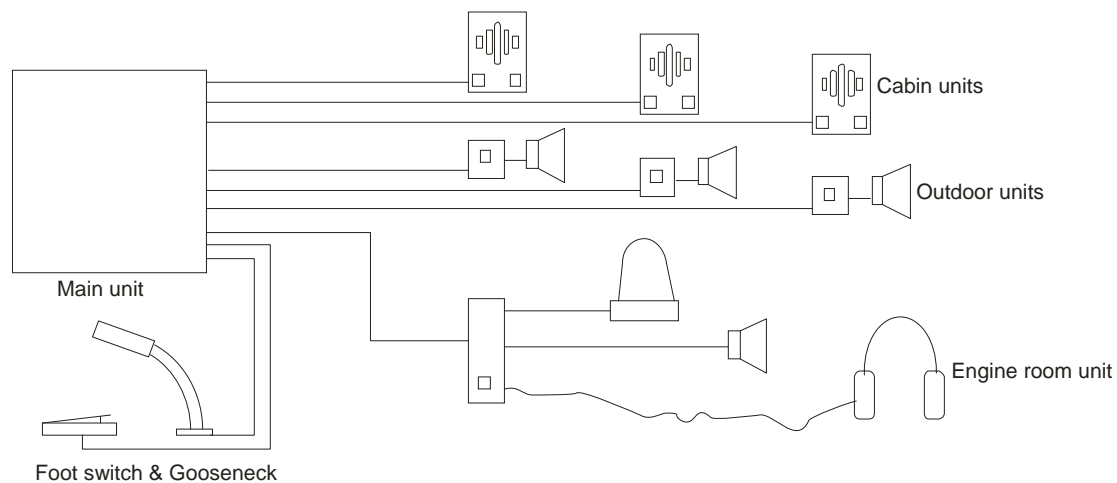
The ALPHACALL MF is one of the products from the ALPHALINE MF product line. Because the ALPHACALL MF allows the connection of up to 10 substations, it can be used on many different types of ship.

When designing the ALPHACALL MF, careful attention was paid to the production of sound that is as crisp and clear as possible. However, this will depend on the location of the substations and the location of the gooseneck microphone if there is a lot of ambient noise near the main unit.

The ALPHACALL MF intercom consists of a main unit, normally installed in the wheel house, to which substations are connected that can be located outside, inside, in the engine room, etc. A gooseneck microphone equipped with a foot switch is connected to the ALPHACALL MF.

The ALPHACALL MF works as a two-way command and intercom system. Communication occurs between the ALPHACALL MF operating unit and the substations that are connected to it, therefore not between the substations.

Substations that do not have the call facility are connected to the ALPHACALL MF using three-core cables, substations that do have the call option are connected using four-core cables. Meaning that in general it is easy to replace an existing intercom. The substations that have an additional signal unit need a six-core cable.



2.1 Options

Optionally, the following peripheral equipment is available:

- Gooseneck microphone
- Foot switch
- External loudspeaker for the main unit
- Substation for indoor use in the living accommodation, including call and talk button
- Substation for use in the engine room, with headphone connection
- Loudspeaker
- Substation with call button for location outdoors, in combination with loudspeaker
- Engine room telephone
- Bridge operation
- Amplifier
- Substation for mobile loudspeaker
- Connecting box for headphones connection
- Substation for use in the engine room, with headphone connection, external speaker and on/off switch



3 INSTALLATION

3.1 Materials supplied

The ALPHACALL MF hardware consists of the following parts:

- ❑ Mounting frame
- ❑ ALPHACALL MF main unit
- ❑ 10x Substation connector
- ❑ 1x Mic, PTT, speaker connector
- ❑ 1x External call connector
- ❑ 1x Power connector



Figure 1: The complete hardware of the ALPHACALL MF



3.2 Installing the ALPHACALL MF

The ALPHACALL MF can be installed in a number of different ways. The instrument can be flush mounted and there is also a surface mounting option.

3.2.1 Flush mounting the ALPHACALL MF

De ALPHACALL MF can be installed horizontally, vertically as well as at an angle. The possible positions are shown in Figure 2.

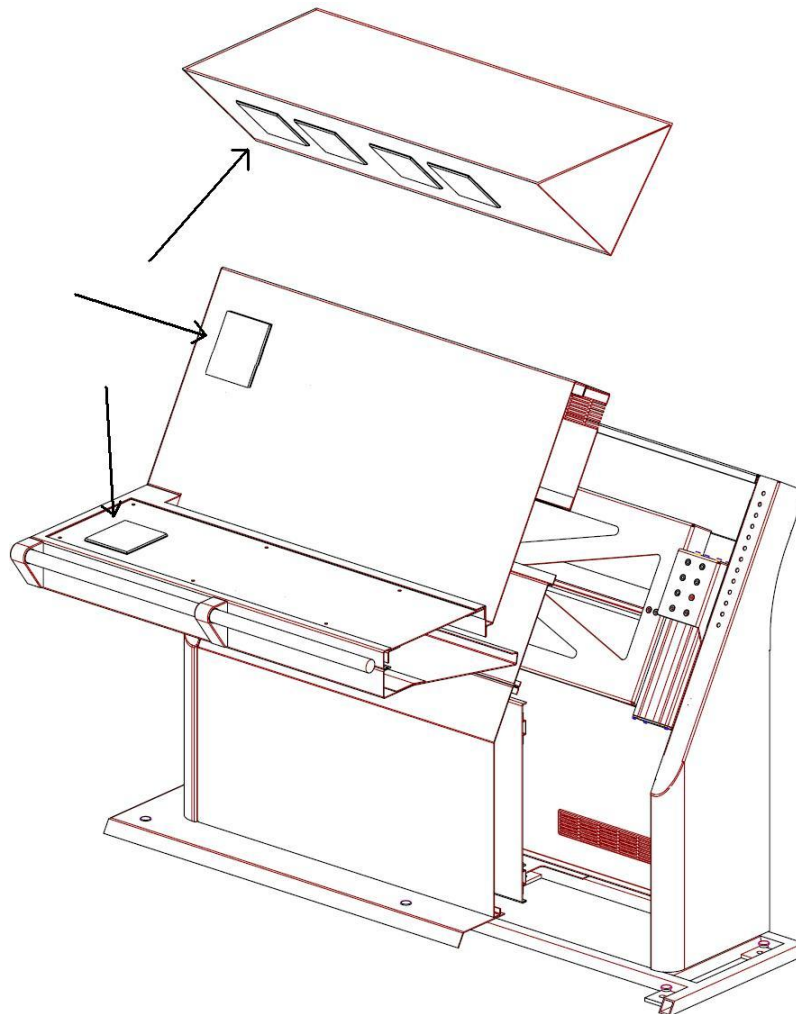


Figure 2: Possible flush mounting positions

To be able to install the ALPHACALL MF, first the mounting frame must be fitted. To do so, an opening must be made in the console or overhead console that has the dimensions of the mounting frame. The dimensions of the mounting frame are given in the appendix of this manual.

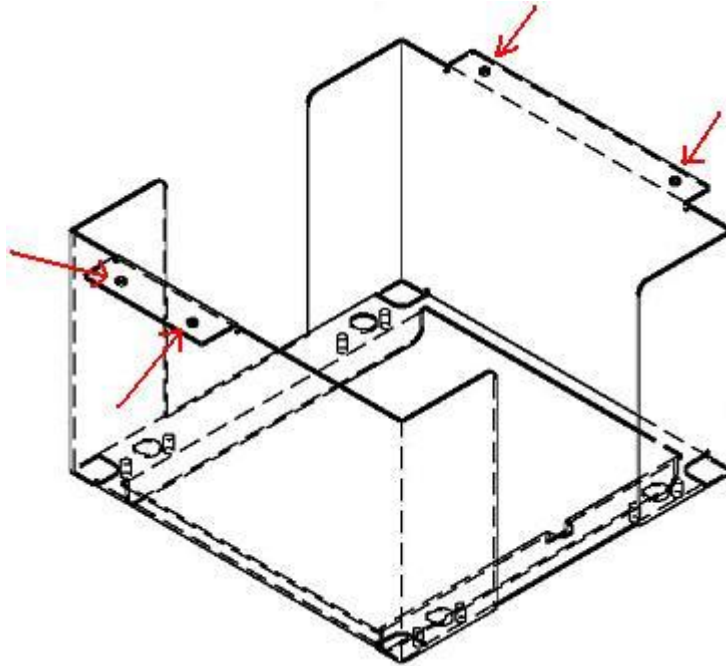


Figure 3: Mounting frame

When the opening for the mounting frame has been made, the mounting frame can be installed in it. The mounting frame must be attached using four screws through the intended holes. These holes are indicated with arrows in Figure 3. After the mounting frame has been installed, the ALPHACALL MF can be pressed into it. The instrument will be kept in position by a click/spring system.



3.2.2 ALPHACALL MF surface mounted

For surface mounting the ALPHACALL MF, an additional DIN 144 housing is required. This housing is not supplied as standard.

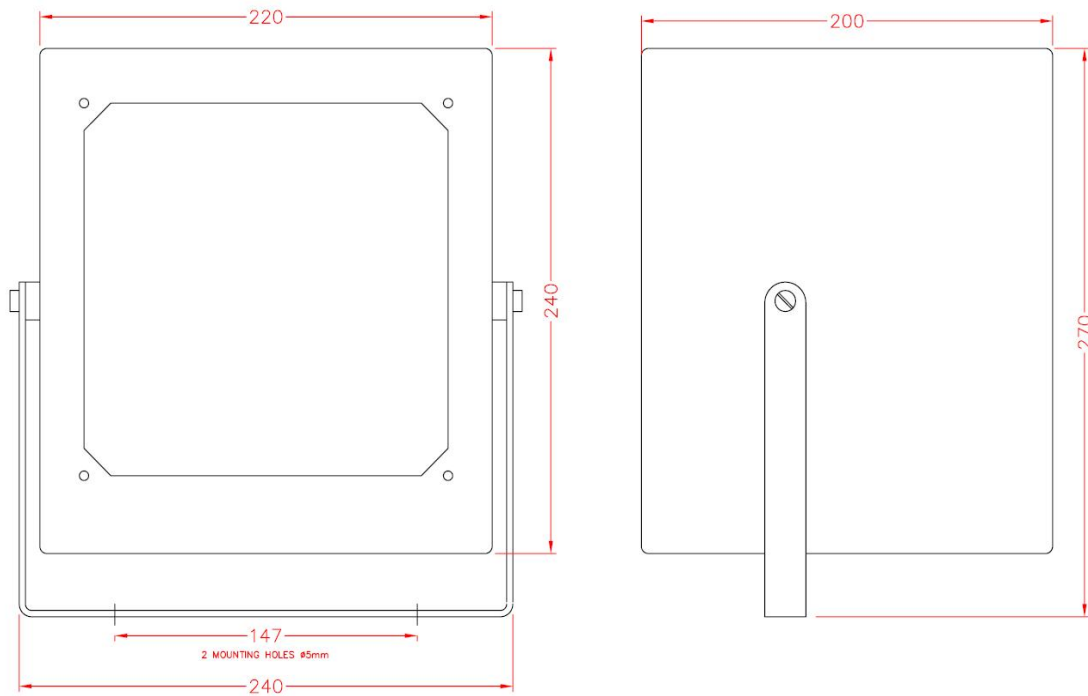


Figure 4: Surface mounted housing MF line



3.3 Connecting the ALPHACALL MF

The ALPHACALL MF has in total 13 connectors at the back of the instrument. The various connectors and their functions are given below.

- Connector 1 = power supply (24VDC)
- Connector 2 = Ext. speaker, microphone and foot switch
- Connector 3 = External call indication
- Connector 4-13 = Substations 1 through 10

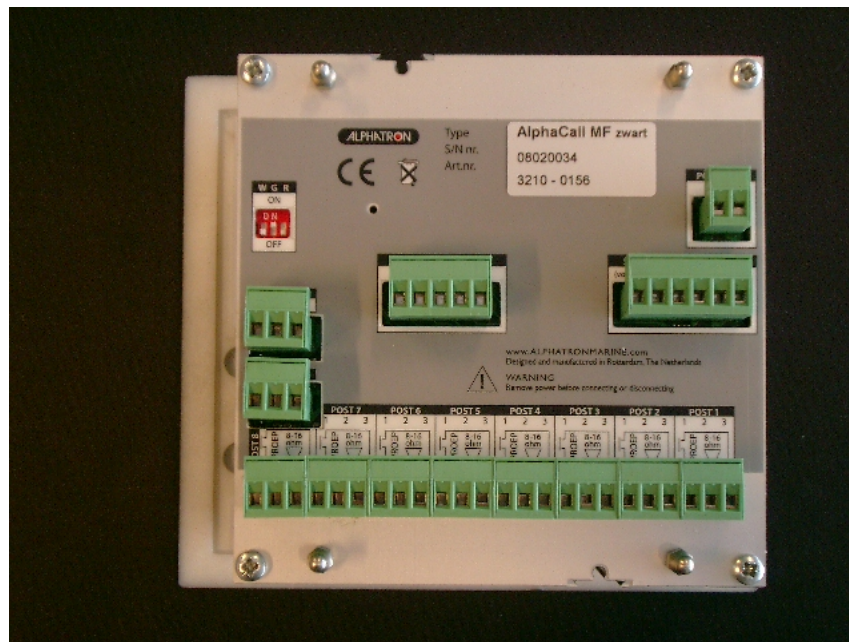


Figure 5: ALPHACALL MF connectors



3.3.1 Terminating the cables

The ALPHACALL MF must be connected in accordance with the instructions in the Appendix.

When designing the ALPHACALL MF, careful attention has been given to the sound quality. To guarantee this quality in the installed system, here are some recommendations regarding the grounding of the system:

- ❑ Prevent ground loops, make one central ground point.
- ❑ The main unit must be grounded.
- ❑ The shielding of the power supply cable must be correctly grounded.
- ❑ In addition, connect unused cores of the cables to ground.
- ❑ The shielding of the cables to the substations must be correctly grounded.
- ❑ Ensure that the cable of the gooseneck is separated from other cables, to prevent cross-talk and/or acoustic feedback. Note that the ground of the microphone is not connected to the ship's mass, but to the minus connection of the microphone input.

With respect to the cables to use, the following:

- ❑ For the majority of substations, a three-core shielded cable is sufficient.
- ❑ Preferably use twisted pair shielded cables for the substations.
- ❑ For substations that have a provision for an additional signal indication, at least a five-core shielded cable must be used. See the Appendix for an overview of the substations.
- ❑ Install the cable connections between the devices in accordance with the Appendix.
- ❑ If not stated differently, shielded cables with flexible cores must be used with a minimum core diameter of 0.5mm².
- ❑ The cabling must not run for long distances next to UTP or antenna cables that carry high currents.

For the instrument to operate correctly, it is essential that all of the cables are terminated correctly.



3.3.2 Connecting the power supply

The ALPHACALL MF must be connected to a 22VDC to 32VDC power supply that can supply at least 2 ampere. Connector 1 in Figure 6 is the power connector. The polarity of the power connectors is shown on the sticker on the back of the instrument. The maximum core thickness that can be connected is 2.5mm². The complete connection diagram of the ALPHACALL MF is included in the Appendix of this manual.

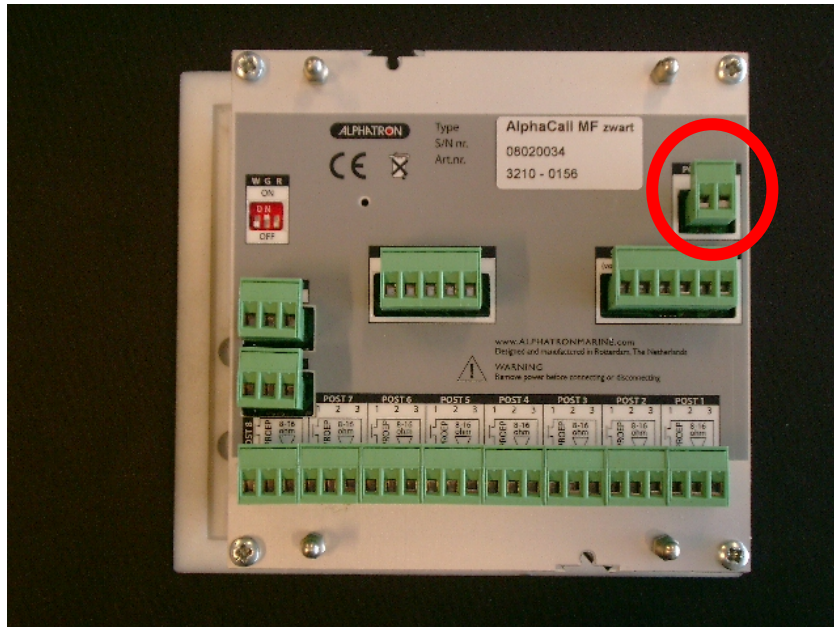


Figure 6: Connecting the power supply

3.3.3 Connecting the microphone and the foot switch

The ALPHACALL MF has no internal microphone and must therefore be connected to an external microphone (gooseneck). To prevent interference, the shielding of the microphone must be connected to the - pole of the microphone input. The talk button (foot switch) connection is located next to the microphone connection. The complete connection diagram of the ALPHACALL MF is included in the Appendix of this manual.

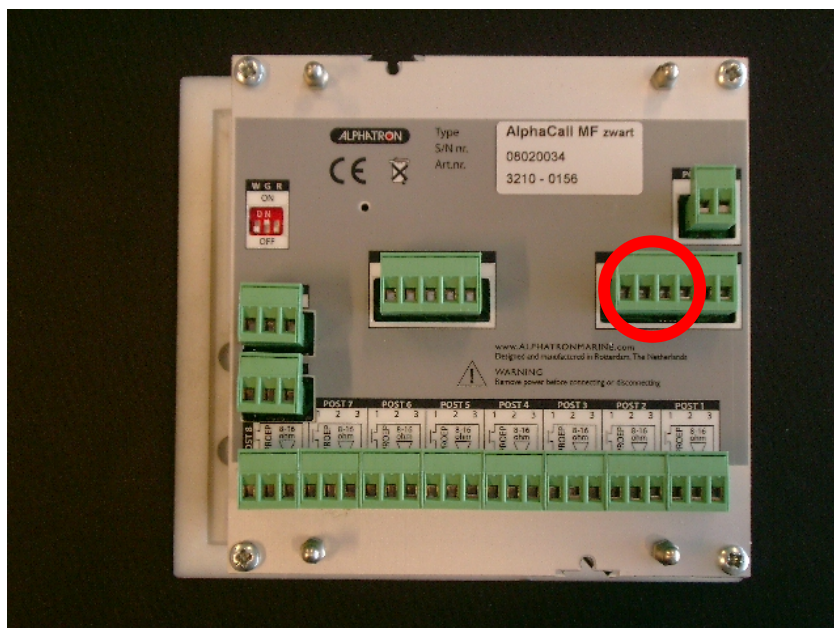


Figure 7: Connecting the microphone and the foot switch



3.3.4 Connecting the substations

Up to 10 substations can be connected to the ALPHACALL MF. The outputs for substations 7 through 10 have the option of generating an external signal at the substation, for instance, a flashing light, see the relevant section of this document. The intercom must be connected to the substation using a three-core cable. One of the cores is the call signal from the substation to the intercom, another core is the audio signal and the last core is common. The complete connection diagram of the ALPHACALL MF is included in the Appendix of this manual.

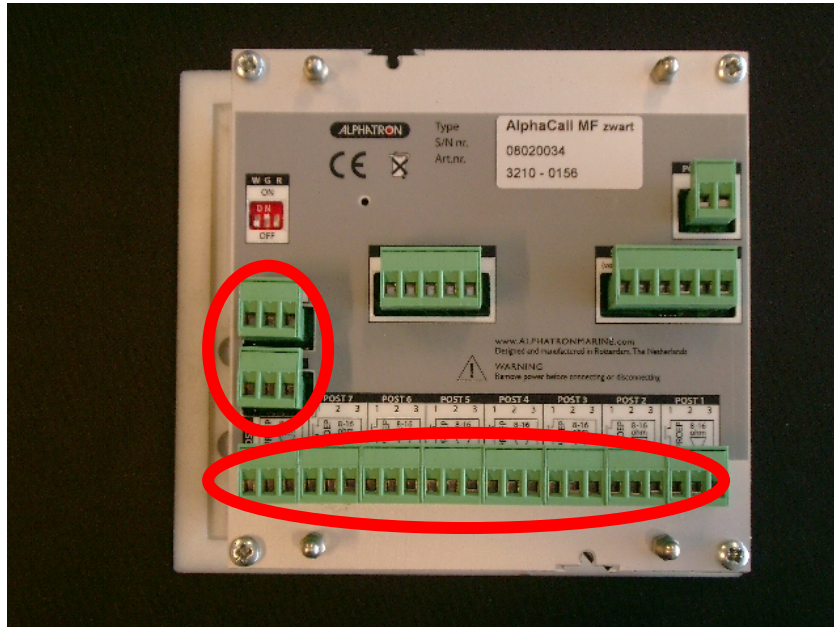


Figure 8: Connecting the substations

3.3.5 Connecting the external speaker

The ALPHACALL MF has a connection for an external speaker, this is located next to the microphone connection. The complete connection diagram of the ALPHACALL MF is included in the Appendix of this manual.

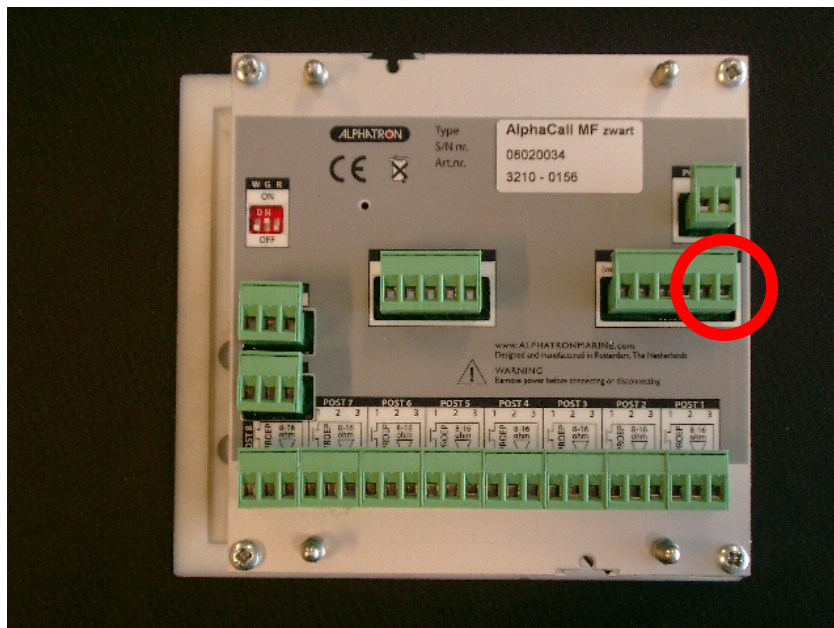


Figure 9: Connecting the external speaker



3.3.6 Connecting the external signalling device

The outputs for the substations 7 through 10 have the option of generating an external signal at the substation for instance by means of a flashing light. The output signal of these connections is 12V and max. 10mA. The complete connection diagram of the ALPHACALL MF is included in the Appendix of this manual.

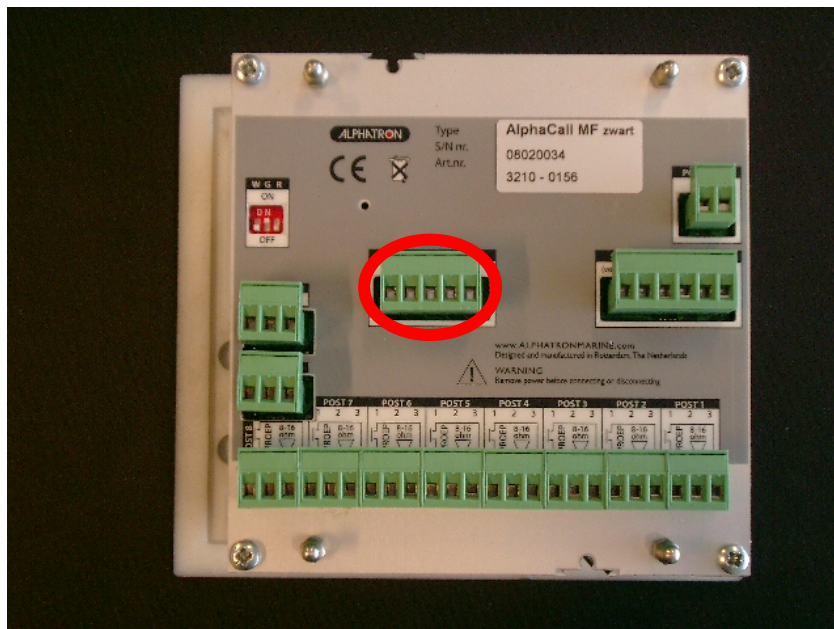


Figure 6: Connecting the external signalling device



4 OPERATING THE ALPHACALL MF

This Chapter explains how to operate the ALPHACALL MF.

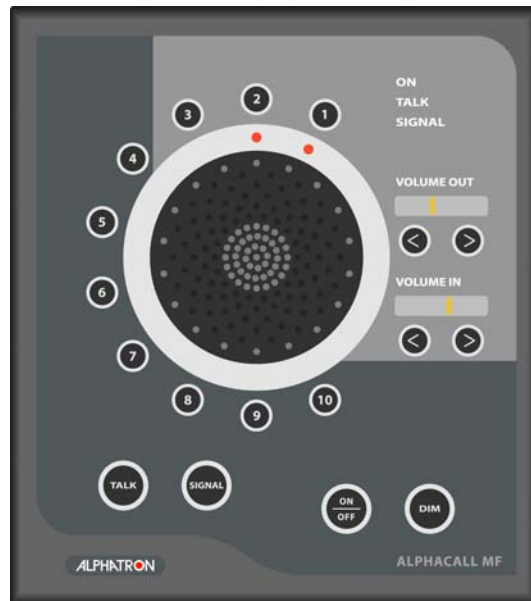


Figure 7: Operating the ALPHACALL MF

4.1 Buttons

The instrument is operated using buttons on its front.

4.1.1 Switching the ALPHACALL MF on/off

To switch on the ALPHACALL MF, press the 'on/off' button briefly. The instrument will immediately switch on. To switch off the instrument, press and hold the 'on/off' button somewhat longer.

4.1.2 Dimming the ALPHACALL MF

To change the backlight of the ALPHACALL MF, the 'dim' button must be pressed briefly and repeatedly. The lighting will change in a cycle from minimum to maximum.

4.1.3 Setting the ALPHACALL MF outgoing and incoming volume

Use the '<' and '>' buttons to separately adjust the outgoing and incoming volume of the intercom.

4.1.4 (De)selecting the substations

Press one of the buttons 1 through 10 briefly to select a substation, the indicator for this substation will turn green. As long as the indicator is green, a conversation can be held with this substation. Press the button concerned somewhat longer to deselect the substation.



4.1.5 Answering a call from one of the substations

If a call is made from one of the substations, the indicator of the substation concerned will turn red. Select the substation by briefly pressing the button (1 through 10) that corresponds to substation, the indicator for this substation will turn green. As long as the indicator is green, a conversation can be held with this substation. Press the button concerned somewhat longer to deselect the substation.

4.1.6 Giving a call signal

First select one of the substations, its indicator will turn green. Then press the 'signal' button to generate an audible signal.

4.1.7 Making a call

First select one of the substations, its indicator will turn green. Press the 'talk' button to talk to the substation, when the 'talk' button is not pressed, the intercom is in listening mode. Note that a private function is built in to certain substations, as a result the 'talk' button at the station concerned must be kept pressed to be able to talk using the intercom.

4.1.8 Calling several substations simultaneously

If several substations must be addressed simultaneously, they must be selected. The indicators of the selected substations will turn green.

4.1.9 Setting the colour of the backlight

On the back of the instrument, there are three dip switches that can be used to set the colour of the backlight of the buttons. The text above the switches corresponds to the following colours: W=white, G=green and R=red.

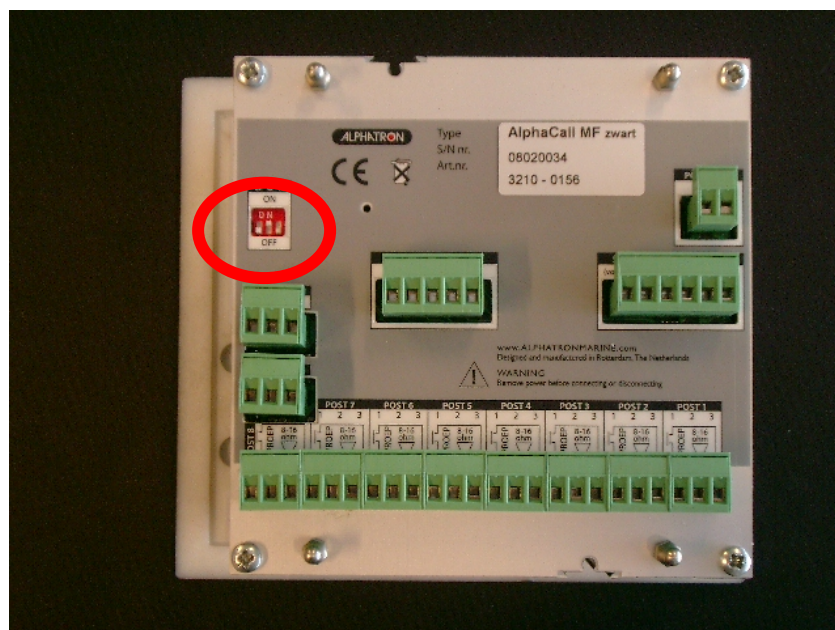


Figure 8: Setting the backlight colour



5 TROUBLESHOOTING

6 TECHNICAL SPECIFICATIONS

Electrical:

Parameter	Value	Comments
Operating voltage	22-30 Volts	DC voltage
Power consumption	30mA turned off Max. 2A turned on	
Reverse battery protection	Yes	
Max number of substations	10	
Substations with ext. signal	4 (substation 1-4), 12V max 10mA	
Built-in speaker	Yes	
External speaker	Yes, optional (8Ω/4-15W)	
Frequency range	Better then 200-6000Hz(-3dB)	
Output power	15W, max. 10W per line	
EMC	Yes	
EMC approved	IEC60945	

Mechanical:

Parameter	Value	Comments
Size	161x181x123mm	
Weight	1.5 Kg	
IP	IP22	Front side

Environmental:

Parameter	Value	Comments
Operating temperature	0°C to +50°C	
Storage temperature	-10°C to +50°C	

7 TECHNICAL SUPPORT

If you require technical support for this ALPHACALL MF, please contact:

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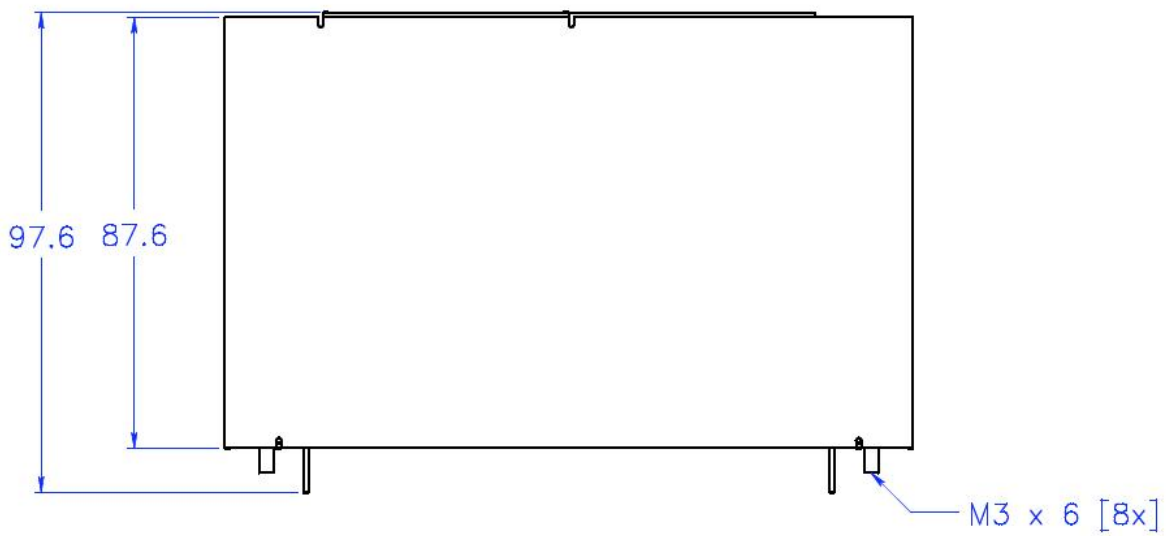
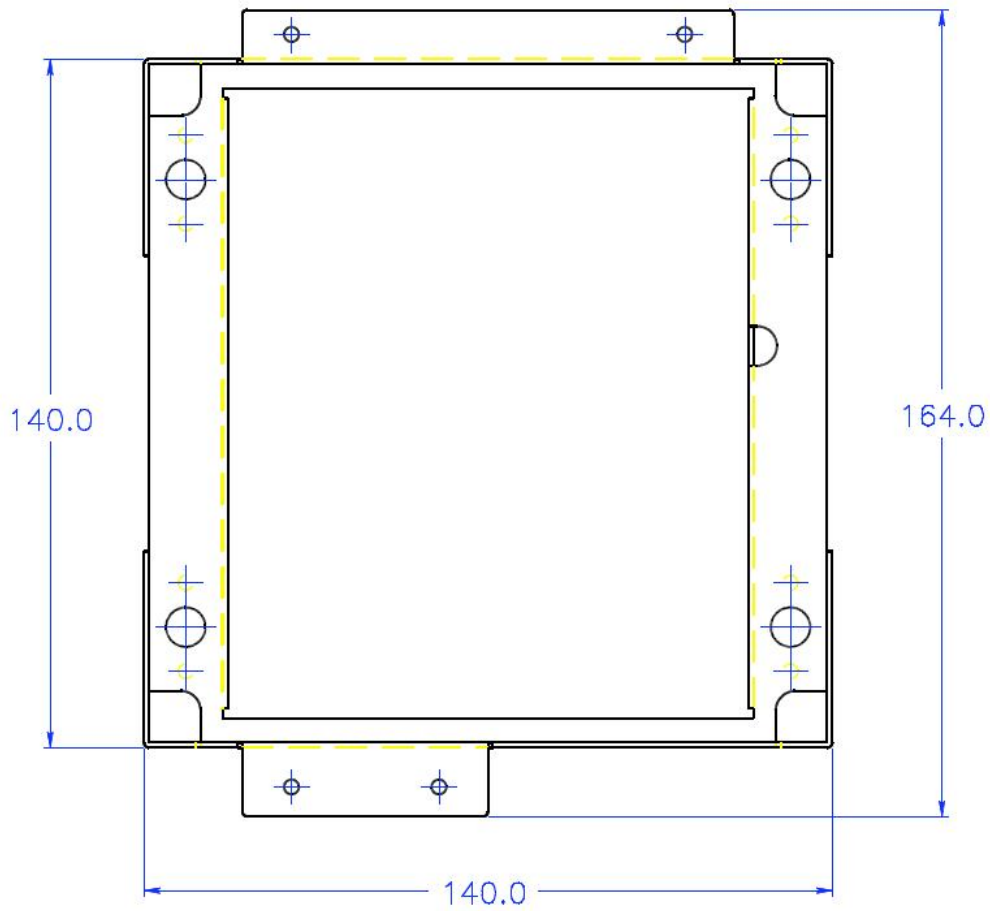
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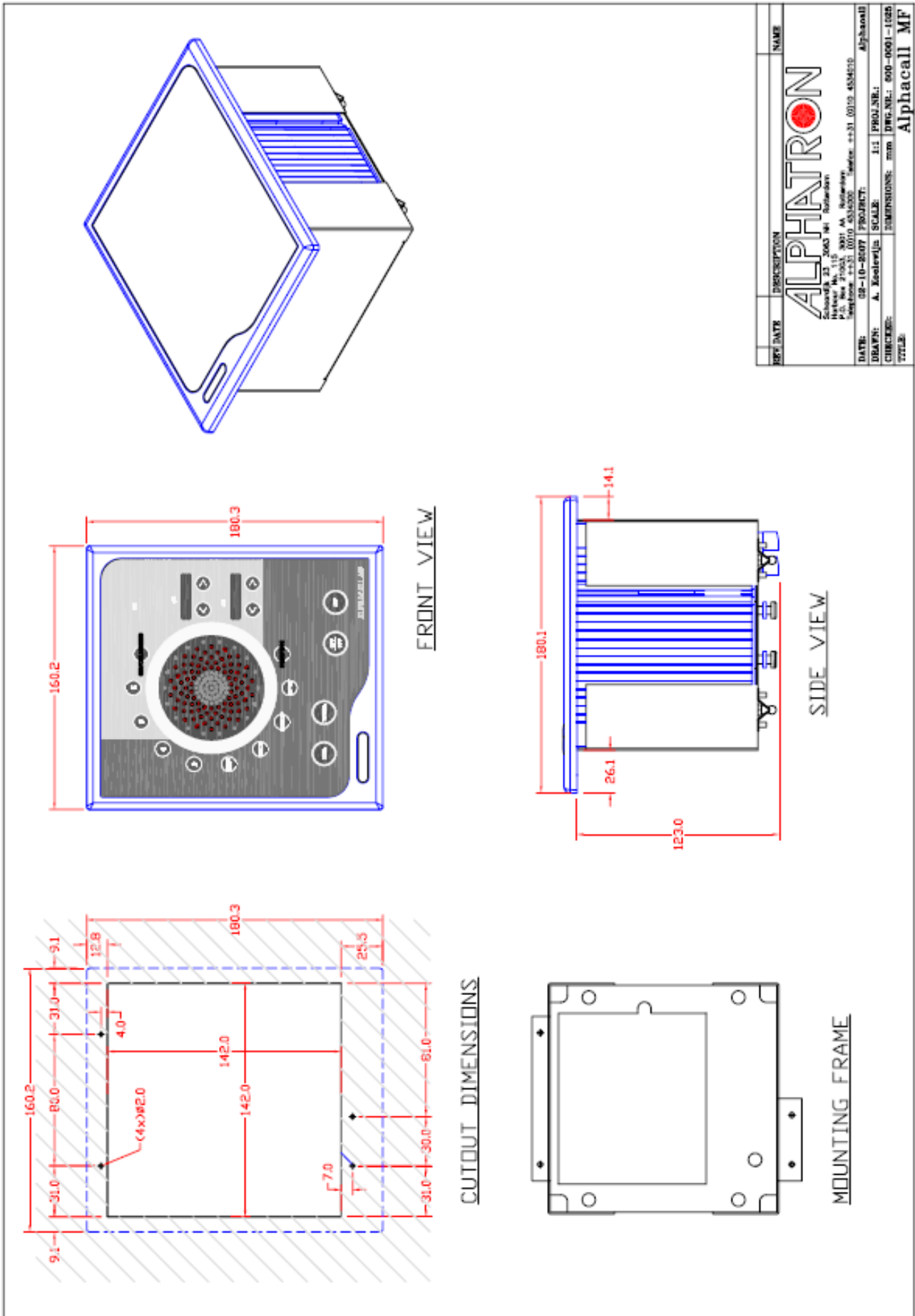


9 Appendix 1: Mounting frame





10 Appendix 2: Instrument dimensions





Appendix 3: Complete connection diagram

