



Operation Manual

SVDR-3000
(Samsung Voyage Data Recorder - 3000)

SME-06V0-030-01
Rev. 1.2

Safety Warnings for Operating SVDR-3000

The SVDR-3000 collects nautical data from several equipments and records securely at one workplace. The SVDR is designed to minimize crew's operation. However the SVDR-3000 is operated by only authorized person.



WARNING

Non-observance of this Safety Warnings and Guidelines may lead malfunction such as abnormal recording, data loss, etc.

There are dangers of receiving an electric shock that can be lethal by touching current electrical parts.

Whenever the SVDR-3000 is operational in the opened-up state such as repairing, maintenance and annual checking, electrical power is on hand.

So act upon this manual for the prevention of electrical accidents.

Even after the main power on switch panel switched off, the main power connection terminals are exist as far as ship's power is not off as outside power.

In case of exchanging defective components, you must check that ship's power is off.

Revision

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1. Introduction

1.1 The VDR System – Overview

VDR is a "Black Box" for the ship in a word. VDR's objective is to maintain a store, in a secure and retrievable form of information concerning position, movement, physical status, command and control of a vessel over and the period leading up to, and following, an incident having an impact thereon. The information is for use during any subsequent investigation to identify the cause of incident.

In short the VDR system could open a new avenue to handle ship safety as it stores the most important information available on the bridge. The VDR is an advanced computerized system, connected to most of the systems on the ship's bridge. There is a crash-proof memory unit available, which is the 'black box', fitted with an acoustic device to assist retrieving in case of an accident.

All data recorded and stored information is time-synchronized for obvious reasons. In the case of the information stored in a VDR it can be retrieved, using a computer for investigational purposes. Thus it's not the VDR system itself, but the information recorded and stored in the VDR that can improve the safety of a vessel.

SHI (Samsung Heavy Industries Co., Ltd.) provides cost effective system solution for voyage data recording. It is designed to meet the IMO Resolution A861(20), standards for Shipborne Voyage Data Recorders.

The **Samsung Voyage Data Recorder** called SVDR-3000 is very flexible, a state-of-the-art Voyage Data Recorder for all kind of ships. The SVDR-3000 is a proper system to record and interface with various signals of navigation system for the advanced vessel.

The specific configuration of the SVDR-3000 depends on the size and type of the ship and individual demands from the ship owner. This flexibility holds for hardware as well as software.

1.2 Data to be recorded

The SVDR-3000 shall continuously record following data for 12hours according to IMO Performance Standard.

- Date and time - GPS
- Ship's position and datum used - GPS
- Speed - speed log
- Heading - ship's compass
- Bridge and Communications Audio
- Radar data - ship's radar
- Depth - echo sounder
- *Main alarms - the status of all IMO mandatory alarms on the bridge*
- *Rudder order and response - autopilot and rudder system*
- *Engine order and response - engine telegraphs or direct engine/propeller controls*
- *Hull openings (doors) status - ship's safety management system*
- *Watertight and fire door status - fire alarm system*
- *Accelerations and hull stress - hull stress monitoring system if a ship is fitted with IMO hull stress and response monitoring equipment.*
- *Wind speed and direction – anemometer (wind gauge)*

*** When the sensor written in *Italic* is available in accordance with IEC61162, Modbus, Analog, Digital data items are recorded.**

1.3 Data Recovery

➤ **Data retrieval from an undamaged protective capsule.**

Data can be replayed by playback software which is provided by Samsung Heavy Industries. If user has this software, download data following playback manual. Or user does not have this program, Send protective capsule to Samsung Heavy Industries or ask Samsung Heavy Industries for support this program.

➤ **Data retrieval from a damaged protective capsule.**

Protective capsule can not communicate with Playback system or be damaged by incident then user should send capsule to Samsung Heavy Industries.

Refer to the “Playback User’s Manual” for more information

2. SVDR-3000 System Configuration

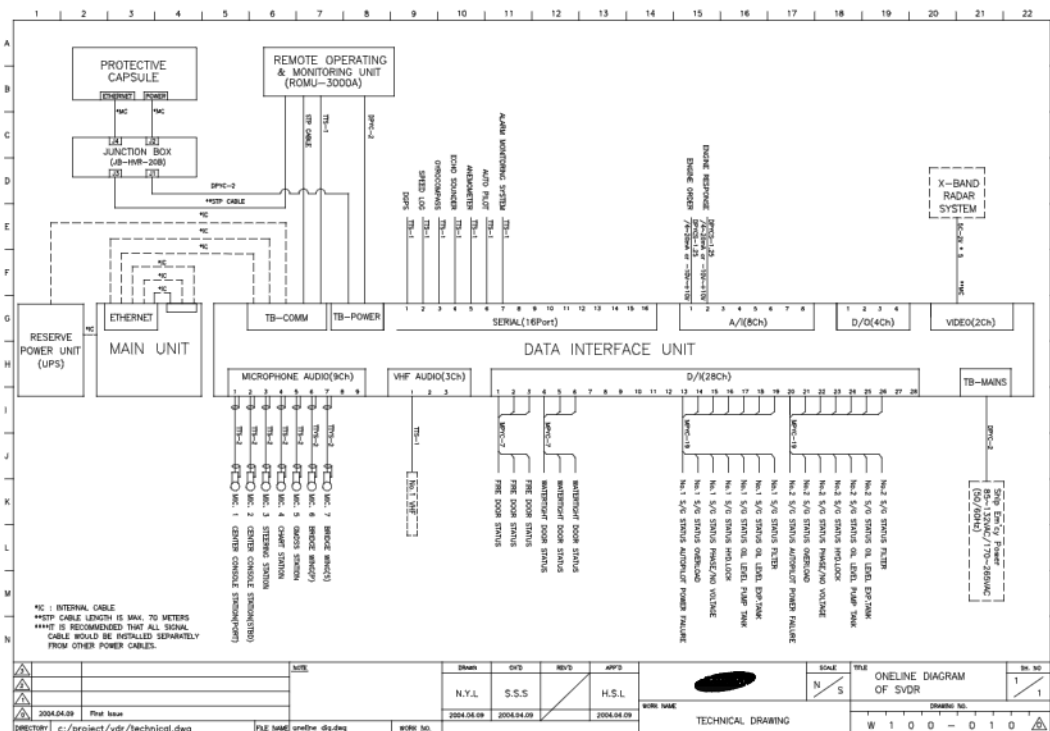
The SVDR-3000 is a basically PC based system and automatically runs.

The SVDR-3000 consists of following components;

- Protective Capsule
- Remote Operating and Monitoring Unit
- Reserve Power Unit
- Audio Interface Unit
- Serial Interface Unit
- Video Interface Unit
- IO Interface Unit
- Microphones

Through this chapter, you will know all operations of main parts in detail.

System Diagram



<Fig. 2-1 SVDR-3000 System Diagram>

The SVDR-3000 shall provide following signals to be interfaced with navigation equipments.

Navigation Equipment	Data	Signal Type	Signal Format
GPS	Date and Time	Serial Comm.	IEC61162*
GPS	Position	Serial Comm.	IEC61162
Speed log	Speed	Serial Comm.	IEC61162
Gyrocompass	Heading	Serial Comm.	IEC61162
Echo sounder	Depth	Serial Comm.	IEC61162
Radar	Radar Image	Video Signal	R,G,B,H,V
Anemometer	Wind speed, direction	Serial Comm.	IEC61162
Autopilot	Rudder order	Serial Comm.	IEC61162
<i>Rudder system</i>	<i>Rudder response</i>	<i>Serial Comm. Analog</i>	<i>IEC61162 -10 ~ 10V 4 ~ 20mA</i>
<i>Telegraph</i>	<i>Engine order</i>	<i>Serial Comm. Analog</i>	<i>IEC61162 -10 ~ 10V 4 ~ 20mA</i>
<i>Telegraph or Engine</i>	<i>Engine response</i>	<i>Serial Comm. Analog</i>	<i>IEC61162 -10 ~ 10V 4 ~ 20mA</i>
<i>Fire alarm system</i>	<i>Watertight, Fire Door status</i>	<i>Serial Comm. Digital</i>	<i>IEC61162 Digital Contact</i>
<i>Safety management system</i>	<i>Hull opening status</i>	<i>Serial Comm.</i>	<i>IEC61162</i>
<i>Hull stress monitoring system</i>	<i>Acceleration, hull stress</i>	<i>Serial Comm.</i>	<i>IEC61162</i>

* IEC61162 is aligned with NMEA0183

2.1 Protective Capsule(HVR)

The Protective Capsule is a final recorder to store and protect all the voyage data. The data is stored for a rolling 12 hours period so that in the event of an accident the capsule can be recovered and an analysis of the events leading up to the incident conducted.

The following data is recorded.

Channel	Qty	Rate
Area audio channel	3	48kbps
Radio audio channel	1	24kbps
Sensor data channel	1	10kbps
Radar compressed frame image channel	1	50kbps

The Protective Capsule records and reproduces data. The Protective Capsule communicates via Ethernet using TCP/IP.



<Fig. 2-2 Protective Capsule>

2.2 Remote Operating & Monitoring Unit(ROMU 3000A)

The Remote Operating & Monitoring Unit displays and records all kinds of alarms and basic navigation data.



<Fig. 2-3 ROMU-3000A>

2.3 Reserve Power Unit(SRPS-3000A)

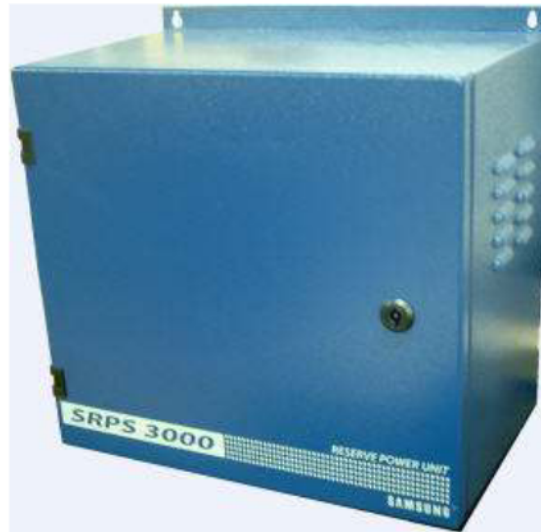
The Reserve Power Unit includes Reserve Power Source. This unit is capable of supplying the power to the SVDR-3000 for the purpose of recording for a period at least two hours in the event of a loss of external power.

This SRPS-3000A is designed to prevent black out, brown out, sags and surges from reaching your system and other valuable electronic equipment.

While running on battery, an internal alarm will sound (periodic beeps). The "ON" button should be pressed to mute the Reserve Power Unit alarm.

And also, Remote Operation Alarm Unit will make power failure alarm

If the main power does not return, the Reserve Power Unit will continue supplying the power to the connected equipment for 2 hours. A continuous beeping will sound for two minutes before the Power Supply Unit's final low battery shut down.



<Fig. 2-4 SRPS-3000A>

Specification

Classification	Specification
Output power	200 W
Power capacity	400 Wh
Nominal output voltage	24VDC (4.2A 50.4W Channel 7EA)
Nominal input voltage	100~240VAC, 50/60Hz auto-switchable or 24VDC
Battery type	Maintenance-free sealed Lead-Acid battery with suspended electrolyte: leak proof
Typical recharge time	4~6 hours
Dimensions	400(W) x 350(H) x 210(D)
Weight	19.2Kg
Control Panel	LED status display with load and battery charge level, power source indicators.
Operating Environment	-15 ~ 55 °C
Operating Relative Humidity	95% RH (No dew drop)
Storage Temperature	-30 ~ 85 °C
Storage Relative Humidity	95% RH (No dew drop)

2.4 Audio Interface Unit(SAIU-1000B or SAIU-1000A)

Unit	Function
Audio Interface Unit	Processing the voice signal to be transferred from each microphone and VHF, which are installed in bridge

The purpose of Audio interface unit is records the sound brings all of the microphones, speakers, and radio input wires together so that they can be tied into the Audio Data Interface unit cable, which connects with the Audio Data Interface Module card. Refer to Fig. 2-4 for the Audio Interface Box, the audio cables are connected to upside ports and the other side ports are connected microphone signals and power.



<Fig. 2-5 Audio Interface Unit >

2.5 Serial Interface Unit(SSIU-2000A or SSIU-1000A)

Unit	Function
Serial Interface Unit	Processing the data to be acquired from navigation equipment on board.

The Serial interface unit is provided with Serial 16 ports. 12 ports are for NMEA0183 format sentence and the other 4 ports are configured as NMEA0183, RS232, RS422 or RS485.



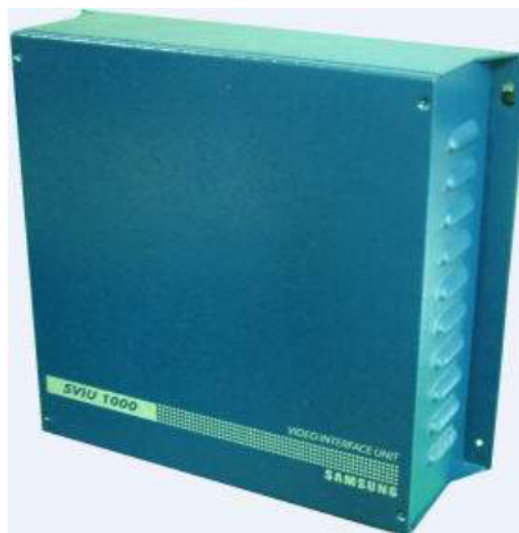
<Fig. 2-6 Serial Interface Unit >

2.6 Video Interface Unit(SVIU-1000B or SVIU-1000A)

Unit	Function
Video Interface Unit	Processing the video image to be transferred from X-band radar or S-band

The SVDR-3000 has a Video interface unit to record radar images from each radar, X-band, S-band. Video interface unit records radar images converted to RGB, separate synch from the Watch keeping Officer's radar with ARPA-information..

The Video interface unit is designed to capture radar image (R,G,B, H-sync, V-Sync)



<Fig. 2-7 Video Interface Unit >

The video interface unit is designed to capture radar image at 15-second intervals.

2.7 IO Interface Unit(SIIU-1000A)

Unit	Function
IO Interface Unit	Receiving and recording Analog / Digital input from sensors

The SVDR-3000 has a IO interface unit to record Analog and digital input value from each Analog and digital sensors. IO interface unit gathering all analog and digital input and send to ROMU through Gateway module.

The IO interface unit is designed to receive analog and digital input value.



<Fig. 2-8 I/O Interface Unit>

This unit receives data every second, and send to ROMU by Gateway module

3. Start Up

This section is given for operators to understand starting-up the SVDR-3000 system.

3.1 Before Starting Up

Before starting up the system, the system should be surveyed important points in order to get started up correctly when power is turned on.

It should be confirmed to connect power cable, network cable and other accessories of the system

3.2 Starting Up

There are two main steps to operate whole system.

1. Turn on the Main Power switches(AC & Battery) in the Reserve Power Unit.
2. Turn on the Remote Operating & Monitoring Unit switch then automatically started in three minutes.

4. System Operation

This section gives to the operator how to operate this system. The SVDR-3000 is very simple system. After turning on the power switch, the system will be automatically operated itself.

4.1 Operating



<Fig. 4-1 Main Power Switch>

To run this system,

Step1. Turn on the Main Power Switch in the Reserve Power Unit.

After turning on the power switch, the system will be automatically run. The status of the system are indicated on the ROMU-3000A

SHUT DOWN

The "OFF" button to be placed inside reserve power unit is for just shutting down of the SVDR-3000 system. And it is for stopping recording and then automatically shutting down system. To shut down system, press this button and hold on for about 5 seconds. If you want to restart the SVDR-3000 program, then press "ON" button which is located on the front panel of the Reserve Power Unit.

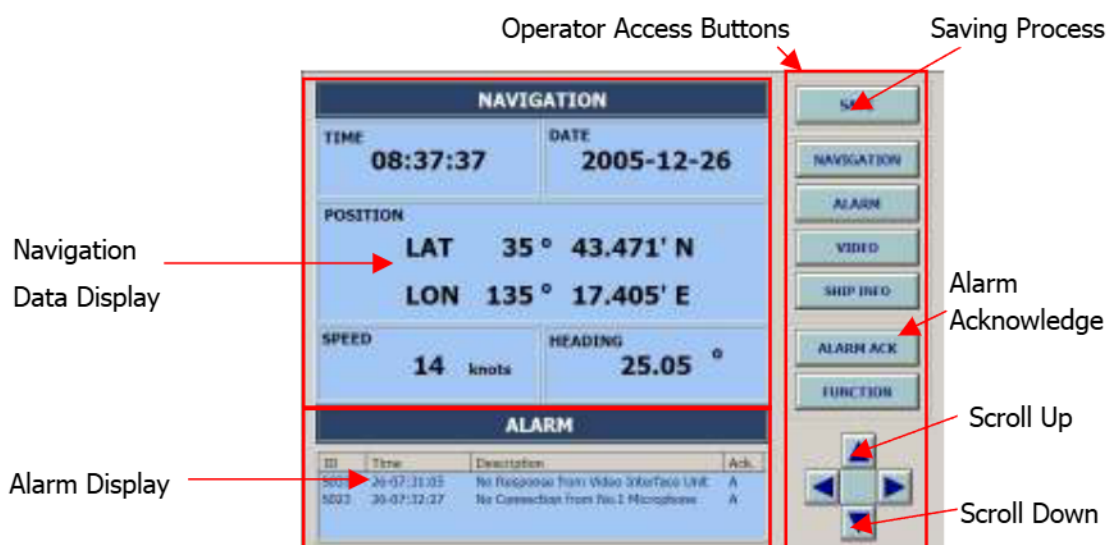
The SVDR-3000 has the Reserve Power Unit, the SVDR-3000 automatically stops recording and shuts down system after 2 hours when the external power source is removed. And then, when external power source supply main power again, the SVDR-3000 starts of itself.

4.2 Remote Operating & Monitoring Unit (ROMU-3000A)

This unit is for indicating whole status of the SVDR-3000. When an alarm is occurred, the alarm buzzer will be activated and released to operator.

The layout of ROMU-3000A is shown in the following figure. This unit has its own functions and common functions.

Detailed operation will be described Chapter 5. Software Operation



<Fig. 4-2 Layout of ROMU-3000A>

When an alarm is occurred, the following actions are carried out :

Situation

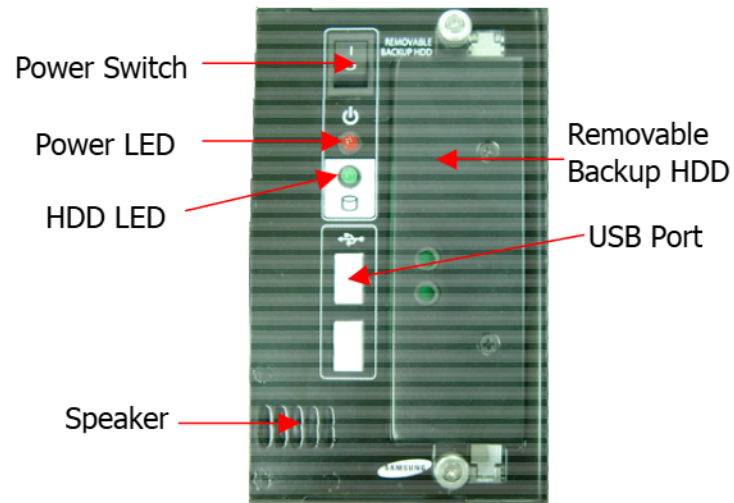
An alarm occurs

Buzzer will sound intermittently and color of alarm button turns to red.

Press **ALARM ACK** button, the sound is off and color of alarm button turn to normal.

If the related sensor is normal state, alarm button will be normal state.

The ROMU-3000A can display 4 alarms list at the same time. If over 4 alarms are generated, you can search all alarms by scroll buttons. To confirm the previous alarm, press SCROLL UP button. To confirm the new alarm, press SCROLL DOWN button.

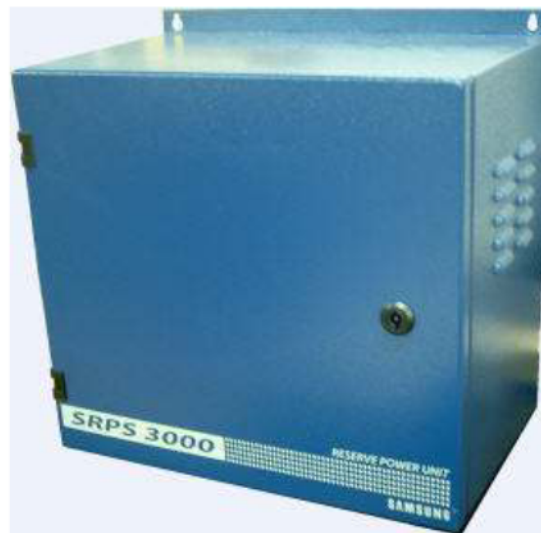


<Fig. 4-3 Inside of ROMU-3000A>

- Power Switch : Turn On/Off for ROMU.
- Red LED : Power LED
- Green LED : HDD Access LED.
- USB Port (2Port) : For using memory stick, USB Mouse or Keyboard.
- Removable Back Up HDD : For Saving Process, Long-term data backup & Playback
- Speaker : When alarm is occurred, speaker sounds

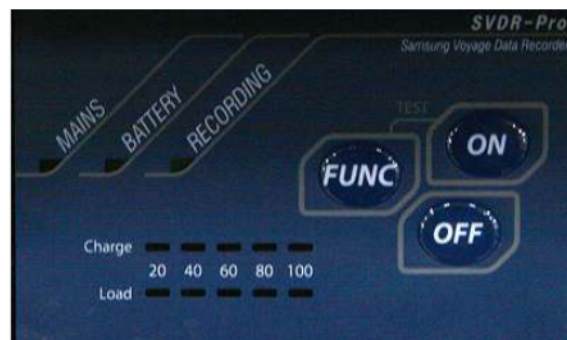
4.3 Reserve Power Unit(SRPS-3000A)

The Reserve Power Unit includes Reserve Power Supply. This unit is capable of supplying the power to the SVDR-3000 for the purpose of recording for a period at least two hours in the event of a loss of external power.



<Fig. 4-4 SRPS-3000A System>

The display panel on the SRPS shows status of power source.



<Fig. 4-5 Reserve Power Unit's Display Panel>

[ON]

When the Reserve Power Unit plugged, press and release the "ON" button to supply power to the loads. The loads are immediately powered on.

[OFF]

To shutdown the ROMU-3000A.

[ON+OFF]

Shutdown Reserve Power Unit. All units attached Reserve Power Unit are also shut down also.

[MAINS]

During Main AC power is applied, the "MAINS" LED illuminates.

[BATTERY]

During on-battery mode operation, the "BATTERY" LED illuminates. And the Reserve Power Unit sounds an audible alarm for 2minutes. The alarm stops when the Reserve Power Unit returns to on-line mode operation.

[RECORDING]

If a program running and capsule is connected properly, "RECORDING" LED illuminates.

Low Battery

When the Reserve Power Unit is operating on-battery and the energy reserve of the battery runs low, the Reserve Power Unit beeps continuously until the Reserve Power Unit shuts down after 2hours or returns to on-line operation.



<Fig. 4-6 Battery Charge Bar Graph>

Battery Charge Bar Graph

The 5-LED display on the left of the front panel shows the present charge of the Reserve Power Unit's battery as a percentage of the battery's capacity. When all five LEDs light, the battery is fully charged. The top LED goes out whenever the battery is not 100% charged. When the lowest LED is flickering, the battery's capacity is less than 10% for the load.



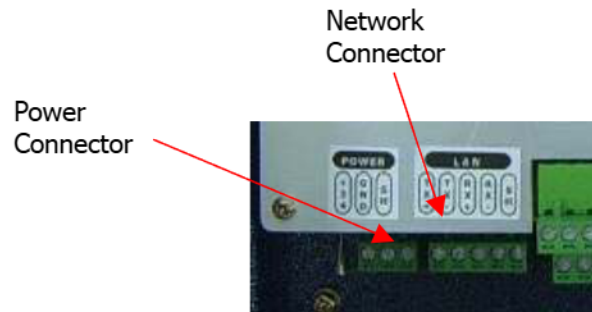
<Fig. 4-7 Load Bar Graph>

Load Bar Graph

The 5-LED display on the right of the front panel represents the power drawn from the Reserve Power Unit as a percentage of total capacity. For example, if three LEDs are on, the load is drawing between 51% and 60% of the Reserve Power Unit's capacity.

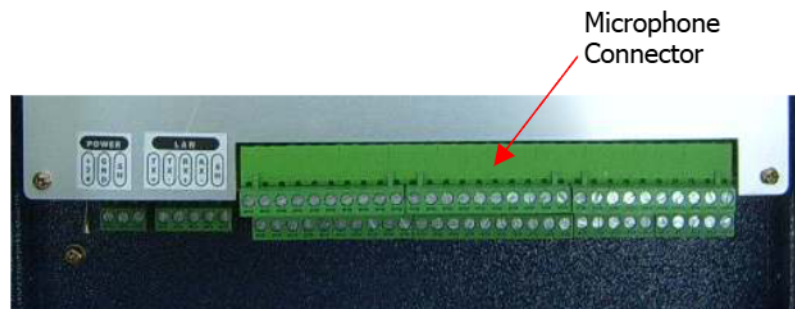
4.4 Audio Interface Unit(SAIU-1000B or SAIU-1000A)

■ SAIU-1000B



<Fig. 4-8 Main Connector of SAIU-1000B>

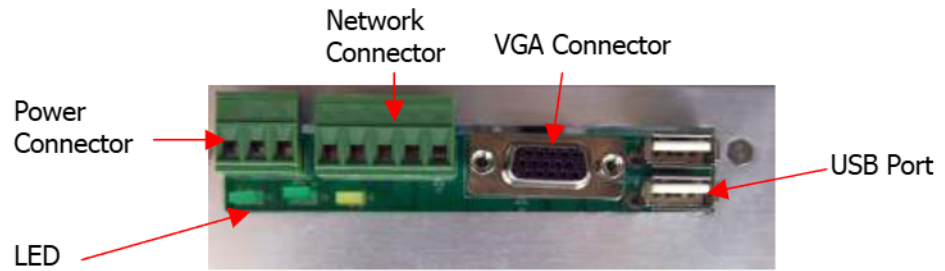
- Power Connector
- Network Connector : For communicating with ROMU & Protective Capsule



<Fig. 4-9 Microphone Connector>

- Terminal Block : For connecting with microphone and VHF

■ SAIU-1000A



<Fig. 4-10 Main Connector of SAIU-1000A>

- Power Connector
- Network Connector : For communicating with ROMU & Protective Capsule
- VGA Connector : For connecting monitor
- USB Port(2Port) : For using memory stick, USB Mouse, Keyboard.
- LED : For monitoring Power, HDD, Network status
- LCD connector : Dedicated LCD monitor on the ROMU may be connected to SAIU

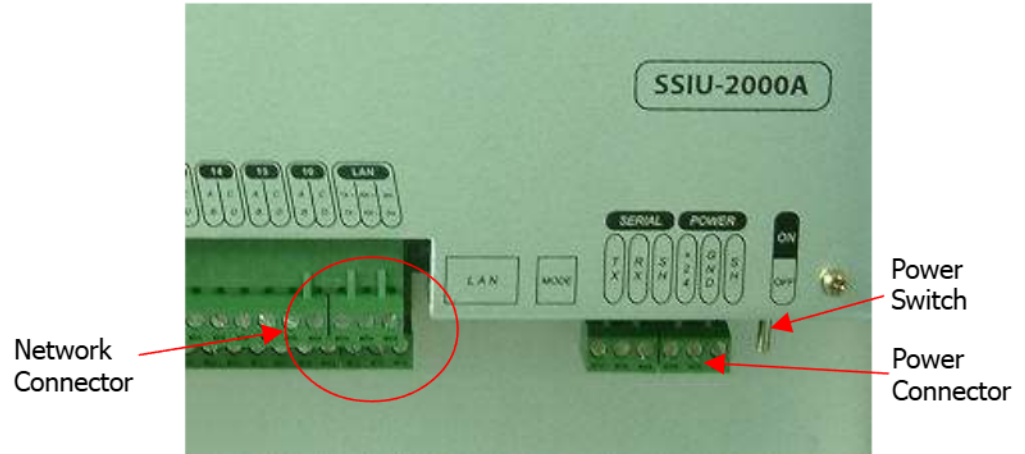


<Fig. 4-11 Microphone Connector>

Terminal Block : For connecting with microphone and VHF

4.5 Serial Interface Unit(SSIU-2000A or SSIU-1000A)

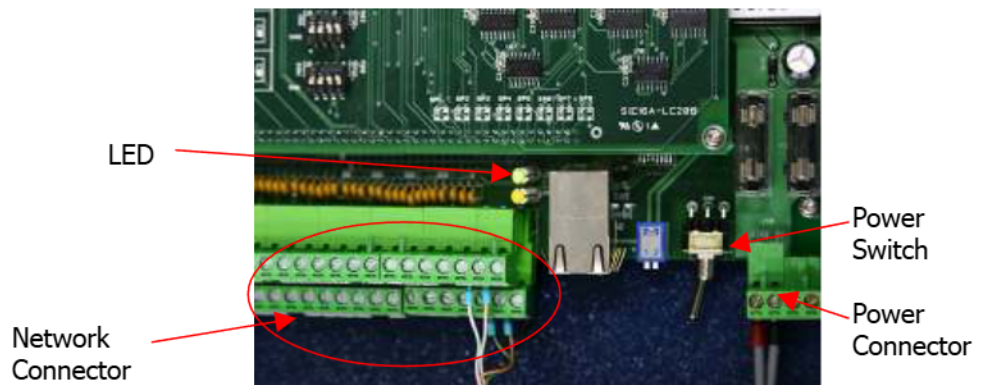
■ SAIU-2000A



<Fig. 4-12 Connector of SSIU>

- Power Connector
- Power Switch : Serial Interface Unit Power ON/OFF
- Network Connector : For communicating with other components

■ SAIU-1000A

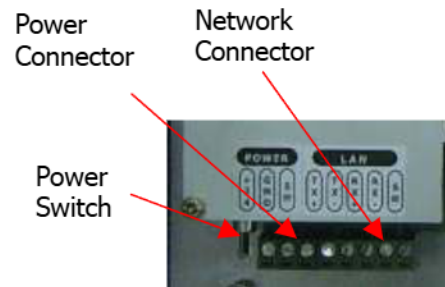


<Fig. 4-13 Connector of SSIU>

- Power Connector
- Power Switch : Serial Interface Unit Power ON/OFF
- Network Connector : For communicating with other components
- LED : Network status

4.6 Video Interface Unit(SVIU-1000B or SVIU-1000A)

■ SVIU-1000B



<Fig. 4-14 Main Connector of SVIU-1000B >

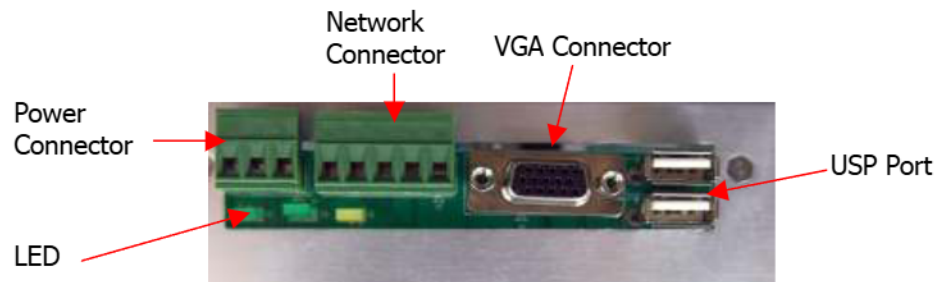
- Power Connector
- Power Switch : Video Interface Unit Power ON/OFF
- Network Connector : For communicating with ROMU & Protective Capsule



<Fig. 4-15 Video connector>

The Video Interface Unit is to help to connect easily each lines (R,G,B, H-Sync, V-Sync)

■ SVIU-1000A



<Fig. 4-16 Main Connector of SVIU >

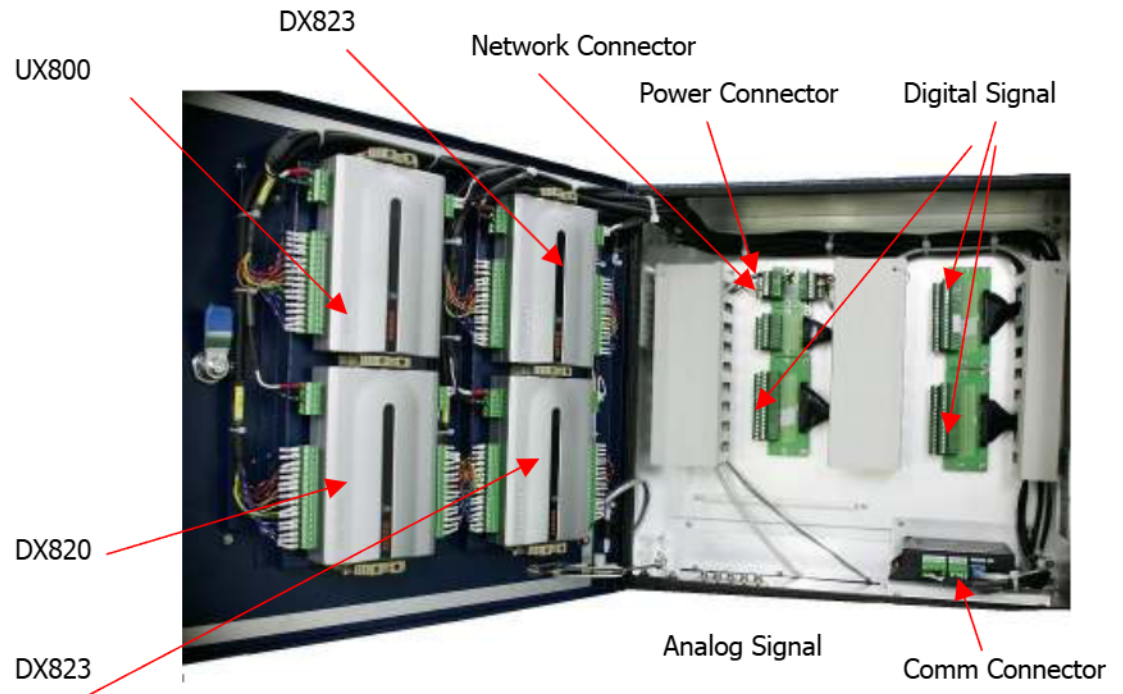
- Power Connector
- Network Connector : For communicating with ROMU & Protective Capsule
- VGA Connector : For connecting monitor
- USB Port(2Port) : For using memory stick, USB Mouse, Keyboard.
- LED : For monitoring Power, HDD, Network status
- LCD connector : Dedicated LCD monitor on the ROMU may be connected to SAIU



<Fig. 4-17 Video connector>

The Video Interface Unit is to help to connect easily each lines (R,G,B, H-Sync, V-Sync)

4.7 IO Interface Unit(SIIU-1000A)



<Fig. 4-12 Main Connector of SIIU-1000A >

- Power Connector
- Network Connector : For communicating with ROMU
- Comm Connector : For communicating with UX800, DX820, DX823
- Analog Signal : For receiving Ampere or voltage from analog sensors
- Digital Signal : For receiving digital signal from digital sensor
- UX800 : Analog signal receiver
- DX823 : Digital signal receiver
- DX820 : Digital signal receiver and sender

For more detail configuration, refer to Technical description Manual

4.8 Data Saving Process

The SVDR-3000's main role is to record data to be specified IMO performance standard and to store into the Protective Capsule

To store data in the Capsule, the SVDR-3000

1. makes the files related to each signal
(i.e. navigation data, audio data and video data)
2. stores in hard disk.

The "SAVE" button is used for copying the recorded data in hard disk up to the present. If the "SAVE" button is pushed unintentionally, the recorded data shall be copied to pre-defined directory. The structures of directory for data are as follows;

Microphone No.1 Mixer File :

"F:\vdr_data\save1\Wmix1W____.g726"

– Compressed File

Microphone No.2 Mixer File :

"F:\vdr_data\save1\Wmix2W____.g726"

– Compressed File

Microphone No.3 Mixer File :

"F:\vdr_data\save1\Wmix3W____.g726"

– Compressed File

Radar Capturing Image1File :

"F:\vdr_data\save1\Wvideo1W____.png"

– Compressed File

Radar Capturing Image2File :

"F:\vdr_data\save1\Wvideo2W____.png"

– Compressed File

Serial Data File :

"F:\Wvdr_data\save1\WsiDataW____.txt"

– Text based File

Alarm Data File :

"F:\Wvdr_data\save1 \Alarm____.txt"

– Text based File

Analog Data File

"F:\Wvdr_data\save1 \Aidata____.txt"

– Text based File

Digital Data File

"F:\Wvdr_data\save1 \Didata____.txt"

– Text based File

Above data are exactly same to the recorded data in the capsule at the moment. After the accident is occurred, the stored data in hard disk can be used for analysis without any interruption in capsule recording operation.

To use data in another system, Ethernet communication is used after following network setup;

- Local IP : 192.168.3.XXX
(Main Control Unit is 192.168.3.201 and the capsule is 192.168.3.200)
- Subnet Mask : 255.255.255.0
- Default Gateway : 192.168.3.1

**** User can save data 4 times, if user save more than 4 times, oldest data will be substitute new saved data.***

- Recent saved data directory : F:\Wvdr_data\Save1

- Oldest saved data directory : F:\Wvdr_data\Save4

5. Operation

The SVDR-3000 Software is divided into two main programs, server and client. The server collects and stores data; the client displays collected data.

Configuration

1. SVDR-3000 Main Program
 - i. Displaying Navigation Data
 - ii. Displaying Alarm Message
 - iii. Display Radar Image
 - iv. Displaying Ship Information
 - v. Function
 - Service Mode
 - Data Backup
 - vi. Saving Process Function

5.1 SVDR-3000 Main Program

Displaying Navigation Data

Navigation Data Display

- Date & Time(UTC)
- Latitude & Longitude
- Speed & Heading

Function Button

- Display picture change
- Save
- Alarm Acknowledge



<Fig. 5-1 ROMU Display>

Navigation data display

- Date
- Time (UTC)
- Latitude
- Longitude
- Speed
- Heading

5.2 Displaying Alarm Message



<Fig. 5-2 Alarm Display Module>

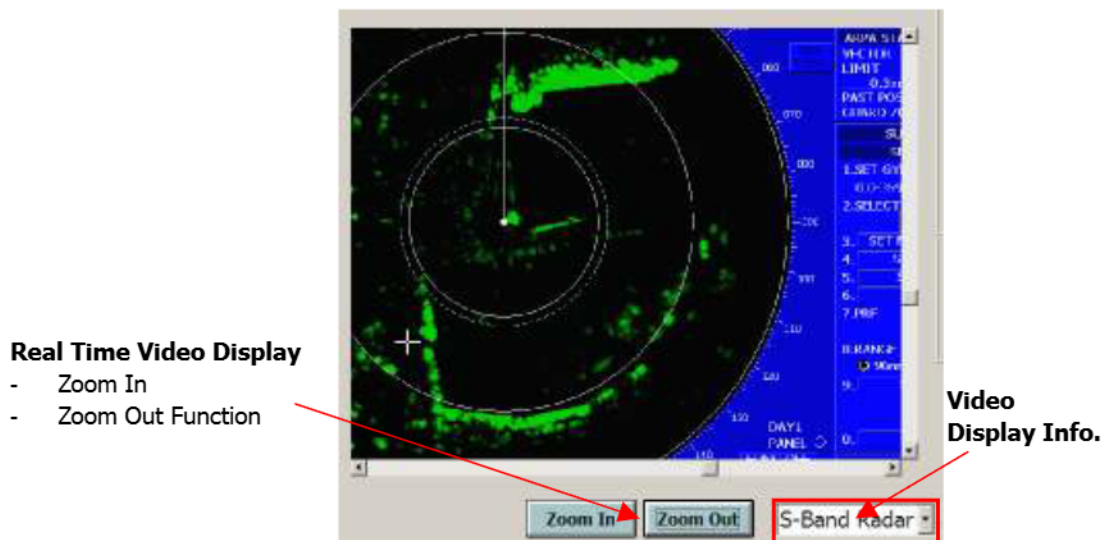
- Alarm Display at a glance
- When the new alarm is happen, alarm Button turns to red and creating buzzer.
- User press the blinking "Alarm" button, the color of alarm button turn to normal and buzzer stop
- If user doesn't press "ALARM ACK" The red color of "Alarm" button is not change

5.3 Displaying Radar Captured Image

User press the  button, it show radar captured image



<Fig. 5-3 Video Display Page>



<Fig. 5-3-1 Video Display Page(Zoom)>

- User can see the radar image, selecting one of four images (Maximum 4)
- Enlarge the captured image by Zoom In & Zoom Out button.

5.4 Displaying Ship Information

User press the  button, it shows ship's basic information

- Vessel Information: Vessel name, ID and Authority.
- Data Information: Sensors connected each serial channel.



<Fig. 5-4 System Configuration Info.(1/2) Display Page>

- Video Information: Which radar and other video recording.
- Audio Information: Position of microphones and VHF radio



<Fig. 5-5 System Configuration Info.(2/2) Display Page >

5.5. Function

The user press  button, it shows **sub menu**(service mode & data backup).



<Fig. 5-6 Sub menu of Function >

Service Mode

Engineer can use this mode only for service and commissioning.



<Fig. 5-7 Service Mode Log In Page>

Data Backup



<Fig. 5-8 Select data backup type>

➤ Long-term Data Backup

SVDR-3000 can save long-term data depend on storage media.

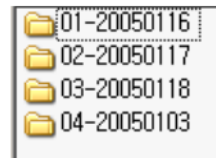


<Fig. 5-9 Long-term data backup >

User can enlarge the date depend on media capacity (usually within 1~30 days)
If media is attached, file creation and delete process is done automatically.

Saving Structure

Data will be saved F:\vdr_data folder.



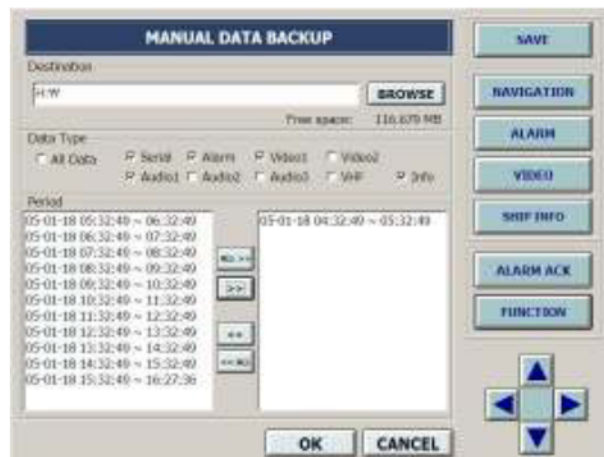
<Fig. 5-10 Saving Folder >

Folder name is order-year/month/date.

When the date is changed, automatically creates new date folder and delete oldest folder.

➤ Manual Data Backup

The user set a destination of data backup, data type and data period.



<Fig. 5-11 Manual data backup >

- Destination : The user press the **BROWSE** button, it shows **Drive** dialog box. The user selects a destination of data backup.



<Fig. 5-12 Manual backup destination dialog >

- Data Type : The user mark in check box, which a data type for backup.
- Period : The left list is available data backup list and the right list is selected data backup list. The period is at intervals of one time. The user select backup period.
- Click  button, create the folder and starting data backup.

Manual backup directory

Microphone No.1 Mixer File

"user selected destination

\\vdr_data\\manual_data_backup\\mix1____.g726"

– Compressed File

Microphone No.2 Mixer File :

"user selected destination

\\vdr_data\\manual_data_backup\\mix2____.g726"

– Compressed File

Microphone No.3 Mixer File :

"user selected destination

\\vdr_data\\manual_data_backup\\mix3____.g726"

– Compressed File

Radar Capturing Image1 File :

"user selected destination

Wvdr_dataWmanual_data_backupWvideo1W____.png"

– Compressed File

Radar Capturing Image2 File :

"user selected destination

Wvdr_dataWmanual_data_backupWvideo2W____.png"

– Compressed File

Serial Data File :

"user selected destination

Wvdr_dataWmanual_data_backupWsiDataW____.txt"

– Text based File

Alarm Data File :

"user selected destination

Wvdr_dataWmanual_data_backupWAlarmW____.txt"

– Text based File

Analog Data File :

"user selected destination

Wvdr_dataWmanual_data_backupWAIDataW____.txt"

– Text based File

Digital Data File :

"user selected destination

Wvdr_dataWmanual_data_backupWDIDataW____.txt"

– Text based File

5.6 Saving Process Function

User wants to save previous 12 hours data to Hard disk, press the button.



<Fig. 5-13 Saving Process Function Display>

Saving directory

Microphone No.1 Mixer File :

"F:\Wvdr_data\save1\Wmix1W____.g726"

– Compressed File

Microphone No.2 Mixer File :

"F:\Wvdr_data\save1\Wmix2W____.g726"

– Compressed File

Microphone No.3 Mixer File :

"F:\Wvdr_data\save1\Wmix3W____.g726"

– Compressed File

Radar Capturing Image1 File :

"F:\Wvdr_data\save1\Wvideo1W____.png"

– Compressed File

Radar Capturing Image2 File :

"F:\Wvdr_data\save1\Wvideo2W____.png"

– Compressed File

Serial Data File :

"F:\Wvdr_data\save1\WsiDataW____.txt"

– Text based File

Alarm Data File :

"F:\vdr_data\save1 \Alarm____.txt"

– Text based File

Analog Data File :

"F:\vdr_data\save1 \AIData____.txt"

– Text based File

Digital Data File :

"F:\vdr_data\save1 \DIData____.txt"

– Text based File

6. Alarm Description

6.1 System Alarm List

ID	Description	Contents
S001	No Response from Protective Capsule	Disconnect line between Protective Capsule and ROMU or Protective Capsule hardware fault.
S002	No Response from No.1 Video Source	Disconnect line between Video1 and SVIU or Video 1 if off state
S003	No Response from No.2 Video Source	Disconnect line between Video2 and SVIU or Video2 if off state
S004	No Response from No.3 Video Source	Disconnect line between Video3 and SVIU or Video3 if off state
S005	No Response from No.4 Video Source	Disconnect line between Video4 and SVIU or Video4 if off state
S006	No Response from No.1 Microphone	Mic1 hardware Fault
S007	No Response from No.2 Microphone	Mic2 hardware Fault
S008	No Response from No.3 Microphone	Mic3 hardware Fault
S009	No Response from No.4 Microphone	Mic4 hardware Fault
S010	No Response from No.5 Microphone	Mic5 hardware Fault
S011	No Response from No.6 Microphone	Mic6 hardware Fault
S012	No Response from No.7 Microphone	Mic7 hardware Fault
S013	No Response from No.8 Microphone	Mic8 hardware Fault
S014	No Response from No.9 Microphone	Mic9 hardware Fault
S017	No Response from SRPS	Disconnect line between Reserve Power Unit and ROMU
S018	External Power Failure	Main power of Reserve Power Unit off
S023	No Connection No.1 Microphone	Disconnect line between Mic1 and SAIU
S024	No Connection No.2 Microphone	Disconnect line between Mic2 and SAIU
S025	No Connection No.3 Microphone	Disconnect line between Mic3 and SAIU
S026	No Connection No.4 Microphone	Disconnect line between Mic4 and SAIU
S027	No Connection No.5 Microphone	Disconnect line between Mic5 and SAIU
S028	No Connection No.6 Microphone	Disconnect line between Mic6 and SAIU
S029	No Connection No.7 Microphone	Disconnect line between Mic7 and SAIU
S030	No Connection No.8 Microphone	Disconnect line between Mic8 and SAIU
S031	No Connection No.9 Microphone	Disconnect line between Mic9 and SAIU
S032	No Response from Audio Interface Unit	Disconnect line between SAIU and ROMU or SAIU hardware fault.
S033	No Response from Video Interface Unit	Disconnect line between SVIU and ROMU or SVIU hardware fault.
S034	No Response from Serial Interface Unit	Disconnect line between SSIU and ROMU or SSIU hardware fault.
S035	No response from Lon Gateway Module	Disconnect line between SIIU and ROMU or SIIU hardware fault.

6.2 Serial Alarm List

Starting "L": It means serial card and channel alarms.

If last number of this ID is 0, then this alarm should be Serial Interface Unit fault
Ex)

L100: 1st Serial Interface Unit error

L200: 2nd Serial Interface Unit error

If not, it means each channel alarm.

Ex)

L101: 1st channel alarm at 1st Serial Interface Unit

L203: 3rd channel alarm at 2nd Serial Interface Unit

ID	Description
L100	No Response from Serial Interface Unit
L101~L116	No Signal from XXX (XXX : sensor name)

6.3 Analog Alarm List

Starting "A": It means Analog card and channel alarms.

If last number of this ID is 0, then this alarm should be Serial Interface Unit fault
Ex)

A100: 1st Analog Interface Module error

A200: 2nd Analog Interface Module error

If not, it means each channel alarm.

Ex)

A101: 1st channel alarm at 1st Analog Interface Module

A203: 3rd channel alarm at 2nd Analog Interface Module

ID	Description
A100	No Response from Analog Interface Module
A101~L1086	No Signal from XXX (XXX : sensor name)

6.4 Digital Alarm List

Starting "D": It means Analog card and channel alarms.

If last number of this ID is 0, then this alarm should be Serial Interface Unit fault
Ex)

D100: 1st Digital Interface Module error

D200: 2nd Digital Interface Module error

ID	Description
D100	No Response from Digital Interface Module

7. Data download and Playback System (Optional)

SVDR-3000 Playback System is software for replay of VDR data recorded with the Samsung Voyage Data Recorder(SVDR-3000). Data can be replayed after downloading from the Protective Capsule. To run Playback System, a desktop computer or laptop computer is required.

Downloading Data from the Capsule

For download the recorded data from the Protective Capsule,

- [Step 1] Setup network setting of playback system such as Notebook computer or other computer as follows;
 - TCP/IP Address: 192.168.3.XXX
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 192.168.3.1
- [Step 2] Turn off the playback system
- [Step 3] Connect the capsule with Ethernet cable directly.
- [Step 4] Turn on the playback system.
- [Step 5] Click on the "Get Data-> from HVR"
- [Step 6] Select the data type and set the estimate time.
- [Step 7] Click on the "Download" button.
- [Step 8] After download all data, Click on the "MakeFile" button
- [Step 9] Click on the "Decompress" button.
- [Step10] After decompress data, Click on the "Parse Data".
- [Step11] After data parsing, set the time.
- [Step12] Start play.

Downloading procedure doesn't give any damage to recording new data to the capsule.

If user wants more detail instruction of playback system, look upon Playback Manual.

It is supported by Samsung Heavy Industries only for buy playback Software.

Recovering the Protective Capsule stored Data

1. Data retrieval from an undamaged protective capsule.

Data can be replayed by playback software which is provided by Samsung Heavy Industries. If user has this software, download data following playback manual. Or user does not have this program, Send protective capsule to Samsung Heavy Industries or ask Samsung Heavy Industries for support this program.

2. Data retrieval from a damaged protective capsule.

Protective capsule can not communicate with Playback system or damaged by incident then user should send capsule to Samsung Heavy Industries.

➤ Removing capsule from base.

- ✓ Lift up the two pins(Fig.7-1) and loosen the clamp.
- ✓ Lift up the Top of capsule using Handle.

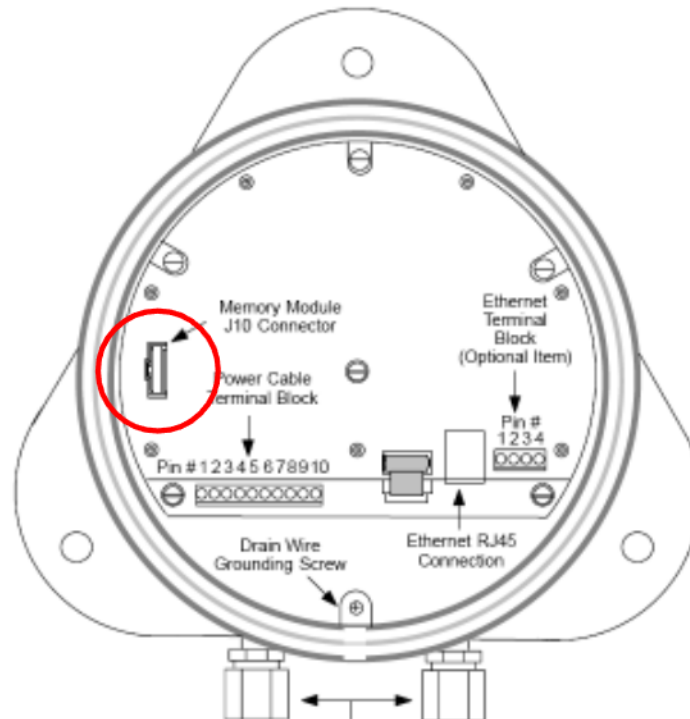
➤ Top and base connected with weak flat cable, so user should be lift up carefully



<Fig.7-1 Clamps>

➤ **Disconnect flat cable**

- ✓ This cable is connected at J10 (Fig.7-2)
- ✓ If cable is snapped, then send this capsule to Samsung Heavy Industries.



< Fig 7-2 Disconnect Memory Flat cable >

-Note :

If there are any problems for operating playback,

If more detail information for playback system is required,

**If there are some problems to read the capsule due to any damage,
please contact Samsung Heavy Industries directly.**

Apprehensive

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