FURUNO®

PC for Live Player and
Configuration setup

Ethernet

8 ch
IEC 61162

GPS Navigator
Echo Sounder
Doppler Speed Log
Heading device
(Gyro Compass, etc.)
Auto pilot
Engine telegraph
Steering gear
M/E remote system
Main air comp.
Bow thruster
Shell door system
Watertight door
Fire doors
Anemometer
Fire detection
Main alarms system
etc.

Data Recording Unit

VDR
Voyage Data Recorder

VDR

VR-3000

Fixed Type

8 ch
IEC 61162
64 ch
Digital Signals
16 ch
Analog Signals

S-VDR
Simplified Voyage Data Recorder

S-VDR

VR-3000S

IEEE 1394

Data Collecting Unit

VHF Radio Telephone
1 ch

VHF Radio Telephone

Removable HD 40GB

Frame Grabber

Ethernet

R/G/B/H/V

IEC 61162

Ethernet

110/230 VAC 24 VDC

Catalogue No. N-865d

The future today with FURUNO's electronics technology.

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VDR
Voyage Data Recorder

S-VDR
Simplified Voyage Data Recorder

Records all sort of crucial data to identify the cause of maritime casualty as well as to contribute to the future prevention of the catastrophe of any kind

The VR-3000/S is a Voyage Data Recorder/Simplified Voyage Data Recorder, which fully complies with IMO A861(20) and IEC 61996 and IEC 60945, and IMO MSC. 163(78) and IEC 61996-1/2 and IEC 60945, respectively. The purposes of the VDR and S-VDR are to assist investigators in identifying the causes of maritime casualty as well as to use the data for future reference to further incident prevention.

The VDR is intended for all the passenger ships as well as for newly constructed cargo ships of 3,000 gross tonnage and upwards. The S-VDR is for existing cargo vessels of the same category with a phase-in requirement schedule for those of 20,000 gross tonnage and upwards first, to be followed by others of 3,000 gross tonnage and upwards. The S-VDR is not required to store the same level of detailed data as the VDR but should maintain a store, in a secure and retrievable form, of information concerning the position, movement, physical status, command and control of a ship over the period leading up to and following an incident.

The VR-3000/S consists of Data Collecting Unit (DCU), Data Recording Unit (DRU), Remote Alarm Panel and up to six microphones. Incorporating interface modules, a powerful processor and status monitor into a compact container, the DCU collects voyage data. The DCU processes the data and events in the order of occurrence, while old data is overwritten by the latest data for storage in the DRU. The data is stored for at least 12 hours. In case of power supply failure, the reserve battery enables the VDR/S-VDR to record the bridge audio for two additional hours.

The data recorded in the DRU can be replayed with the playback software application, Liveplayer Pro for incident investigation as well as for educational briefing purposes.
The DRU is contained in a protective capsule to ensure survival and recovery of the recorded data following an incident.
The incorporated acoustic pinger helps investigators locate the capsule underwater.

Data Recording Unit
(Fixed type)

Data Collecting Unit

■ **VDR:** **Complies with IMO A861(20) and IEC 61996 and IEC 60945**

■ **S-VDR:** **Complies with IMO MSC.163(78) and IEC 61996-1/2 and IEC 60945**

■ **Space-saving installation with a compact Data Collecting Unit (DCU)**

■ **Data storing for 12 hours both in the DCU and Data Recording Unit (DRU)**

■ **Internal Radar Interface board to record Radar/ECDIS images***

■ **Junction Box for recording serial data, contact signals and analog data***

■ **Live Player software allows for real-time data monitoring as well as data playback with a PC at a later date**

*Standard for VR-3000 and optional for VR-3000S

Data items to be recorded
Every kind of data and events can be recorded if the data sources are interfaced with VDR/S-VDR.

No.	Data to be recorded	VDR			S-VDR	
		IMO A861(20)	IEC Clause(s)	Interface	IMO MSC.163(78)	Interface
1	Date and time	5.4.1	4.6.1	IEC61162	5.4.1	IEC61162
2	Ship's position and datum used	5.4.2	4.6.2	IEC61162	5.4.2	IEC61162
3	Speed (through the water and/or over the ground)	5.4.3	4.6.3	IEC61162	5.4.3	IEC61162
4	Heading (from compass)	5.4.4	4.6.4	IEC61162, Step, Synchro, Analog	5.4.4	IEC61162, Step, Synchro, Analog
5	Bridge audio (by one or more microphones on the bridge)	5.4.5	4.6.5	Audio	5.4.5	Audio
6	Communications audio	5.4.6	4.6.6	Audio	5.4.6	Audio
7	Radar, post-display selection	5.4.7	4.6.7	R.G.B.H.V	5.4.7	R.G.B.H.V (if available)
8	Depth	5.4.8	4.6.8	NMEA/IEC61162	5.4.9	
9	Main alarms (mandatory alarms on the bridge)	5.4.9	4.6.9	NMEA/IEC61162, Contact, Analog	5.4.9	
10	Rudder order and response	5.4.10	4.6.10	IEC61162, Contact, Analog	5.4.9	
11	Engine order and response	5.4.11	4.6.11	IEC61162, Contact, Analog	5.4.9	
12	Hull openings status (all mandatory information required to be displayed on the bridge)	5.4.12	4.6.12	IEC61162, Contact	5.4.9	if available IEC61162 Interface
13	Water tight and fire door status (all mandatory information rquired to be displayed on the bridge)	5.4.13	4.6.13	IEC61162, Contact	5.4.9	
14	Accelerations and hull stresses (if fitted)	5.4.14	4.6.14	IEC61162, Contact, Analog	5.4.9	
15	Wind speed and direction (If fitted)	5.4.15	4.6.15	IEC61162, Analog	5.4.9	
16	AIS Information				5.4.8	IEC61162-2 (if radar data isn't recorded should be recorded)

▢ : Mandatory   ▢ : Option   ▢ : Selectable

Requirement for VDR VR-3000

Minimum Requirement for S-VDR VR-3000S

Data Recording Unit

Remote Alarm Panel

VHF Radiotelephone — 1 ch

VHF Radiotelephone — 1 ch

Microphone or Water-resistant Microphone (6 pieces max)

Data Collecting Unit

built in removable HDD

PC for Live Player

PC **

Ethernet

Radar — 1ch (Max. 4ch) R/G/B/H/V

Radar Interface *

IEC 61162 — 8 ch

8 ch

GPS Navigator

AIS

Echo Sounder

Heading device (Gyro Compass, etc.)
Auto pilot
Engine telegraph
Steering gear
M/E remote system
Main air comp
Bow thrusters
Shell door system
Watertight doors
Fire doors
Anemometer
Fire detection
Main alarms system
etc.

Doppler Speed Log

Ethernet

Junction Box *

IEC 61162
Digital Signals — 64 ch
Analog Signals — 16 ch

* Standard for VR-3000 and optional for VR-3000S
** Live Player requires a PC for data replay.
— Option or locally supply

100/230 VAC   24 VDC

Carriage Requirement

	Ships on **International voyages**	Mandatory Installation
S-VDR	Existing cargo ships of 20,000 GT and upward	At the first scheduled dry-docking after 1 July 2006 but not later than 1 July 2009
	Existing cargo ships of 3,000 GT and upward but less than 20,000 GT	At the first scheduled dry-docking after 1 July 2007 but not later than 1 July 2010
VDR	All passenger ships as well as newly built cargo ships of 3,000 GT and upwards.	

Data Recording Unit

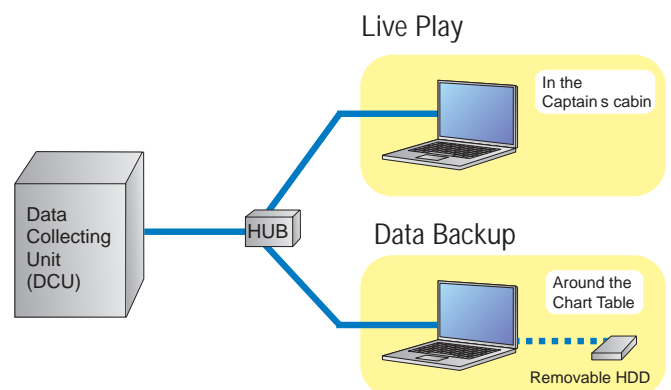Microphone for bridge audio

Play back/Live play Software

Play back/Live play Software is available for VR-3000/3000S in order to smooth out the data collection process.

This software application extracts and displays the data accumulated in VR-3000/S in real time on the networked PC screen.
Also, the data can be replayed for a more thorough data analysis at a later date.

Standard mode

Live Play

In the Captain s cabin

Data Collecting Unit (DCU)

HUB

Data Backup

Around the Chart Table

Removable HDD

— Cat 5 Ethernet Cross Cable   ▪▪▪▪ IEEE 1394 Cable or USB Cable

GENERAL

Rules and Regulations

VDR: IMO A.861(20), IEC 61996, IEC 60945, IEC 61162
S-VDR: IMO MSC.163(78), IEC 61996-1/2, IEC 60945, IEC 61162

Data Collecting Unit (DCU)

Recording period: At least 12 hours
Data to be recorded: As specified in the above regs
Interface

	VDR	S-VDR
Input		
Fire wire (IEEE1394):	1 ch	1 ch
Serial interface IEC 61162-2:	4 ch	2 ch (+2 ch*)
IEC 61162-1:	12 ch	6 ch (+6 ch*)
Bridge communication:	6 ch	6 ch
VHF audio:	2 ch	2 ch
Radar RGBHV:	1 ch (Max 4ch*)	Max 4 ch*
Analog:	16 ch (Max 48ch*)	Max 48 ch*
Contact/Digital:	64 ch (Max 192ch*)	Max 192 ch*
Output		
Ethernet:	2 ch	2 ch
Remote Alarm System:		
VDR System Fail	1 ch	1 ch
Local ACK	1 ch	1 ch
Remote ACK	1 ch	1 ch

* Option

Data Recording Unit (DRU)

Memory
6 GB/9 GB* flash memory standard for IMO mandatory data for 12 h cycle, first-in first-out basis. Retains data for more than 10 years under no external power.

* Specify when placing a purchase order.

POWER SUPPLY

100 - 230 VAC, 50 - 60 Hz

EQUIPMENT LIST

VDR VR-3000

Standard

1. Data Collecting Unit VR-3010	
(built in removable HDD / radar interface board RI-3010)	1 unit
2. Data Recording Unit VR-5020 (with 30 m cable and cradle)	1 unit
3. Remote Alarm Panel VR-3016	1 unit
4. Junction Box IF-8530	1 unit
5. Microphone VR-5011 or	
Water-resistant Microphone VR-3012W	6 sets
6. LivePlayer Pro software	
7. Installation Materials and Spare Parts	

Optional

1. Removable HDD for DCU (40 GB)	1 unit
2. VHF Interface IF-5200	

S-VDR VR-3000S

Standard

|	
1. Data Collecting Unit VR-3010 (built in removable HDD)	1 unit
2. Data Recording Unit VR-5020	
(with 30 m cable and cradle)	1 unit
3. Remote Alarm Panel VR-3016	1 unit
4. Microphone VR-5011 or	
Water-resistant Microphone VR-3012W	6 sets
5. LivePlayer Pro software	
6. Installation Materials and Spare Parts	

Optional

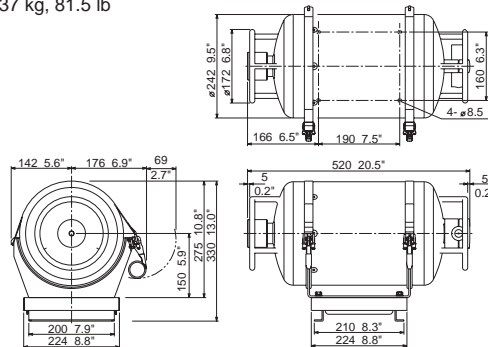|	
1. Removable HDD for DCU (40 GB)	
2. Junction Box IF-8530	1 unit
3. Radar Interface Board RI-3010	1 unit
4. VHF Interface IF-5200	

Data Collecting Unit VR-3010
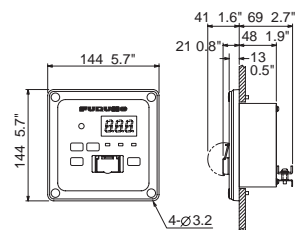46 kg, 101.4 lb
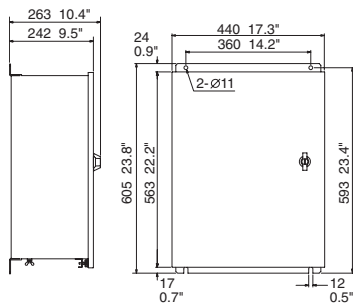
Data Recording Unit VR-5020
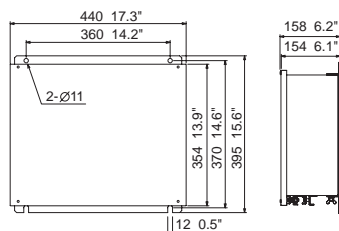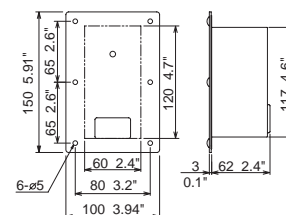37 kg, 81.5 lb

Remote Alarm Panel VR-3016
1.0 kg, 2.2 lb

Junction Box IF-8530
12 kg, 26.5 lb

Microphone VR-5011
0.3 kg, 0.7 lb

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE