

# Sound Reception System

*An acoustical electronic navigational system (MSR-9200A)  
For totally enclosed bridge space.*



## - Sound Reception System (MSR-9200A)

This sound reception system is acoustic electronic navigational aids to enable the officer on the watch to hear outside sound signals at totally enclosed bridge in order to perform the look-out function as required in the International Regulations for Preventing Collisions at Sea, 1972 and SOLAS 2002(resolution A. 694(17)) revisions. Thus, this system receives the sound signals in all directions in the audio frequency 70Hz~820Hz and re-produces these incoming signals electrically inside wheel house.

The four microphones operate in pair depending of the approximate direction of the received sound signal by these combinations. The value for detection of sound signal is 75dBA.

The microphone active value of sound level for detecting direction is more than 0.07mV between forward and after or port and starboard. The system is tested according to IEC60945, certified for CE and type approved by RINA Register.



Microphone



Power Supply



SRS Main Unit

## - System Features

- 1. Easy to install and operate
- 2. Support up to 4 microphones (St'bd, port, bow and stern).
- 3. Loud speaker: Built-in wide band
- 4. Sound signal: Direction display of the sound source
- 5. Dimmer control function: adapted
- 6. Sensitivity adjustment (one potentiometer per microphone inside the unit)
- 7. Mute circuit for the ships own horn and talk-back system.
- 8. Mute delay function (2sec).
- 9. Installed bypass filter(70Hz ~ 820Hz/6dB)
- 10. The power unit (MPS-030A): independently for private use.
- 11. Main AC & emergency (DC) power using simultaneously.
- 12. The electrets condenser microphone provides the proper reception required for audio frequency band.

## - Specifications of Main Unit (MSR-9200A)

- |                               |                           |
|-------------------------------|---------------------------|
| -1. Power & Consumption       | : DC24V/ Max. 30VA        |
| -2. Frequency Characteristics | : 70Hz - 820Hz (6dB)      |
| -3. Distortion                | : less than 3% (-30dBm)   |
| -4. Input Sensitivity         | : less than -45dBm        |
| -5. S/N Ratio                 | : more than 50dB          |
| -6. AF Output                 | : Max. 5W                 |
| -7. Temperature/ IP Grade     | : -25°C ~ +55°C/ IP22     |
| -8. Humidity                  | : less than 95%           |
| -9. Weight & Material         | : 2.15kg / Aluminum-Steel |
| -10. Color/ Mounting Type     | : Black/ Flush Mounting   |
| -11. Compass Safety Distance  | : 0.75m                   |

## - Specifications of Microphone (MR-11A)

- |                                      |                          |
|--------------------------------------|--------------------------|
| -1. Power Source & Consumption       | : DC15V / Max. 0.1VA     |
| -2. Microphone Type                  | : Electrets Condenser    |
| -3. Input Sensitivity                | : -36±2dB/Pa (1 kHz)     |
| -4. Impedance & S/N Ratio            | : less 2.2kΩ / more 50dB |
| -5. Operating Temperature Range      | : -25°C ~ +55°C          |
| -6. Operating Humidity               | : less than 95%          |
| -7. IP Grade & Weight                | : IP 56 / 1.1kg          |
| -8. Housing & Color                  | : ABS / N-7(Gray)        |
| -9. Mounting Type                    | : Wall Mounting          |
| -10. Compass Safety Distance         | : 0.25m                  |
| -11. Relative Distance between Mic's | : Min. 0.5m              |
| -12. Compass Safety Distance         | : Min. 4m                |
| -13. Recommended installation        | : four Microphones       |

ISO 9001 & OHSAS 18001 Certified, for more information, visit [www.mrckorea.com](http://www.mrckorea.com)

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## - Name of Model (MSR-9200A)

The system includes main unit, microphone and power supply unit.

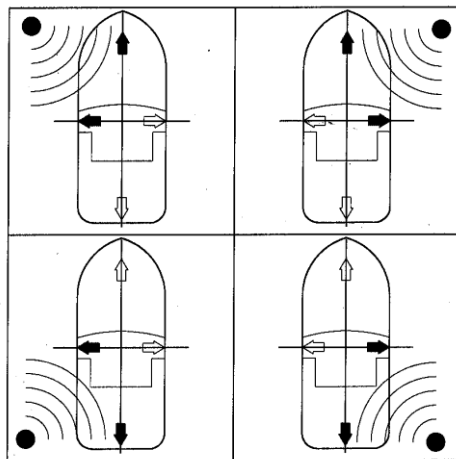
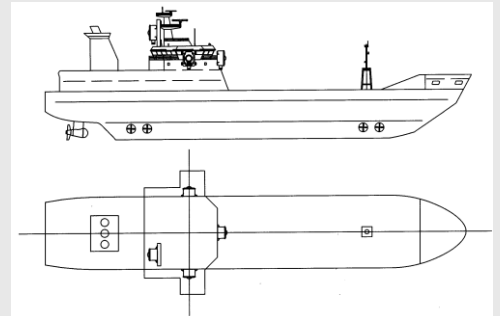
No	Model	Name	Position
1	MSR-9200A	Main Unit	Inside Wheel House
2	MR-11A	Water Tight Mic.	Wing/Bow/Stern
3	MPS-030A	Power Supply	Inside Wheel House

## - Functional Requirements

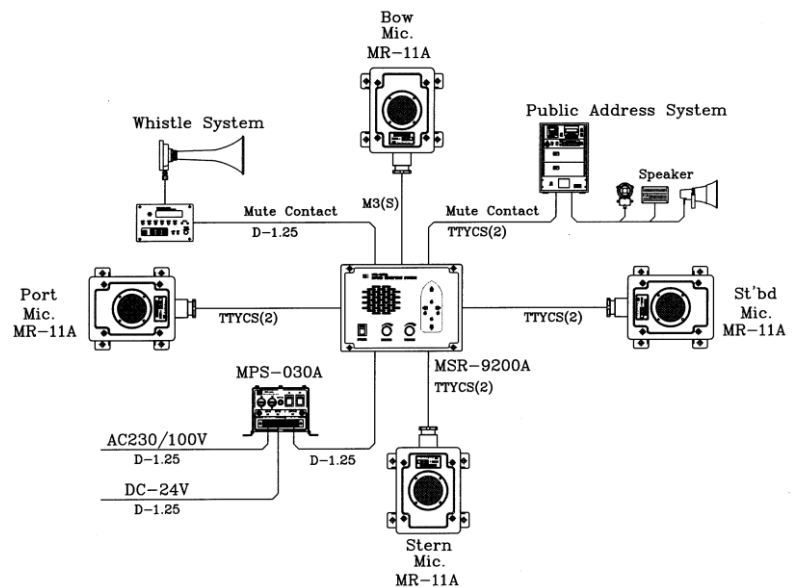
1. Audio band: 70 Hz - 820 Hz
2. Reproducing outside sound signals inside the bridge
3. Indicating the approximate direction of sound signals.
4. Suppressing unwanted background noise
5. Allowing reception of meaningful sounds.

## - Installation of MRS-9200A system

1. The microphones should be installed in such a way that they are as far from noise sources, wind noise and mechanical vibrations.
2. The display should be installed so that it is visible at least from the conning position.



Direction Display of Sound Signal



Wiring Diagram of Sound Reception System (MSR-9200A)

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