![JRC]

Voyage Data Recorder

Long term performance and reliability

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Compliant with the latest performance criteria

In addtion to the revised Voyage Data Recorder (VDR) performance standards MSC.333(90) which came into force on 1 July 2014, in line with the revised EPIRB performance standards MSC.494(104) which came into force on 1 July 2022, JRC welcomes or as we say in Japan, yōkoso, to our fourth generation VDR model, the JCY-1900. Having been involved in VDR development from the very beginning in 2001, this latest revision in the performance standards has allowed JRC to re-think, develop and design its latest model with the standard attention to detail for performance, reliability and long term competitive cost of ownership.

The required ones by the new performance standards

- Equipped of capsule of two types of fixed type and float free type
- Recording of 48 hours in both capsule of fixed type and float free type
- Recording of 30 days / 720 hours in built-in media in control unit
- Image recording of two radars and one ECDIS
- Recording of AIS information
- Audio recording of minimum 2 ch of bridge microphone and audio recording of independent minimum 1 ch of external wing microphone
- Independent recording of microphone audio of VHF call audio
- Recording of electronic logbook, electronic inclinometer, thruster and BAMS information * [1]

* 1: Only when it is mounted on a ship.

System operation, on a 7-inch display

Newly designed for the JCY-1900 is the 7-inch color LCD touch display which allows full system operation. Displaying various VDR alerts with detailed information, see what sensors are connected including status, view the latest recorded image data of radar and ECDIS and playback of audio tracks recorded from microphones.
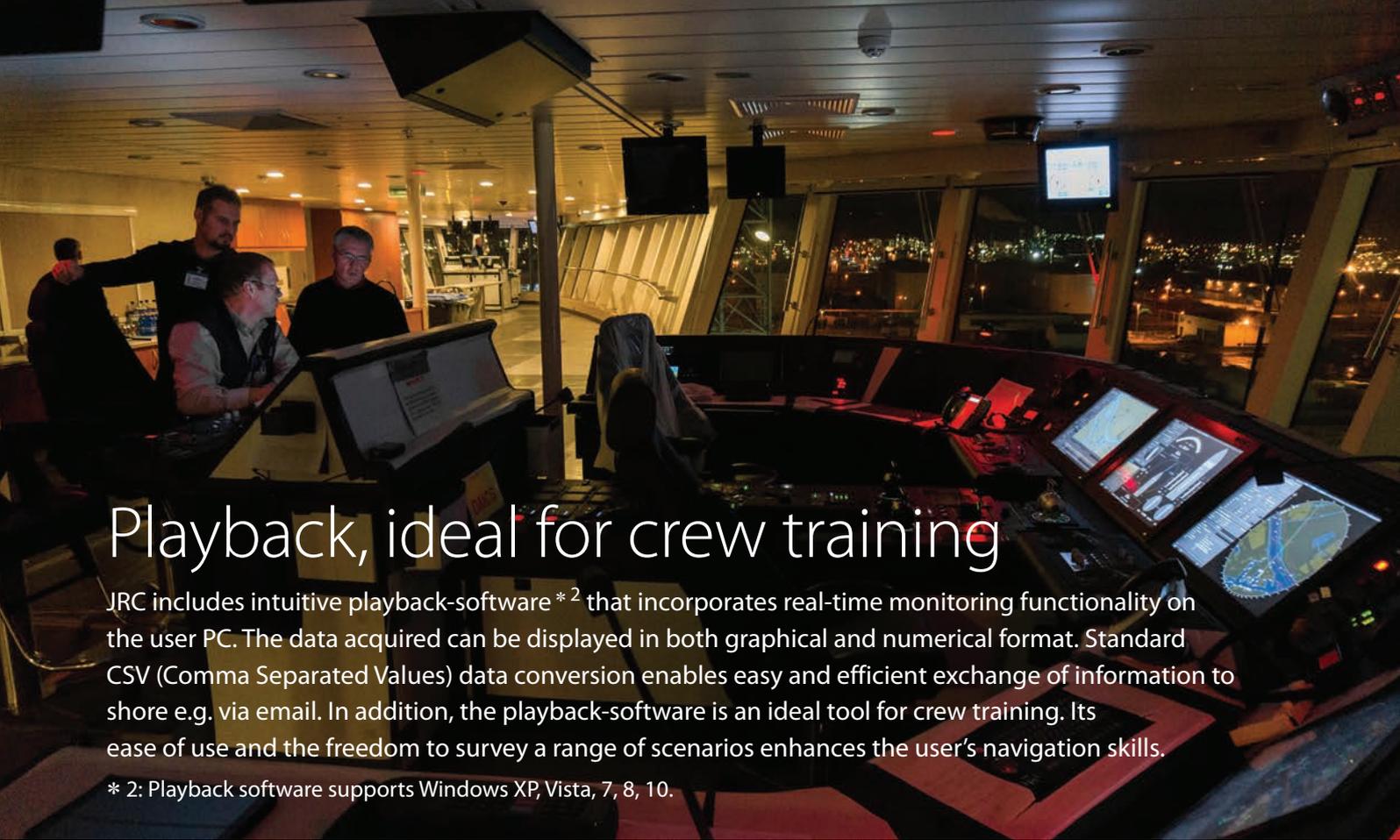
Playback, ideal for crew training

JRC includes intuitive playback-software *[2] that incorporates real-time monitoring functionality on the user PC. The data acquired can be displayed in both graphical and numerical format. Standard CSV (Comma Separated Values) data conversion enables easy and efficient exchange of information to shore e.g. via email. In addition, the playback-software is an ideal tool for crew training. Its ease of use and the freedom to survey a range of scenarios enhances the user's navigation skills.

*[2]: Playback software supports Windows XP, Vista, 7, 8, 10.

Remote maintenance, closer to you than ever

The new JRC VDR has a dedicated server integrated as standard to support our JRC proprietary Remote Maintenance System (RMS) using IP-routing technology to monitor status of navigation and radio communication equipment onboard, via JRC's FB or GX Inmarsat satellite communications systems, to establish a highly secure connection data link to the vessel. This allows a cost-effective determination of the operating status, software version numbers installed, etc., of the JRC equipment onboard whilst the vessel is at sea. Being able to diagnose a problem remotely, accurately, reliably and quickly, allows the ship owner to save one of the most precious commodities, time. JRC can make preparations at the next port for the necessary repair work, dramatically increasing the return to work status, using our comprehensive and well-trained global support network.

Built, around our MFD

The JCY-1900 is built around our revolutionary new Multi Function Display (MFD) which functions as radar and/or ECDIS. The unit supports a LAN video input with a maximum of 6 video signals, which allows a straightforward and seamless integration of our MFD, supporting multiple radars and paperless sailing with dual ECDIS.

Naturally, connecting our previous generation radar/ECDIS equipment or other third party radar/ECDIS are also possible, although may require additional hardware.
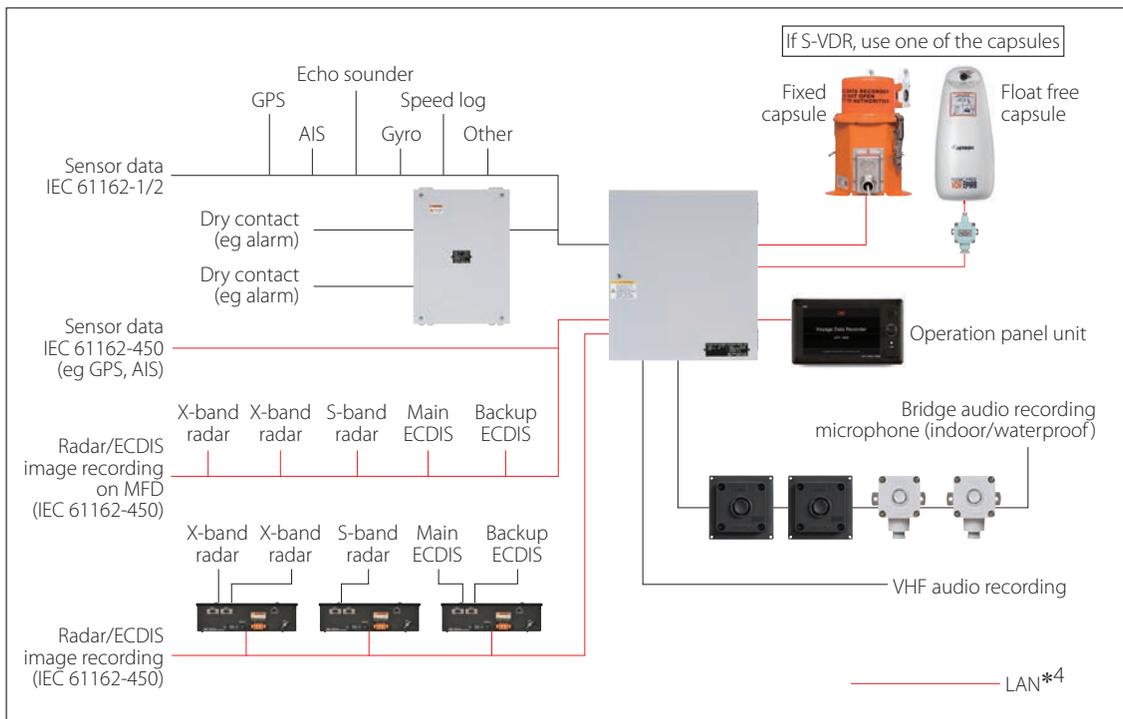
No new S-VDR regulation, yet a new model

For Simplified Voyage Data Recorder (S-VDR), there will also be the new JCY-1950*[3] variant available with just one capsule, fixed or float free. JRC is a company founded on the principles of long term reliability and customer support and there are many ship owners sailing with older S-VDR makes and models that might no longer be supported. JRC views this as a duty to these owners to continue to offer an acceptable alternative solution.

∗3 : Conforming to the S-VDR performance standards MSC.493(104), which is a revised EPIRB performance standards.

System diagram

The VDR can be connected to various navigation and communication equipment and sensors onboard a ship. JRC's straightforward configuration assures continuous performance of the VDR system.

If S-VDR, use one of the capsules

Echo sounder
GPS
Speed log
AIS
Gyro
Other

Sensor data
IEC 61162-1/2

Dry contact
(eg alarm)

Dry contact
(eg alarm)

Sensor data
IEC 61162-450
(eg GPS, AIS)

Fixed capsule
Float free capsule

Operation panel unit

X-band radar
X-band radar
S-band radar
Main ECDIS
Backup ECDIS

Radar/ECDIS image recording on MFD (IEC 61162-450)

Bridge audio recording microphone (indoor/waterproof)

X-band radar
X-band radar
S-band radar
Main ECDIS
Backup ECDIS

VHF audio recording

Radar/ECDIS image recording (IEC 61162-450)

LAN*[4]

∗4 : If you want to connect 5 or more ports, please use the 100BASE-T compatible HUB.

In the box

・Recording control unit (JCY-1900)	NDV-1900
・Recording control unit (JCY-1950)	NDV-1950
・Operation panel unit (JCY-1900)	NCG-1900
・Operation panel unit (JCY-1950)	NCG-1950
・Fixed protective capsule unit	NDH-338
・Float-free capsule unit	NDH-339B
・Microphone unit	NVT-181
・Junction box	NQE-7700A
・Playback software for the accident investigators	CYC-825
・Playback software for users	CYC-826
・Spare parts	

Options

・Microphone unit	NVT-181
・Waterproof microphone unit	NVT-182
・Digital signal converter (32CH)	NCT-82
・Digital signal converter (64CH)	NCT-83
・Data acquisition unit	NCT-84
・Analog to digital conversion board	CEF-60
・Frame grabber unit	NWP-69
・Spare parts	

If you want to retrofit as S-VDR, requires either one capsule of the fixed type or float free type.
Since there is a case where there is limit, the capsule of the type equipped as S-VDR, please check in advance to the classification/Flag State.

Dimensions

Operation panel unit RoHS
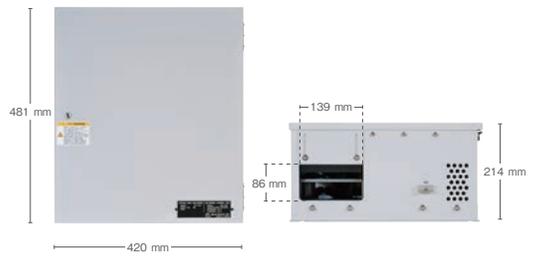NCG-1900/1950 MASS 800 g

136 mm
225 mm
38 mm

Fixed protective capsule unit
NDH-338 MASS 6.8 kg

276 mm
185 mm
120°
131.5 mm
252 mm

Float-free capsule unit RoHS
NDH-339B MASS 5.4 kg

397 mm
534 mm
200 mm
237 mm
214 mm

Recording control unit RoHS
NDV-1900/1950 MASS 22.5 kg

481 mm
139 mm
86 mm
214 mm
420 mm

Microphone unit RoHS
NVT-181 MASS 200 g

110 mm
82 mm
110 mm
51 mm

Junction box RoHS
NQE-7700A MASS 600 g

139 mm
120 mm
78 mm

Waterproof microphone unit RoHS
NVT-182 MASS 500 g

83 mm
120 mm
111 mm

Digital signal converter (32CH) RoHS
NCT-82 MASS 2.8 kg

280 mm
300 mm
147 mm
52 mm
130 mm
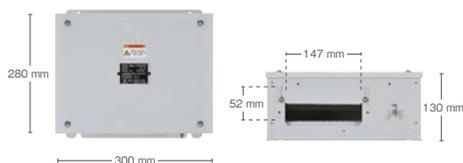
Digital signal converter (64CH) RoHS
NCT-83 MASS 4.2 kg

480 mm
300 mm
157 mm
77 mm
130 mm
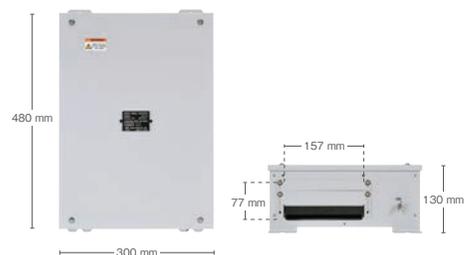
Data acquisition unit RoHS
NCT-84 MASS 4.3 kg

480 mm
300 mm
157 mm
77 mm
130 mm

Frame grabber unit RoHS
NWP-69 MASS 1.5 kg

167 mm
255 mm
72 mm

Specifications

Name	Voyage Data Recorder (VDR)
Model	JCY-1900

Operation panel unit

Display	7-inch WVGA color LCD, 800x480 pixel Built in speaker, Touch + rotate and push button, USB (copying of data)

Protective capsule

Recording data

Sensor data	date & time, ship's position, speed, heading, echo sounder, main alarms, rudder order and response, engine and thruster order and response, watertight and fire door status, Hull openings status, Accelerations and hull stresses, Wind speed and direction, AIS, Rolling motion, Electronic logbook, BNWAS, speed and distance measuring equipment both ground/water speed
Audio data	Microphone, VHF
Image data	Radar (X-band/S-band), ECDIS
Recording time	Fixed capsule : 48 hours (capacity 32 GB) Float free capsule : 48 hours (capacity 80 GB) Solid state drive : 720 hours (30 days) (capacity 512 GB)
Data recording interval	Sensor data : depends on the input from the sensors (normally 1 second) Audio data : continuous (1 audio file / minutes) Image data : 3 images /15 seconds

Input ports for sensor connecting

Serial port	IEC 61162-1 (4800 bps) : 22 ports IEC 61162-2 (38400 bps) : 2 ports
LAN	IEC 61162-450 : 24 ports
Microphone audio input	8 ports
VHF audio input	4 ports
Radar/ECDIS input	6 ports
Connection I/F	RGB (option)
Dry contact	32 ports (option : NCT-82 dry contact input) 64 ports (option : NCT-83 dry contact input)
Analog input	8 ports (option)

Power supply

100-120 VAC (±10%) 1-phase 50/60 Hz 200-240 VAC (±10%) 1-phase 50/60 Hz

• Specifications may be subject to change without notice.

For further information, contact:

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