JAN-9201/7201
ECDIS

RMS

* The photograph includes options.

- Provide a smooth operating environment ensured by high-speed chart drawing.

- **Conforming to the latest IMO performance standards with Marine Equipment Directive (MED) certification.**
- **Ensuring intuitive and easy-to-use display and operation performance reflecting professional user's voices.**
- **Integrating route editing and route safety checking to support safer route plans.**
- **Delivered with a software license allowing an expansion tailored to each operational requirement for a wide variety of optional features.**
- **ECDIS type-specific training (TST) is provided by a variety of organizations around the world on behalf of JRC.**

JRC Japan Radio Co., Ltd.

JAN-9201/7201
Mandatory installation and standards

ECDIS

The Electronic Chart Display and Information System (ECDIS) is a geographic information system for voyage planning and route monitoring to support the safety navigation of ships at sea.
The ECDIS onboard a ship uses images obtained from the automatic identification system (AIS), radar system, and collision avoidance target tracking (TT) system and superposes the images with navigational chart information, thus accurately displaying dynamic information on other ships around. Also the ECDIS plays central roles in the safe navigation of the ship and provides safety functions, including the generation of warnings when the ship approaches dangerous areas. The ECDIS is useful for marine accident avoidance and serves as equipment indispensable to the safe navigation of ships.

Mandatory installation of ECDIS

In response to the latest revision of the International Convention for the Safety of Life at Sea (SOLAS), the International Maritime Organization (IMO) enforced the mandatory installation of the ECDIS on oceangoing passenger ships with 500 gross tons or more and tankers and cargo ships with 3,000 gross tons or more in a stepwise manner in and after July 2012. This mandatory decision requires conventional paper charts or an additional ECDIS as a backup to the primary ECDIS if a ship uses the primary ECDIS as main navigational equipment. (Requirements for the equipment and operation qualification are subject to approval from the country with which the ship is registered and recommendations from the classification society of the ship.)

Type	Size	Newbuild	Existing
Passenger ship	> 500	July 2012	July 2014
Tanker	> 3,000	July 2012	July 2015
Cargo ship	> 3,000	July 2014	—
	> 10,000	July 2013	July 2018
	> 20,000	July 2013	July 2017
	> 50,000	July 2013	July 2016

Regulations and major specifications

This equipment conforms to the requirements set out in the IMO's resolution MSC.191 (79) for display-related voyage information adopted in December 2004 and the IMO Resolution MSC.232 (82) for ECDIS performance standards adopted in December 2006. Other specifications of the ECDIS are shown below.

- Electronic chart display function/Radar overlay function : IEC 61174
- Display-related voyage information : IEC 62288
- Track control system (TCS) function[*1] : IEC 62065

*1. Contact your JRC representative for supporting autopilot models.

JAN-9201/7201
Features

Sophisticated user interface

The JAN-9201/7201 incorporates a new user interface (named jGUI) for an intuitive, easy-to-use, simple menu system based on the display of icons. This interface always displays critical data in fixed positions on the screen while icon-based menu display informs users of corresponding functions straightaway. Furthermore, target tracking (TT) and AIS symbols feature pop-up displays while mouseover on the target showing their main data at a glance.

Easy-to-use operating unit

The newly designed trackball supports all the operation of the equipment. Users will be alerted with alarms from the operating unit and color changes under situations that require attention.

Optional keyboard

The ECDIS will be operable like conventional models by connecting an optional operating unit that incorporates dedicated function buttons, control knobs and a full keyboard.

Route editing and safety checking

JRC's new ECDIS model JAN 9201/7201 has integrated route editing, which was conventionally divided into two segments, i.e., graphics input and numeric table input areas, into one. Waypoints, if specified, on a navigational chart are immediately quantified and added to the numeric editing table, and the numeric data on the waypoints that is input into the editing table is immediately reflected on the navigational chart. Up to four routes can be edited at the same time, and a portion cut out of any route can be combined and the routes can be all or partly replaced or edited.
Furthermore, a safety check on edited route data is possible with a click of a button. Detected error information items, if any, are listed and displayed, and the corresponding route portions are highlighted in the chart and table, which can be confirmed at a glance to take remedial measures.

Route editing screen example

JAN-9201/7201
Functional expansion and configuration

Functional expansion

The equipment incorporates a variety of optional functions that will be available with software licenses added. Software licenses can be added before or after the radar comes into operation. Therefore, the radar can be customized to match the actual operating conditions.

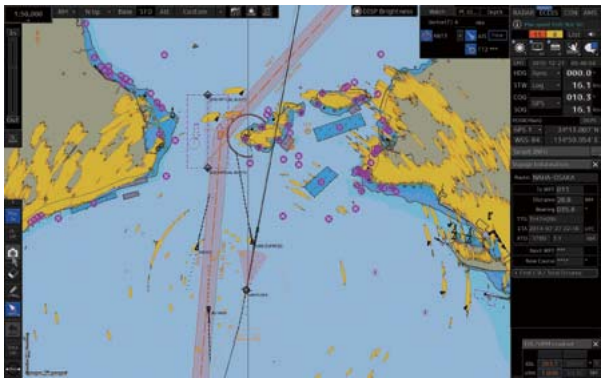
Optional functions

- Expansion of AIS display targets (500 → 1000)
- Radar overlay function*1
- TCS support*2
- S-Joy control support*3

*1. The radar overlay function requires an optional radar interface circuit and radar image signal input.

*2. The track control system (TCS) function requires auto pilot connections in addition. For details, including corresponding models, contact your JRC representative.

*3. For autopilot models connectable to the S-Joy control panel, contact your JRC representative.



Example of additional display of radar overlay function

Correspond to the major chart

The JAN-9201/7201 supports the display of major electronic navigational charts (ENCs), including those provided by ADMIRALTY Vector Chart Service (AVCS) (S-57 Ed 3.0/3.1 and S-63), NAVTOR ENC Service, and C-MAP ADMIRALTY ENC Service as well as ADMIRALTY Raster Chart Service (ARCS). Also, it supports advanced features provided with ENCs, such as the Admiralty Information Overlay (AIO) of AVCS by the United Kingdom Hydrographic Office (UKHO) and Dynamic Licensing of Jeppesen ENC service.

ENC (S-57 and S-63 vector charts)
- AVCS (AIO supported)
- NAVTOR ENC Service (PAYS supported)
- C-MAP ADMIRALTY ENC Service*4 (Dynamic Licensing supported)

Raster charts
- ARCS

Others (private charts)
- C-MAP Professional+*4

*4. eToken is optional item.

Satellite transmission blocking area display*5

The equipment offers a function for confirming areas where JRC INMARSAT FBB and INMARSAT GX*6 equipment cannot communicate with satellites. The equipment can display satellite antenna reception levels, blocking conditions, and transmission suspension*7. When connections with antennas are lost, this function can be used to check whether it is a temporary transmission outage or it is caused by a device malfunction. When performing route planning, this function makes it possible to confirm in advance if there are any parts of the route where satellite communication is not possible and to avoid losing contact.

*5. Satellite transmission blocking area display is option, contact your JRC representative.

*6. The INMARSAT FBB and INMARSAT GX support the JUE-251/501 and the JUE-60GX.

*7. Transmission suspension supports only the JUE-60GX.

Example of satellite transmission blocking area display

JAN-9201/7201
Functional expansion and configuration

VHF remote operation by ECDIS

The ECDIS offers a VHF remote operation function*8. This can be used to configure channels on the VHF unit or to perform DSC calls using AIS targets on the radar PPI screen. Features such as the wireless speaker mic*9 make it possible to communicate with other ships even when away from the VHF equipment.

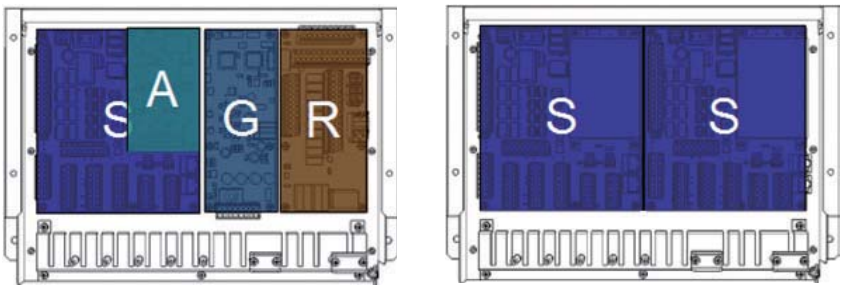
Example of ECDIS JAN-9201 26-inch display　　VHF screen

*8. The VHF supports the JHS-800S.

*9. Wireless speaker mic is option for the JHS-800S.

Sensor data sharing

The central control unit is provided with the only minimum required external interfaces specified by Marine Equipment Directives (MEDs), and other sensor data is received through the bridge network (LAN) from the interface circuits. The interface circuits are designed to be shared by a number of new-type navigation devices, and each type of interface circuit can be combined and selected according to each signal format and the number of connections.



Interface circuit arrangement in NQE-1143 junction box

Interface circuits

- S : SLC (Serial LAN interface circuit): IEC 61162-2 × 2; IEC 61162-1 × 8; Contact input point × 4; Contact output point x 8
- A : AOC (Analog option circuit)*10: -10 to 10VDC or 4 to 20mA × 4
- G : GIF (Gyro interface circuit): Gyro signals (Sync and Step); Ship speed pulse signals (100 to 800 pp)
- R : RIF (Radar interface circuit): Interswitch connection × 1; Slave video input × 1

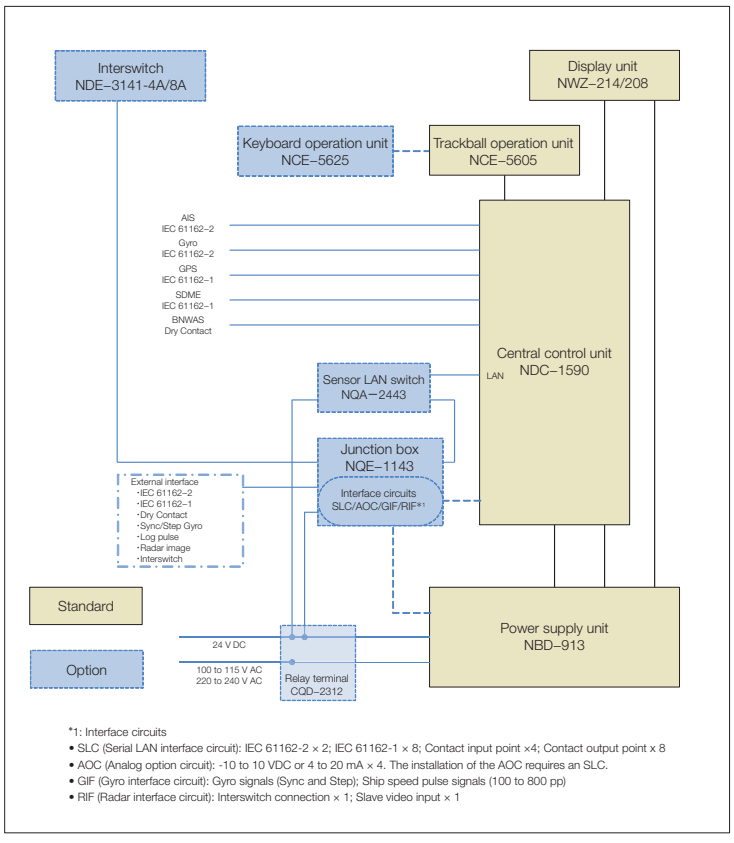
*10. The installation of the AOC requires a serial LAN interface circuit (SLC).

JAN-9201/7201
Technical training

Type-specific training (TST)

Unlike JRC's conventional ECDIS models, this ECDIS has adopted a new operation system and a TST program supporting the new operation system is required. The TST for the new ECDIS is given at JRC's major branches, agents, and training institutions around the world. The training will be given onboard or offices by instructors dispatched at the request of customers.
Furthermore, PC software is available for users' self-learning at home or onboard. For more information about TST, contact your JRC representative.

Block diagram



*1: Interface circuits
- SLC (Serial LAN interface circuit): IEC 61162-2 × 2; IEC 61162-1 × 8; Contact input point ×4; Contact output point x 8
- AOC (Analog option circuit): -10 to 10 VDC or 4 to 20 mA × 4. The installation of the AOC requires an SLC.
- GIF (Gyro interface circuit): Gyro signals (Sync and Step); Ship speed pulse signals (100 to 800 pp)
- RIF (Radar interface circuit): Interswitch connection × 1; Slave video input × 1

In the box

- Central control unit
- Power supply unit
- Display unit
- Trackball operation unit

Options

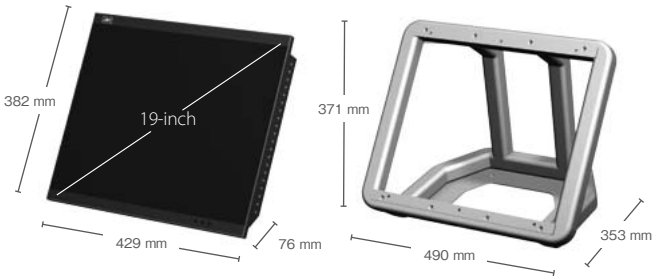
- Keyboard operation unit
- Sensor LAN switch
- Junction box
- Serial LAN interface circuit
- Analog option circuit
- Gyro interface circuit
- Radar interface circuit
- Relay terminal block
- Display unit mount kit
- Interswitch (4 ch/8 ch)
- eToken*2

*2. For C-MAP ADMIRALTY ENC Service and C-MAP Professional+.

JAN-9201/7201
Dimensions and weight

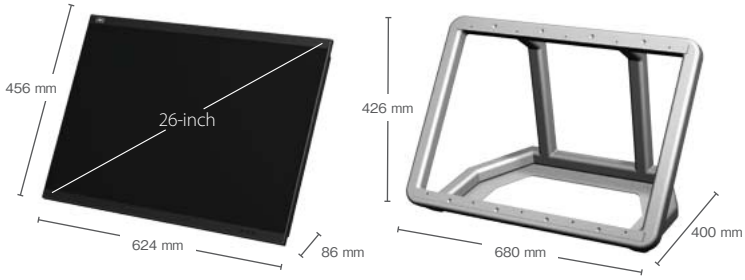
19-inch display and desktop frame

NWZ-214 Weight: 4.6 kg **CWB-1594**[*3] Weight: 3.6 kg



26-inch display and desktop frame

NWZ-208 Weight: 16 kg **CWB-1595**[*3] Weight: 5.5 kg



* Desktop frame is option.

Central control unit

NDC-1590 Weight: 5.6 kg

Power supply unit

NBD-913 Weight: 4.2 kg

Trackball operation unit

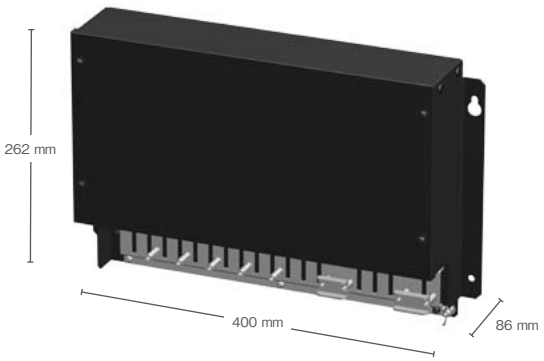
NCE-5605 Weight: 1.3 kg

Keyboard operation unit

NCE-5625[*3] Weight: 0.8 kg

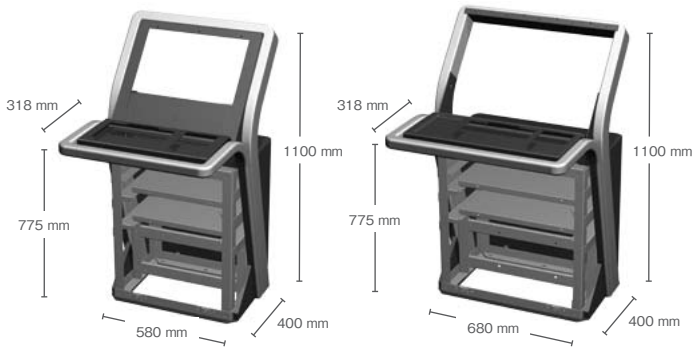
Junction box

NQE-1143[*3] Weight: 3.8 kg



19" cradle frame and 26" cradle frame

CWA-245[*3] Weight: 55 kg **CWB-246**[*3] Weight: 65 kg



*3. Option.

JAN-9201/7201
Specifications

Model	26-inch model	JAN-9201
	19-inch model	JAN-7201
Conforming to IMO standards		✓
Hardware function		
Display unit		JAN-9201: 26-inch WUXGA color LCD, 1920 × 1200 dots JAN-7201: 19-inch SXGA color LCD, 1280 × 1024 dots
Central control block		2-GB main memory SSD × 2 DVD drive × 1
Power supply		100-115 VAC, 50/60Hz, 1φ/220-240 VAC, 50/60Hz, 1φ/24 VDC
Power consumption		Rating JAN-9201: 240 VA ; JAN-7201: 200 VA
Chart display function		
Chart database		ENC: S-57 Ed3.0/3.1 and S-63 AVCS (AIO supported), NAVTOR ENC Service, and C-MAP ADMIRALTY ENC Service Raster charts: ARCS Personal chart: C-MAP Professional+
Operation mode		TM (true motion)/RM (relative motion) display
Azimuth display mode		True motion mode: North UP/Course UP/Head UP/Waypoint UP Relative motion mode: North UP/Course UP/Head UP/Waypoint UP
Scale		1:1,000 to 1:20,000,000 (WUXGA)/1:40,000,000 (SXGA)/1:20,000,000 (FHD)
Range		0.125, 0.25, 0.5, 0.75, 1.5, 3, 6, 12, 24, 48, 96NM
Multi-window display		Upper-lower split/Left-right split/Picture-in-picture
Route planning function		
Route creation		Table/Graphic editing
Route editing		Waypoint addition/deletion/edition Alternative route creation Route copy Connection between routes Import/export (in CSV)
Safety check		Yes
Number of routes displayed		Four types max.
Navigation-monitoring function		
Own ship		Monitoring for position, wake, and dragging anchor
Route monitoring		Water depths, obstacles, approaching prohibited areas, course deviation, waypoints, and arrival time
Other ship monitoring		TT display 200 targets max. (100 targets per radar and responding to a maximum of two radars) AIS display: 500 targets max. (expanding to a maximum 1,000 targets with an optional function added)
User map		
Number of display points		100,000 points (marks and lines)
Import/Export		Possible with USB memory
Other functions		
Data display function		Conning data block display
Self-diagnostic function		Standard
Remote maintenance function		Standard
Playback		Navigation data (3 months max.) Logbook (3 months max.)
Radar overlay		Optional (software license)
TCS		Optional
S-Joy control supported		Optional

• Specifications may be subject to change without notice.

For further information, contact:

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